Organizational Creativity and Psychological Well-being

Contextual aspects on organizational creativity and psychological well-being from an open systems perspective

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ABSTRACT

Present day organizations in a globalized society are experiencing external challenges and changes more than ever before and in order to adapt and react to these changes creativity and innovation are seen as some of the most important means. The standpoint in this thesis is that all employees have creative potential, and how the creative potential is expressed may depend on variables in the organizational context. Accordingly, this thesis aims to investigate the relationship between organizational creativity and innovation and contextual aspects: organizational climate, team climate, leadership, work resources, workload, the organizational culture, and the individual.

In this time of change, globalization, and technology improvements to mention some few factors, the well-being of the employees may be at risk. Change is often associated with negative attitudes in employees. This may depend on that change has in recent years meant lean production and down cuts in number of the staff which resulted in "anorectic" organizations. Also, supervisors got increasingly larger units to lead and motivate. If the change is not dealt with the employee may experience a lack of well-being and negative stress. In this thesis it is suggested that increasing organizational creativity and innovation, for which the foundation is employee creativity, are means to achieve a psychological well-being.

The results of study I showed that the joint contribution of the contextual variables was related to ratings of organizational creativity and innovation. The more one rated the organizational climate for creativity, team climate for innovation, change/employee-oriented leadership style, work resources, and less workload, the higher was the organization rated as creative and innovative. On the importance of the context, the results of study III also implied that, although creativity mainly was experienced to be an individual phenomenon, the context had an important if not a determining role for how organizational creativity and innovation were experienced. Contextual aspects such as structure dependency, organizational defences, collaboration difficulties, and political cannibalism, among other things, made it difficult for the engineers to be creative at their work.

Regarding well-being, the results of study I suggested that organizational creativity and innovation might be means to increase psychological well-being. In study II, the results implied that the more creative the climate was rated, the less did employees experience stress . Furthermore, in study II, stress was predicted by a relation-oriented leadership, indicating the importance of the leader for the well-being of the employees. The results of study II suggested that educational level is a more relevant dimension than gender with regard to experiencing the organizational climate and leadership but not with regard to experiencing stress and workload. The results indicated that well educated people experienced the climate for creativity as more beneficial and the leadership as more change/employee-oriented than less educated, and women experienced stress and workload more than men.

Taken together, the results pointed at the importance of the context for how creativity is experienced and to the importance of the relationship between organizational creativity and innovation and well-being. The assumptions made regarding organizational creativity and innovation leading to a better well-being and a creative organizational climate leading to less stress are limited and needs to be further developed, especially concerning the causality of the relationships, within the context of organizations.

Key words: organizational creativity, innovation, psychological well-being, stress, climate, leadership, work resources, workload, culture.

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Lund, May 2007

Farida Rasulzada

LIST OF EMPIRICAL STUDIES

This thesis is based on the following three papers, which will be referred to in by their Roman numerals. The three appended papers can be found at the end of the thesis.

I. Rasulzada, F., & Dackert, I. (2006). A Model Examining the Relationships between Organizational Factors, Organizational Creativity and Innovation, and Individual Well-being. *Manuscript submitted for publication in Creativity Journal of Research.*

II. Rasulzada, F., Johansson, C. R., & Dackert, I. (2006). Employee Stress in Relation to Perceived Creative Organizational Climate, Leadership Styles, Work Resources, and Workload. *Manuscript submitted for publication in Work and Stress.*

III. Rasulzada, F., & Ragneklint, R. (2007). Contextual Perspective on Organizational Creativity and Innovation. *Manuscript submitted for publication in Organization Studies.*

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APPENDED STUDIES

1 INTRODUCTION

According to researchers (e.g., Florida, 2002) the main source of growth in the 21st century are not competition, knowledge or technology, rather the fundamental drive to economical growth is identified as implemented human creativity. Due to technology development, economical growth, and globalization and the opportunities, competition, increased market demands and expectations it brings, there is a growing interest in creating work environments that support and nurture employees' creativity, which is the foundation for all organizational creativity (Amabile, 1988). We are experiencing changes more than ever before and to adapt and react to these changes creativity and innovation are seen as necessary conditions for development (Csikszentmihalyi, 1996; Runco, 2004; Weisberg, 1999). According to Woodman, Sawyer, and Griffin (1993) creativity for individuals and organizations represents a dramatic aspect of organizational change and it provides a key to understand change processes, organizational effectiveness, and survival.

The benefit of increasing organizational creativity and innovation is not only gaining a competitive advantage and economical growth but also creativity and innovation can introduce change, life, dynamics, and opportunities for the organization (e.g., Amabile, 1996; Ekvall, 1999; Martins & Terblance, 2003; Oldham & Cummings, 1996). For an individual, creativity is associated with being more productive (Amabile, 1983). Creative and innovative individuals are also thought to be happier, more committed, and often strive to achieve self-actualisation (Csikszentmihalyi, 1997).

In creativity literature the general view is that creativity is triggered by problems, incongruities, and dissatisfactions of some sort that the individual is faced with (Drucker, 1985; Kanter, 1988). Anderson, De Dreu, and Nijstad (2004) define these problems as psychological stressors that pro-

duce an elevated state of arousal in an individual. When faced with these psychological stressors one tries to cope with them and this coping may involve a change or renewal in cognition, expectancies, abilities and behaviours (Anderson et al., 2004). Thus, it may be that negative feelings evoke creativity, and the use of creativity and innovation may be a coping strategy to deal with the changes in an environment. Consequently, increasing creativity and innovation can be a mean to achieve benefits in terms of a better psychological well-being through increasing creativity and innovation which is one of the foci in the current thesis.

While the benefits of increasing creativity for an organization have been acknowledged, the benefit for the individual in terms of a better psychological well-being has been relatively neglected in the contemporary research. Psychological well-being is typically viewed as an affect-based construct (Warr, 1987) and a consistent and stable trait (Wright & Bonett, 1997). It has been suggested that affect may be a determinant of creative accomplishments on a theoretical level (Amabile, 1988), but the research conducted in the field of creativity has neglected the influence of affect on creativity (Damanpour, 1991). The research that has been conducted in this field has shown that positive affects that are induced in laboratory settings can increase creativity (Isen, 1999a, b; Isen et al., 1987), and that because psychological well-being closely taps the hedonic or happiness dimension, it is predictive of creativity (Isen et al., 1987; Wright & Walton, 2003). To the knowledge of the author the relationship between well-being and creativity has not yet been investigated in organizational research settings.

This thesis is accordingly concentrated on two important issues; creativity and innovation at the organizational and at the individual level. Acknowledging the importance of personality and cognitive characteristics that make some individuals potentially more creative than others, the degree to which creativity is supported and expressed is considered to be influenced to a large extent by the context the individual exists in (e.g., Amabile, 1996; Woodman et al., 1993). The first issue aims to shed some light on the contextual aspects of organizational creativity and innovation and their relation to creativity and innovation. Because the influence of affect and well-

being on creativity has been relatively neglected in research, the second issue of interest in this thesis investigate if organizational creativity and innovation are related to positive outcomes for the individual in terms of a better psychological well-being.

However, one should note that creativity and innovation do not come without a cost. Both creativity and innovation processes are identified as being unpredictable, controversial, and in competition with alternative courses of actions (Kanter, 1988). The outcome is uncertain, and it may result in failure and unintended costs for the innovators involved (Janssen, van de Vliert, & West, 2004). Creativity and innovation are thus risky behaviours that often are accompanied by a great deal of uncertainty, risk, stress, and negative affects. Furthermore, creative individuals often question the old and challenge the established norms, procedures and frameworks, and are considered to bring disorder into the workplace. These individuals often have a tendency to "rock the boat" and question routines, which is not always welcomed by organisations where control often is a central and hidden agenda. As a consequence creative individuals may be met with scepticism and resistance. Consequently, these people are likely to face conflicts with colleagues and supervisors who opposed change and the consequence may be that the individuals who want change experience less positive feelings about relationships with colleagues and supervisors who oppose change (Janssen, 2003).

Systems Approach

The present thesis uses the systems approach to understanding organizations and organizational creativity (e.g., Gruber, 1988; Rathunde, 1999). The systems approach has been used by various theorists to understand and study organizational processes (e.g., Senge, 1990). From the systems perspective creativity is seen as emerging in a socio-cultural context that is formed by several forces, including the individual. The systems approach was originally developed by a biologist named Ludwig von Bertalanffy (1963). He noted that it is impossible to separate a living organism from its environment because all organisms are open systems and cannot survive without interacting with other systems outside themselves in the external

world. The basic idea of the systems approach, which has early been applied in the work of for example Churchman (1986) and Katz and Kahn (1966), is that an organization is an open system consisting of several subsystems that constitute the whole (the organization). These subsystems are interdependent, interconnected, and interrelated. According to this approach the whole is more than the sum of its parts. These open systems are interacting with and influenced by other systems in the external environment (Capra, 1996). To understand a system, one must understand all parts of the system, and not investigate a part of the system in isolation. Change in one subsystem will have effects on the rest of the subsystems as well because there is interconnectedness among the different subsystems (Arnold, Cooper, & Robertson, 1998).

To develop and attain effectivity the organization need to not only interact with the external surroundings, but also need to develop an effective interaction between the different subsystems inside the organization. In contrast to a closed system which only exchanges energy with the external environment and reaches a state of equilibrium, the open systems perspective is more suitable for understanding organizations as it states that open systems/organizations interact and have a relationship with its external environment. The open system is dependent on customers, the maket, globalization, and other factors

Inspired by the open systems approach the literature review in this thesis is organized in two sections. In the first section the investigated different subsystems are; individuals, organizational culture, climate, and leadership. They are highlighted in relation to organizational creativity and innovation. Before focusing on the different subsystems, the text provides a review of how creativity and innovation are identified in the organizational research field, relevant open systems theories on creativity, and a short note on the study of creativity. The second section deals with the relationship between psychological well-being, stress and organizational creativity and innovation.

2 CREATIVITY AND INNOVATION IN ORGANIZATIONS

Definitions of Creativity and Innovation in the Organizational Context

The creative organization is identified as "any business entity whose main source of income comes from the production of novel and appropriate ideas, processes, products or services to tackle clients' problems or opportunities identified" (Andriopoulos & Lowe, 2000, p. 734). Creativity is often defined as the development of ideas about products, practices, services or procedures that are novel (unique) and potentially useful (having a direct or indirect value) to the organization (Amabile, 1996). Mumford and Gustafson (1988) suggest that creativity could range from suggestions including incremental ideas for adaptations to radical and major breakthroughs in the development of new products. The differences in the nature of creative and innovative outcomes are referred as adaptive and radical creativity to by Ekvall (1997). Kirton (1987) refer to these ideas as adaptive and innovative problem solving styles. Adaptive creativity refers to solutions that improve the old, while radical creativity is ground breaking and results in an outcome that revolutionizes the field (Ekvall, 1997; Kirton, 1987).

In organizational research creativity has often been used interchangeably with innovation (Smolenski & Kleiner, 1995). An attempt to distinguish these concepts has identified creativity as the production of novel perspectives, ideas, or products, while innovation has been identified as the implementation of these perspectives, ideas, or products, and as such innovation involves creativity (Ford, 1996; Oldham & Cummings, 1996; West and Farr, 1990).

An additional and relevant perspective on creativity is the term organizational creativity, which has been defined by Woodman et al. (1993) as "the creation of a valuable, useful, new product, service, idea, procedure, or process by in-

dividuals working together in a complex social system" (pp. 293). Bharadwaj and Menon (2000) also give a definition of organizational creativity and refer it to the extent creativity is structurally embedded in the organization. That is, to the extent the organization is working toward creativity by establishing formal approaches and tools, and providing resources to encourage novel behaviours within the context of that organization. From this point forward the term organizational creativity will replace organizational creativity and innovation in the present thesis where ever possible as it is reasoned that these concepts can not exist separately without loosing their value for the organization. The interest of the organizations is to make creativity result-oriented, thus without creativity the value of innovation disperses, and without innovation creativity is not result-oriented and loses its value for the organization.

Systems Theories of Organizational Creativity

Acknowledging the profound contribution of the traditional approach to creativity, which is focused on personality and mental attributes, many organizational researchers have turned the focus of creativity studies to include the social determinants of creativity, and the impact of contextual factors on creativity. The social environment has become important because research has shown that it influence the frequency of creative behaviour as well as the level of the creative work (Amabile, Conti, Coon, Herron, & Lazenby, 1996; Hemlin, Allwood, & Martin, 2004). According to the systems approach both the individual and the environment are crucial to develop a creative organization. From this point of view creativity is not only seen as a function of the employee's personality and the characteristics of the context in which he or she works, but also as a function of the interactions between the individual's personality and the contextual characteristics (Amabile, 1996). Contextual characteristics are defined as dimensions of the work environment that potentially can influence an employee's creativity. Researchers that have proposed different models and theories that emphasize the importance of the context are for example Woodman et al. (1993), Amabile et al. (1996), and Csikszentmihalyi (1988).

Interactionist approach to organizational creativity

Woodman and colleagues (1993) proposed a multilevel model based on the interactionist approach to creativity. Generally, the interactionist approach

holds that an adequate description of an individual's behaviour accounts for the context in which the behaviour took place. In their model, Woodman and colleagues suggest that creativity is a complex process that results in a product of an individual's behaviour in a specific context. According to the authors, organizational creativity is a subset of organizational innovation, which in turn is a subset of organizational change. This theory may be seen as a version of a systems theory approach, which explains organizational creativity as being dependent on the interaction between different systems in an organization; the creative person, process, product and place.

The interactionist approach that underlies the model asserts that individual differences in creativity can be explained in terms of individual characteristics (e.g., cognitive style and ability, personality and motivation), and situational and contextual characteristics (e.g., physical environment, time and task constraints). At the group level creativity is seen as the result of individual creativity, the interaction of the individuals involved (e.g., group composition), group characteristics (e.g., norms, size, degree of cohesiveness), group processes (e.g., approaches to problem solving), and contextual influences (e.g., the larger organization, characteristics of group task). At the organizational level creativity is a function of group creativity and contextual influences (organizational culture, organizational climate, reward systems etc.). This complex behaviour of an individual which is the result of interaction between an individual and the situation is thought to repeat at all levels of the organization (Woodman et al., 1993).

Conceptual model

Perhaps one of the most well-known works that links creativity and innovation to various dimensions in the organization is the conceptual model of Amabile and colleague (1996). This model is based on the Componential Model of Organizational Innovation (Amabile, 1988). The Componential Model considers three major components of individual (or small team) creativity, each of which is necessary for creativity in any given domain: expertise, creative-thinking skill, and intrinsic task motivation. The Componential Model also describes work characteristics that influence individual creativity; organizational motivation to innovate; resources; and management practices. The conceptual model (Amabile et al., 1996), which is a further development, con-

siders more organizational aspects and consists of five conceptual categories that influence creativity and innovation in the organization.

The conceptual model states that for the organization to be creative and innovative, the individuals need to perceive high levels of *organizational encouragement* in the form of support from supervisors and colleagues, risk taking, and a collaborative environment among others. When people perceive they have *freedom* in making the choice in how to do their work along with a sense of having control over one's work, they also produce more creative work. According to Amabile and colleagues (1996) *resources* are directly related to creative outcomes. Not only a lack of resources does impede people in their effort to be creative and accomplish their work, but it can also influence employees psychologically in the sense that they experience that their work is not valued. Furthermore, Amabile and colleagues (1996) talk about two types of *pressures*; excessive workload pressure and challenge. When the pressure arises from the intellectually challenging nature of the problem it can enhance creativity. Excessive workload that involves a time constraint has been negatively related to creativity. The last conceptual category in the model is *impediments* which contain factors such as internal strife, conservatism, and rigid formal management structures that are thought to impede creativity and decrease the intrinsic motivation of employees to be creative.

According to Amabile and colleagues (1996), these conceptual categories are related to the creative outcome of an organization. They conclude that people produce more creative work when they experience high levels of support and encouragement, freedom, resources, less overload and more challenge, and fewer impediments. The perceptions of the employees are regarded as of utter importance and as influencing the creative level in the organization (Amabile, et al., 1996).

Systems approach to creativity - DIFI Model

Another systems theory perspective on creativity is the DIFI (Domain Individual Field Interaction) model of Csikszentmihalyi (1988). The DIFI model states that creativity is dependent on persons, processes, products, and places. From this systems perspective creativity is defined as a socially constructed label that is used to describe actions that are embedded in given contexts (Ford & Gioia, 2000). The model of Csikszentmihalyi (1988, 1999) involves systems

that include individuals, social and cultural factors that influence creativity and the creative outcome. The three interrelated subsystems identified in the DIFI model are the domain, the field, and the individual.

Domain refers to a structured knowledge system a person must access and become an expert of in order to change the rules of the domain and to create something new. This novelty is evaluated and accepted as being of value to the culture or rejected by experts in the field. According to Moneta and Csikszentmihalyi (1999) fields are important and necessary to insure that ideas or products that don't qualify as creative don't pass as creative. But fields can also have a limitative effect, for example they can be too conservative and as a consequence creative ideas or products may not pass and as result development and growth can be undermined. Therefore, the domain and field need to be well-suited to recognize novel ideas. The function of the last subsystem, individuals, is to produce novelty and to introduce variations within a field. Creativity is brought jointly by these three subsystems.

3 THE STUDY OF CREATIVITY

Epistemological Underpinnings

The answer to the question *what is creativity and how do we know it when we see it?* is a difficult question and the answer may depend on the epistemological frameworks used by the researcher. These epistemological frameworks and definitions of the researchers are suggested to affect the methodological issues, i.e. the use of methods, data collection, and the results (Montuori & Purser, 1997).

Since Kuhn (1970/1996) the term paradigm has been used in many ways. According to Kuhn a paradigm is a set of practices that define a scientific discipline during a particular period of time. A paradigm refers to a perspective that is generally accepted by the community of the researchers working within that field. According to Kuhn, the paradigm is accepted because it seems to be able to solve the main problems in that discipline, referred to as puzzles. Because paradigms are referred to as general perspectives that influence studies in a given domain of knowledge, it influences the research direction and methodological issues. Kuhn refers the knowledge that is well organized according to a well established paradigm is as normal science. When a paradigm can not deal with new problems properly, it faces a scientific revolution which can result in the emergence of a new paradigm.

Inspired by Kuhn (1970), Burrell and Morgan (1979) designed four paradigms for the analysis of science and society. According to Burrell and Morgan (1979) the researcher's understanding of the world is dependent on the paradigmatic lens the researcher is using. Burrell and Morgan view paradigms as ideal kinds of opposing meta-theoretical assumptions. These assumptions are treated as worldviews or assumptions of reality.

According to Burrell and Morgan mainstream thinking in social science can be studied by mapping any research along two distinct dimensions; objectivist-

subjectivist and radical-regulation. The intersection of the two dimensions result in the four paradigms: functionalist, interpretative, radical humanist, and radical structuralist. These different paradigmatic lenses can be used to understand the study of organizations (ibid). Based on the assumption of Burrell and Morgan (1979) that mainstream thinking and research in social science can be mapped along the objective-subjective and radically-regulatory dimensions, Richards and De Cock (1999) conducted a paradigmatic analysis of creativity research. In their study they attempted to locate and map creativity research along the four paradigms in the Burrell and Morgan taxonomy (1979).

The functionalist paradigm (objective/regulatory)

In line with positivistic traditions, researchers within this paradigm assume that the best way to gain generalizable knowledge is to measure the system without interacting with it. These researchers are also in the pursuit of the correct definition of creativity and large surveys are conducted to gain results that are often based on statistical analysis (Richards & De Cock, 1999). Most of the creativity research conducted in the organizational context (e.g., Amabile, 1983; Conti & Amabile, 1999; Nyström, 2000; Oldham & Cummings, 1996) lies within the functionalism paradigm (Richards & De Cock, 1999). This could be because the functionalist paradigm is seen as the traditional approach to data collection. Researchers with this lens are usually concerned with finding concrete empirical artefacts and relationships that can be identified and studied. Most of the widely accepted theories and definitions of creativity and innovation fall in this paradigm (e.g., Amabile, 1996; Ekvall, 1990; Guilford, 1950).

The interpretative paradigm (subjective/regulatory)

Subjectivistic researchers are concerned with the understanding of individual's own interpretation of the world, and in the interpretative paradigm creativity may be a matter of a personal reframing (Styhre & Sundgren, 2005). A portion of research in creativity falls within the interpretative paradigm. Interpretationists are concerned with the individual's experience of a phenomenon and the emphasis is on the experiences and perceptions of an individual and not on an objective outcome (Burrell & Morgan, 1979). There are several perspectives in this paradigm. Burell and Morgan argue that interpretativism in its purest form has a standpoint that organizations do not exist. However, they use of the concept of organization is allowed if it is helpful in

making sense of how things work. The definitions of creativity in the interpretative paradigm are focused on the individual's experiences with creativity within the organization. One such approach is proposed by Drazin, Glynn, and Kazanjian (1999) who specifically define creativity in terms of the sense-making approach. The focus is on how individuals in complex, ambiguous, and ill defined situations or events attempt to orient themselves, and take creative action. Another definition that falls within this paradigm is the theory of Ford (1996) who defines creativity as a domain-specific social construction that results from the joint influence of sense making, motivation, knowledge, and ability.

The radical humanist paradigm (subjective/radical)

Radical humanists such as Csikszentmihalyi and Maslow view creativity as a self-actualization process and argue that individual's consciousness is embedded in the system surrounding it, whether it is organizational structures or structures in the mind. In an organization these structures inhibit individual creative expression and creative fulfilment. The approach is thus to understand how these structures work so one can liberate oneself from the dominant structures (Richards & De Cock, 1999).

The radical structuralist paradigm (objective/radical)

According to radical structuralists conflict is inherent in a society, and different conflicts create social change. Radical structuralism is concerned with structures and acknowledges that certain structures, processes, or arrangements can impede change in organizations. Radical structuralists aim at replacing the old structures and behaviours and support innovation and change (Richards & De Cock, 1999). According to radical structuralists creativity can be facilitated or impeded by certain structures in an organization. Rampley (1988) is an example of a radical structuralist who stated that creativity can be reached both by following a set of procedures and rules, and without following any procedures or rules.

Both radical humanists and radical structuralists are concerned with explaining radical change in organizations and societies but they take different approach to do so. For example, from the radical humanist perspective learning creativity is viewed as more important for the individual's liberation than for the interests of a group or environment, while in contrast the radical struc-

turalists' aim is to change a society that is seen as socially, culturally, and economically unjust. The aim of radical structuralist is to produce an alternative structure or system.

The paradigms underlying the present thesis are the functionalist and interpretative paradigms. Based on the notion that a researcher within the functionalist paradigm aims to link truth to the confirmation of predicted results and empirical regularities, and where the primary objective is to explain phenomena, study I and II in the current thesis falls within this paradigm. Study III in the current thesis falls in the interpretative paradigm as attention is directed to the subjective experiences of the individuals regarding creativity, and with that it aims to describe the importance of different subsystems for creativity in an organization. In interpretative paradigm one can find research positions which state that the process of studying creativity may be more fruitful by becoming a part of that reality, that is when the role of the researcher is to interpret the emerging story.

4 SYSTEMS APPROACH IN THE PRESENT THESIS

Different systems approaches emphasise different subsystems in all organizations. Tan (1998) for example stresses subsystems such as culture, technostructural subsystems, management, and people. Inspired by the model of Amabile et al. (1996) the subsystems of interest in the present thesis are: individuals, organizational culture, climate, and leadership. These subsystems were chosen as they have been emphasised in the research literature as some of the most important aspects of organizational creativity. These subsystems are presented below in relation to organizational creativity.

Individuals

Reviews of creativity research and theory point at a number of topics that have been in focus in the field of creativity. Among others, these foci are mainly on personality traits (Barron & Harrington, 1981; Singh, 1986), cognitive processes (e.g., Barron & Harrington, 1981; Basadur & Finkbeiner, 1985; Basadur, Graen, & Green, 1982; Gardner, 1993), and intrinsic motivation (Amabile, Hill, Hennessey, & Tighe, 1994; Glynn & Webster, 1993).

The creative personality

In Sternberg and Lubart's handbook of creativity (1999), authors such as Boden (1999), Feist (1999), Gruber and Wallace (1999), Howe (1999), Policastro and Gardner (1999), Simonton (1999), and Weisberg (1999) focused on people doing creative work. In many of the above mentioned works the focus has been on dispositional characteristics, such as introversion, autonomy, and bipolar functioning in creativity. Feist (1999) found that creative scientists and artists showed high levels of (a) autonomy, independence, and introversion; (b) energy, achievement, drive, and self-confidence; (c) openness, flexibility, imagination, and tolerance for ambiguity; and (d) arrogance, hostility, and power needs. Feist (1999) further found that artists, but not scientists, tend to be less socialized and less conscientious. Research has also shown that attrib-

utes such as high motivation, endurance, intellectual curiosity, self-strength, emotional stability, commitment and an aspiration for self-actualization and other characteristics such as ego strength, independence of judgement, flexibility, openness and preference for complexity which distinguish creative individuals are reasonably stable across fields (Amabile, 1996, 1988; Barron, 1988; Carlsson, 1992; Conti & Amabile, 1999; Ekvall, 1999).

Creative cognition

Although acknowledging that some individuals are more creative than others and that few even achieve extreme levels of creative accomplishments, generative cognitive differences are not seen as taking place in the mind of geniuses, rather they are seen as common and normative processes that reside within all. Ward, Smith, and Finke (1999) refer to the qualitative differences in generated ideas as variations in thinking processes, or in other words as cognitive differences, and not so much as individual differences. Throughout the literature cognitive processes such as divergent and convergent thinking, conceptual combination, transformational processes, and problem finding among others have been frequently related to creative thinking processes.

Divergent and convergent thinking

In the research literature on creativity a great deal of credit is given to J.P. Guilford (1950) who was interested in the relationship between creativity and intelligence. According to Guilford, creativity is a component of intelligence, especially the ability to think divergently, which Guilford recognizes as one of our most important cognitions crucial to creativity. Divergent thinking refers to the ability to find as many possible answers to a given problem as possible. Convergent thinking, which also is of relevance to creativity, refers to thinking in conventional, traditional, and accepted paths. According to Cropley (2006) both thinking processes are important in the creative process. But for Guilford divergent thinking remained the most relevant component for creativity since it referred to the use of knowledge or objects in a novel way or to solve problems from different perspectives (Guilford (1950).

Conceptual combination and transform

In their review, Ward et al., (1999) found that creativity might involve two key cognitive capacities; conceptual combination and idea generation. Conceptual combination is a process in which separate ideas, concepts, or other forms are

mentally merged into a new combination, and it has frequently been associated to creativity and creative accomplishments (e.g., Rothenberg, 1979; Ward, 2001). Ward and colleagues (1999) concluded that the new concepts or new understandings that emerge from conceptual combination form a basis for the subsequent generation of new ideas. With this conclusion they suggest that divergent thinking may be a process that is dependent on the prior execution of other processes such as conceptual combination and *transformational processes* that make conceptual combination possible (Ward et al., 1999). Transformational processes refer to the use of analogical reasoning and metaphors to transfer concepts from one domain to another, and have been related to creative outcomes (Buchanan, 2001; Mumford & Porter, 1999).

Problem finding

Problem finding is one of the primary components of creative thinking and has frequently been included in most creativity models such as Guilford's and Torrance's and Wallas' theories (Runco & Dow, 1999). Guilford for example referred to problem finding as "sensitivity to problems" and Torrance referred to it as "the process of sensing gaps or disturbing missing elements and formulating hypotheses (cited in Runco & Dow, 1999, pp. 434).

Getzels & Csikszentmihalyi (1976) define problem finding as an act where an individual feels a challenge in discovering and formulating a problem that is to be solved. According to Runco & Dow (1999), problem finding precedes problem solving and include problem discovery, problem reconstruction, problem expression, problem posing, problem defining, and problem identification. The act of finding problems or questions is also emphasised by other researchers (e.g., Wertheimer, 1945) who state that the most important ingredient in great discoveries is to find the question. How the question or the problem is formulated, and how one raises new questions, possibilities and problems are thus often more important than their solution.

Motivation

Perhaps the most important factor in being creative is not personality traits, cognitive skills, or conditions for behaving creatively because habitual behaviours are preferred to creative behaviours as long as the individual lacks the

motivation to take risks and be creative (Ford (1996). Cropley (1999) argues that one of the most impeding factors to creativity is habit that emerges as we learn how to do things according to the 'right' way. To understand how employees might consistently engage in a complex, demanding, and resource-intensive undertaking process that will occasionally or maybe even rarely result in a creative outcome, one must understand the drive to engage in a creative behaviour.

Amabile (1983, 1996) defines two types of motivation; intrinsic and extrinsic. The former one is characterized by a deep interest and involvement in the work, curiosity, enjoyment, or a personal sense of challenge. Individuals who are extrinsically motivated are characterized by a desire to achieve goals apart from the work itself, for example receiving rewards or recognition from others (Amabile, 1996). High levels of intrinsic motivation are most conducive to crreativity (ibid), since such motivation increases their tendency to be curious, cognitively flexible, risk taking, and persistent in the face of barriers (Amabile, 1996; Utman, 1997; Zhou & Shalley, 2003).)

According to Collins and Amabile (1999), extrinsic motivation results in poor performance when they draw attention away from task performance. However, other researchers, for example Sternberg and Lubart (1999), suggest that extrinsic factors (e.g., praise, status, pay, etc.) play an important role in motivating creative work. Although motivation is mainly an individual characteristic, social factors such as colleagues, leadership, and various conditions of the climate can influence the motivation to be creative (Amabile et al., 1996; Ekvall, 1990).

Organizational Culture

One of the most critical features that distinguishes organizational context from other type of contexts when it comes to creative performance could be the common frame of thoughts and actions hold by the members of an organization. These common thoughts, feelings and behaviours that are reflected in a culture of the organization are likely to narrow behaviour of an individual in the organization (Weick, 1979). The concept of organizational culture is of importance to creativity and innovation because it is within a culture that one sets limitations for what one can do and what one should not do. The research of Tushman and O'Reilly (1997) and Turnipseed (1994), among others, have

shown that organizational culture lies at the heart of organizational innovations.

Basadur (2001) compares the culture of an organization to a personality and states that just as self-concepts relates to the personality so does a culture relates to the organization. According to Margulies and Raia (1978) the shared beliefs and feelings that a culture consists of makes up informal rules that guide the people what to expect and how to behave to be rewarded (whether formal or informal rewards). As time passes these values that the culture consists of gradually come to be taken for granted and then assume the character of assumptions. Because these assumptions have provided success in the past these assumptions are no longer questioned. As time passes these unquestioned assumptions become less and less open to discussion, and can create a hindrance to development and learning (Barrett, 1998).

Generally it is believed that organizational culture can affect creativity and innovation in different ways. According to Martins and Terblanche (2003) culture can influence organizational creativity in two ways. First, the culture can affect behaviour through the socialisation process. During the socialization process they learn which behaviours and responses are acceptable and which behaviours and responses are not acceptable. Norms, values, and assumptions that guide people how to behave and how to think, in short how to do things, are developed. It is during this phase that the individuals learn whether creative behaviours and risk taking are valued or not.

In 1947 Weber (cited in Landy & Conte, 2004) developed his theory of bureaucracy as way of structuring an organization to achieve maximum effectiveness and success. But because the bureaucratic model of organization provided by Weber is associated with rigidity and irrational use of rules and procedures (Landy & Conte, 2004), it has been negatively associated with creativity. However, the good side of bureaucracy is necessary for the functioning of organizational processes and procedures. The negative side of bureaucracy, on the other hand, is apparent when efficiency is achieved through maintaining and imposing order, and creating a predictable and structuralized environment so that the variation will be less. Bureaucratic cultures are often characterized by an environment in which competition, not cooperation, is rewarded. The atmosphere in such environments tends to be conservative, and new and differ-

ent ideas are often perceived as a threat (Agrell & Gustafson, 1996). The bureaucratic culture is also focused on achieving high levels of structuring. But due to change, globalization, technological development, foreign competition, and so on organizations can not survive by imposing orders and creating high levels of structures at the cost of organizational creativity.

Work Resources and Workload

The other way that culture can affect behaviour is when the basic values, norms, and assumptions become enacted in policy, politics, practises, and procedures (Martins & Terblanche, 2003). These structures may either facilitate or impede creativity by for example providing/withholding resources to innovate and by the amount of workload an individuals face in an organization. While the perception of having enough resources can influence individuals psychologically to engage in creative behaviours, the experience of having excessive workload may influence people to withdraw from engaging in risky and time consuming behaviours such as creativity. Further, it may also give a signal to the individual that creative behaviours are not wanted (Amabile et al., 1996).

Creativity being a risk taking behaviour (Ford, 1996) requires a lot in terms of time, cognitive capacities, effort, and hard work. Other resources may include everything from knowledge, information, time, funds, and tools to meetings (formally or informally) and people (Shalley, Gilson, & Blum, 2000). Although the importance of work resources for creativity is stressed in research, it should also be noted that too many resources can decrease creativity and too few resources may make people experience the pressure of workload heavier, and thus also make people less motivated to engage in creative behaviour. Therefore, work resources should be given in optimal levels. However, Csikszentmihalyi (1997) states that while too many resources can make people comfortable, the lack of resources may stretch the cognitive capacities of employees to think of different solutions or methods.

Workload has also been related to organizational creativity. Amabile and colleagues (1996) differentiate between two types of pressures; excessive workload and challenge. When the pressure comes from challenge creativity may be enhanced, but when the pressure comes from excessive workload that arises from having too much to do in too little time it may hamper employee

creativity. Like the case with work resources, workload should also come in optimal levels because too much time can make people feel bored and loose their motivation and too little time may make people feel stressed (Shalley et al., 2000).

Researchers as for example Claxton (1998) argue that creativity and the cognitions that are involved in the creative process, occur when there is an absence from negative pressure, when the individual feels safe and experiences risk taking as something positive. Excessive workload was also an impediment to organizational creativity in Amabile and colleagues' study (1996). But this view has been challenged by West (2002) who argues that innovation often is a response to the changing demands of the environment. This was empirically confirmed in the study of Hardy and West (2000) (cited in West, 2002), where they found that work overload was predictive of innovation. This finding suggests that the more threatening the environment is (e.g., competitive demands) the more likely it is that innovation will take place as a response to reduce uncertainty or other kind of threats.

Climate

Climate and Culture

Climate has often been used interchangeably with culture. While culture is related to an organization as the personality is related to an individual (Basadur, 2001), the climate may be viewed as how the personality is reflected and expressed in behaviour. Each climate reflects how the particular context (e.g., individuals and group) experiences and expresses the commonly held values of the culture.

The climate has often been defined as the combination of shared history, expectations, unwritten rules, and social mores which are experienced by the people in an organization (Ekvall, 1990). According to Ekvall climate is "a conglomerate of attitudes, feelings, and behaviours that characterizes life in the organization" (1996, p.105). However, there has been much controversy about the concept. One such debate is about whether climate should be comprehended as common perceptions that exist among the individuals in an organization, or whether it is an objective property of an organization. According to Ekvall (1996), the climate is an organizational reality. Further, Ekvall states that the climate is important because it affects behaviours such as

communication, problem solving, decision making, conflict handling, learning, and motivation.

Recently several researchers have emphasised the existence of multiple climates within the same organization and/or between organizations. Schneider, Salvaggio, and Subirats (2002) identify a service climate, which refers to how employees perceive practices, procedures, and behaviours that are rewarded, and supported with regard to customer service and customer service quality. Flin, Mearns, O´Conner, and Bryden (2000) identify safety climates peculiar to air traffic controllers, Hoffman and Morgeson (1999) identify safety climates in general, Baer and Frese (2003) identify climate for initiative and innovation, and Ekvall (1990) identify a climate for creativity.

Organizational climate, creativity and innovation

Research has shown that organizational climate plays an important role for the innovation and creativity of an organization and important links between a creative climate and innovative organizations have been established (e.g., Ekvall, 1990, Ekvall & Ryhammar, 1999).

According to Ekvall (1999) innovative organizations have the capacity to adapt to constantly changing environments in order to survive, and these adaptive organizations require climate that stimulate creative behaviour. In his research Ekvall (1990) concludes that the climate in creative and innovative organizations differs from the climate in stagnated organizations in ten dimensions. The term "stagnating" is applied by Ekvall (1990) for organizations that have stopped developing and where the climate does not support creative behaviours. Ekvall further states that a creative organizational climate can be viewed as the opposite of a bureaucratic atmosphere which is characterized by a rigid and irrational use of rules, lack of dynamism, passivity, fear of taking risks, and a focus on finding problems rather than possibilities. The ten dimensions that distinguished innovative organizations from the stagnant ones were: challenge/motivation, freedom, idea-support, trust, dynamism, humour, debate, risk-taking, conflict, and idea-time. Creative and innovative organizations scored high in these dimensions, except for the dimension "conflict." Stagnating organizations scored low in these dimensions. The dimensions of freedom, dynamism, debate, and risk taking are more related to radical innovation than are the other dimensions. The largest discrepancy between innovative and

stagnating organizations lies in the dimensions of idea-support, debate, risk taking, and idea-time (Ekvall, 1999).

Team climate, creativity and innovation

Agrell and Gustafson (1996) argue for the notion that different climates exist within smaller groups or units of an organization and researchers have shown that the climate of a team plays a crucial role not only in achieving its objectives, but also in its processes (e.g. Ekvall, 1990; Nyström, 1990). For example, a climate that supports innovation can enable its members to generate and implement creative ideas more effectively.

Based on the assumption that every individual in an organization has his or her own perception of the climate and he or she can describe it on that basis. Team climate is defined by Anderson and West (1998) as emerging from the perceptions among the individuals in a team. A model that explains the relationship between group climate and innovation is developed by West (1990) with the aim to predict innovation in organizations. The model has empirical support and consists of four climate factors: *vision, participative safety, climate for excellence,* and *norms of and support for innovation.*

Vision reflects the normative global goals of a group. To facilitate innovation, the group's visions need to be shared by all the members. The more the vision is shared by the members of a group, the more the group members are committed to implement it. Also, it is of great importance that visions are developed and re-evaluated constantly, and that the goals are reachable.

The purpose of *participative safety* is to create a feeling of safety in the group climate in order to enhance employee's influence, interaction, and communication through encouraging employees to participate in decision-making. Safety refers to a climate where there are norms for valuing constructive conflicts as positive, where opportunities are arising, and where people are not afraid of speaking out their minds. A safe environment that supports different ideas, perspectives, and opinions, and encourages participation and a dynamic debate based on diversity (diversity in skills, knowledge, and experience of the individuals), is likely to lead to innovation (West, 1990).

Climate for excellence emphasizes high quality production according to the group's vision. The existence of group goals or objectives is considered to be an important factor in determining the performance of a group. Clear team objectives will facilitate innovation because clear objectives can help a group to focus on implementing relevant ideas. However, to facilitate innovation, it is important that the team members are committed to the goal and persistent in achieving it.

Another important factor that West refers to is *support for innovation*. Teams are likely to be productive and innovative when they perceive support for innovation and when one is rewarded and not punished for making efforts to innovate. West (1990) defines support for innovation as the expectation, approval, and practical support for attempts to introduce new and improved ways of doing things (in the work environment). Support can be given in different forms and implies a tolerance for failing with an innovation.

According to West (1990), these four factors are related to qualitative and quantitative aspects of innovation. Vision and climate for excellence are directed toward the qualitative aspect in the sense that they for example can influence the quality of the ideas. Norms of support and participative safety are directed toward the quantitative aspects in the sense that the more support and participative safety one experiences, the more ideas one will generate.

Leadership

Whether leadership is necessary to the performance of a group has been questioned. Recently, the studies have shown that leadership is not necessary for the effectiveness of a group when the task is well structured, goals and objectives are clear, and the group is cohesive and has the necessary expertise that are needed to accomplish work tasks (Mumford & Connelly, 1999). Since the groups often meet change, ambiguity, and stressful events, the importance of the impact and presence of a leader is unquestioned. Many leadership theories hold that leaders influence people or groups to accomplish certain goals of the organization. Therefore both creativity relevant skills of the leader and an ability to encourage creativity within their employees have been emphasised as crucial for effective leadership (Mumford & Connelly, 1999). However, the focus here is on the leaders' ability to encourage and manage the creativity of their employees, since employee's creativity is defined as the building block

for organizational innovation (Amabile, Schatzel, Moneta, & Kramer, 2004) One such leadership theory is the CPE model of leadership offered by Ekvall and Arvonen (1991, 1994). The CPE model was chosen for the purpose of this thesis as it is concerned with measuring employee's perceptions of leadership style and furthermore reflects the Scandinavian culture as CPE was developed in Scandinavia.

CPE leadership theory

The two-dimensional model of leadership behaviour styles that emerged at the University of Michigan Institute for Social Research in the 1950s (Likert, 1977) and at Ohio State University (Stogdill & Coons, 1957) resulted in two dimensions of leadership behaviour, employee-centred and production-centred (Likert, 1977), or consideration-oriented and structure-oriented behaviour (Stogdill & Coons, 1957). Ekvall and Arvonen's (1991, 1994) model of leadership (CPE) includes the two dimensions from the Michigan and Ohio studies, as well as a third dimension. The third leadership style in CPE was suggested to arise from the changing needs of corporations of today that are expressed in new business ideas, new goals, and a philosophy that emphasizes flexibility and development.

The three leadership styles or dimensions that are included in the CPE are Change/development-, Product/task-, and Employee/relation-orientations. The change/development-oriented leader promotes change and growth, is visionary, and supports a creative climate and the creative capacities of the employees. The product/task-oriented leader is concerned with the structure of the production and with the organizing of work. An employee/relation-oriented leadership shows concern and respect for the individual employee, and to establish positive relations with employees is a very important aspect of this leadership style.

The leadership style is a combination or a mix of these three orientations and the preferred combination depends on the context. Ekvall and Arvonen (1994) identified ten profiles with different combinations of the three orientations. Three of these profiles scored high in change/development-orientation; super leader, domineering entrepreneur, and the gardener. The most effective combination is the super leader who scores high in all the three orientations. The domineering entrepreneur scores high in product/task-orientation but low in

employee/relation-orientation. This leader combination uses the capacities of the employees to develop the organization instead of developing the employees. The gardener is the third combination and this one scores high in both change/development- and employee/relation-orientations but low in the product/task-orientation.

In the studies of Ekvall (1991), Ekvall and Arvonen (1991, 1994), and Lindell and Rosenqvist (1992), the change/development-oriented leadership style was positively related to the ratings of the leader's competence and with the employee's job satisfaction. Furthermore, Ekvall and Arvonen (1991) note that the employee/relation-oriented leadership style is not related to high levels of satisfaction with the job itself or with the employee's colleagues but with satisfaction with the leader. Ekvall (1991) suggests that leaders with change/development-orientations feel strong commitment and motivation because they understand the necessity for change, and believe that this leadership style can secure their future career and position. However, Arvonen (1995) found that although being positively related to work satisfaction, the change/development-oriented leadership did not have any stronger association with high levels of work satisfaction than the other two leadership styles.

Leadership, creativity and innovation

Organizational creativity is an increasingly interesting topic for organizational managers and leaders. Among others, Amabile and colleagues (Amabile, et al., 2004; Amabile & Gryskiewicz, 1987) suggests that leaders play an important role in the work context for creativity. The leaders, through their behaviours, can influence employees' perceptions of their work environments, which in turn can influence their creativity (Amabile et al., 2004).

Throughout the literature the common behaviours of leaders that have a significant effect on employee creativity are for example encouraging employees to express their opinions, providing timely and constructive feedback, autonomy, high levels of social support, expressing concern for employees' feelings, balancing employees' freedom and responsibility, and facilitating skill development (Amabile, 1998; Amabile et al., 2004; Oldham & Cummings, 1996). Generally, studies suggest that leaders should create a less tightly structured environment, not adhere to routines and past phrase stocks, and create less

bureaucratic organizations, among other things, to facilitate employee creativity (e.g., Amabile, 1996; Barrett, 1998).

Leaders may also benefit from what Barrett (1998) calls provocative competence, which refers to creating irregular patterns that disturb routines and interrupts conformity. Further, leaders should not only encourage creativity but also provide their employees with time and resources to take risks (Mumford & Connelly, 1999). The creative tendencies of the leader (or perceived by employees as having creative tendencies) may also stimulate creative behaviour in employees. If the employee perceives a supportive leadership that takes risks and is independent, the employee may feel inspired to pursue creative behaviours, especially if the leader is encouraging and allow employees to find new solutions and methods.

Compared to the research linking creativity to personality styles the association between leadership and employee creativity is a relatively new area. Much of the research that exists supports the link between supportive leadership and creative outcomes (e.g., Redmond, Mumford, & Teach, 1993). Shin and Zhou (2003) found that transformational leaders were more supportive of employee creativity. The theory of the transformational and transactional leadership (e.g., Bass, 1998; Burns, 1987) is another leadership theory that incorporates the two early dimensions of leadership (Likert, 1977) according to Ekvall and Arvonen (1994) the transformational leader is in accordance with the gardener leadership style.

Employees who reported positive LMX (Leader-Member-Exchange) relationships also reported engaging in more challenging and relevant tasks than the employees who reported less positive LMX relationships (Liden & Graen, 1980). Scott and Bruce (1994) also found that the stronger the leader-follower relationship is the more creative are the produced outputs. Oldham and Cummings (1996) linked leadership behaviour style to creativity and found that employee creativity was higher with a non-controlling leader but on the other hand, they did not find a direct relationship between supportive leadership and creative outcomes.

5 PSYCHOLOGICAL WELL-BEING, STRESS, AND ORGANIZATIONAL CREATIVITY AND INNOVATION

The benefit of increasing organizational creativity may not only apply to an organization in terms of more profit but may also apply to the individuals in terms of psychological well-being and less experienced stress. Often well-being has been related to personality variables, coping resources, the availability of work resources and other personal resources but its connection to organizational creativity appears to be lacking in research. Well-being is a complex subject and it may be influenced by several other organizational aspects apart from organizational creativity and innovation. In the present thesis it is suggested that well-being is also related to: organizational climate for creativity, leadership, work resources, and workload. Theoretical support for these relationships will be provided in the text below.

Psychological Well-being

Based on a review of articles on the subject of psychological well-being, Wright and Cropanzano (2000) concluded that mental health issues have never been so important as they are today. Due to the rapid pace of change the well-being of the employees may be at risk (Kinnunen, Geurts, & Mauno, 2004). Paying attention to the psychological well-being of the employees is crucial because it influences their behaviour, decision making and interactions with colleagues, and also spills over to family and social life (Warr, 1990, 1987).

According to Keyes, Hysom and Lupo (2000), well-being refers to employees' perception and assessment of the quality of their lives, and the quality of their psychological and social functioning. As employee well-being

increases, the productivity, and profitability of the organization also increase (Warr, 1999). But when employee well-being decreases stress will increase and the chances for coping effectively with stressors will decrease (Cox, 1987).

Psychologically healthy individuals experience warm and trusting relationships, feel that they are developing as individuals, have a purpose in their lives, feel that they can shape the world around them to fit their needs, and feel capable to direct their actions from internal standards. Individuals who experience high well-being tend to be superior decision makers, demonstrate better interpersonal behaviours, and receive higher overall performance ratings (Wright & Cropanzano, 2004). Employees who are more satisfied with their lives and aspects of their work are more cooperative and helpful to their colleagues, more punctual, report fewer sick days, and remain employed for longer periods than more dissatisfied employees (Spector, 1997; Warr, 1999).

Stress

Stress is one of the most frequently reported work-related problems across Europe (Paoli & Merllie, 2000). One of the most important sources to stress has been identified as changes of various types. Change is not always welcomed by the employees (Beer & Nohria, 2000) and has been associated with health consequences among employees (Vahtera, Kivimäki, Pentti, 1997; Westerland, Ferrie, Hagberg, Jeding, Oxenstierna, Theorell, 2004). In Beer and Nohria's study (2000) 70% of change initiatives were met with resistance and as a consequence were failed. Vakola and Nikolaou (2005) showed that change is often met with negative attitudes as it brings stress and insecurity.

If the stress that employees are facing isn't dealt with, it can contribute to higher absenteeism, voluntary turnover (Gupta & Beehr, 1979), an inability to adapt to new conditions longer and more frequent sick leaves, and conflicts between workers and or management (LeCraw, 1992), reduced work performance and productivity, higher levels of accidents, and employee complaints (Cox & Griffiths, 1995a), job-dissatisfaction, fatigue, and

tension (Beehr, Walsh, & Taber, 1976), and burnout, anxiety, high blood pressure, as well as heart diseases (Landy & Conte, 2004; Selye, 1976).

Lazarus (1991) viewed stress as an ongoing process in which an individual makes a cognitive appraisal of the situation and an appraisal of available resources the individual have or experiences that he or she have to deal with the stressors in the situation. Thus, when one experiences a situation as stressful or threatening and makes the judgement that one doesn't have the capacity to deal with the specific situation, one experiences stress. Stressors are usually referred to as physical or psychological demands that individuals react to. Common stressors at the workplace include for example workload, time pressure, role ambiguity, interpersonal conflicts, lack of control, and more physical stressors such as heat, noise, cold etc. (Landy & Conte, 2004). However, it is to be noted that it is the capacity or capability of our judgement that determines whether we will experience the situation as stressful or controllable.

Not all levels of stress are negative, in fact a certain degree of stress has shown to be an important component of life that makes us function and perform our best. According to the Yerkes-Dodson Law, formulated by Yerkes and Dodson (1908), efficiency and performance increases with increase in stress, but only to a certain point. When stress becomes too great, performance and efficiency tend to decline. Stress becomes negative when it exceeds a person's capacity to manage and cope and it results in an inhibited performance at work. The presence of work stressors is considered to be associated with generally low levels of psychological well-being (Cox & Griffiths, 1995a). If the negative stress increases, the well-being of the employees and their capacity to effectively cope with stressors decreases (Cox, 1987). In fact, lack of well-being has been found to be predicted by work stressors (Cooper, Rout, & Faraghar, 1989).

Well-being, Affect, and Creativity

As the relationship between well-being and creativity has been a neglected area in research (Isen et al., 1987), there is not much theoretical support that underlies the suggested relationship. Therefore, the relationship is

supported on the literature that exists in the field of affect and creativity, which to a great extent has been conducted in laboratory settings which show that affects can influence creativity.

The growing interest in the role of affect in the study of creativity is a recent and important trend (Russ, 1999). Affect consists of subsets of emotions, and one definition of emotion refers to it as a state of aroused feeling or agitation (Russ, 1999). George (1996) referred to affect as the intense feelings and reactions that people have are commonly referred to as emotions and moods. In relation to creativity affects or moods are at a general level, often spoken of in terms of positive and negative affects in the literature. Watson and Tellegen (1985) described positive affects as mood states that consist of increasing physiological activation and increasing pleasantness. Negative affect was defined as mood states consisted of increased physiological activation and increased unpleasantness. People experiencing high levels of positive affects such as enthusiasm, happiness, and interest tend to be positively engaged and feel good about activities in which they are involved. People feeling high levels of negative affects, such as boredom and depression, tend to become disengaged to some degree from the world around them (George, 1996).

Whether we experience creativity as a result of negative or positive mood is a debatable question and support for both directions exist in the research literature. While some researchers argue that positive mood, induced in laboratory settings, facilitates creative problem-solving task performance (e.g., Isen et al., 1987; Isen, Johnson, Mertz, & Robinson, 1985), other researchers have demonstrated that negative mood can stimulate creativity and positive mood can impede creativity (e.g., Hirt, McDonald, & Melton, 1996; Martin & Stoner, 1996).

On the positive side is for example the broaden-and-build affect theory (Fredrickson, 2001) which states that people who experience high levels of positive mood will have broaden momentary thought-action repertoires. Consequently, these positive moods are suggested to permit more flexible cognitive processes that lead to a wider variety of behavioural options. If

one experiences positive mood idea-generation may increase. Isen and Means (1983) showed that positive mood also leads to a more efficient processing of information, allowing individuals to disregard irrelevant and extraneous information while maintaining high decision-making quality. It may also be possible that when the individual experiences negative affect one may also be less associative and thus experiences decreased idea-generation. Studies of Isen and colleagues (1983, 1987) show, however, that negative mood doesn't have any effect on creativity.

Consistent with this hedonistic approach, positive emotions can be seen as providing the distinct value for of making individuals feel good. When we experience the positive emotion of interest for example, the desire to explore, assimilate new experiences, encounter new information, and grow increases. In a similar way the positive emotion of enjoyment can create the urge to explore, play, to think "out-of-the box" and be creative (Csikszentmihalyi, 1996). As we experience positive emotions we tend to become more open to different thoughts and actions by expanding our cognitive capacities. For example, one discovers new meanings in the work and as a consequence one's attitudes toward work evolve to more enjoyment of the work (Fredrickson, 2003).

On the other side it is often argued that while positive feelings can make one comfortable and satisfied, some negative feelings can also provoke one to find new solutions (Frijda, 1988; Martin & Stoner, 1996). Jamison (1993) suggested that artists and writers might have 2-3 fold more psychosis, mood disorders, and suicide compared to people in less creative professions. In another study 38% of a group of 47 British prize winning writers were diagnosed with affective disorders (Jamison, 1989). In the study of Andreasen's (1987) 80% of 30 well-known writers, were found to have a history of a major mood disorder at some time in their lives (compared to 30% of controls). However, the discussion between affective disorders and eminent creators in non-art fields has been said to be more complex (Richards, 1999). Scientists have showed to be a healthier group where non-psychotic disorders are half as common as for artists, and other

groups for example creative businesspersons show even lower levels of psychopathology (Richards, 1999).

The issue of whether positive or negative mood facilitates creativity in the organization is a different question than the question of whether organizational creativity may facilitate positive or negative moods. The nature of organizational creativity is such that it brings change, which can be positive or negative. In this thesis it is argued that increase in organizational creativity can be experienced as positive by the employees. But creativity and innovation may also be accompanied by a great deal of uncertainty, risk, stress and negative affects. If one's ideas are met with resistance or if the innovation turns out to be a failure, one may experience negative feelings such as frustration, anger, and anxiety, which may lead to decreases in the well-being of the employees. If creativity and change are welcomed by an organization, positive emotions such as increase in enthusiasm, happiness, and optimism for example may be experienced, or in other terms, a positive well-being may be experienced.

Well-being and Creative Organizational Climate

Researchers (e.g., Ekvall, 1999; Ekvall & Ryhammar, 1999) have identified creative climates as the characteristics of creative and innovative organizations. When the climate is high for creativity in the dimensions of challenge, freedom, idea-support, trust, dynamism, humour, debate, risk taking, idea-time, and low in conflict, then innovation and creativity appear to be high (Ekvall, 1996).

Many of the dimensions that work to enhance organizational creativity are also associated with the conditions necessary for the psychological well-being. For example, dimensions such as challenge, freedom and autonomy and low levels of conflict are important to increase the psychological well-being of employees. When an individual experiences less opportunities to influence decision-making, less freedom in one's work, and control in combination with high workload, stress is likely to be experienced (Karasek & Theorell, 1990). As a consequence commitment and participation may decline, and one might no longer see the work as meaningful.

This in turn may decrease the motivation to work, perform and to behave creatively and one may also experience frustration, depression or other negative feelings (Karasek & Theorell, 1990).

Regarding conflicts, the relationship to organizational creativity is dependent on the type of conflict. Ekvall suggests that creative organizations tend to be characterized by low levels of interpersonal conflicts but high levels of constructive conflicts. Other researchers have also identified conflicts at an interpersonal and at emotional level as negative to creativity and bring about issues of dominance and politics. Whereas conflicts and debate referring to task-related or information-related concerns may enhance creativity and innovation (West, 2002; Tjosvold, 1998).

Well-being and Leadership

Although there is a vast body of research literature on leadership, there are few empirical studies that deal with how leaders influence the experience of stress and health of the subordinate employees. Studies that deal with the relationship between leader behaviour and employee stress show that leadership is important for how employees deal with stress (Bass, 1998). When people perceive threats to their well-being they experience stress, and many times the leadership makes the difference in how employees cope with stress that arises from their jobs, for example the stress of being faced by competitive and changing environment (Arvonen, 1995; Bass, 1998, 1985).

While previous research results have created an association between supportive leadership and psychological well-being of the employees, the research of linking a leadership that is concerned with change, development, and creativity, employee well-being is less rooted in research. It may be that this leadership style promotes well-being as a consequence of providing employees with opportunities to self-growth and development. Ekvall and Arvonen (1991) found in their study that the change/development-oriented leadership styles are associated with better job satisfaction. Ekvall and Arvonen (1991) argued that with this kind of leadership style employees are apt to feel strong commitment and motivation. However,

the results of Arvonen (1995) showed that the change/development-oriented leadership style is associated with mental fatigue and with work dissatisfaction but, on the other hand, not with psychosomatic load.

The structure-oriented leader which is mainly concerned with planning, controlling, and organizing work can be seen as a risk factor for the work satisfaction of the employees and for their mental health (Karasek and Theorell , 1990; Seltzer & Numerof, 1988). But on the other hand rules, procedures, definitions of roles and work tasks could reduce the amount of uncertainty about the work tasks and roles and thus lower the experience of stress and help people in developing good relations with their superiors. While Ekvall and Arvonen (1994) in their research found no relationship between leader popularity among the employees and product /task-oriented leader behaviour, Arvonen (1995) found that employees who report the product/task-oriented leadership also report less dissatisfaction with work, less mental fatigue, and less psychosomatic workload. In contrast to the notion of Seltzer and Numerof (1988), Arvonen's results indicate that this leadership may be beneficial in terms of better employee well-being. This relationship was also found in McGee, Goodson, and Cashman's study (1987). They found that employees who reported their leaders as more relation- and structure-oriented also reported low stress levels and high degrees of job satisfaction.

In general the relation-oriented leader has been associated with lower levels of stress and burnout factor (Seltzer & Numerof, 1988). Other studies have also shown that the relation-oriented leader is associated with relatively good levels of satisfaction among co-workers, less absenteeism, less workforce turnover, and fewer workplace conflicts (Vroom, 1964). Beehr, King and King (1990) also showed that a supportive leadership is associated with high levels of work satisfaction, satisfaction with leader, low levels of role conflicts and role ambiguity.

The transformational leadership, which is similar to the combination of the change/employee-orientations (Ekvall & Arvonen, 1994), has been shown to be beneficial when it comes to helping employees to deal with their

stress in a better way (Bass, 1998). These leaders are more likely, than transactional leaders, to help their employees to cope with the stressful situation (Bass, 1998). Other studies that stress the importance of transformational leadership in general have for example reported significant relationships between organizational effectiveness and a transformational leadership style (Almio-Metcalf, 1996; Bass & Avolio 1994; Kouzes & Posner 1997). However, other studies for example the study by Seltzer and Numerof (1988) pointed out that reported burnout was inversely related to all dimensions of the transformational leadership and to one transactional leadership dimension (reward). According to Bass (1985) the transformational leadership is positively related to satisfaction with the leader, but negatively related to stress and burnout.

Well-being, Work Resources and Workload

How employees experience stress and perceive their well-being are suggested by some researchers to be related to the availability of work resources and level of workload in the organization (e.g., Hobfoll & Shirom, 2000). According to the Conservation of Resources Theory (COR) developed by Hobfoll (1989) individual stress might be understood in terms of potential or actual loss of resources. Resources are defined as tools used by an individual to attain goals. Examples of resources are; control of one's work environment; social support; and encouragement to develop new ideas at work (Hobfoll & Shirom, 2000; Amabile & Gryskiewicz, 1989). Studies have shown that people who experience enough resources when faced with stressful circumstances are less influenced by the negative impacts of stress (e.g., Baltes, 1997; Coyne & Downey, 1991; Hobfoll, 1988, 1998; Norris & Kaniasty, 1996). The gain of resources is suggested to be not as important for the experience of stressful events as the loss of resources (Kahneman & Tversky, 1979; Wells, Hobfoll, & Lavin, 1999). Studies suggest that resource loss is critical in the experience of stress processes and the resource mobilization can counteract the negative aspects of stress (Benotsch, Lutgendorf, Walson, Fick, & Lange, 2000; Norris & Kaniasty, 1996).

Workload is another factor that has been identified as a job stressor and has been linked to the well-being of the employees (e.g., Karasek & Theorell, 1990). Excessive workload is defined as employees' perception of having more work than can be completed within a given time period (Amabile, et al., 1996; Jex, 1998). Workload includes for example heavy time schedules and excessive demands in a short amount of time. The anxiety and stress of coping with excessive workload can be negatively related to performance as time is put off to address the feelings of anxiety. Further, Spector, Dwyer, and Jex (1988) found that overload was related to involuntary physiological responses that lowered job performance. In the study of Kinman and Jones (2004), perceptions of an unmanageable workload were associated with psychological distress and job dissatisfaction, and with lower levels of control. Workload was also found to influence job stress negatively in the study of Daniels and Guppy (1997). The result of Ramirez, Teresi, Holmes, and Fairchild's (1998) study showed that work demands and work resources factors were related to staff outcomes such as job satisfaction and burnout. Other studies indicate that burnout can be predicted by overload (Schaufeli & Enzmann, 1998).

Sociocultural Differences

Individual differences such as gender and socio-economic status may result in different experiences of the same stressors (Fotinatos & Cooper, 2005). Research on gender differences in the experience of stress is an area that has been given more attention lately (European Agency for Safety and Health at Work, 2003). More women are joining the work force and according to the European Agency for Safety and Health at Work (2003) women make up 42 percent of the work force. But still research shows that women face more stress than men. According to Beehr and Shuler (1980), gender has been viewed as affecting not only when one experiences stress but also how stress is experienced. Beehr and Shuler (1980) concluded that gender has been seen not only as a predictor of stress but also as a moderator influencing how one perceives stress and how well one deals with stress.

Results that have shown that women are more likely than men to report low levels of well-being or poor health are reported in several studies (Verbrugge & Wingard, 1987; Waldron, 1983). For example women in non-managerial positions face more problems at work than men (Stokes, Riger, & Sullivan, 1995). Women also get less benefits from the informal social structures, and face more problems and barriers in getting promoted and when solving problems at work. West (1997) and Saltzman (1991) refer to an invisible barrier that women face in their work more than men. This invisible barrier which is referred to as "glass ceiling" is painful and destructive, and contributes to giving women less access to benefits than their male colleagues. Although lessening with higher position in the organization, problems and barriers are still present for women at managerial positions (Saltzman, 1991).

Several other studies have shown that women in academic settings face inequity in resources (Long, 1990; Valian, 2004). Park (1996) found that women report less office and lab space, less access to assistance, and less support from staff. Further, other results (Yoder, 1991) show that women are often excluded from the inner circles of power from predominantly male department chairs. Men in academic settings, who have a natural affinity to male leaders, are believed to have greater access to support and resources. Bilimoria et al. (2006) found that both effective leadership and mentoring (within and outside the immediate workplace) are important for the job satisfaction of women in academic settings.

Many studies from different academic disciplines have shown that people with fewer socioeconomic resources face more health problems. Several studies have found a strong correlation between education and self-rated overall health (Marmot, Bosma, Hemingway, Brunner, & Stansfield, 1997; Miech & Hauser, 2001; Pitsavos, et al., 2002; Power, Matthews, & Manor, 1998). Vahtera, Kivimäki & Pentti (1997) concludes that workplace factors partly account for socioeconomic gradients in health, particularly for men. In Dionne et al. (2001) review of 64 articles published between 1966 and 2000 they found good evidence for that the less well educated people are more likely to be affected by back pain. Other studies have found strong

associations between level of education and depression, especially among women (Marmot et al., 1997; Miech, Caspi, Mofitt, Wright, & Silva, 1999). These results showed that the lower the educational level was the higher were the levels of depression.

The role of work task depending on the educational background may play an important role in how different organizational aspects are experienced. Research has already shown that the differences in education or socioeconomic status between managers and non-managers are present. Ekvall (1996) stated that managers have greater influence on the climate of an organization than non-managers have because managers have more access to resources and technology, and more power and freedom (Amabile & Gryskiewicz, 1989). Hatch (1997) also pointed out that the managers and the non managers differ in their skills and abilities.

According to Rosenman and Friedman (1971) the role in an organization and the work tasks the employees have might influence how one experiences changes and stress. Kwasniewska and Necka's study (2004) showed that employees with less socioeconomic status in the organization were more inhibited in their attempts to initiate creativity at work. The employees with a high status experienced less hindrance to implement innovation than the employees with low status. However, the results of Kwasniewska and Necka's may depend on the extent to which creativity was a part of the employees' work tasks. For example, whether creativity was a part of the work of employees with low socio-economical status was not reported in Kwasniewska and Necka's study.

6 AIMS AND RESEARCH QUESTIONS

Aims

Inspired from the multilevel approaches to creativity and the work of Amabile and colleagues (1996) on the contextual influences on organizational creativity this thesis aims to understand organizational creativity from the perspective of the employees in the studied organizations. Perceptions of organizational creativity will be measured and thus no independent measure of how creative and innovative the organization is has been made.

The measurement of creativity in organizations has not been a problem free issue in the literature. One assessment is the consensual assessment technique of Amabile (1996), which involves two or more judges with relevant backgrounds, experience, expertise, and education. These judges often rate the creative outcome with the criteria of originality, novelty, and usefulness (Zhou & Shalley, 2003). Other approaches to achieve independent measures of organizational creativity involve for example the amount of submitted ideas per employee, or number of patents. Yet other researchers have used the measurements of the climate for creativity as an indication of how creative the organization is (Amabile et al., 1995, 1996; Ekvall, 1990). This approach will also be used in the current thesis. Ekvall's (1990) instrument for measuring climate for creativity will be used. Further, a constructed questionnaire for the purpose of study I, inspired by Amabile and colleagues' KEYS instrument (1995), will also be used as an indirect measure of how creative and innovative the studied organization is.

In study I the aim is to create a model that relates organizational creativity to several contextual variables at the organizational level and to well-being

at the individual level. At the organizational level, variables related to organizational creativity are; climate for creativity, team climate for innovation, leadership, work resources, and workload. The joint impact of these variables has not yet been investigated in relation to organizational creativity. As the relation between creative organizational creativity and psychological well-being has not been investigated to the awareness of the author, it is of interest to investigate it in study I.

In study II, well-being in terms of stress or ill-health is further investigated and hypothesized to be related to, and predicted by a creative organizational climate, leadership, work resources, and workload with respect to differences in gender and educational background.

In study III, the aim is to understand how employees with creative work tasks define creativity and how contextual and individual aspects are perceived to facilitate or impede employee creativity.

Research Questions

The following research questions are addressed:

Study I

How are the organizational/contextual variables creative organizational climate, team climate for innovation, leadership style, work resources, and workload related to organizational creativity and innovation from the perspective of the employees?

How are perceptions of organizational creativity and innovation related to perceptions of psychological well-being of the employees?

Study II

Do creative organizational climate, leadership style, work resources, and workload predict and have a relationship to stress, and are these relationships expressed differently with respect to gender and education?

Study III

How do employees working with creative work tasks in an organization reconstruct the concept of creativity?
What does creativity mean for individuals with creative work tasks in their professional role?
How is creativity facilitated and how is it impeded in the organization from the perspective of the employees?

Background of the Studied Organizations

To which degree organizations emphasise creativity and work towards it may depend on the type of organization and its view of human agencies that are incorporated in the organizational agenda. The empirical material in this thesis comes from the two organizations. Study I and II are based on one and the same organization, referred to as organization A, and study III is based on another organization, referred to as organization B. According to information provided by the senior managers and the contact persons in both companies, both organizations are process-oriented and have creativity and innovation as one of their most important core values.

Process-oriented versus hierarchical organizations

Because change has become a norm for many organizations (Ahrenfelt, 2001) traditional organizations with a hierarchical structure are believed to not have the right conditions to be flexible and meet changes (Gulledge & Sommer, 2002). An organization that is process-oriented aims to increase flexibility and decrease structures so that the changes are dealt with in a better way (Hammer, 1996). This in turn will facilitate creativity and innovation (Barrett, 1998; West, 2000) in contrast to strictly hierarchical and functional organizations which often impede innovation (Starbuck, 1995).

In the hierarchical organization the process of change is difficult due to the hierarchical structures that make information less available to everyone, and communication and decision-making are limited to a top-down process. Change for this type of organization often involves an increase in efficiency of routines. Many of the difficulties of hierarchical or function-based organizations include a lack of seeing the big picture, managers who

guard their territories and borders so no trespassing can occur. Efficiency is often aspired and employees are instructed to concentrate on few, specialized tasks (the full potential of the employee is thus lost) (Hammer, 1996). Further, in contrast to process oriented organizations, hierarchical organizations have problems in adapting to the fast changing environment and new conditions. The contact with market and the customers is limited and is experienced only by a specialized division, which makes it difficult for the company to consider and react to customer demands (ibid) in the hierarchical organization.

Most of these difficulties are believed to be handled in a process-oriented organization (Earl, 1994) as the focus of process-oriented organizations are on values such as change, flexibility, communication across the whole organization, and customer- and result-orientation. In a process-oriented organization the individuals are viewed as entrepreneurs with characteristics such as independent, flexible, intrinsically interested, creative, and with initiative. Employees are given freedom, autonomy, and resources because it is believed that it will foster innovation (Amabile, 1996; Ekvall, 1990; West, 2000).

7 METHODOLOGY

Instruments

Creative Climate Questionnaire

To asses the organizational climate for creativity Creative Climate Questionnaire (CCQ) (Ekvall, 1990) was chosen. CCQ consists of 50 items that are divided in 10 dimensions. These 10 dimensions were derived from several large factor analytic studies (Ekvall, 1990). The 10 dimensions, where each dimension contains five items, are presented in Table 1a and 1b along with one item from each dimension. The items are translated here from Swedish only for the current purpose. The scale ranges from 0 to 3, where 0 = do not agree, 1 = agree to some extent, 2 = agree to a great extent, and 3 = fully agree.

Table 1a. Example of items and Cronbach's coefficient alpha for each of the first five dimensions of CCQ (Ekvall, 1990) compared to estimated alpha values from the studied organization A (N = 95)

CCQ	Item	Ekvall's sample α	Studied org. α
Challenge/ Motivation	*People around here often feel a strong commitment toward their work.*	.81	.90
Freedom	*People around here make their own decisions to a great extent.*	.67	.83
Idea-support	*One is encouraged to put forward ideas because others listen and encourage.*	.88	.92
Trust	*One does not need to be afraid to get the dagger in the back.*	.76	.86
Dynamism	*People here have lots of ideas.*	.76	.84

Table 1b. Example of items and Cronbach's coefficient alpha for each of the 5 remaining dimensions of CCQ (Ekvall, 1990) compared to estimated alpha values from the studied organization A (N = 95)

CCQ	Item	Ekvall's sample α	Studied org. α
Humour	*There is a playful atmosphere around here.*	.70	.87
Debate	*Many new ideas occur around here*	.67	.80
Conflict	*There are a lot of tensions around here because of prestige.*	.84	.85
Risk taking	*People around here dare to take risks even when the outcome is uncertain.*	.66	.81
Idea-time	*One has time to think of new ideas.*	.78	.82

Note. Ekvall's sample (1990) consists of 104 engineers from a large company, who rated the climate of the department they worked in.

All CCQ dimensions were positively related to creativity and change except for the dimension *conflict,* which had a negative relation to creativity and change (ibid). Data regarding the validity and reliability of CCQ can be obtained in the work of Ekvall (1990). In Ekvall's sample the climates in the 10 innovative organizations were rated as creative and innovative as compared to the climate in five stagnated organizations, which all scored low on CCQ. It is to be noticed that CCQ measures the perceptions of the beholders of an organization regarding the conditions for creativity and change, and thus not creativity or change itself. CCQ is not a measure of actual behaviour, but a measure of perceptions of how people normally behave in the workplace.

Team Climate for Innovation

To asses team climate for innovation a short version (Dackert, Brenner & Johansson, 2002; Kivimäki & Elovainio, 1999) of the original Team Climate Inventory (TCI) (Anderson & West, 1998) is used. The short version of TCI consists of 14 items related to four dimensions. These four dimensions which constitute the four scales in the instrument as well as an item from

each scale are presented in Table 2. The scales range from 1 = strongly disagree to 5 = strongly agree.

Table 2. Example of items and Cronbach's coefficient alpha for each of the four dimensions of TCI (West, 1990) compared to estimated alpha values from the studied organization A (N = 95).

TCI	Example of Item	Kivimäki's sample α	Studied .org.(A) α
Participation	*The team members feel that they are understood and accepted by each other*	.84	.89
Support for innovation	*We take the time that is needed to develop new ideas in our team.*	.85	.88
Clarity of and commitment to the team's objectives	*To what degree do You agree with the goals of the team?*	.86	.83
Emphasis on quality in the team's work	*Do the members of the group associate on each others ideas to achieve best possible result?*	.79	.86

Studies of West (1990), West and Anderson (1996), Agrell and Gustafson (1994), Burningham and West, (1995) support the four aspects of West's model and relate all of them to group innovation. West and Anderson (1996) conducted a study where they examined innovations developed by top management teams in 27 healthcare organizations. The study was based on the model of West (1990) and the results supported West's model, showing that overall group innovation was related to all the four group process variables, with support for innovation being the best predictor. High levels of participation, clarifying goals, emphasis on quality, and support for innovation were all related to innovation in teams (West & Anderson, 1996).

CPE leadership style

A short version of the *Change-, Product- and Employee-oriented* (CPE) leadership style questionnaire is used (Ekvall & Arvonen, 1991, 1994) to assess leadership style. The CPE is a standardized instrument that measures three

different dimensions of a leader's orientation style; c*hange/development-orientation*; *production/task-orientation* and; *employee/relation-orientation*. The short version of CPE (Ekvall & Arvonen, 1994) consists of 15 items divided into three scales. Each CPE scale consists of five of the 'purest' items, i.e. with low intercorrelations, between each of the three factors: change/development, production/task/structure, and employee/relation, in their study. Below in Table 3 is a list provided for the three scales and an item for each scale. The answers reflect the employees' perceptions of the leadership style.

Table 3. Example of items and Cronbach's coefficient alpha for each of the three dimensions in CPE (Sverke, Arvonen, & Lindell, 1995) compared to estimated alpha values from the studied organization A (*N* = 95).

CPE	Item	Sverke et al.'s sample (N = 1093) α	Studied org. (A) α
Change/development-oriented leadership	*Encourages thinking along new lines.*	.87	. 86
Product/task-oriented leadership	*Is very exacting about plans being followed.*	.77	.78
Employee/relation-oriented leadership	*Allows her/his subordinate to make decisions.*	.77	. 73

The scale ranges from 0 to 3 (0 = seldom or never, 1 = sometimes, 2 = quite often, and 3 = often/most of the time). Validity and reliability data for CPE can be obtained in the studies of Ekvall and Arvonen (1991, 1994).

Organizational creativity and innovation assessment

The perceived degrees of creativity and innovation in the organization are measured with two items inspired from the KEYS instrument developed by Amabile and colleagues (Amabile, Burnside, & Gryskiewicz, 1995). The items are: *the department I am working at is creative* and *the department I am working at is innovative.* The respondents rates his or her department regarding its creativity and innovation on a scale ranging from 1 to 4 (1 = never, 2 = sometimes, 3 = often, 4 = always). Regarding the validity and reliability of KEYS, Amabile et al. (1996) showed that perceptions of a

creative and innovative climate are highly significantly related to independent measures of creativity.

Work resources and workload assessment

To measure work resources and workload seven items, inspired from KEYS (Amabile, et al., 1995), are constructed. Work resources are measured with four items and workload is measured with three items. Example of an item in the work resources scale is: *more or less I have access to the resources I need to do my work*. Example of an item in the workload scale is: *I have too much to do in too little time.* The respondents rates their department regarding the availability of work resources and amount of workload on a scale that ranges from 1 to 4 (1 = never, 2 = sometimes, 3 = often, 4 = always). Cronbach's alpha (α) for the work resources scale in study I is .71 and for the workload scale α = .43, which is a low alpha value indicating that the items may not measure exactly the same phenomenon. In Amabile et al.'s study (1996) perceptions of work resources and workload differed with high significance in environments that were high and low in creativity (measured with KEYS).

Well-being assessments

To measure well-being two instruments are used. In study I Warr's (1990) Well-being Questionnaire is used and in study II, the General Well-Being Questionnaire (GWBQ) of Cox and Griffiths (1995b) is used.

Warr´s instrument (1990) is based on two scales; enthusiasm-depression and anxiety-contentment. Each scale contains six adjectives that describe how you experience your well-being at the workplace. The answer is based on how things have been during the past weeks at work. Examples of adjectives in the enthusiasm-depression scale are *enthusiastic*, *optimistic, depressed*, and *gloomy*. The anxiety-contentment scale includes adjectives such as *tense,* and *worried* respectively *calm* and *relaxed*. For the purpose of study I only the depression-enthusiasm scale is used in the study. The estimated alpha value for this scale in study I is .69. The range of the scale varies between 1 and 6 where 1= never, 2= now and then, 3= sometimes,

4= often, 5 = most of the time, and 6 = the whole time (during the past weeks at work).

Sevastos and Smith (1992) scrutinized the reliability and construct validity of Warr's (1990) well-being and concluded the structural model of well-being required certain modifications but on the general level they suggested that the instrument is able to discriminate well across different samples, and is suitable for use in organizational settings.

The GWBQ was originally developed in 1983 by Cox, Thirlaway, Gotts, and Cox and modified in 1995 by Cox and Griffiths. GWBQ measures stress-related symptoms that are both psychological and physiological in nature, and contains two scales; *worn-out* and *uptight/anxious,* with 12 items in each scale. The worn-out scale includes items such as "have you been forgetful" with an estimated alpha value of (α = .80). The uptight/anxious scale includes items such as "have you been tense and jittery" for which the estimated alpha in study II is (α = .83). The estimated alpha value for the sum of the scales is (α = .88). Alpha values from the original scales couldn't be found or obtained. The response scale ranges from 0 to 4 (0 = never, 1 = seldom, 2 = sometimes, 3 = often, and 4 = all the time).

The validity and reliability of the two scales in GWBQ are discussed in Cox et al. (1983) and they conclude that the GWBQ appears to be reliable and robust across diverse samples. Cox and colleagues further discuss that scores on the GWBQ scales have been related to psychological well-being in a study of 3000 school teachers where they found that neuroticism was significantly related to both scales of GWBQ. In another study based on 320 shopfloor workers the two scales in GWBQ were related to a health and behavioural habits questionnaire which measured information about overt ill health, general health, and sleeping habits. The results showed that GWBQ was related to all the three aspects of the other questionnaire; overt ill health, quality of sleep, and feelings of tiredness on waking up in the morning. Cox and colleagues (1983) further suggest that there are sex differences in GWBQ. In one of their samples women reported significantly more symptoms related to the "up-tight" scale than men for a het-

erogeneous working population. No differences were found on the worn-out scale. With these results Cox and colleagues (1983) conclude that the studies demonstrate the concurrent validity of their model of general well-being.

To investigate how the two well-being scales relate to each other Pearsons correlations were calculated. The results indicated no significant relationship between the two scales in Cox's GWBQ and the depression-enthusiasm scale in Warr's well-being questionnaire (Cox worn-out and Warr's dep-enth. r = -.31, Cox's uptight and Warr's dep-enth. r = -.13, sum of Cox's scales and Warr's depr-enth. r = -.15, with p >.05 for all three correlations). This indicates that the two instruments are measuring different aspects of well-being and provide independent support for the relationship between well-being and organizational creativity and innovation in study I and between stress-related symptoms and organizational climate for creativity in study II.

Critical Incidence Technique

To collect data about the experience of creativity at workplace, Critical incidence Technique (CIT) in text form (Flanagan, 1954) is used. Here, CIT is used to identify critical incidents or circumstances under which creativity is experienced or hindered. CIT is a method used to collect data of direct observations of human behaviours that have critical significance. A critical incidence is an event that is observed by the participant and this observation includes how the person (the observer) experiences the event, phenomenon, or situation. The task of the participant is to observe and identify a *critical incidence* that has critical significance and meets methodically defined criteria. The validity and reliability of CIT is discussed for example in Andersson and Nilsson (1964). The CIT method has been used in organizational settings to identify important processes (Butler, 1991; Chell, 1998). An advantage of the CIT method is that it makes it possible to focus on relevant and interesting events. A disadvantage is that events that are negative for different reasons to the person may not be reported (Chell, 1998).

Interviews

Flanagan (1995) himself proposed different variations of the CIT method, where both written forms and interviews were included. Critical Incidence Technique in interview form (Flanagan, 1954) is used in study III to better comprehend to the experience of creativity. A 2 hour interview is carried out with the participant with the purpose of reaching at a deeper understanding regarding creativity in their work.

Focus group method

Basically, focus groups are interviews where 5-10 people discuss and interact with each other at the same time in the same group (Morgan, 1988). These discussions are used to gain knowledge about people's attitudes toward a phenomenon. According to Marshall and Rossman (1999), focus group has a high apparent validity, and is considered a good method for the purpose of understanding how people reconstruct given concepts in a context. A disadvantage is that due to social pressure, some individuals may feel that they have to conform to the view of the group and thus be hindered from expressing relevant information.

Participants/Studied Organizations

Study I and II

Study I and II are based on the same participants and conducted at a multinational corporation in the high-tech field of industry in Sweden (organization A). The organization is one of the world's leading companies in its domain, dedicated to the discovery, development, manufacturing and marketing of high quality, effective products. The company, which is an open shareholding company, is a merger of originally two corporations that merged less than a decade ago. The studied unit is comprised of 166 employees of whom 101 answered (60% response rate). The participants belonged to four sub-units. Of the 101 participants who answered 13% belonged to a HR (Human Resources) department, 14% belonged to several smaller subunits where the common denominator was external contacts (e.g., clients, suppliers etc). 11% of the participants belonged to a department which worked with developmental issues and the rest, 62 %, belonged to a sub-unit where most of the manufacturing was conducted.

Most of the participants from this sub-unit had a non-academic background but the sub-unit also included managers and supervisors. This distribution was also representative for the whole unit that was studied.

Due to skewness and outliers only 94 participants were included in study I, and 95 in study II. Most were females (57%) and 43% were males. 41 % had an academic background and 59 % were non-academics. The ages varied from 20 to 65 years, and most people were in the age category 36-45 years.

Study III

The material for study III was collected in a private and global product organization in Sweden (organization B). The studied organization consisted of more than 3000 employees at the studied location. Most of the research and development of the entire corporation is conducted at the studied unit. The contact person described that the company transformed some years ago from being a functional organization into a process-oriented organization. As a step in that effort the organization was divided into sub-companies each with its own main business area. All the sub-companies hold a common aspiration of developing their organization according to the process view of organizing.

13 development engineers participated, four women and nine men (average age 39). They worked with different aspects of product and technology development. The choice of these particular development engineers to participate in the study was made by the management of the organization on the basis of the researchers' criteria of including employees with creative work tasks. According to the contact person, these development engineers were chosen because they are required to work with developmental aspects and to come up with innovative solutions to the technical problems. All engineers had an academic background, some with a doctoral degree. The nature of their work tasks varied from administration to developing products, machines, and methods. The engineers reported that they worked in 2-3 projects at a time and that that they worked alone up to 80% of their time with the tasks they were assigned to in the project.

The average age was 39 and the average working time in the company was 9 years.

Data Analysis

Statistical analyses

The statistical calculations were made in the SPSS software for Windows. The data was checked for missing values and the option of exclude cases as pairwise was used (Pallant, 2005). Univariate outliers were checked and excluded. Multivariate outliers were investigated by calculating Mahalanobis distance for all variables. In this analysis alpha on the χ^2 was set to $p < .001$. The occurrence of outliers in the solution was checked visually by inspecting the standardized residuals of every case in each multiple regression analysis. No major deviance in outliers was found. The data was also checked for multicollinearity and singularity. The multicollinearity showed that none of the tolerance values were close to zero for all variables implying no collinearity in each variable. Regarding singularity no problems were detected in the analysis. Despite that normal distribution of the independent variables are not required all variables were transformed into rank-ordered variables and tested in the multiple regression analyses as a check-out. The result of this transformation was similar to the original variables regarding the significance/not significance level. The homogeneity of the scales was calculated with Cronbach´s alpha (α). Pearson correlations were used to investigate the internal relationships between the independent variables. Standard multiple regression analysis was used to make predictions and a MANOVA was used to investigate differences between groups in all the variables.

Study I

The suggested model in study I was tested with a covariance structural-equation model. This technique allows the researcher to test the interrelationships among a set of variables in a model. The technique is based on regression and factor analytic techniques that allow one to evaluate the importance of each of the independent variable as well as to test the overall fit of the model to one's data (Pallant, 2005). Chi-square goodness-of-fit statistic was used according to Jöreskog and Sörbom (1993). A non-signifi-

cant value indicates a good fit between the predicted and the obtained correlations. Root mean square error of approximation (RMSEA) was used. While values of RMSEA that are less than .05 indicates a very good fit, values up to .08 represent reasonable errors of approximation in the population. The goodness-of-fit index (GFI) was also used. GFI is an indication of the fit of the model compared to no model at all, and a value of 1.00 indicates a perfect fit between the model and the data.

Study II

Multiple regression analysis was used to predict well-being from creative organizational climate, leadership styles, work resources, and workload as the independent variables. Multiple regression analysis is a collection of statistical techniques that one can use to assess the relationships between a set of independent variables and a dependent variable. Pallant (2005) argues that multiple regression analysis is a refined method of investigating the relationships between variables and is considered to be a supreme method in examining complex real-life research questions.

Multiple regression analysis can be used with three general analytical strategies (Tabachnick & Fidell, 2007). The first strategy is referred to as the standard multiple regression which was used in study II. In this strategy all independent variables are entered into the regression equation at the same time. The second strategy is the hierarchical (sequential) multiple regression in which the independent variables are entered into the regression equation in an order that the researcher determines. This is usually done by basing the entry order of the independent variables in accordance with a logical or theoretical consideration. The third strategy is to perform a stepwise (statistical) regression. The independent variables are entered into the equation based exclusively on statistical considerations in stepwise regressions and the interpretation or meaning of the independent variables is unimportant.

Despite the benefits of multiple regression analysis the technique does have some limitations. As the technique investigates relationships between variables one cannot make any conclusions regarding causality. As such

several sources (measured as well as unmeasured) can account for a strong relationship between variables (Tabachnick & Fidell, 2007). Another limitation (or requirement) is that the analysis requires a minimum amount of participants per independent variable, usually 10 participants per independent variable.

To investigate whether there were differences in gender and educational background multivariate analysis of variance (MANOVA) was used. A MANOVA is used when there is more than one dependent variable. With an MANOVA one can compare groups and see whether it is likely that the differences between the groups on the combination of dependent variables have occurred by chance (Pallant, 2005).

Besides analysing the data to find any significant differences between groups on the composite dependent variables, MANOVA can also provide univariate results for each of the independent variable separately (ibid). The advantage of performing a MANOVA instead of an ANOVA for each dependent variable separately, which is a set of statistical procedures based on a comparison between two estimates of variances (Tabachnick & Fidell, 2007), is that the MANOVA adjusts for the increased risk of Type 1 error. However, there are limitations as well with MANOVA. Pallant (2005) stresses that it is for example a much more complex set of procedures than ANOVA, and that it requires that one has more cases in each cell than one has dependent variables. Furthermore, checking for normality, outliers, and multivariate normality (with Mahalanobis distance), are all assumptions of MANOVA and these were checked as stated earlier.

In the test of normality values of Kolmogorov-Smirnov statistics were significant for all variables, but shouldn't have been so. However, Pallant (2005) argues that Kolmogorov-Smirnov can be significant in larger samples. A non-parametric test (Mann-Whitney U test) was conducted and the results showed to be the same as in the parametric test (Independent Samples T-test).

Content analysis (Study III)

The data obtained in study III was verbal and processed accordingly to a grounded theory methodology (Glaser, 1998). This basically means to read (and re-read) a textual database and identify categories, concepts and properties and their interrelationships. The ability to perceive variables and relationships is termed "theoretical sensitivity" and is affected by a number of things including the researcher's reading of the literature and of techniques designed to enhance sensitivity. The process of coding, writing memos, categorizing and interrelating categories, concepts, codes and so on was done with the help of computer program ATLAS.ti (Muhr, 1997) (www.atlasti.de).

All material was transcribed to the extent that it included all expressed words and pauses. The material was processed in ATLAS.ti in three sets. The first set processed the CIT texts, the second set interviews, and the third set processed focus groups. In each set, each participant's text was processed separately. The procedure for processing the material in ATLAS.ti was consistent for all three sets (CIT texts, interviews, and focus groups). After processing the material in ATLAS.ti the three different sets were compared and analyzed further to create categories. Both authors of study III worked independently with the categorization of the data and a consensus regarding the derived categories and understanding of the data was reached.

8 SUMMARY OF STUDIES

Study I. A Model Examining the Relationships between Organizational Factors, Organizational Creativity and Innovation, and Individual Well-being

Given the importance of the social environment for employee creativity, which influences both the frequency and level of creative behaviour (Amabile et al., 1996) this paper aims to investigate the relationship between organizational creativity and contextual aspects such as organizational climate, team climate, leadership, work resources and workload. Furthermore, a creative and innovative organization is also suggested in this study to be positively related to the well-being of the employees. Most of the studies in this area have been conducted outside the organizational context, in laboratory settings and have shown that positive affects increases individual creativity (e.g., Forgas, 1992; Seidlitz et al., 1997).

These above relationships are hypothesized in a suggested model and tested via structural-equation modelling (LISREL, Jöreskog & Sörbom, 1993). The first hypothesis in the model suggests that organizational climate for creativity, team climate for innovation, employee/change-oriented leadership style, work resources, and less amount of workload will be related to higher levels of perceptions of organizational creativity. The second hypothesis in the model assumes a positive relationship between perceived organizational creativity and better assessed psychological well-being of the employees in terms of higher levels of happiness, enthusiasm, and optimism.

Answers of 95 employees in a high-tech industrial company in Sweden (organization A) were used. Ekvall's Creative Climate Questionnaire (CCQ) (1990) measured organizational climate. Team climate was meas-

ured using a short version of Team Climate Inventory (TCI) (Kivimäki & Elovainio, 1999). Leadership was assessed using a short version of the CPE questionnaire (Ekvall & Arvonen, 1994). Work resources, workload, organizational creativity, and innovation were measured with items inspired from Amabile and colleagues' KEYS instrument (Amabile et al., 1995). Well-Being was assessed using Warr´s (1990) questionnaire.

Results and Comments

The suggested model was found to be significant and showed that jointly the contextual aspects: a creative organizational climate, an innovative team climate, a leader which is rated as having a combination of change/employee-orientation, work resources, and less workload, were related the rating the organization as creative and innovative. However, the in detail, these results showed that only creative organizational climate and work resources were significantly related to ratings of organizational creativity. That is, the more the organizational climate supports and stimulates creativity and the more work resources one perceives, the more creative and innovative will the organization be reported. However, the model pointed to that in its wholeness, all the variables were related to organizational creativity. In general the results are consistent with the results of other interactionist findings (e.g., Amabile et al., 1996; Amabile et al., 2004; Ekvall, 1990; West, 1990).

The second hypothesis was also confirmed and showed that the more one rated the organization as creative and innovative, the better was the reported well-being, which indicated that increasing organizational creativity has benefits for the individual.

Study II. Employee Stress in Relation to Perceived Creative Organizational Climate, Leadership Style, Work resources, and Workload

Organizations face new and challenging times due to globalization, competition, and increased market demands (Bjerke, 2005). Being a norm for many organizations (Ahrenfelt (2001), change is not always welcomed by

employees. Some research has shown that change is often perceived as negative by employees (Vakola & Nikolaou, 2005), and can lead to stress, ill health, and a decrease in well-being if the negative reactions toward changes are not dealt with (Cooper, Sloan, & Williams, 1988). The underlying assumption in this study is that a creative organizational climate, a leadership that is considerate and impels employee creativity, work resources, and fewer workloads are means to deal with the potential stress. Sociocultural differences in how the climate for creativity, leadership style, work resources, and workload are experienced are also of interest to investigate with respect to gender and educational background. Stress is further hypothesised to be predicted by creative organizational climate, leadership styles, work resources, workload, as well as gender and educational background.

94 employees from organization A were included in the final analysis due to outliers and skewness. 55% were females and 45% were males. 40 % had an academic background and 60 % were non-academics.

Since the interest was to investigate the negative aspect of well-being Cox's General Well-Being Questionnaire (GWBQ) was used to measure stress (Cox &Griffiths, 1995b). Ekvall's Creative organizational Climate Questionnaire (CCQ) (1990) measured organizational climate. A short version of Team Climate Inventory (TCI) (Kivimäki & Elovainio, 1999) was used to measure team climate. Leadership styles were rated with a short version of the CPE questionnaire (Ekvall & Arvonen, 1994). Work resources and workload were measured with items inspired from Amabile and co-worker's' KEYS instrument (Amabile et al., 1995).

Relationships were investigated with Pearson's correlations, differences in gender and educational background were investigated with MANOVA, and predictions were made with a standard regression analysis.

Results and Comments

The results implied that when people perceived the climate as creative, they also perceived less stress. The only leadership style that was related to lower reported levels of stress among the employees was the employee /relation-oriented leader. Work resources or workload had no relation to well-being. The overall result showed that stress was only predicted by the employee/relation-oriented leadership. This result confirmed earlier research of Arvonen (1995). It may be that a relation-oriented leadership was better in helping their employees coping with stress. However, it may also be that employees who report lower levels of stress also experienced the leadership as more employee/relation-oriented.

The results also implied that gender was a more important than education with regard to stress and workload, and less important than education with regard to perceptions of organizational climate for creativity and leadership. Women reported more stress and workload than men, which was not unexpected since women experienced more difficulties in preserving a balance between work and private life (Nesbitt et al., 1993). Well educated employees described the climate for creativity as more favourable and also reported a more change/development- and employee/relation-oriented leadership than less educated employees. It may not be unreasonable to assume that employees with a non-academic background have routine-based work tasks, more controlled work situation, and consequently may also rate the climate as less favourable for creativity and the leadership as more focused on production and the organization of work (product-oriented leadership) than well educated employees.

Study III. A Contextual Perspective on Organizational Creativity and Innovation

Interactionist approaches to creativity emphasize the importance of the context in explaining creative behaviours (e.g., Woodman et al., 1993). According to Woodman et al. (1993) creativity is a complex process that results in a product of an individual's behaviour in a specific context. Interactionist approaches include the individual as an important part of the

context and the creative outcome is viewed as the result of the interaction between the four Ps of creativity: the creative person, the creative process, the creative product, and the creative place.

Given the importance of the influence of the context (the environment) on creativity, the research questions of interest were to understand how the concept of creativity was reconstructed in a specific context consisting of employees with creative work tasks, and how the context could influence creativity from the perspective of the employees.

13 development engineers selected on a random basis from a global high-tech industrial product company in Sweden (organization B) participated. Critical Incidence Technique (CIT) was used both in text form and interview form (Flanagan, 1954). Focus groups (Smith, 2004) were conducted to understand how the participants reasoned about creativity in group.

The data was analysed with a grounded theory methodology (Glaser, 1998; Strauss & Corbin, 1998). All together the results revealed five themes; individual creativity, "in the box" creativity, structure dependency, organizational defence, collaboration and organizational synergy.

Results and Comments

The results indicated that creativity to a large extent was viewed as a cognitive process that resided within the individual and was affected by individual characteristics such as being open, flexible, and brave. However, despite being identified as a person-related phenomenon, the results indicated the importance of the context on how creativity was expressed. Reported factors in the context such as organizational impediments such as a structure dependency (e.g., referring to the company's rigid emphasis on standard procedures), economical and time restraints, single loop learning, political cannibalism, weak collaborations, and a weak interest for seeing the whole picture gave the engineers little space and opportunities to be creative.

Due to these reported impediments to creativity the engineers experienced that they were hindered from expressing radical creativity, which was referred to as creating something totally new. The reported creativity that did take room in the organization was experienced to be "conservative" in the sense that it referred to improvements of the old. This is in the literature referred to as adaptive creativity in contrast to radical creativity which is norm breaking (e.g., Ekvall, 1997). The overall conclusion was that the studied organization put a lot of effort in maintaining status quo and creating structures that made it difficult for the engineers to be radically creative.

9 DISCUSSION

The general aim of the research in this thesis was to study organizational aspects of creativity and innovation at various levels of analysis. At the organizational level the joint contribution of contextual aspects such as organizational climate, team climate, leadership style, work resources, and workload were thought to be related to organizational creativity. At the individual level organizational creativity was thought to contribute to a better psychological well-being in study I. In study II a measure of stress-related symptoms was related to organizational aspects such as creative climate, leadership, work resources, and workload. Study (III) aimed to understand how employees with creative work tasks reconstruct the concept of creativity in their professional roles.

All these relationships were investigated from the perspective of an individual and thus measures reported experiences of the individual. According to Hemlin et al. (2004), the perceptions of the individuals regarding the environment they work or live in to a large extent will guide their thinking and behaviour. How the individual perceives her or his reality is important for how she or he will think and behave.

Contextual Aspects on Organizational Creativity

One of the aims of this thesis was to investigate the impact of contextual aspects on organizational creativity and innovation. The term organizational creativity will replace organizational creativity and innovation when possible in the forthcoming discussion because without creativity it is impossible for an organization to innovate in order to improve its performance and respond to environmental change, and without innovation, creativity loses its value. As organizational creativity is defined to be embedded in the social context so it is reasonable to assume that every organization has frames that work to facilitate or inhibit organizational creativity to

various degrees. These frames are referred to as the different subsystems of interest in this thesis (climate, leadership, work resources and workload, organizational impediments, culture and individuals).

The subsystems of the organization

From a systems view (e.g., Churchman, 1986; Csikszentmihalyi, 1996; Katz & Kahn, 1966), the whole is more than the sum of scales and investigating one part in isolation would create problems as the different parts are interrelated and interconnected. Therefore the different contextual aspects (subsystems) of interest in this thesis were jointly related to perceptions of organizational creativity in a suggested model in study I. The model was significant and pointed to that jointly the contextual variables (climate, leadership, work resources, workload) were related to experiencing the organization as more creative and innovative. Study III pointed at the importance of the individual and the culture, as well, to the experience of creativity. These subsystems are discussed below.

The creative individual

In line with the mainstream literature, the personality of the creative actor was viewed in study III as the cause of the creative accomplishment. This indicates that creativity to a large part is considered to be an individual function. Being unrestrained , open minded, flexible, challenge driven, and possessing skills like analogical, divergent and convergent thinking were identified as some of the most important characteristics of creativity. However, the results showed that even if creativity was viewed as an individual characteristic, the context influenced how creativity was expressed. This is consistent with interactionist theories on that the social context, influences the personality and thus also how creativity is expressed (Hemlin, et al., 2004). The influence of the context on creativity is discussed below in terms of how the climate, the work resources, workload, and the culture affect employee creativity.

Climate for creativity and innovation

A creative organizational climate or a team climate for innovation is not a direct measure of organizational creativity but the results of study I are in

line with other studies that have showed important links between a creative climate and innovative organizations (e.g., Amabile et al., 1996; Ekvall, 1990, Ekvall & Ryhammar, 1999; West, 1990). Although not directly measured, the results of study III also pointed at that the climate is crucial for how creativity is expressed in the organization.

Generally, the results showed that when the climate facilitates creativity and innovation, e.g., when there is time and support for idea-development, a dynamic environment, risk taking, and a tolerance for failure, the more creative and innovative is the organizations rated. The results of study III pointed out climate characteristics such as interpersonal and intergroup level competition, interpersonal conflicts, and political cannibalism as impeding for creativity. These characteristics are associated with bureaucratic organizations (Agrell & Gustafson, 1996; Sonnenberg & Goldberg, 1992), indicating that the employees in study III, despite the transition of the organization from being hierarchical to a process orientation, to a large extent experienced the organization as bureaucratic with regard to creativity.

Leadership

Being an important contextual aspect, leadership has important implications for the organization. The result of study I pointed to that a change/employee leader, who is experienced as considerate, and facilitates change and employee creativity, is related to higher levels of reported organizational creativity in the context of the suggested model. However, the individual relationship between leadership and organizational creativity was not significant. One possible reason is that the climate, which refers to various conditions at the work place, includes leadership. An important leader competence identified in study III was supporting and providing employees with opportunities to interrupt habit patterns. However, the engineers in study III didn't experience encouragement from leadership for doing things differently because that would take too much time and impede efficiency. But to interrupt habit patterns is one important competence of a leader (Barrett, 1998) in relation to creativity because it can

help people to find new and fresh ideas, meanings and relations (Cropley, 1999).

Work resources

In line with Amabile et al.'s notion (1996) that an organization can affect the individuals to either engage or withdraw from creative behaviours through providing or withholding resources study I and III pointed to similar results. The results of study I indicated that merely having the subjective notion that one has access to resources, also makes one rate the organization as more creative and innovative. Although not tested, apprehending the organization as creative and innovative can in turn stimulate the individual to engage in creative behaviours more often.

Workload

In the research of Amabile et al. (1996) workload is negatively associated to creativity. However, other researchers, as for example Hardy and West (2000) (cited in West, 2002), found that high work demands are significant predictors of individual innovation, suggesting that the more work overload, the more likely is innovation. The results of study I pointed at that when workload was a part of the hypothesised model. That is, in combination with climate for creativity and innovations, change/employee-oriented leader style, and work resources, workload was negatively related to the ratings of organizational creativity. This indicated that the less one perceived workload in the context of the model, the more one rated the organization as creative and innovative. However, the single relationship showed that workload was not related to the ratings of organizational creativity on a significant level. A possible explanation is that workload may be a moderating variable that has a more indirect influence. The reliability of the workload scale (.43) was low and may also be one possible reason why it wasn't related to organizational creativity as was assumed.

Organizational culture

The results of study III pointed out that creativity is viewed as a risky behaviour, and that if the culture supports risk taking, double loop learning, uses adequate reward systems, and does not punish people for trying new

things, then people will take the risk to be creative. But if the culture impedes risk taking, freedom, and withholds resources, the outcome will be that creativity is likely to be on the decline and innovation is not likely to happen.

The interpretation in study III was that the engineers had learned which behaviours benefited them the most and more often used those behaviours that were positively reinforced by the organization. However, the reported behaviours that were positively reinforced by the organization signalled to the engineers that creativity is not a worthwhile behaviour, even to the extent that the engineers were punished when taking the freedom to be creative. Reported signs of structure dependency, organizational defence routines, political cannibalism, bureaucracy, weak organizational synergy, and weak interest to get the overall picture, were all experienced as decreasing the motivation to be creative and take risks because the pressure to follow standard procedures weighed heavier than the urge to be creative and explore.

Under such circumstances the individual will not engage in creative behaviour because the habitual behaviours are more attractive for them (Ford, 1996; Gioia & Poole, 1984). This implies an obvious risk that potential and original ideas are lost because change and the unknown are, for different reasons, difficult to manage in the organization. Consequently it was reported that experimenting is ruled out in the organization. This implies a tendency towards not taking risks and avoiding the risks of error and failure, which have long been seen as important learning sources as they can provide new opportunities and fresh perspectives (e.g., Amabile et al., 2004; Ekvall, 1990).

Conclusions of the subsystems

According to Bjerke, a tendency to change to stagnating forms can be found in organizations after they reach success (Bjerke, cited in Carlsson, 2004). Further, Bjerke notes that successful companies tend to develop from being innovators to administrators with time. But organizations in dynamic and competitive marketplaces need to innovate constantly be-

cause in such environments it is not sufficient for an organization to innovate merely once.

To be of a competitive value and retain its position at the market, the organization needs to interact with systems outside and inside the organization (e.g., Capra, 1996; Csikszentmihalyi, 1990). This can be accomplished by constantly expanding the frames of the organization through providing the employees with opportunities to be creative so that the products or services offered are still of interest to the market. If the frames expand, the organization can increase the growth and economical foundations it is standing on by increasing the conditions for employee creativity.

These frames, which are illustrated in Figure 1 below, may expand, as was suggested in study I, by increasing the climate for creativity and innovation, applying more change- and relation-oriented leader styles, providing employees with work resources, and lessening negative workload. Study III also pointed to that the frames can be expanded if the culture encourages people to be creative and take risks and show high levels of tolerance for failure. In creative and innovative organizations one may say that the frames are enlarging and supporting employee creativity and innovation. In stagnating organizations the frames appear to get narrower with time and become more bureaucratic and less creative.

Because stagnating companies do not tend to prioritize development, they are likely to become vulnerable to changes in the external world. Due to inflexibility that characterises stagnating organizations, they may also lack the ability to react to change adequately. A creative and innovative company, on the other hand, is less vulnerable and can adapt and grow with the changes in the external world. Thus, by increasing organizational creativity the company is more apt to secure success (Amabile et al., 2004; Ekvall, 1999).

Furthermore, based on the results of study III, Figure 1 illustrates that creativity, which was mainly identified to be a cognitive process from the views of the development engineers, can be expressed in different ways in

the organization; C_n. C_1 is achieved within the frames of the "box" and C_2 is achieved with an "out-of-the-box" thinking. An "out-of-the-box" thinking is a more common term for De Bono's (1970) "lateral thinking." In both cases the terms refer to the effort of putting aside commonly accepted beliefs or constraints.

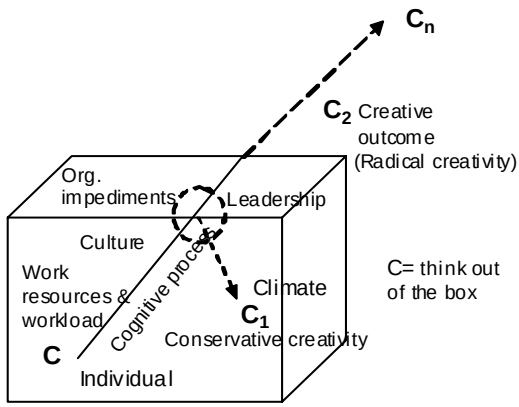

Figure 1. Perspectives on creativity and innovation in the organization. The different concepts are examples of different contextual aspects that can impede or facilitate organizational creativity.

The thinking process which De Bono' identified as lateral corresponds to the concepts of divergent thinking. This would mean that in general an "out-of-box" thinking represents a radically new way of looking at things while an "in-the-box" thinking represents a restrictive thinking. However, in contrast to that view the general impression is that creativity can also exist within the "box" and may apply to a different kind of creativity. The other type of creativity might be related to a convergent thinking which also has been identified as important for creativity (Cropley, 2006).

The participants in study III also differentiated between convergent and divergent creativity, and experienced both thinking processes as important for creativity, but with a preference for the latter one. It appears as if the minor changes are felt to take place in the organization. This was referred to by the participants as conservative creativity. However, this seems more

like convergent thinking. Instead, creativity was defined by the participants as the creation of something totally new where divergent thinking was experienced as more central, referred to in the literature as radical creativity (e.g., Ekvall, 1997). Radical creativity refers to the production of something completely new, which is expressed in revolutionizing products, ideas, and processes. Adaptive creativity refers to the improvement of the old. Depending on how the company is organized, one or the other type of creativity is supported. A high emphasis on structures for example facilitates adaptive creativity but blocks radical creativity, because the latter is facilitated in loose and vague environments Ekvall (1990).

It may perhaps be stated that one type of creativity is not better than the other, since both are viewed as important in the literature. According to Mezias and Glynn (1993) it is easy for companies to implement small improvements. On the other hand, radical innovation has long been seen as an important driving force to not only cultural evolution, but also for organizational survival. In study III, the small improvements were viewed as conservative changes that hindered the engineers from being "really" creative as they themselves expressed it, which referred to for example developing sidetracks or in other terms to radical creativity? It is also possible that the views of the engineers on conservative creativity could reflect the transition to more bureaucratic forms (Adizes, 1988) as they referred conservative creativity to the acts of negative bureaucracy.

Furthermore, study I and II stressed the positive impact of creativity and the assumption was that increasing creativity has positive effects. However, as it has been stressed earlier creativity has also a negative side. This negative nature of creativity was reported in study III and expressed as defences at personal and organizational level, territorial thinking, competition at interpersonal level, political cannibalism, and other signs of power struggles. These negative aspects of creativity created different kinds of feelings such as powerlessness, frustrations, and a sense of being invisible and replaceable. Creativity does not always bring positive advantages, but by being aware of the negative side one can counteract them by for example removing inadequate defence routines, increasing flexibility and inde-

pendency, providing resources, support, time, and adequate rewards for creative behaviours.

It may be possible that study I and II which emphasised the positive sides of creativity may have reflected an adaptive or everyday creativity, while study III, which emphasised the negative aspects of creativity, reflected the radical nature of creativity, or a lack of radical creativity. An interpretation is that the negative side of creativity may be more apparent in the case of radical creativity, because such creativity is more often followed by resistance and opposition for different reasons. Adaptive creativity, on the other hand, does not require as much effort, is not ground breaking, and hence may not signify a threat.

One may question if the negative results found in study III were due to the organization being rigid and negatively bureaucratic, or if the development engineers, who are a self-motivated, driving, and creative profession, experienced the conditions for radical creativity as more restricting than other professions. Because they are working with highly creative work tasks, they may experience more hinders and impediments to creativity.

However, I find indications on that the organization (B) restricts the creativity of the engineers. The values and norms that constituted the organizational culture, signalled to the employees that creativity was not a worthwhile behaviour and that doing things according to the process with the big P was the "right" way. Speculatively, their history may also have impeded the engineers in their efforts to be creative and innovative in two ways. First, due to a reported conservative creativity and lack of opportunities to work with side tracks, the engineers may have been restricted from achieving radical creativity. Secondly, the company appears to be dragging a history of interpersonal conflicts, intrigues, and territorial thinking. These difficulties were still to date reported by the engineers as inadequate defences, political cannibalism, and collaboration difficulties among other things, and may have made it difficult for them to be radically creative. This may depend on that radical creativity can signify

threats and conflicts of interests which in turn make it difficult to implement creativity in organizations that prefers a state of equilibrium.

Well-being

The second aim of this thesis dealt with the relationship between organizational creativity and the psychological well-being of the employees. The higher the organization was rated as creative and innovative, the better was the assessed well-being of the employees. Further, the higher the organizational climate was rated, the fewer were the reported stress symptoms.

To the awareness of the author the relationship between organizational creativity and psychological well-being has not been examined in organizational settings. The theoretical support for this relationship in study I has been drawn from the research relating positive and negative affects to creativity. It should be noted that affects and well-being should not be equalized. While measures of affects often measure activation, valence or arousal (Watson & Tellegen, 1985), well-being often refers to the overall effectiveness of an individual's psychological and social functioning (Cropanzano & Wright, 2001) and is not tied to any particular context or situation (Warr, 1987).

Study I took a positive approach to psychological well-being and the result implied that as organizational creativity increased, happiness, enthusiasm, and optimism also increased. This may be due to the wider range of behavioural options that is the result of optimizing the organizational conditions for the individual to behave creatively. The possibility to learn by spotting opportunities then may increase instead of a learning that is triggered by problems as is the case in organizations where there is a tendency to rely on routines (Barrett, 1998).

Study II took a negative approach and stressed the lack of well-being in terms of experienced stress. The reached conclusion was that the more the organizational climate was rated as creative, the less were the reported

stress symptoms. This can indicate that increasing a climate for creativity could be a mean to deal with the stress facing employees.

Although living in a time of globalisation, technological, and economical growth, change is not always experienced as positive. On the contrary, change is often associated with negative attitudes in employees (Vakola & Nikolaou, 2005). Forslin and Kira (2000) note that the negative attitude towards change may be due to the type of changes organizations have faced in the recent decades. These changes, for example organizational downsizing and upsizing, have been identified as common changes of the 21st century (Parker, Chmiel, & Wall, 1997), and are associated with ill-health consequences among employees (Vahtera, Kivimäki, Pentti, 1997; Westerland et al., 2004).

According to Forslin and Kira (2000), innovations fail as a consequence of not providing the employees with opportunities to understand and reflect on the changes they face. Furthermore, Forslin and Kira state that other sources of failure are the hard demands and fast working pace that employees face in combination with lesser employment security and lack of resources. These variables may not only contribute to failing innovations but can also be a source to stress and ill-health.

It is believed in this thesis that by providing employees with conditions and opportunities to be creative and innovative, many of the negative impacts of change can be dealt with. The results of study I and II point to that by increasing organizational creativity and the conditions for it, the employees may deal with the negative impacts of change. The different problems, incongruities, and dissatisfaction that employees face at work can create stress or other negative reactions and the results of study I and II indicated that by increasing organizational creativity and the conditions for it, one also decrease employee stress and increase positive emotions such as happiness, enthusiasm, optimism, and less experienced stress-related symptoms.

It may be that negative feelings evoke creativity, and the use of organizational creativity may be a coping strategy to increase well-being and decrease stress. However, these thoughts are speculative. The causality of the relationship is not tested, which makes it difficult to state whether experiencing organizational creativity makes one feel happier and less stressed or whether it is the other way around. However, the result of study I pointed to that psychological well-being is followed by ratings of organizational creativity. Increasing organizational creativity and a climate for creativity could be means to increase well-being and deal with the stress which employees face. The benefit could be that the individuals learn to adapt to the environment by introducing innovations, which may in turn induce better psychological well-being in terms of being less stressed, more happy, enthusiastic, and optimistic.

Strangely, the results showed that well-being is not predicted by organizational climate for creativity, but by an employee/relation-oriented leadership style consistently across all groups (gender and educational background). Ekvall and Arvonen (1991) state that the employee/relation-oriented leadership is not related to satisfaction with the job itself, but only to the satisfaction with the leader. However, our results indicated the importance of an employee-oriented leader style for the well-being of the employees, which was also found in Arvonen's (1995) study. However, the results of Arvonen also found positive relationships between well-being and the other two leadership styles: change/development, product/task-, and employee/relation-orientations. These relationships were not confirmed in study II, except for the employee-oriented leader style.

Furthermore, the results of study II indicated sociocultural differences in the experience of stress, organizational climate, leadership style, and workload. The gender aspect has been raised by many researchers as an important factor. According to Hägenstam (2000) men often point to organizational impediments or lack of resources and women tend to often get worried. The results of study II indicated that women experienced more stress and workload than men, and a slightly significant difference in the climate

for creativity, which showed that women experienced less time to develop new ideas than men.

The socio-economical status of the employee has also been identified as an important individual difference that can contribute to different experiences in an organization (Schneider, Gunnarson, & Niles-Jolly, 1994)). Our results confirm few studies that have been conducted in this area. These results have shown that well educated employees experienced a more favourable climate for creativity and a more change/employee-oriented leadership than less educated. It is possible that due to experiencing a high socio-economical status, more varying work tasks, and power, well educated employees also experience the climate as more favourable for their creativity and the leadership as supporting and stimulating their creativity.

Method Discussion

Different methods to measure creativity in organizations have been discussed frequently and often one wondered whether the instruments that are available today are of any value or not. Ratings of organizational creativity are investigated from the perspective of the individuals in the organization in this thesis. These ratings are based on self-reports, not on independent measures of existing creativity and innovation in the organization such as ratings of experts who judge the creative outcome with the criteria of originality, novelty, and usefulness (Zhou & Shalley, 2003). Other possible approaches that could have been used involve the measurement of the number of patents, research papers, technical reports, or ideas submitted in employee suggestion boxes (Zhou & Shalley, 2003).

Despite being tested for both validity and reliability it is not impossible that the instruments used in the three studies are affected by other variables, for example social desirability. If social desirability takes place, the answers may be biased. However, social desirability is often limited to questions that measure private or personal issues. All the instruments used in study I and II except for the stress and well-being assessments, require the participant to judge the amount of resources and workload,

organizational climate, team climate, the leadership style, and organizational creativity on an objective level, which does not involve the employee by herself or himself. The questions do not relate to how the person behaves but how the mentioned variables such as for example the climate or leadership style of the supervisor is perceived.

One instrument, where social desirability may be an issue, is the assessment of the psychological well-being, which operates at the individual level. The items in GWBQ (Cox & Griffiths, 1995b) can be interpreted as too private as they include for example insomnia and issues regarding the intimate sphere of the respondent. Warr's (1990) well-being is also at a personal level and relates affects like depressed, gloomy, happy, and enthusiastic directly to aspects of work.

Even if the aim of study III was not to measure the creativity of the participants it is possible that they may have interpreted the investigation as an investigation of their own creativity as development engineers. Other social effects in relation to the instruments used in study III are social desirability and social pressure to conform to the mainstream viewpoint of the group that might have taken place especially in the focus groups.

The items used to measure the subjective experience of organizational creativity were inspired from KEYS (Amabile et al., 1995) and have thus no validity or reliability reference, which makes the ability to relate and compare the result to other studies restricted. These items were furthermore only two and the application of only two items and the generalisation to other measurements of organizational creativity may be questioned. However, the significant relationships found between the ratings of organizational creativity and the joint contribution of organizational climate for creativity, team climate for innovation, leadership, work resources, and workload are in general consistent with the results of other studies (e.g., Amabile et al., 1996; Ekvall, 1990; West, 1990). The use of perceptions as a measurement of organizational creativity also confirms the results of Amabile and colleagues (1996), implying that perceptions of organiza-

tional creativity can be used as an indirect measure of a creative and innovative organization.

To what extent then are the results of this thesis possible to generalize to other contexts? Due to the small number of participants the generalization of the results to other contexts may be questioned. But it is argued here that the results are such that they may to a large extent be applicable to other type of organizations and contexts with similar work tasks and organizational settings. The results may be applicable in other contexts, as the variables of interest, for example psycho-social climate and leadership, are of relevance to all organizations. However, the low number of participants in all three studies may still be a risk because they might not reflect the general perceptions and experiences of the whole organization (company A) or people working with creative work tasks (Company B) to a larger extent.

Another restriction to generalizability is the limited number of organizations that this study is based on. Study I and II are based on the same organization and this limits the degree to which one can generalize the results. Further, some of the measurements (scales) that were used in study I are reused in study II. This can for example also mean that study I and II do not provide independent support for the relationship between organizational creativity and psychological well-being as the relationships are based on the same participants in both studies.

However, as different instruments were used to investigate the relationship between well-being and organizational creativity in study I, and stress and organizational climate for creativity in study II, the results may also support each other. This may be the case especially since the two different instruments of well-being that were used in study I and II didn't correlate with each other, indicating that these instruments measured different aspects of well-being. At the same time, a negative relationship between the two well-being scales would have been preferred, since it was stressed that while study I took a positive approach to well-being, study II took a negative approach toward it.

There are other relevant variables that have been associated to well-being and stress in the research literature. For example personal resources (aspects of the self that are related to resiliency) have also been suggested to be a factor that limits the negative effects of stress (Bandura, 1997). Schaufeli and Enzmann (1998) concluded that the strongest correlate of burnout (emotional exhaustion) was neuroticism. Other predictors of well-being and lower stress are for example work tasks with a varying nature that require one to use one's skills and knowledge (Warr, 2005), clear work roles (Beehr & Glazer, 2005), social support (Sauter, Murphy, & Hurell, 1990), and control and participation (Theorell, 2003; Warr, 2005). To relate these aspects that were not investigated in the present thesis to organizational creativity could be of interest in future studies.

The degree of generalization of the results from some of the instrument used in this study can be questioned. Both organizational climate for creativity (Ekvall, 1990) and CPE leadership styles (Ekvall & Arvonen, 1991) are developed in Scandinavia and thus reflects Scandinavian conditions. A version of Creative Climate Questionnaire (CCQ), the Situational Outlook Questionnaire (Isaksen, Lauer, & Ekvall, 1999), has been translated and used in the US to investigate aspects of creative climates, and the instrument has been shown to be valid and reliable. However, there are studies that have been critical to CCQ (e.g., Mathisen & Einarsen, 2004). For example, CCQ has been criticized due to the lack of unreported background data, psychometric qualities. Furthermore, the study of Isaksen et al. (1999) showed that the dimension dynamism was removed, which meant that only 9 of the 10 dimensions were significant.

Study III used a grounded theory approach. Such an approach requires that the researcher rids her-himself of expectations. It is impossible to achieve that ideal state, since each and one of us works and exists within a context and as such it is impossible to be totally free-standing. Further, the "theory-free" level that is aspired in grounded theory methodology was also impossible to achieve because the ability to understand and analyse the data involves identification of patterns or connections, and to address

key underlying issues, which requires among other things, theoretical knowledge, professional experience, and training.

Due to preconceived notions of the researcher, hidden or unconscious factors, lack of trust in the researcher, or other factors, relevant aspects or information may not have been revealed. A disadvantage of the CIT and focus groups is that to gain full collaboration, one need to build trust on beforehand. In the focus groups the ambition was that the role of the researcher should be in the periphery. But due to slow discussions, the role of the researcher became more like a facilitator. The risk of influencing the participants both consciously and unconsciously therefore probably increased, which can have lead to different kinds of methodological shortcomings or bias.

One of the strengths of the thesis is the application of various methods in the study of creativity. The three studies in the present thesis fall within the functionalist and interpretative paradigms. Both study I and II, which to a large extent were inspired by research of Amabile and colleagues (1996), Ekvall (1990), fall within the functionalist paradigm. The functionalist paradigm is very suitable for profit organizations because they imply that organizational creativity can be measured for example in terms of perceptions of creative behaviours that one can use to improve performance and innovation, which will give the organization competitive and financial benefits. The third study (study III) falls in the interpretative paradigm because the concern is to describe the experiences of the individuals as the researchers are interpreting it. It is believed that the study of organizational creativity is enriched by investigating and exploring it from different paradigms as well as combining different paradigms to apprehend organizational creativity better. A multiparadigmatic approach is therefore stressed to be used in future studies as it can generate different perspectives on creativity.

Although organization B was not measured for creativity, one may speculate whether the negative results in study III indicate that organization B is less creative than A, or if the they reflect a difference in the

methodology?. Purely speculating, it may be possible that organization A is more innovative than B. While the assessed climate for creativity in study II indicated that organization A is innovative, the statements of the engineers in study III pointed at sings of negative bureaucracy and restrictive organizational creativity, Although organization B made a transition from a traditional and hierarchical organization into a process oriented organization relatively recently, the results point to that in their attempt to renew themselves they may not have succeeded completely. Many of the values that the company (B) hinges on, as reported by the informants, are associated with a hierarchical organization and negative forms of bureaucracy.

Furthermore, it may also be possible that the results are due to methodological aspects. Speculatively, it is possible that if the organizational climate for creativity had been measured in organization B, the results would have indicated a creative organization. This may be possible because the informants constantly signalled different opinions. While expressing the notion that the company is stimulating their creativity, signs of inadequate defences, political cannibalism, economical restraints, and lack of resources, to mention few, pointed at the direct opposite.

Further research

Despite that the importance of the context in which organizational creativity is expressed has been stressed by several researchers, much work is still left to be done to understand the impact of the context. As Hemlin et al. (2004) note, the conclusion that Woodman and colleagues (1993) reached that little is known about how the creative process works in a complex social systems such as organizations, is still valid more than ten years later.

The assumed contextual variables in study I were chosen as they have been linked to organizational creativity in the literature. However, there are other organizational aspects that have been associated to creativity in the research literature. For example creativity has been related to organizational learning (Ford, 2002), information and knowledge management (Styhre & Sundgren, 2003), and entrepreneurship (Bjerke, 2005). It would

be of interest to investigate how these aspects relate to organizational creativity as a complement to the investigated aspects in this thesis. Furthermore, the combinations in future studies of perceptions of contextual aspects, including organizational creativity, with independent measures of organizational creativity may be a way to further investigate the impact of the context on employee creativity.

Another important and interesting area in creativity research is gender differences. Among others Härenstam et al. (2000) has emphasized the importance of including gender aspects in studies of organizational behaviour. Yet so far research has not showed any significant consistent results (Baer, 1999; Kaufman, 2006).

An important relationship that was established in study I and II was the link between psychological well-being and organizational creativity. However, the question of how organizational creativity can influence the psychological well-being of an individual needs more research. It was concluded in study I that perceptions of organizational creativity lead to a better well-being and in study II it was concluded that experiencing a creative climate was related to lower levels of reported stress or ill health. But it can also be that people high in well-being rates the organization as more creative and innovative, and the climate as more creative. To make any inferences and clarify the relationship of causality more research is needed.

Much of the work that does exist within this area has focused on the role of positive affects in laboratory settings or investigated the role of negative emotions in geniuses and aspects of psychopathology on creative behaviours (e.g., schizophrenia and creativity, Schuldberg & Sass, 1999). More work that supports both positive and negative affects of well-being in professions that can be found in organizations (e.g., Human Resources-personnel, engineers, managers etc.) is needed. On the organizational level, the relationship between individual well-being and number of days with sick-leave, i.e. more closely related to organizational health, is important to investigate further.

Conclusions

On an overall level, the results supported the importance of the social context for employee creativity. The results obtained in study I and III are generally consistent with earlier research on interactionist approaches toward creativity in organizations (e.g., Amabile, et al., 1996; Oldham & Cummings, 1996) and points to that the context may not only provide the arena for individual cognition and action but may also be an important part in the creative action as the individual. This is inline with the notion of Hemlin and colleagues (2004) that the environment, including the individual as an important part, has a great influence on how creativity is expressed.

Another important implication of the results was that the benefit of increasing organizational creativity and a climate for creativity is not only important to attain competitive value and remain attractive in the market, but is also beneficial for the individual in terms of a better psychological well-being. Even if the direction of the influence was not tested, the assumption was that to feel psychologically well, one needs to experience the organisation as creative and innovative. However, to make an assumption about the direction of the relationship more research is needed, because it may be that experiencing well-being may lead to rating the organization as more creative and innovative.

10 SUMMARY IN SWEDISH

Inledning

Organisationer drivs till en stor del av rutiner och standardiserade processer som bidrar t.ex. till effektivitet och bättre kommunikation. Men när dessa rutiner och standard procedurer utvecklas till normer kan det blir svårare att vara kreativ och att upptäcka alternativa och kanske bättre lösningar. Kreativitet definieras som produktionen av nya, releventa och användbara ideér. Innovation definieras som implementeringen av dessa ideér (Amabile, 1996).

Hur kreativ en organisation är beror till exempel på hur mycket organisationen accepterar att man tar risker och misslyckas, utmanar rådande normer och etablerar ett klimat som stödjer kreativitet (e.g., Amabile, 1996; Ekvall, 1990). I byråkratiska organisationer där man förlitar sig oflexibelt på rutiner finns det ofta inte stort utrymme för ett annorlunda tänkande eftersom nya idéer ofta uppfattas som hot (Agrell & Gustafson, 1996). I organisationer som uppmuntrar risktagande, nya idéer och intellektuella diskussioner, har en heterogen personal, ger utrymme för lekfullhet, skapar en miljö där man inte behöver vara rädd för negativa utvärderingar hittar man ofta ett stort utrymme för kreativitet (Amabile, 1996; Ekvall, 1990; West, 1990, 2002). Tillgång till resurser (människor, lokaler, pengar, möten, material, information, verktyg osv.) har också visat sig vara viktigt för att uppmuntra kreativt beteende. Forskningen har också visat att för hög arbetsbelastning är negativt och kan hindra kreativitet och innovation. Ett uppmuntrande ledarskap som skapar stöd och entusiasm för nya idéer i en miljö utan hot om att bli utvärderad har också pekats ut som en viktig kontextuell faktor för kreativitet och innovation (Amabile et al., 2004).

Att kreativitet och innovation kan bidra till en ekonomisk tillväxt är allmänt känt. I denna avhandling föreslås det att kreativtet och innovation

också kan leda till ett bättre psykologiskt välbefinnande för individen. För att hantera de hot som de flesta organisationer idag möter på arbetsmarknaden i form av konkurrens, organisationsförändringar, sammanslagningar osv. bör organisationer förändras i takt med att omgivningen förändras. Bemöter man inte förändringar på ett bra sätt riskerar man få en personal som känner sig stressade och mår dåligt (Cunningham, Woodward, Harry & MacIntosh, 2002). I föreliggande avhandling föreslås det att om man ökar organisatorisk kreativitet och innovation samt skapar ett klimat som stödjer och stimulerar kreativitet och innovation, så kan man också minska stressen och öka det psykologiska välbefinnandet för de anställda.

Således är syftena i denna avhandling att dels undersöka hur kontextuella faktorer är relaterade till kreativitet och innovation samt hur relationen mellan välbefinnande och organisationskreativitet och innovation ser ut.

Empiriskt material

Det empiriska materialet som ligger till grund för denna avhandling kommer från två processorganisationer. Studie I och II är således baserade på samma deltagare (totalt 94 resp. 95) och organisation (företag A) samt även delvis samma skalor. Deltagarna i studie III var 13 utvecklingsingenjörer från en annan organisation (företag B). Båda företagen är högteknologiska industriföretag, globala och världsledande inom sin respective bransch och betonar kreativitet och innovation som ett av sina främsta kärnvärden. Drygt hälften av deltagarna i företag A hade en akademisk bakgrund och samtliga informanter i företag B hade en akademisk bakgrund varav en minoritet hade en doktorsexamen.

Studie I

Syftet i studie I var att testa en modell som dels antog en relation mellan organisationskreativitet och innovation och kontextuella variabler, dels en relation mellan organisationskreativitet och innovation och psykologiskt välbefinnade ur de anställdas perspektiv. Modellen testades statistiskt och visade sig vara signifikant i sin helhet. Tillsammans var organisationsklimat, teamklimat, relation/förändrings-orienterat ledarskap, arbets-

resurser och arbetsbelastningar signifikant relateterade till organisationskreativitet och innovation. De enskilda relationerna visade dock att endast två variabler var relaterade till organisationskreativiet och innovation. Ju mer man bedömde organisationsklimatet som kreativt och ju mer arbetsresurser man uppfattade, desto mer bedömde man organisationen som kreativ och innovativ.

Den andra hypotesen i modellen blev också bekräftad och visade att ju mer man bedömde organisationen som kreativ och innovativ, desto bättre mådde man. Denna relation har enligt författarens kännedom inte bekräftats i den organisatoriska forskningen. Resultatet pekade på att organisationskreativitet och innovation möjligtvis föregås av ett psykologiskt välbefinnande men mer forskning behövs för att undersöka kausaliteten.

Studie II

Syftet med studie II var att undersöka om det finns en relation mellan stress och ett kreativt organisationsklimat, relations- och förändringsorienterat ledarskap, arbetsresurser och låga nivåer av arbetsbelastningar samt att undersöka om stress prediceras av dessa ovannända variabler med hänsyn till sociokulturella skillnader som kön och utbildningsbakgrund (akademiker/icke-akademiker).

Resultatet visade att ju mer kreativt man bedömde organisationsklimatet, ju mer relations-orienterat ledarskapet uppfattades, desto mindre stress upplevde man som anställd.

När de sociokulturella skillnaderna undersöktes, visades att kvinnorna rapporterade mer stress och arbetsbelastning än män. Anställda med icke-akademisk utbildning upplevde klimatet för kreativitet som mindre fördelsaktigt och ledarskapet som mer kontrollerande och produktionsorienterat. Detta resultat får delvis stöd i tidigare forskning som har visat att kvinnor ofta stöter på fler barriärer i arbetslivet än deras manliga kollegor (e.g., Härenstam med flera, 2000; West, 1997), samt att personer

med högre status i organisationen har fler tillgångar och möjligheter än dem med lägre status (e.g., Ekvall, 1996).

Studie III

Med frågeställningen *hur rekonstrueras begreppet kreativitet i en kontext bestående av utvecklingsingenjörer* var det av intresse att fånga utvecklingsingenjörers egna ord eller uttryck för vad som utmärker kreativitet i deras professionella roll. Resultatet pekade på att det inte finns utrymme eller möjligheter att vara radikalt kreativ p.g.a ekonomiska begränsningar, tidsbrist, organisationsförsvar, politisk kannibalism, samarbetssvårigheter, och svagt intresse för att se helheten. Vidare rapporterade man en upplevelse av en konservativ kreativitet eftersom man sysslade med samma material och samma arbetsmetoder hela tiden, vilket gav mindre utrymme för att utveckla sidospår. Ekvall (1997) refererar till dessa skillnader som adaptiv och innovativ kreativitet. Adaptiv kreativitet innebär att man förbättrar det gamla medan innovativ kreativitet innebär att man skapar något helt nytt. Resultat av studie III pekade på att företaget föredrar den adaptiva kreativiteten, men att även denna var begränsad av företagets betoning på rutiner och ingrodda sätt att arbeta på.

Slutsatser

Resultaten av samtliga studier visade att kreativitet och innovation är processer som påverkas av kontextuella faktorer. Generellt är resultatet i i linje med tidigare interaktionistisk forskning (e.g., Amabile et a., 1996). Men som Woodman och kollegor (1993) och även Hemlin och kollegor (2004) mer än tio år senare noterar är kunskapen fortfarande liten om den sociala kontextens inverkan på kreativitet i komplexa system som organisationer. Både studie I och II indikerar att organisationskreativitet och innovation kan ha andra fördelar än de rent ekonomiska då relationen till det psykologiska välbefinnandet etablerades. Dock behövs det fortfarande mer forskning om kausaliteten och stöd för detta samband för att man ska förstå vilka kopplingar det finns mellan nyskapande inom organisationer och de anställdas välbefinnande och hälsa.

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Model examining the relationships between organizational factors, organizational creativity and innovation, and individual well-being

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The two aims of this paper were to investigate the relationship between organizational factors and organizational creativity and innovation as well as the relationship between organizational creativity and innovation and psychological well-being of the employees. 95 employees working in a high-tech field of industry participated in the study. The two relationships were tested in a LISREL model and the results showed that organizational climate, team climate, change/employee-oriented leadership, work resources, and workload were all together related to organizational creativity and innovation, and that organizational creativity and innovation was related to the well-being of the employees. However, looking in detail, not all relationships in the first hypothesis were significant. Organizational climate followed by work resources were the only organizational factors that were significantly related to organizational creativity and innovation. Taken together the results suggest that enhancing the conditions for creativity and innovation is not only beneficial for the organization but also beneficial for the individual in terms of better psychological well-being.

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Employee stress in relation to perceived creative organizational climate, leadership style, work resources, and workload

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The aims of this study were to examine the relationships between stress and creative organizational climate, leadership styles, work resources, workload, and to predict stress on the basis of these variables. Data was collected from 94 employees. Stress-related symptoms were measured with Cox's GWBQ, organizational climate for creativity with Ekvall's CCQ, leadership style with Ekvall and Arvonen's CPE, and workload and work resources with a questionnaire. The more creative the organizational climate was perceived and the more employee/relation-oriented the leadership style was perceived, the less were the reported stress levels among the employees. Work resources and workload were not significantly associated to stress. However, the only factor predicting stress was leadership style. Regarding gender and educational background differences the results showed that women perceived more stress and workload than men, and employees with academic background perceived a more favourable CCQ, more change/development- and employee/relation-oriented leadership than non-academics.

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“Conservative creativity” A contextual perspective on organizational creativity

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In developmental organizations with a process-orientation creativity and innovation are often prioritized as top values. In this study the aim was to investigate how employees with creative work tasks in a process-oriented organization define creativity and how the organization they work in enhances or impedes creativity from the perspectives of the employees. The investigation was conducted at a global company and 13 development engineers participated. Critical Incidence Technique in text and interview form and focus groups were used to collect data. Organizational and individual factors were identified and discussed in five different themes: individual creativity, “in-the-box creativity,” organizational defence, collaboration, and organizational synergy. The results indicated two types of creativity, radical and adaptive creativity. The latter one, adaptive creativity, was referred to as a “conservative in-the-box thinking” from the creative point of view.

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APPENDIX A

Roles

All roles will be described from four perspectives: traits, ethics, fixations (hang-ups), and whether their role is bringing the organization success or disadvantage.

The Creator

Traits: A norm breaking person who is driven by curiosity and has a strong ego.
Ethics: The creator can at times be ruthless to other people's ideas, and considers own ideas as superior.
Hang-ups: Has an ego-fixation.
Success/disadvantage: This person is beneficial to the organization in the long term and brings success but needs to be guided toward the organizational goals and missions.

The Pessimist

Traits: A realistic but also a negative and controlling person, spreads negative energy. Pessimist is person who always says no.
Ethics: Doesn't care about the consequences of own behaviour, wants to control the environment.
Hang-ups: Power and control need.
Success/disadvantage: Pessimist, in the role of the person who always says no, has an important function for the group dynamic and can either provoke to development or stagnation with negativity. Pessimist should not have too much influence in the decision-making and should not be introduced to the project in the beginning phases.

The optimist

Traits: Is the person who always says yes. Optimist spreads positive energy but this person's viewpoints are somewhat blinded and not so realistic. Optimist often crosses the frames for budget.
Ethics: Is positive for the group and encourages everyone else, and is a good cliff.
Hang-ups: Has a tendency to say yes to everything, even when the project is a bad one. Has an ambition to achieve perfection and can sometimes hide realistic views to preserve the image of being an optimist.
Success/disadvantage: Is good for group dynamic in the early phases but the aspiration for perfectionism and an image as the optimist can blind this person.

The traditional

Traits: Is a culture carrier and stands for the values of orderliness and structure. Says often: *Why change? It is good as it is.* Traditional finds security in habitual actions. This person wants everything to be handled as they always have been handled and opposes novelty.
Ethics: Can sometimes be conservative in nature and kill novel ideas.
Hang-ups: This person is very insecure when it comes to the unknown and wants to retreat in those situations.
Success/disadvantage: Success is achieved through being a culture carrier and through creating orderliness, but this same aspiration for orderliness is also of great disadvantage for aspects such as creativity.

The Credulous

Traits: This person often ignores negative aspects, and is blind when it comes to detecting defects in one's work. Is more of an inside-the-box thinker than an outside-the-box. Wants to fit in the box, is scared of conflicts and has an invisible character.

Ethics: Is ready to give up own values and viewpoints to fit in. This person always change views so they always can be in accordance to the rest of the group
Hang-ups: Wants to fit in and does everything to do so, including abandoning values and principles.
Success/disadvantage: This character is not likely to be creative and contribute to the development of the box. However, this character is wanted especially when the organization doesn't want people who questions things.

The Cannibal
Traits: Is a creativity thief, listens and steals, damps the group dynamic, has a strong confirmation need, and do not trust own ability.
Ethics: Very weak ethics, does not hesitate to steal or eat some one standing in the way. Cannibal has a disloyal personality and a strong ego.
Hang-ups: A great need for power, which has its roots in not trusting own ability.
Success/disadvantage: A great need for power is doomed to fail when working with other people such as in the organizational context.

The Critic
Traits: Questions and doubts everything, interferes with constructive structures, has a hard time in identifying the target for his critic. Is related to Pessimist and can't tolerate Credulous.
Ethics: Doesn't care about whose toes he/she steps on.
Hang-ups: Needs attention
Success/disadvantage: Can be of great value to the organization because this person will question in-the-box thinking and propose new ways of thinking.
The Politician
Traits: Has a diplomatic personality and is related to Diplomat. Is a *don't walk the talk* character. Is the one who makes everything so political that nothing is done. Politics is for this person more important than the results.
Ethics: Very smooth person who avoids taking responsibility.
Hang-ups: Telling the truth.
Success/disadvantage: Is good when there are conflicts that have no concrete solutions but a disadvantage because this person gets nothing done.

The Diplomat
Traits: Takes away invisible barriers before they get visible and neutralizes internal politics. Sees conflicts as opportunities
Ethics: Very good manners, considers both parties before reaching a fair conclusion
Hang-ups: High ideals, e.g., about fairness.
Success/disadvantage: Is the perfect complement for Creator because Creator won't have to face and deal with unnecessary conflicts when Diplomat is there.

The Researcher
Traits: Seeker, expert in a field, analytical, outsider. Can get blinded by own knowledge and expertise.
Ethics: always being considerate but can at times act superior.
Hang-ups: This person has hang-ups with being objective because this state can never be reached completely. The researcher has own frames that may hinder her/him from going "out of the box."
Success/disadvantage: Identifies problems and can bring knowledge into the organization if accepted by the organization and not looked at as an outsider. Researcher can be considered as a provocateur who constantly reminds people/organizations of their blind spots.

APPENDIX B
Scene 1

The Coffee Break Scene
Scenery: Coffee room
Story: Individual Creativity
Roles: Cannibal, Creator, Credulous Critic, Diplomat, Optimist, Pessimist, Politician, Traditional, and Researcher.

Cannibal stands up and puts his coffee cup on the table. He looks at his colleagues with respect and taps his cup.

Cannibal: It is an honour for me to have such competent work colleagues as you. Today is a usual coffee break but I would still like to honour and support your talent when it comes to supporting me so that we together can find creative solutions in the Box. After all, to create novelty I need your existing knowledge. Thank you and cheers![1]

Cannibal sits down. Critic becomes so upset by Cannibal's speech that he cannot stop himself from questioning Cannibal and stands up and screams:

Critic: Who in the whole world gave you the freedom to take the word and state that you are the most important among us? I don't understand how you at all have contributed to this Box except for taking the credit and I say this without being critical![2]

Cannibal replies back with a self-right attitude and says:

Cannibal: Dear Critic, we all know who in this Box comes with the most novel, original, aesthetic and of course useful ideas, and thus is the most creative of us all.[3] I don't think I need to say that it is I who have the ability to imagine and visualize.[4]

Pessimist: My dear Cannibal, if that is true, which I doubt strongly, it is because you eat up other's work and take the honour for it!

Politician finds an opportunity to intervene:

Politician: Now, let us calm down. There is no need for us to get political. We all contribute. Maybe everyone doesn't contribute equally much but we all do contribute with something in different ways. While some of us have self-interests in it, others get their inspiration to be creative from their families or other private sources.[5] But no matter where our inspiration comes from, we all contribute

[1] Cannibal salutes himself and states that he as an individual stands for the creative solutions in the Box, by this he takes a individualistic view of creativity and states that creator alone is the causer of creative achievements.
[2] The Critic, as himself, stands for the trait perspective on creativity, where characteristics such as being critical, seeing what others don't see, independence of judgment, ego strength and preference for complexity (Barron, 1990) is applied to the creative personality. See categories *personality* and *motivation and inspiration.*
[3] The creativity outcome is usually judged by these three criteria; novelty, value and elegance (Besemer & O´Quin, 1987). See categories *creative quality/novelty* and *cognitive skills.*
[4] Imagination is a referred to as a critical cognitive skill in creativity (Singer, 1999). See category *cognitive skills*.
[5] See category *motivation and inspiration.*

to creativity in the Box. But I must say that merely having the imagination of Creator is not enough, or even having the hunger as Cannibal does, the intellectual curiosity of Critic and the openness of the Optimist are not enough. One should also have the flexibility of a politician, as I have, to be really successful![6]

Credulous: I have seen a lot of accomplishments and I am still seeing a lot of effort and ongoing creative project so I really don't think this is something to make a fuss about, especially now that we are having such a good coffee.

Pessimist: Who the hell said that it is good coffee?

Optimist: Why of course… the coffee may be not that good but we will soon have a new coffee machine that is ordered. But I believe that everyone is contributing a lot to the creative work in this Box but my personal opinion is that I, in this group of diversities,[7] am the one who contributes with the most optimistic views and that also makes me the most important person in this Box. To be self aware, I guess my weak point is the budget. But to be optimistic and the most forceful and driving are the most important attributions one can have in this Box.[8] I own these attributions and I don't feel ashamed for that.

Traditional: So be it, all honour to being optimist and creative, but to be a traditionalist means to have a realistic view that stops one from loosing one's way in the Box. Without structures we can't find our way out of the labyrinth.[9] Besides, we cannot go around and be creative all the time. We have real work to do, but if we can use creativity as a tool and especially to get more efficient in our work, then I agree on increasing creativity.[10]

Creator: Lost?! Loosing one's way! That is what will take us to new roads and that is what will build and secure our future! Without my visionary thinking you would not even make it to coffee![11]
Traditional [to Creator]: I don't understand were you get your creativity from! The way you go around and invent without our awareness can't be good.[12] Besides you never succeed in selling your ideas because they are too wild!
Creator: I get inspired from my life, nature and children... but I guess I do it because I want to see myself reflected in the masterpieces I do inside the Box.[13]

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[6] Traits that are associated to creativity (Barron, 1988; Barron and Harrington, 1981). See categories *cognitive skills* and *personality.*
[7] Diversity in knowledge and skills is considered to enhance creativity (Paulus, 1999). See categories *cognitive skills* and *personality.*
[8] High levels of energy, self-confidence, arrogance, hostility, and power needs characterises creative people (Fesit, 1999). See category *personality.*
[9] Claims that both divergent thinking (associated with creativity) and convergent thinking (one right solution per problem) are needed in creative processes (McGrath, 1984; Nemeth, Mosier, & Chiles 1992). See category *cognitive skills.* Hand in hand with these abilities Traditional also states that both disorder and order is needed to create but emphasises order. See category *disorder/order.* Further, traditional along with the Pessimist has an important role in the group's dynamic (Axelson & Thylefors, 2005). Their function is to be the person who always says no to everything, which could be useful at later stages of the creative process, for example in the form of convergent thinking (Nemeth et al., 1992).
[10] Refers the ambition in Adam's Box to maximize efficiency and use creativity as a tool. See category *competence for efficient creativity*.
[11] Creativity means to shake things up both in our mind and in our outside world (Barron, 1990) and disorder is needed to create order (Taylor, 2001). See category *disorder/order.*
[12] While some researchers state that surveillance can be detrimental to creativity (Sternberg & Lubart, 1999), others state that under some circumstances it can trigger creativity (e.g., Amabile, 1996).

Traditional: Ha! You are prestige driven.[14]

The temperature rises in the air and to calm down Creator and Traditional, Diplomat says:

Diplomat: We need Creator equally much as we need Traditional. Without the one, the other would neither exist or be appreciated.[15] I don't think this issue is worth squabbling over. Instead we should look after each other's interests and we should see this conflict as a resource and an inspiration to create.[16]

Critic: This is an interesting discussion. First of all, I don't see this as a conflict. Secondly, does this mean that the individual is more important than the group?[17]

Cannibal stands up again and ends this coffee break discussion with the following words:

Cannibal: I am very sorry for the misunderstanding. You all seem to misinterpret me. I don't have a need of self-assertion. Nor do I need to take the credit and I think that none of you should have this need either. Deep down we all know who of us is always there, always doing that extra thing and I am not going to say who it is because all of you will get upset all over again. But think for one moment, how would things have been if I hadn't been around to interrupt the pattern or the coffee pause. Without my provocation there would be no dialog to a future. Thank you.[18]
Cannibal sits down. A silence was spread in the room and everyone went out. In silent Researcher was asking herself: Who can win against Cannibal?

SCENE 2

The Company Jazz Band Scene
Scenery: Meeting room
Story: The team has been given the task to form a band and in this scene they are talking about the choice of the song to be played.
Roles: Cannibal, Creator, Credulous, Critic, Diplomat, Optimist, Pessimist, Traditional, and Researcher.

Cannibal: I have a new song!

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[13] Inspiration to be creative comes from private life and the motivation to be creative in the professional role comes from self-interest. See category *motivation and inspiration.*
[14] Prestige as a motivation to be creative. See category *motivation and inspiration*.
[15] Both disorder and order is necessary for creativity. Muntouri state that creativity has often been viewed as emerging from the opposite of order and that order and disorder has been viewed as binary opposites recent scientific research has shifted to a deeper understanding of order-disorder as containing a mutual constitutive relationship. See category *disorder/order.*
[16] Creative people tend to see problems as challenges and opportunities (Thurston & Runco, 1999) – a trait of Optimist. See categories *personality* and *motivation and inspiration.*
[17] Creativity is referred to as an individual trait (Barron, 1988) and as opposed to group creativity (Montuori, 2003) and with that a distinction is made and a dichotomy is created between either individual or group which is representative of our cultural understandings where this kind of thinking leads people to choose one above the other instead of seeing them as co-existing (Montuori & Purser, 1999).
See category *social creativity*.
[18] To see new ideas and meanings and opportunities one need to interrupting patterns and routines, and question "unquestioned" norms and assumptions (Barrett, 1998). See category *creative quality/novelty* and *personality.*

Cannibal sings a piece but is interrupted very fast by an upset Pessimist.
Pessimist: It's not your song. I have been hearing Creator hymning to that song since weeks!
Traditional: Wait wait…I have a song, which we have always used here. Let's sing *we are the world…* Let our history and traditions strengthen us![19]

Pessimist: I know that we are told to steal with pride, but it's an old song.

Cannibal: Okay, now I have a song…

Pessimist: You are wearing an ipod!

Creator: Why don't we create a song from scratch?

Pessimist: That would take too much effort and time. And besides we have been successful before when using old material.[20]
Optimist: But singing the same songs as we did 10 years ago will not take us to new markets.[21]
Critic: Researcher asked us if we would survive and still be around after 20 - 50 years. How can we do that if we continue to sing same songs as we did in the past?![22]

Diplomat: Now listen, we have a problem to come up with a song. Let this inspire us![23]
Traditional: I actually suggest that we use old songs according to the standard procedure that was developed to choose songs[24]. It has created success before and that is what we are encouraged to do.[25]

Creator: Standard procedure to be innovative! That is to bureaucratise innovation![26]

Optimist: I agree with you, Creator, if we don't have the time we can improvise.[27] But we do need something new.

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[19]The temptation to rely on behaviours that have proven to be effective in past performance is stronger in organizations than to create fresh improvisations (Gioia, 1988). See categories *history*, *conformity,* and *structure dependency.*

[20] Because of the risk involved in improvising and playing something that is incoherent, one is often tempted to rely on behaviours that are within one's range of convenience (Barrett, 1998). An organizational culture that fights any kind of change often holds and spreads the belief that the way things have been done in the past is how things should be done in the future and therefore creates and maintains a status quo. Such cultures often develop self- defences that are associated with single loop learning (Argyris, 1990). See categories *conformity, pseudo-creativity* and *structure dependency.*

[21] Refers to an organization's tendency to rely on routines and the tendency to generate the same response even when stimuli change (Weick 1991). See category *pseudo-creativity.*

[22] See categories *history* and *pseudo-creativity.*

[23] In organizations that are routine-oriented learning is often triggered by problems (Hedberg, 1981). See category *structure dependency.*

[24] Argyris (1990) refers to the use of safe processes and formulas that repeat past success as a competency trap that hinders one from seeing fresh perspectives. See categories *history, conformity, pseudo-creativity* and *structure dependency.*

[25] A leadership that encourages automatic and safe responses instead of encouraging to mindfulness and imagination will not improve innovation or creativity in the organization (Barrett, 1998). See categories *history, conformity, pseudo-creativity,* and *structure dependency.*

[26] See category *bureaucratic creativity and innovation.*

[27] To improvise is in the popular mind to create something temporary, not as good as the usual, but in lack of better options this can do for the time being (Montuori, 2003).

Traditional: That's too risky! What if we get caught! That would be so embarrassing![28]
Creator: If there is no use for me then why am I here?! Are we told to be creative just to look good on the paper?[29]

Credulous: Last time we made a mistake, they [leaders] didn't say anything. Actually they decided to ignore it.[30]

Critic: The leaders won't give us their support. They would rather prefer us to use old songs so we can finish in time rather than risking something that is uncertain to them.[31]
Diplomat: Well, if we face failure, we can see it as an opportunity to learn.[32]

Critic: It is not what they want. To avoid error is on their priority list.[33]
Pessimist: Oh, come on now! Does all of this really matter? If we don't come up with a song they will replace us with people who can without any greater effort. It is not as if we are given any time to reflect over our actions[34]…

The argument went on about which song to play. Traditional won this time and Creator had to give in. But finally when they agreed on a song they faced some problems in singing that song.

Traditional: Creator you cannot just suddenly sing a different version when the rest of us are not! You are breaking the cohesion and coordination of the group![35]

Creator: Why not? I agreed to sing an old song and now that we have repeated the song everyone knows where we have each other. Now is the time to be free and improvise.[36]
Traditional: you have to follow standard procedures just like the rest of us! That is what we were instructed to do![37]

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[28] Disorder and errors are avoided because disorder is seen as the source of error and uncertainty (Montuori & Purser, 1999). Traditional (who is a conformist) therefore prefers conformity and non-disruptiveness to unpredictability and impulsiveness (Barron, 1990). If one doesn't question this, single loop learning (Argyris, 1990) will take place, which basically not only allows but also preserves anti-learning in a dynamic context as the organization is. See category *structure dependency* and *organizational defence.*

[29] What appears to be a prioritized organizational aspect formally, as for example efficiency, may actually be hampered or worked against informally and become pseudo-efficiency (Argyris, 1971). In this case creativity and innovation are the organizational aspects that are hampered to become pseudo-creativity. See category *pseudo-creativity.*

[30] This is a sign of an organizational defence routine, which aims to suppress what is uncomfortable and threatening or embarrassing (Argyris, 1992). See category *organizational defence.*

[31] Refers to a stagnated climate where there is neither time nor support for developing creative ideas because risk taking is not valued, in contrast to a creative climate (Ekvall, 1999). The extent to which the environment supports new ideas is significantly associated to creativity (Ekvall, 1999).
See category pseudo-creativity and *structure dependency*.

[32] Represents the view that when organizations embrace errors as a source of learning they can achieve success (Barrett, 1998). However, most organizations try to avoid errors because these represent uncertainty and disorder (Montuori, 2003).

[33] See category *organizational defence.*

[34] See category *organizational defence* and *reflexivity.*

[35] An organization that is locked to its past tend to be conservative, question change and new and different ideas, and show an unwillingness to work with new methods (Agrell & Gustafson, 1996; Amabile, 1996). See category *conformity* and *structure dependency.*

[36] A good cohesion and coordination in the organization implies a good synergy (Argyris, 1990) and when such is achieved one can have the freedom to put time in creative efforts such as improvisation.

The fight continues and traditional forces win again because they are strong and they stick to their past like a back mirror that one always keeps looking in to decide where to drive next.

SCENE 3

The Movement of the Box Scene
Scenery: Adam's Box.
Story: Collaboration or lack of it.
Roles: Cannibal, Creator, Credulous, Critic, Diplomat, Optimist, Pessimist, Traditional, and Researcher.

One Friday night Creator and Optimist made a genius plan to make the box moving. Creator and Optimist had put wheels on the Box[38] and the plan was to make the box roll into new markets. For this they intended to use the force of the box, the people[39] and their differences.[40] As they introduced the plan for the others on Monday morning, they met resistance from some and applauses from other. To make the Box mowing all who were negative had to go to one side and those who were positive had to go to the other side and when the box started to move, they all run over to the positive side and then to the negative side and so on. Together they made the Box move toward new places and new markets. The plan is to continually keep the box moving so new positions can be reached all the time.[41]
One day Adam's Box stopped moving and the people inside were fighting about whether they had stopped at the right place or not. While Optimist believed that they were on the right place, Pessimist thought that they once again were on the wrong place.[42]

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[37] Organizations that have high levels of structure (dependency) constrain flexibility, creativity and innovation. Fewer structures will create more space for flexibility and thus increase organizational success (Barrett, 1998). In conservative and bureaucratic environments where structures are given too much room, creativity and innovation are stifled. The purpose of holding on to structures and routines is to increase efficiency (Ekvall, 1990; Sonnenberg & Goldberg, 1992). As result, a self-defensive competition, that could be devastating to the organization, is often encouraged (Amabile, 1996; Argyris, 1990).
See category *pseudo-creativity* and *structure dependency.*

[38] Creativity involves pushing boundaries and moving out of comfort zones (Barron, 1990). In doing so the importance of social creativity (the collaboration of two or more individuals that results in a creative outcome) has been emphasised by researchers such as Montuori and Purser (1999). See category *collaboration.*

[39] Organizational synergy (Argyris, 1990) refers to a joint effort between different parts of an organization and aims to make the organization work as one unity. It is the close coordination of the efforts and resources of individuals working together that makes the performance of the whole greater than the sum of the parts. See category *organizational synergy.*

[40] Diversity in teams has been shown to be important for achieving creativity in many studies (e.g., Paulus, 1999; Paulus, Brown, & Ortega, 1999; Simons Palled, & Smith, 1999). Individuals with differing professional backgrounds, knowledge, skills and abilities, tend to be more innovative than individuals who are similar because they bring usefully differing perspectives on issues to the group. However, Kurtzberg (2005) state that homogenous groups may experience higher levels of creativity as these groups tend to experience more cohesion and positive affects. See category *collaboration.*

[41] To create movement and chaos is viewed as an important part of creativity (Barron, 1990) and brings possibilities to organizations (Montuori, 2003). See category *collaboration.*

[42]Due to weak collaboration Adam's Box stops moving and the inadequate use of organizational efforts and resources makes them believe they are at the wrong place. See categories *collaboration* and *organizational synergy.*

Cannibal: No, it is the right place. We haven't been here before so it must be right. There must be lots of opportunities here.

Diplomat: Let us not fight now but instead turn this to our benefit even if we would have been at the wrong place.

The argument continued and people opted for a position that strengthened their ego. The argument ended in a division of the Box in three smaller boxes, three gangs. Each gang rolled in different directions.[43] One box was left behind and the following dialogs took place in that box.

Optimist: We are the best group because we are at the right place.
Credulous: Yes! We are the winner team.

Creator: The other boxes have probably rolled directly down to the employment service!

They all laughed and continued with their winner attitude. But it didn't take long before doubt and mutiny against the leaders dominated the atmosphere.[44] It was Cannibal whom had staged this coup.

Pessimist: How can we be sure that we are at the right place in the right time? What if the other boxes are ahead of us and we are left behind? We can't see them, can we?[45]

Optimist: They are not ahead of us.[46] We have time and luck on our side.

Critic: We have been led as blind men by our dog guide and no one has realized that![47]

As the discussion goes on in arguing over whether they are at the right place at the right time and who is to blame, they hear a faraway call. It is Optimist in the second box who shouts:

Optimist: Where are you?! We are on the right place because we know the right people. Can we cooperate?[48]
Pessimist in the third box replies:

Pessimist: Why should we? Besides you think you are at the right place because that is what your leaders want you to think.[49]

The silence in the first box, which was left behind, spoke for itself.

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[43] Weak organizational synergy due to lack of or weak coordination of resources (Argyris, 1990). See category *organizational synergy.*
[44] Expresses the view that when there is an absence of strong leaders employees may feel unvalued, and as a result of the way they are being treated by management dissatisfaction can arise. See category *leadership.*
[45] See category *organizational synergy*.
[46] See category *organizational synergy*.
[47] Refers to the relationship between leadership and employees as illustrated in Mc Gregor's theory-X and theory-Y (cited in Landy & Conte, 2004). While Y theory is more in accordance with the process thinking (Hammer, 1996) that Adam's Box have adopted in recent years and where individuals are seen as highly interested and self-motivated, the experience in Adam's Box seem to be that of theory X, which asserts that individuals should be controlled and led. See category *leadership.*
[48] A willingness to cooperate among employees is present, but whether the organizational structures enhances or inhibits it is another question. See category *leadership.*
[49] Refers to a distrust towards leaders. See category *leadership.*

Optimist in box 2: Send us your best player and we will send you ours.

Cannibal in box 3: That sounds like a good idea. Send us your best players first.[50]

As the dialog between the second and the third box got more intensified, the first box realized that they will be outplayed if they do not collaborate.[51]
Traditional in box 2: If you want to work with us you have to fill in some bureaucratic blankets.[52]
Inside the first box Cannibal says to his gang:

Cannibal: We cannot send them our best player and give them our best material. That would be collective suicide![53]

Traditional: Yes, Cannibal is right. Why should we give them our best ideas?[54]

Critic: I wonder why the leaders thought it was good move to divide the box in three boxes.[55] Not only do we have to fill in forms to collaborate but also we have to keep eyes on the other boxes so they don't roll ahead of us, and we are not good at that![56]

Creator: whatever the reasons may be,[57] I feel inspired to develop better ideas than the other Boxes!

Credulous: and I feel a stronger social commitment and a sense of unity between us.[58]

Diplomat: let us use this opportunity to create our own norms, visions and plans.[59]

Exited and enthusiastic about they all sat down in the box to create a sense of identity and give their box a personality which they can use to create a border between what is inside and outside their Box.

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[50] Refers to a cannibalistic act, in which one department absorbs the creative resources (people, ideas, work, products etc) of the other departments. See category *political cannibalism.*
[51] Teams constitute the organizing principle in most modern creative behaviours and innovation (Cohen & Bailey, 1997). As creativity and innovation in organizations are defined by some researchers as the result of the collaboration between people (e.g., Muntouri & Purser, 1999), many researchers have focused on the importance of team creativity (Bain, Mann, & Pirola-Merlo, 2001; Burningham & West, 1995).
[52] Refers to a bureaucracy, which can create organizational defences, be a hindrance to creativity, innovation, and collaboration (Sonnenberg & Goldberg, 1992). See category *collaboration*.
[53] See category *political cannibalism.*
[54] Internal competition is experienced to also have positive side-effects in terms of higher motivation to do better than their colleagues. See category *political cannibalism.*
[55] See category *leadership.*
[56] See category *the big picture.*
[57] Creator says that line with a cynical attitude because he understands that the underlying reasons are political, but despite that he tries to oversee that and get inspired. See category *political cannibalism.*
[58] See category *social interests.*
[59] As a consequence of the division each box develops a subculture because the organizational culture is no longer relevant for the boxes since there is no unity. Each box develops its own interests, norms, visions, budgets, responsibilities, processes, routines, traditions and so on (Landy & Conte, 2004). See category *social interests.*

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