

## **Collective stress and coping in the context of organizational culture**

Hannakaisa Länsisalmi

*Andersen Consulting, Finland*

José M. Peiró

*Department of Social Psychology, University of Valencia, Spain*

Mika Kivimäki

*Department of Psychology, University of Helsinki, Finland*

We examined from a cultural perspective how well-being was collectively defined, what were the sources of collective stress, and what kind of collective coping mechanisms were used to alleviate such stress in three divisions of a multinational company. In the first phase of the study we collected data on organizational culture by using individual thematic interviews ( $N = 63$ ). Applying the grounded theory methodology and an inductive analysis, specific cultures describing the divisions were identified. In terms of co-operation we found the following fundamental cultural recipes: joint focused efforts on money-making, despite the awareness of the common goals employees interested only in fulfilling their own role (jig-saw puzzle), and the awareness of the common goals lacking (scattered islands). In the second phase we conducted group interviews ( $N = 32$ ) using the critical incident technique to assess collective definitions of well-being, sources of collective stress and respective collective coping mechanisms. These data were complemented with observations at the work site, participant observations at meetings, and analysis of documents. The definitions of well-being varied across cultures as regards their emphasis either on work or on other life domains as sources of well-being. Furthermore, the more hectic the organizational context, the more permissive the collective conception of well-being was. Collective stress emerged as a response to two types of signals: (1) adaptation to the environment of the division or work unit was imperfect (fluctuation, risk of unemployment, continuously changing customer needs, poor client satisfaction, multinational game, group bonus, culture shock due to a merger, work overload, and pressure toward more extensive autonomy), or (2) friction inside the community (undervaluation of a group of employees, and the “penal colony” reputation). Of the corresponding coping mechanisms, a large proportion were found to be collective, learned uniform

---

Requests for reprints should be addressed to H. Länsisalmi, Andersen Consulting, Itämerenkatu 1, PO Box 1109, FIN-00101 Helsinki, Finland. Email: [hannakaisa.lansisalmi@ac.com](mailto:hannakaisa.lansisalmi@ac.com)

responses to remove the stressor, to change the interpretation of the situation or to alleviate negative feelings. In conclusion, our results suggest that stress experiences and coping strategies have collective qualities. Culture not only seems to moderate the appraisal of stress, but also contains collective coping responses to stressors, which seem to have their origin either in the organizational environment or inside the community itself.

Organizational psychology has recently been marked by a trend of moving from an individualistic point of view toward a more integrated view based on social psychology, sociology, and anthropology (Peiró, 1990; Schein, 1996). The resulting increased interest in social constructivism, in the field, might be a reflection of the turbulence and change that organizations are trying to deal with in their current business environments (Rousseau, 1997). Signs of an evolution toward more holistic and context-dependent explanations of organizational phenomena can be observed also in traditionally individual-focused areas of research, such as the stress studies. In the recent literature, there appear suggestions of the collective nature of stress experiences and coping (Cox, 1990; Handy, 1991, 1995; Newton, 1989, 1995; Semmer, Zapf, & Greif, 1996), evidence of relationships between individual stress-related behaviour patterns and organizational culture (Porter, 1996) and questioning of the universality of the traditional interpretation of individually experienced stress in different organizational contexts (Abbott, 1990; Barley & Knight, 1992; Meyerson, 1994).

The present study attempts to shed more light on the theme of stress and coping by applying an organizational culture perspective. More specifically, we examine the sources of collective stress in an organization and collective coping mechanisms that exist to alleviate such stress. By collective stress we think of stress as a cultural artefact (Fineman, 1995), that results when members of a particular organizational culture as a group perceive a certain event as stressful. Collective coping, then, consists of the learned, uniform responses that members within the culture manifest when trying either to remove the stressor, to change the interpretation of the situation, or to alleviate the shared negative feelings it produces.

## EMOTIONAL EXPERIENCES AND STRESS IN ORGANIZATIONS

Stress-related emotions form only one category of the extensive variety of feelings that the experience of work is saturated with. The different explanations for how emotions are experienced, in general, can be roughly divided into two main categories (Ashforth & Humphrey, 1995). The first one, called the naturalistic and positivistic perspective, emphasizes the individuality of emotional reactions. Originally, it referred to the conception that specific situational stimuli elicit specific emotions which are universal, automatic, and

biologically determined. Later on, however, this conception of emotions was broadened by adding a cognitive component, appraisal, to this simple stimulus response chain (Lazarus, 1993). The second category, called the social constructivist and the symbolic interactionist approach, in turn, suggests that emotional reactions are moderated by social or symbolic interaction. A given stimulus is assumed to elicit various emotions depending on the social context where the interpretation takes place. Thus, the social context, such as societal, organizational, or departmental culture, partially determines the interpretation of the emotional tune of the situation—threat vs no threat—and, furthermore, dictates how one is supposed to react to it. This leads to the suggestion that stress experiences and coping can have collective qualities, a proposition that has been extensively studied in the field of catastrophe psychology (e.g., Hallmann & Wandersman, 1992; Pennebaker & Harber, 1993), but infrequently approached in empirical stress research in the context of organizations (Rousseau, 1998).

The few empirical studies, in the field, have focused on cultural connotations of stress, underlining its symbolic meaning in different social contexts. These studies have examined the dual role of the individual in this process—being the product and agent of his or her social cognition simultaneously (Abbott, 1990; Barley & Knight, 1992). Furthermore, Meyerson (1994) concentrated on the role of the interplay between institutional and organizational cultural contexts in the interpretation of stress-related experience in different organizations. The present study goes beyond these by examining, not only collective interpretations of stress, but also sources of collective stress and cultural determinants of such an experience. In more detail, our study examines what is regarded as well-being, how collective stress is produced, and what kind of strategies are used to alleviate collectively experienced stress in a particular organizational culture.

## THE CONCEPT OF ORGANIZATIONAL CULTURE

Schein (1990, p. 111) defines organizational culture as “a pattern of basic assumptions invented, discovered or developed by a given group, as it learns to cope with its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, is to be taught to new members entering the organization as the correct way to perceive, think, and feel in relation to those problems”. Another definition suggests variations to Schein’s theme, by defining culture as a mix of values, beliefs, assumptions, meanings, and expectations that members of a particular group hold in common, and that they use as behaviour and problem-solving cues (Hodge & Anthony, 1988). What is common for these definitions is that both of them make reference to the idea of collective interpretation of stressful situations and collective coping strategies. These are automatic behaviour and cognitive patterns that provide meaning, stability, and comfort in an ambiguous situation (Schein, 1990). Thus, organizational culture functions as an important anxiety-reducing mechanism,

being for the group what defence mechanisms are for the individual (Hirschhorn 1987; Menzies, 1960; Schein, 1985).

The empirical studies in the field have included a variety of methodologies ranging from deductive survey research methodologies to inductive orientations such as historical, analytical descriptive, ethnographic, and clinical descriptive approaches (Barley, 1983; Bechard & Harris, 1977; Chandler, 1977; Dyer, 1986; French & Bell, 1984; Harris & Sutton, 1986; Martin & Siehl, 1983; Phillips, 1994; Sackmann, 1991a; Schall, 1983; Van Maanen, 1988; Westney, 1987). Since we were interested in developing, instead of testing, hypothesis about collective stress and coping within the context of organizational culture, we chose an inductive approach applying the grounded theory framework (see Glaser & Strauss, 1967; Strauss & Corbin, 1990; Turner, 1981). We combined an ethnographic perspective, emphasizing the exploration of the nature of a particular social phenomenon with unstructured data, with a clinical descriptive perspective which stresses interpretational aspects. Grounded theory methodologies were justifiable, as the application of the previously mentioned perspectives often results in large amounts of unstructured data, accumulating in rather non-standard and unpredictable formats (Martin & Turner, 1986; Turner, 1981). By applying such an approach we identified collective interpretations of well-being, sources of collective stress, and collective coping mechanisms in three divisions of a large multinational company.

## CASE DESCRIPTION AND METHODS

### Case description

The target organizations were three economically independent divisions (A, B, and C) of a multinational company operating in the field of metal industry. Until 1995, a year before the start of this study, these divisions formed part of the same Finnish subsidiary, after which they were separated and integrated into two different subsidiaries. This, in turn, resulted, among other things, in a restructuring of the organization. One work unit (X), originally forming part of division B, was merged with division C. Although, the multinational company formed a common context to all the target organizations, these rather independent organizational units operated in very different business environments.

### Phase 1

#### *Methods*

*Field data collection.* To help in understanding the collective sources of stress and coping mechanisms, we determined the organizational cultures of the three divisions by gathering descriptive data. The data were collected in 1996 by individual thematic interviews and complemented with observations at the work site, participant observations at meetings, and analysis of documents. A total of

63 informants were interviewed over a period of 3 months. The informants represented all the divisions, different professional groups, hierarchical levels, both sexes, and different age groups. The themes guiding the 1- to 2-hour interviews were: (1) the informant's own work and daily routines, (2) work-related values and company values, and (3) the informant's career history within the company and important events in the organization during this career.

Although the themes guided the interviews, the interviewer (the first author of this article) did not ask exactly the same questions each time. In this way each successive interview was used to expand understanding of the organizational culture. After each interview, the interviewer summarized the emerging themes and these summaries served as a basis for the reformulation and development of questions and testing of the emerging hypothesis. All the interviews were recorded and also extensive notes were taken during them. Based on these notes, 33 of the most informative interviews were transcribed, and the rest served as validation material in recorded form.

*Analysis.* An inductive analysis of the data was conducted following the basic principles of the grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 1990; Turner, 1981). The main aim was to generate a descriptive theory of the dominant organizational culture and/or subcultures present in the divisions, and to formulate preliminary hypothesis on how collective stress might be produced and coped with within these cultures.

The data were, first, read and categorized into concepts that were suggested by the data rather than imposed from outside, a procedure known as "open coding" (Strauss & Corbin, 1990). Once all the data were examined, the concepts were organized by themes, which became candidates for a set of stable and integrative categories. The properties and dimensions of each possible category were identified. The identification of integrative themes within each division and comparisons between divisions often required further analysis of the transcriptions. This iteration between data and concepts ended when enough categories and associated concepts were defined to describe the cultures of the divisions, a situation Glaser and Strauss (1967) refer to as "theoretical saturation" (Appendix 1). As a result of the ongoing iterative process, four subcultures were identified and distinguished by the following categories. The first two categories represent what Schein (1990, 1996) described as underlying basic assumptions and values and the third one observable artefacts, "products" of and manifest behaviours of a certain culture:

- fundamental recipe, that gave the "gestalt" to the culture and included the assumptions about the core task of each employee or the mission of the organization;
- guiding assumptions, consisting of assumptions, expectations, interpretations, and myths that guide the work and daily life in the divisions;

- work-related emotions, i.e., how one is supposed to feel in relation to work and the organization.

These categories were validated by comparing them with the information obtained through: (1) reading the summaries and listening to the tapes of the individual interviews not transcribed; (2) participant observations at the work site (i.e., the first author was present at the workplace during 22 interview days, spent 2 additional observation days in each division and participated in 11 meetings); (3) analyses of documents of and about the divisions and the whole company; and (4) cross-checking the validity of the choice of categories with selected informants' (two) individual interviews per division, and a public feedback session to the personnel of the divisions. Two additional procedures ensured that the data analysis was not entirely subjective: (1) During data analysis the first author had hours of detailed discussions about the cultural models with three colleagues, two of whom acted as consultants in organization development activities in the divisions; and (2) a random sample of the collected individual interview data was blindly reanalysed by the third author of this article. The discussion confirmed the validity of categories, and the first and the second analysis corresponded to each other. In total, the first phase of the study took a year to complete.

In the present study only those aspects of the subcultures, which have relevance in terms of collective stress and coping, are described in the results section.

## Phase 2

### *Methods*

*Field data collection.* Over a period of 1 month, in 1997, we conducted group interviews ( $N = 32$ ) covering a total of 90 informants in groups of 2 or 3 persons. The informants represented again the entire sample (cf., phase 1). Group interviews, instead of individual interviews, were preferred for two reasons. First, we wanted to increase the total number of informants used, in order to confirm the validity of the cultural models in a wider sample of the target population. Second, by interviewing a group of persons at the same time, we created a situation of social control that would minimize the emergence of individual interpretations and maximize the emergence of collective interpretations, which were the main interest of the present study.

The critical incidents technique was applied with the aim of specifying how collective stress is produced in the existing culture and what kinds of coping mechanisms are used to remove or alleviate collectively experienced stress. The specific themes guiding the interviews were: (1) definition of well-being and its components, (2) description of situations or events which result in the deterioration of employee well-being, and (3) description of situations or events which result in enhanced employee well-being.

*Analysis.* An inductive analysis was conducted, following the earlier described principles of grounded theory to confirm the validity of the cultural categories developed in the first phase, and to specify the relationship of these categories in each culture with collective stress and coping (Appendix 1). The following three thematic categories emerged in the analysis: (1) collective definitions of well-being; (2) collective stressors, defined as incidents and factors, interpreted by the members of the particular culture as stress-producing; and (3) respective collective problem-focused, appraisal-focused, and emotion-focused coping mechanisms, defined as learned uniform reactions to collectively experienced stress. The categories of coping mechanisms consisted of intentions to change the situation or the interpretation of the situation, and of efforts to manage the emotions that arise in response to threat (Lazarus & Folkman, 1984; Miller, Brody, & Summerton, 1988; Pearlin & Schooler, 1978).

## RESULTS

Descriptions of the subcultures are given in Table 1, for divisions A, B, and C, and work unit X. Definitions of well-being, stressors and coping mechanisms for each can be found in Table 2.

### Division A

Division A was a manufacturing division, operating in a business environment undergoing a shift from a rather stable environment towards a more competitive one. The production chain comprised five work units, within which the work was divided so that one or two employees normally performed a clearly limited set of tasks independently of the others.

#### *Definition of well-being*

In division A, well-being was interpreted as a balance between the different important aspects of life—work, family, physical health, and economic well-being, i.e., money in a bank account. Especially, the blue-collar workers emphasized the importance of the compensating effect of other areas of life on their overall well-being. Well-being could be detected in the behaviour of colleagues at work in social interaction situations. Signs of well-being were “not sulking”, “salutes” and “looks happy” (“one doesn’t have to smile all the time, though”). Own well-being was detected as: a positive attitude in the morning towards going to work, having resources during leisure hours for hobbies, and being able to sleep well.

#### *Sources of collective stress*

Three categories of collective stressors emerged in division A: fluctuation, risk of unemployment, and social undervaluation of “blue-collar” workers.

TABLE 1  
Description of the subcultures of divisions A, B, and C and work unit X

	<i>Division A</i>	<i>Division B</i>	<i>Division C</i>	<i>Work unit X</i>
(1) Fundamental recipe	Jig-saw puzzle	Making money	Scattered islands	Making money
(2) Guiding assumptions	Working is performing	Time is money	Hierarchy(authoritarian leadership)	Client focus
	Hierarchy	Client focus	Provide help only when asked	Time is money
		Myth of salesman		Organized co-operation
(3) Work-related emotions	Selfishness	Chaotic urgency	Mistrust, non-commitment	Hecticism
	Insecurity	Collective commitment	Isolation	Collective commitment
	Foreman vacuum	Helping one another (sense of belonging)	Inflexibility	Autonomy
		Pride		Equality
				Pride

TABLE 2  
Definitions of well-being, stressors, and coping mechanisms

	<i>Division B</i>	<i>Division C</i>	<i>Work unit X</i>
Definition of well-being	<ul style="list-style-type: none"> <li>Positive attitude towards work and life, healthy, emphasis on work as a source of well-being</li> <li>Signs: willingness to chat and co-operate, cheerfulness, good sense of humour</li> </ul>	<ul style="list-style-type: none"> <li>Regular income, emphasis on other spheres of life, apart from work, as sources of well-being</li> <li>Signs: not sulking or isolating</li> </ul>	<ul style="list-style-type: none"> <li>Balance between different spheres of life, emphasis on living an active life (life → just work)</li> <li>Signs: willingness to chat, cheerfulness, good sense of humour</li> </ul>

Stressors	<ul style="list-style-type: none"> <li>• fluctuation</li> <li>• risk of unemployment</li> <li>• social undervaluation</li> </ul>	<ul style="list-style-type: none"> <li>• constantly changing customer needs combined with shortage of time</li> <li>• poor client satisfaction</li> <li>• multinational game</li> </ul>	<ul style="list-style-type: none"> <li>• social undervaluation, “penal colony” reputation</li> <li>• risk of unemployment</li> <li>• implementation of group bonus system</li> </ul>	<ul style="list-style-type: none"> <li>• work overload</li> <li>• pressure towards more extensive autonomy (blue-collar workers)</li> <li>• culture shock due to a restructuring of the organization</li> </ul>
Coping	<p>problem-focused</p> <ul style="list-style-type: none"> <li>• collective responsibility</li> <li>• rotation of employees</li> <li>• rely on hierarchy</li> </ul>	<ul style="list-style-type: none"> <li>• “workaholism”</li> <li>• providing and relying on getting help</li> <li>• active sharing of information</li> </ul>	<ul style="list-style-type: none"> <li>• rely on hierarchy</li> <li>• watching and controlling peers, labelling lazy ones</li> </ul>	<ul style="list-style-type: none"> <li>• weekly meetings</li> <li>• providing and relying on getting help</li> <li>• solidarity in dividing aversive weekend work</li> <li>• clinging to “own group”</li> </ul>
appraisal and emotion-focused	<ul style="list-style-type: none"> <li>• climate (= few conflicts in own group)</li> <li>• blaming others</li> <li>• storytelling (“good old days”, “bun eating”)</li> </ul>	<ul style="list-style-type: none"> <li>• climate (= “perfect”, everyone gets along)</li> <li>• belonging to an “all stars” division compensates for sacrifices</li> <li>• stress interpreted as normal and as an admired state</li> </ul>	<ul style="list-style-type: none"> <li>• climate (= few destructive quarrels in own work group)</li> <li>• gossiping, creating conflicts with other groups</li> <li>• pottering</li> <li>• enhancing isolation, attributing “badness” outside of own division</li> <li>• storytelling (“good old days”, “we’re better” measured by other indicators)</li> </ul>	<ul style="list-style-type: none"> <li>• climate (= people get along well)</li> <li>• belonging to a good work unit (pride)</li> <li>• high degrees of freedom in the own job</li> <li>• storytelling (good old days with no hurry)</li> <li>• “making Porsche’s” metaphor</li> </ul>

*Fluctuation.* The production process was far from being fluent. Due to the recent introduction of lean ideology, warehouses were reduced and there were attempts to organize the production according to Time-Based Manufacturing (TBM) principles. As a result, there were often periods of overload and, occasionally, underload of work. Continuous product delays, furious customers, and angry peers created strain on all organizational levels. The cultural origins of this lack of fluency lay in the lack of co-operation between the different work units and hierarchical layers and selfishness. The lack of co-operation was rooted in the fundamental recipe, the jig-saw puzzle. In the jig-saw puzzle the core task of each individual was to carry out the tasks appointed to him or her and not to worry about the larger context. The assumption that the organization functioned, if every piece of the puzzle did his or her share well, guided the employees in their daily work. A guiding assumption, hierarchy, furthermore created gaps between organizational levels inhibiting fluent cross-hierarchical co-operation. Everyone had a specified role: The blue-collar workers were expected to do physical work (diligence was considered a virtue), the middle management and white-collar employees to organize work and work schedules and to provide help to the blue-collar workers in problematic situations (responsibility was considered a virtue), and the managers and sales personnel to take care of PR with clients, subsidiaries, and other parts of the company. The gaps between the levels were less distinctive than in past years, but the two extremes, the manual workers and the managers, hardly ever communicated face to face. Selfishness inhibiting production-chain fluency had increased as the multinational company put constantly more pressure to make better unit level results. Selfishness arose from a feeling that the different divisions, work units, and even individual workers were perceived to compete with each other. A continuous battle for the survival of the fittest had replaced the feeling of “doing our share for the common good”. These three cultural elements combined with scarce slack resources created a situation where a single human error could undermine the whole production process. Delays due to unavoidable errors and mistakes had a tendency to accumulate, resulting in accumulated stress especially in the last link of the production chain.

*Risk of unemployment.* Insecurity was created by incidents, such as lay-offs in the surrounding divisions, use of temporary workers, monitoring of productivity statistics, lows in the production, prohibition of working overtime, transfers of products to other plants and countries, and organizational changes. These incidents were experienced to occur in an unpredictable fashion and they were interpreted as signs of the division’s existence being in jeopardy. The psychological contract made with the employer had changed from “If I work according to the rules of the jig-saw puzzle organization, the employer provides me with a regular income until I retire” to “If I work according to organization rules, the employer might not fire me next month, if I’m lucky”. Although it was said that only money counted in the decisions on lay-offs, good economic results

did not seem to guarantee the continuity of existence, either. This interpretation was reflected in stories about other divisions making first-class results and still being forced to lay off people. Thus, the workers felt powerless regarding the continuity of their employment. Due to economic reasons, the lay-offs had concentrated on elderly workers (after a certain age, those laid off would get full compensation for unemployment provided by the State until they reached the “official” retirement age). However, retirement through getting “kicked out through the unemployment tube”—as it was called—was an undesirable end for one’s work career. It offended the workers’ pride and did not respect the fact that they had sacrificed their best years for the company.

*Social undervaluation of workers.* The social hierarchy was based on the quality of the work one was performing. The dirtier the job and the more inhumane the working conditions were, the lower the person found him/herself in the hierarchy. Also, the more directly the work was related to production and the more complete the pieces one produced, the higher the position in the hierarchy. Consequently, among blue-collar workers, those performing more supportive tasks (production of small components, warehouse, packing, etc.) or dirty jobs were undervalued. The division of people into “blue-collars” and “white-collars” was a stressor affecting a larger group of people and it was expressed in two types of stories. The first category, the “oppression stories”, dealt with situations in which white-collars and managers systematically ignored the workers’ opinions and interests. The second category consisted of “accident stories” in which the worker, typically, due to the management’s ignorance, was involved or might have easily been involved in a serious accident.

### *Collective coping*

*Problem-focused coping.* The problem-focused coping mechanisms mainly aimed at solving problems related to the stressor of fluctuation. Another result of the recently implemented lean ideology was a collective experience of a foreman vacuum. Middle managers had been eliminated or transferred to other tasks, and the word “foreman”, was banned. Thus, the workers were forced to adopt more responsibility for the whole production process. To solve the stressor of fluctuation, partly due to the foreman vacuum situation, a collective sense of responsibility over all the tasks appointed to one’s own unit had started to develop in the most seriously affected work units. Being in a hurry had become a shared feeling, which was interpreted to create cohesion among the members of one’s own group. Lazy employees were not tolerated. The development of collective responsibility was, furthermore, encouraged by the team development activities put in practice recently in the division.

Another means to control the stressor of fluctuation was creating flexibility by rotating workers in different tasks or by transferring employees to other departments in peak periods of work load. These activities were initiated by the “non-

existing” foremen. The guiding assumption working is performing present in the culture shared by the blue-collar workers included an “any work will do” attitude, which supported these actions. The hierarchy of jobs, however, made the transfers, occasionally, aversive. In the case of a really problematic situation, such as the absence of a key individual or a need for an extremely urgent delivery, one coped by relying on the hierarchy. The ex-foreman would take over and solve the problem.

*Emotion- and appraisal-focused coping.* A good climate in one’s own work group was perceived to relieve all kinds of tensions produced in everyday life. A good climate meant that there were no disruptive conflicts between people and that in a problematic situation the problem solving stayed on the work issue level, and did not become personal. The coffee breaks, during which people chatted, told jokes, and tried to cheer up individuals in a bad mood, were tension-relieving moments during the workday. Related to the fluctuation, blaming “others” was a common coping mechanism at all hierarchical levels. Risk of unemployment was coped with by telling stories of the “good old days”, when the employer had still taken care of the employees (Appendix 2).

The feeling of undervaluation was alleviated through storytelling. In addition to the earlier mentioned oppression and accident stories, the workers also told stories representing opposite interpretations, aiming at changing the interpretation of the situation. Normally, these consisted of different versions of the “bun-eating story” (Appendix 2). These reminded people of how much positive development in the blue-collar worker’s social position had taken place, when compared with the old days.

## Division B

Unlike the other divisions, division B had no manufacturing activities apart from a very small production unit not focused on in the present study. The business environment of division B was highly competitive and unpredictable. However, the division had a history of being very successful, having avoided the lay-offs affecting the other divisions and having the reputation of being a tough school, i.e., those who had passed it were successful career people who had “made it” in the company. The division continuously showed signs of growing, manifested for example by the constant hiring of new employees. The majority of the employees were engineers engaged in design work organized around projects of varying length. The different tasks in the projects were highly interdependent.

### *Definition of well-being*

In division B, well-being was defined as a positive attitude towards work and life and good physical health. The definitions were more work-centred than those in the other divisions. References to one’s private life in terms of well-being only included descriptions of situations in which it suffered because of work. Few

individuals claimed, though, that work could be clearly separated from leisure. Signs of well-being in colleagues, such as “willingness to chat and co-operate with peers” and cheerfulness (“smiles, laughs, has a sense of humour”), revealed the crucial role of climate for well-being at work. According to general opinion, however, each individual was responsible for his or her own well- or ill-being. Signs of well-being were ability to enjoy work (“comes to work happily”, “does not start counting the remaining work hours at 4 p.m.”), ability to perform the “impossible” at work and to appreciate small things in life. The signs of ill-being were severe stress symptoms such as not having any energy left after the working day, or drastic changes in one’s health (i.e., severe attacks of migraine or symptoms of ulcers).

### *Sources of collective stress*

Three collective stressors emerged in division B: constantly changing customer needs combined with shortage of time, poor client satisfaction and multinational game.

*Constantly changing customer needs.* The guiding assumption “time is money” combined with a high commitment to fulfil the continuously changing needs of multiple clients resulted in a work pattern characterized as scattered, lacking coherence and the ability to complete tasks without frequent interruptions. Employees were often dealing with several projects, being at different stages simultaneously, and in all of which one was forced to react to the impulses of the clients at short notice. Consequently, people felt they were working in a chaotic manner, not being able to plan their work in advance. The feeling of chaotic urgency dominated, being expressed as complaints about being in a hurry and experiences of total exhaustion, vividly coloured by stories of stress symptoms and tragic burn-out cases. Unpredictable difficulties and last-minute changes were mentioned as stress-producing events, and stress reactions were triggered by the “last-drop-in-the bucket”. Another source of strain produced in the chaos was lack of time. The shortage of time was blatantly evident with the newcomers entering the division. Instead of being mentored for their tasks, they found themselves in a “learn to swim or sink” situation. Seeing that everybody was extremely busy, the newcomers did not dare to ask for help from anybody, and simply had to learn through trial and error.

*Poor client satisfaction.* Money making, the ultimate goal of the division, was disturbed, if client satisfaction was put in jeopardy. For this reason, a loss of a client or a quiet season in the business was perceived as stressful.

*Multinational game.* To co-ordinate the efforts of the separate divisions the multinational company had specified the countries where each division was allowed to operate. This was perceived as a source of frustration as it limited the

opportunities to do successful business under constantly growing expectations. Another source of frustration related to the internal competition between the different divisions nurtured by the multinational company. Great amounts of time and resources were repeatedly wasted in sales attempts which, in the end, slipped to another division in another country. The employees referred to these stressors as “the multinational game”.

### *Collective coping*

*Problem-focused coping.* Collective commitment, helping one another and effective information sharing aimed at eliminating all the previously described stressors. The collective commitment sometimes resembled “workaholism” and an “I would sacrifice anything for my work” attitude. The heroic character of overly committed individuals was kept alive by telling stories of long working days and nights, weekends spent at work, and angry wives calling to project managers and asking to get their husbands home for the Easter holidays, at least. Sharing the workload by providing help to a colleague in a tight situation or by providing help from outside the organization was applied to equalize the workload. The underlying assumption was that nobody would be left alone with excessive work (unless his/her colleagues are not drowning in work, as well). To further relieve the tension produced by the chaos, employees encouraged fluent communication and information sharing orally and through the use of a software application, in which all the relevant knowledge of the on-going projects was stored.

*Emotion- and appraisal-focused coping.* Maintenance of a good working climate was the most important and general tension-relieving coping strategy. In this aspect the division spoke of perfection, i.e., “everybody gets along with everybody”, “humour is nurtured”, and “nobody gets into a conflict with anybody”. Employees were supposed to have fun together at work, and some individuals thought that this should be the case even outside working hours. The belief of sharing a “perfect” climate resulted in the absolute denial of social conflicts, or, when denial was impossible, the usual explanations given for the conflicts were grounded in the personal characteristics (i.e., “troublemaker”) of the person involved.

The feeling of pride of forming part of the extraordinary “all stars” division with its history of success, relieved strain and compensated for the sacrifices made for work. Continuous haste was alleviated by interpreting being in a hurry as a sign of an important, committed employee in the division. Talk about haste was nurtured and taken for granted and days without stress were considered abnormal. There were also stories about stress-symptom heroes, i.e., the mythical and admired salesmen, who were able to cope with any kind of situation, disregarding their stress-related health problems.

## Division C

Division C was a manufacturing division consisting of four work units. One of the units had formed part of division B until 1995 and represented clearly a counterculture in division C. It clung more to division B-like cultural assumptions. This particular subculture will be presented later. The business environment of division C was rather stable and the products it manufactured were described as “traditional and reliable”. The work was organized as mass-production of goods. One of the work units was located in a dark, far-away basement and had given a particular cultural connotation to the entire division. It was called “the penal colony”.

### *Definition of well-being*

Except for economic welfare and regular income, the definition of well-being emphasized other spheres of life apart from work. The sources of well-being were not discussed at work. At the individual level, one was considered to be well, if one did not feel like being forced to go to work. Ill-being was described to manifest in the form of sulking and isolating from peers.

### *Sources of collective stress*

The following three sources of stress were identified: social undervaluation of the blue-collar worker and the “penal colony”, risk of unemployment, and implementation of a group bonus system.

*Social undervaluation of the blue-collar worker and the “penal colony”.* Social undervaluation was built into the hierarchy, where the blue-collar workers were expected to obey, the middle management and white-collar are expected to control the blue-collar workers in a rigid fashion, and the managers and sales people are expected to take care of PR work. The quality of the relationship between the different hierarchical levels varied from a mutual conflict situation to a neutral, pertinent attitude, the latter being more an exception to the rule. In addition to these, the unfavourable reputation of the “penal colony” was causing stress. The reputation was maintained by storytelling about individuals who would rather have been laid off than been transferred to the “penal colony”, where employees had traditionally been exposed to sensitizing materials and the unit had an unfavourable location with poor air conditioning.

*Risk of unemployment.* Risk of unemployment was present due to similar incidents taking place as in division A. However, in division C lay-offs were interpreted as a “cleaning operation” in which the company got rid of ill, old, and difficult employees. Doubts about the legality of lay-offs emerged, because, at the same, the company was recruiting young temporary workers. Being laid-off

was considered as an insult after a long work career in the company. These and other changes were interpreted as being given from above; the employees having no say in them. Mistrust in the management and lack of commitment to the company were the prevailing feelings.

*Group bonus system.* In the “penal colony” unit, the recently implemented group bonus system created tension in everyday life. Before implementation, help was provided only when asked, a principle that had been sufficient for handling the daily routines. People were considered as lazy freeriders by nature. Due to the introduction of the group bonus system, one’s pay check suddenly depended on others. As a result, the workers became suspicious about each other’s doings, and conflicts arose. The prevailing assumption on the individual level was that “I am working hard and the others are just pottering around”.

### *Collective coping*

*Problem-focused coping.* Collective problem-focused mechanisms were all related to the undervaluation and group bonus stressors. Even when slight signs of oppression occurred, the workers followed the rules of the hierarchy, contacted their foreman, complained, and demanded immediate action for the removal of the oppressive behaviour patterns. The problems related to the group bonus were resolved by watching and controlling carefully what one’s co-workers were doing and by giving remarks to “lazy ones”. A lot of group pressure was also used to make life hell for those considered “lazy”.

*Emotion- and appraisal-focused coping.* A tension-relieving working climate was defined as an atmosphere with few destructive quarrels in their own work group. Coffee breaks with the “bun-eating” story, spreading rumors, and the cultivation of coarse humour lightened the dull working days. Conflicts were frequent, and the employees were used to them. Gossiping about other shifts, shouting at women, and loud accusations of other work groups were all commonly applied tension-relieving behaviors, all being interpreted as “normal” human interaction.

In the actual “penal colony” unit there were also different forms of pottering, i.e., all kinds of devious activities that varied from mild disobedience to severe misconduct (e.g., illegal absences from the workplace), which the managers and outsiders interpreted as a sign of a low work morale. The pottering included gossiping about secret relationships at the plant and about the personal lives of the employees, quarrels about politics, and other themes. Coping with the “penal colony” stigma also included enhancement of isolation from the other divisions and attribution of “badness” to outsiders. Finally, an appraisal-focused strategy emerged, namely, storytelling about the “penal colony” units being better in various senses than the other units (e.g., having fairer foremen).

The risk of unemployment and mistrust in the management were alleviated by telling stories of the “good old days”. In the “penal colony” there emerged two additional coping strategies. First, telling stories about individuals who were actually volunteering to be laid off and who got angry when they were not laid off. Instead of interpreting being laid-off as an insult, the “unemployment tube” was perceived as a liberation. Second, there was confidence in the manager of the “penal colony”, as he manifested behaviours opposing the temporary worker policies and lay-offs. The “bad guys” were in the other units, whereas the manager of the “penal colony” was doing his best to defend the rights of “his people”.

## Work unit X

Work unit X consisted of a production unit and a small product development unit that were merged with division C in 1995. This restructuring affected the members of the product development unit most directly, as they were forced to be in daily contact with the employees of division C. Work unit X produced customized products and operated in a highly competitive market. The personnel consisted of both blue-collar and white-collar employees, and the work was organized around projects, the tasks being highly interdependent on one another.

### *Definition of well-being*

The definitions of well-being in work unit X had features of both those in division A and those in division B. As in division A, well-being was defined as an entity on which numerous factors have an impact. Furthermore, emphasis was put on living an active life and on the existence of various sources of satisfaction, underlining that work should not be one’s entire life. The signs of well-being in colleagues were similar to those in division B, e.g., “cheerfulness, a good sense of humour, and willingness to chat casually”, all being related to work climate.

### *Sources of collective stress*

Three categories of collective stressors were identified in work unit X: work overload, pressure towards more extensive autonomy, and culture shock.

*Work overload.* Hecticism characterized the days of all the employees and was due to similar assumptions as in division B; the common goals being money-making and the collective means to achieve that, with client focus and time-is-money assumptions. Client focus meant in practice making special contracts with shorter delivery times for the most important clients, and flexible production and delivery of goods. The time-is-money assumption was manifested in a generalized attitude that delivery time was a critical element in guaranteeing client satisfaction. All the actions aimed at keeping to the schedules promised to the

client. Commitment to this principle was strong, partly because the blue-collar workers' bonus was determined on the basis of the delivery times. The resulting continuous work overload eliminated tension-relieving practices, such as small talk and informal meetings with colleagues after working hours. Furthermore, due to the strong collective commitment, and the resulting social pressure, the employees hardly permitted themselves to take a break, being scared that peers would get angry. Finally, continuous weekend shifts were becoming an agony, the workers no longer being able to revive even during their leisure time.

*Pressure towards more extensive autonomy* in the blue-collar worker tasks. A high degree of autonomy was already present and it manifested in a strong trust in the individual's own capacities and skills also on the shop-floor level. Everybody had an idea of the whole production process and understood one's own responsibilities in it. Recent rumours about team training and "total" autonomy had made the blue-collar workers nervous, however. They believed that, in the future, the workers were to perform white-collar tasks, such as making sales offers, fishing for clients, and doing all the paperwork related to the production. Such an idea did not attract them, since learning new things would require extra efforts that would exceed their limits at the current overload situation. Moreover, the professional identity of a blue-collar worker was that of a working man, who worked with his bare hands and created something concrete, and not that of an "office wimp".

*Culture shock.* As a result of the reorganization in 1995, work unit X was going through a major culture shock. The employees perceived the implementation of the restructuring as blunt, as the personnel were not prepared. The employees of work unit X felt abandoned and ignored by the management of division C from the first moment on. The metaphor "a shotgun marriage" was used to describe the merger. Cultural assumptions and attitudes, such as clinging to a strict hierarchy, inflexibility, and authoritarian leadership style were in conflict with those of work unit X. The employees of work unit X felt that they would be going backwards in time 10–15 years, if they had to apply such behaviour patterns, their culture being characterized by organized co-operation and equality in the treatment of personnel.

### *Collective coping*

*Problem-focused coping.* The stress produced by the work overload was reduced with three mechanisms all related to autonomy and collective commitment, manifesting in a "We're all in the same boat" attitude. First, everyday problems were solved in weekly meetings, which provided an opportunity for the employees to talk about the problems and facilitated extensive participation in decision making. Second, the employees regularly

charted the workload level of their colleagues and provided help whenever necessary and whenever their own workload situation permitted it. Third, taken-for-granted solidarity among the workers enabled a democratic division of the undesirable weekend work. The stress created by the cultural shock was handled by clinging stubbornly to their “own” culture, resulting in two conflicting camps, the Xs and the Cs.

*Emotion- and appraisal-focused coping.* The stress produced by the continuous overload of work was alleviated, in general, by a good work climate (i.e., people get along well) and by the awareness of having a job with a high degree of freedom to control it. Also pride in the good output of work unit X (cultural characteristic similar to that of division B) and the resulting high professional self-esteem dampened the harmful effects of work overload. Storytelling of the good old days, when there was no hurry and plenty of time for chatting, also took place. The feelings of not being appreciated by the managers of division C were dealt with an appraisal-focused mechanism, i.e., reminding oneself and the others that work unit X had brought a first-class product to division C, and that, thanks to their presence, the division was now making “big money”. The metaphor used for this purpose was: “we make Porsches, while they make Moscowiches”.

## DISCUSSION

The aim of this study was to explore definitions of well-being, sources of collective stress and coping mechanisms in different organizational cultures. Our results suggest that stress experiences and coping have collective qualities. Similar stressors across cultures, such as continuous work overload, risk of unemployment, and social undervaluation seemed to get a different form in each of them and the respective coping strategies also differed from one cultural context to another.

The concept of organizational culture has caused debate in the academic literature throughout the 1990s. These debates arise, partly, from the “onion-like” character of cultural phenomena. On the one hand, culture refers to mindsets that cut across organizations (e.g., engineers have the same mindset, whichever company they serve), including professional cultures (Barley, 1983, 1986; Bloor & Dawson, 1994; Dubinskas, 1988; Everett, Stening, & Longton, 1982; Gregory, 1983; Van Maanen & Barley, 1984), non-national cultural overlays upon sets of organizations such as regional cultures (Weiss & Delbeck, 1987), national differences and similarities between organizational cultures (Hofstede, 1980; Hofstede, Neuijen, Ohayv, & Sanders, 1990), and whole industry cultures (Chatman & Jehn, 1994; Gordon, 1991; Phillips, 1994). On the other hand, the empirical studies on culture have focused on micro-cultural phenomena, i.e., studies focusing on intra-organizational subcultures based on

locations, functions, and/or hierarchical levels (Bushe, 1988; Jermier, Slocum, Louis, & Gaines, 1991; Martin & Siehl, 1983; Martin, Sitkin, & Boehm, 1985; Sackmann, 1991a, b), which also constituted the main focus of the present study.

Our findings on collective stress suggest that a common history seems to be a more important determinant of the sources of collective stress and coping than, for example, location or functional unit (cf., Handy 1988, 1991; Meyerson, 1994; Rosen, Greenlagh, & Anderson, 1981; Schein, 1985). For example, work unit X formally and geographically formed part of division C, but had a culture that resembled more that of division B. Also the collective aspects of stress and coping in work unit X corresponded more to those of division B than those of division C. Further comparison of the cultures also revealed the layered nature of social meaning and collectively shared views. The similarities found between interpretations across organizational units among “blue-collar” and “white-collar” employees refer to social expectations that are formulated in the wider society (Meyerson, 1994; Schein, 1996). Thus, collective shared views of stress inside a certain organization seem to actually be a mixture of society-wide cultural expectations and organization specific connotations.

### Characteristics of collective stressors and coping

The appraisal of being stressed, appraisal understood here as a form of coping unlike in traditional appraisal theories that make the difference between primary and secondary appraisal (e.g., Lazarus, 1993), depended on the social context. The more hectic the organizational reality, the more permissive the collective conception of well-being seemed to be, stress being interpreted as a “normal” characteristic of work, and mild stress symptoms as signs of job involvement, in the culture of “money making” and “chaotic urgency”. This result is similar to Meyerson’s (1994) in the professional culture of social workers, where symptoms of burn-out were interpreted as a perfectly normal condition, carrying also an interpretation of a “dedicated professional” with them. Such a collective appraisal that deviates from the norm, however, may not necessarily be pathology, rather it may represent an efficient appraisal-focused coping mechanism in a certain reality (Cox, 1993; Lazarus, 1993). In a world that is inherently chaotic, unpredictable, and stressful, it may make sense to question the assumed normality, the experiences of stress, and even burn-out, becoming the norm, rather than the exception (Meyerson, 1994).

Culture not only moderated the appraisal of stress, but also produced collective coping responses to stressors, which in the present study were found to have their origin either in the organizational environment or inside the community. Extraorganizational factors related to an environment consisting of multiple, simultaneous demands from clients, overload of work, fluctuation, recent implementation of group bonus system, pressure towards “total” autonomy, poor client satisfaction and multinational game, risk of unemployment, and

culture shock due to restructuring. Intraorganizational factors referred to frictions inside the community, including social conflicts due to undervaluation of a group of employees, and the “penal colony” reputation.

### Extraorganizational stressors and related coping

Most of the extraorganizational stressors seemed to have their origin at the crossroads of the particular business environment and the multinational context, and were similar to those reported in previous studies focusing on the adoption of Lean Ideology and TBM practices in European industrial plants (e.g., fear of unemployment, lack of support in the middle- and lower-level management due to their ambiguous role in the changing organization, insufficient training of the workers, and lack of willingness to adjust the work performance to fluctuations in the product flow) (Alasoini, 1993; Antoni, 1996). As an additional potential stressor for a work unit operating in a multinational firm seems to be to live up to the expectations set by the top management of the company. Partly due to the differences in their particular business environments, the target organizations of the present study represented four kinds of organizational realities reflected in four distinguishable subcultures, whose overlap with the official corporate culture of the multinational varied. Subculture B represented the closest fit and subculture C the furthest fit.

Examination of the coping responses revealed the impact of the multinational context on the collective self-esteem of each subculture. In the two cultures that manifested greatest overlap with the official culture, the ability to live up to the expectations of the multinational seemed to serve as an extra pair of wings in the hectic and unpredictable reality, that constantly demanded a great deal of sacrifices from the employees. These sacrifices were made justified, by interpreting them as serving for a “noble” and publicly admired goal (i.e., outstanding results), leading to rewarding feelings of pride and professional competence. This result is in line with previous studies emphasizing the importance of a high effort–high reward situation for the individual’s motivation and well-being at work (Brown & Leight, 1996; Siegrist, 1996). Brown and Leight (1996) suggest that feelings of making a meaningful contribution, being appropriately recognized for it, and perceiving work as challenging are the necessary prerequisites for high job involvement and effort level.

Decisions motivated by the value “competitiveness of the multinational is a priority” created a drastic cultural collision, when the subculture of “money making” was merged with the culture of “scattered islands”. The two cultures obviously represented very different guiding assumptions, values, and ways of operating. The resulting battlefield situation and the collective coping strategies, i.e., holding on stubbornly to one’s own culture, isolation, and story-telling that enhanced the collective self-esteem of the own group, all describe behaviours that in previous studies have been labelled as symptoms of cultural “indigestion”.

Such a situation typically results from a lack of a pre-merger analysis of the companies involved (e.g., Schein, 1990; Walter, 1986).

In the other subcultures representing poor overlap with the “official” culture, the presence of the demand for continuous growth, combined with the awareness of the mediocre output development, and the recent lay-offs, conducted under the lean management label, resulted in quite an opposite emotional response; i.e., generalized fear of unemployment. The respective coping responses consisted mainly of story-telling, that included the acknowledgement that a drastic change that had occurred comparing the current situation with the “good old days”, rationalization attempts making the unemployment alternative seem more attractive, and projection of the undesirable “bad behaviours” to concern only outsiders. Also simple resignation behaviours such as psychological disengagement occurred.

The emergence of story-telling as a collective coping response is not surprising, as it has been proposed to function as an important means of constructing and communicating meaning in organizations (e.g., Boje, 1991; Lewitt & March, 1996; Martin et al., 1985). Especially in periods of change, it has been suggested that story-telling plays an important role, not only serving as a means to bring order to the experienced ambiguity, thus, relieving strain, but also because it may offer opportunities for collective reflecting on the new situation. Consequently, it may help in the creation of a new social order (Feldman, 1990), as the stories of the “good old days” in the present study might have done.

### **Intraorganizational factors**

The second category of collective stressors related to frictions in the integrity of the group. These emerged due to the social hierarchies inherent in the culture and in the wider society. The heroes of the cultures were happy, but the “losers”, employee groups low down on the social ladder like the blue-collars in the hierarchical cultures or the entire “penal colony” unit, felt undervalued. Similar collective experiences of undervaluation were found in Aaltio-Marjosola’s (1994) study on gender stereotypes in cultural contexts. The undervalued women in her study occupied less salient roles of “invisible heroines” with a mission of securing the continuity of the culture, while the mission of the organization was embodied in the men—heroes—occupying visible and publicly admired roles.

Emotion- and appraisal-focused strategies were mostly used for coping with the feelings of undervaluation. A problem-focused strategy emerged only in the “penal colony” culture (complain through hierarchy when facing oppression), where oppression legitimated by the well-rooted hierarchy assumption was probably socially more acceptable than in the other subcultures. The appraisal-

focused coping strategies consisted of story-telling, which reminded that a change was in the air, i.e., the blue-collar workers have been treated even worse in the “old days”, or again, of protecting the collective self-esteem, i.e., “others are even worse off when other criteria of comparison are considered”. Furthermore, in the “penal colony”, avoidance was used; it was reflected in “pottering” and in active isolation from the surrounding divisions, typical behaviour patterns in hierarchical industrial organizations (e.g., Roy, 1958).

Regarding the emotion-focused mechanisms, climate was mentioned to function as a general medicine for a great variety of situations—a finding confirming the importance of social support in coping with stress (e.g., Katz & Kahn, 1978; Peeters, Buunk, & Schaufeli, 1995). The interpretation of a “healthy” climate was, however, also a socially constructed interpretation having different meanings in different cultures, according to the significance of social relationships and the interdependence of the work tasks. Thus, climate seemed to function in itself as a form of what Lazarus (1993) calls primary appraisal. The level of conflicts tolerated by the cultures ranged from conflict-tolerant cultures (i.e., social conflicts interpreted as unavoidable and perfectly healthy phenomena in organizational life in division C) to conflict-intolerant cultures (the slightest friction in human relationships putting the whole social system in jeopardy in division B). In division B the cultural identity of expected collective commitment did not tolerate public acknowledgement of existence of social conflicts. The collectively negotiated myth of a “perfect climate” seemed to be crucial for coping with the constantly and unpredictably changing customer demands (Fineman, 1995; Handy, 1995). Similar differences in conflict tolerance have been found on the national culture level (Botti, 1995).

## IN CLOSING

The present exploratory study on the sources of collective stress and coping serves as a preliminary step towards a more coherent understanding on the issue. Our research results suggest that stress experiences and coping strategies have collective qualities that are determined by the organizational and the larger societal culture. Culture not only seems to moderate the appraisal of stress, but also contains collective coping responses to stressors. Our research findings support Oakland and Ostell’s (1996) recommendation that instead of relying solely on measuring coping and stress, alternative methods, such as those applied in this study, would add great value to traditional research, and help us to understand better the role of coping in the stress/health relationship. Our findings are also important for practitioners in the field dedicated in preventive stress management and stress—interventions in organizations (cf., Quick, Quick, & Nelson, 1998). The present findings suggest that we should be looking for collective responses that are significant for large groups of individuals and from

there identify interventions that will have the maximum impact in a particular organization, instead of focusing on interventions derived from traditional individual-focused stress theories (e.g., Cooper, 1998; Karasek & Theorell, 1990; Lazarus & Folkman, 1984; Miller et al., 1988).

We found that collective stress represents a response to both extra- and intraorganizational factors. The first stressor group represented threats to the organization's survival and the latter group to the integrity of the community. This is well in line with Schein's (1985, 1990) formulations about the two essential functions of organizational culture—adaptation to the environment and integration of the group.

Collective learned uniform reactions to both types of stressors were evident. Besides provoking change that potentially made the fit in the environment more perfect, collective coping also seemed to ensure that the required change did not put the identity of each subculture in jeopardy. A broader frame of interpretation is also possible here. The first function of collective coping makes reference to organizational learning, which has been suggested to include both innovative and preservative activities (Cook & Yanow, 1996; Hatch, 1993, 1997). The latter activities refer to the effort that human organizations put into maintaining patterns of activity that make them unique and that distinguish them from other organizations (Cook & Yanow, 1996).

## REFERENCES

- Aaltio-Marjosola, I. (1994). Gender stereotypes as cultural products of the organization. *Scandinavian Journal of Management*, *10*, 147–162.
- Abbott, A.D. (1990). Positivism and interpretation in sociology: Lessons from sociologists from the history of stress research. *Sociological Forum*, *5*, 435–458.
- Alasoini, T. (1993). Transformation of work organization in time-based production management: The case of three Finnish electronics plants. *International Journal of Human Factors in Manufacturing*, *3*, 319–333.
- Antoni, C. (1996). Lean production in Europe: A matter of technical adjustment or cultural change. *Applied Psychology: An International Review*, *45*, 119–122.
- Ashforth, B.E., & Humphrey, R.H. (1995). Emotion in the workplace: A reappraisal. *Human Relations*, *48*, 97–125.
- Barley, S.R. (1983). Semiotics and the study of occupational and organizational cultures. *Administrative Science Quarterly*, *28*, 393–413.
- Barley, S.R. (1986). Technology as an occasion for structuring: Evidence from observations of CT scanners and the social order of radiology departments. *Administrative Science Quarterly*, *31*, 78–108.
- Barley, S.R., & Knight, D.B. (1992). Toward a cultural theory of stress complaints. In M. Barry, B.M. Staw, & L.L. Cummings (Eds.), *Research in Organizational Behavior* (pp. 1–48). Greenwich, CT: JAI Press.
- Bechard, R., & Harris, R.T. (1977). *Organizational transitions: Managing complex change* (2nd ed.). Reading, MA: Addison-Wesley.
- Bloor, G., & Dawson, P. (1994). Understanding professional culture in organizational context. *Organization Studies*, *15*, 275–295.
- Boje, D. (1991). The storytelling organization: A study of story performance in an office-supply firm. *Administrative Science Quarterly*, *36*, 106–126.

- Botti, H.F. (1995). Misunderstandings: A Japanese transplant in Italy strives for lean production. *Organization*, 2, 55–86.
- Brown, S.P., & Leight, T.W. (1996). A new look at psychological climate and its relationship to job involvement, effort, and performance. *Journal of Applied Psychology*, 81, 358–368.
- Bushe, G.R. (1988). Cultural contradictions of statistical process control in American manufacturing organizations. *Journal of Management*, 14, 19–31.
- Chandler, A.P. (1977). *The visible hand*. Cambridge, MA: Harvard University Press.
- Chatman, J.A., & Jehn, K.A. (1994). Assessing the relationship between industry characteristics and organizational culture: How different can you be? *Academy of Management Journal*, 37, 522–553.
- Cook, S.D.N., & Yanow, D. (1996). Culture and organizational learning. In M.D. Cohen & L.S. Sproull (Eds.), *Organizational learning* (pp. 430–459). Thousand Oaks, CA: Sage.
- Cooper, G.L. (Ed.). (1998). *Theories of organizational stress*. Oxford, UK: Oxford University Press.
- Cox, T. (1990). Organizational culture, stress, and stress management, *Work and Stress*, 5, 1–4.
- Cox, T. (1993). *Stress research and stress management: Putting theory to work*. London: Health and Safety Executive.
- Dubinskas, F.A. (1988). Janus organizations: Scientists and managers in genetic engineering firms. In Dubinskas (Ed.), *Making time: Ethnographies of high technology organizations* (pp. 170–232). Philadelphia: Temple University Press.
- Dyer, W.G. (1986). *Cultural change in family firms*. San Francisco: Jossey-Bass.
- Everett, J.E., Stening, B.W., & Longton, P.A. (1982). Some evidence for an international managerial culture. *Journal of Management Studies*, 19, 153–162.
- Feldman, S.P. (1990). Stories as cultural creativity: On the relation between symbolism and politics in organizational change. *Human Relations*, 43, 809–828.
- Fineman, S. (1995). Stress, emotion and intervention. In T. Newton (Ed.), *Managing stress, emotion and power at work* (pp. 120–135). London: Sage.
- French, W.L., & Bell, C.H. (1984). *Organization development* (3rd ed.). Englewood-Cliffs, NJ: Prentice Hall.
- Glaser, B.G., & Strauss, A.L. (1967). *The discovery of grounded theory: Strategies for qualitative research*. New York: Aldine.
- Gordon, G.G. (1991). Industry determinants of organizational culture. *Academy of Management Review*, 16, 396–415.
- Gregory, K.K. (1983). Native view paradigms: Multiple cultures and culture conflicts in organizations. *Administrative Science Quarterly*, 28, 359–376.
- Hallmann, W.K., & Wandersman, A. (1992). Attribution of responsibility and individual and collective coping with environmental threats. *Journal of Social Issues*, 48, 101–118.
- Handy, J. (1988). Theoretical and methodological problems with occupational stress and burnout research. *Human Relations*, 41, 351–369.
- Handy, J. (1991). Stress and contradiction in psychiatric nursing. *Human Relations*, 44, 39–53.
- Handy, J. (1995). Rethinking stress: Seeing the collective. In T. Newton (Ed.), *Managing stress, emotion and power at work* (pp. 85–96). London: Sage.
- Harris, S.G., & Sutton, R.I. (1986). Functions of parting ceremonies in dying organizations. *Academy of Management Journal*, 29, 5–30.
- Hatch, M.J. (1993). The dynamics of organizational culture. *Academy of Management Review*, 18, 657–693.
- Hatch, M.J. (1997). *Organization theory: Modern, symbolic and postmodern perspectives*. Oxford, UK: Oxford University Press.
- Hirschhorn, L. (1987). *The workplace within*. Cambridge, MA: MIT Press.
- Hodge, B.J., & Anthony, W.P. (1988). *Organization theory*. Boston: Allyn & Bacon.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.

- Hofstede, G., Neuijen, B., Ohayv, D.D., & Sanders, G. (1990). Measuring organizational cultures: A qualitative and quantitative study across twenty cases. *Administrative Science Quarterly*, *35*, 286–316.
- Jermier, J.M., Slocum, J.W., Jr, Louis, W.F., & Gaines, J. (1991). Organizational subcultures in a soft bureaucracy: Resistance behind the myth and facade of an official culture. *Organization Science*, *2*, 170–194.
- Karasek, R.A., & Theorell, T. (1990). *Healthy work: Stress, productivity, and the reconstruction of working life*. New York: Basic Books.
- Katz, D., & Kahn, R.L. (1978). *The social psychology of organizations*. New York: Wiley.
- Lazarus, R.S. (1993). From psychological stress to emotions: A history of changing outlooks. *Annual Review of Psychology*, *44*, 1–21.
- Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal and coping*. New York: Crowell.
- Lewitt, B., & March, J.G. (1996). Organizational learning. In M.D. Cohen & L.S. Sproull (Eds.), *Organizational learning* (pp. 516–540). Thousand Oaks, CA: Sage.
- Martin, J., & Siehl, C. (1983). Organizational culture and counterculture: An uneasy symbiosis. *Organizational Dynamics*, *12*, 52–64.
- Martin, J., Sitkin, S.B., & Boehm, M. (1985). Founders and the elusiveness of a cultural legacy. In P. Frost, L.F. Moore, M.R. Louis, C.C. Lundberg, & J. Martin (Eds.), *Organizational culture* (pp. 99–124). Beverly Hills: Sage.
- Martin, P.Y., & Turner, A.A. (1986). Grounded theory and organizational research. *Journal of Applied Behavioral Science*, *22*, 141–157.
- Menzies, I.E.P. (1960). A case study in the functioning of social systems as a defense mechanism against anxiety. *Human Relations*, *13*, 95–121.
- Meyerson, D.E. (1994). Interpretations of stress in institutions: The cultural production of ambiguity and burnout. *Administrative Science Quarterly*, *39*, 628–653.
- Miller, S., Brody, D., & Summerton, J. (1988). Styles of coping with threat: Implications for health. *Journal of Personality and Social Psychology*, *54*, 142–148.
- Newton, T.J. (1989). Occupational stress and coping with stress: A critique. *Human Relations*, *42*, 441–461.
- Newton, T.J. (1995). *Managing stress, emotion and power at work*. London: Sage.
- Oakland, S., & Ostell, A. (1996). Measuring coping: A review and critique. *Human Relations*, *49*, 133–155.
- Pearlin, L., & Schooler, C. (1978). The structure of coping. *Journal of Health and Social Behavior*, *19*, 2–21.
- Peeters, M.C.W., Buunk, B.P., & Schaufeli, W.B. (1995). Social interactions, stressful events and negative affect at work: A micro-analytic approach. *European Journal of Social Psychology*, *25*, 391–401.
- Peiró, J.M. (1990). Expected developments in work and organizational psychology in Europe in the nineties. In P.J. Drenth, J.A. Sergeant, & R.J. Takens (Eds.), *European perspectives in psychology* (Vol. 3, pp. 21–38). Chichester: Wiley.
- Pennebaker, J.W., & Harber, K.B. (1993). A social stage model of collective coping: The Loma Prieta earthquake and the Persian Gulf War. *Journal of Social Issues*, *49*, 125–145.
- Phillips, M.E. (1994). Industry mindsets: Exploring the cultures of two macro-organizational settings. *Organization Science*, *5*, 384–402.
- Porter, G. (1996). Organizational impact of workaholism: Suggestions for researching the negative outcomes of excessive work. *Journal of Occupational Health Psychology*, *1*, 70–84.
- Quick, D.J., Quick, C.J., & Nelson, D.L. (1998). The theory of preventive stress management in organizations. In G.L. Cooper (Ed.), *Theories of organizational stress* (pp. 246–268). Oxford, UK: Oxford University Press.
- Rosen, N., Greenlagh, L., & Anderson, J.C. (1981). The cognitive structure of industrial/labor relationships. *International Review of Applied Psychology*, *30*, 217–233.

- Rousseau, D.M. (1998). Organizational climate and culture. In J.M. Stellman (Ed.), *Encyclopaedia of occupational health and safety* (4th ed., pp. 34.36–34.37). Geneva, Switzerland: International Labor Office.
- Rousseau, D.M. (1997). Organizational behavior in the new organizational era. *Annual Review of Psychology*, *48*, 515–546.
- Roy, D. (1958). Banana time: Job satisfaction and informal interaction. *Human Organization*, *18*, 158–168.
- Sackmann, S.A. (1991a). *Cultural knowledge in organizations: Exploring the collective mind*. Thousand Oaks, CA: Sage.
- Sackmann, S.A. (1991b). Uncovering culture in organizations. *Journal of Applied Behavioral Science*, *27*, 295–317.
- Schall, M.S. (1983). A communication-rules approach to organizational culture. *Administrative Science Quarterly*, *28*, 557–581.
- Schein, E.H. (1985). *Organizational culture and leadership*. San Francisco: Jossey-Bass.
- Schein, E.H. (1990). Organizational culture. *American Psychologist*, *45*, 109–119.
- Schein, E.H. (1996). Culture: The missing concept in organizational studies. *Administrative Science Quarterly*, *41*, 229–240.
- Semmer, N., Zapf, D., & Greif, S. (1996). Shared job strain: A new approach for assessing the validity of job stress measurements. *Journal of Occupational and Organizational Psychology*, *69*, 293–310.
- Siegrist, J. (1996). Adverse health effects of high-effort/low effort reward conditions. *Journal of Occupational Health Psychology*, *1*, 27–41.
- Strauss, A.L., & Corbin, J. (1990). *Basics of qualitative research: Grounded theory procedures and techniques*. Newbury Park, CA: Sage.
- Turner, B.A. (1981). Some practical aspects of qualitative data analysis: One way of organizing some of the cognitive processes associated with the generation of grounded theory. *Quality and Quantity*, *15*, 225–247.
- Van Maanen, J. (1988). *Tales of the field*. Chicago: University of Chicago Press.
- Van Maanen, J., & Barley, S.R. (1984). Occupational communities: Culture and control in organizations. In B.M. Staw & L.L. Cummins (Eds.), *Research on organizational behavior* (Vol. 6, pp. 287–365). Greenwich, CT: JAI Press.
- Walter, G.A. (1986). Culture collisions in mergers and acquisitions. In P. Frost, L.F. Moore, M.R. Louis, C.C. Lundberg, & J. Martin (Eds.), *Organizational culture* (pp. 301–314). Beverly Hills: Sage.
- Weiss, J., & Delbeck, A. (1987). High-technology cultures and management: Silicon Valley and Route 128. *Group and Organization Studies*, *12*, 39–54.
- Westney, D.E. (1987). *Imitation and innovation*. Cambridge, MA: Harvard University Press.

## APPENDIX A

Examples of open coding, integrative categories,  
and dimensions of the categories (division A)

## Integrative category: Jig-saw puzzle

*Dimensions:*

- Specific jobs and tasks/person, work is divided into small pieces.
- Functions well, if all the pieces work well.
- Narrow, deep competence (source of professional pride), “I own my piece” (sign of competence if you are able to master your own job).
- The different work units have few contacts with each other (coffee breaks and other socializing events preferably with the own group).
- “Us” and “them”.

*Quotation from the memo notes:*

The organization is a machinelike jig-saw puzzle. The work is divided by products/functions to different work units. The jig-saw puzzle works well, if every piece in the game takes care of his share of the work (mechanistic view of the organization). Professional competence develops over the years. Everyone deepens his expertise in his own job. A real professional is a person who skilfully fulfills his responsibilities, without errors.

*Examples of quotations**Code in open coding*

- |  |   |
|--|---|
| <p><i>I:</i> What I did, was that I stepped on someone else’s area of responsibility, but I wanted to take care of that issue. It was completely irrelevant, the matter. A piece of paper was missing a date. If you print out lists of prices and there is no date, then you have to go through an awful lot of trouble to find out which one is the newest list. So [this time] I went to take care of it [myself] and I got it done immediately, but then I ran into that guy who is supposed to take care of those things [normally]. So, I told him that I went to check this date] ... and I noticed immediately that this was an extremely negative thing that I had done, that what is it my business to get involved in that. So that’s the attitude with people who have done the same job for a long time.</p> <p><i>R:</i> So are these like defined areas of responsibilities?</p> <p><i>I:</i> They are unwritten rules, that you should not put your nose in everything.</p> <p><i>R:</i> How are those areas determined?</p> <p><i>I:</i> They are not determined anyhow. Maybe somewhere it says that for example this guy takes care of development work.</p> <p><i>R:</i> Do you have a Christmas party?</p> <p><i>I:</i> We would have had, but I didn’t take part in it.</p> <p><i>R:</i> Was it for the whole company?</p> <p><i>I:</i> Yes. But I normally participate only in our own parties. I’m probably kind of cliquish ... in the events organized for ‘our tube’, as we usually call ourselves.</p> | <p>One should take care of his/her business only.</p> <p>Preference of own group’s parties.</p> |
|--|---|

## APPENDIX A continued

- R: Going back to the day you started working here ...  
When was that?  
I: 1962, the 18th of October. I was a young man then.  
R: How young?  
I: Just under 18. Yes after one week I became 18, but I can say that I was under 18 when I started!
- R: Can you do that by heart?  
I: There are instructions for that, but I haven't really needed them. I have been [working here] for so long. Then the same jobs are repeated ...
- [...]  
R: What kind of an employee is appreciated here?  
I: Well ... depends on what you do, you have to be an expert at least, you have to know what you're doing. That's what I think, that at least and as I have been already here for a long time I think I am somehow competent in what I'm doing. That's one characteristic at least.
- I2: The worst thing that can happen is that you make a bad piece, it really feels bad, kind of "hurts your pride". Once you have been here as long as I have ...
- I: [...] Now we have this team thing here [messing things up], we have our warehouse there and it is so big that you can't be in all the places at the same time, it should be kept like it has always been, divided into areas. Then you know where you are and what there is, and that an "outsider" does not go [and mess up] your things, that becomes a total mess, you can't find anything ...
- I: We have designers for this and designers for that, but then we have a "no man's land", we have no one who would co-ordinate the whole.
- Feeling proud about being so young when started working.
- Professional competence develops over years of experience.
- Mastering your task is a source of pride.
- Work divided into clearly defined areas of responsibility, everything works well if everyone takes care of his share.
- Bits and pieces, no co-ordination.

---

I = Informant, R = Researcher.

## Integrative category: Hierarchy

### *Dimensions:*

- Shop floor level, "hut" level, "upstairs" level.
- Workers: manual work (diligence a virtue).
- Foremen/white collar employees: think, organize, make decisions, take the responsibility (taking responsibility and equal treatment of subordinates a virtue).
- Big bosses → PR work towards client, big decisions (lowest and highest levels do not meet face to face).
- Extreme: opposition employee vs. employer is breaking down (gap getting smaller).

### *Quotation from the memo notes:*

The role of the blue collar worker in the organization is to perform and work hard. Superior (foreman) takes the responsibility, that things get done in time, the worker does not have to worry

## APPENDIX A continued

for taking responsibility a part from one's own job. For "bosses" higher in the hierarchy ("people from upstairs") are rather distant to the shop floor worker. Their job is to take care of client relationships and outer world. There are also traces of a contradiction between employee and employer interests, but these attitudes seem to be loosening.

*Examples of quotations**Code in open coding*

- |  |  |
|--|--|
| <p>R: What kind of a worker is appreciated in this company?<br/>         I1: Conscientious, I guess.<br/>         I2: Hard working, comes to my mind first ...<br/>         I3: ... Mechanical work performance [is appreciated here] ...</p> <p>R: What kind of a superior is a good superior?<br/>         I: Someone who takes the responsibility. That says straight if there is something to be said. Honest, in a way, somebody that would see both sides, employer and employee sides, and that would [treat all of us] in an equal way.<br/>         I2: Somebody who knows the work, and from whom you can get help if necessary ... and he has to be tough about certain issues as well, to "punish" a bit the worker if necessary, if the worker goes off course for some reason. In the right place to "punish" a bit and tell that things are going in the wrong direction.<br/>         I3: I don't believe in these autonomous teams. Most of the workers would prefer that the foreman controls, tells us what to do, guides us ... that way we feel a lot safer ...</p> <p>R: If we go higher in the organization, who comes after the forman?<br/>         I: The Boss.<br/>         R: Do you see him often?<br/>         I: Yes, he moves around sometimes.<br/>         R: What does he do?<br/>         I: Well I'm not quite sure ... I don't really know exactly, tries to get us some work, I guess, negotiates about prices ... all kinds of things, negotiates ...<br/>         R: Does he ever talk to you?<br/>         I: Well, then you better have something <i>really important</i>, we prefer to communicate through our foreman and then he takes the matter further.</p> <p>R: So what do you do, if you run out of materials?<br/>         I: Well, we let the buyers know ...<br/>         R: Are they also there at the same place at the plant?<br/>         I: Well, yes they are there. Close by there is this "hut" where they sit, but then also here "upstairs". We call them then.</p> <p>R: Who do you work with most?<br/>         I2: With the other foremen that sit in the same "hut" and then of course with these people that do the manual work.</p> | <p>Worker performs the work diligence is appreciated.</p> <p>Superiors take the responsibility; honesty and being equal appreciated. Employer and employee sides.</p> <p>Superiors punish, take the responsibility and think.</p> <p>"Bosses" do PR work.</p> <p>Communication through middle management from the shop floor.</p> <p>Casts: White collars from the "hut" and "upstairs".</p> |
|--|--|

## APPENDIX A continued

<i>Examples of quotations</i>	<i>Code in open coding</i>
R: You talked about historical "burdens" ... What do you mean by that?	Young people and old people →
I: Well, we younger people think a bit differently than the older people [...]. Some people for example think that you shouldn't be too good friends with the foremen or something like that. I think that we all work for the same company that pays our salary, whether that person works in export, or is the big boss himself or a cleaning lady, everyone gets paid anyway by the same company, X.	Old people make more of the distinction employer vs. employee.

## Integrative category: Risk of unemployment stressor

### *Dimensions:*

- Lay-offs in the surroundings.
- Prohibition of working overtime.
- Transfers of products.
- Organizational changes.
- Temporary employees.
- Monitoring of results statistics.

<i>Examples of quotations</i>	<i>Code in open coding</i>
I1: Well I don't know whether it's well-being, it's ill-being ... this insecurity, now they are laying off people again (in other divisions ... One gets scared that when will it hit us again, that's what one thinks immediately, also when they prohibited overtime work, I thought that OK now they start with us also ...	Lay-offs in other divisions stressful, prohibition of overtime work also interpreted as a sign of "the firm might go under".
I2: You can't really plan anything big beforehand. You can't be sure of anything, one morning you might have a different employer ... or you're without a job.	
R: Is it easier for you to start with factors that cause ill-being?	Transfers of products to other countries interpreted as a sign of "the firm might go under".
I1: ... insecure situation about a product, when their production is stopped (just like that) ... it can in the worst case lead to losing one's job ... fear ...	
I2: Yes that would be the worst case, when you can't be sure about tomorrow, well we know our future six months ahead.	
R: So there have been lay-offs on this hill? [the factories are all situated on the same hill]	Lay-offs do not depend on profitability of the division.
I: Not in our divisions yet. But we know from the experiences in Division F that they were doing well [when they had to lay-off people] and that was no guarantee of anything.	
I: We read in a paper one beautiful morning that aha, we have a new boss coming here on Monday, was it on Tuesday that we actually got the notice? ...	Organizational changes create insecurity.

## APPENDIX A continued

Communication does not work, you don't know what's going on, people start wondering ... what will happen to my job?

I2: Yes. You become insecure about your own job.

## Integrative category: Collective responsibility as a problem-focused coping strategy

### *Dimensions:*

- Being in a hurry is collective, it brings people together.
- Lazy employees are not tolerated.
- People take responsibility in a group over their work tasks.

---

### *Examples of quotations*

### *Code in open coding*

---

- |  |   |
|--|---|
| <p>R: So you told about these bottleneck situations [referring to a period of work overload], anyway you seem to have coped pretty well in them?</p>   | <p>Being in a hurry brings people together.</p>                     |
| <p>I1: Let's put it this way. In packing being in a hurry has somehow brought us together.</p> <p>[...]</p> <p>I2: Yes when all of us we're in the same boat.</p> <p>I1: And nobody is just loafing behind the corner.</p> <p>I2: Yes we're in it all together, it's kind of psychological as well, it brings us together.</p>   |   |
| <p>I: Well, we have a system that the finished product is delivered [in time to the next stage in the production process], so if someone is "allergic" to work inhibiting the product from leaving [in time] and if there are two men working on that piece ... then there [is trouble to be expected] ... one of them will get splinters in his hands.</p>  | <p>People who don't work hard are not wanted in a team.</p>         |
| <p>I1: It is kind of nice. I have been walking around there [at the plant] on a Tuesday, for example. And I have noticed there are products being worked on that have to leave on Friday morning. In those kind of situations the group, they work longer days and take care that [the products] leave on Friday. The group takes responsibility collectively, even though it's not kind of appreciated [publicly] ... No one would say "go home now"</p> <p>[...]</p> <p>I1: The people work hard, skip their lunch breaks [if necessary], come to work at 6 a.m. to get it done.</p> | <p>People take collective responsibility over their work tasks.</p> |
-

## APPENDIX B

Examples of collective coping (appraisal and emotion-focused):  
The "good old days" story and the "bun eating" story**"Good old days" story:**

*Man:* When you compare [this] with the old days, then ... when there was no work to do, women were knitting socks for weeks. But the boss said that you have to be there, even though there was nothing to do.

*Woman:* You don't sit around anymore a lot. You have to look for a place to hide, if it looks like you have nothing [to do]. In those days you were allowed to sit around freely, to read the newspaper, to knit. I came here in '73.

*Man:* We were cleaning windows.

*Woman:* In the garden we raked dead leaves. That was fun.

*Man:* And we worked, when there was work.

*Interviewer:* Now, people get laid off if there is no work?

*Man:* You wouldn't be knitting for long.

*Woman:* I wouldn't even dare to take [a sock] out. I don't think that people knit anymore in public. It has changed a lot since I started ...

*Interviewer:* Who decides on these lay-offs?

*Man:* I believe that the decisions come from up there [the head quarters of the multinational], there they just check this and that. The first impulse probably comes from there. These [managers] here are only messenger boys that obey the orders.

*Woman:* Today it's like that.

*Man:* There, they just deal with numbers. It is a hard game.

**"Bun eating" story:**

In the old days life in the plant was like living in a prison. Even having a bun with coffee or listening to the radio at the work-place was considered a crime that would be severely punished, if detected by the foremen. Nowadays, the atmosphere at the plant resembles more that of a recreation park: the coffee-machines provided by the employer produce 5 litres of coffee a minute, the workers are eating buns, sandwiches, anything, whenever they feel like it, and rock 'n' roll is heard all day long.

Copyright of *European Journal of Work & Organizational Psychology* is the property of Psychology Press (T&F) and its content may not be copied or emailed to multiple sites or posted to a listserv without the copyright holder's express written permission. However, users may print, download, or email articles for individual use.