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Burnout ?

Abstract

In this thesis, two questions are answered: What is burnout ?, and What causes burnout ? Essentialist conceptions of burnout are criticized and burnout is regarderd as a syndrome in the sense of a practice concept, not possible to delineate exactly. Practice concepts are compared to social constructions. From the syndrome idea, the Maslach Burnout Inventory (MBI), is chosen as an operationalization of the burnout syndrome. There, the syndrome consists of three causally related components: emotional exhaustion leading to depersonali-zation, which leads to a sense of reduced personal accomplishment. The measure is psychometrically evaluated on a survey study of employees in two Swedish human service organizations: the Social Insurance Organization, and the Individual and Family Care within the social welfare organization. First, personal accomplishment is found not to covary with the two other MBI components, and is therefore discarded from further analysis. The remainder of the thesis is devoted to investigate the relation between emotional exhaustion and depersonalization. This is done relating them to different levels of analysis, psycho-physiology, social psychology, and organization, using regression modelling also for multilevel problems in connection with occupational stress theory and the theory of human service organizations. Two distinctly different mechanisms are found behind the development of the two MBI components. This contradicts a general consensus in burnout research. It is concluded that the "burnout syndrome" is an artificial social construction. Emotional exhaustion and depersonalization are however real phenomena, but with different causal provenience. There are different reasons for people getting tired or mean.

Key words
emotional demands, demand-control model, work conditions, alienation, human services

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BURNOUT ?

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1. BURNOUT ?

In 1915, behind the front lines in World War I, the famous philosopher Ludwig Wittgenstein wrote a letter to his friend, the author Ludwig von Ficker. Wittgenstein described himself as having a sterile period, unable to pick up new thoughts. This was however hopeful since;

> "I only have that during a decline in productivity, not when it has totally ceased. But - unfortunately, I now feel totally *burned out.* One only has to have patience." Cited in Monk (1992, p 119, my italics).

Almost forty years later, in 1953, Schwartz and Will published a case study about a nurse, Miss Jones. She returned from a vacation to the mental hospital ward where she was working. She found that things were not as usual. There was a shortage of personnel, the patients were not treated adequately, and the ward staff were tired and not effective in their collaboration or in dealing with the patients. The work was performed in a "context of low morale" (Schwartz & Will, 1953, p 399). Under these circumstances, Miss Jones reacted like her workmates. She distanced herself from her patients, got angry with them and found them irritating and demanding. As she had more difficulty with the patients, her self-esteem went down. She began to regard herself as a failure. The story of Miss Jones is often cited as an early example of *burnout* (Maslach & Schaufeli, 1993).

Another forty years later, in 1993, a case study was published about a male German Shepherd dog used in police work (Luescher, 1993). The dog served at a major international

airport and was trained to search airplanes for explosives. The dog had performed well in its job for more than a year, but suddenly its behavior changed. It exhibited intense excitement by constant circling in the back of the vehicle during the ride to the airport. It also showed territorial aggression towards strangers. The dog's job performance decreased progressively. Previously, it could work continuously for 1.5 hours. Now it became exhausted after about 15 minutes. The dog's territorial aggression became almost uncontrollable. It was diagnosed as being *burned out.*

After treatment in intervention programs, both Miss Jones and the shepherd dog started to function better in their jobs. Wittgenstein wrote "Tractatus", even without an intervention program.

The three cases span over 80 years and are very different. Still, they have one thing in common - burnout. Wittgenstein probably used the word meaning improductivity, Miss Jones acted negatively in relation to her patients, and the bomb dog was so stressed that it could not find the explosives. Also Miss Jones and the bomb dog were improductive in relation to their respective tasks. It seems as if burnout simply means improductivity. Unfortunately, as this thesis will show, that does not exhaust the meaning of the concept.

Literally, burnout refers to large fires, to electric short-circuits, or to the burning speed of rocket segments (Esselte, 1989). Used as a metaphor, it can be found in many other contexts, certainly not always meaning improductivity. In the 1930's, burnout was a concern in professional athletics and in the performing arts, and

in the 1960's, it was used to describe the effects of chronic drug abuse (Farber, 1983; Paine, 1982).

About twenty years ago, the concept was brought into research on the human services, describing adverse reactions to work among people in caring professions. The American psychoanalyst Herbert Freudenberger is usually given credit for this particular use of the concept. The human service oriented conception of burnout has had obvious appeal to workers in human services as well as to researchers. Burnout has increasingly received attention in research. One example of the quantity of the research can be found in the 2496 titles of a bibliography comprising the burnout literature between 1974 and 1989 (Kleiber & Enzmann, 1990). Of these, 70% were articles and book chapters, 19% dissertations, 7% conference papers, 3% books, and 1% research reports. For the period 1974-1996, the keyword "burnout" yielded 1590 references in Psychological Abstracts, 326 in Sociological Abstracts, and 671 in MEDLINE. The present work is another contribution to this extensive research.

The structure of the thesis

The thesis will attempt to answer two main questions:

1. What is burnout ?
2. What causes burnout ?

The first question,"What is burnout?" is not particularly original. One finds it in almost every book on burnout. There are also many answers that rather obfuscate than clarify the issue. Thus, burnout is said to be: a reaction to a stressful work situation (Cherniss, 1980), the feelings of a corrections

department worker finding out that one of her clients was back in jail (Edelwich & Brodsky, 1980), frustrated good intentions among decent people who have striven hard to reach a goal (Freudenberger & Richelson, 1980), and even, believe it or not, a relational problem between humans and guppy-fish. "Persons can burn out with respect to their profession, job, spouse, house, locale, wardrobe, car, or guppy." (Radde, 1982, p 1162). A complete list of all definitions of burnout would be rather exhausting. Here, it is sufficient to point out that, ignoring some more fanciful descriptions, burnout is usually considered to be related to adverse work conditions in human service organizations. It is most often described as a syndrome (Ekberg, Griffith, & Foxhall, 1986; Freudenberger, 1975; Leiter, 1992; Maslach, 1981; Paine, 1981; Paine, 1982; Rogers, 1987). Five different attempts to capture the concept will be described as a starting point.

Chapter 2: Five attempts to clarify burnout. Herbert Freudenberger described exhausted and cynical personnel in alternative institutions as burned out from their work (Freudenberger, 1974). He later widened the meaning of burnout to encompass others than persons working in the human services, e.g. women in general. His descriptions of burnout were based on observations and experience. Freudenberger considered many different symptoms, both physical and behavioral, that he regarded as signs of burnout.

The implicit syndrome approach by Freudenberger was more explicit in the second attempt to clarify burnout, by Christina Maslach, probably the most cited burnout researcher (Maslach, 1976). She explicitly described burnout as a syndrome consisting of three different dimensions, emotional exhaustion,

depersonalization, and a sense of reduced personal accomplishment. Her initial interest in burnout was related to the depersonalization aspect, via the concepts of "detached concern" and "dehumanization in self-defense". She developed a burnout measure, the Maslach Burnout Inventory, (MBI), designed to capture the three dimensions of burnout. Maslach's view of burnout was thus clearly multidimensional. She reserved the experience of burnout to persons doing "people-work", i.e. human service personnel. She also suggested that the syndrome developed in a process. First, the human service person becomes emotionally exhausted due to the inherent emotional demands in such work. In order to cope with this exhaustion, people distance themselves by becoming depersonalized in relation to their clients, eventually leading to feelings of reduced personal accomplishment.

This multidimensional view of burnout was different from the third attempt described in chapter 2, Ayala Pines' (Pines, Aronsson, & Kafry, 1981). She viewed burnout as unidimensional, consisting of different aspects of exhaustion (physical, emotional, and mental). Pines regarded burnout as related to involvement with other people. Contrary to Maslach, this was not limited to human service work, but referred to human interaction in general. Pines also (implicitly) discussed burnout as a syndrome. Compared to Freudenberger and Maslach, she is closer to a medical discourse, e.g. when stating that chronic fatigue is one aspect of physical exhaustion. In this sense, Pines' burnout description is similar to the fourth attempt in chapter 2 to clarify burnout, Walter Paine's (1981).

Paine put the question if burnout should be regarded as a mental disorder. However, he did not find this to be appropriate, even

though he considered certain psychiatric disorders to be similar to burnout. Instead, he suggested a burnout process consisting of four stages, where burnout mental disability was the end state. Paine had an explicit syndrome approach towards burnout and considered it to be health-related.

The fifth and last attempt presented in chapter 2, by Gillian Walker, is totally different from the four others (Walker, 1986). For her, burnout is an ideology that hides the strains and frustrations of professionals. Academia constructed the concept, where human service worker experiences were defined and re-entered into the general culture as burnout. This provided "ordinary people" a way of expressing their experiences. This process does not mean that the experiences defined as burnout do not exist, but they hide "real reasons" for the strains that these human service workers experience, lying in social factors like the fiscal crisis. The construction of burnout instead put the attention to the experiences of the individual human service worker, individualizing a social problem.

Chapter 3: Burnout - a syndrome or a social construction ? The five attempts to clarify burnout lead to a first attack to find the essence of burnout in chapter 3. The question "What is burnout?" will be reformulated to the question: "Is burnout a syndrome or a social construction?" Answering this question necessitates an analysis of both the syndrome concept and the concept of social construction. Then we encounter two concepts almost as diffuse as burnout.

The label "syndrome" is frequently applied to medical conditions. Few discuss the meaning of the concept. I have only found two instances that in any way problemize the syndrome

concept. They will be presented in detail in chapter 3. The understanding of the syndrome concept can be extended using the ideas of the Danish philosopher Uffe Juul Jensen concerning the development of diseases (Juul Jensen, 1987). According to him, all diseases should be regarded as syndromes. He distinguishes between practice and ideal concepts, stating that no ideal concepts, i.e. no theoretical definitions, can be formulated of diseases. Disease are historical phenomena, where initial classifications of symptoms into syndromes split into subgroups. In this differentiation process, some syndromes disappear while others become diseases in a complex interplay of social, professional, organizational, and scientific factors. Juul Jensen's analysis of diseases breaks away from the traditional biomedical essentialism.

In chapter 3, I argue that Jensen's analysis can be used to understand the essence of burnout: Burnout has no essence. Instead, the concept refers to categorizations in a practice of psychologists and human services. It is not an ideal but a practice concept, and the quest for a final definition of burnout is as futile as finding the final definition of disease. Burnout is defined and delineated in practice, which means that it can vary in meaning.

The proof of the pudding is eating it, i.e. the proof of burnout is the application of its measure in empirical practice. The thesis will therefore enter into the empirical world in chapter 4. There, an extensive empirical study will be presented of personnel from two Swedish human service organizations. Since it is my conviction that all empirical analysis should be closely integrated with theory, the theory of human service organizations is presented in the chapter.

Chapter 4: Human service organizations. This chapter will be the starting point for the more empirically inclinated part of the thesis. There will *not* be, however, an "empirical section", to be distinguished from a "theoretical section". My ambition is to integrate theory and data, based on my firm conviction that there are no theory-less data, and no theory without connection to the real world. The emphasis will vary between theoretical and empirical analysis, but both theory and data will be present all the time. Consequently, there will be no "methods section", since also the methodological discussion should be conducted in close connection to the theoretical and empirical problems.

Chapter 5: Measuring burnout. Indeed, the connection between theory and data is measurement, and therefore the measuring of burnout is investigated in chapter 5. First, a description of different burnout measures is done. A consequence of the analysis of burnout as a practice concept will be that the choice of measure is simplified. Since no measure can capture "the real essence" of burnout, the most used measure should be chosen to retain comparability to others. This measure is the MBI, which is described thoroughly in the chapter and shown to have good psychometric properties. The MBI is constructed to measure the three factors of Maslach's burnout analysis, emotional exhaustion, depersonalization, and personal accomplishment. It shows to be well applicable also in a Swedish human service context.

The connection between theory and data is obvious in the choice of measure, since it reflects the idea of burnout as a process. Here, the second main question of the thesis, "What causes burnout ?", enters. Paradoxically, it will be shown that an answer to this question is necessary before settling the first

question, "What is burnout ?". If the defining question is regarded to concern the essence of burnout, I will argue that it is meaningless and unanswerable. On the other hand, if the question is regarded as referring to a practice concept, the answer is very simple: Burnout is that which is measured by the MBI.

This statement sounds like pure operationism. However, using the MBI brings with it the theoretical idea of a distinct burnout process, which is not a defining matter but an empirical proposition. The operationism disappears if the theoretical basis of a measure is invoked and tested. This is done in chapter 6. There, the relations between the three burnout components are investigated in detail, also assessing indirect effects.

Chapter 6: "The burnout process". The results in this chapter show more complex relations between the three components than suggested by Maslach. Personal accomplishment was almost unrelated to the other two factors. Based on this observation alone, the three stage process model suggested by Maslach is refuted. Personal accomplishment may be a phenomenon in its own right, but it has very little to do with depersonalization or emotional exhaustion. If anyone wants to call it burnout, that is certainly possible, but then the problem of the meaning of burnout is reduced to pure semantics. There was, however, a clear association between the other two components, as suggested by Maslach's model. The refutation is therefore only partial, and it is concluded that the connection between the two remaining burnout components should be further analyzed. As explicated in the chapter, an association is not enough to state that there really is a causal relation between two phenomena. If it would be warranted to call emotional exhaustion and depersonalization a

"burnout syndrome", a minimum requirement would be that they are causally related. The object of the next chapter is to begin to find out if that is the case.

Chapter 7: Job stress in human services. There is unanimity in the literature that burnout is caused by stress. This blunt statement makes us not much wiser, however, since it introduces a concept as complex as burnout, namely stress. In this more theoretical chapter, I have chosen one of the models in occupational stress research, the demand-control model by Karasek and Theorell, and tried to apply it to burnout conceived as emotional exhaustion and depersonalization. Since burnout relates to human service work, and the stress model does not, it becomes necessary to consider the relevance of the stress model for such work before applying it on burnout. It will be found that it can be used with, I believe, important and original modifications, as a possible causal explanation for emotional exhaustion and depersonalization.

Chapter 8: Demand, control, human services, and emotional exhaustion. Since emotional exhaustion by many is regarded as "the core meaning of burnout", the causal analysis begins with that component of the syndrome-to-be. Stress is suggested to trigger the burnout process beginning with emotional exhaustion. In chapter 8, the constituents of the stress model will be related to emotional exhaustion, including a detailed analysis of the explanatory variables. The chapter is more empirical in its inclination, but theoretically connected. The analysis is continued and extended in the following chapter.

Chapter 9: Job strain, human services, and emotional exhaustion. A central tenet of the stress model is the interaction between

demands and control in the work situation. This proposition is the object of chapter 9. There, the relations between stress, as conceived in the chosen modified stress model, and emotional exhaustion are analysed in detail. Another empirical material is introduced in the chapter, where also physiological stress measures are available and related to emotional exhaustion. It will be shown that the relation between stress and emotional exhaustion is complex, and the consensus about the close connection between emotional exhaustion and stress can be questioned to a large extent. The psychophysiological study, for example, shows no clear relations between stress indicators and emotional exhaustion. The analysis is however continued and extended in the next chapter before definite conclusions are made.

Chapter 10: A fully specified model of emotional exhaustion. Relating physiology to a social psychological phenomenon like emotional exhaustion means that a level borderline is crossed. This can be done upwards as well as downwards in the level hierarchy. As well as there is a consensus about the relation between burnout and stress, there are also many who suggest a relation between organizational structure and burnout. In chapter 10, the level above the individual, organization, is analyzed. This chapter presents a fully specified model of emotional exhaustion, including formal and informal organizational variables, job and individual attributes and the variables resulting from the previous analyses. It is shown that formal organization seems rather irrelevant for emotional exhaustion. Emotional exertions are most important, while the traditionally formulated stress model has very limited effects on emotional exhaustion.

Since the previous chapters also have been devoted to the detailed analysis of measures of all the variables that are investigated, many of the basic analytic tasks are fulfilled when the causal factors are studied behind the other burnout component, depersonalization. The amount of text concerning the two components should *not* be regarded as some sort of valuation of their importance. The study of causes of depersonalization can be contained in one chapter, number 11.

Chapter 11: Depersonalization. Here, the model developed for emotional exhaustion is applied on depersonalization. A clear result appears: there are different causal patterns for depersonalization than for emotional exhaustion. Emotional exertions have almost no relation to depersonalization, which does not seem stress related at all. Client related factors and individual attributes are important for depersonalization, and it retains a relation to organizational structure, which emotional exhaustion does not.

Further in chapter 11, the process model of Maslach is revisited. The analytic instrumentarium is now complete, allowing an analysis of the reciprocal relations of the two "syndrome parts", emotional exhaustion and depersonalization. Inclusion of emotional exhaustion in the depersonalization model changes little in the model, which it should if they were related according to the process model. Turning the process model around, i.e. inclusion of depersonalization as an explanatory factor behind emotional exhaustion, changes the image of the causal mechanisms rather little. No distinct indirect effects as predicted by the process model can be found, although there remains a reciprocal association between the two components.

Chapter 12: Burnout ? In the final chapter, number 12, the questionmark after burnout remains. The chapter contains three parts: first a detailed summary of my main argument. This is followed by a discussion of possible methodological and theoretical problems. The chapter - as well as the thesis - ends with a brief revisit into practice asking for remedies to burnout.

The main conclusion is that the two suggested components of burnout are produced by different mechanisms. The idea of a burnout syndrome is refuted. As such, burnout is an ideological social construction, not a really existing phenomenon. However, emotional exhaustion, depersonalization, and of course also personal accomplishment are probably real phenomena. Calling either burnout may be a semantic question, but would hide more than it reveals.

Burnout research, as well as medicine, is infested with a covert ambition to find the real essence of their basic concepts, burnout and disease. Such ambitions are meaningless. Taking a critical approach to burnout, as done here, leads to the dissolution of the concept. This is the first hand conclusion of the thesis. In my view, this is an important result. The consequence is that literally thousands of scientific works are devoted to a quixotian attack on windmills.

One should note that this conclusion does not amount to replacement of one essence of burnout with another. A common feature of essentialist thought is that vigorous criticism results in a new essence to replace the previous one. Walker, for instance, says that burnout "actually is" a conspiracy to hide the real power in capitalist society. Another critic, Karger, says that burnout "actually is" alienation, while still another, Asplund,

means that it "is" lack of social responsivity. They all have in common that the phenomenon as such is acknowledged, although the essence of it varies.

I mean that burnout has no essence. There certainly exists emotionally exhausted or depersonalized people. There is however no reason to artificially bring them together. The mechanisms producing the one or the other are different.

On the road towards the full burnout analysis, the demand-control stress model had to be modified to a great extent, by means of human service theory. The original model clearly does not hold for human service work as far as emotional exhaustion and depersonalization are concerned. The ambition of the demand-control model to be a general model of work cannot be corroborated. In human services, there are emotional demands which are not captured in the usual ideas of workload and demands. Control also becomes very different when the object of the work is to get control of other people.

Emotional exhaustion is primarily produced by emotional exertions, and rather insensitive for variation in job and individual attributes. Depersonalization is related to role conflict and outcome control, but also to job and individual attributes. If emotional exertions are regarded as stress, then emotional exhaustion is stress related, but depersonalization is not. There are different reasons for people getting tired or mean.

2. FIVE ATTEMPTS TO CLARIFY BURNOUT

The first attempt to describe the burnout phenomenon was done by Herbert Freudenberger, who introduced the concept as describing adverse reactions to human service work. He was a clinically oriented psychoanalyst, and his approach to burnout was tainted by this fact. He drew his ideas of burnout from clinical experience of "burned out" persons.

The clinical approach by Freudenberger is different compared to the second attempt, Christina Maslach's. She can be regarded as the person who brought burnout into Academia, and she has played an important role in the expansion of the burnout research. She has developed the most widely used measurement of burnout, the Maslach Burnout Inventory, MBI, where burnout is conceived as a syndrome of three different, but related, aspects. Maslach clearly has a multidimensional view of burnout.

In the seventies, Christina Maslach worked together with Ayala Pines. She developed a somewhat different approach to burnout, conceived as a unidimensional phenomenon. Also Pines discusses burnout in terms of a syndrome, although not as explicitly as Maslach. Pines leans more towards relating burnout to medical conditions, which is similar to Walter Paine's approach to burnout. Like Maslach, he explicitly discusses burnout in terms of a syndrome. There are according to Paine different stages in a burnout process which ends in mental disability. Paine pushes burnout from psychology in the direction of a medical discourse.

The fifth attempt also tries to break away from psychology, but in another direction. The sociologist Gillian Walker discusses burnout in terms of a social construction. She offers explanations on the societal level. Walker's analysis differs very much from other discussions of burnout.

In this chapter, the five attempts will be described in some detail. There are many more researchers who have discussed burnout, and they will be discussed in due course. The selection here serves as an introduction, but includes the three most important pioneers of burnout research.

The birth of an idea

A commonly referred starting point for the use of the burnout concept in human services is an article in 1974 by Herbert Freudenberger. It was based on his own experiences and cooperation with the personnel of his alternative free clinic (Freudenberger, 1974; Freudenberger & Richelson, 1980). He had opened a store-front clinic in East Village, New York, and recruited a few professionals to volunteer in the clinic, but the bulk of the personnel came "from the street", needing lots of training. Freudenberger worked intensely to fulfill all his engagements. He became more and more involved with the clients at the clinic and also had to take care of his private practice to support himself and his family.

In his own story, when Freudenberger was to take a vacation at Christmas with his family, he collapsed, stayed at home and slept, ruining the family vacation. When he woke up, it was literally wake-up time. He began to analyze himself, realizing

that he was burned out. Also, in observations of his personnel, it was clear that they presented reactions similar to his own. This led him to his first descriptions of burnout as a phenomenon among people working in free-clinic settings[1] (Freudenberger, 1974; Freudenberger, 1975).

Freudenberger initially defined burnout as;

> "to fail, wear out, or become exhausted by making excessive demands on energy, strengths, or resources."

This is said to be what happens when staff in alternative institutions burn out (Freudenberger, 1974, p 159-160; Freudenberger, 1975, p 73; Freudenberger, 1977, p 90). It amounts to a purely nominal definition of the concept giving little information of its meaning. The concept first referred to staff of alternative institutions, but was soon expanded. Freudenberger extended the concept to be more general and also related it to life outside work (Freudenberger & North, 1985; Freudenberger & Richelson, 1980). Potential burnout victims were the addict who shoots up until he possibly dies; the speed freak, when he reaches his maniacal speed runs; the compulsive gambler, the golf freak, and the overweight person (Freudenberger, 1975). He also discussed burnout in relation to work in other settings than the helping professions, although people who choose to become helpers were said to be particularly vulnerable. Work in such professions was characterized as especially taxing and tough (Freudenberger & North, 1985; Freudenberger & Richelson, 1980).

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[1] To my knowledge, Freudenberger has never discussed why he used the term burnout as a metaphor of the feelings and behaviors by the free-clinic personnel.

The meaning of the concept was also expanded. The burnout condition was said to imply several different symptoms, which Freudenberger described thoroughly, based on his observations in daily life. He made very detailed statements about the general effects of burnout. Its signs can be both physical and behavioral, varying in degree from person to person. The physical or psychosomatic symptoms occur about one year after a person has begun to work in an institution. Freudenberger considered the following symptoms to be early signs of burnout: feelings of exhaustion and fatigue, unability to shake a lingering cold, feelings of being physically run down, frequent headaches, backaches, and gastrointestinal disturbances, loss of weight, sleeplessness, depression, and shortness of breath.

One should note that all these items were stated as effects of burnout. It remains very unclear where the cause was delimited in relation to its effects. As it stands, it seems that what Freudenberger said is that exhaustion has the effect exhaustion, or that wear out results in wear out. One interpretation is that the effects indeed are parts of the cause, that burnout *is* a syndrome of various symptoms, If so, the meaning is widened considerably, becoming quite elaborated. The number of symptoms mentioned by Freudenberger was rather impressive.

The potentially burned out person was described as someone who finds it difficult to hold his feelings. He cries too easily, yells and screams, and feels overburdened by the slightest pressure. Due to all his anger, he becomes suspicious and paranoid, even to his workmates, and feels that everyone is out to fool him. He also feels omnipotent and thus becomes overconfident and risktaking in his contacts with dangerous clients, like speed freaks, homicidal people and other paranoids.

Sometimes the risk-taking behavior is said to border on the lunatic, in terms of the burnout victim's own behavior. Other signs - or symptoms in the syndrome - are that the burned out person distances himself from emotional involvement, and becomes cynical. Clients are discussed in intellectual and jargon terms, and suggestions from workmates are always negatively met. This has to do with one of the most serious personality traits coupled to burnout - rigidity. The "burnout" becomes stubborn, rigid, inflexible, and "the house cynic" whose totally negative attitude gets verbalized. He blocks progress and constructive change. The "burnout" looks, acts, and seems depressed, and keeps to himself. He hangs around more and more time at his workplace because he has lost just about all his friends. Less and less is being accomplished at work (Freudenberger, 1974; Freudenberger, 1975; Freudenberger & Richelson, 1980).

Burnout becomes a conglomerate of very diverse phenomena. It includes personality, work performance, and social relations. Personality was however also said to be something different than burnout, a risk factor of the syndrome rather than a part of it. If personality is a risk factor, it becomes easy to widen the concept to apply to life in general. This became clear in a new definition where Freudenberger described burnout as "a state of fatigue or frustration, brought about by devotion to a cause, way of life, or relationship that failed to produce the expected reward" (Freudenberger & Richelson, 1980, p 13).

In the new definition, burnout was defined as a state, and devotion as a causal personality factor. Freudenberger eventually described burnout to be a problem caused by a discrepancy between a person's good intentions and accomplished goals.

People who "fall prey" to burnout were said to start with some ideal in mind, and to strive hard to reach a goal, so called "high-achievers". If the person's expectation level was dramatically opposed to reality, but he still persisted in trying to reach his goal, he would become burned out. The ideal to be achieved could be a marriage like those in the storybooks, money, power, a career, or whatever.

Burnout had now become related to life in general, and Freudenberger even asked why Americans, as a nation, seem to be in the throes of the fast-spreading phenomenon burnout (Freudenberger & Richelson, 1980, p 3). Although burnout was applied to all Americans, people in the helping professions were still said to be especially vulnerable. They hope to have an impact on peoples lives, but often see failure and misery despite their efforts (Freudenberger & Richelson, 1980). Besides the professional helpers, a new particular risk group was mentioned - women. Freudenberger and North (Freudenberger & North, 1985) asserted that women's burnout had become the most prevalent condition in the modern culture. Not only professional women were supposed to be the victims of burnout, but also housewifes, mothers, widows, the single, and the divorced.

To summarize Freudenberger's discussion, he started out to describe burnout as reactions to work in the helping professions. He then widened the concept to make it applicable to life in general and to most people, especially the "high-achiever personalities". Consequently, the meaning was widened from descriptions of the signs of burnout to inclusion of work performance, social relations, and particularly personality factors, similar to type A-behavior personalities.

Type A personalities were initially defined as those persons with intense sustained drives to achieve usually poorly defined goals. They have been described as "doers", capable of accomplishing their particular functions, but at the same time chronically harassed by their various committments, ambitions, and drives (Friedman & Rosenman, 1959). Freudenberger did not discuss the similarity between the type A-personalities and burnout, although the two ideas clearly seem to refer to the same, or at least similar, phenomena. Both concepts are widely applicable, due to their vagueness. They seem to be archetypical "rubber concepts", that can be stretched infinitely, describing everything and explaining nothing. Social science and psychology are plagued by this kind of contentless labels that occasionally win popularity and eventually wane away, becoming replaced with some other concept. Unfortunately, this does not mean that such ideas always are totally empty and readily disposable. There can be a meaningful core in them, although it can be very difficult to find.

Regarding Freudenberger's description of burnout, it mostly seems as if he views the phenomenon as composed of different components. There, a clue can be found to the conception of a burnout syndrome. Freudenberger never explicitly discussed burnout in terms of a syndrome, which distinguishes him from Christina Maslach. She began her study of burnout through observations and interviews with human service personnel. However, in contrast to the clinician Freudenberger, she was primarily interested in research. Her approach to burnout constitutes the second attempt here.

The syndrome concept pursued

In Christina Maslach's own account, her interest in burnout originated in research on emotional arousal. She studied how persons working as policemen or in hospital emergency rooms managed to keep such arousal from disrupting necessary action. Two concepts of interest in this context (both borrowed from the medical literature) were "detached concern" and "dehumanization in self-defense". Detached concern (Lief & Fox, 1963), refers to the medical profession's ideal of blending compassion and emotional distance. Dehumanization in self-defense (Zimbardo, 1970) refers to the process of protecting oneself from overwhelming emotional feelings by responding to other people more as objects than as persons. With these two concepts in mind, Maslach conducted exploratory interviews with practitioners, like physicians and nurses. Three key results emerged from the interviews.

First, emotional experiences seemed to be important in the provision of health care. Most of them were related to negative situations, where the practitioner, for example, had to deal with unpleasant or difficult patients, give bad news, or handle patient's deaths. Such emotional experiences were said to be overwhelming, and the practitioners talked about being emotionally exhausted or drained of their feelings.

The second aspect had to do with detached concern, which was supposed to be more an impossible ideal than achievable in reality. The practitioners found it difficult to detach themselves from the emotional strains and at the same time maintain concern for the patients. A negative shift over time towards the

patients was instead more common. The practitioners could even develop dislike or despise of their patients.

The third aspect was related to the self-assessment of the professional competence. The experience of emotional turmoil was often interpreted as a professional failure. Many of the practitioners did not feel prepared by their formal training to deal with the emotional aspects of the work and their impact on them.

By chance, Maslach got to know that the same kinds of feelings and reactions also were frequent among poverty lawyers, and that they used to call it burnout. This, as well as Freudenbergers work, led Maslach and her coworker Susan Jackson to adopt the term. (Maslach, 1993; Maslach & Jackson, 1984). From the results of the explorative studies, Maslach and Jackson developed a measurement of burnout, called "the Maslach Burnout Inventory", MBI (Maslach & Jackson, 1981b). They conducted exploratory factor analyses on data from different human service samples and found three dimensions, named emotional exhaustion, depersonalization and personal accomplishment , which were interpreted as reflecting a burnout syndrome. Thus, as pointed out by Schaufeli and collaborators (1993a), Maslach's three burnout components were not theoretically deduced. They were rather based on knowledge from interviews and observations of human service workers.

The presence of a measure like MBI plays an important role in the early development of a syndrome to a more established status. Maslach's conceptualization of burnout can be characterized as a clear advancement towards such status in relation to Freudenberger. Maslach, like Freudenberger in his

initial work, related burnout to work in the human services. The similarities between the two however stop there. Freudenberger expanded the concept of burnout, while Maslach restricted it. The syndrome idea was explicit from the beginning. She defined burnout as

> "...a syndrome of emotional exhaustion and cynicism that occurs frequently among individuals doing 'people-work' of some kind."(Maslach & Jackson, 1981b, p 99).

The syndrome was said to consist of three parts, where the key was feelings of emotional exhaustion. The other aspects were the development of negative and cynical attitudes and feelings about the clients, and a tendency to evaluate oneself negatively with regard to the work with clients. The two latter aspects of the syndrome were included more explicitly in later definitions, where burnout sometimes was identified as a form of job stress (Maslach & Florian, 1988; Maslach & Jackson, 1985), and defined as

> "...a syndrome of emotional exhaustion, depersonalization, and reduced personal accomplishment which can occur among individuals who do 'people-work' of some kind." (Maslach & Jackson, 1984, p 124).

The syndrome conception is here fully developed. It should be noted that the burnout definition is more a description of the phenomenon, just like many "definitions" of diseases. "Disease is not something one defines, only something one describes in the same way as a book about animals or plants describes, but not defines, an elephant or a beech tree" (Wulff, 1980, p 73).

Maslach's three burnout components refer to the following phenomena:

1. "Emotional exhaustion" refers to feelings of being emotionally drained by the contact with other people;
2. "Depersonalization" refers to callous responses towards these people;
3. Reduced "personal accomplishment" refers to a decline in the feelings of successful achievement in the work with people (Maslach & Jackson, 1984).

A hypothesized relationship between the three components is that emotional exhaustion is a response to emotional stressors at the job and therefore likely to be the first phase of burnout. The individual may attempt to cope with the stressors by detaching from others, developing depersonalized responses to them. When depersonalization occurs, the individual might evaluate him- or herself less positively in terms of accomplishments. Thus, emotional exhaustion should be a predictor of depersonalization, which should be a predictor of the level of personal accomplishment (Maslach & Jackson, 1982).

Freudenberger can also be interpreted to consider burnout as a process when he mentioned specific symptoms as "early signs". He was however not explicit, and as mentioned above, the similarities between Freudenberger and Maslach are rather few. She keeps the meaning of the concept much more delimited and does not change it over time. While Freudenberger described the burnout symtoms in a way that could be *interpreted* as referring to a syndrome, Maslach explicitly referred to such a conception of burnout. Further, Freudenberger's emphasis of personality factors was not shared by Maslach. On the contrary, she stated that "..many of the causes of burnout are located not in permanent traits of the people involved, but in certain specific social and situational factors.." (Maslach, 1976, p 22).

Maslach reserved burnout to individuals who do "people-work", i.e. those working in the human services. She stated that there are severe emotional stressors inherent in human service work, both related to the staff-client relationship and to other job-related factors.

> "The providers of human services are usually required to work intensely and intimately with people on a large-scale, continuous basis. They learn about these people's psychological, social, and/or physical problems and are expected to provide aid or treatment of some kind. The staff-client interaction can be very emotionally stressful for the staff person as well as for the client, both because of its content - e.g. embarrassing information about the client, hostility directed at the staff person - and because of its structure - e.g. regulations requiring the the staff member to ask certain personal questions to the client, or the staff member not being authorized to give the client what he or she wants. In order to perform well in such stressful situations, the staff person may defend against the strong emotions through techniques of detachment." (Maslach, 1978, p 112).

Maslach implies here that the relation is a power relationship, where clients are dependent both on organizational policies, norms, and values, as well as on the relation to the individual human service worker (Hasenfeld, 1992b). But the staff-client relationship is not the only potential stressor. Caseload, administrative red tape, and scarcity of resources could also act as sources of burnout (Maslach & Jackson, 1984). This means that, in contrast to Freudenberger, Maslach locates burnout to a social psychological level. Burnout occurs at the individual level, but does not contain any personality traits. Rather, properties of

the work in human services are supposed to be critical in the understanding of burnout. A position inbetween the two in this respect was taken by a third participant in the early discussion of burnout, Ayala Pines.

Burnout or tedium - or burnout ?

Ayala Pines' early research on burnout was influenced by three areas of psychological research. The first area was stress and coping, the second was stress in the work environment and job satisfaction, and the third was burnout in the human services. Maslach was the primary source of inspiration in the burnout area, and Pines collaborated with her in the late seventies. She also conducted many burnout workshops together with two other colleagues. The organizational setting for the workshops was primarily different human service organizations (Pines, et al., 1981; Pines & Kafry, 1978).

Pines however introduced a new concept, tedium. It was described as something that happens when work demands exceed a person's endurance and ability to cope. It consists of a cluster of symtoms, and was defined as " .. a general experience of physical, emotional, and attitudinal exhaustion" (Pines & Kafry, 1978, p 499). Tedium was said to be characterized by feelings of strain and burnout, emotional and physical depletion, negation of one's self and one's environment, distress and discontent with one's work and way of life, a sense of failure, and "that one cannot take it anymore".

It is reasonable to interpret tedium as a syndrome since it is explicitly said to be a cluster of symptoms. Burnout is one of the

symptoms, and tedium thus includes burnout. Tedium is related to work in the human services, but it is not explicitly delimited to people working in such organizations. In a later work by Pines, both tedium and burnout were characterized as clusters of exhaustion reactions, similar in symptomatology, but different in origin.

> "Tedium is the experience of physical, emotional, and mental exhaustion. It is characterized by emotional and physical depletion and by the negation of one's self, one's environment, and one's life. Burnout is identical to tedium in terms of definition and symptomology but is said to be unique to people who work with people in situations that are emotionally demanding." (Pines, et al., 1981, p 202).

Tedium is the result of *any* prolonged chronic mental, physical or emotional pressure, while burnout is the result of emotional pressure due to intense involvement with people over long periods of time. The two concepts are thus closely related to each other (Pines, et al., 1981). Burnout is accompanied by symptoms indicating a general malaise, like emotional, physical, and psychological fatigue, feelings of helplessness, hopelessness, and lack of enthusiasm about work and life in general. Tedium occurs when life imposes more stress than support, due to daily struggles and chronic stresses in everyday life and work. Still, Pines said that "..burnout can occur in all aspects of life." (Pines, et al., 1981, p 169). One can be a burned out husband, wife or parent. Burnout is also affected by cultural mores and societal expectations. Burnout often spills over from one category of life to another. Despite such contentions, burnout is only caused by continual intimate involvement with other people, which according to Pines distinguishes it from tedium.

Pines developed a measurement of tedium/burnout, The Pines' Tedium Scale (Pines, et al., 1981). Later on, Pines ceased to distinguish between tedium and burnout, and the measure was renamed the Burnout Measure (Pines & Aronson, 1988). Burnout was defined as

> "..a state of physical, emotional, and mental exhaustion caused by long-term involvement in situations that are emotionally demanding." (Pines & Aronson, 1988, p 9).

The physical exhaustion was characterized by low energy, chronic fatigue, weakness, and weariness, and increased susceptibility to illness. The emotional exhaustion was feelings of depression, helplessness, in extreme cases leading to mental illness. The mental exhaustion was characterized by the development of negative attitudes toward one's self, one's work and one's life (Pines & Aronson, 1988, p 12-13).

Pines located burnout to the social psychological level. The causes of burnout were primarily put in the environment and not in the individual. Further, burnout was clearly attributed to involvement with other people. Here, there are similarities to Maslach, even if Pines did not reserve burnout only for people in the human services (Pines, et al., 1981). A similarity to Freudenberger lies in the extension of burnout and tedium to life in general. Further, even if the causality of burnout and tedium was located outside the individual, personality factors were supposed to mediate the consequences.

Also Pines can be interpreted as describing burnout in terms of a syndrome, when she mentions different symptoms supposed to be related to burnout. One difference between Pines on one side and Freudenberger and Maslach on the other side is that she related

burnout closer to medical factors. One example is her statement that chronic fatigue is an aspect of physical exhaustion.

This is interesting, since the chronic fatigue syndrome (CFS), or the so called "yuppie disease", is more medically oriented compared to burnout. CFS is however not a new disease. It was called "febricula" in the 18th century, "neurasthenia" and "DaCostas effort syndrome" in the 19th century. Other names are "chronic Brucellosis" "hypoglycemia", "total allergy syndrome", and "20th century disease", all in our century (Straus, 1991). Today, there is an official definition of CFS by the Centers for Disease Control (Holmes, Kaplan, Gantz, et al., 1988), but the refinement process is still going on, addressing potential interrelations between fatigue, psychological factors, and medical illness (Krupp, Mendelson, & Friedman, 1991). So far, CFS has had greater success then burnout to be accepted as a disease. The attempts to construe burnout in the medical setting have been rather few and weak, maybe because that not necessarily has been a goal of the burnout theorists.

There was however another early and serious attempt at relating burnout to medicine. There are two large and interrelated clinical communities in the psychological field, where an important difference is that one of the communities, psychiatry, has entrance to the medical world and its wide panorama of power and profit. The burnout concept has obvious appeal to many overworked and underpaid social workers and other human service personnel. It gained rapidly in popularity, and it therefore became logical to investigate if it could enter into the psychiatric domain. The first one to do this, what I have found, was Walter Paine.

The Burnout Stress Syndrome

In 1981, Paine put the question if burnout is a syndrome or a mental disorder. Referring to the DSM III (Diagnostic and Statistical Manual of the American Psychiatric Association , Edition III), he defined a syndrome as: "A grouping of symptoms that occur together and that constitute a recognizable condition", and mental disorder as:

> "... a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and that typically is associated with either a painful symptom (distress) or impairment in one or more important areas of functioning disability." (Paine, 1981, p 5).

Referring to these definitions, Paine classified burnout as a syndrome. But he considered some descriptions of burnout (especially those by Freudenberger and Pines) to indicate high levels of distress and disability, which are included in the DSM III definition of mental disorder. Paine thus considered it inappropriate to define burnout as a mental disorder, although he found similarities between certain psychiatric diagnoses and burnout. The approach in DSM III was regarded as useful since it raised the question of a final stage in the burnout process - disability. To make the distinction between burnout and mental disorder clear, Paine suggested a way to differentiatiate the basic terms:

1. *Burnout Stress Syndrome* (BOSS), which refers to the identifiable clusters of feelings and behaviors most commonly found in stressful or highly frustrating work environments.
2. *Burnout Mental Disability* (BOMD), which refers to the often serious, clinically significant pattern of personal distresses and

diminished performances which is the end state of the burnout process.
3. *Burnout Process* (BOP), which refers to the usual sequence of different stages or phases occuring in individuals. Each stage or phase presumably has different indicators of distress and possibility of developing disability, and may be a separate syndrome (Paine, 1982, p 6-7).

Here, Paine explicitly introduced a process-oriented conception of burnout, the burnout syndrome. It is however unclear which the stages in the BOP are, and if BOSS occurs in the first stage or in some subsequent one. The only explicit statement is that BOMD is the end state of BOP. Also, it was emphasized that BOSS is *not* a mental disorder but may lead to it. Paine instead characterized BOSS as a set of maladaptive coping reactions to high and continuing levels of perceived job stress and personal frustration. Incidentally, there is a difference in comparison to Maslach on this point, who also discussed burnout in terms of a process, but where only depersonalization was regarded as a maladaptive coping reaction.

Paine made two aspects of burnout clear: First, burnout should be conceived as a syndrome (even though it was unclear which symptoms the syndrome contained), an opinion similar to Freudenberger's as well as to Maslach's and Pines'. Second, burnout was related to health, an opinion similar to Pines'. There are thus clear connections between the presented approaches to burnout. Neither Freudenberger, nor Maslach, Pines or Paine entertained any doubts that burnout actually exists. Their common approach to burnout could be described in Paine's words:

"The BOSS seems to exist but its features are unclear." (Paine, 1981, p 7).

Gillian Walker has a radically different view on burnout, which will be presented in the fifth and last example.

Burnout as a social construction

Walker started her analysis of the burnout phenomenon by suggesting that it is an instance of conceptual imperialism. By that, she meant

> "..the practice whereby new issues and concerns are embraced by professionals, researchers, and social scientists in general, and brought within the realm of the discourse; that is, the field of an academic discipline empowered to define, theorize and prescribe a particular area of knowledge." (Walker, 1986, p 36).

The power to create meaning of concepts is one of the most efficient ways to control others. Burnout is an ideology for Walker, hiding the real reasons for "the strains and frustrations of professional life". The concept of burnout has been absorbed by Academia from the practice of human service professionals. It has then become a way of thinking that organizes the self-conception of professionals in a particular way. The imperialism of the concept is an instance of the dominating role of the social and psychological research community in forming concepts that determine socially perceived reality.

The real reasons for the "apathy, guilt, or depression" that so many professionals experience are according to Walker found in

"current fiscal policies, escalating cut-backs, changes in management techniques, and shifts in government policy", all outside the range of action of the professionals and caused by the crisis of late capitalism. The basic tenet of Walker is that the concept of burnout diverts attention from these real causes towards psychological explanations. Ironically, one could say that the concept of burnout in itself creates burnout, in the meaning of feelings of powerlessness and sense of futility of own actions.

The concept of ideology stands at the center of Walker's analysis. She says that ideology is a "... method of thinking which provides a way of understanding or knowing which in itself obscures another way we might understand or know a given situation. /.../ Ideology as a practice or method of thinking cuts free a concept from its grounding and creates a rupture between the "observable and its ground" (p 37). Ideology leads to the treatment of concepts as universals rather than as referring to the actual material world. Walker however contended that ideologies are not pure ideas, but have anchorage in the actual world. In what way did she then perceive burnout as a social construction ?

The social construction of the phenomenon was described as follows: Something that happens among e.g. human service workers, (like distress) is perceived by other professionals. They and those whose interest include report and research do work in order to produce burnout as a concept. Here, the ideological practice is to develop the concept in a way which enters it into the science discourse, and further to the public via media. In the science discourse, as well as in the media, definitions of burnout are produced and re-entered into the general culture. By then, people in general can identify experiences and describe them in terms already provided for them by the science discourse and the

media. What happens is, in this case, that burnout has become an entity in its own right, as something which causes problems for people.

> "...the term references a process of construction rather than the mere discovering or naming a problem or the identifying of a phenomenon which exists in its present form prior to and independent of the activities of those who discovered or identified it." (p 37).

Walker briefly reviewed the literature on burnout concerning its causes, consequences, and solutions. She emphasized the individualistic approach of many of the writers, who e.g. suggest yoga to deal with "..the existensial crisis of inner identity" (p 44), i.e. burnout. She does however not suggest that the ideological practices which create burnout constitute causes of the symptoms identified as burnout. Nor does she deny that people experience the feelings described ".. in psychological terms such as apathy, guilt, or depression, or that they may find a measure of relief in the remedies offered." (p 44). What she argues is that the process shapes what people experience and gives them a way of understanding only certain selected aspects of their lives. Within this framework, selected individualistic solutions have been developed, and burnout is a paradigmatic case in point.

Walker's approach to burnout is different compared to the previous ones. She does not regard burnout as a syndrome. Instead, it is characterized as an ideological interpretation of a contemporary experience, where the traditional power of the professional to initiate, and to bring about things as they should be, no longer resembles the overall interest of the ruling apparatus. The ideology masks the class and gender character of

the professional organizations by making everyone a potential sufferer. The social construction of burnout individualizes societal problems. It also provides for remedies against burnout on this individual level, like exercise, hobbies, yoga or burnout workshops.

We now have five different descriptions of burnout. There are, as can be realized from the mass of research on burnout, many others that could have been picked as examples. However, the chosen ones serve one purpose: Four of them can be characterized as "the syndrome approach", and the fifth as "the social construction approach". The five examples suffice to demonstrate the contention that there are at least two different understandings of burnout. This leads to a corollary of the question about what burnout is: *Is burnout a syndrome or a social construction ?*

3. BURNOUT - A SYNDROME OR A SOCIAL CONSTRUCTION ?

The syndrome concept

A syndrome has traditionally been defined as a pathological condition with a cluster of co-occurring symptoms (usually three or more). The search for such combinations originated with Hippocrates, who attempted to find typical clinical pictures of disorders (Weber & Scharfetter, 1984). Since then, the term has been used more or less frequently during different periods of time. Stanley Jablonski[1] means that the syndrome concept is one of the oldest as well as one of the most frequently used (and misused) words in modern medical vocabulary (Jablonski, 1992). For example, the first series *Index-Catalogue of the Surgeon General's Office* from 1893, did not recognize the concept. In the second series, from 1912, only five references were listed under the heading, "syndrome". This should be compared to the MEDLARS database in 1991 where over 1,500 articles containing the word syndrome were added *each month* (Jablonski, 1992).

The amount of articles including the term syndrome does however not say anything about their content. After searches in the database MEDLINE, I dare to say that they do *not* concern theoretical considerations. In a data search embracing the time period 1983 to December 1995, I found over 70 000 articles

[1] Formerly head of indexing, National Library of Medicine, NIH, Bethesda, MD

including the keyword syndrome. A combination with the keyword "concept" yielded but two articles.

The first one argues for the use of a statistical method for distinguishing syndroms among a number of symptoms (Weber & Scharfetter, 1984). The authors implicitly criticize the fact that the combination of symptoms to syndromes generally has been done in clinical practice. They make a historical retrospection of attempts to discriminate syndromes, but they mean that the described attempts "..were built on no more than clinical experience" (Weber & Scharfetter, 1984, p 315). They consider the formation of syndromes in clinical experience to be a Gestalt-psychological process. This process originates in the patient as the symptom-producer, in the interviewer as the symptom-investigator, and in their mutual interactions.

The construction of a syndrome is exemplified by a psychiatric case. Weber and Scharfetter mean that the syndrome primarily is construed by the psychiatrist. It reflects his interaction with the patient, the patient's expression of his needs, and the psychiatrist's intention to form clinical types and build up a psychopathological Gestalt. The physician thus has great influence in this process, and standardized diagnostic procedures have a limited effect on this influence.

Weber and Scharfetter ask: which underlying principle allows a number of symptoms to be called a syndrome ? In medicine, they mean, it is the pathological process which causes the symptoms to appear. These processes are well-known for many somatic diseases, and causal laws can be established. In psychiatry, however, it is different according to the authors. The underlying principles cannot be observed. All that can be

perceived is the concurrence of certain symptoms on a superficial level. When similar patterns of symptoms have been observed in many patients, assumptions about common origins can be made, and it is appropriate to call the relevant symptoms a syndrome.

One way to detect such patterns is by a statistical analysis of symptom lists, with standardized responses from large empirical materials. This procedure is called "Automatic Syndrome Detection" (ASD). The authors mean that ASD has two interdependent problems that have to be solved, the establishment of a well-defined syndrome concept which can serve as a structure to which the data are fitted, and choice of the appropriate data-analytical procedure. Most often, there is no match between the used syndrome concept and the statistical technique. Syndrome is used in the meaning "group of symptoms", and statistical procedures that can impose a group structure are applied regardless of the respective grouping rule. The three most used procedures in this respect are factor analysis, cluster analysis, and multidimensional scaling. Weber and Scharfetter mean that all these methods have limitations and propose an alternative method of analysis, "Boolean factor analysis".

Boolean factor analysis makes direct use of raw data and Boolean algebra is a mathematical discipline dealing with set-theoretical operations such as "intersection" and "union". The name of the method refers to a formal similarity to ordinary factor analysis in which the raw data table can be decomposed into a "loadings" and a "scores" matrix (otherwise, there are few similarities between Boolean and ordinary factor analysis).

Weber and Scharfetter's article is actually an argument for the use of a particular - in my opinion rather questionable- statistical method. Their interesting question about which underlying principle that allows a number of symptoms to be called a syndrome is answered by the distributions of ones and zeros in an empirical material. The blocks (or syndromes) that are distinguished arise by mathematical calculations. No theoretical considerations are included in the judgment of which symptoms that should constitute a syndrome, but statistical covariation is the sole underlying principle despite the initial approach. The example in the article is artificial, and consists of a material of ones and zeros which are moved around in boxes by different techniques. Pawson's criticism against simple variable analysis, without any theories about underlying mechanisms, seems reasonable to apply in this case (Pawson, 1989). According to this methodological view, covariation would be a necessary but not sufficient criterion for something to be called a syndrome.

The other paper I found about the syndrome concept concerns mainly the problem with bibliographical indexing. The author, Jablonski, means that the meaning of syndrome remained grossly unchanged from the time of Hippocrates to the seventeenth century, when Thomas Sydenham contended that "syndrome" and "disease" were synonyms. The syndrome concept then disappeared from the arena during about two centuries. By the end of the nineteenth century, the syndrome concept was rediscovered and used to classify complex "disorders". Around the 1950's, the scope of the concept was expanded to include all morbid conditions that were characterized by a complex symptomatology. The initial, relatively narrow, definition of syndrome as a condition characterized by a specific cluster of co-occurring symptoms was broadened to be used as a synonym

for "disease", "symtom complex", "sign", "manifestation", or "association" (Jablonski, 1992).

Among geneticists, there is a general syndrome definition, which states that a syndrome is

> "an etiologically defined entity of unknown pathogenesis not to be confused with 'disease symptom complex' or 'sequence', pertaining only to those conditions which are characterized by clusters of identical or similar symptoms" (Jablonski, 1992, p 325).

In other fields, the concept is used differently, depending on the purpose by the individual author or researcher.

According to Jablonski, the syndrome concept has also been applied as a heading for groups of similar or related conditions. One example is the headache syndrome, which hardly is a syndrome in its customary sense. Instead, it refers to a large group of neurological conditions, involving the head, neck, and throat, otherwise having little in common. Further, the concept has been extended to denote almost all "bizarre, out-of-the-order, or humorous" conditions, whether medical, behavioral, or social. The syndrome concept can according to Jablonski be compared to the Greek god Proteus, known for his ability to assume different forms in different contexts.

It is understandable that a vague concept like syndrome gives problems in bibliographical indexing. The unclarity of the concept is also shown in the two reviewed articles. It seems as if the only general definition to be found of syndrome is "conglomerate of symptoms". According to the definition in the Jablonski article, the symptoms that constitute the syndrome should also be fairly similar. This is also in line with the

definition of a syndrome in the DSM III. However, the definition in genetics adds an important condition, when it requires "an etiologically defined entity", distinguishing the syndrome concept from the mere symptom complex. In my interpretation, that means that some kind of mechanism should be present connecting the symptoms for anything to be called a syndrome. The initial analysis of Weber and Scharfetter can also be interpreted along these lines.

From this review, it is difficult to decide whether burnout fits into a syndrome approach or not. To be sure, both Freudenberger and Pines described a series of symptoms that they considered to be related to burnout. However, their respective definitions of burnout did not include specific symptoms. They rather associated these symptoms with burnout instead of viewing them as parts of burnout. Paine did not at all mention the eventual symptoms of BOSS.

Maslach discussed three components of the burnout syndrome, emotional exhaustion, depersonalization, and personal accomplishment. Maslach's burnout conception seems to fulfil the more qualified criterion for the syndrome label. She formulates an idea of the connections between the symptoms. It is not a question of some mechanical statistical association, but there is a clear argument about the psychological process that gives rise to the symptoms. Another matter is that, so far, pinning the syndrome label on a set of symptoms clarifies little except adding the requirement of a mechanism. However, there is a strand of thought concerning diseases that gives an even more qualified meaning to the syndrome concept, making it a theoretically meaningful and operative concept.

Concepts in ideas and practice

In philosophy of medicine, the concept of syndrome has gained an important place during the last decades. In his seminal work "Clinical Judgment", Alvan Feinstein suggested that all diseases rightly should be regarded as syndromes, meaning more or less coherent conglomerates of symptoms. Diabetes and rheumatic fever were but two examples, where the idea was that the diseases in themselves, contrary to common belief and usage of the disease concept, cannot be defined. No two patients ever display exactly the same set of symptoms, and there is a fundamental vagueness about the disease concept (Feinstein, 1967).

These ideas were further developed by the Danish philosopher Uffe Juul Jensen. He puts the practice of the clinical community as the basic drive behind the emergence of diseases, or rather, of those syndrome complexes that are enough well documented and established in practice to be pronounced as diseases. There is an ongoing process, defining and delimiting syndromes, that never ends, and where disease labels disappear and new ones emerge. A case in point might be MBD, minimal brain dysfunction, also called DAMP, deficits in attention, motor control, and perception. MBD/DAMP is gaining increasing acceptance as a syndrome that should be the object of the medical system. Another example could be homosexuality, which used to be labeled as a disease but nowadays is regarded as nothing of the kind. Presently, in Sweden, the controversies around "oral galvanism" and "hypersensitivity to electricity" (Brante & Norman, 1995), might be regarded as such ongoing processes, where the disease label is at stake, and where the final outcome by no means is clear.

Juul Jensen sets the practice of the clinical community as the decisive factor behind disease and syndrome labels. Both "disease" and "syndrome" are instances of what Jensen calls practice concepts, based on a development of ideas from Ludwig Wittgenstein (Juul Jensen, 1987). Jensen distinguishes the "practice concept" from the "ideal concept". The ideal concept refers to the situation where a concept exactly specifies those phenomena that are connoted by it. A practice concept refers to practical abilities, exertion of practical routines of some kind, never exactly delineated. Ideal concepts presuppose practice concepts.

Jensen takes the example of colors. Anyone has a practice concept of a color. We can all distinguish, say, red or white. Still, the exact delineation of e.g. shades of red, always varies between people. Exactly how much white is there for example in "light red", and where is the limit to "pink"?

In physics and neurophysiology, a color is something else. It is defined as a certain wave-length segment. The perception of color can be investigated as chemically mediated reactions of light-sensitive cells in the eye, different from other wave-length segments. Such a conceptualization is close to an ideal concept.

Another aspect of the distinction between the two types of concepts is that they differ as to their content of silent knowledge. Practice concepts always contain silent - not linguistically expressible - knowledge, while ideal concepts are constrained to language. For example, the phenomenon "red" cannot really be described in language, only experienced, while the statement "light of wavelength x" does not extend beyond the reach of language.

The point of Jensen's analysis is that no ideal concept of diseases can be formulated, and that attempts to do so emanate from implicitly essentialist ontologies. Diseases can be delineated only in practice. There is no example of any successful, unquestionable, formulation of a universal disease concept. Still, practitioners do such delineations every day in deciding whom to treat or not to treat. There is no final exactness to be obtained in those delineations, which does not mean that they cannot be improved.

A disease should according to Jensen be regarded as a historical phenomenon. It begins as a classification of symptoms into a syndrome. Eventually, in interplay with theoretical science, the syndrome is more carefully defined and often split into subgroups. There is a process of continuous differentiation of diseases in reciprocal exchange between theory and practice. It is an empirical and historical question when such a developed syndrome eventually is called a disease. There is no determinism in this process. Some syndromes disappear, others become diseases, which in their turn either wane away or develop into more differentiated categories. What happens is determined by a complex interplay of social, professional, organizational, and scientific factors. The study of diseases must therefore comprise study of the practices that are aimed at phenomena claiming to be diseases. A practice concept is thus always historical and dynamic. Eventually, practice concepts can asymptotically approach ideal concepts (Juul Jensen, 1987).

The fundamental idea behind this "practice concept of disease" is that there can be no theoretical definition of a concept like disease. In my opinion, the same idea should be a reasonable hypothesis for the concept of burnout. This also means that it is

not possible to give any final clearcut definition of burnout. It is hardly an ideal concept. What we can do is to study its historical development, trying to discern patterns in it. Any quest for some essence of the concept is futile.

A basic thesis of Jensen is that the development of a disease implies a differentiation in an interplay between practice and science. The biomedical dominance in the medical community leads to a bias in this development. In the case of burnout, it has been a different process, where psychology has played the part of biomedicine in the interplay between science and practice. The burnout concept obviously originated in clinical practice. It was refined and developed by scientists. It has already become differentiated into at least burnout and tedium. There is an abundance of more or less serious therapeutic suggestions (Söderfeldt, Söderfeldt, & Warg, 1995).

An important consequence of this conception of a syndrome is, however, that burnout *has no ontology* in the sense of a distinct essence. In the world, there *is* no phenomenon "burnout" which somebody can discover. At the same time, there certainly exist people who are exhausted, fatigued, cynical, and bitter. The syndrome concept implies an empirical reference not to some single phenomenon, but to the categorizations in a practice of a group in society. The practices referred to by the burnout concept are primarily the practices of psychology and human services.

Statements like these seem to lead to the conclusion that the whole discourse on burnout is built on a social construction, that it is an ideological invention. In my opinion, that would however be a premature conclusion. In order to investigate this more

closely, the meaning of "social construction" should also be analyzed.

What is a social construction ?

At least four different interpretations are possible of the statement "X is a social construction" (Brante, 1993):

1. All human culture presuppose human beings, human language, and human actions.

This means that humans presuppose humans, a not particularly original statement. In this sense, social constructivism is perfectly trivial. Another sense would be:

2. Reality is mental, or rather a mental construction.

In this sense, social constructivism is a variant of traditional idealist philosophy in new linguistic clothes. There are however also more interesting meanings of social constructivism.

3. Some knowledge or discoveries that appear to be of Nature are in reality social phenomena.

This third meaning of social constructivism states that the proper level of phenomena is misconstrued. What appears to be on one level is in reality on another level. Social facts can for example mistakenly be understood as biological facts. Constructivism mostly regards the way of misunderstanding as a one-way street, meaning that many aspects of biology or psychology in reality are social, but seldom the other way around. Applied on burnout, this would mean that it is in reality a social, and not a psychological, phenomenon. Social constructivism criticizes reductionism, where higher levels are disregarded and transmogrified into lower levels.

There is also a fourth interpretation of social constructivism:

4. Concepts initially without empirical reference can affect social reality, and thereby gain reference.

The usual idea about concepts is that there is something in the world, which eventually is labeled with a concept. Denotation precedes connotation. In social reality, this is not always so, and connotation can precede or interact with denotation. If sufficiently many people believe that there is burnout, burnout will have social effects, even if it doesn't exist. It will even come into social existence as a consequence of the belief, and thus connotation will precede denotation.

There are thus at least two interpretations of social constructivism that could make sense in analysis of burnout. The present problem is how these two senses of constructivism relate to the concept of a syndrome as a practice concept. The idea is rather simple, as said previously. Burnout is, just like diseases, a more or less coherent array of symptoms. There is no basic essence, no "thing" that a disease or burnout actually is. The quest for a final definition of any disease - or burnout - is futile. They are concepts developed from practice and subjected to perpetual change and development. The idea of a practice concept does not imply empirical reference to any single phenomenon, but to the categorizations in a practice of a group in society, which does not mean that these categorizations lack grounds.

In comparison to social constructivism, there are clear similarities, but also differences. The polemic point of the idea of a practice concept is directed against any reductionist essentialism. This is partly similar to the criticism in social constructivism against reductionism (interpretation 3 above). The difference lies in the direction of the reduction. Social

constructivism, in my opinion, seems only to criticize reduction of social phenomena to lower levels, psychologization or biologization of social facts. The idea of practice concepts does not presuppose any directionality of the reduction. It criticizes socio-reductionism as well as bio-reductionism. This is well illustrated in Jensen's critique of Laing's ideas about psychiatric diseases, which, as Jensen points out, a priori exclude biological determinants. The actually existing biological practice aimed at psychiatric disease is thereby excluded from the concept. Possible biological determinants are ignored.

On the other hand, analysis of diseases as practice concepts leads to very much the same conclusions as constructivist analyses, with the same critique of reduction of social phenomena. The practice concept, however, changes the one-way street of social constructivist critique of reductionism into a two-way street. Reductionism is possible in any direction.

Concerning the fourth interpretation of social constructivism, that connotation can precede denotation, the idea of a practice concept can be regarded as partly overlapping, partly differing, like the third interpretation. The similarity lies primarily in the emphasis of an interaction between reference and concept. The difference lies in that the idea of a practice concept excludes connotation without denotation. There is always a human practice behind any concept. On this point, there is a resemblance between the idea of a practice concept and the concept of ideology as a combination of recognition and miscognition, "reconnaissance/misconnaissance" (Althusser, 1970). In ideology, there must always be some resonance in practical reality behind any concept. There is no abstract world of pure ideas (Bhaskar, 1989). They always have some

connection to material reality, even if the characteristic feature of ideology is to obfuscate and misrepresent reality, much in the same way as prematurely conceived ideal concepts.

Burnout as a social construction in practice

Burnout should, in my opinion, be regarded as a practice concept. It then encompasses the non-trivial meanings of social constructivism, but adds two crucial points: the two-way possibility of reductionism and the sound anchorage in the material world. The paradoxical response to the ontological question, "What is burnout?" thus becomes: *Burnout has no ontology*, in the sense of an ideal concept. There is no essence of burnout, no absolute criterion by which true believers or heretics can be distinguished. Still, *the concept has reference,* namely to the practices of human service workers and psychologists. Burnout cannot be readily dismissed as some sort of idealist social construction, even if it certainly can be possible that the concept distorts these practices and steers them in undesirable directions.

The latter is in my opinion the main point of Walker's analysis of burnout (Walker, 1986). Walker is not a social constructivist according to the two first interpretations above. She does not regard burnout solely as a mental construction, but admits that there exist people who have the symptoms described as burnout. It is not only a mental phenomenon. Both the third and fourth interpretation of social constructivism seem however to fit into Walkers analysis. She conceives the proper level of burnout to be misconstrued so that it places explanations on a psychological level instead of the social level. She also views burnout as a

concept initially without empirical reference, i.e. connotation precedes or at least interacts with denotation. Further, burnout as a social process has social effects. It serves a function both for the "victims", and for their professional helpers like psychotherapists and management consultants. The "victims" can be burned out instead of acquiring a more stigmatizing mental diagnosis. The helpers can develop burnout workshops and therapeutical programs.

In my opinion, Walker unfortunately enters the one-way street of social constructivism. Just like Laing's analysis of psychiatric diseases, she loses the connection to the lower level, and reduces the phenomenon to the higher level. Psychiatric diseases probably have biological components, and burnout probably has psychological components. The reductionism of Walker also shows in her criticism of burnout as an ideology; that it is the provision of psychological, stress-related explanations for people's experience of adverse working conditions. She presupposes that stress rests solely on a psychological level. That is an unwarranted assumption. My idea is on the contrary that stress is a multi-level concept. There are certainly strands of thought that reduce stress to the psychological level, but the fruitfulness of the concept lies in that stress theory offers explanations in terms of mechanisms that join different levels. Reductionism is typical of shallow theories with little explanatory value. Deeper theories connect levels with theories of the mechanisms that tie them together (Bunge, 1967).

This argument can extend the reasoning about the syndrome concept. It is a practice concept, in the sense that is is a complex of symptoms found to covary in clinical practice. However, that is eventually not sufficient for the development of the syndrome

into social existence as a disease. There are many factors affecting this development, e.g. the role of the profession, scientific development, and legal aspects. I believe that one important factor in the disease defining process is the discovery of mechanisms.

Taking diabetes as an example, the disease cannot be defined theoretically, and developed as clinical observations of a syndrome of thirst, weight loss, sweet urine etc (Juul Jensen, 1987). However, the discovery of the insuline mechanism played an important part for the acceptance of the disease label. The conclusion in the burnout context would be that there is no essence of burnout, but that in the development of a possible "burnout syndrome", the presence of mechanisms producing burnout would be an important factor behind a more general acceptance of the phenomenon.

There is almost unanimity in the burnout literature that at least one other level than the individual is involved in burnout, namely the level of organization, or more specifically, human service organization. The next task will therefore be to take a closer look on that level, before attacking the burnout problem empirically. An over-arching goal of the analysis will be to find arguments for a burnout mechanism, as implied in the question "What causes burnout ?".

4. HUMAN SERVICE ORGANIZATIONS

Characteristics of human service organizations

Burnout is by most researchers connected to work with humans, human services. Human service organizations (HSO:s) can be defined according to social function or governmental design, or simply as workplaces of human service professionals (Stein, 1981). One of the most common characterizations is that of Yeheskel Hasenfeld, who describes HSO:s as

> "...that set of organizations whose principal function is to protect, maintain, or enhance the personal well-being of individuals by defining, shaping, or altering their personal attributes.." (Hasenfeld, 1983, p 1).

According to Hasenfeld, there are two main properties that distinguish HSO:s from other bureaucracies. HSO:s work directly with the people they are to protect, maintain, or enhance, and they are mandated to protect and promote the welfare of those people. There are several features of HSO:s, according to Hasenfeld:

1. *The "raw material" as well as the "product" consist of people.* This has many implications. Simple decisions, which can be considered as routines for the HSO, can have important implications for the client's life and must thus be morally justified. Further, since the "raw material" is a human being, the organization is limited to what it can do, and how it can do it, to the clients. In order to be able to carry out the work, the organization also needs to develop methods to attain compliance

from the clients. In short, Hasenfeld can be interpreted as stressing the moral foundation of HSO:s. They are said to be founded on some moral doctrine, rooted in general welfare ideology and reflecting values of human welfare and well-being.

2. *The goals of HSO:s are vague and ambiguous due to the nature of the work.* There are both official and operative goals, where the official goals reflect public acts or offical reports, and the operative goals are what the organization actually is trying to do. It can be easier to get consensus about the official goals than about the operative ones. Here, there are clear similarities to Perrow's general tenets about the relative insignificance of official organizational goals (Perrow, 1978). A particular property of HSO:s may be that the cleavage between official and operative goals often is especially wide.

3. *Since the "raw material" of HSO:s consists of human beings, it is difficult to know how to attain desired outcomes and also to find determinate technologies.* There is an inherent variability of people, and thus no "one-to-one" correspondence between technology and desired outcome. It is also difficult to evaluate the outcome of the work, since the results of the assignments of HSO:s mostly are difficult to measure. In comparison to industry, the HSO:s lack consensual and easily measurable criteria for success. In my opinion the introduction of market mechanisms will make profitability a goal criterion also in HSO:s, maybe aggravating the cleavage between official welfare goals and actual operations.

4. *The core of the work in HSO:s is the relation between clients and personnel.* The quality of those relations is essential for the result of the work. There are however complications. The role

of the client is not always voluntary. Hence, the interests of the client and the HSO can be incompatible. The relation may imply a power relationship, where clients are dependent both on organizational policies, norms, and values, as well as on the relation to the individual human service worker. That relation is difficult for the organization to control, since it is affected by those involved. Consequently, the personnel can exercise more authority in practice than they are formally granted (Lipsky, 1980).

This conception of HSO:s applies to many organizations, such as schools, prisons, social service agencies, or hospitals. They differ vastly in function and structure, making it difficult to generalize about common traits. According to Stein (Stein, 1981), differences between such organizations are more important than similarities, making it questionable to condense them into one single type or class of organization. In my view, there is however a fundamental common trait in HSO:s, namely the client relation between the organization representative and the object of his/her work. This is a key factor in the discussion of burnout as a specific effect of work in human services. The core element of such work, the human relation, differentiates it from manufactural or administrative work. Burnout can be imagined as a specific consequence of (salaried) human relations (Karger, 1981). This is in my opinion a very important point, deserving a closer analysis.

The purposes of human service work

The relation between the service provider and the client varies depending on the kind of service provided and of the kind of

client. Hasenfeld distinguishes three service categories, or what he calls technologies, people-processing, people-sustaining and people-changing, and two client categories defined by the organization, "normal functioning" and "malfunctioning" (Hasenfeld, 1983). These categories form a starting point for the analysis.

According to Hasenfeld, the *people-processing* technologies do not attempt to alter the personal attributes of the clients. The purpose is rather to confer a social label or status that evokes desirable reactions from other HSO:s. This is done e.g. by a classification that defines a client as "mentally ill", "gifted child" or "cancer patient". By means of such labels, other HSO:s can respond and provide the proper service. Incidentally, this is similar to the way Juul Jensen and Feinstein regard a diagnosis of a "disease". The *people-sustaining* technologies attempt to prevent or retard the deterioration of the well-being of the clients, but imply no attempt to change their personal attributes. The *people-changing* technologies aim to change those personal attributes in order to improve well-being, for example, psychotherapy or medical treatment. Hasenfeld cross-classifies the three technologies and the two client-types, resulting in six HSO-types shown in figure 1.

Type of client	**People-processing**	**People-sustaining**	**People-changing**
Normal functioning	*Type I* College admissions office	*Type III* Retirement home	*Type V* Public school
Malfunctioning	*Type II* Diagnostic clinic	*Type IV* Public assistance	*Type VI* Hospital

Figure 1. Classification of Human Service Organizations (with examples from Hasenfeld, 1983)

It is clear from this classification that the concept of HSO is supposed to be applicable to a wide variety of organizations. It includes organizations dealing with the general "normal" population as well as with people that in some way deviate from what is considered to be normal behavior. Stein's criticism, that the difference between these organizations are greater than the similarities seems to be relevant (Stein, 1981). Here, the aim is however not to judge the relevance of the HSO concept. The aim is rather to investigate burnout in human services. The categories can aid in putting attention to different types of human service work and burnout.

People-processing technologies are probably to some degree a feature of almost all work in human services. The other two technologies of Hasenfeld, people-sustaining and people-changing, both refer to some action done to the client. They presuppose that some people-processing has been done. People-sustaining work dealing with malfunctioning clients, Type IV in Hasenfeld's figure, determines an acceptable and adequate level of sustenance, which implies fiscal as well as ideological factors. The staff-client interaction in people-sustaining work is described as limited, with focus on the type, amount, and frequency of client care that the organization can provide. For type V and type VI, the people-changing technologies, the problem of distinguishing between normal- and malfunctioning clients is obvious. They also have to operate with change technologies that produce uncertain outcomes. Furthermore, there is not always consensus about the desired outcomes. The staff-client relationships are one of the most important tools in in people-changing work. In contrast to the relations in people-sustaining work, they consist of intensive and often extensive

relations. Here, we find a difference in the two technologies that might have relevance for burnout.

Hasenfeld's analysis of human services has to my knowledge never been used in burnout research, despite the general consensus that burnout is related to human services. A merit with the classification is that it distinguishes between various tasks within human services, putting focus on the purpose of the work. Here, it will be applied in a detailed analysis of two actually existing organizations, which also constitute the empirical study objects.

An application of the HSO classification

In the modern welfare state, human services represent a major section of the labor market. Previously, the family or other primary groups had the responsibility for social security and adjustment. Now, these responsibilities have become developed into being a prime object of the state. Sweden is (was ?) the paradigm of the welfare state. It is therefore most relevant to study two Swedish organizations to gain knowledge about human services. I will start with a very peculiar and specifically Swedish organization, the Social Insurance Organization (Försäkringskassan) which lacks a counterpart in any other country, as far as I know.

The Social Insurance Organization

The Social Insurance Organization (SIO) has evolved from sickness funds in close connection primarily with the labor

unions, sobriety associations and independent churches (Edebalk, 1996). From the beginning, local associations inaugurated funds to provide some security in case of sickness or other social needs. These sickness funds were increasingly formally regulated, coordinated, structured, and state governed. In 1891, the funds were granted a limited right to state subsidies. A national association of sick funds was formed in 1907. A Sick Fund Act was promulgated in 1910, regulating the right for state subsidy. The Act of Recognized Sick Funds of 1931 was important, giving the backbone of the present regional and local structure. As a central part of the welfare program after World War II, the General Health Insurance Act was decided in 1955, basically socializing the sick funds. Further tasks were assigned to the organization, and the present structure was formed in 1962. The SIO is now the main administrative agency for the general welfare policies in Sweden, administrering child allowances, sickness allowances, dental insurance, pensions, rehabilitation, and disability allowances. About 20 % of Sweden's GNP is presently channelled through this organization (Broberg, 1973; Edebalk, 1996; Lindeberg, 1949; Lindquist, 1990; Riksförsäkringsverket, 1988).

In Sweden, there are 25 SIO:s, one in each county and in Göteborg commune, altogether employing about 15.000 persons at the time of this study. They are not formally public authorities but independent legal persons, reflecting their historical origin. They are however regulated by the General Insurance Act and by advisory directives from the state authority, the National Board of Health Insurance. At the time of the study (1993), there were 416 local branches and a few smaller service offices for the direct contact with the public. In each county, there is a central office coordinating the local branches. The central offices are

governed by boards with a chairman and lieutenant chairman appointed by the national government, and members appointed by the county councils (Riksförsäkringsverket, 1988). The health insurance personnel are predominantly women. They often lack higher education - sometimes they do not even have high school, although educational requirements have been tightened. Employee turnover is very low and average age is quite high. The personnel is mainly unionized in a manual worker's trade union, reflecting the origin in the labor movement.

During the 1960's, the organization of the work in SIO was characterized by tayloristic organizational principles. The division of labor between the central and local branches, as well as within the local branches, was strictly hierarchical and regulated in detail (Göranzon, 1983). This rigidity has been relaxed in later years. In the 90's, the SIO has been an object of extensive organizational change. One goal has been to bring down the number of decision-levels where there previously were several echelons in the hierarchy (Lindquist, 1990). Clerks are now called insurance administrators *(försäkringssekreterare)* There have also been legal changes concerning administration of the sickness allowance, previously representing a large share of the work. From 1992, all Swedish employees receive sick pay from their employers for the first 14 days (four weeks from 1997). This meant that a great share of the detailed regulated work disappeared from the SIO. Instead, resources were allocated to rehabilitation work. Previously, the work required primarily knowledge about laws and rules. With the reorganization, the work contains closer client contact and cooperation, and more room for decisions. The human service character has become clearer.

Besides the SIO, the other main branch of Swedish welfare is the Social Welfare Agencies. They have described a different development. Their role has changed to being the last resort for those not accommodated through the general policies. Their historical origin were the poverty boards, established since the 19th century, when the local public administration took over the responsibility for the poor from the church. This was done in 1862, when the local administration was changed from the parish to the new municipality, the commune, still the lowest level public administration unit in Sweden.

From the church, an individual, selective and rather authoritarian ideology, was inherited in the poverty boards. A subdivision occurred into special branches, like child care boards and sobriety boards, all in the authoritarian tradition. Through amalgamation of communes, the number of boards has been drastically reduced, from >3000 in 1950 to about 280 today. In the 1980's the child care and sobriety boards were integrated with the poverty boards and reorganized as general social boards, appointed by the locally elected commune government. Their work has expanded and become diversified and professionalized. They are regulated through the Social Welfare Act and by advisory directives from the state authority, the National Board of Health and Welfare.

In each commune, there is a central social office for planning, administration, and some specialized functions of the social welfare. For the direct client contact, there are subdepartments for home care of elderly, for children's day care, and for individual and family care, abbreviated IFC, which is the part of

the social welfare agencies that includes income maintenance and social services. IFC is in popular image generally equated with individual social welfare, and retains the selective character of the older agencies.

The majority of the personnel in IFC are social workers *(socialsekreterare)*, who have academic education (Masters of Social Work). There are no statistics of the total number of employees in IFC, but a rough estimate gives about 15.000 social workers in such subdepartments nationwide. Personnel turnover is relatively high and average age is low. Social workers are unionized in the academician's union, with a minority in the white collar union.

The organization of IFC varies between communes. Independent of the formal organization, the work is aimed at persons that in some way do not manage to live a "normal" life in society: poor people, drug abusers, families with problems, children in custody, foreign refugees, and others. In most communes, there is a separation between social services and income maintenance. Within income maintenance work, a new personnel group has developed, investigation assistants *(utredningsbiträden),* with more routine work. There is usually a "first social worker" *(1:e socialsekreterare)* at each local unit, who has a greater responsibility and delegation to take decisions, compared to the ordinary social worker. In addition to the first social worker, there can be a local unit head.

As a whole, the IFC can be characterized as a very decentralized organization with few decision levels. Relatively little regulates formally the performance of social workers in client contacts, except in authoritative action (Socialstyrelsen, 1983). This

organizational structure is largely the consequence of the selective orientation, where the individual client stands in focus. The work in IFC can be regarded as a typical "street-level bureaucracy" (Lipsky, 1980). There is relatively high discretion to decide within the given framework. This freedom has probably shrunk during the last years due to the economic problems in Sweden. The fiscal crisis of the communes, not primarily laws and rules, sets the limit for which services that can be provided. Still, the IFC has the final statutory responsibility for persons that stay in the commune, but this responsibility is in effect first when the client's need cannot be supplied in another way.

The selective orientation points to a fundamental difference between IFC and SIO related to Hasenfeld's classification of HSO:s. The SIO works with "normal functioning" as well as with "malfunctioning" clients, but the IFC works only with "malfunctioning" clients. "Normal" clients can be regarded as being entitled to the general social policies, while "malfunctioning" clients are entitled to selective policies. The two organizations have also been very different as to structure and the extent of formal regulation of their work, although many of their work tasks are rather similar. There has however been a convergence, where SIO has become more decentralized and IFC perhaps somewhat more structured.

Work in SIO and IFC

Both SIO and IFC are prime examples of human services. The core of the work in both SIO and IFC is the human relation. I will first go cell by cell in Hasenfeld's classification scheme,

exemplifying work tasks in the two organizations. It will be obvious that neither organization can be classified as entirely falling into one of the cells of the scheme. It consists of analytical rather than empirical categories.

Type I, normal functioning/processing. In SIO, most major work tasks include assessments of eligibility and other types of "social diagnostics". This is however seldom separated into administratively recognized separate work tasks, but is a part of other work tasks. In the SIO, many of these work tasks are computerized and done automatically, e.g. the issuing of child allowance on the report of a child from population records authorities. In the IFC, this type is lacking.

Type II, malfunctioning/processing. In SIO, there are at least three kinds of benefits aimed at "malfunctioning" clients that have to be determined by people-processing technologies: sickness and disability allowances and rehabilitation. Like the work tasks in type I, these eligibility assessments seldom constitute a separate work task. In IFC, one main work task is the distribution of social welfare allowance which includes assessment of eligibility. Mostly this assessment is part of the the whole issuing process, but in some cases there can be a division of labor. Sometimes, the determination of eligibility for a certain period of time is done by a social worker, and the administration is done by an assistant.

Type III, normal functioning/sustaining. In this type, the work tasks are primarily amount to administration of general social policies. For example, all children in Sweden, up to 16 years of age, receive child allowance independent of their parents or their

own income. All persons over 65 years are entitled to old-age pension. This type is lacking in the IFC.

Type IV, malfunctioning/sustaining. In this type, we find work tasks in both organizations. In SIO, the disability allowance and sickness insurances are aimed at "malfunctioning" clients. In IFC, one main work task is the social welfare allowance, which clearly belongs to this category.

Type V, normal functioning/changing. In this type, we find no work tasks in either the SIO or the IFC.

Type VI, malfunctioning/changing. Many work tasks in the IFC are of this type. There are different kinds of services aimed at children, families, drug abusers, and others, that in some way do not live what is considered to be a "normal" life. The primary aim is of course to change those people in a "normal" direction. Mostly, the used services are decided in cooperation with the client. There are also instances of coercive action, like taking children or drug abusers into custody. In the SIO, there is one main work task of this type, rehabilitation of people that have been sick-listed for a long time. The aim is to change the clients in order for them to be able to work. An element of coercion can also be found there, but limited to restriction of benefits for non-cooperative clients.

In general, the services in the IFC are aimed at "malfunctioning" clients, and use people-changing technologies. For the SIO, the services are people-sustaining, aimed at both "functioning" and "malfunctioning" clients. For each organization, there is one exception from this general pattern. In SIO, rehabilitation work uses people-changing technologies. In IFC, the social welfare

allowance work represents the people-sustaining category. Both exceptions contain however a large share of the work done in both organizations, as will be shown later.

From the HSO theory, a set of tentative hypotheses can be formulated that are interesting in a burnout perspective. The people-changing services are said to imply more extensive engagement in and contact with clients compared to people-sustaining services (Hasenfeld, 1983). This should result in a higher degree of emotional exhaustion (Maslach, 1982a; Pines & Aronson, 1988). The efficiency of changing technologies is however very uncertain and might lead to a low sense of personal accomplishment (Maslach & Florian, 1988). The heavy engagement in clients could counteract tendencies for depersonalization - it could also be the other way around, if engagement leads to exhaustion which leads to depersonalization (Maslach, 1982b). Work aimed at "malfunctioning" clients could imply a higher probability for an adversary relation to the clients, leading to a greater tendency to depersonalization (Maslach, 1978). These hypotheses will be investigated, together with many others, on an empirical material drawn from the two organizations SIO and IFC.

Study design [1]

The study had the ambition to obtain nationally representative data about the personnel in the two organizations. There existed unfortunately no national sampling frame of the individuals

[1]This work was done as a part of the research project "Psychosocial work environment in two Swedish human service organizations". The description of the study design is based on Söderfeldt, Söderfeldt, Ohlson, & Warg (1996b).

employed in the two organizations. The study therefore had to use a cluster sample design with communes as clusters. Within each commune, all employees in all local units of the two organizations were chosen for study. There was thus no sampling within the communes. Any error induced by the sampling can therefore be found only at the commune level.

At the beginning of the study, the 1991 population statistics were the latest available. There were then 283 Swedish communes. Their population distribution is very skewed, with many small and few large communes. As pointed out by Särndal and collaborators (1992, p 129), a simple random sample of clusters can be inefficient when clusters are of very unequal sizes. The clusters thus had to be stratified to ensure representation of the relatively few large communes. It was done by taking the square root of the population number in each commune, thereby approximately linearizing the population sizes, then adding the roots and finally dividing the root sum by three, the number of desired strata. This gave the cutting points for the strata. Three strata were obtained, the first with 143 small communes, the second with 90 middle-sized communes, and the third with 50 larger communes. Then, 37 communes were randomly sampled from the first and second stratum, and 25 from the third stratum, in all 99 communes. The numbers of sampled communes were chosen to obtain proportionality in relation to the population as a whole and in consideration of available resources, setting limits to the size of the study. Additional funds were later obtained to permit one more commune to be added to the third stratum, giving in all 100 communes for study. The representativity of the sample was checked by calculating the weighted averages (with sample fractions as weights) of the populations in the sampled communes, times the number of

communes in the stratum, and comparison of the result to the actual Swedish population. The weighted sample population sum matched the actual population almost perfectly - the ratio was 1.003.

The main problem in cluster sampling is the variation between clusters concerning the variables under analysis, which can distort the estimates from the samples. If there is low cluster variation, the cluster sample approximates a simple random sample (Särndal, et al., 1992, p 128). By an emerging statistical method, multilevel analysis, this between-cluster variance can be assessed (Bryk & Raudenbush, 1992). Four main health indicators, (Söderfeldt, et al., 1996b), were used as dependent variables in three level models, using the software ML3e (Woodhouse, 1993). The first level was the individual, the second the local unit, and the third the commune. Null models were calculated, where no other explanatory variables than the intercept were included. This maximizes the random variation, since no variables but the intercept are fixed. No variance significantly larger than 0 was however found on the commune level for any of the health variables. The (non-significant) estimates of third level variance ranged between 0 and 0.5 % of the total variance. This means that commune level properties, e.g. population density, size, or geographical structure, had *no* effect on the health variables. This is in accordance with other studies, finding very small geographical effects on health (Duncan, Jones, & Moon, 1993). The conclusion was that the present sample of communes can be regarded as very nearly random and well proportional in relation to the population under study.

In the sampled communes, there were 124 local units in SIO and 188 in IFC. All those units were included in the study. A questionnaire with items concerning organizational variables, including the number of employees, was sent to the heads of the local units during September-October 1993. The number of responding unit heads was 121 (98 %) in SIO and 170 (90 %) in IFC, with 4596 and 3700 employees, respectively. The average number of employees per local unit was thus 38.0 persons in SIO and 21.8 in IFC.

A second questionnaire, aimed at the unit personnel, was sent in a package to the local unit heads during October-November 1993. The packages contained copies of the questionnaire matching the reported number of employees in the unit. Each questionnaire was marked with a code for the unit to identify responses. The unit heads were requested to distribute it to all employees. Responses were individually returned in a special individual return envelope. There were two written reminders, both channelled through the local unit heads. Personal telephone contact with unit heads was a third and last reminder. The response rate of the personnel questionnaire, calculated on the number of employees in responding local units, 8296 persons, was 71.2 % in SIO (n=3273) and 66.4 % in IFC (n=2457). This yielded a study sample of altogether 5730 persons and a gross response rate of 69.1 % (Söderfeldt, et al., 1996b).

Non-response

Due to the study design, individual responses could be identified only as to the code of the local unit. Analysis of non-response based on individuals was thus not possible, but could be done on

aggregate level, the local unit. The variation of response rates of local units was rather small (quartile deviation 0.12). The response rate of units was set as the dependent variable and related in multiple regression models to other variables that could be affecting the response rates. The following independent variables were tested:

- For communes, based on public statistics: 1) unemployment rate, 2) population size, and 3) population density.
- For local units, based on responses from local unit heads: 4) number of employees, 5) assessment of the degree of increase of difficult cases (as an indicator of workload), 6) assessment of the psychosocial climate of the unit as measured by two questions, "Do you think your personnel finds great joy in their work?" and "Do you think that your personnel can give and take critique openly ?"
- Aggregated variables from the personnel questionnaire: 7) the percentage of women in the unit, 8) average age of personnel in the unit and 9) unit averages of four health indicators (as measured by self-reports).

Models were tested separately for the two organizations and for the joint material. The results were stable and consistent. No covariations were found between the response rates and *any* of the above variables, except a weak relation to the number of employees. An increase of one employee decreased the response rate by 0.1 per cent unit. There was also a weak relation between response rates and one of the health indicators, containing an item about colds and infections (the study was done in high season for colds). That model on the joint material was significant ($F=2.63$, 13 df) with adjusted $R^2 = .07$. The conclusion was that response rates of local units were practically random, and no weighting procedure was deemed necessary,

since the slightly lower response rates of larger units was compensated by their greater numbers (Söderfeldt, et al., 1996b).

Description of the participants

In table 1, the sociodemographic characteristics of the participants are stated.

Table 1. Description of the employees in SIO and IFC.

Variables	SIO		IFC	
	%	n	%	n
Gender				
Male	14	468	20	482
Female	86	2787	80	1952
Age				
-29 years	6	190	12	288
30-39 years	26	856	32	787
40-49 years	47	1529	38	919
50-59 years	20	644	16	401
60- years	1	45	2	55
Marital status				
Married/cohabitant	81	2639	77	1854
Single	19	630	23	546
Children <7 years				
Yes	17	544	25	600
No	83	2719	75	1848
Education				
≤ 2-year high school	56	1792	16	357
High school	34	1092	11	241
MSW	4	111	61	1317
Other college degree	6	198	12	253
Tenured employment				
Yes	96	3128	85	2069
No	4	135	15	373

There were some differences between the organizations. IFC had a somewhat greater proportion of men, and the personnel were younger compared to the SIO, even though the middle-aged people formed the majority in both organizations.

Concerning education, it showed that almost 60% of the personnel in SIO had junior high school as the highest education, while about the same proportion in IFC had a MSW. This mirrors the different requirements for employment in respective organization. A similar pattern was shown in the parents' education. In SIO, 67% of the parents had junior high school compared to 51% of the parents of the IFC personnel. Almost everyone (96%) in SIO had tenured employment, compared to 85% in IFC. The average employment time was almost twice as long in SIO than in IFC, 17.6 and 9.0 years. The main differences between personnel in the two organizations were in education and work experience.

It was stated earlier that SIO and IFC both are HSO:s. Another indication of this statement is of course the proportion of workers doing human service work. One question in the questionnaire asked for the respondent's work position. There were seven response options for SIO and eight for IFC, and an open option. The answers gave in sum 34 different work positions in SIO and 98 in IFC. Almost everyone in SIO, 94%, gave one of the given options. In IFC, this figure was somewhat lower, 79%. All responses were categorized into three categories "non-human service worker" (non-HS worker), "human service worker" (HS worker), and "supervisor", based on previous knowledge of the work content of the various job titles. Concerning the open response alternatives, there were some unclarities about the proper categorization in IFC. Information

about the extent of client contact was therefore used in a few cases to categorize them. Results are stated in table 2.

Table 2. Distribution of personnel among different work positions in SIO and IFC. Percent and numbers.

Work position	SIO %	SIO n	IFC %	IFC n
Non-HS workers	4	132	7	158
HS workers	88	2856	83	2009
Supervisors	8	263	10	248

The table shows the HSO character of SIO and IFC. A majority of the workers were HS workers, and about ten percent of the personnel in each organization were supervisors. Non-HS workers and HS workers do not form a hierarchical structure. Most of the non-HS workers were clerks, but the category also includes other, not primarily client-oriented work positions, e.g. consultants in SIO. That category of workers has very little client contact, but work as advisors to other HS workers.

An important aspect of human service work is related to the core of the work, the client relation. One question was asked about this;

- *About how much time of an ordinary work day do you have personal client contact (visits or phone) ?*

There were six response alternatives divided into three categories: "much contact" (response alternatives "almost all day", and "more than half of the day") "some contact" (response alternatives "about half day" and "less than half of the day"), and "little contact" (response alternatives "a small part of the day",

and "no daily contact"). Table 3 states the amount of client contact for the three work positions in SIO and IFC.

Table 3. Amount of client contact for different work positions in SIO and IFC. Percent and numbers.

	Non-HS workers				HS workers				Supervisors			
	SIO		IFC		SIO		IFC		SIO		IFC	
	%	n	%	n	%	n	%	n	%	n	%	n
Much	20	26	37	52	43	1221	49	973	3	7	11	26
Some	25	33	28	40	43	1241	42	846	18	48	25	61
Little	55	71	35	50	14	389	9	177	79	208	64	158

An obvious result was the lower client contact reported by the supervisors. Of the non-HS workers in IFC, almost 40% reported much client contact, which seems somewhat contradictory to their classification. The non-HS workers were however mostly receptionists, telephone operators and similar. The content of their contacts was not stated. It can be assumed that the contacts were more of trivial character.

Besides client contact, another aspect of human service work is the degree of cooperation with colleagues. The concept of human services only says that the client relation is decisive. There are instances of human services both with and without extensive collaboration and teamwork, e.g. physicians and teachers. Within human services, this can be suspected to be a factor of importance for burnout and other exertions in the work. One question in the questionnaire concerned this;

- *About how much time of an ordinary work day do you work in personal contact with your colleagues ?*

The response alternatives were the same as for client contact and were also trichotomized in the same way. The responses are stated in table 4.

Table 4. Degree of cooperation with colleagues for different work positions in SIO and IFC. Percent and absolute numbers.

	Non-HS workers				HS workers				Supervisors			
	SIO		IFC		SIO		IFC		SIO		IFC	
	%	n	%	n	%	n	%	n	%	n	%	n
Much	40	52	50	77	36	1034	24	475	51	133	50	123
Some	32	42	16	25	28	788	31	627	44	115	37	91
Little	28	36	34	52	36	1024	45	904	6	15	13	33

Non-HS workers as well as supervisors reported a high degree of cooperation. At the same time, quite a few non-HS workers reported no cooperation at all. Human service workers reported less collaboration compared to the two other work positions, especially in IFC. In SIO, the distribution was more even between the three work positions.

Work specialization is related to collaboration. The degree of specialization in the different work tasks was subject of another question:

• *Do you have any specialization or profile in your work ?*

Results are given in table 5. There were of course different response alternatives for each organization. In IFC 36% were specialized in only one work task, compared to 20% in SIO. Most of the respondents thus worked with more than one task.

Table 5. Proportions of personnel in different work tasks within SIO and IFC. Percent and absolute numbers.

Work task	Total %	Total n	Only this task %	Only this task n
SIO				
Child allowance, etc	15	494	4	134
Parenthood insurance	27	881	3	85
Sickness allowance insurance	35	1152	3	107
Rehabilitation	39	1263	8	248
Disability pension	33	1069	2	52
Old-age pension	12	400	1	19
IFC				
Social welfare allowance	26	638	8	187
Children	25	604	5	117
Youth	25	618	6	150
Adults	23	552	0	6
Family law	11	257	5	113
Immigrants	8	184	0	5
Refugees	8	202	2	49
Unemployed persons	12	304	1	20
Drug abuse	26	643	9	221

In the analysis of burnout, the characteristics of the personnel reported here will be considered. Work content, work position, amount of client contact, degree of cooperation with colleagues, and sociodemographic attributes can all have relevance for burnout. This depends of course on how burnout is conceptualized and measured.

5. MEASURING BURNOUT[1]

Burnout is a complicated concept. There are consequently varying proposals of burnout measures. As pointed out above and also by Schaufeli and collaborators (1993a), burnout was first described by clinical observations. Despite this, no systematic observational method to assess burnout has been developed. There are however many other attempts to measure or assess burnout, primarily by self-report instruments (Schaufeli, et al., 1996a). Figure 2 presents a number of measures that aim to operationalize burnout. The overview does not aspire to be complete, but is sufficient to show the sheer amount of possible alternatives in the choice of burnout measure.

Measure	Author(s)
1. Rarely used methods	
Structured interview	(Forney, et al., 1982)
Projective drawings	(Haack & Jones, 1983)
Self-assessment in relation	(Rafferty, et al., 1986)
to a description of burnout	(Meier, 1984)
2. Do-it-yourself inventories	
How burned-out are you ?	(Bramhall & Ezell, 1981)
What's your burnout score ?	(Stewart & Meszaros, 1981)
The burnout test	(Dailey, 1985)
The National Job Burnout Survey	(Veninga & Spradley, 1981)
Burnout scale	(Freudenberger & Richelson, 1980)

Figure 2. Methods and measures to assess burnout.

[1] This chapter is partly based on the paper by Söderfeldt, Söderfeldt, Warg, & Ohlson (1996d)

3. Inventories employed only in a single study

49 burnout indicators	(Blostein, et al., 1985)
64-item Teacher Attitude Scale (TAS)	(Farber, 1984)
Staff Burnout Scale (SBS-HP)	(Jones, 1981)
Meier Burnout Assessment (MBA)	(Meier, 1984)
Perceptual Job Burnout Inventory	(Ford, et al., 1983)
Emener-Luck Burnout Scale (ELBOS)	(Emener, et al., 1982)
Energy Depletion Index (EDI)	(Garden, 1987)
Nursing Stress Scale (NSS)	(Gray-Toft & Anderson, 1981)
Teacher Stress Inventory (TSI)	(Fimian, 1984)
Psychologists Burnout Inventory (PBI)	(Ackerley, et al., 1988)
Medical Personnel Stress Survey (MPSS)	(Hammer, et al., 1985)

4. Widely used measures

Burnout measure (BM)	(Pines & Aronson, 1988)
Maslach Burnout Inventory (MBI)	(Maslach & Jackson, 1981b)

Figure 2, cont'd. Methods and measures to assess burnout.

One example of the rarely used methods is the use of projective drawings in order to assess burnout. The method is described in a pilot study of 26 nurses, attending a burnout workshop (Haack & Jones, 1983). They were asked to draw how burned-out they currently felt, and they also completed the Staff Burnout Scale for Health Professionals (SBS-HP). A hypothesis was that drawings depicting isolation, withdrawal, and insecurity, death themes, etc., should correlate with burnout. The drawings were rated by a psychologist and an instructor of psychiatric nursing, and the results showed that high-burnout persons (according to SBS-HP) drew pictures that were rated as expressing more burnout than low-burnout persons. The results were found promising for further development of methodologies for diagnosis of burnout by projective drawings. This optimism is however not shared by Schaufeli and collaborators who mean that the method does not seem to be reliable since the criteria for burned-out drawings are unclear. "Perhaps this is why the

authors do not mention inter-rater reliabilities" (Schaufeli, et al., 1993a, p 201).

Do-it-yourself inventories can be compared to different types of weekly magazine tests. One example is by Stewart (Stewart & Meszaros, 1981) who, besides a presentation of a burnout check-list, provides a burnout dice game where you can advance towards the square "professional renewal & job satisfaction". A similarity between the do-it-yourself inventories is, according to Schaufeli and collaborators (1993a) that none of them has been studied empirically, and their use is rather limited. At best, they may give a clearer picture of the author's definition of burnout.

The third group of measures, which is the most comprehensive one, is limited due to the fact that they have been used only in a few or in a single study. Their similarity lies in their assessment of feelings and emotions that are generated in work-related settings, primarily human service contexts. This is also true for the two widely used measures, Pines' Burnout Measure and the Maslach Burnout Inventory.

Pines' Burnout Measure (BM) is a 21-item questionnaire supposed to capture physical, emotional and mental exhaustion (Pines & Aronson, 1988; Pines, et al., 1981). This is in accordance with Pines' definition of burnout. The items are scored on a 7-point rating scale ranging from "never" to "always". The BM is presented as an instrument for self-diagnosis of burnout, and there are published norms for different occupational groups. The test authors have demonstrated good psychometric properties of the BM in samples of altogether more than 8000 persons (Pines & Aronson, 1988; Pines, et al., 1981). Most of the study subjects

were however voluntary participants in burnout workshops, which can have affected the reported results.

Despite the multidimensional definition of burnout by Pines, the BM is supposed to capture a single dimension. This could be regarded as an improper operationalization of the concept (Schaufeli, et al., 1993a). Furthermore, although Pines considers burnout to be work-related, the items are not expressed in such terms. They are instead more general, and the respondent is asked to indicate experiences of feeling tired, depressed, worthless, happy, etc (Pines, et al., 1981). The context of these feelings is not stated.

Pines' unidimensional operationalization of the burnout concept, and the general character of the items are the two main differences in comparison to the MBI. Maslach operationalizes her multidimensional conception of burnout by a measure that aims at distinguishing all three dimensions. The items in the MBI are formulated in relation to work with clients (Maslach & Jackson, 1981b). Since the MBI is the measure used in this study, I will present it in detail. The choice of MBI was rather obvious, as can be concluded from this short review of various burnout measures. Since the MBI is the measure which is most common, the use of it here also makes it possible to compare the results to most other burnout studies. Since the ambition here is not to find "the true measure of the real thing", such methodological considerations are in place when choosing measure. For a practice concept, using the measure most used in practice seems very appropriate.

Burnout as measured by the MBI

Maslach's three dimensions of burnout were not deduced theoretically (Maslach, 1993; Schaufeli, et al., 1993a). They were rather interpretations of initial interviews and observations of human service workers, and later, factor analyses of responses from different human service samples. The final work to construct the MBI was done by Christina Maslach in cooperation with Susan Jackson. Their working definition of burnout first consisted of two components: emotional exhaustion and depersonalization (Maslach, 1993). In an article from 1981, the two researchers described their work to develop the measure (Maslach & Jackson, 1981b).

A preliminary version of the MBI, consisting of 47 items in the form of statements of personal feelings and attitudes, was sent to a sample of 605 persons in a variety of human service occupations. For each statement, the respondent was asked to answer twice, according to intensity and according to frequency. Data were analyzed by principal factoring (it is unclear if this means principal components analysis or principal axes factoring). Ten factors emerged from the frequency and the intensity dimensions respectively. Four factors accounted for over three-fourths of the variance. From the 47 items, 25 were selected that fulfilled the following criteria; "a factor loading greater than 0.40 on only one of the four factors, a wide range of subject response, a relatively low percentage of subjects checking the 'never' response, and a high item-total correlation" (Maslach & Jackson, 1981b, p 101). In order to obtain confirmatory data for the pattern of factors, the 25-item questionnaire was distributed to a new sample of 420 persons. A

similar factor pattern was obtained , and the two samples were combined (n=1025) for a final analysis.

The final analysis, also described as "principal factoring", gave the same four factor solution. The analyses of the frequency and intensity dimensions gave almost identical results. Three of the factors had eigenvalues greater than unity. Two of those could, just as expected according to Maslach/Jackson's working definition, be interpreted as "emotional exhaustion" and "depersonalization". The third factor was interpreted as referring to feelings of reduced personal accomplishment. The two researchers found this to be consistent with their results from the explorative studies. They had however expected that such "feelings would be one aspect of the other components and thus highly correlated with them" (Maslach, 1993, p 26). The fourth factor was interpreted to capture a dimension of "involvement in people". Since its eigenvalue was less than one, the factor was excluded in the analysis according to the Kaiser criterion (Kim & Mueller, 1978b).

In my regard, the way in which Maslach and Jackson worked to develop the MBI would probably not have satisfied Pawson (1989). The reason for excluding single items, as well as the fourth factor, were statistical without theoretical assumptions about their contextual relevance.

The final measure contained 22 items, structured in three different subscales. Nine items, assessing feelings of being emotionally overextended by the work, were interpreted as emotional exhaustion (EE). Five items measuring unfeeling and impersonal attitudes towards the recipients of the services were interpreted as depersonalization (DP). Finally, eight items

assessing feelings of competence and successful achievements in work were interpreted as personal accomplishment (PA). The items will be reported in detail below[1].

Maslach and Jackson point out that burnout should not be regarded as a dichotomy, being either present or absent. It is conceptualized as a continuous variable, ranging from low to medium to high degrees of experienced feelings. A high degree of burnout is said to be reflected in high scores on the EE and DP subscales and low scores on the PA subscale. A medium degree of burnout is said to be reflected in medium scores on all three subscales, and a low degree of burnout is said to be reflected in low scores on the EE and DP subscales and high scores on the PA subscale.

A manual was constructed as a guide for researchers (Maslach & Jackson, 1981a). It was revised after five years, when the intensity dimension was excluded since it had high correlations with the frequency dimensions. There were two reasons for keeping only the frequency dimension.

> "1.The frequency format is least similar to the typical format used in other self-report measures of attitudes and feelings. Therefore, spurious correlations with other measures, due to similarities of response formats, should be minimized. 2. The seven points on the frequency dimension are all explicitly anchored for the respondent, creating a more standardized response scale. Therefore, the researcher can be fairly certain about the meanings assumed by

[1] I will use the abbreviations when talking about the scales, but not when discussing the phenomena.

respondents for each scale value." (Maslach & Jackson, 1986, p 8).

The revised research manual also presented norms, i.e. means and limits for low, medium and high values for each of the subscales respectively. The norms and limits were based on data from 11067 persons in different human service samples. Recently, a third edition of the manual has been issued (Maslach, Jackson, & Leiter, 1996)

Empirically, the MBI, (Maslach & Jackson, 1981b; Maslach & Jackson, 1986) is the most used measures of burnout (Arches, 1991; Byrne, 1991; Byrne, 1993; Firth, McIntee, McKeown, & Britton, 1985; Gold, 1984; Gold, Bachelor, & Michael, 1989; Green, Walkey, & Taylor, 1991; Green & Walkey, 1988; Hagen, 1989; Himle, Jayaratne, & Thyness, 1986a; Himle, Jayaratne, & Chess, 1986b; Jayaratne, Himle, & Chess, 1988; Johnson & Stone, 1986; Kleiber & Enzmann, 1990; Lahoz & Mason, 1989; Leiter, 1989; Leiter, 1992; Mark, Pierce, & Molloy, 1989; Sirigatti, Stefanile, & Menoni, 1988). Use of the MBI thus implies an operational definition of burnout as consisting of the three dimensions of the measure, and an acceptance of the definition of burnout as "a syndrome of emotional exhaustion, and cynicism that occurs frequently among individuals who do 'people-work' of some kind" (Maslach & Jackson, 1981b).

Since the majority of burnout researchers use the MBI, it is natural to use it also in this study. My view of burnout as a practice-concept also aids in this choice. I do not have to find the "right" measure of a clearly defined ideal-concept. Instead, I use the measure that probably captures burnout as it is conceived in practice, i.e. the MBI.

Burnout in Sweden as measured by the MBI

By the time of the data collection, there was a Swedish translation of the MBI, performed by Lars-Erik Warg, a Swedish psychologist, and Dr Steven Linton, a bi-lingual and American born psychologist. The MBI was translated and reproduced by special permission from the publisher, Consulting Psychologists Press, Inc, from *The Human Services Survey* by Christina Maslach and Susan Jackson, © 1986. The use of the translated measure in this study was granted a licence amounting to $ 1680.

In Swedish, there is no word corresponding to the general term in the MBI items, "recipients". In the IFC, the recipients are named "clients" (klienter) and in the SIO "the insured persons" (de försäkrade). In the translation, these terms were therefore substituted for recipients, similar to the procedures by (Firth, et al., 1985; Schaufeli & Van Dierendonk, 1993). Responses were given on a seven point scale ranging as follows;
0 = never, 1= a few times a year or less, 2= once a month or less, 3 = a few times a month, 4= once a week, 5= a few times a week, and 6= every day. Table 6 presents all items in the MBI, and also response distributions for each item in the SIO and IFC.

Table 6. Percent distribution of MBI items (n=5316-5692, missing data 0.7 - 7.2%).

	How often:						
Item	**0**	**1**	**2**	**3**	**4**	**5**	**6**
1. I feel emotionally drained from my work.	10	28	21	22	9	9	1
2. I feel used up at the end of the workday.	2	13	17	25	15	21	7
3. I feel fatigued when I get up in the morning and have to face another day on the job.	22	32	18	15	6	6	2

Table 6, cont'd. Percent distribution of MBI items (n=5316-5692, missing data 0.7 - 7.2%).

Item	How often: 0	1	2	3	4	5	6
4. I can easily understand how my recipients feel about things.	1	3	5	16	14	31	31
5. I feel I treat some recipients as if they were impersonal objects.	41	31	13	9	3	2	1
6. Working with people all day is really a strain for me.	22	35	19	15	4	4	1
7. I deal very effectively with the problems of my recipients.	1	2	5	17	15	32	29
8. I feel burned out from my work.	23	33	16	16	6	5	1
9. I feel I´m positively influencing other people's lives through my work.	1	4	8	25	17	29	16
10. I´ve become more callous toward people since I took this job.	49	30	11	7	2	1	0
11. I worry that this job is hardening me emotionally.	51	27	9	8	3	2	1
12. I feel very energetic.	1	3	6	19	16	36	20
13. I feel frustrated by my job.	24	34	16	15	5	4	2
14. I feel I´m working too hard on my job.	8	16	15	25	12	16	8
15. I don´t really care what happens to some recipients.	40	31	11	9	3	3	3
16. Working with people directly puts too much stress on me.	16	35	19	17	6	6	2
17. I can easily create a relaxed atmosphere with my recipients.	1	3	4	12	12	37	32
18. I feel exhilarated after working closely with my recipients.	2	4	8	22	18	32	14
19. I have accomplished many worthwhile things in this job.	1	4	7	22	17	29	20
20. I feel like I´m at the end of my rope.	60	24	6	5	2	2	1
21. In my work I deal with emotional problems very calmly.	1	5	9	25	17	29	14
22. I feel recipients blame me for some of their problems.	21	32	17	16	7	6	2

Most of the questions showed good discrimination, although the frequency distributions were rather skewed for some items. The internal non-response was low, less than 3% for 15 of the 22 items. The largest internal non-response (7.2%) was on item 7 concerning dealing with the clients problem in an efficient way.

An important question in the context of the present study was of course if it was possible to distinguish the same dimensions in a Swedish sample as Maslach did. The three-factor structure of the MBI has been confirmed in several studies (Byrne, 1993; Evans & Fischer, 1993; Gold, 1984; Gold, et al., 1989; Green & Walkey, 1988; Huberty & Huebner, 1988; Lahoz & Mason, 1989; Lee & Ashforth, 1990; Mark, et al., 1989; Schaufeli & Van Dierendonk, 1993). There are also examples of two-factor solutions where the EE and DP items form one factor (Dignam, Barrerra, & West, 1986; Green, et al., 1991). Most of the studies have been performed on different American populations. The validity of the MBI in other national and cultural settings is more uncertain. There are some indications that the MBI dimensions are invariant in samples from different countries (Green, et al., 1991; Schaufeli & Janczur, 1994; Schaufeli & Van Dierendonk, 1993). The present study is to my knowledge the first evaluation of the MBI in a large Swedish sample.

The factor structure of the MBI

As pointed out earlier, it is not clear which kind of factor analysis that Maslach used in the development of MBI (Maslach & Jackson, 1981b; Maslach & Jackson, 1986). One can guess that it was principal components analysis which is the most common type. Here, the 22 items in MBI were therefore analyzed by

principal components analysis with varimax rotation. The number of factors was determined by the Kaiser criterion and by scree plots. In addition, also the item loadings on each factor were analyzed separately , i.e. nine items for the EE subscale, five items for the DP subscale, and eight items for the PA subscale. The aim was to assess differences in eigenvalues between the first and second factor in each of the separate analyses. Cronbach's α was calculated for each factor. For methodological comparison, principal axes and alpha factor analyses were performed, both with varimax rotation. For those analyses, the number of factors was set to three. The results from these two analyses were practically perfectly similar. Due to the size of the material, separate analyses could be done for the two organizations, testing the stability of the analyses (Kim & Mueller, 1978a; Kim & Mueller, 1978b). All data analysis here and in the following was done in SPSS (version 6.0 for the MacIntosh).

In table 7, the results of the principal components analysis are stated together with the published factor loadings from the studies of Maslach and Jackson (Maslach & Jackson, 1986). The results are stated separately for the two organizations, IFC and SIO. The major loadings on each factor are stated in boldface, and minor loadings in plain text.

Table 7. Principal components analysis of the MBI. Item factor loadings, reference loadings and loadings for IFC and SIO on the three burnout components.

	EE			PA			DP		
Items	**MJ**	**IFC**	**SIO**	**MJ**	**IFC**	**SIO**	**MJ**	**IFC**	**SIO**
1. Drained	**.74**	**.75**	**.75**	.02	.01	.01	.06	.15	.14
2. Used up	**.73**	**.78**	**.78**	.03	.02	.04	.04	.01	.01
3. Fatigued	**.66**	**.72**	**.71**	.15	-.07	-.07	.18	.06	.13
6. Work a strain	**.61**	**.62**	**.53**	-.10	-.14	-.13	.22	.29	.41
8. Burned out	**.84**	**.75**	**.82**	-.09	-.12	-.03	.19	.25	.15
13. Frustrated	**.65**	**.58**	**.61**	-.12	-.15	-.12	.23	.36	.27
14. Working hard	**.56**	**.67**	**.66**	.07	.14	.14	.08	.09	.00
16. Work stressful	**.54**	**.51**	**.50**	-.06	-.05	-.07	.31	.29	.35
20. End of my rope	**.65**	**.62**	**.65**	-.08	-.13	-.13	.21	.24	.17
4. Understand recipients	.11	.28	.28	**.50**	**.47**	**.51**	-.06	-.11	-.01
7. Efficient	-.01	.00	-.01	**.54**	**.68**	**.70**	-.07	.06	.04
9. Positive influence	-.02	-.10	-.05	**.58**	**.76**	**.71**	-.17	-.09	-.07
12. Energetic	-.30	-.18	-.17	**.43**	**.62**	**.59**	-.04	-.09	-.16
17. Relaxed atmosphere	-.06	.01	.00	**.51**	**.69**	**.71**	-.08	-.10	-.06
18. Exhilarated	.00	-.06	-.12	**.55**	**.67**	**.70**	-.23	-.10	-.06
19. Accomplish things	-.10	-.08	-.06	**.57**	**.70**	**.67**	-.17	-.07	-.06
21. Deal with emotions	-.07	-.06	.00	**.59**	**.74**	**.72**	.07	-.09	-.07
5. Recipients objects	.11	.19	.12	-.09	-.16	-.09	**.67**	**.67**	**.71**
10. Callous	.23	.23	.23	-.13	-.13	-.11	**.66**	**.75**	**.75**
11. Hardening	.37	.26	.30	-.10	-.15	-.07	**.55**	**.69**	**.65**
15. Don´t care	.12	.04	-.06	-.16	-.10	-.12	**.62**	**.62**	**.58**
22. Recipients blame	.13	.20	.19	-.04	.05	.07	**.41**	**.48**	**.48**
eigenvalue	*	**5.9**	**5.5**	*	**3.4**	**3.6**	*	**1.5**	**1.6**

MJ= Maslach-Jackson sample (n=1025), * Eigenvalues for the MJ material not available. **IFC=** Individual and Family Care (n= 2457) **SIO=** Social Insurance Organization (n= 3273)

As a whole, the results carry a striking resemblance to the ones by Maslach and Jackson, as well as there is a remarkable stability between the two populations. Mostly, the differences are in the hundredths. The magnitudes are very similar both for major and minor factor loadings. In the principal components analysis, the eigenvalues for the fourth possible factor were 0.98 for both organizations, whence a three factor solution satisfied the Kaiser criterion. As follows from the relatively high eigenvalues for the third factor, the "knee" on the scree plot was pronounced at the third factor.

As a control of the result, the items belonging to each factor were separately analyzed, both in principal components analysis (PCA) and in principal axes factor analysis (PAF). These analyses showed similar patterns, with almost identical loadings as compared to the principal components analysis. Intracorrelations using Cronbach's α were also calculated for each factor. The following eigenvalues and α:s were obtained:

- Emotional exhaustion:
PCA: First factor 4.43, second 0.87,
PAF: First factor 3.58, second 0.51,
α = .89 in IFC and .86 in SIO.

- Depersonalization:
PCA: First factor 2.38, second 0.86,
PAF: First factor 1.93, second 0.30,
α = .84 in IFC and .77 in SIO.

- Personal accomplishment:
PCA: First factor 3.62, second 0.95,
PAF: First factor 3.06, second 0.32,
α = .87 in IFC and .83 in SIO.

The large differences between the eigenvalues of the first and second factors give a clear argument for the unidimensionality of each factor. The argument is strengthened by the large α:s, which also are similar (for PA and DP even higher) to the original ones, where, in a sample of 1316 persons, the α:s were .90 for EE, .79 for DP, and .71 for PA (Maslach & Jackson, 1986).

In sum, the present results indicate that the MBI seems to be quite useful to discern the three burnout components also in another national and cultural context. The three factor solution was remarkably stable in all different ways of comparison, also irrespective of type of factor analysis. Deviations were only slight in relation to the original U.S. material. It is striking that the results are so similar in two such different settings.

Methodologically, one general premise of factor analysis might be questioned in this context, the fact that it requires interval scale measurement. Strictly speaking, the item scales are ordinal, hardly interval. However, there are several arguments that are applicable on this point. First, the present procedures are done in good company. Factor analysis of attitudinal items is a standard procedure, used in thousands of studies and also in a multitude of burnout studies. Second, the shortcomings in metricality of course introduce an error in the analyses. As the resemblance both between the two organizations in the present study and to the results of other applications of the MBI is so striking, it gives an argument that this error is small. Third, the underlying assumption, as explicitly stated by Maslach, is that the three latent constructs, emotional exhaustion, depersonalization and personal accomplishment, indeed are continuous. The actual distances between the scale steps can of course be discussed, but

it remains that they mirror a continuity of the underlying construct. The time intervals are uneven between the scale steps, but the personal salience of the various steps is probably more evenly distributed. In the present study, this was further underlined by constructing the response alternatives as a continuum, in a way similar to visual analogue scales, VAS-scales, which generally are agreed to approximate interval level measurement to a high degree (Wewers & Lowe, 1990). Finally, even if there are errors in single items, the very point of constructing indices, e.g. by adding the item scores, is to even out random errors and increasing the number of scale steps. This improves the approximation of an interval scale. In sum, minor imperfections in the metrics are relatively negligible in cases like the present one (Borgatta & Bohrnstedt, 1981).

MBI components among Swedish human service workers

The goal of factor analysis is dimensionality analysis. The actual levels of the items are irrelevant for the dimensions. The levels that various groups reach on the different factors is another issue, which can be interesting it its own right. To produce measures of the dimensions, the item scores are simply added. Maslach and Jackson use such additive indices and divide the index measures into three equally sized groups, trichotomization. The cutting points, constituting scoring norms for each subscale, are published (Maslach & Jackson, 1986).

One should be suspicious towards any categorizations of theoretically continuous variables, especially towards such divisions that are done *post factum,* either arbitrarily or, worse, to maximize differentiation of a variable (Blalock, 1979). Such

categorizations are abundant, which does not improve the situation. Using Maslach's trichotomization of the burnout components must be regarded to fall into this type of methodological error. She does, however, explicitly encourage researchers to utilize the continuous measures of the variables (Maslach & Jackson, 1986).

However, using group size as a basis for categorization is arbitrary, but it gives a point of comparison. Also means and standard deviations are often used for such comparisons. In table 8, comparison data for the Swedish sample are given in relation to those of the overall U.S. sample and to a subsample of U.S. personnel in social services.

Table 8. Means, standard deviations, and scoring limits for the MBI subscales on Maslach-Jackson total material and social services, and for IFC and SIO.

	EE	DP	PA
U.S. overall sample (n=11067)			
Mean	21.0	8.7	34.6
SD	10.8	5.9	7.1
Low	≤16	≤6	≥39
Medium	17-26	7-12	38-32
High	≥27	≥13	≤31
U.S. social services (n=1538)			
Mean	21.4	7.5	32.8
SD	10.5	5.1	7.7
Low	≤16	≤5	≥37
Medium	17-27	6-10	36-30
High	≥28	≥11	≤29

Table 8, cont'd. Means, standard deviations, and scoring limits for the MBI subscales on Maslach-Jackson total material and social services, and for IFC and SIO.

		EE	DP	PA
Swedish sample				
IFC				
	Mean	19.3	7.0	34.2
	SD	9.2	4.7	7.1
	n	2293	2285	2127
	Low	≤14	≤4	≥38
	Medium	15-21	5-7	37-32
	High	≥22	≥8	≤31
SIO				
	Mean	16.8	5.3	34.4
	SD	9.3	4.3	7.8
	n	3146	3123	2969
	Low	≤12	≤3	≥39
	Medium	13-19	4-5	38-33
	High	≥20	≥6	≤32

Both the Swedish samples scored lower on the EE and DP scales in comparison to the U.S. samples, but about equally on the PA scale. There were also differences between the two Swedish samples. Personnel in the IFC scored higher on both the EE and the DP scales. As to the PA scale, there were only slight differences between the two organizations. It seems as if the dimensionality of MBI is invariant, but that the score levels may covary with context. This is in accordance with an argument against any individual "clinical" applications of MBI (Burisch, 1993). Maslach recommends use of the full index scales to avoid fetishization of the cutting points (Maslach & Jackson, 1986). It is thus rather meaningless to discuss scoring differences in detail. The use of means or arbitrary groups is most appropriate in comparisons within a study. Between studies, such comparisons

are more doubtful. In table 9, means and standard deviations are stated for the three different work positions in IFC and SIO.

Table 9. Means and standard deviations (in parentheses) for the MBI subscales in different work positions.

	Non-HS workers	HS workers	Supervisors
	n=196 - 228	n=4412 - 4665	n=441 - 480
EE	14.4 (8.2)	18.2 (9.4)	16.6 (8.9)
DP	5.4 (4.7)	6.1 (4.5)	5.8 (4.5)
PA	32.8 (9.2)	34.3 (7.5)	34.7 (6.9)

The differences of means between the three groups were tested by independent samples two-tailed t-test. For the DP subscale, there were no statistically significant differences between the three work positions. Concerning the EE scale, both supervisors and HS workers scored significantly higher than the non-HS workers, and HS workers scored higher than supervisors. The HS workers also scored higher on the PA subscale than the non-HS workers, but there was no difference in comparison to the supervisors in this respect. There were thus some differences in the "burnout pattern" between persons in the three work positions. The HS workers were most emotionally exhausted and depersonalized, while the non-HS workers reported the lowest sense of personal accomplishment.

A further analysis of differences in means was done by comparing the scores among persons working in the different work tasks. Also here, independent samples two-tailed t-test was used to compare persons working in a specific area to those who did not work in that area. The results are stated in table 10.

Table 10. Means and mean differences for the MBI subscales in different work tasks.

	EE			DP			PA		
	Mean	Diff		Mean	Diff		Mean	Diff	
SIO									
Child allowance, etc	15.8	-1.1	**	5.2	-0.1		35.8	1.6	***
Parenthood insurance	16.3	-0.6	(*)	5.6	0.5	**	34.5	-0.1	
Sickness allowance	17.4	0.9	**	5.7	0.7	***	34.2	-0.4	
Disability pension	18.5	2.6	***	5.3	0.0		35.2	1.2	***
Rehabilitation	18.6	2.9	***	5.2	-0.1		35.1	1.1	***
Old-age pension	16.5	-0.3		5.2	-0.2		35.6	1.4	***
IFC									
Social welfare allowance	21.7	3.2	***	8.6	2.3	***	33.8	0.5	
Children	19.8	0.6		6.4	-0.8	***	34.0	-0.2	
Youth	19.6	0.4		6.5	-0.7	**	35.2	1.4	***
Adults	19.8	0.6		6.7	-0.4		34.6	0.6	(*)
Family law	19.4	0.2		6.6	-0.5		33.4	-0.8	(*)
Immigrants	19.3	-0.1		6.9	-0.1		34.9	0.8	
Refugees	18.3	-1.1	(*)	6.6	-0.5		34.3	0.1	
Unemployed persons	20.9	1.8	**	7.5	0.6	(*)	34.5	0.3	
Drug addiction	18.6	-0.9	*	6.7	-0.4		34.9	1.0	**

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

In the section above about human service organization, some tentative hypotheses could be formulated about the MBI components in different kinds of human service work. Table 10 gives a basis for judging the tenability of those hypotheses.

The first hypothesis was that people working in people-changing services are more emotionally exhausted than others. This is not so. Social welfare allowance and sickness allowance are clearly

people-sustaining, but reveal higher levels on the EE scale. Many of the explicitly changing tasks in the IFC - youth, adults, children etc. - show no differences as to EE.

The second hypothesis was that changing technologies had lower personal accomplishment. No support is given in table 10 for that contention, rather the contrary. It was further suggested that heavy engagemnet in clients - people-changing - would result in lower tendencies for depersonalization. This was so for people working with children and youth, but not for other changing work tasks. The opposite pattern was also suggested as possible, that high exhaustion could lead to higher depersonalization for these work tasks. No support is found for that suggestion.

It was further suggested that work with "malfunctioning" clients would imply an adversary relation to the clients, leading to higher depersonalization. This was the case for those working with sickness and social welfare allowance, but not for those working with e.g. drug addicts. However, if the hypothesis is amended so that people working with *sustaining* of "malfunctioning" clients, it is not contradicted by the data in table 10.

The raw group means of course say rather little about the actual social mechanisms taking place in the various work tasks. The present results are not conclusive. They indicate, however, that there are reasons to pay special attention to those work tasks combining sustaining work with "malfunctioning" clients. One work task seems especially problematic in this respect, social welfare allowance, since those working with that task score the highest on both the EE and DP scales.

A further weakness of the simple scores is of course that they are static. Nothing can be said about the relations between the MBI components. As pointed out several times earlier, Maslach already in her early research, proposed a sequence or process concerning the three MBI components. In this model, emotional exhaustion arises first in response to emotional stressors in human service work. Increased exhaustion leads to depersonalization where workers try to gain distance to the clients as a way of coping. This leads in turn to a sense of reduced personal accomplishment. An investigation of this process model will be the object of the next chapter.

6. "THE BURNOUT PROCESS"

According to the discussion of the syndrome concept above, a close relation between symptoms is necessary, although not sufficient, for anything to be called a syndrome. Maslach's process model of the "burnout syndrome" can be depicted as follows:

> Emotional exhaustion → depersonalization → reduced personal accomplishment.

Emotional exhaustion thus leads to reduced personal accomplishment with depersonalization as a mediating variable. There is no direct relationship between emotional exhaustion and personal accomplishment. The trigger of the process is said to be emotional stress in human service work which will be analyzed in the chapter to follow. Here, the object is limited to investigate the relations between the MBI components.

There is a problem in the analysis of the burnout process, namely the meaning of the word "relation". In social scientific methodological discussion, it can mean increased probability to have a particular property if you have another. It can also mean which reduction in error of prediction of a variable that you obtain if you have knowledge of a person's position on another variable. It can further mean how much the value of a person's score on a variable changes if it changes on another variable (Blalock, 1979). In analysis of relations between variables, one should clarify the meaning intended in the analysis. The exact meaning of Maslach's propositions in this respect remains unclear, and it seems therefore to be a wise strategy to have a

rather eclectic approach, investigating more than one meaning of the relation between the burnout components.

There is another, more philosophical than methodological, problem in this context, where Maslach's meaning indeed is rather clear. My interpretation is that she explicitly thinks of the burnout process as a *causal* process. Emotional exhaustion *produces* depersonalization, that in its turn *produces* a lowered sense of personal accomplishment. In this regard, Maslach's theory seems to be related to the view on causality that is suggested by e.g. Hubert Blalock and Mario Bunge. With them, the fundamental emphasis lies in the idea of a cause producing its effect. The point of this is that one should require not only general causality criteria about covariation, temporal sequence etc., but also that the cause gives the effect through a mechanism. The statement that two phenomena are causally related to each other necessitates a statement about *how* the cause brings about its effect (Blalock, 1964; Bunge, 1979).

A consequence of this view on causality is that e.g. Hill's classical criteria of a causal relation are necessary but not sufficient to conclude the presence of causality. Hill certainly suggests both empirical and theoretical criteria for assessment of causality (Hill, 1965). The theoretical criteria are plausibility, coherence and analogy, but the requirement of mechanism is not explicitly stated. The empirical criteria are strength of covariation,"when x, then y"; consistency, "when x, mostly y"; specificity, "when x, but not x_1, then y" temporal sequence; "x at t_0, y at t_1"; and gradient "$x + \Delta x = y + \Delta y$".

In my opinion, a reasonable research strategy is to investigate the necessary criteria first, before going into the sufficient

requirement. If a causal suggestion does not even fulfill the necessary requirements, it can be dismissed more easily. The requirement of a mechanism is a qualified one, demanding deeper study. Starting with the simpler criteria seems to be good research economy. The aim of this chapter is therefore limited to application of the empirical criteria on the "burnout process". It will show that one of the MBI components can be discarded already here. However, the other two components will show to fulfill the empirical criteria, necessitating deeper study. In the chapters to follow this one, the theoretical plausibility and coherence of the process model will be investigated through analysis of theories of the trigger of the process, occupational stress. This will also lead into study of the sufficient criterion, if there are mechanisms tying emotional exhaustion and depersonalization together.

Of the empirical criteria applied on the burnout process, the requirement of a gradient relation is not well studied, nor is the specificity of the proposed causal chain. These lacunae can be filled in this context, which another of the criteria cannot, namely the requirement of temporal sequence. Lacking longitudinal data, we can make some way towards the assessment of a causal relation, but not all the way. Maslach's hypotheses give fair theoretical grounds for determining which variable that should be dependent and which should be independent.

Here, I will use a two stage strategy in the analysis of the "burnout process". First, I will perform a contingency table analysis with various measures of the relations, i.e. using both specificity related measures - odds ratios - probability related measures - chi-square - and proportional reduction of error measures - Goodman and Kruskal's tau. Then I will do a

regression analysis, using the gradient interpretation of the relation concept. Before going into this, there is however another idea of the burnout process, based on Maslach's three dimensions, which requires some comment.

The hip-hop model

Robert Golembiewski (Golembiewski, Munzenrider, & Carter, 1983) relies on the MBI in his analysis of the burnout process. According to him, the process consists of eight phases. High depersonalization is suggested to be initial component, followed by reduced personal accomplishment, finally leading to emotional exhaustion. Depersonalization is suggested to be experienced first, because a certain degree of professional detachment is functional in dealing with others in a more "objective" manner. Beyond a certain degree, this detachment becomes depersonalization, which impairs performance. As depersonalization and felt accomplishment worsen, work stress may exceed one's ability to cope, which leads to emotional exhaustion (Golembiewski & Munzenrider, 1988). This process model can be described as follows:

> Depersonalization → reduced personal accomplishment → emotional exhaustion

This model is obviously different compared to Maslach's, although it includes the same components, and in some sense relates burnout to work stress. Another difference is that Golembiewski does not limit the relevance of burnout to human services. Depersonalization is instead conceived as a response towards work mates, not to clients or patients.

The eight phases were constructed by different combinations of the three subscales, dichotomized at the median to indicate "high" versus "low" emotional exhaustion, depersonalization, and personal accomplishment respectively. (This violates the methodological *post factum* rule mentioned above.) Starting out with depersonalization as a mild indicator of burnout, and emotional exhaustion as a strong indicator of burnout, Golembiewski developed his phase-model, shown in figure 3. He means that the phases represent a "progressive virulence" (*sic!*) of burnout. Individuals in phase IV should thus experience more distress than individuals in phase III, but less distress than individuals in phase V (Golembiewski, Scherb, & Boudreau, 1993).

	Phase no.							
	I	**II**	**III**	**IV**	**V**	**VI**	**VII**	**VIII**
Depersonalization	Low	High	Low	High	Low	High	Low	High
Personal accomplishment	Low	Low	High	High	Low	Low	High	High
Emotional exhaustion	Low	Low	Low	Low	High	High	High	High

Figure 3. The phase model by Golembiewski.

Personal accomplishment = reversed scale , i.e. high score indicates poor performance

There are clear contradictions in Golembiewski's scheme of the burnout phases. According to his idea about a progressive virulence, a person should proceed through each of the phases. In my opinion, it is absurd that a person should jump from high depersonalization to low and then to high again. Golembiewski obviously thinks the same. His solution to this dilemma is an *ad*

hoc argument: "..no individual will proceed through each of the eight phases on the way to full-term burnout. For example, psychologically, it seems awkward for a II to move to a III" (Golembiewski, et al., 1993, p 230). The somewhat provocative label in the section headline seems relevant. People are sort of jumping up and down in the three syndrome components, reminding of the suggestive rhytms of hip-hop music.

Another analytic aspect of the model, invoking a popperian argument, is that it - as it stands - hardly is possible to falsify. According to Popper, scientific tenets *prohibit* something from happening. In the hip-hop model, no combination of depersonalization and personal accomplishment leads to any exclusive outcome. Any combination is possible. No data can falsify the model.

Still another criticism of the model is that it is developed without connection to theory (Schaufeli & Buunk, 1996). The different combinations of the burnout components into the eight phases were done without any theoretical discussion. This is an example of what Pawson describes as a-theoretical variable analysis (Pawson, 1989), based on arbitrary categorizations. The model has also been criticized by Leiter (1993), who means that its construction in practice reduces MBI to emotional exhaustion. Further, the model has also been evaluated in relation to Maslach's model (Lee & Ashfort, 1993). The results showed Maslach's model as giving the best explanatory power. In sum, it seems unnecessary to devote any further attention to Golembiewski's model, and we can turn to the analysis of the Maslach model. The only interesting question the Golembiewski model can raise is, in my opinion, how such absurdities can be suggested with anybody taking them seriously. An answer to that

question could be found, I think, in that Golembiewski reduces burnout to be a pure social construction in the idealist meaning. If theory loses any connection to reality, it is of course perfectly in order that one is depersonalized one minute and not another.

Contingency analysis of Maslach's process model

In the analysis of Maslach's process model, the bivariate relationships between the three components will first be studied in contingency tables. Three hypotheses can be formulated.

1. If Maslach's model is correct, depersonalization should occur if a person experiences high emotional exhaustion.
2. The same relation should occur between depersonalization and personal accomplishment, i.e. a sense of low personal accomplishment should be present among highly depersonalized persons.
3. If depersonalization is an intervening variable, there should be no covariation between emotional exhaustion and personal accomplishment when controlling for depersonalization.

For a categorization, the three MBI subscales were trichotomized at 0.5 standard deviations above and below the mean. Only the extreme categories were included in the analyses, in order to maximize the discriminatory ability of the MBI components. This procedure is similar to what many other researchers use (Johnson, 1986; Karasek & Theorell, 1990; Karasek, 1979). It can obviously be subjected to the criticism of artificiality of *post factum* categories that was mentioned above. Here, it is only a starting point in the scrutiny of the process, and interpretations of results must be made with caution.

Odd ratios with 95% confidence intervals, the chi-square based measure phi, and Goodman and Kruskal's tau were calculated. In table 11, the association between emotional exhaustion and depersonalization is stated.

Table 11. Bivariate association between emotional exhaustion and depersonalization. Percent. Odds ratios with 95% confidence intervals.

	Depersonalization		
	High	Low	n
Emotional exhaustion			
High	75	25	1200
Low	20	80	1251

OR= 12.4 (10.2 - 15.0), ϕ= 0.55, τ= 0.31

There was a very strong association between emotional exhaustion and depersonalization: Three quarters of the respondents who reported high emotional exhaustion also reported high depersonalization. There were also some respondents who reported high emotional exhaustion and low depersonalization. In Maslach's terms, this could be interpreted as if they were in an initial stage of the burnout process, not yet depersonalized. An assessment of this statement however requires a longitudinal study.

The strength of the association is shown by the high odds ratio. It means that a person who reports high emotional exhaustion has a risk of being depersonalized by a factor of 12.4 relative to those who are low exhausted. Phi, which ranges from 0-1 in 2x2 tables, was also high, possibly interpretable that there is a high probability to have high depersonalization if you have high emotional exhaustion (or the reverse). The tau coefficient means

that if we know the degree of emotional exhaustion, we reduce our error in predicting the degree of depersonalization by 31%. All three measures of association tell us that there was a strong association between emotional exhaustion and depersonalization. Maslach's tenet about the positive relationship between emotional exhaustion and depersonalization seems to hold.

One should, however, keep in mind that 3279 respondents were excluded from table 11 due to the dichotomization technique. The next step in the analysis was therefore to relax this restriction. In a 3x3 table, including the middle group, Cramer's V is used as the chi-square based measure, since V, but not phi, keeps the upper limit of unity in such tables. Odds ratios cannot be calculated in a 3x3 table. It is shown in table 12.

Table 12. Association between emotional exhaustion and depersonalization, using all categories. Percent.

	Depersonalization			
	Low	Medium	High	n
Emotional exhaustion				
Low	53	34	13	1909
Medium	29	42	29	1705
High	17	29	54	1687

V= 0.29, τ= 0.08

V was 0.29, and tau 0.08. The reduction in error thus decreased from 31% to 8% which may reflect the fact that the risk for error increases with the number of categories. When using the whole material there was still a positive association between emotional exhaustion and depersonalization, but the strength of this association decreased considerably.

The second hypothesis concerned the relation between depersonalization and personal accomplishment. The association between these two components is stated in table 13, using the extreme dichotomization.

Table 13. Bivariate association between depersonalization and personal accomplishment. Percent. Odds ratios with 95% confidence intervals.

		Personal accomplishment[1]		
		Low	High	n
Depersonalization				
	High	60	40	1040
	Low	31	69	1222

OR= 3.3 (2.8-3.9), ϕ= 0.28, τ= 0.08

Also depersonalization and personal accomplishment covaried, although not as much as emotional exhaustion and depersonalization. Most persons who reported high depersonalization also reported low personal accomplishment. The less strong association is indicated by all three measures, which are lower compared to previous table. Persons reporting high depersonalization had an increased risk of low personal accomplishment by a factor of 3.3 in relation to persons who reported low depersonalization. The reduction of proportion in error knowing the degree of depersonalization was 8 %, and phi was 0.28, considerably weaker compared to the association between emotional exhaustion and depersonalization. Still, the result supports a relation between depersonalization and personal accomplishment as proposed by Maslach.

[1] Low PA indicates a high degree of burnout, and high PA indicates a low degree of burnout.

When using the whole material, i.e. including the persons that reported moderate degrees of the burnout components analyzed here, the associations were less strong. V was 0.15 and tau decreased from 0.08 to 0.02. This means that with knowledge about the degree of depersonalization, we can reduce our error in predicting the degree of personal accomplishment by 2%, which is rather low. The full 3x3 table is not stated here.

The third hypothesis concerned the relation between emotional exhaustion and personal accomplishment. The result is stated in table 14, without controlling for depersonalization, and with extreme dichotomies.

Table 14. Bivariate association between emotional exhaustion and personal accomplishment. Percent. Odds ratios with 95% confidence intervals.

	Personal accomplishment		
	Low	High	n
Emotional exhaustion			
High	50	50	1044
Low	36	64	1282

OR= 1.8 (1.5 - 2.1), ϕ= 0.14, τ= 0.02

High emotional exhaustion did not discriminate for personal accomplishment. Tau was low, indicating little reduction in error of predicting personal accomplishment with knowledge of the degree of emotional exhaustion.

According to the process model, the association between emotional exhaustion and personal accomplishment should disappear when controlling for depersonalization. In table 15, the associations between emotional exhaustion and personal

accomplishment are stated controlling for low and high depersonalization, retaining the extreme dichotomization.

Table 15. Bivariate association between emotional exhaustion and personal accomplishment, controlling for depersonalization. Percent. Odds ratios with 95% confidence intervals.

	Low depersonalization			High depersonalization		
	Personal accomplishment			Personal accomplishment		
	Low	High	n	Low	High	n
Emotional exhaustion						
High	31	69	201	62	38	555
Low	30	70	693	48	52	164
	OR= 1.1 (0.7 - 1.5), ϕ= 0.01 τ= 0.00			OR= 1.8 (1.3 - 2.5), ϕ= 0.12 τ= 0.01		

The association between emotional exhaustion and personal accomplishment disappeared only when depersonalization was low. With high depersonalization, there still was an independent association between the two other burnout components, although very weak. This association remained when including the whole material in 3x3 tables. V ranged from 0.06 to 0.08 and tau from 0.00-0.01. The independent relations between emotional exhaustion and personal accomplishment were very low, although statistically significant.

So far, Maslach's idea of a process has received some empirical support. We proceed to another interpretation of the idea of a relation, i.e. the gradient association. The method for that is regression analysis.

Regression analysis of "the burnout process"

In regression, a dependent variable, y, is presumed to be linearly associated with one or more independent variables, x_i; $y = \alpha + \beta_1 x_1 + \beta_n x_n + \varepsilon$. The α signifies the intercept with the y-axis, i.e. when x=0. The ε is an error-term containing all deviations from the straight line. The β, the regression coefficient, tells us how much y changes if x changes one measurement unit. To facilitate the interpretations in the regression analyses, the summed indices for the three burnout subscales were transformed to range between 0-100. This makes it possible to interpret the coefficients in terms of percent change. For example, the variable of emotional exhaustion had its maximum value of 54. For this variable, the ratio of 100/54 was first calculated (=1.8519). Second, all values on the variable were multiplied by this ratio. This procedure yields a variable with the same distribution as the non-transformed one. There are at least two advantages with such a transformation. First, the variables get the same possible range, (0-100), and second, it becomes possible to interpret results in terms of percent change.

First, bivariate regression was done with depersonalization as dependent and emotional exhaustion as independent variable. The results are stated in table 16.

Table 16. Bivariate regression model for depersonalization as dependent and emotional exhaustion as independent variable.

	Regression coefficient
Emotional exhaustion	0.44
Intercept	6.2
Adj. R^2	0.23
F/df	1603/5299
Signif. F	0.000

Just like in the contingency analysis, the regression shows a strong relationship between emotional exhaustion and depersonalization, and the model is strongly significant. The regression coefficient indicates that depersonalization increases with 0.44 % for each percent increase in emotional exhaustion. The R^2 of 0.23 means that 23% of the variation in depersonalization was explained by emotional exhaustion. Three fourths of the variance were due to other factors than emotional exhaustion, and other independent variables should be included in the model in order to explain depersonalization.

The relatively low R^2 indicates that model is not correctly specified, which is one of the most important aspects of regression analysis. Specification error, omitting a variable, can cause heteroskedasticity, i.e. that the error term does not have a constant variance (Studenmund, 1992). The residual scatter plot of the model behind table 16 also indicated heteroskedasticity, with more variation at larger values of emotional exhaustion. Further, the residuals were not normally distributed, since there was a straggling tail toward larger positive values. Regression models can be very sensitive to extreme values, so called outliers. The residuals were inspected for outliers using Cook's distance, which considers the change in residuals when case *i* is

omitted (Fox, 1991). The outliers were removed but it did not change the results, due to the large sample size.

The low R^2 could also be due to a non-linear relation between the two burnout components. To check for linearity, the study population was partitioned into three approximately equal parts, and separate regressions were run within each subgroup. If the relation between the variable is linear, the regression coefficient should be approximately the same in all the segments and the confidence intervals should overlap. The trichotomization categories were used as subgroups, and within each group, the continuous variables were used. The confidence intervals for the regression coefficients were all overlapping, indicating a linear relation between emotional exhaustion and depersonalization. For low emotional exhaustion, the confidence interval was 0.4-0.5, for medium emotional exhaustion 0.3-0.5, and for high emotional exhaustion 0.4-0.5. Since the result was not due to outliers nor to non-linearity, I conclude that the low R^2 together with the heteroskedasticity indicates poor model specification.

The second stage was to analyze the effects of depersonalization on personal accomplishment. There should, according to Maslach's process model, be a negative relationship between these two components, i.e. increase in depersonalization should decrease personal accomplishment. Also here, the variables were transformed for a percent interpretation. The hypothesized negative relationship between depersonalization and personal accomplishment was confirmed. One percent increase in depersonalization decreased personal accomplishment by 0.21 %. The results are stated in table 17.

Table 17. Bivariate regression model for personal accomplishment as dependent and depersonalization as independent variable.

	Regression coefficient
Depersonalization	-0.21
Intercept	75.8
Adj. R^2	0.04
F/df	235/5023
Signif. F	0.000

The association was thus only half as strong as the one between emotional exhaustion and depersonalization. The model fit was also much poorer, an R^2 of 0.04. The residual scatter plot also here indicated heteroskedasticity, with larger variation at smaller values. The residuals were not normally distributed, with a straggling tail toward larger negative values. Also here, the relation was checked for linearity. The confidence intervals were overlapping, indicating a linear relation between these burnout components. The confidence interval was -0.6 - -0.1 for low depersonalization; -0.3 - -0.1 for medium depersonalization and -0.2 - -0.1 for high depersonalization. Also in this case, lacking model specification should be an appropriate characterization of the model.

The next analysis was between emotional exhaustion and personal accomplishment, following the pattern from the contingency analysis. Emotional exhaustion was regressed on personal accomplishment, using transformed variables. As predicted by the model, the relationship between emotional exhaustion and personal accomplishment was weak. The model fit was very poor, an R^2 of 0.01. The regression equation thus failed to explain the values of personal accomplishment better than could be explained by the sample mean (71.46 on the

transformed variable) of personal accomplishment (Studenmund, 1992). The results are stated in table 18.

Table 18. Bivariate regression model for personal accomplishment as dependent and emotional exhaustion as independent variable.

	Regression coefficients
Emotional exhaustion	-0.10
Intercept	74.7
R^2	0.01
F/df	61/5017
Signif. F	0.000

Residuals were also here heteroskedastic and non-normally distributed. The relation between emotional exhaustion and personal accomplishment was linear, with overlapping confidence intervals.

All three variables of Maslach's process model were included in the next regression model. The association between emotional exhaustion and depersonalization disappeared and the relation between depersonalization and personal accomplishment remained the same as in the bivariate model. The results are stated in table 19.

Table 19. Multivariate regression model for personal accomplishment as dependent variable and emotional exhaustion and depersonalization as independent variables.

	Regression coefficients
Emotional exhaustion	-0.01
Depersonalization	-0.20
Intercept	76.0
Adj. R^2	0.04
F/df	114/4952
Signif. F	0.000

This model was not fully specified. Like in all the other models the residuals indicated heteroskedasticity. Only 4% of the last chain in the burnout process was explained by the two other elements. One should keep in mind, however, that the coefficients in this multivariate model show the effect of each of the two components, keeping the other constant. When keeping depersonalization constant, the relation between emotional exhaustion and personal accomplishment disappears. The relation between depersonalization and personal accomplishment was the same as in the bivariate regression analysis.

From the results of the regression, it is difficult to conclude a burnout syndrome in three stages as suggested by Maslach. There is a relation between emotional exhaustion and depersonalization, but with rather moderate explained variance, and the relation between depersonalization and personal accomplishment is even weaker. In fact, one of the predicted relations gave a proportional reduction of error of only 8 %, which is very little. The minimum requirement of covariation is not fulfilled for the last component of Maslach's process model.

A revised process model of burnout

The simple three stage process model has been questioned by others. Leiter initially supported Maslach's original model (Leiter & Maslach, 1988). He then reconsidered the simple model of the internal relationships between the burnout components and developed the burnout model by including "external" factors, like "organizational supports", i.e. coworker and supervisor support, and skill utilization.

Leiter considers emotional exhaustion to be the central aspect of burnout, since it is most responsive to stressors in the work environment. Persons with high emotional exhaustion experience high depersonalization and feel less personal accomplishment, if they lack supportive relationships with their supervisors or coworkers, or if their abilities are underutilized (Leiter, 1993). Leiter's developed model still contains a chain from emotional exhaustion (caused by organizational stressors like work overload and interpersonal conflict), via increased depersonalization to a decreased sense of personal accomplishment. However, he also means that depersonalization and decreased personal accomplishment can develop independently of emotional exhaustion, mediated by organizational supports. A high degree of emotional exhaustion is supposed to reinforce these effects (Leiter, 1991).

Later, Leiter presented a refinement of the process model, into a mixed sequential and parallel model (Leiter, 1993). Decrease in personal accomplishment was there supposed to develop parallel to increased emotional exhaustion. Emotional exhaustion was still considered to be an effect of demanding aspects of the work environment (workload, conflicts, hassles), contributing to increased depersonalization. As in the model before, organizational supports, and a new dimension, "client cooperation", were set as directly influencing depersonalization. Personal accomplishment in the new model was considered to be related to presence of resources, i.e. support and opportunities for skill enhancement. In the revised model, there was no longer a direct relationship between depersonalization and personal accomplishment

> "It (the relation between depersonalization and personal accomplishment, my comment) exists within their social

context, in the provision of organizational resources, in the personal conflict among colleagues and service recipients, and in the pressure of emotional demands" (Leiter, 1993, p 246).

Leiter means that his new model of burnout is a process model where time plays an important part. People do not suddenly become burned out, nor are the levels of the burnout components constant in individuals.

> "Instead, people move toward increased professional efficacy or toward burnout as a function of their personal reactions to persistent aspects of their work environment" (Leiter, 1993, p 246).

Leiter questions the direct relationship between depersonalization and personal accomplishment, widening the model of burnout to include external causal factors. The burnout model thus becomes much more complex. Personal accomplishment is suggested to be independent of emotional exhaustion and depersonalization, as it showed to be in the empirical analysis here. Leiter's hypotheses thus receive support in the present study. However, Leiter does not suggest that personal accomplishment should be excluded as a part of the burnout syndrome. Still, his revised process model puts the issue in the beginning of this chapter in focus: should the three burnout components be related to each other in the form of a syndrome ?

The discussions about the burnout process imply differentiation and refinement of the idea of a syndrome, just as described by Juul Jensen in his analysis of the development of diseases and syndromes, presented in chapter 3. Irrespective of one's standpoint to that argument, a minimum requirement for a set of

symptoms to be pronounced a syndrome is empirical covariation. That is obviously not fulfilled here. In my regard, it is time to break up the original syndrome suggestion, taking a further step towards the differentiation of the burnout syndrome. The personal accomplishment component should be excluded from the syndrome based on the lack of relation to emotional exhaustion and depersonalization. This does not mean that personal accomplishment lacks interest or is irrelevant, only that it seems to be a result of many other factors than emotional exhaustion and depersonalization, which both seem to play a rather insignificant part for sense of reduced personal accomplishment. This is similar to e.g. the definition by other researchers of the burnout process (Cherniss, 1980; Koeske & Kelly, 1995). It is also the logical consequence of Leiter's revised process model (even though Leiter does not explicitly exclude personal accomplishment). Consequently, personal accomplishment will not be studied further in this context. Instead, I will concentrate on the other two components. They fulfill the criterion of empirical covariation. Their relation in the syndrome context is however not uncomplicated. Let us first find out if they are associated in a piece of actual practice.

Burnout in practice

A fundamental tenet here is that burnout is a practice concept. Let us therefore take snapshot of a practice referring to burnout: claims for workmen's compensation in Sweden. There is a special health insurance in Sweden for damages caused by factors in work, where claims are made through the Social Insurance Organization. Claims can concern a more beneficial sickness allowance and/or various forms of pensions. All claims are

registered by the National Board of Occupational Safety and Health.

In 1995, I requested copies of all cases concerning workmen's compensation where burnout appeared as a word. I received the copies by courtesy and in de-identified condition. Burnout had no register heading of its own, but was a part of the general heading "social and organizational factors". It was coded under the subheading "psychophysiological reaction" together with e.g. stomach pain and headache. Through 1993, the latest year that was completely registered at the time of my request, there were 600 cases registred under this subheading. In 103 of the cases, the persons claiming compensation reported that their troubles were related to "the whole body". Of those, 11 persons claimed compensation for burnout. Ten were diagnosed according to physician certificates as follows: 1. Burnout - six persons; 2. stress reaction (burnout) - one person; 3. psychosomatic troubles - one person; 4. depression - one person; 5. asthenia=burnout - one person.

The claimers worked in different human service occupations, with one exception, a production manager. The occupational distribution is shown in figure 4.

Occupation	
Junior-level teacher (2)	Home-help care assistant
Production manager	Company physician
Dentist	Employment assistant
Family care-giver	Refugee camp manager
Social worker (2)	

Figure 4. Occupational distribution of claimers for workmen's compensation due to burnout.

It seems as if burnout in practice, just as in research, is supposed to be an effect of human service work. Another similarity to the research is the perception of the causes of burnout. In the claims, work load, primarily conceived as quantity of work, was the most common factor attributed as the cause of burnout. The reported causes are shown in figure 5.

Causes of burnout	
Work overload	Haste
Stress	Increased computerization
Heavily demanding work	Single work
Demands from patients	Unclear responsibility
Psychologically demanding work	Change in work organization
Immature children in class, especially very demanding boys	Complaints, threats and confrontations with clients
Worry, fear, grief, and hopelessness due to bankruptcy and unemployment	Psychosocial work environment

Figure 5. Reported causes of burnout.

The claims also contained descriptions of "the course of the disease", mainly different symptoms of burnout. The reported symptoms are stated in figure 6.

Symptoms	
Heart problems	Pain in the body
Pain in chest and overarm	High blood-pressure
High rest pulse	Headache
Sleeping problems	Weakness
Depression	Muscular inflammation
Almost nervous breakdown	Exhaustion
Fainting-fit	Paralysis
Loss of weight	Concentration problems
Dizziness	Weariness

Figure 6. Reported symptoms of burnout.

The list of symptoms differs from Maslach's conception of the burnout syndrome. According to her, there should be three symptoms in this figure, not 18. It seems like burnout, at least in this practice, was not conceived as a conglomerate of the symptoms emotional exhaustion, depersonalization, and personal accomplishment. Of these, only "exhaustion", and the similar "weariness" and "weakness", were mentioned as indicators of burnout. The other symptoms were more medically oriented and similar to symptoms reported by patients with chronic fatigue syndrome (Buchwald, Garrity, Pascualy, et al., 1992) or oral galvanism (Lundberg, 1989). In order to give a clearer picture of the conception of burnout in this particular practice, I will describe one case more in detail.

A burnt out case.

We will meet a junior-level teacher, call her Anna, who has worked in her occupation for 13 years. In her compensation claim, Anna described her work as heavily demanding with high responsibility. The teacher team in her school did not cooperate well, primarily due to high absenteeism. There were no replacements for the absent teachers. Anna requested help to handle her unbearable work situation, but got none. This led to a "very strong burnout which in its turn led to sick-leave". The course is described as follows:

> " In the end of january 19xx, I was so worn out that one day I fainted after work. I had to be lying down for several hours in school due to strong dizziness before I could go home. By then, I had lost lots of weight, and had sleeping problems, concentration problems, and many of other typical burnout symptoms. When the same thing happened

three times during the same week, I went to a doctor who confirmed that I was totally burned out. I was sick-listed for two weeks, and the doctor urged me to change job."

Anna tried to go back to her work, but after a couple of weeks she had to visit the doctor again. The work situation had not changed during her absence. Now, she became sick-listed for several months, and she had medical examinations in order to exclude that her problems were due to some somatic disease. She was found to be quite healthy besides the burnout symptoms, which were attributed to her work situation.

During this time period, Anna felt very bad both physically and psychologically.

" I was still in the acute burnout phase and not in a condition to file a workmen's compensation claim. /.../ My employer refused to believe that I was burned out due to my work situation and required me either to quit my job, or to go back to it. In order not to lose my job or to become burned out again, I have had to apply for a leave every semester, without having any other job".

Anna was exhausted by the work conditions at her school. Her exhaustion led to different psychosomatic reactions. In Anna's story, there were no indications that the exhaustion led to a depersonalized behavior towards the pupils, or that she felt reduced personal accomplishment. This was true for all the workmen's compensations claims investigated here. In no case, neither depersonalization nor personal accomplishment were discussed as components of burnout. The general impression was instead that high work load leads to some form of exhaustion,

and eventually also to different, primarily psychosomatic, symptoms.

In the referred practice, burnout was thus equated with emotional exhaustion and nothing else. This does however not contradict the conception of burnout as consisting of emotional exhaustion and depersonalization. Depersonalization or personal accomplishment were not addressed at all - probably, neither the claimants nor the physicians knew anything about this connection in American psychological research. In my regard, burnout was a semantic label for "very tired", meaning nothing particular in addition to the statement of tiredness. If one were to investigate Anna and her companions in the material, they might very well score high on the DP scale and low on the PA scale. We know nothing about that.

In many accounts of the burnout process, depersonalization is regarded as a coping mechanism, or an effect, or both, in relation to emotional exhaustion, and not as burnout it itself (Cox, Kuk, & Leiter, 1993; Shirom, 1989). Emotional exhaustion is set as the "core meaning of burnout" by many burnout researchers (Koeske & Kelly, 1995; Koeske & Koeske, 1989). Cox and collaborators (1993) made a short review of burnout studies and summarized the centrality of emotional exhaustion as follows:

1. It is what defines burnout to the subject
2. It correlates most strongly with global measures of burnout (e.g. the Pines' BM)
3. It is what determines in a temporal sequence at least one of the burnout components; depersonalization.

This is rather typical for many of the defining exercises in the burnout literature. The "core meaning of burnout" is this or

that. One sets a limit at some arbitrary point in the social processes. The quest for the essence of burnout never ends, but remains rather uninteresting. Here, I will retain the process model of Maslach as a possible candidate for the syndrome label, dropping personal accomplishment. The study of the mechanisms behind this model makes it however necessary to study the trigger of the process, occupational stress, where the practice examples actually give some support for a connection.

7. JOB STRESS IN HUMAN SERVICES

In this chapter, the focus is shifted to a new problem. The previous chapters can be regarded as various approaches to the meaning of burnout. I have also reached a provisional solution to that problem: emotional exhaustion and depersonalization, with a so far unexplained mutual relation. The problem in that relation is if emotional exhaustion produces depersonalization. To find an answer to that problem, we must go into the process supposed to trigger the relation, occupational stress.

There is unanimity in research that emotional exhaustion is an effect of work in HSO:s (Leiter, 1993; Maslach, 1982b; Pines & Aronson, 1988). In the limited regression analysis above, it was a general finding that model specification was insufficient. This is the most important step in regression analysis (Achen, 1982; Studenmund, 1992), but becomes a problem when it comes to burnout research.

Even though burnout is supposed to be related to stress, and the emotional demands or stressors in human service work are said to cause emotional exhaustion, the concepts of stress and job demands are usually not problemized, but taken for granted in the literature. Here, my ambition is to deepen the analysis of job demands and job stress in relation to emotional exhaustion, with the goal of a fully specified model of emotional exhaustion. A starting point for the analysis can be found in studies on burnout in social work.

Correlates to burnout in social work [1]

In a review of 18 studies of burnout among social workers, one question was: what is associated with burnout ? (Söderfeldt, et al., 1995). In the reviewed studies, burnout was operationalized in different ways. Seven of the studies measured burnout by the three subscales of MBI (Arches, 1991; Coady, Kent, & Davis, 1990; Ganster, 1989; Gibson, McGrath, & Reid, 1989; Himle, et al., 1986a; Himle, et al., 1986b; Johnson & Stone, 1986; Williams, 1989), and two of the studies used the three MBI subscales plus the fourth factor (LeCroy & Rank, 1986; Stav, Florian, & Zernitsky Shurka, 1986). Five of the studies used only parts of the MBI subscales (Corcoran, 1986; Corcoran & Bryce, 1983; Hagen, 1989; Jayaratne, Davis-Sacks, & Chess, 1991; Jayaratne, et al., 1988). The Pines' Tedium Scale was used in one study (Justice, Gold, & Klein, 1981), and in another study in combination with the MBI (Fahs Beck, 1987).

Two studies made their own scales; in one, burnout was measured by a revised emotional fatigue scale, developed from the MBI and from the Pines' Tedium Scale (Corcoran, 1989). In another study, burnout was measured by a thirteen items scale made up of symptoms that the author regarded as associated with burnout (Streepy, 1981). The reviewed studies illustrate the ambiguity of the burnout concept. The ambiguity also holds when looking into the correlates to burnout. The covariate factors, suggested in the articles, can be categorized as related to the work, the client, or to the individual social worker.

[1]This section is based on the paper by Söderfeldt, et al. (1995)

Sometimes the covariate factors were discussed as correlates of burnout, and sometimes as related to the three different subscales of MBI. Figure 7 gives an overview of work-related factors that were found to be associated with burnout in the reviewed articles.

Work-related associations	
Low work autonomy	(Arches, 1991; LeCroy & Rank,1986)
Lack of challenge on the job	(Himle, et al., 1986a)
Low degrees of support	(Fahs Beck, 1987; Himle, et al., 1986b; Jayaratne, et al., 1988)
Role ambiguity	(Himle, et al., 1986b)
Work in public sector	(Justice, et al., 1981)
Low professional self-esteem,	(LeCroy & Rank, 1986)
Low salary	(LeCroy & Rank, 1986)
Dissatisfaction with agency goals and minimal use of coping strategies at work	(Fahs Beck, 1987)
Difficulties in providing services to the clients	(Fahs Beck, 1987; Streepy, 1981)
Negative attitudes towards the profession.	(Streepy, 1981)
High degree of work pressure	(Streepy, 1981)
Bad agency functioning	(Streepy, 1981)
Role conflict	(Hagen, 1989; Himle, et al., 1986a)
Boredom,	(Hagen, 1989)
Low job satisfaction	(Hagen, 1989)
Intent to change job	(Hagen, 1989)
Working 31-40 hours providing services to patients with chronic illnesses other than cystic fibrosis	(Coady, et al., 1990)

Figure 7. Work-related factors associated to burnout in 18 reviewed articles.

There were also some associations to burnout connected to the client as well as to the individual social worker. They are stated in figure 8.

Client related associations	
Negative impressions of the clients	(Corcoran, 1986)
Empathy	(Corcoran, 1989)
Personal involvement in clients' problems	(Fahs Beck, 1987)
Low job satisfaction	(Hagen, 1989)
Involvement in the client-worker relationship	(Streepy, 1981)
Worker related associations	
Chronic minor hassles of daily living	(Johnson & Stone, 1986)
Family income	(Streepy, 1981)
Attitudes towards the profession	(Streepy, 1981)
Years of experience	(Streepy, 1981)
Low education	(Streepy, 1981)

Figure 8. Client- and worker-related factors associated to burnout in 18 reviewed articles.

Only a few client-related factors were mentioned in the studies. A high degree of involvement with clients was associated with burnout in two studies (Fahs Beck, 1987; Streepy, 1981), but in three studies, there were no such associations (Coady, et al., 1990; LeCroy & Rank, 1986; Williams, 1989). Most of the individual factors related to the social worker, e.g. age or work experience, or a personality construct - assertiveness- were not associated with burnout (Corcoran, 1986; LeCroy & Rank, 1986). Further, burnout was only slightly related to demographic or occupational background variables.

The correlates to burnout were thus primarily related to the job situation and not to individual personality traits or to clients. The studies were sometimes contradictory. High work pressure was correlated to burnout in one study (Streepy, 1981), yet unrelated in another study (Fahs Beck, 1987). Burnout was measured differently in those two studies, whence the difference could be a measurement artefact. In one case, the author concluded that

burnout probably was not strictly related to the job (Justice, et al., 1981). That study used Pines' Tedium Scale, which does not contain work related items.

The main impression from the reviewed studies was that "burnout" primarily seems to be a work-related phenomenon. The results indicate that the causes of "burnout" should be searched for on the level of work organization, not in properties of the individual worker. The mechanism through which the work organization affects the well-being of the individual is by most researchers set as the *stress* mechanism. The work organization affects the worker by producing tensions and exertions that have individual effects in the form of experienced stress, where "burnout" could be a manifestation.

Surprisingly, one finds that burnout research and research on occupational stress are *not* closely connected research areas. Burnout research has been criticized for not using theories and methods already developed within occupational stress research (Handy, 1988). The research areas have however converged to some extent in the late eighties and in the ninetees (Cox, et al., 1993; Leiter, 1993; Schaufeli & Buunk, 1996). In my opinion, this is a step forwards away from the a-theoretical search for correlations and significances so often found in burnout research: what Maslach calls "fishing-expeditions" (Maslach, 1986; Schaufeli & Maslach, 1993).

In the present study, I will rely on the *demand-control model* (DC model) in the analyses of the causes of emotional exhaustion and depersonalization. The DC model has an explicitly general ambition, trying to find universal properties of all work. The model joins levels of analysis, since it is anchored both in stress

theories and theories about work organization (Karasek & Theorell, 1990), which seems suitable for explaining the two MBI components.

Despite this, there is only one previous attempt, to my knowledge, to connect the DC model to burnout which will be discussed in detail in chapter 9 (Landsbergis, 1988). Before the empirical analyses, it is therefore necessary to present the model and to analyze its concepts in relation to work in HSO:s. I will suggest important modifications for the applicability of the model on human services. The aim here is to construct explanatory models of emotional exhaustion and depersonalization through the DC model.

The Demand-Control model [1]

The DC model was developed from one research tradition about job decision latitude and another about stressors on the job. The development of the model was influenced by a Swedish research tradition on work organization and stress, with Gardell's analysis of workload, autonomy, and participation as the most important source (Gardell, 1971). Another source was Kohn's and Schooler's research on characteristics of work, such as complexity, routinization, and closeness of supervision, and the effects on psychological functioning (Kohn, 1983). The DC model proposes that psychological strain does not result from a single aspect of the work environment, but from the *joint* effects of the demands of a work situation and the range of decision-making freedom available to the worker in meeting the demands.

[1] This section is based on the paper by Söderfeldt, et al. (1996a)

Specifically, two aspects of the work environment are considered:

1. The job demands placed on the worker
2. The discretion permitted to the worker in how to meet the demands, i.e. job control (Karasek, 1979).

The DC model can be regarded as a social psychological model, since it emphasizes the interaction between a person and his immediate work environment. It however also assumes a sociological causality, since the organization of work is supposed to determine the degree of psychological demands and decision latitude. The DC model makes change of work organization salient, not change of individual behavior (Muntaner & O'Campo, 1993) . In the further development and refinement of the model, it has become connected to physiological stress theory (Frankenhaeuser, 1986; Levi, 1972) by the collaboration between Karasek and Theorell. The model is sometimes called the Karasek-Theorell model and is elaborated in a major work (Karasek & Theorell, 1990), where the different levels of analysis - biological, psychological, and organizational - are unified into a theory of work organization and its psychophysiological effects. The model is gaining increased attention in research on work organization and public health (Alfredsson, Karasek, & Theorell, 1982; Arnetz, 1991; Carayon, 1993; Härenstam, 1989; LaCroix & Haynes, 1987; Landsbergis, 1988; Muntaner, Eaton, & Garrison, 1993)

The core of the model is the combination of job demands and job control, resulting in four different types of jobs. The model is shown in figure 9.

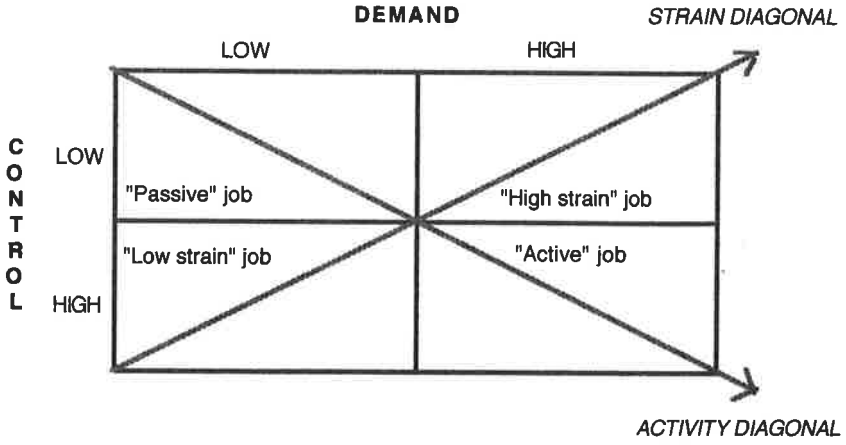

Figure 9. The strain and activity diagonals in the demand-control model. From Karasek (1979).

Karasek and Theorell hypothezise that the four job types have different effects on health and well-being:

1. *High strain jobs*, the combination of high demands and low control. This is the critical combination of the model, and it is proposed to produce psychological strain and adverse reactions like fatigue, depression, anxiety, and eventually physical illness. The exemplar work of this kind is assembly line work. In a HSO context, the nature of demands may be more complex, with emotional demands as a possible additional demand characteristic.

2. *Active jobs*, the combination of high demands and high control, which results in challenging but stimulating work situations with no particular risk for psychological strain or illness. People with active jobs are also active in leisure activities. Examples of active jobs are found among professionals but also among entrepreneurs like farmers. In this context, the

problem is of course if the human service professionals are active, or if they go into the high strain quadrant.

3. *Low strain jobs*, the combination of low demands and high control. In such jobs the risk for strain and illness is lower than average. Empirically, few jobs are found in this category, which probably holds for human services too.

4. *Passive jobs*, the combination of low demands and low control. In such jobs, the workers are not given opportunities to utilize their skills. Combined with lack of job challenges this can result in an unmotivating job setting, with average risk of psychological strain and illness. A prime example of a passive job is surveillance work of various kinds in process industry (Karasek & Theorell, 1990).

The suggestions of the DC model have been tested extensively both in the U.S.A. and in Sweden, using data from the U.S. Quality of Employment Survey, and the Swedish Level of Living Survey (Karasek & Theorell, 1990; Karasek, Baker, Marxer, Ahlbom, & Theorell, 1981; Pieper, LaCroix, & Karasek, 1989). In the course of testing and analyzing the model, it has been subjected to several modifications, one of them inclusion of the concept of social support in the workplace (Johnson, 1986). However, the level of social support does not disqualify the model but introduces support as a buffering factor in the interaction between demand and control (Karasek & Theorell, 1990).

The number of studies testing the DC model has increased. Studies that do *not* verify the model have also been published. There are critical questions about its relevance for occupationally homogeneous samples (Payne & Fletcher, 1983; Spector, 1987a) and about its stability over time for the

predicted relationships of the model (Carayon, 1993). The conceptua-lizations and measurements of the model components have been criticized, especially the concept of control (Ganster, 1989), but also the job demand concept (Spector, 1987a). The verifications of the model are further based to a large extent on cross-sectional and secondary data as well as on self reports of perceived demands and control , which also have been the objects of critical questioning (Muntaner & O'Campo, 1993; Williams, Cote, & Buckley, 1989).

Here, another critical question is at focus, the relevance of the DC model for human service work. In applications of the model, human services have usually been incorporated into an undifferentiated category of "white collar work" (Arnetz, 1991; Karasek & Theorell, 1990). There are at least three reasons for this. First, the setting for the discourse of occupational epidemiology is industry, primarily the archetype of manufac-turing industry, the assembly line, where the DC model finds some of its clearest verifications. The natural "anti-thesis" of the line work is then white collar work. Second, the very aim of the DC model is generalization, with the explicit pretense to have validity for all kinds of jobs, leading to the broad tests with large cross-sectional secondary data bodies. There, white collar work is mostly a general label for middle-class occupation categories (Söderfeldt, 1988). Third, in one of the major predecessors of the model, the Kohn and Schooler analysis of occupations, it is explicitly stated that the work object - data, things, or people - does not make a qualitative difference for the properties of work (Kohn & Schooler, 1983, p 299). In the following sections, through a closer analysis of the two central concepts of the DC model, I will try to show that the object of human service work - the client relation - indeed does make a difference.

In the most comprehensive presentation of the DC model, it is pointed out that the theoretical conceptualization of demand is complex and difficult. The most general common trait is said to be the subjective assessment of "work load", resulting in mental alertness, or physiological arousal. As a consequence of the theoretical difficulties in connecting the psychophysiological concept of arousal to job characteristics, the definition of demand is done ostensively. The general feature of demand is said to be "how hard you work". Several more specific characteristics comprise this concept: work load, mental stimulation necessary to accomplish the work task, coordination burdens, skill obsolence, and fear of losing the job. Of these demands, work load poses the greatest psychological job demand for most workers (Karasek & Theorell, 1990).

With an operationist flavor, the actual definition of the demand concept is accomplished through applications. There, demand is regarded as work load, amalgamated with conflicting demands. The operationalizations of the demand concept in the model were to a large extent brought from the Quality of Employment Survey in the USA and the Swedish Level of Living surveys. The demand measure is therefore usually construed from questions like "how fast you work", "how hard you work", "the quantity of work", and "if time usually is too short" (Quinn, Seashore, Kahn, et al., 1971). In another application, based on the Swedish Level of Living surveys, the demand operationalization was done through two questions on hectic job and psychologically demanding job (Karasek, 1979). To my knowledge, nobody has explicitly included emotional demands in

the application of the demand concept, despite the fact that such demands are ubiquitous in human services (Hochshild, 1983).

In a critique of the model, Muntaner and O'Campo (1993) point out that the essential vagueness of psychometric constructs makes them prone to extension far beyond the original domain. In other words, the constructs can be accused of lacking semantic closure. In relation to the original formulation of the demand concept by Karasek (1979), it is consequently obvious that the concept has been widened in his formulation of 1990. In the latter work, physical demands are included in the demand concept. High physical exertion is said to result in psychological exertion. Additionally, which is more relevant to HSO:s, role conflicts at the work place also become included in the demand concept. Role conflict, incompatibility of demands from the environment, represents frequent demands in human services (Satyamurti, 1981). Thus it can be said that the presently most comprehensive formulation of the DC model theoretically has more relevance for human services than the original one.

Role conflict is however not the only qualitative characteristic of HSO job demands. There are also special emotional demands, due to the nature of the work (Leiter, 1992; Maslach & Jackson, 1982; Pines & Aronson, 1988). As we have seen, such demands are frequently mentioned in the burnout literature. Workers in HSO:s are confronted with poverty, disease, criminality and many other facets of human problems and suffering, together with gnawing feelings of own inadequacy, since the instruments of change usually are limited to individual action. I also believe there is a peculiar psychological mechanism about the salience of work tasks in human service work. One failure is mostly given much greater psychological and emotional weight than many

successes, as far as clients or patients are concerned. The subjective assessment of emotional demands depends thus on norms and values of both the organization and the worker. Those values are affected by a special kind of role conflict in HSO:s, the fact that the contact between the worker and the client mostly represents a power relation (Hasenfeld, 1992b).

There is a clash between care and control of the client. The "natural" reaction in a human contact, the core of human service work, should be empathy and human engagement. This is inculcated in professional educational schedules in human services as well as in all official goal statements. In a power relation, the "natural" reaction is not always allowed or possible. Empathy and engagement can be transformed into paternalism or open oppression. Workers in human services are thus often confronted with a conflict between idealistic role models versus harsh reality, aggravating the emotional demands of their jobs. But not only demands are complex in human services.

Job control in human services

Karasek and Theorell define job decision latitude, or job control, as the working individual's control over his tasks and his performance during the working day. The dimension has two components. The first one is *skill discretion*, i.e. the degree to which the job involves learning new things, absence of routinization, or creativity. A high level of skill is supposed to give the worker control over how to accomplish a task (skill discretion is also called intellectual discretion and skill utilization). The second component is *decision authority*, i.e. the individual's freedom to make decisions about his own job, to

influence the work group, and the company policy. Decision authority is sometimes also called task authority (Karasek, 1990).

The control concept is very complex. It is, for example, uncertain in many contexts whether control should be given a psychological or a sociological connotation, or a combination of both. There are interpretations ranging from control as contingencies of reinforcement in operant behavior (Rachlin, 1976), to control as appropriation of surplus value in capitalist mode of production (Poulantzas, 1975). It is difficult, due to its vagueness, to place the DC model "control" in the available array of interpretations. Considering the two dimensions of the model, it seems reasonable to interpret "skill discretion" as primarily a psychological concept, while "decision authority" requires a sociological level of analysis. If both dimensions were interpreted psychologically, consequences would be fatal for workplace change and job redesign, leaving individual factors as the sole object of change, an explicit adversary of the DC model.

The ambition here is not to give a comprehensive review over the control concept, which far would exceed the scope of this study. The aim is rather to scrutinize the concepts of the DC model for their relevance to human service work. Within that limitation, there are at least three aspects of control that should be discussed:

1. An interpretation of the concept into what can be called administrative control.
2. A closer examination of the purport of skill discretion with two possible, and for HSO:s, contradicting implications.

3. A discussion of decision authority in human services with a comparison of that concept to other strands of thought based on a sociological analysis of human services.

Administrative control

In applications of the DC model, control is measured in many ways. The usual method is to construct an index, condensing series of questions about various supposedly control related items, a standard procedure in social research. Mostly, the different items seem to lie rather close to what theoretically is intended - the euphemism is "face validity". Skill discretion is accordingly operationalized with items concerning task variety, degree of routinization, opportunities to learn new things etc., and decision authority with items about freedom to make own decisions, freedom how to perform work, taking initiatives, etc (Härenstam, 1989; Karasek, Baker, Marxer, et al.,1981; Landsbergis, 1988; Wahlstedt & Edling, 1994).

In some applications, there are however items in the indices that do not seem to really pertain to the content of the job, but rather to the setting and regulation of *when* to do it. There are questions about influence over the time placement of vacation, flexibility of work hours, freedom to do private errands during work hours, when to take breaks etc (Hall, 1990; Johnson, 1986). It seems difficult to relate such formal (not content related) properties of jobs to either skill discretion or decision authority, which both concern the actual job tasks, what is done in the job.

The whole idea of psychosocial work environment research is to study effects of properties of jobs on various outcome variables, in this case emotional exhaustion and depersonalization. Items like those mentioned do not address the content of the job, the actual performance of work tasks. As pointed out by Johnson, when commenting on job demand measures, ideal measures in a psychosocial work environment context should address specific stressors and try to objectify the content of work (Johnson, 1986). The formal properties of jobs, like the setting of work hours or vacations are hardly specific stressors *in* the job, even if they certainly are important for the individual. These kind of factors should be investigated separately. I would support the term "administrative control" for these aspects of work. Maybe one even should consider this kind of control as a coping strategy for handling job demands, not as control.

In industry, administrative control is often brought to a minimum. In assembly-line work, there are few and strictly regulated opportunities to take a break or even to go to the bathroom. Work hours are determined by the minute and any breaks are deduced from wages (Friedman, 1977). In human service work, this kind of control is on the contrary usually very high. There are wide opportunities for a social worker or a physician to make a phonecall to a friend, take a short break, etc., in comparison to an assembly line worker. In a HSO context, this point is of some importance. As pointed out by HSO theorists, (Hasenfeld, 1992a; Lipsky, 1980), the individual freedom in HSO:s is often very high in the respects that are included in administrative control. There will always be "air" in systems where the object is work with other people. Conceptually, it therefore seems necessary to distinguish this kind of control. It would probably lack discriminatory power in

human services. Other kinds of control are far more problematic in human services, especially skill discretion, and operationalization of control in the administrative sense may divert attention from those problems.

Two meanings of skill discretion

Skill discretion concerns the skill in accomplishing a work task. This must mean *control over the outcome* of the work (Bazerman, 1982), which can be very problematic in human services. Karasek and Theorell make a point that control should concern only the control over one's own work, not control over other people (Karasek & Theorell, 1990, p 60). This of course becomes entirely different when the very object of the work is to get control over other people, which is one aspect of human service work. In many, if not most, human services, outcome control is affected by the freedom of the client to act on his own. In this interpretation, skill discretion is probably very difficult to obtain in most human services (cf. Hasenfeld's discussion about difficulties to attain desired outcomes).

However, outcome control does not exhaust the concept of skill discretion. It also concerns the freedom to use one's skills and abilities on a problem. In this understanding, skill discretion is often very high in human services, especially in more professionalized sectors. Doctors, nurses, teachers, and social workers are "street level bureaucrats", with high control over their choice of skills, even if cost containment and market mechanisms may set some limits to this freedom of the workers in HSO:s.

Applications of the DC model to human services should specify which meaning of control that is intended. This is not always done. Instead, human services are unreflectedly equated with "white collar work", implying absence of semantic closure also of the control concept. In testing the DC model, any result could be regarded as a verification or falsification of the model. Control can be found to be high - administrative or skill discretion meanings - or low - outcome control - depending on operational interpretations of the control concept. In studies of human services, it is essential to distinguish between these meanings of control, and, of course, to study the connections and eventual associations between the different aspects. This becomes even more obvious when we turn to the meaning of decision authority.

Decision authority: closeness of supervision and role ambiguity

Karasek and Theorell put the question whether skill discretion or decision authority is the most important component of control. They state that the two concepts should be regarded as mutually reinforcing aspects of work, given the fact that acquisition of skills over a long term is what gives workers influence over the work process (Karasek & Theorell, 1990; Karasek, 1979). The original measures of "decision authority" and "skill discretion" were selected due to their similarities to other measures in the literature, especially regarding two components of Kohn/ Schooler's occupational self-directionality scale: "closeness of supervision" and "substantive complexity". Substantive complexity denotes the job requirements of initiative, thought, and independent judgment, i.e. one of the aspects above of skill discretion. Closeness of supervision relates to the other

dimension, decision authority (Kohn & Schooler, 1983). It relates to the question: what degree of independence does the worker have in performing the work ?

Compared to skill discretion, decision authority is both theoretically and empirically a different aspect of control. It denotes the individual's freedom to make decisions about how to do his own job. In human services, this freedom is usually very wide. Direct supervision from management is difficult to achieve. The work itself is momentaneously produced and consumed in a dual relation between the human service worker and client, where few others have access. The doctor is alone with the patient in the examination room. The teacher is sole sovereign in the classroom, and no boss interferes in the dialogue between a social worker and the client (Lipsky, 1980). If decision authority is interpreted in terms of closeness of supervision, the result must accordingly be that it will have very low discriminating power in human services. The concept can however be interpreted in other ways.

An obvious question becomes: *decision authority over what ?* A current answer in analysis of human services is that the command, the authority, over the job lies in the command over the *resources* that are available to perform it. Available resources are often used rather irrespective of their appropriateness. The surgeon makes operations, the internist administers drugs, the social worker issues allowances, and the teacher teaches (Sunesson, 1981). The freedom of the individual human service worker may be very wide in application of those resources that stand at his or her disposal. However, as pointed out by Hasenfeld (1983), one of the particular traits of human services is the general uncertainty of its technologies. Relatively

few are available, those that are available often have very uncertain effects, they are difficult to assess or evaluate, and they are often controversial. The result may be role ambiguity.

Since the original formulation of the role ambiguity concept by Kahn, Wolfe, Quinn, et al., (1964), which was inspired by information processing theory, role ambiguity in jobs has been shown to be related to job stress. It has also been shown, especially in professionalized jobs, that multiple authority disrupts the individual's orientation to his organization or profession by requiring him to choose between the various authority sources (Rizzo, House, & Lirtzman, 1970). Role ambiguity is of course not unique for human services, but they are especially prone to high role ambiguity, due to the relative freedom of the workers in terms of supervision and due to the uncertainty of technologies and fuzziness of goals (Satyamurti, 1981). Hence, decision authority in one sense - lax supervision - may be very high, and in another sense - clarity of job roles - may be very low in most human services.

With this, the discussion of control can be finished in this context. There are certainly many more aspects possible of the concept and its relatives authority and power. The present analysis is however sufficient to show that job control is especially complex in human services.

The maze of demand and control in human services

The analysis so far can be summarized in a tabular presentation of the various meanings of job demands and control that have

been found to be of special relevance for human services. The presentation is shown in figure 10.

DEMAND	CONTROL		
	Administrative control	**Skill discretion**	**Decision authority**
emotional demands	coping strategy (?)	outcome control	closeness of supervision
work load		choice of skills	role ambiguity (?)
role conflict			
role ambiguity (?)			

Figure 10. Meanings of demand and control in human services.

Obviously, the concepts of demand and control are more complex than in the simple DC model. Both concepts are multidimensional. This leads to one main implication for the analysis of the two MBI components: It does not seem unreasonable that some combinations of aspects of the two grand concepts have different effects than other combinations. For example outcome control could be imagined to bear a special relevance for emotional exhaustion, since the relative hopelessness of many human service work tasks could contribute to fatigue and exhaustion. A sense of meaninglessness of the work derived from low outcome control could also contribute to depersonalization. The emotional demands, also in combination with low control, according to the core of the DC model, should be especially relevant for emotional exhaustion. Role conflict could be imagined to have a relation to emotional exhaustion, since conflicting demands are tiresome and exhausting. If the conflict is present in relation to the client, it would be probable that it would cause depersonalization.

The next chapter is devoted to the analysis of relations like these between the different aspects of demand, control and emotional exhaustion. It will also be the place for the more detailed presentation and analysis of measures of the DC model variables. The large empirical study that was used above (chs. 4-6) about the Social Insurance Organization (SIO) and the Individual and Family Care (IFC) in social welfare contained sufficient data to go into these issues.

8. DEMAND, CONTROL, HUMAN SERVICES, AND EMOTIONAL EXHAUSTION

This chapter aims to apply the various DC model interpretations on emotional exhaustion and on human services in different work positions - non-HS worker, HS-worker, and supervisor - and work tasks. Three work tasks will be studied as especially interesting: social welfare allowance work, rehabilitation work and disability allowance work. (The choice of these tasks is obvious from table 10). The empirical relations between the demand and control interpretations and emotional exhaustion will be investigated, beginning with separate scrutiny of the different interpretations of the concepts in the DC model. The combination of demand and control, strain, will be the object of the next chapter. In the analyses, I will use the same methodological approach as in the chapter on the burnout process, first a contingency table analysis, and second regression analysis, using the gradient interpretation of the relation concept.

Job demands and emotional exhaustion

In the previous chapter, four interpretations of the demand concept for human services were suggested. These interpretations have all been associated to burnout in previous research (Hagen, 1989; Himle, et al., 1986a; Leiter, 1993; Söderfeldt, et al., 1995). A systematic comparison between these demand concepts in relation to burnout has, however, to my knowledge, not been done before.

The most common interpretation of demands in a burnout context is emotional demands. Such demands are often mentioned as the trigger of emotional exhaustion (Maslach & Jackson, 1982; Pines, et al., 1981). In the questionnaire that was sent to the personnel in SIO and IFC, there were three questions, specially designed to measure emotional demands: They were:

- *Do you think that your work tasks are emotionally demanding with great engagement in people ?*
- *Are you bothered by not being able to switch off thoughts of work during your free time ?*
- *Do you think that all too much responsibility rests on you?*

All three questions had responses on a five point scale ranging from "never " to "always". The first question was specially designed for the study. The two other questions were less direct indicators of emotional demands. They were inspired from questions in another study on psychosocial work environment in HSO:s. There, the questions were not operationalized in terms of emotional demands, but were part of an overall demand-index (Härenstam, 1989). Response distributions on the emotional demands questions for the total material are stated in table 20.

Table 20. Response distributions for different questions on emotional demands. Percent for the total material.

	Always	Often	Some-times	Seldom	Never	n
Emotionally demanding work	15	41	31	11	2	5687
Not able to switch off thoughts	2	14	37	35	13	5716
Too much responsibility	2	12	44	33	9	5710

Most of the respondents, 56%, found their work to be "always" or "often" emotionally demanding with great engagement in people. For the other two questions, the majority responded "sometimes", or more seldom. Almost half of them had no problems to switch off thoughts of work during leisure time, and about as many reported that they did not have too much responsibility.

Emotional demands are however not the only types of demands that have been related to burnout. There are also indications of a relation to high degree of work pressure (Streepy, 1981). Leiter discusses work load as a possible cause of emotional exhaustion (Leiter, 1993). His meaning of work load is however unclear, since it could be interpreted both in emotional and quantitative terms. In the questionnaire, there were also three questions designed to measure quantitative demands. The first question was similar to the first one on emotional demands:

- *Do you think that your work tasks are demanding due to their quantity, even if the tasks themselves are not very difficult ?*

The second question concerned change in work load and was:

- *Has there been any change in your workload during the last twelve months ?*

The third question on quantitative demands was related to overtime work:

- *Overtime work can be paid or unpaid. One can also use the flextime "having excess time". If you consider all forms of overtime work, about how often do you work more than your ordinary working time?*

The response alternatives and distributions for the total material on these three questions are stated in table 21.

Table 21. Response distributions for the questions about quantitative demands. Percent for the total material.

	Always	Often	Some-times	Seldom	Never	n
Quantitatively demanding work	17	38	33	10	1	5691

	Increa-sed a lot	Increa-sed some-what	No diffe-rence	Decrea-sed	n
Increased work load	33	37	23	8	5654

	Almost every day	A couple of times a week	A couple of times a month	More seldom	n
Overtime work	13	33	32	22	5705

More than half of the respondents perceived their work tasks as quantitatively demanding, and more than two thirds reported increased work load during the last twelve months. Almost half of the respondents reported overtime work at least a couple of times a week. The general picture from the responses is that the work in SIO and IFC is quantitatively demanding. The responses are not surprising. The study was done during a time of rapidly increasing work load through rising unemployment and cutdowns in public welfare.

Contingency analysis - emotional and quantitative demands

The response alternatives were dichotomized according to a judgment of relevant categories, not mechanically to maximize discrimination. The intuitive way to dichotomize the responses ranging from always to never, was to transform the alternatives, "always" and "often" to the category "often", and the three other to the category "not often". The responses on the question about increased work load were dichotomized into the categories "increased", including the response alternatives "increased a lot" and "increased somewhat", and "not increased" including the responses "no difference" and "decreased". The response alternatives for the question on overtime work were dichotomized into the categories "not often" including "a couple of times a month", and "more seldom", and "often" including the responses "almost every day", "and a couple of times a week". It is important to remember Blalock's criticism about artificiality in categorizations of theoretically continuous variables. As emphasized above, the present analysis is only a starting point in the scrutiny of the process.

In table 22, the questions on emotional and quantitative demands are stated with comparisons of the dichotomized responses from the three work positions and the three deviating work groups. Work position was analyzed in two categories, supervisors versus workers, and HS- versus non-HS workers. The supervisor/worker variable thus included all respondents, while the HS/non-HS variable included only the workers. For the three work tasks, those working in that particular area were compared to those who did not. The social welfare allowance workers were compared to others within IFC, while rehabilitation and disability allowance workers were compared to others in SIO.

Odds ratios were used as measures of association, and an OR over 1 indicates an increased risk for *high* demands. The table is a summary of 30 2X2 tables.

Table 22. Different aspects of emotional and quantitative demands. Odds ratios with 95% confidence intervals for different work positions and work tasks.

	Supervisor /worker	HS/ non-HS worker	Social welfare allowance	Reha-bilitation	Disability allowance
Emotionally demanding work	1.6 (1.3 - 2.0)	3.1 (2.4 - 4.1)	0.6 (0.5 - 0.8)	4.0 (3.5 - 4.7)	3.3 (2.8 - 3.8)
Not able to switch off thoughts	1.4 (1.1 - 1.8)	1.9 (1.2 - 2.9)	1.4 (1.1 - 1.8)	2.0 (1.6 - 2.4)	2.2 (1.8 - 2.6)
Too much responsibility	1.2 (1.0 - 1.6)	1.1 (0.8 - 1.6)	1.2 (1.0 - 1.6)	1.9 (1.6 - 2.4)	2.0 (1.6 - 2.5)
Quantitatively demanding work	0.9 (0.7 - 1.0)	1.8 (1.4 - 2.3)	2.8 (2.3 - 3.5)	1.9 (1.6 - 2.2)	2.0 (1.7 - 2.3)
Increased work load	1.7 (1.4 - 2.1)	1.1 (0.9 - 1.5)	2.5 (2.0 - 3.1)	1.2 (1.1 - 1.4)	1.4 (1.2 - 1.6)
Overtime work	2.1 (1.8 - 2.6)	1.1 (0.9 - 1.4)	1.6 (1.3 - 1.9)	1.5 (1.3 - 1.7)	1.3 (1.1 - 1.5)
n range	5627-5655	5118-5144	2407-2447	3244-3266	3244-3266

There were clear differences between the work positions concerning the first question on emotional demands. The supervisors in general reported more demands than the workers (with two exceptions as shown in the table). Two thirds of the supervisors reported to have emotionally demanding work tasks compared to 55% of the workers. Supervisory work maybe implies great engagement in people, but it probably concerns the employees, not the clients. There were also differences between the workers on this question. More than half of the HS workers, 56 % (n=2721), reported having emotionally demanding work

tasks often, compared to 29 % (n=78) of the non-HS workers. The HS workers also had more difficulties to switch off thoughts of work, and reported more quantitatively demanding work tasks than the non-HS workers.

Rehabilitation and disability allowance workers reported considerably higher degrees of emotionally demanding work tasks compared to those who did not work in these areas, while the social welfare allowance workers reported lower levels. About two thirds in each group reported that they often found their work to be emotionally demanding with great engagement in people. The OR below 1 for the social welfare allowance workers is due to their comparison with others in IFC, who reported to have even more emotionally demanding work. The social welfare allowance workers also reported the highest levels of quantitatively demanding work tasks and increased work load. Almost three quarters of them stated that their work tasks were quantitatively demanding, and 84 % reported increased work load during the last twelve months. Concerning overtime work, about half of the personnel in all three groups reported overtime work at least a couple of times a week. The personnel in the three different work groups had obviously high emotional and quantitative work loads, even if there were somewhat different patterns between them.

In table 23, the associations between the different aspects of demand and emotional exhaustion are stated. The extreme groups of the emotional exhaustion subscale were used, i.e. the medium category was discarded, as in chapter 6.

Table 23. Different aspects of emotional and quantitative demands. Percent and numbers for emotional exhaustion. Odds ratios with 95% confidence intervals.

		Emotional exhaustion		
		Low	High	n
Emotionally demanding work	~ Often	69	31	1617
	Often	41	59	2082
	OR		3.1 (2.7 - 3.6)	
Not able to switch off thoughts	~ Often	62	38	3062
	Often	12	88	642
	OR		11.7 (9.2 - 15.0)	
Too much responsibility	~ Often	62	38	3102
	Often	11	89	598
	OR		13.2 (10.1 - 17.2)	
Quantitatively demanding work	~ Often	74	26	1648
	Often	37	63	2048
	OR		4.8 (4.1 - 5.5)	
Increased work load	No	64	36	1141
	Yes	48	52	2527
	OR		1.9 (1.7 - 2.2)	
Overtime work	~ Often	60	40	1987
	Often	46	54	1713
	OR		1.8 (1.6 - 2.0)	

All the different aspects of emotional and quantitative job demands were positively associated with emotional exhaustion. The highest OR for perceived emotional exhaustion were obtained for the questions about difficulty to switch off thoughts, too much responsibility, and quantitatively demanding work, i.e. two questions about emotional, and one about quantitative

demands. The suggestions in the literature about the importance of both kinds of demands seem to be confirmed here.

The strong associations between emotional exhaustion and the questions about difficulties to switch off thoughts, and too much responsibility could be an effect of the relatively small marginal distributions. To check for this, both questions were analyzed with a different dichotomization of the responses. The response categories "always, often, and sometimes" (instead of only always and often) were put into the category "often", and the response categories "seldom and never" were put into the category "~ often". This yielded odds ratios of 6.9 (CI 6.0-8.0) for the question on difficulties to switch off thoughts, and 8.5 (CI 7.2-9.9) for the question on too much responsibility. The associations were thus very strong, irrespective of dichotomization technique.

Index construction for emotional and quantitative demands

A limitation so far is that only contingency analysis has been performed. The gradients in the relations between emotional exhaustion and emotional and quantitative demands should be investigated through regression analysis. This requires more fine-tuned scales than the four or five point scales that have been used so far. To find out if the six questions could be interpreted as representing two underlying dimensions, emotional and quantitative demands, the six demand questions were analyzed by principal components analysis. The analysis yielded a clear two-factor solution with 55.6% variance explanation. The questions that aimed to measure emotional demands loaded singularly on the first factor, and the questions that aimed to measure

quantitative demands loaded on the second factor. The minor loadings showed that there were no overlapping loadings, and all communalities were satisfactory. The two factors were thus easy to interpret as emotional and quantitative demands.

The conclusion was that the questions could be summed into two unidimensional indices. The range for the index variable "emotional demands" was 3-15, and for the index variable "quantitative demands" 3-13. Cronbach's α was calculated for each index. For the questions about emotional demands, α was 0.60, and for the quantitative demand questions it was 0.57, showing that there were rather high intercorrelations between the items. The same reasoning can be applied here concerning ordinal and interval scales as was detailed about the MBI components in chapter 5. The index variables approximate reasonably interval scales. Also, regression analysis is rather robust concerning inadvertencies in the metrics (Achen, 1982).

In table 23, we saw that the different questions on emotional and quantitative demands covaried with emotional exhaustion. The covariations between emotional exhaustion and the composite demand indices were investigated by dichotomizing the indices by the median. For emotional exhaustion, the extreme categories were used. The results are stated in table 24. The covariation between emotional demands and emotional exhaustion was almost three times as high as between emotional exhaustion and quantitative demands.

Table 24. Covariations between the summed indices of emotional and quantitative demands and emotional exhaustion. Percent and numbers. Odds ratios with 95% confidence intervals.

	Emotional exhaustion		
	Low	High	n
Emotional demands			
Low	73	27	2297
High	21	79	1396
OR	10.4 (8.9 - 12.2)		
Quantitative demands			
Low	66	34	2176
High	35	65	1479
OR	3.6 (3.2 - 4.2)		

The result is in line with Maslach's and others emphasis of the importance of the emotional demands in human service work for the experience of emotional exhaustion (Maslach, 1982b), and also with the hypothesis above that emotional demands should be especially relevant for emotional exhaustion. However, two other interpretations of job demands remain to analyze, role conflict and role ambiguity, before going into regression modelling.

Role conflict, role ambiguity and emotional exhaustion

In the previous chapter, role conflict and ambiguity were suggested as possible interpretations of job demands in a HSO context. Role ambiguity is an ambiguous concept itself, since it also was proposed as an interpretation of job control. Role conflict and ambiguity will both be analyzed here as they were measured by the well-known "Role conflict and role ambiguity scale" (Rizzo, et al., 1970). Several studies have provided

support for its reliability and validity (Schuler, Aldag, & Brief, 1979). It has also been used in relation to burnout (Schwab & Iwanicki, 1982).

The role conflict and ambiguity scales consist of eight and six statements, respectively. The statements have numerical rating scales ranging from 1 to 7 (very false to very true). All questions were analyzed by principal components analysis with varimax rotation. The two expected factors were obtained also in this material, satisfying the Kaiser criterion. The factor solution was clear cut with a variance explanation of 55,5 %. Two indices were constructed, one for role conflict and one for role ambiguity. Cronbach's α was 0.84 for the role conflict scale and 0.86 for the ambiguity scale. The good psychometric properties of the scale can thus be demonstrated also on the present material.

Role conflict and ambiguity were first analyzed in bivariate contingency tables, investigating their associations to work positions, work tasks and emotional exhaustion. Also here, the extreme groups of the emotional exhaustion subscale were used, i.e. the medium category was discarded. The role conflict and ambiguity scales were dichotomized by the median in order to indicate low and high role conflict and ambiguity.

In table 25, the comparisons between the three work positions and the three work groups with respect to role conflict and role ambiguity are stated. Odds ratios were used as the measure of association. An OR over 1 indicates an increased risk for high conflict or ambiguity.

Table 25. Role conflict and role ambiguity. Odds ratios with 95% confidence intervals for different work positions and work tasks.

Work position/task	Role conflict	Role ambiguity
Supervisor/worker	2.2 (1.8 - 2.7)	1.2 (1.0 - 1.4)
HS/non-HS worker	1.2 (1.0 - 1.6)	1.4 (1.1 - 1.8)
Social welfare allowance	0.9 (0.8 - 1.1)	0.9 (0.7 - 1.1)
Rehabilitation	1.9 (1.7 - 2.2)	1.7 (1.4 - 1.9)
Disability allowance	1.5 (1.3 - 1.7)	1.2 (1.1 - 1.4)
n range	2301-5322	2394-5539

Not surprisingly, the supervisors reported more role conflict compared to the workers. The supervisors in SIO and IFC are in a middle-position between their own supervisors and their subordinates. There were however no differences in role ambiguity between the supervisors and the workers, or between HS- and non-HS workers, neither according to role conflict nor to ambiguity. The same was true for social welfare allowance workers compared to others in IFC. Rehabilitation workers had higher risks of both role conflict and ambiguity compared to those who did not work in that area. For disability allowance workers, there were weak positive associations to role conflict and ambiguity. From the results here, it seems as if people-changing work could imply role conflict and ambiguity to a higher degree than people-sustaining work.

The covariations between role conflict/ambiguity and emotional exhaustion were also analyzed in contingency tables. The results are stated in table 26.

Table 26. Covariations between role conflict, role ambiguity and emotional exhaustion. Percent and numbers. Odds ratios with 95% confidence intervals.

	Emotional exhaustion		
	Low	High	n
Role conflict			
Low	74	26	1886
High	30	70	1642
OR		6.5 (5.6 - 7.6)	
Role ambiguity			
Low	69	31	1939
High	36	64	1701
OR		3.9 (3.4 - 4.4)	

The figures in table 28 confirm previous studies that have emphasized the importance of especially role conflict but also ambiguity for emotional exhaustion (Hagen, 1989; Himle, et al., 1986a; Jayaratne & Chess, 1984; Schwab & Iwanicki, 1982). There were strong positive covariations between both role conflict and ambiguity and emotional exhaustion, even stronger for role conflict. It seems exhausting both to be in a conflict position between different roles, as well as having unclear role expectations.

Summing up the whole section on demands, there were differences between the three work positions in reported job demands. The supervisors reported the most demanding work. The social welfare allowance workers reported primarily higher

quantitative demands but not higher role conflict/ambiguity compared to those not working in that particular area. Rehabilitation and disability allowance workers reported higher emotional demands compared to those not having these work tasks. Rehabilitation workers also reported higher role conflict/ambiguity.

There were also strong positive associations between all aspects of demands and emotional exhaustion. The strongest covariations were obtained for emotional demands. This confirms the emphasis on this type of demand in previous research. The covariation between role conflict and emotional exhaustion was however also strong. Work that implies at least two or more roles that are incompatible, or in conflict with each other seems to be exhausting. Role ambiguity and quantitative demands were also related to emotional exhaustion, albeit not to the same extent as the two other demand aspects. As a whole, the findings in previous burnout research were replicated here, with the reservation that the analysis so far is limited to simple bivariate association. We can now turn our attention to the control concept.

Job control and emotional exhaustion

In this section, the different aspects of job control are studied, i.e. skill discretion, decision authority, administrative control and outcome control. These aspects of control incorporate work autonomy and challenge on the job, factors that both have been associated with burnout (Arches, 1991; Himle, et al., 1986a; LeCroy & Rank, 1986). They will be analyzed in the same way

as job demands, in the interest of didactics and explicitness of measures.

Skill discretion and decision authority

The two dimensions in the concept of decision latitude are skill discretion and decision authority. Their measures are mostly summed into a single index, aimed at capturing an overall control aspect (Karasek & Theorell, 1990). Härenstam, however, treats them as separate variables in her study on prison personnel (Härenstam, 1989). There are thus different ways of handling the two control dimensions, but according to Karasek, there is a mutually reinforcing relationship between them.

In this study, skill discretion was operationalized by three statements from Härenstam (1989), and Karasek & Theorell (1990). They were:

- *The work gives opportunities to learn new things*
- *I can take my own initiatives in my work*
- *My work has variety*

Responses were given on five point temporal scales, (from "always" to "never"). Frequency distributions on these questions for the total material are stated in table 27.

Table 27. Response distributions for the questions on skill discretion. Percent for the total material.

	Always	Often	Some-times	Seldom	Never	n
Opportunities to learn new things	19	49	26	5	1	5650
Can take initiatives	25	50	19	5	1	5646
Work has variety	29	50	17	4	0	5653

As could be expected from the argument about control in human services, control in the sense of skill discretion was very high in SIO and IFC. About 70% reported often or always on all three questions. This supports the theories of Hasenfeld and Lipsky (Hasenfeld, 1992a; Lipsky, 1980). In my opinion, the levels are high, but I have been unable to find reference data for judging relative magnitudes.

The other aspect of Karasek's control concept, decision authority, was measured by two questions from Härenstam (1989) and Karasek & Theorell (1990). They were:

- *Can you decide your work pace yourself ?*
- *How often does it happen that you have to change plans due to unexpected circumstances ?*

Responses were given on five point temporal scales, (from "always" to "never") and the distribution of responses is shown in table 28.

Table 28. Response distributions for the questions on decision authority. Percent for the total material.

	Always	Often	Some-times	Seldom	Never	n
Can decide work pace	9	38	29	20	4	5627
Have to change plans	5	52	34	8	1	5637

From the table, it seems as if job control in the sense of decision authority was lower than skill discretion in SIO and IFC. Still, almost half of the respondents reported that they could decide their work pace. Two thirds of the respondents, however, had to change plans always or often, an indicator of low control. This response pattern seems somewhat contradictory. The relative

unclarity of the operational concepts of the DC model shows here, in my regard. Above, variety in the job was an indicator of high control in the sense of skill discretion. Here, unexpected changes of plans are set as indicators of low control in the sense of decision authority. Still, the questions will be retained as control measures based on comparability with other studies using the DC model and on their - as it will show - empirical covariation.

In the further analysis, the response alternatives were dichotomized and analyzed similarly to the analysis of the two demand aspects in table 22. Also here, dichotomization was done according to a judgment of relevant categories. The response alternatives "always" and "often" were combined into the category "often", and the alternatives sometimes, never, and seldom were combined into the category "not often". In table 29, the questions on skill discretion and decision authority are stated with comparisons of the dichotomized responses from the three work positions and the three work groups. Odds ratios over 1 indicate higher risks of *low* job control, and OR:s less than 1 thus indicate *high* control.

Table 29. Different aspects of skill discretion and decision authority. Odds ratios with 95% confidence intervals for different work positions and work tasks.

	Supervisor /worker	HS/ non-HS worker	Social welfare allowance	Reha-bilitation	Disability allowance
Possibilities to learn	0.4 (0.3 - 0.5)	0.4 (0.3 - 0.5)	1.3 (1.1 - 1.5)	0.5 (0.5 - 0.6)	0.5 (0.4 - 0.6)
Can take initiatives	0.1 (0.1 - 0.2)	0.5 (0.4 - 0.7)	2.0 (1.6 - 2.4)	0.4 (0.3 - 0.4)	0.4 (0.4 - 0.5)
Job has variety	0.2 (0.2 - 0.3)	0.6 (0.5 - 0.8)	2.1 (1.7 - 2.5)	0.5 (0.4 - 0.6)	0.4 (0.3 - 0.5)

Table 29, cont'd. Different aspects of skill discretion and decision authority. Odds ratios with 95% confidence intervals for different work positions and work tasks.

	Supervisor /worker	HS/ non-HS worker	Social welfare allowance	Reha-bilitation	Disability allowance
Decide work pace	1.0 (0.8 - 1.2)	1.2 (1.0 - 1.6)	2.0 (1.6 - 2.4)	1.3 (1.2 - 1.5)	1.1 (0.9 - 1.2)
Change plans	1.5 (1.3 - 1.9)	1.3 (1.0 - 1.7)	1.3 (1.0 - 1.5)	1.9 (1.6 - 2.2)	1.9 (1.7 - 2.3)
n range	5627-5653	5118-5143	2437-2445	3247-3263	3247-3263

The figures in the table show that supervisors reported to have more job control in the sense of skill discretion, and that HS workers reported more skill discretion than non-HS workers. This is not surprising, and in line with the discussion above about control in human service work. The social welfare allowance workers reported to have less job control than those not working in that area. The results in the table indicate that even if there are high job demands in SIO and IFC, there is also relatively high control for many. The social welfare allowance workers seem so far to be at risk for both high demands and low control. A further observation is that despite the seeming similarity between the variety and the change plans items, they show different patterns.

The covariations between the different control aspects and emotional exhaustion were analyzed, using the extreme categories of the EE scale. The results are stated in table 30. Odds ratios over 1 indicate association between low control and high exhaustion.

Table 30. Different aspects of skill discretion and decision authority. Percent and numbers for emotional exhaustion. Odds ratios with 95% confidence intervals.

		Emotional exhaustion		
		Low	High	n
Possibilities to learn new things	Often	56	44	2491
	~ Often	48	52	1206
	OR		1.4 (1.2 - 1.6)	
Can take initiatives	Often	56	44	2752
	~ Often	46	54	940
	OR		1.5 (1.3 - 1.7)	
Job has variety	Often	56	44	2935
	~ Often	42	58	760
	OR		1.8 (1.5 - 2.1)	
Decide work pace	Often	72	28	1784
	~ Often	36	64	1897
	OR		4.5 (3.9 - 5.2)	
Change plans	~ Often	70	30	1599
	Often	41	59	2091
	OR		3.3 (2.9 - 3.8)	

Low job control, as measured by the questions here, was associated with high emotional exhaustion. All questions on skill discretion and decision authority covaried with emotional exhaustion. The questions about decision authority covaried stronger with emotional exhaustion. So far, it thus seems as if high emotional demands and low decision authority are the two aspects of demands and control that are most likely to increase emotional exhaustion.

Index construction for skill discretion and decision authority

The two aspects of job control that have been analyzed so far are the most common operationalizations of job control in studies that utilize the DC model. As pointed out above, they are sometimes used as separate variables and sometimes as a composite control variable. The five questions were analyzed in order to investigate if they represented two underlying dimensions. The analysis resulted in a two-factor solution with 65.5% variance explanation. The questions that were aimed at measuring skill discretion loaded on the first factor, and the questions about decision authority loaded on the second factor. There were no overlapping factor loadings. The highest minor loading was 0.23. Two indices were constructed, one for "skill discretion" with a range of 3-15, and one for "decision authority", with a range of 2-10. Cronbach's α was calculated for the skill discretion index and was 0.65. Since the decision authority index contained only two variables, Spearman's rho was calculated: 0.28. The two indices were dichotomized by the median, and the associations to emotional exhaustion were analyzed. The results are stated in table 31.

Table 31. Covariations between skill discretion, decision authority and emotional exhaustion. Percent and numbers. Odds ratios with 95% confidence intervals.

	Emotional exhaustion		
	Low	High	n
Skill discretion			
High	62	38	1351
Low	48	52	2335
OR		1.8 (1.5 - 2.0)	
Decision authority			
High	78	22	1178
Low	42	58	2500
OR		4.8 (4.1 - 5.6)	

The results show that low control in the form of decision authority is more exhausting than low skill discretion in the job. Little is said in the burnout literature on this point, since job demands have been in focus. However, there remains two more interpretations of control according to the previous theoretical discussion.

Administrative and outcome control

In the questionnaire, there were three questions from Johnson (1986). They all referred to more formal aspects of control rather than to control related to the job content, i.e. control over when to do the job. The questions were:

- *Can you influence the planning of your work hours ?*
- *Can you influence the planning of your work breaks ?*
- *Can you influence the planning of your vacation ?*

For each question, there were four response alternatives,"totally free", "almost free", "within certain frames", and "not at all". As expected, the responses showed that this kind of control was high in IFC and SIO. Almost all responses were on the alternatives "almost free", and "within certain frames". The supervisors reported to have somewhat higher degree of control in this respect and the non-HS workers had somewhat lower control compared to the others. The respondents must be available during office hours, but they are otherwise relatively free.

The three questions were associated with emotional exhaustion. Low administrative control covaried with high emotional exhaustion. The questions were analyzed in principal components analysis which yielded a one-factor solution with 54,6% variance explanation, summed into an index (α= 0.48), and dichotomized

by the median. The social welfare allowance workers reported lower administrative control compared to others in IFC, OR 2.0 (CI 1.7-2.4), while rehabilitation and disability allowance workers reported higher administrative control compared to other SIO workers (OR 0.7, CI 0.6-0.8 for both groups). Administrative control was also associated to emotional exhaustion with an odds ratio of 1.6 (CI 1.4-1.8).

Outcome control, i.e. the control of the results of one's work, was most difficult to operationalize of the control aspects. In the questionnaire, there was a question battery aimed at measuring at least parts of this control aspect. The questions were brought from Härenstam (1989), although they were not used to measure outcome control there. One question was:

- *One can perceive the result of ones work in different ways. In what way do you think that you can see results of your own work ?*

The respondents had to consider the following five statements, and answer on five point temparal scales, ranging from "very often" to "never" for each of the following:

a. The clients are in some ways influenced in a positive way
b. The clients perceive that they are treated fair and just
c. Daily routines work as they are supposed to do
d. I feel that I contribute to the solution of social problems
e. I work fast and efficiently

This question was supplemented by another:

- *Do you think that you can do anything beneficiary for your clients ?*

There were five response alternatives also here, ranging from "yes, for almost everyone", to "no, hardly".

The six questions were analyzed in principal components analysis with varimax rotation, which resulted in a two factor solution with a variance explanation of 63.9%. The factor solution was clear without any overlapping loadings. The first factor drew on the items that were related to client work and the second factor on the items related to practical routines in work. The factors were interpreted as *outcome control in relation to clients*, and *outcome control in relation to routines*. The items were summed into two indices.

Cronbach's α was 0.77 for the outcome-client index, and Spearman's rho was 0.44 for the outcome-routine index. The indices were dichotomized by the median, in order to analyze their respective associations to the work positions, and work tasks. The results are stated in table 32. Odds ratios over 1 indicate higher risks of *low* job control, and OR:s less than 1 thus indicate *high* control.

Table 32. Aspects of outcome control. Odds ratios with 95% confidence intervals for different work positions and work tasks.

Work position/task	Outcome control - client	Outcome control - routines
Supervisor/worker	1.0 (0.9 - 1.3)	0.7 (0.5 - 0.8)
HS/non-HS worker	0.6 (0.5 - 0.8)	2.2 (1.6 - 3.0)
Social welfare allowance	1.5 (1.3 - 1.8)	0.7 (0.6 - 0.8)
Rehabilitation	0.9 (0.8 - 1.0)	2.8 (2.4 - 3.4)
Disability allowance	0.9 (0.7 - 1.0)	2.0 (1.7 - 2.3)
n range	2343-5473	2380-5547

The supervisors reported higher routine control than the workers but no difference according to client control. Among the workers, HS workers had higher client control, but lower routine control compared to the non-HS workers. This is not surprising, since HS workers primarily work with clients while the non-HS workers have more administrative work tasks.

There were differences between personnel in the three work tasks. Both rehabilitation and disability allowance workers reported lower routine control than those not working in those areas, while social welfare allowance workers reported less client control. This could be due to the pure people-sustaining character of the work, which does not require that the client should be influenced or changed. On the other hand, personnel in the two SIO work tasks did not differ in their client control compared to those in the organization who do people-sustaining work.

The two aspects of outcome control were also analyzed in relation to emotional exhaustion. The results are stated in table 33.

Table 33. Covariations between client and routine outcome control and emotional exhaustion. Percent and numbers. Odds ratios with 95% confidence intervals.

	Emotional exhaustion		
	Low	High	n
Outcome control - client			
High	61	39	2023
Low	43	57	1616
OR		2.1 (1.8 - 2.4)	

Table 33, cont'd. Covariations between client and routine outcome control and emotional exhaustion. Percent and numbers. Odds ratios with 95% confidence intervals.

	Emotional exhaustion		
	Low	High	n
Outcome control - routines			
High	63	37	2543
Low	31	69	1115
OR		3.9 (3.4 - 4.6)	

The results show a stronger covariation between exhaustion and routine control than between exhaustion and client control. This result is surprising, since client work is considered to be the specific burnout related factor, and the main reason why burnout is considered to be an effect of human service work. Still, all analyses so far are bivariate, and we do not yet know anything about the eventual spuriousity of the relations. Before pursuing the analysis, it is time to summarize the results that have been presented so far. Then, regression analysis will be done in order to investigate the gradient relations.

Summary of results

Emotional exhaustion. All aspects of job demands covaried positively with emotional exhaustion. The highest covariations were obtained for emotional demands and role conflict. Low levels of the control aspects covaried with high emotional exhaustion. The strongest associations were found between low decision authority and emotional exhaustion, and low outcome-routine control and emotional exhaustion.

Supervisors. Compared to the workers, the supervisors reported higher demands, with the exception of role ambiguity. They also reported higher control, in the sense of skill discretion, administrative control, and outcome-routine control. There were no differences for decision authority and outcome-client control compared to the workers. Their high demands were thus combined with high control, perhaps indicating they having active jobs according to the DC model.

HS workers. The HS workers reported higher degrees of job demands, except for role conflict, compared to the non-HS workers. There was, however, no clear pattern in reported control. HS workers reported lower decision authority and outcome-routine control, but higher skill discretion and outcome-client control.

Social welfare allowance workers reported higher quantitative demands compared to those who did not work in this area. There were no differences as to the other demand aspects. They also reported lower control in all aspects except outcome-routine control, which was higher for social welfare workers than others in IFC.

Rehabilitation workers reported higher demands in all aspects compared to non-rehabilitation workers. The same was true for *disability allowance workers*. Both groups reported higher skill discretion, and administrative control than others, but lower outcome-routine control. The rehabilitation workers reported lower decision authority compared to non-rehabilitation workers. There was no difference between disability allowance workers and others for this control aspect.

Regression analyses of demand, control, and emotional exhaustion

The task in this section will be to analyse emotional exhaustion as a dependent variable in regression models, with the demand and control variables, work position and work tasks as independent variables. This will be done realizing that there certainly are omitted variables in the models. First three models will be analyzed:

1. Emotional exhaustion as dependent variable with the demand variables, work position and work tasks as independent variables.
2. Emotional exhaustion as dependent variable with the control variables, work position and work tasks as independent variables.
3. Emotional exhaustion as dependent variable with both the demand and control variables, work position and work tasks as independent variables.

The regression models here will thus eventually include four demand variables and five control variables. This could imply a risk for multicollinearity which violates one of the regression assumptions: no independent variable should be a perfect linear function of one or more independent variables. Even though perfect multicollinearity is rare, also imperfect multicollinearity where two or more independent variables are highly correlated can cause problems. The main problem with multicollinearity can be described as follows:

Usually, the regression coefficient, can be regarded as a measure of the impact of a one-unit change in the independent variable on the dependent variable (in multivariate analysis, when the other

variables in the equation are held constant). If the independent variables are strongly related to each other, whenever one changes, the other will tend to change too. It becomes difficult to distinguish the effects of one variable from the effects of the other. However, if the variables are only moderately correlated, then there still might be possibilities to estimate the two impacts accurately enough (Studenmund, 1992).

To check for eventual multicollinearity, Pearson correlation coefficients were calculated for all variables. The results are stated in table 34.

Table 34. Pearson correlation coefficients for all demand and control variables.

	A	B	C	D	E	F	G	H	I
A. Emotion demands	1.00								
B. Quantit demands	0.40	1.00							
C. Role ambig.	0.22	0.07	1.00						
D. Role conflict	0.38	0.28	0.32	1.00					
E. Admin. control	-0.03	-0.05	-0.06	0.00	1.00				
F. Decision auth.	-0.35	-0.39	-0.18	-0.35	0.26	1.00			
G. Skill discretion	0.17	0.14	-0.09	0.01	0.24	0.02	1.00		
H. Outcome-client	0.08	0.05	-0.18	-0.06	0.09	0.08	0.32	1.00	
I. Outcome-routine	-0.27	-0.08	-0.35	-0.30	0.02	0.24	0.06	0.32	1.00

The correlations between the variables were not particularly high, indicating little risk for multicollinearity. As a rule of thumb, a Pearson correlation coefficient of 0.80 or higher should cause concern in this respect. The highest correlation among the demand variables was between emotional and quantitative demands, and, among the control variables, between

outcome-routine control and role ambiguity. One of the lowest correlations was obtained for skill discretion and decision authority. This is perhaps the most interesting result from the table, and not in line with the tenet that skill discretion and decision authority are "mutually reinforcing aspects of work that often appear together" (Karasek & Theorell, 1990, p 58). Still, the purpose of the correlation matrix was not to discuss the relations between these two control aspects in detail, (I will return to that problem later), but to check the risk for multicollinearity. Since this was not a problem, the planned regression models could be tested. To facilitate interpretation of the models, all indices were transformed to range between 0-100, as described above.

In the first regression model, the four demand variables, work position and work tasks were included as independent variables. The variable work position is an example of a variable that defies explicit quantification and can only be expressed in a qualitative manner. One of the most common ways to quantify such variables is using binary or dummy variables, taking on the values 1 or 0, depending on whether some condition holds or not. When using dummy variables in regression analysis, one dummy variable less than the number of conditions should be constructed. The omitted condition forms the basis against which the included conditions are compared. Inclusion of all conditions in the model would cause perfect multicollinearity, since the dummies in such a case add to a constant (Studenmund, 1992).

In this case, there were three conditions, supervisor, HS worker, and non-HS worker. Two dummy variables were constructed, one for supervisor, and one for non-HS worker. HS worker was used as reference category. Concerning work tasks, dummy

variables were constructed where the personnel in the respective task were contrasted to all others in the total material. Rehabilitation workers were thus contrasted to others in both SIO and IFC. The analysis was done in three stages. First, only the demand variables were included in the model (model A). Second, only the work positions and tasks were included (model B), and third, all the variables (model C). The results are stated in table 35.

Table 35. Regression models for emotional exhaustion as dependent variable and demand aspects, work position and work tasks as independent variables.

	Regression coefficients					
	Model A		**Model B**		**Model C**	
Emotional demands	0.5	***			0.5	***
Quantitative demands	0.1	***			0.1	***
Role conflict	0.2	***			0.3	***
Role ambiguity	0.1	***			0.1	***
Supervisor			-2.5	**	-7.0	***
Non HS worker			-6.4	***	-2.4	*
Social welfare allowance			8.6	***	4.2	***
Rehabilitation			2.2	**	-0.9	
Disability allowance			1.2	(*)	0.3	
Intercept	-15.8		31.9		-15.1	
Adj. R^2	0.40		0.03		0.42	
F/df	837/5006		37/5381		400/4958	
Signif. F	0.0000		0.0000		0.0000	

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

Model A, including only the demand variables was strongly significant, and explained 40% of the variance in emotional exhaustion. All the demand variables showed independent relations to emotional exhaustion. The result from the bivariate analysis, where emotional demands and role conflict were more strongly related to emotional exhaustion, was confirmed here. Model B, including only work positions and tasks, was also

significant, but explained only 3% of the variance in emotional exhaustion. Work positions and task are thus far from sufficient for explaining emotional exhaustion.

Model C, which included all current variables, was strongly significant, and more than 40% of the variance in exhaustion was explained. There was no particular difference between this model and model A in variance explanation, nor in the magnitudes of the demand coefficients. All demand aspects had independent effects on exhaustion, with emotional demands and role conflict as most important for emotional exhaustion. One percent increase in emotional demands increased emotional exhaustion by 0.5 %, and one percent increase in role conflict increased emotional exhaustion by 0.3 %. Quantitative demands and role ambiguity were also related to an increase in emotional exhaustion, but to a lower degree. The results were thus similar to the bivariate analysis. There were, however, different patterns in model B and C for the other variables. Being a supervisor reduced exhaustion by 7 % compared to the HS workers, when controlling for all demand aspects. The opposite pattern was obtained for the non-HS workers. When all demand variables were included in the model, the coefficient decreased from 6 to 2 %. Working with social welfare allowance had a strong and independent relation to exhaustion, irrespective of job demands.

In model C, the residual plots indicated some heteroskedasticity; there were still omitted variables in the model. So far, the proposal about the importance of job demands for the experience of emotional exhaustion was confirmed, even if job demands are not the only factor leading to exhaustion. As a whole, one observation can be made. The pretenses of the DC model to find common properties of jobs receive some support (Karasek &

Theorell, 1990). There was hardly any change in the demand coefficients when moving from model A to model C. However, the coefficients changed considerably between model B and C, indicating that the differences between positions and work tasks in relation to emotional exhaustion partially were spurious, depending on differences in demands.

In the next set of models, the control variables were included as independent variables. Here, two analyses were made, the first one (model D) including only the control variables, and the second one (model E) including also the work position and work task variables.

Table 36. Regression models for emotional exhaustion as dependent variable and control aspects, work position and work tasks as independent variables.

	Regression coefficients			
	Model D		Model E	
Skill discretion	-0.2	***	-0.2	***
Decision authority	-0.4	***	-0.4	***
Administrative control	0.0		0.0	
Outcome control - client	-0.1	*	-0.1	***
Outcome control - routine	-0.2	***	-0.2	**
Supervisor			-1.8	*
Non HS worker			-5.3	***
Social welfare allowance			5.8	***
Rehabilitation			0.8	
Disability allowance			1.4	*
Intercept	54.5		54.1	
Adj. R^2	0.22		0.23	
F/df	293/5231		159/5178	
Signif. F	0.0000		0.0000	

(*) $0.10 \geq p > 0.05$ * $0.05 \geq p > 0.01$ **$0.01 \geq p > 0.001$ ***$0.001 \geq p$

Also these models were strongly significant. The variance explanations were lower than in the demand models. The

inclusion of the work position and work task variables did not contribute to better model fit, even though there were associations with exhaustion for all work variables, except rehabilitation work. The bivariate covariation between administrative control and exhaustion disappeared. All other control variables had independent relations to exhaustion, so that increase in control decreased exhaustion. The strongest relation was between decision authority and emotional exhaustion. One percent increase in decision authority decreased emotional exhaustion by 0.4 %. The work positions retained independent relations to emotional exhaustion, when controlling for the job control variables. Also in this model, social welfare allowance work was independently related to emotional exhaustion, as well as disability allowance work. That relation was however weaker.

The last models to be investigated included all the demand and control aspects in order to investigate their independent effects on emotional exhaustion. Also here a two-stage strategy was used, where the demand and control variables were included in the first model (model F), and the work variables were added in the second model (model G). The results are stated in table 37. When all demand and control variables were included, the adjusted R^2 increased. In the models, almost half of the variance in emotional exhaustion was explained. The pattern among the demand aspects did not change when controlling for control. Especially emotional demands, but also role conflict were still related to emotional exhaustion. One percent increase in emotional demands increased emotional exhaustion by 0.5 %, and one percent increase in role conflict increased emotional exhaustion by 0.2 %. The control variables, however, displayed a different pattern compared to the previous analyses. Skill discretion and outcome control-client were the control aspects

that had the strongest relations to emotional exhaustion in this model. The work related variables did not contribute to more variance explanation, but some of them were independently related to emotional exhaustion. Being a supervisor or non-HS worker decreased exhaustion, while working with social welfare allowance increased exhaustion.

Table 37. Regression models for emotional exhaustion as dependent variable and demand and control aspects, work position and work tasks as independent variables.

	Regression coefficients			
	Model F		Model G	
Emotional demands	0.5	***	0.5	***
Quantitative demands	0.1	***	0.1	***
Role conflict	0.2	***	0.2	***
Role ambiguity	0.1	***	0.1	***
Skill discretion	-0.3	***	-0.2	***
Decision authority	-0.1	***	-0.1	***
Administrative control	0.0		0.0	
Outcome control - client	-0.1	***	-0.2	***
Outcome control - routine	0.0		0.0	
Supervisor			-5.1	***
Non HS worker			-3.2	***
Social welfare allowance			3.2	***
Rehabilitation			-0.4	
Disability allowance			0.5	
Intercept	4.7		4.6	
Adj. R^2	0.47		0.48	
F/df	481/4873		319/4827	
Signif. F	0.0000		0.0000	

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

Bi- and multivariate analysis

In this chapter, the relations between job demands, job control, work position/work task and emotional exhaustion have been analyzed. The results clearly show that even if both work

position and working with social welfare allowance had independent relations to emotional exhaustion, they did not particularly improve the variance explanations in any of the regression models. The most important factors for explaining emotional exhaustion are so far job demands, but also job control.

The bivariate and multivariate analyses gave different results on some points. A comparison of the results is shown in figure 11. In the figure, a very strong positive relation is assigned three +, a medium strong relation is assigned two +, and a weak relation one +. The assessment of strength in relations is based on the size of the odds ratios and the regression coefficients, not on the p-values. The assessments from the multivariate analysis are based on the last regression model, including all demand and control variables and the work related variables.

	Bivariate analysis	**Multivariate analysis**
Emotional demands	+ + +	+ + +
Quantitative demands	+ +	+
Role conflict	+ + +	+ +
Role ambiguity	+ +	+
Skill discretion	-	- -
Decision authority	- -	-
Administrative control	-	no relation
Outcome control-client	-	- -
Outcome control-routine	- -	no relation

Figure 11. Summary of relations between the demand and control variables and emotional exhaustion, in bivariate and multivariate analysis.

The emotional demands retained their strong relation to emotional exhaustion in the multivariate analysis. The relations between quantitative demands, role conflict, role ambiguity and emotional exhaustion were weakened in the multivariate analysis. The control variables displayed a different pattern. In the bivariate analysis, decision authority had a stronger relation to emotional exhaustion than skill discretion. The reverse pattern showed in the multivariate analysis. A similar result was obtained for the outcome control variables. Bivariately, outcome control-routine was related to emotional exhaustion, but in the multivariate analysis, the relation disappeared, while the pattern was the opposite one for outcome control-client. For administrative control, the weak relation in the bivariate analysis disappeared when controlling for all demand and control variables.

One important conclusion can be drawn from this chapter: In studying emotional exhaustion, as well as anything else in social science, the complexity of the relations between different variables is so large that a bivariate analysis is incomplete, and even misleading. This is an important memento for much burnout research. There, a plethora of bivariate associations is reported.

Burnout has e.g. been associated with abdominal pain, difficulty in breathing, eczema, hives, tinnitus, an injury from occupational cause, bowel difficulties, tearfulness, loss of voice, an injury from non-occupational cause, dizziness, difficulty in falling asleep at night, warts, hemorrhoids, an allergic reaction to something in the air, acid in the stomach, nausea, pimples, back pain, cold or flu, sensitivity to weather, nightmares, headaches, and heartbeat (Belcastro, 1982). Other reported

associations are with diabetes, high blood pressure, and asthma, gain in weight or loss of weight, increased premenstrual tension or if the menstrual cycle is missed, nervous ticks, high cholesterol, frequent colds and flu, galvanic skin responses, and increased respirations (Beemsterboer & Baum, 1984; Carroll & White, 1982). "Fishing expedition" research of this kind is useless.

There is however an obvious limitation so far also in the present analysis. The relations between emotional exhaustion and demand/control have been set as additive without considering interactions between demand and control. That means that an important model specification moment so far has been disregarded, despite the fact that this interaction is the point of the theory. That will be studied in the next chapter.

9. JOB STRAIN, HUMAN SERVICES, AND EMOTIONAL EXHAUSTION

So far, we have seen that both demand and control in many aspects are additively related to emotional exhaustion. In the DC model, the point is however the *interaction* between demands and control. The combination of high demands with low control is supposed to lead to more severe effects on health, or in this case, emotional exhaustion, than demand and control in themselves. This means that an interaction term should be included into the regression model.

In chapter 6, the ordinary additive regression model was discussed. In the previous chapter, the various demand and control variables were tested in such models. The model specifications in those models were however not sufficient, if the effect of one independent variable, demand, depends on another independent variable, control, i.e. the basic tenet in the DC model. In such a case, a non-additive form is preferred:

$$y = \alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_1 x_2 + \varepsilon$$

where y=emotional exhaustion, x_1 = demand, x_2 = control and $x_1 x_2$ = demand times control. The multiplicative term $\beta_3 x_1 x_2$ is a new term representing the dependency of demand on control. The slope, β_3, is a measure of this interaction effect (Jaccard, Turrisi, & Wan, 1990).

DC model interaction

To test the idea about an interaction effect between demand and control, two such multiplicative terms were constructed. Before doing that, it was necessary to construct a summed control index. Considering the low correlations between the two main aspects of control, skill discretion and decision authority, it is doubtful to do this. The problem will be restated later on. Presently, the aim is to get variables that are comparable to the ones used in the DC model. Therefore, the measures of skill discretion and decision authority were summed into an index and then reversed, so that high numbers indicate low control.

After constructing the joint control index, the demand and control variables were multiplied with each other. Since there were two interpretations of demand, two strain variables were obtained, one for emotional demands and one for quantitative demands. The interaction variables were called "emotional strain" and "quantitative strain", respectively. They were transformed to range between 0-100.

On this point, I have found a considerable terminological confusion in the literature. In many texts, strain is used to designate the condition that results in stress - that is the meaning here. In other texts, strain is rather the name of the result of stress. There are even examples stating that strain is the result of strain, which in my opinion does not add to clarity (Landsbergis, 1988). In still other texts, strain is used meaning stress, and stress is used in the meaning that strain has here. In Jex, Beehr, & Roberts (1992), there is an excellent review over this terminological mess. I have tried to make the meaning of the

concepts I use very clear, but the reader should keep the definitions in mind.

There was no theoretical rationale to construct interaction terms using the other control variables. Nothing is said in the DC model about them, and I fail to see any particular reasons why e.g. outcome control should be interactively related to demands. The low correlations in table 34 give arguments in this respect. This empirical argument holds also for the interaction variables that are used here, but the theoretical model is explicit on this point.

Using interaction terms, the regression model will include variables that can be highly correlated, increasing the risk for multicollinearity. In this particular case, there were six variables in jeopardy: the four demand variables versus the two strain variables. Assessing this, the first stage was to examine the simple product moment correlation coefficients. They are stated in table 38.

Table 38. Pearson correlation coefficients for the demand, control, and strain variables.

	Decision authority	Skill discretion	Quantit. demands	Emotion demands	Quantit. strain
Quantitative strain	-0.75	-0.40	0.69	0.32	-
Emotional strain	-0.74	-0.40	0.37	0.67	0.80

There were high correlations between some of the variables, especially the two strain variables. According to the "rule of thumb", 0.80 or above signals possible problems with multicollinearity. Studenmund says that it is mostly best to leave an equation unadjusted, not dropping any of the correlated

variables. If there are theoretical reasons to include two highly correlated variables in the same equation, it should be done. Specification bias is much worse than multicollinearity (Studenmund, 1992). The main effect of multicollinearity is inflation of the variances. If two variables in a model are strongly related to each other, the regression analysis basically tries to extract information where little new information is to be found. That means that even slight differences between the culprit variables become exaggerated. The consequence is greater uncertainty and hence greater difficulties to achieve significant model estimates. They are however still unbiased. The remedy recommended is primarily to do nothing if there are theoretical reasons to include the variables. Especially in a large sample, as the present one, this is the best strategy, since large sample size is a way to increase precision in estimates.

In table 39, one finds the model including all demand and control variables and the interaction variables, i.e. the strain variables. In the first model (model H), only those variables are included, and in the second (model I), the work positions and work tasks are added. The results showed different results for the two strain variables. The strain variable most closely resembling the strain concept in the DC model, quantitative strain, had no independent relation at all to emotional exhaustion. The regression coefficient was 0. The coefficient for quantitative demands did not change, but became significant only at the ten percent level. Emotional strain was however strongly related to emotional exhaustion. One percent increase in emotional strain increased emotional exhaustion by 0.5% (in model I).

Table 39. Regression models for emotional exhaustion as dependent variable and demand and control aspects, strain variables, work position and work tasks as independent variables.

	Regression coefficients Model H		Model I	
Emotional demands	0.4	***	0.4	***
Quantitative demands	0.1	(*)	0.1	*
Role conflict	0.2	***	0.2	***
Role ambiguity	0.1	***	0.1	***
Skill discretion	-0.1	(*)	-0.1	*
Decision authority	0.0		0.0	
Administrative control	0.0		0.0	
Outcome control - client	-0.1	***	-0.2	***
Outcome control - routine	0.0		0.0	
Emotional strain	0.6	***	0.5	***
Quantitative strain	0.0		0.0	
Supervisor			-5.1	***
Non HS worker			-3.1	**
Social welfare allowance			3.0	***
Rehabilitation			-0.5	
Disability allowance			0.5	
Intercept	-18.1		-13.3	
Adj. R^2	0.47		0.48	
F/df	396/4871		281/4825	
Signif. F	0.0000		0.0000	

(*) $0.10 \geq p > 0.05$ * $0.05 \geq p > 0.01$ **$0.01 \geq p > 0.001$ ***$0.001 \geq p$

However, contrary to the DC model, there was still a strong and independent relation between emotional demands and emotional exhaustion. Further, the results amend the statement in burnout theory about the importance of emotional demands (Leiter, 1992; Maslach & Jackson, 1982; Pines, 1993), adding the interaction with control.

Assessing the interaction

As mentioned earlier, the two control variables in the interaction term, skill discretion and decision authority, were almost uncorrelated. They also behaved differently in the bivariate and the multivariate analysis. One question then becomes; what happens when they are summed into an index, and multiplied with the demand variables ? The emotional strain variable had an independent effect on emotional exhaustion, somewhat stronger than the independent effect from emotional demands. But does the stronger effect of the interaction stem from skill discretion, decision authority or from both? Further, is the absence of relation to the quantitative strain variable due to skill discretion, decision authority, or both ?

To investigate this, four new strain variables were constructed with the following combinations:

- emotional demands - skill discretion
- emotional demands - decision authority
- quantitative demands - skill discretion
- quantitative demands - decision authority

Also here, the variables were checked for multicollinearity. The results are stated in table 40.

Table 40. Pearson Correlation coefficients for the demand, control, and "new" strain variables.

	Decision authority	Skill discretion	Quantit. demands	Emotion demands
Quant.dem/skill discr.	-0.17	-0.89	0.25	0.00
Quant.dem/dec auth.	-0.89	0.06	0.74	0.43
Emot.dem/skill discr.	-0.16	-0.89	0.02	0.23
Emot.dem/dec auth.	-0.87	0.07	0.48	0.73

The two strain variables including decision authority as the control part were correlated by 0.87-0.89 and the two including skill discretion by 0.89. In this case the correlations were higher than in models H and I. Still, since the aim was to investigate the relative impact of the different strain variables on emotional exhaustion, the new variables were included in the respective regression models.

Two new regression models were tested. The first model (model J) included the strain variables where skill discretion was the control part, and the second one (model K) included the strain variables with decision authority. The results from the two analyses are stated in table 41. Work positions and tasks were included in the analyses.

The results of these analyses show a stable pattern among the demand and control variables in relation to emotional exhaustion. Almost all coefficients were significantly different from 0, and adjusted R^2 was relatively high, indicating low probability of severe multicollinearity (Studenmund, 1992). The coefficients of the independent variables were surprisingly stable, irrespective of which strain combination that was used. The multicollinearity was thus not dangerous for the models, since there was no instability of the estimates.

Table 41. Regression model for emotional exhaustion as dependent variable and demand and control aspects, "new" strain variables, work position and work tasks as independent variables.

	Regression coefficients Model J		Model K	
Emotional demands	0.5	***	0.4	***
Quantitative demands	0.1	***	0.0	
Role conflict	0.2	***	0.2	***
Role ambiguity	0.1	***	0.1	***
Skill discretion	-0.2	**	-0.2	*
Decision authority	-0.1	***	0.0	
Administrative control	0.0		0.0	
Outcome control - client	-0.2	***	-0.2	***
Outcome control - routine	0.0		0.0	
Quant.dem/skill discr.	-0.2	(*)	-	
Emot.dem/skill discr.	0.3	**	-	
Quant.dem/dec auth.	-		0.1	
Emot.dem/dec auth.	-		0.2	*
Supervisor	-5.1	***	-5.1	***
Non HS worker	-3.0	**	-3.3	***
Social welfare allowance	3.1	***	3.1	***
Rehabilitation	-0.5		-0.5	
Disability allowance	0.5		0.6	
Intercept	-0.6		-5.5	
Adj. R^2	0.48		0.48	
F/df	280/4825		280/4825	
Signif. F	0.0000		0.0000	

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

The analysis is complex. To facilitate interpretation and assessment of the various models and concepts, the results from all analyses, including model G in the previous chapter, are repeated in in tables 42a and 42b. In the tables, only the demand, control, and strain variables are stated, although the work position and areas were included in the analyses. The regression coefficient for the demand and control variables are stated in table 42a, and the coefficients for the strain variables in table 42b. Significance indication is omitted.

Table 42a. Comparison of the regression coefficients for the demand and control variables.

	Regression coefficients			
	Model G	**Model I**	**Model J**	**Model K**
Emotional demands	0.5	0.4	0.5	0.4
Quantitative demands	0.1	0.1	0.1	0.0
Role conflict	0.2	0.2	0.2	0.2
Role ambiguity	0.1	0.1	0.1	0.1
Skill discretion	-0.2	-0.1	-0.2	-0.2
Decision authority	-0.1	0.0	-0.1	0.0
Administrative control	0.0	0.0	0.0	0.0
Outcome control - client	-0.2	-0.2	-0.2	-0.2
Outcome control - routine	0.0	0.0	0.0	0.0

The coefficients were remarkably stable in the different models, indicating no multicollinearity problem. Further, models I, J and K included strain variables, which did not influence the coefficients of the demand and control variables. The emotional demands had a persistent and strong independent effect on emotional exhaustion, confirming the suggestions in the burnout literature. In the next table, the coefficients for the strain variables are stated.

Table 42b. Comparison of the regression coefficients for the strain variables.

	Regression coefficients		
	Model I	**Model J**	**Model K**
Emotional strain	0.5		
Quantitative strain	0.0		
Emot.dem/skill discretion	-	0.3	-
Quant.dem/skill discretion	-	-0.2	-
Emot.dem/dec authority	-	-	0.2
Quant.dem/dec authority.	-	-	0.1

The strain variable including emotional demands and the combination of skill discretion and decision authority had clearly the strongest independent effect on emotional exhaustion. This

effect seems to be due primarily to the combination of emotional demands and skill discretion. When skill discretion was combined with quantitative demands, 1% higher strain *decreased* emotional exhaustion by 0.2%. This means that high work load combined with low possibilities for learning and development was related to *lower* emotional exhaustion. The estimate was however significant only on 10% level. This is in my opinion an interesting result, since one obvious interpretation is that strain in this operationalization reduces emotional exhaustion. Recalling the results from the previous chapter, this result is probably due to the influence of skill discretion. The summary in figure 11 showed that skill discretion had a relatively strong negative relation to emotional exhaustion, while quantitative demands had a weak positive relation. The combination gave an overall negative relation.

Tables 42a and b are complex, since they summarize the whole preceding analysis. They are important and the assessment of what they show must be done at some length, including a comparison to another study.

Assessing the models

There is, to my knowledge, only one other study applying the DC model on human services in order to study burnout (Landsbergis, 1988). It should therefore be presented in more detail. The DC model was used by Landsbergis in a study of workers in health care (nurses, social workers, dieticians). According to the author, the study was the first one to investigate the associations between the DC model and burnout. He also studied job dissatisfaction, sleeping problems,

depression, and physical/psychosomatic strain (*sic!*) as dependent variables. The study sample consisted of net 289 persons (response rate 37.5 %), who answered the MBI and the Job Content Questionnaire, developed by Karasek and Theorell.

Landsbergis' results were similar to the ones here in one respect: he could not show any effects of the interaction term in the DC model on burnout. He operationalized his interaction term as quantitative strain only (in the meaning used here). Neither the demand concept nor its operationalization were problemized to fit a human service context. The lack of any interaction effects in the DC model was observed not only for burnout, but also for measures of job dissatisfaction, sleeping problems, depression, and physical/psychosomatic "strain". Although Landsbergis describes his results thoroughly, these particular findings were mentioned only in two sentences. In the discussion (almost 4 pages), the only comment was that the

> "...demand-latitude interaction effects, which have been previously identified (Karasek, 1979), need to be more carefully examined." (Landsbergis, 1988, p 234).

Methodologically, hierarchical multiple regression was used. This is a form of stepwise regression. The method was used to examine the contribution of various sets of variables, assessed in terms of increase in R^2. The conclusion of no effects of the interaction term was thus based on its (lack of) contribution to the multiple correlation coefficient, R^2 also called the determination coefficient. No regression coefficients were stated.

The study can in my opinion be regarded as an example of misuse of R^2. Maximizing R^2 is not the best way to assure the quality of a regression model: it is only one of several measures.

It tells you something about the precision of the model, but nothing of the strength of the modelled relationships (Studenmund, 1992). Or, in Blalock's words:

> "A large correlation coefficient merely means a low degree of scatter about the least squares equation and hence an accurate estimate of the true slope. The size of the correlation coefficient tells the researcher how successful he is being in attaining his real goal, namely in describing the *nature* of the relationship between his variables. *It is the regression coefficients which give us the laws of science.*" (Blalock, 1964, p 51).

Ironically, it is not even clear if Landsbergis used the R^2 or rather the *adjusted* R^2 to assess variance explanation . As pointed out by (Studenmund, 1992, p 49), if one compares two identical regressions, with the same dependent and independent variables, except that one has an additional independent variable, the equation with the greater number of independent variables will always have a better, or equal, fit as measured by R^2. The proper measure to use in the Landsbergis study is adjusted R^2, which is adjusted for the degrees of freedom.

Further, the use of stepwise regression means that the researcher leaves the most important part of regression analysis to the computer - model specification (Achen, 1982; Studenmund, 1992). Model specification implies theoretical and not statistical considerations. Landsbergis' omission of theoretical discussions about burnout in relation to the DC model might be the reason that only quantitative job demands were considered. The a-theoretical approach of the study is also shown in the emphasis on the multiple correlation coefficient. The regression coefficients are not even stated whence it is impossible to assess

the strength of the relations between the independent and dependent variables. Unfortunately, the Landsbergis study therefore has limited value as a comparison to the present results. The theoretical naïvety, the methodological limitation, and the poor response rate all disqualify the study from any conclusions about the validity of the DC model in relation to the MBI.

The models here have to be assessed in their own right. The findings about job demands and emotional exhaustion in the bivariate analyses were stable. Emotional demands and role conflict had the strongest relations to emotional exhaustion. When the interaction variable emotional strain was included in the model, there remained a strong independent relation between emotional demands and emotional exhaustion. The results of the regression analyses confirm the suggestion of emotional demands as the most important factor for the experience of emotional exhaustion. There was also an independent relation between quantitative demands and emotional exhaustion, although weaker than for emotional demands. The interaction variable, quantitative strain, had however no relation at all to emotional exhaustion.

Concerning the control aspects included in the interaction terms, decision authority lost its weak relation to emotional exhaustion, and skill discretion got a higher association to emotional exhaustion compared to the model without an interaction term. The core of the DC model, the interaction between demand and control, was relevant for the analysis of emotional exhaustion *only* when job demands were conceived as emotional demands. Quantitative demands retained some importance for the experience of emotional exhaustion but had no effect in

interaction with job control. In other words, the "original" DC model could not be confirmed here.

The two new strain variables, where skill discretion and decision authority were treated separately, displayed more inconclusive patterns in relation to emotional exhaustion. Emotional demands combined with skill discretion had a positive relation to emotional exhaustion, while quantitative demands/skill discretion had a negative relation. Quantitative demands combined with decision authority had no significant relation to emotional exhaustion, while emotional demands/decision authority had a weak positive relation.

I conclude that the two strain variables including the composite control index of skill discretion and decision authority, i.e. the control variable proposed by Karasek, should be used in the following analyses. I would argue along these lines: First, the results are clear cut and easily interpretable, as well as in line with the theoretical predictions, if emotional demands are considered as operationalizing the demand concept. Second, the control concept combining skill discretion and decision authority is clearly multidimensional, but dimensionality does not exhaust scientific relevance. Third, the analysis has yielded the insight that skill discretion seems to be most important of the two components, but analogically, primarily in combination with decision authority and emotional demands. The human service worker who has high emotional demands, low skill discretion, and low decision authority is at risk for emotional exhaustion.

There is, however, another issue related to the results about the close connections between emotional strain and emotional exhaustion. The strain caused by the combination of demands

and control is supposed to act through triggering a physiological mechanism, stress. There is consensus in the burnout literature that there is a relation between stress and emotional exhaustion, although it is unclear if this refers to stress in a physiological sense. Therefore, a study was performed where emotional exhaustion was related to physiological stress indicators.

Stress and emotional exhaustion

The idea of stress refers to physiological and psychological factors, leading to disease. This stress is a physiological mechanism mirrored in hormones and other bodily substances. There are many suggestions of physiological stress indicators. Lacking own competence in physiology, I have relied on the judgments of stress researchers in choosing suitable such indicators[1]. The question in this context is of course if emotional exhaustion is related to the physiological stress mechanism. A special study was partly devoted to this issue.

For this study, four local units that participated in the main project were selected: two in the IFC (78 and 13 employees) and two in the SIO (67 and 25 employees), 183 persons in sum. The units were selected because of differences in size and in subjectively reported psychosocial climate. Blood samples were collected to measure physiological stress indicators. Participation in the study was voluntary and 103 (56.3 %) persons took part. The field work was carried out in December 1993. Details about sample procedures and laboratory analyses are reported

[1] Carl-Göran Ohlson, MD, PhD, Assoc. prof., and Töres Theorell, MD, PhD, Prof.

separately. They were performed professionally by the collaborators Drs. Carl-Göran Ohlson and Ian Jones, Örebro Medical Hospital Center, Örebro, Sweden (Söderfeldt, Söderfeldt, Theorell, et al., 1996c).

The following stress indicators were measured in serum or plasma. They are according to the physiological expertise associated with different physiological systems that become affected by stress conditions:
cortisol (nmol/l)
prolactin (μg/l)
immunoglobulin IgA (g/l)
immunoglobulin IgG (g/l)
The measures of all independent variables except the stress indicators were based on the questionnaire, the same one as used in the main study. In the models, four individual attributes were included: age, gender, smoking, and drinking alcohol at least once a week or less. Regression models were analyzed, where one stress indicator at a time was included as an independent variable. In the tables, regression coefficients are stated only for the stress indicators. The other independent variables are discussed in the text.

Due to the relatively large number of variables and the small number of participants, it was expected that model significance would be difficult to achieve. In a small material, it is important to investigate outliers in regression analysis, since the coefficient estimates are sensitive for extreme values. This was done by plotting predicted values against residuals, and studying unusual observations and influential cases by Mahalanobis and Cook's distances. Mahalanobis distance is a measure of the distance of cases from average values of the independent variables, and

Cook's distance identifies observations that can have a large influence on the estimates of the parameters ((Fox, 1991). Cases that had high values on both were discarded, and another analysis was done.

The average values of the analyzed stress indicators were all within the reference intervals given by the analyzing laboratory. They are stated in table 43.

Table 43. Average values, standard deviations and reference intervals of stress indicators.

	Mean	SD	Reference interval
Cortisol (nmol/l)	325.5	119.3	200-800
Prolactin (µg/l)	6.3	2.7	<15
IgA (g/l)	2.1	0.8	1.0-3.0
IgG (g/l)	11.2	2.2	7.0-16.0

The first model, stated in table 44, included IgA in addition to the individual attribute variables. First, the analysis was done on all cases (model α). Second, cases were excluded due to high values of Mahalanobis and Cook's distances (model β).

Table 44. Regression models for emotional exhaustion as dependent variable and IgA, age, gender, alcohol use, and smoking habits as independent variables.

	Regression coefficients			
	Model α		Model β	
IgA	-8.2	**	-11.7	***
Intercept	61.9		64.1	
Adj. R^2	0.04		0.18	
F/df	1.6/83	0.1512	4.0/77	0.0015

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

The model including all cases was not significant, although IgA had a strong relation to emotional exhaustion. The regression coefficients for the other independent variables were non-significant. Residual plots indicated heteroskedasticity, and residuals were not normally distributed. Mahalanobis and Cook's distances indicated that six cases ought to be excluded from the analysis. This was done in model β. When the outliers were discarded from the analysis, the model was significant. The explained variance increased from 4 to 18 %, and the relation between IgA and emotional exhaustion became even stronger. One gram per liter blood increase in IgA decreased emotional exhaustion by 11.7 %. It is important to remember that the reference interval for IgA is narrow (1-3 g/l), and 1 gram increase is quite much, more than 1 SD. No significant relations between emotional exhaustion and the individual attributes appeared in model β. The other immunoglobuline, IgG was analyzed in table 45.

Table 45. Regression models for emotional exhaustion as dependent variable and IgG, age, gender, alcohol use, and smoking habits as independent variables.

	Regression coefficients			
	Model α		Model β	
IgG	-2.3	*	-2.5	*
Intercept	70.8		64.2	
Adj. R^2	0.01		0.06	
F/df	1.2/83	0.3393	1.9/78	0.0898

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

There was a relation also between IgG and emotional exhaustion, but not as clear and strong as the relation to IgA. One gram per liter increase in IgG decreased emotional exhaustion by 2.5 %.

One should note that the reference interval for IgG is wider compared to IgA, and one gram per liter change represents only a half SD. Discarding the outliers in model β increased the variance explanation from 1 to 6%. The residual analysis indicated heteroskedasticity, indicating lacking model specification. On a small material, there is however a limited possibility to include too many variables, and the multicollinearity problem becomes acute.

A theoretical question arises from the results of the relations between emotional exhaustion and the immunoglobulines. Does increased emotional exhaustion lead to an impaired immune system, or does a weaker immune system lead to emotional exhaustion ? To investigate this causal problem, emotional exhaustion was substituted as dependent variable for IgG and IgA. The models were otherwise identical, i.e. including also age gender alcohol, and tobacco use as independent variables. The table shows only the models where influential cases have been omitted. The results are stated in table 46.

Table 46. Regression models for IgA and IgG as dependent variable and emotional exhaustion, age, gender, alcohol use, and smoking habits as independent variables.

	Regression coefficients IgA		IgG	
Emotional exhaustion	-0.01	***	-0.03	*
Intercept	2.6		13.8	
Adj. R^2	0.17		0.24	
F/df	3.9/78	0.0018	5.4/77	0.0001

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

The results showed much weaker relations between emotional exhaustion and the immunoglobulines compared to the previous results. The better model fit for the IgG model was probably due to the influence of the other included independent variables, where both alcohol and tobacco use were significantly related to IgG. Still, one percent increase in emotional exhaustion decreased IgG only with 0.03 g/l and IgA with 0.01 g/l. The results illustrate clearly the difference between the variance explanation and the regression coefficients. To produce a 1 gram per liter change in IgG, emotional exhaustion has to increase by 33 per cent units, and for the same change in IgA, it must increase by the absurd 100 per cent units. I conclude that data here give arguments that emotional exhaustion does not lead to an impaired immune system, while there are indications of the reverse relation.

Two other physiological stress indicators were available: cortisol and prolactin. Models with emotional exhaustion as dependent variable were constructed in the same way as above. The results are stated in table 47.

Table 47. Regression models for emotional exhaustion as dependent variable and cortisol, prolactin age, gender, alcohol use, and smoking habits as independent variables.

	Regression coefficients	
	Model α	**Model β**
Cortisol	-0.01	-0.02
Intercept	47.9	42.1
Adj. R^2	-0.05	0.05
F/df	0.4/79	1.7/73
Prolactin	-0.5	0.04
Intercept	48.2	36.7
Adj. R^2	-0.05	-0.03
F/df	0.3/81	0.6/75

There was no relation between cortisol and emotional exhaustion. Change of 1 SD in cortisol changes emotional exhaustion by 1.2 %, and the same change in prolactin changes it 1.4 %. Neither of the two analyses yielded significant models. The same result was obtained for the analysis of the fourth stress indicator, prolactin.

These results throw doubt on the proposition that emotional exhaustion is stress related. As we have seen, emotional exhaustion is strongly related to self-reported emotional strain, but this does not seem to be mirrored in physiological stress, except concerning the immunoglobulines. So far, the results here may support a possible explanation for the failure to find any explanations of emotional exhaustion in the original DC model: emotional exhaustion is simply not related to stress. It may be possible that the DC model is a good model of stress related phenomena, and its failure here may be due to the lack of relation between emotional exhaustion and stress. On the other hand, this is at cross with a great mass of "burnout" research. However, noone has bothered to check if the cliché "stress leads to burnout" has any physiological ground. This study is to my knowledge the first check on the truth of this stereotype.

These conclusions presuppose of course that the stress indicators are valid and reliable indicators of physiological stress. I cannot judge that, more than the simple observation that they are used in many studies of physiological stress. However, I also know that professional physiologists by no means are unanimous on the relation between stress and the indicators here, and that there are many studies contradicting each other. Incidentally, it has been interesting for me as a social scientist to learn that natural scientists are as divided and uncertain as anyone in social science.

Be this as it may, the results here cannot be used to say that emotional exhaustion is related to stress, although they do not exclude the possibility in a definite way, as no single study can. There was a relation to the immunoglobulines (but produced through a certain amount of data manipulation), although not to the other stress indicators. The models were far from fully specified which was not possible on the small material obtainable in an expensive physiological study. In the next chapter, unfortunately lacking physiological data, full model specification of emotional exhaustion will however be the goal.

10. A FULLY SPECIFIED MODEL OF EMOTIONAL EXHAUSTION

In the literature, burnout is primarily suggested to be an effect of work-related factors (Leiter, 1993; Maslach, 1982b; Söderfeldt, et al., 1995). There are however also authors stating that burnout primarily is a personal problem, where the causes, signs, and symptoms are all based on the individual (Rogers, 1987). We saw in the previous chapter that the demand, control, and strain variables explained almost half of the variance in emotional exhaustion, and that work positions and working with social welfare allowance had independent effects. The DC model emphasizes that demand and control in work are functions of the work organization (Karasek & Theorell, 1990). Reliance on the model would thus imply that emotional exhaustion should be regarded primarily as a problem related to the work organization and not to the individual worker.

In this chapter, the task is to get a deeper understanding of the causes of emotional exhaustion, amounting to the best possible model specification. This requires that all variables with any suspected theoretical relation to the dependent variable should be included. The regression models will therefore be expanded to include both individual and work related variables, referring to informal organization. First an ordinary regression analysis will be performed to assess the effects on emotional exhaustion of the different independent variables. There are however also suggestions that burnout is related to aspects of the formal organizational structure (McCulloch & O'Brien, 1986; Winnubst, 1993). Such factors and their relation to emotional exhaustion

will also be analyzed, which means that two levels of analysis will be considered simultaneously. The correct method to use in such a case is multilevel analysis, which deals with research situations that are hierarchically structured (Goldstein, 1986; Goldstein, 1995).

An individual model of emotional exhaustion

In this section, the impact of factors related to the individual worker on emotional exhaustion will be analyzed. There are statements that work experience, age, gender, family situation, education, and personality dispositions influence the experience of burnout (Garden, 1989; Leiter, 1990; Maslach & Jackson, 1985; Söderfeldt, et al., 1995). These findings in burnout research will be investigated, as well as the reasons why the suggested correlates would be related to emotional exhaustion. Individual and job attributes will be explicated one by one in the following.

Individual attributes

Work experience. There are suggestions in the literature that burnout is an effect of disillusionment. Young idealistic persons enter their professional career with the aim of doing good for other people. When they realize that this was more difficult than they might have thought, they become disappointed and, probably, burned out. Sometimes this process is said to take a year (Edelwich & Brodsky, 1980; Freudenberger, 1975; Paine, 1981; Pines & Aronson, 1988). After about a year of employment, the worker should thus become burned out.

First, the bivariate relation between work experience and emotional exhaustion was studied. Employment time, and accordingly work experience, was long on the average in the two studied organizations. For the total material, the mean employment time was 14 years. Only 4 % had an employment time of one year or less. Their mean score on emotional exhaustion was compared to that of personnel with more than one year of employment in two-tailed independent samples t-test. The results showed no difference between newly employed and persons with more work experience ($p=0.24$). The relation between emotional exhaustion and work experience was also tested in bivariate regression analysis, using a continuous measure of work experience, i.e. number of years employed. The results showed that each year of increased work experience *decreased* emotional exhaustion by 0.1 % ($p= 0.000$). The result indicates that the more experienced you are as a human service worker, the better you can handle the exertions in the work. Considering the magnitude of the coefficient, it means that you must work 10 years to decrease emotional exhaustion by 1 %, so the association is not very strong. The suggestions in the burnout literature about the relation between burnout and work experience were not confirmed here.

Age is of course related to work experience, (r_{xy} was 0.5 in this material), but not the same thing. Age as a continuous variable was not included in the questionnaire. It was measured in five year categories, condensed into three categories: "young" (≤34 years), "middle-age" (35-49 years), and "old" (50- years). The rationale for using a categorization in the question was to strengthen the sense of anonymity in responding to it. The demographic norms in (Maslach & Jackson, 1986) state that persons over 50 years score lower on the EE scale than younger

persons. In dummy variable regression analysis, using the middle-aged as reference category, no differences between the age groups were found. Neither the model nor the coefficients were significant. Similar to work experience, the proposed relation between age and emotional exhaustion could not be confirmed here.

Gender. The demographic norms in Maslach & Jackson (1986) indicate that there are some differences between men and women in the experience of emotional exhaustion. Women had somewhat higher scores than men even though the differences were small. The same results were obtained also in earlier studies (Maslach & Jackson, 1985). Here, no gender differences in the experience of exhaustion were found. The weak, non-significant, indications in bivariate regression analysis showed that women were somewhat *less* emotionally exhausted.

Family situation. There are some statements that married persons are less burned out than singles, although some studies fail to show such a relation (Maslach & Jackson, 1985; Maslach & Jackson, 1986). Further, it is suggested that the presence of children at home contributes to less burnout (Maslach & Jackson, 1985). These suggestions were tested here. Married persons were slightly less emotionally exhausted than singles with 1.8 % less emotional exhaustion. Presence of children at home (in this case children less than 7 years) was unrelated to emotional exhaustion.

Education. In the literature, there are contradictory statements concerning the role of education for the experience of burnout. For example, low education (Streepy, 1981), as well as high education (Hagen, 1989) have been associated with burnout. In

the demographic norms (Maslach & Jackson, 1986), persons with no college education score higher on emotional exhaustion than those having post-graduate education. Here, the relation was investigated in dummy regression analysis. Degree of education was categorized in three dummy variables: "low" (junior high school), "medium" (high school), and "high" (college education). "Medium" education was used as reference category. The analysis showed a clear gradient relation. "Low" were 2.3 % less exhausted than "medium" and "high" 4.5 % more.

Self-esteem was measured in the study by the Rosenberg's self-esteem scale (Rosenberg, 1989). It is a variable that theoretically ought to capture some of the possible personality variation in burnout. The responses were summed into an index and transformed to range between 0-100. The analysis showed a negative relation between self-esteem and emotional exhaustion. One percent increase in self-esteem decreased emotional exhaustion by 0.3 %. Persons with a high self-esteem maybe handle the emotional exertions in human service work and thus become less exhausted.

Job attributes

The results from the bivariate analyses concerning individual attributes and their relation to emotional exhaustion sometimes confirmed previous research, and sometimes not. Eventually, all variables will be investigated in multivariate analysis, but first some job attributes will be analyzed bivariately.

Feelings of isolation in the job, degree of client contact, lack of social support and feedback in work, inadequate leadership, and

organizational climate (Burisch, 1993; Garden, 1989; Maslach, 1978; Pines, 1993; Winnubst, 1993) have all been related to burnout. In the questionnaire to the personnel, there were questions that captured those variables.

Feelings of isolation in the job was measured by the question: "Does it happen that you feel alone in your job ?" (Härenstam, 1989). Responses ranged from "always" to "never" on a five grade scale. The response alternatives "always" and "often" were categorized into "often", and the alternatives "sometimes", "seldom", and "never" into "not often", constituting a binary dummy variable. Feeling isolated in work was strongly related to emotional exhaustion. Those who reported frequent such feelings scored 12.5 % higher on emotional exhaustion compared to those who seldom felt isolated in their job.

Degree of contact with co-workers can also be considered as an indicator of isolation (the question is stated in chapter 4). The responses were categorized in dummy variables indicating "much contact" (> half the day), "medium contact" (about half the day) and "little contact" (almost none). "Medium contact" was used as reference category. The relation between co-worker contact and emotional exhaustion was significant. Those who reported little contact scored 3 % higher on emotional exhaustion, and those reporting much contact scored 2.4 % lower compared to persons with medium contact. The relation were thus less strong than the one between feelings of isolation and emotional exhaustion, indicating that feelings of isolation may capture another dimension than frequency of contact with co-workers.

Degree of client contact (the question is stated in chapter 4). The responses were categorized in the same way as the responses for co-worker contact. The relation between client contact and emotional exhaustion was less clear than the relation between co-worker contact and emotional exhaustion. Having little contact decreased emotional exhaustion by 4.4% compared to those with medium contact, while there was no difference in emotional exhaustion between those with medium and much client contact.

Social support from supervisors and co-workers was measured by a set of questions developed from Härenstam (1989). They aimed at mesuring emotional support (encouragement and acknowledgement), informative support (help and advise in doing the work), and instrumental support (help to do the job), (House, 1981; Aronsson, 1987). There were altogether six questions, one for each type of support from supervisors and co-workers. The questions were analyzed in principal components analysis, giving two factors. The questions aimed at measuring supervisor support loaded on the first factor, and those aimed at measuring co-worker support loaded on the second factor. The factor solution was clear cut with no overlapping loadings, with high communalities and variance explanation (70.4 %). The responses were summed into two indices, one for coworker and one for supervisor support and transformed to range between 0-100. Both types of support were related to emotional exhaustion. One percent increase in both supervisor and coworker support decreased emotional exhaustion by 0.3 %. The findings in the bivariate analysis were thus in the expected direction.

Management style, is an aspect of leadership, which is the concept used in the burnout literature. This was measured by four questions from Härenstam (1989) about feedback from

supervisor, contradictory instructions from supervisor, if supervision is sufficient, and if personnel matters are handled correctly. The responses were summed into an index and transformed to range between 0-100. There was a strong relation between management style and emotional exhaustion. One percent increase in good management style decreased emotional exhaustion by 0.4%.

Psychosocial climate, an aspect of organizational climate. Six questions about feelings of social cohesion, atmosphere, job satisfaction, communication, and openness at the work place were brought from Härenstam (1989), summed into an index and transformed to range between 0-100. The same magnitude in the relation to emotional exhaustion as for management style was obtained, i.e. one percent better psychosocial climate decreased emotional exhaustion by 0.4 %.

To summarize, it seems as if the job attributes were closer related to emotional exhaustion than the individual attributes. All were related to emotional exhaustion, while this was true only for three of the six variables capturing individual attributes. Some of the analyses confirmed previous research results and some did not.

A first attempt at full model specification

As pointed out before, most of the findings in burnout research rely on correlational studies. So far, the associations between emotional exhaustion and the different variables above have only been studied bivariately or in dummy variable models. The next task is therefore to analyze all these independent variables that

have been introduced in a multiple regression analysis. There, the effects of the independent variables in the model on emotional exhaustion will be assessed. All the demand and control variables, strain, work position and work tasks, as well as the individual attributes and the job related variables above will be included in a first attempt to obtain a fully specified model of emotional exhaustion. To check for multicollinearity, all variables were correlated. The single strongest correlations were between coworker social support and feelings of isolation (-0.35), and being a supervisor and having little client contact (0.43). There was thus no multicollinearity problem. The model is stated in table 48.

The coefficients for the demand, control and strain variables were remarkably stable compared to previous analyses. They were not affected by the inclusion of job and individual attributes. This in itself constitutes a strong argument that the effects of these variables are direct and not mediated by e.g. the job attributes. Despite the high bivariate associations, most of the job attributes did not retain an independent relation to emotional exhaustion. The coefficients for management style, coworker support and supervisor support were 0.

Further, the degree of client contact and contact with work-mates kept no independent relations to emotional exhaustion. Persons who often or always felt isolated in their jobs were however 2.5 % more exhausted, a decrease from the bivariate analysis with 10 per cent units. Good psychosocial climate kept a weaker but significant relation to emotional exhaustion: 1 % increase in climate decreased exhaustion by 0.1 %. The changes in these coefficients give an argument that their strong bivariate

relations to emotional exhaustion is spurious and partly explained by the DC model variables or the individual attributes.

Table 48. A fully specified individual model of emotional exhaustion.

Regression coefficients

Demand, control and strain			Job attributes		
Emotional demands	0.3	***	*Much client contact*	0.1	
Quantitative demands	0.1	(*)	*Little client contact*	0.1	
Role conflict	0.2	***	*Much coworker contact*	-0.2	
Role ambiguity	0.0		*Little coworker contact*	-0.1	
Skill discretion	0.0		*Feeling isolated in work*	2.7	***
Decision authority	0.0		*Management style*	0.0	
Administrative control	0.0		*Psychosocial climate*	-0.1	***
Outcome- client	-0.1	***	*Supervisor support*	0.0	
Outcome- routine	0.0		*Coworker support*	0.0	
Emotional strain	0.5	**	*Supervisor*	-4.8	***
Quantitative strain	0.0		*Non-HS worker*	-2.5	**
Individual attributes			*Social welfare allowance*	3.6	***
Gender - woman	-2.0	***	*Rehabilitation*	-0.3	
Age < 35	-0.1		*Disability allowance*	0.1	
Age > 50	-0.8				
Marital status - married	-2.0	***			
Having small children	-0.1				
Work experience	0.0				
Low education	0.1				
High education	0.9				
Self-esteem	-0.1	***			
Intercept	7.8		Adj. R^2=0.52	F/df 133/4203, Signif. F: 0.0000	

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

Three of the individual attributes were still independently related to emotional exhaustion: being married, gender and self-esteem. One variable displayed an opposite pattern compared to many other variables when moving from bivariate to multivariate analysis namely gender, which showed an independent relation to emotional exhaustion in the multiple regression analysis. Women

were 2 % less exhausted than men, when controlling for all the other variables in the model.

However, it still seems that factors related to the job, and not to the individual worker, have the strongest relations to the experience of emotional exhaustion. The job-related factors were primarily emotional demands and strain including such demands. Also role conflict showed a relatively strong independent relation to emotional exhaustion. One control variable had an independent relation, outcome control related to client-work. None of the variables in the original DC model were independently related to emotional exhaustion.

Further work on full model specification

The results above are important considering model specification. It is essential to include variables that should belong in the model, but it is also important to *exclude* those who should not be there. Model specification in itself refers to the problem of omitted variables in a regression model. Also the reverse case, i.e. possible irrelevant variables, can be a problem, especially when considering the mass of more or less ingenious suggestions of correlates to burnout. I hesitate, for example, to include the weather, warts or hemorrhoids in the models, and I refuse to consider possession of guppy fish. Fortunately, Studenmund gives four criteria to help decide whether a given variable belongs in an equation.

1. *Theory*: Is the variable's place in the equation unambiguous and theoretically sound ?
2. *t-test:* Is the variable's estimated coefficient significantly different from zero ?

3. *Adjusted R^2:* Does the overall fit of the equation improve when the variable is added to the equation ?
4. *Bias:* Do other variables' coefficients change significantly when the variable is added to the equation ?

If all the conditions hold, a variable belongs in the equation, and if none of them hold, the variable can safely be excluded. The single most important determinant of a variable's relevance is its theoretical justification (Studenmund, 1992).

In the model in the previous section, there were several variables that did not fulfill the conditions 2-4. The question is then if the most important condition concerning theoretical justification holds, and the variable consequently should be included in the regression equation. I will try to judge this in a discussion of all the variables lacking independent relation to emotional exhaustion.

The demand, control, and strain variables. Role ambiguity, skill discretion, decision authority, administrative control, outcome control-routine, and quantitative strain had no independent relations to emotional exhaustion. Of these variables, there are theoretical reasons to keep the variables from the DC model in the regression model because of the unanimous suggestions of the relation between burnout and job stress. It is more difficult to theoretically justify the inclusion of role ambiguity, where indications of a relation primarily are empirical (Himle, et al.,1986a; Himle, et al., 1986b).

Administrative control was discussed as one interpretation of the control concept in the theoretical section. Its place in the regression model is however not theoretically unambiguous, and it is not problemized in the burnout literature. The same

argument holds for outcome control-routine. From a human service perspective, outcome control in relation to the client must be more relevant, since the core of the work is the relation to the client.

In sum, role ambiguity, administrative control, and outcome control-routine could be excluded from the model according to the first and second conditions. The third and fourth conditions were also tested for the three variables. There was in no case any improvement of R^2, and the other variable coefficients did not change.

The job attributes. Also here, there were variables without any independent relation to emotional exhaustion: Client and co-worker contact, social support, and the two work tasks rehabilitation and disability allowance work. The first argument about theoretical relevance held for all variables. Coworker contact was, as mentioned above, included in the model as an indication of loneliness in work. There was however another variable in the model that more directly captured this dimension. The criteria 2-4 did not hold for coworker contact. The two dummy variables did not contribute to improved model fit, and the other variable coefficients did not change when including the two variables in the equation. Coworker contact was therefore discarded from the model.

Client contact is relevant from a human service perspective as well as from a burnout perspective, which emphasizes "people-work" as the context where one finds burnout.

Social support has been included in theoretical models of burnout (Leiter, 1993; Winnubst, 1993). It has also been

included as an important factor in a development of the DC model, where it is suggested to moderate the effects of job strain (Johnson, 1986). Management style is also theoretically discussed in a burnout context as inadequate leadership (Burisch, 1993). All these variables should therefore be kept in the model, based on the theoretical argument.

Concerning the work tasks, two of them were not independently related to emotional exhaustion. This was contrary to earlier suggestions that the more extensive engagement in people-changing services should result in more exhaustion (Hasenfeld, 1983; Paine, 1981; Pines & Aronson, 1988). This suggestion was not confirmed here but is anchored both in HSO and burnout theory. All three work tasks should therefore be kept in the equation.

The individual attributes. Age, having small children, work experience and education were not independently related to emotional exhaustion. Of these variables, the only one with some theoretical justification for inclusion in the model was work experience (Edelwich & Brodsky, 1980; Freudenberger, 1975; Paine, 1981; Pines & Aronson, 1988). The other variables have primarily been related to burnout in the demographic norms (Maslach & Jackson, 1986). None of these variables contributed to improved model fit. The other variable coefficients did not change when they were included in the equation. They were therefore discarded from the model.

The last stage in the construction of a fully specified individual model of emotional exhaustion was thus to exclude all irrelevant variables according to the discussion above. The results are stated in table 49.

Table 49. A fully specified individual model of emotional exhaustion - stage 2.

	Regression coefficients				
Demand, control and strain			Job attributes		
Emotional demands	0.3	***	*Much client contact*	0.1	
Quantitative demands	0.1	*	*Little client contact*	0.1	
Role conflict	0.2	***	*Feeling isolated in work*	2.8	***
Skill discretion	0.0		*Management style*	0.0	
Decision authority	0.0		*Psychosocial climate*	-0.1	***
Outcome- client	-0.1	***	*Supervisor support*	-0.1	***
Emotional strain	0.4	**	*Coworker support*	0.0	
Quantitative strain	0.0		*Supervisor*	-4.7	***
Individual attributes			*Non-HS worker*	-2.0	*
Gender - woman	-2.0	***	*Social welfare allowance*	3.8	***
Marital status - married	-1.9	***	*Rehabilitation*	-0.5	
Work experience	0.0		*Disability allowance*	0.1	
Self-esteem	-0.1	***			
Intercept	6.7	Adj. R^2=0.51	F/df 204/4577, Signif. F: 0.0000		

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

The regression coefficients remained practically the same. This is an argument that the discarded variables did not have any indirect effects either. The variance explanation was also stable, decreasing one hundreth. Maslach's suggestion of the importance of the emotional demands still holds. Also emotional strain had an independent relation to emotional exhaustion. These two variables were not the only ones contributing to the experience of emotional exhaustion. Being a supervisor or a non-HS worker was less exhausting than being a HS worker, irrespective of the demands or the job strain. This confirms the suggestion of burnout as an effect of human service work. Further, working with social welfare allowance was especially exhausting, as well as feeling isolated in the job.

A didactic example

It would be understandable if the reader at this point is somewhat dizzy by all coefficients and equations. As a didactic example, that hopefully will aid in the realization of the full power of regression analysis, I have calculated predicted values for two stereotypical persons, chosen for maximum contrast. I will portray one person who is at high risk for emotional exhaustion and one at low risk. They can be described as follows:

Person 1, call her Greta, has a good chance to show low emotional exhaustion. Greta is married, working as a supervisor, but does not handle social welfare allowances. She does not feel isolated in her job, has relatively good self-esteem, and perceives that the psychosocial climate at her work-place is quite good. Greta has relatively low emotional and quantitative demands, emotional strain and role conflict, but she feels that she can do something for the clients and has thus relatively high outcome control.

Person 2, call him Hans, has a clear risk for high emotional exhaustion. He is single and has low self-esteem. Hans works with social welfare allowance and is thus a HS-worker. There is poor psychosocial climate at Hans' work-place, and he feels lonely in his work. He has high emotional and quantitative job demands as well as high emotional strain and role conflict. Hans' outcome control is relatively low.

When the two equations were calculated, taking all variables in the fully specified model into consideration, using ± 1 standard deviation around the mean as a contrast, Greta got a score of 12 on the emotional exhaustion scale, while Hans got a score of 60. The variables in the regression model make a difference for the experience of emotional exhaustion.

I searched for actually existing persons as similar as possible to Hans and Greta. I found noone fulfilling all criteria, but two "Gretas", and one "Hans" could be found. They fulfilled all but four of the the criteria. The "Gretas" had scores on the emotional exhaustion scale of 4 and 6, respectively. The "Hans" had a score of 59. The scores in the empirical material for the "Gretas" were somewhat lower than predicted, while the "Hans" had almost exactly the predicted value. The results show the strength and precision of a multivariate regression model in estimating the effects of the independent variables on the dependent variable.

An interesting finding was that the amount of client contact had no relation to emotional exhaustion. I think it may be the *content* of the client relation, and not the frequency, that is important. An argument for that would be that working with social welfare allowance retains its independent relation to emotional exhaustion. That is the only work task that combines the sustaining-malfunctioning category of human service work with detailed and individual needs assessment. Maybe this particular work content is a risk factor for emotional exhaustion. This remains so far a speculation.

So far, the model specification has been limited to variables on individual level. The DC model is supposedly related not only to the physiological level, but also to the level of work

organization. In the previous chapter, no conclusive relations were found between emotional exhaustion and the physiological stress indicators, throwing doubt on the idea of a stress mechanism behind "burnout". Going down one level yielded little in model specification. We are now ready to climb one step upwards in the level hierarchy. The suggestion of an organizational basis of burnout is often pronounced with as much certainty as that of its relation to stress. Maybe this, too, is a cliché without real ground, more a lip-service than real theory ?

Organization and emotional exhaustion

On the individual level, emotional exhaustion is primarily an effect of work related factors. This view is shared by many burnout researchers:

> " ..felt burnout is related to the occupational conditions of these staff, rather than to the psychological makeup of individual workers." (McCulloch & O'Brien, 1986, p 175).

McCulloch and O'Brien argue that a such a view of burnout implies that intervention strategies should be directed to the level of organization and not to the individual. Their view is in this respect similar to that of Karasek and Theorell who discuss job demand and job control as factors related to the level of organization. Here, we find the main difference between the DC model and the Person-Environment-fit model, where - in the latter model - the individual's perception of the imbalance between demands and resources is at focus (Caplan, 1984). Despite the emphasis on the organization and "objective" work conditions, it is important to remember that demand and control in most studies, also in the present one, are measured by self-

reports, which of course capture individual assessments. This has also been criticized (Muntaner & O'Campo, 1993). In a recent study, where multilevel analysis was used, it was however shown that the strain variables utilized in the DC model draw some part of their variation from the organizational level. It was concluded that the claim of the DC model to rely on organizational factors received support (Söderfeldt, Söderfeldt, Jones, et al., 1997).

In burnout research, a more systematic focus on organization in relation to burnout is rare. Except in the mentioned study from 1986 (McCulloch & O'Brien), I have found more detailed discussions of organization only in four chapters of a rather recent book (Schaufeli & Maslach, 1993). The cliché of organizational determination is abundant in burnout research, but I have only found these five studies worth reviewing.

Organizational approaches to burnout

Of the five studies, two are in fact more oriented towards the individual than the organizational level. One study by Cherniss deals with the concept of self-efficacy, i.e. the sense of mastery over life and the belief that one can exercise control over events that affect one's life. Cherniss (1993), argues that the concept of professional self-efficacy is important for the understanding of burnout. This means the belief that one is able to perform well in professional work roles. People with stronger perceived self-efficacy are suggested to experience less stress in taxing situations. Since burnout is presumed to be a reaction to such situations, it is argued that the link between self-efficacy and burnout is to be found there. This might be interesting since the concept of self-efficacy is similar to Maslach's burnout compo-

nent "personal accomplishment". However, Cherniss does not include this in his definition of burnout, but rather adds this component to his burnout model, claiming an original contribution. The result is that a low sense of personal accomplishment leads to burnout. Maslach's process model is turned upside down. Above in chapter 6, the personal accomplishment component could easily be discarded from the Maslach burnout process. An extension of the arguments there lead to the conclusion that Cherniss' "organizational approach" can be disregarded.

The second more individually oriented burnout organization study focusses on creative behavior in organizations (Noworol, Zarczynski, Fafrowicz, et al, 1993). The authors analyze two types of employees in organizations. "Adaptors" are said to behave conventionally and are neither original nor creative, while "innovators" redefine problems and behave in a creative way. The chain to burnout is said to lie in that "adaptors" are more likely to become burned out than "innovators". This contribution to burnout research is in my opinion more related to the individual level of analysis than to the organizational and thus not relevant here.

There are also more organizationally oriented studies. Cox and collaborators (1993), discuss burnout in relation to what they call organizational healthiness. Organizational healthiness is suggested to consist of three psychosocial systems; the goodness of task environment within the organization, the goodness of problem-solving environment, and the goodness of development environment. The authors argue that organizational healthiness is related to the well-being of the personnel. Further, they argue that this organizational health could be related to burnout and

that it captures the salient characteristics of organizations having impact on processes like burnout.

It is however unclear what the three suggested psychosocial systems mean, and *ipso facto* organizational healthiness. It is therefore difficult to assess their importance in relation to burnout, or emotional exhaustion. Indeed, burnout among the personnel is suggested to depend on different organizational conditions even if it unclear which ones. This general suggestion will be assessed in the empirical analysis below.

Another of the studies analyzes the relationship between organizational structure, social support and burnout (Winnubst, 1993). The author does not restrict burnout to human service workers. He regards extreme fatigue and emotional exhaustion as two different sides of the same coin - burnout. The contribution of this study is summarized by the author as follows;

- The types of stressors with which burnout are linked covary with organizational structure.
- The way social support is provided depends on the organizational climate, which is associated with organizational structure.
- The symptomatology of burnout is identical for blue and white collar employees, but the etiology of burnout differs according to organizational type.

Organizational structure is discussed in terms of "machine bureaucracy", and "professional bureaucracy". The first type is said to be a form where many labor processes are standardized, and the horizontal decentralization is limited. The second type is characterized by both horizontal and vertical decentralization, and only skills are standardized. The author argues that there is a major difference in the manner in which social support occurs

within the two organizational types. The mechanical machine bureaucracy is characterized by standardization and formalization of the work, while the professional organization is characterized by standardization of skills, little formalization, and decentralization. Further, social support systems are closely linked to the organizational structure. Instrumental support, i.e. the willingness of other people to give substantial aid is hypothesized to be associated with machine bureaucracy. The professional bureaucracy is linked to informational (the willingness of other people to state opinions and give information) and emotional support, i.e. "that piece of information which convinces people that others love them and care for them" (Winnubst, 1993, p 155).

In the machine bureaucracy, burnout is said to be caused by emotional estrangement, which is an effect of long-lasting high monotony types of work. However, among professionals, burnout is supposed to be caused by the continuous struggle with other people, domain fights, role problems, lack of social support from supervisors and co-workers, high work load and high responsibility for others.

Winnubst's focus on organizational factors is similar to the study by McCulloch and O'Brien (1986). They seeked to develop and examine the relationship between reported levels of burnout among human service workers and the following aspects of organization:

- Committment, e.g. the degree to which an individual first admits that the department's interests supersede the individuals'
- Control, which includes participation in decision making and hierarchy of authority

- Formalization, encompassing the degree to which work norms are explicit
- Alienation, e.g. the extent to which workers perceive they have autonomy in their work
- Supervisor support

In the study, as in most other burnout studies, the different variables were bivariately correlated, and the conclusions were based on whether significant correlations were found or not. The results suggested that the important factors for the experience of burnout were work autonomy and supervisory support. The other variables were not associated with burnout. There are thus similarities to the results from the bivariate analyses above, where supervisory support and skill discretion/decision authority, capturing autonomy in work, were significantly (although rather weakly) related to emotional exhaustion. McCulloch and O'Brien did not investigate the multivariate relations between burnout and their organizational variables. From the previous chapter, we know that the results in bivariate versus those of multivariate analysis can differ considerably.

In these studies on burnout and organization, there is a mix of formal aspects like formalization, and what I have called job attributes, like social support and control. Those attributes cannot readily be regarded as related to the formal organizational structure, even though they might be organizationally determined. The only formal organizational aspect that was empirically assessed in the studies, formalization, showed bivariately no relation to burnout.

In my opinion, the relation between the level of organization and burnout is not particularly well specified in the mentioned

studies. Unfortunately, discussions of organization and concepts reminiscent of burnout, e.g. alienation, are mostly focussed on industrial work and not very relevant here. A case in point is the so called Braverman debate criticizing taylorism (Mouzelis, 1975). Human service work is generally very far from anything similar to e.g. assembly-line work. The organizations that are the object of this study have very little that can be said to be derived from "scientific management" (although there used to be such elements in the SIO, which now have disappeared to a great extent). The concepts of decentralization and standardization in the study by Winnubst, and the concept of formalization in the study by McCollough and O'Brien are however similar to some of the concepts developed in the Aston program of organization studies, which I regard as one of the main empirical contributions to the study of organization (Pugh, 1988). I will use some of their concepts to specify the impact of formal organization on burnout. Then two levels of analysis, organization and individual, must be connected, necessitating the use of multilevel modelling (Goldstein, 1995).

Formal organizational structure

Four concepts have been shown in the Aston program to be important for differences in organizational functioning (Pugh, Hickson, Hinings, et al., 1968). They are:

- *Formalization,* denoting the extent to which rules, procedures, instructions and communications are written and codified.
- *Specialization,* the division of labor within the organization.
- *Centralization,* the locus in the hierarchy of the authority to make decisions
- *Size,* the number of persons employed in the organization

Here, these concepts were measured by a series of questions answered by the heads of the local units participating in the study. There was a special questionnaire, sent to them during September-October 1993. The number of responding unit heads was 121 (98 %) in SIO and 170 (90 %) in IFC, in sum 291 local units.

Formalization was measured by four questions:
- use of written handbooks or manuals (yes-no)
- presence of written goal formulations (yes-no)
- occurrence of systematic and regular evaluations of the work (yes-no)
- an assessment of change in formal regulation during the last twelve months (increased considerably, increased somewhat, no difference, decreased somewhat and decreased considerably).

The responses were summed into a formalization index and transformed to range between 0-100.

Specialization was measured by an assessment of the unit head of the specialization in work. There were three response alternatives: if the personnel primarily were very specialized, not particularly specialized, or if most of them were able to handle most work tasks. Two dummy variables were constructed, one for "high" and one for "medium" specialization, using the last response category as reference. There was also a question if the work primarily was group oriented or not. The responses were coded as a binary variable.

Centralization was measured by ten items concerning the place in the hierarchy where different organizational decisions were taken, e.g. employment of personnel, decisions about salaries, purchases of necessary equipment of different kinds, and

decisions regarding the content of the work, e.g. suspension of sickpay. The response alternatives were the governing board, the central office, the local unit head, the assistant local unit head, the section head or the individual social worker. The responses were summed into an index and transformed to range between 0-100.

Finally, *size* was measured by the number of employees in the local unit.

In table 50, means and standard deviations for the formalization, centralization and size variables are stated for SIO and IFC.

Table 50. Description of formalization, centralization and size in SIO and IFC.

		Mean	SD
Formalization			
	SIO	61.1	14.6
	IFC	63.8	15.1
Centralization			
	SIO	52.1	25.9
	IFC	37.7	20.6
Size			
	SIO	38.4	33.2
	IFC	21.8	19.9

The three aspects of formal organization varied both within and between the organizations. IFC had a somewhat higher mean value on formalization, but the difference was not significant in independent samples means t-test (p=0.13). The centralization variable differred more between the two organizations and was higher in SIO. The SD:s showed that the degree of centralization varied considerably within the organizations. The same was true for size. In IFC, there are many small local units. The three variables had good discrimination.

There were also differences between the two organizations in specialization, as shown in table 51.

Table 51. Degree of specialization in SIO and IFC.

	Low		Medium		High	
	%	n	%	n	%	n
SIO	11	13	55	67	34	41
IFC	30	50	27	46	43	73

V= 0.31, p=0.000

The personnel in SIO were primarily medium specialized. In IFC, there were more of of both low specialized and high specialized personnel. In IFC, the work was also described as much more individually oriented, compared to SIO. Of the unit heads in IFC, 74 % (n=126) stated that the work was individually oriented compared to 53 % (n=64) of the SIO heads. There was thus also on this point variation between and within the organizations.

In order to assess the impact of the variables related to the formal organizational structure, they were included in the fully specified model of burnout. As pointed out before, this connects levels, which requires a special method of analysis, multilevel analysis. Before the presentation of the results, it is therefore necessary to describe this method.

Multilevel analysis

Multilevel analysis deals with research objects that are hierarchically structured, that is when social processes are thought to operate at several levels (Cooley, Bond, & Mao,

1981). In the simplest case of a two-level structure, individual employees (at level 1) nest within organizational units (at level 2). Since we are interested in modelling organizational effects on individual emotional exhaustion, we need to consider variables at both the individual and the organizational level. Previously, when analyzing multilevel problems, one of two strategies had to be chosen: either aggregate analysis at level 2 or inclusion of dummy variables for each level 2 unit at level 1. Neither strategy is satisfactory. Relations found on aggregate level are difficult to interpret, and cannot be transferred to the lower level - the well-known "ecological fallacy". Using the dummy variable approach, one rapidly gets an unmanageable number of variables when the number of units is reasonably large, and one does not get any information about the overall variation between level 2 units, "the atomistic fallacy" (Duncan, et al., 1993).

The simplest model in multi-level analysis, a so-called "null model" contains no independent variables, and - in the present context - emotional exhaustion of an individual is set to depend only on the mean level of all individuals in all organizations, with a differential for each organization and for each person. These two differentials are treated as random variables and their variability is described in two variances. In the null-models here, individual emotional exhaustion will be captured in three parameters: the overall mean, the between-organization variance, and the between-individual variance. If organizations are not implicated in emotional exhaustion, the ratio of the between-organization variance to the total variance will be close to zero.

The null model only allows the variance to be separated into each level, but the model can be extended to include independent variables for both individuals and organizations. The regression

coefficients then assess the relationships between - in this case - emotional exhaustion and the independent variables across all organizational units. If these variables are important determinants of emotional exhaustion, their inclusion in the model will, not surprisingly, lead to a reduction in the residual variance between individuals. If the variables are organizationally determined, their inclusion will change the residual variance between organizations. These models are called random intercepts models. The intercepts are allowed to vary between organizations, but the slopes of the variables are assumed to be constant.

It can happen that the between-organizational variance will decrease when individual characteristics are introduced in the models. Then, apparent differences between organizations in the null model are really artefacts of differential composition of individual attributes in level two units. It is also possible, though less usual, that the between-organization variance can increase when individual variables are included. This can occur if e.g. organizations with a genuinely high rate of emotional exhaustion have relatively many individuals who due to their individual attributes have low emotional exhaustion.

Multilevel models can be constructed by the MLn software. The program was developed at University of London (Woodhouse, 1995). There are also other programs that can handle multilevel problems, but MLn is in my opinion the most flexible and useful software.

Formal organization and emotional exhaustion

Three models were constructed. First, a null model was tested without inclusion of any independent variables. Second, the variables from the fully specified individual model of emotional exhaustion were included. Third, the variables relating to the formal organizational structure were included. The results are stated in table 52. In the tables, no significances are stated, but standard errors are given, SE. They give the width of the confidence interval of the coefficient if multiplied by 2 (or actually, 1.96 for a 95% confidence interval). To judge the significance of a coefficient, its value can be compared to 2xSE. If the coefficient is greater, then it is significantly different from 0.

Model A, the null model, includes no independent variables and only allows the variance to be separated into levels. There is very little between-organization variance in emotional exhaustion, 0.1 % of the total variance. Already this model contradicts the cliché that burnout, or at least emotional exhaustion, is related to organization. This is even more striking considering the large variations in formal organizational structure described above. In model B, the variables from the individual model in previous chapter were included. This reduced the level 1 variance by more than 50 % in accordance with the adjusted R^2 reported before. The level 2 variance became 0 in this model.

Table 52. Multilevel estimates for models of emotional exhaustion: total material (n= 209, units, 4192 individuals).

	Null model (A)		Random intercept (B)		Random intercept (C)	
	b	SE	b	SE	b	SE
Fixed effects						
Intercept	32.7	0.3	3.4	0.7	4.1	7.5
Formal organizational variables						
No. of employees	-		-		0.0	0.0
Centralization	-		-		0.0	0.0
Formalization	-		-		0.0	0.01
Group oriented work	-		-		0.3	0.4
High specialization	-		-		-0.7	0.7
Medium specialization	-		-		-0.6	0.7
Demand, control, and strain						
Emotional demands	-		0.3	0.05	0.3	0.05
Quantitative demands	-		0.0	0.0	0.0	0.04
Role conflict	-		0.2	0.01	0.2	0.01
Skill discretion	-		0.0	0.1	0.0	0.1
Decision authority	-		0.0	0.1	0.0	0.1
Outcome- client	-		-0.1	0.02	-0.1	0.02
Emotional strain	-		0.4	0.1	0.4	0.1
Quantitative strain	-		0.0	0.1	0.0	0.1
Job attributes						
Much client contact	-		0.0	0.4	-0.2	0.4
Little client contact	-		0.0	0.6	0.1	0.6
Feeling isolated in work	-		2.7	0.5	2.7	0.5
Management style	-		0.0	0.0	0.0	0.02
Psychosocial climate	-		-0.1	0.01	-0.1	0.01
Supervisor support	-		-0.1	0.01	-0.1	0.01
Coworker support	-		0.0	0.0	0.0	0.02
Supervisor	-		-4.9	0.8	-4.9	0.8
Non-HS worker	-		-2.0	1.0	-2.0	1.0
Social welfare allowance	-		3.6	0.6	3.5	0.6
Rehabilitation	-		-0.6	0.5	-0.6	0.5
Disability allowance	-		0.3	0.6	0.3	0.6
Individual attributes	-					
Gender - woman	-		-1.9	0.5	-1.9	0.5
Marital status - married	-		-1.9	0.5	-1.9	0.5
Work experience	-		0.0	0.02	0.0	0.02
Self-esteem	-		-0.1	0.01	-0.1	0.01
Random effects variances						
Level 1 individual variance	299	6.6	143	3.1	143	3.1
Level 2 organization variance	0.38	1.2	0	0	0	0
-2LL	35793		32710		32708	
p improvement			0.00		0.16	

The same result was obtained in model C, where the variables supposed to capture formal organizational factors were included. None of these variables had any relation to emotional exhaustion. This is also shown by the non-significant improvement of -2LL, a measure of the goodness of fit of the models.

Model C was run also in an OLS regression model, using SPSS. Since there was no level 2 variance, this could be done. Identical results were obtained. Hence, results were stable independent of estimation technique and soft-ware program.

In sum, the analysis in this chapter cannot show any relation between emotional exhaustion and organization. This result confirms the finding by McCollough and O'Brien (1986), that formalization and burnout were uncorrelated. However, it is also clear that emotional exhaustion is not particularly related to individual attributes. The most important factors for the experience of emotional exhaustion were emotional strain and emotional demands.

The results here contradict a central tenet of almost all burnout research. This is a reason to scrutinize the results in more detail. A limitation with regression analysis is that it only assesses the direct effects of the independent variables on the dependent variable. The eventual indirect effects are not considered. This means that there could be indirect effects from the organizational structure variables, affecting emotional exhaustion. The DC model assumes that demand and control are determined by the work organization. As pointed out above, it has also been empirically confirmed that the combination of demand and control - strain- draws parts of its variance from the organizational level. This was shown by including strain as

independent variable in a random intercepts model, whereby the level 2 variance from the null model disappeared (Söderfeldt, et al., 1997).

Since emotional strain has shown to be the single most important determinant of emotional exhaustion, there might be an indirect effect from organization via emotional strain. To test this hypothesis, emotional strain was included as a dependent variable in a multilevel null model. In the null model, the level 1 variance was 91.8 (SE 1.9), and the level 2 variance was 4.4 (SE 1.1). The organizational level thus gave 4.6 % of the total variance in emotional strain. This is an argument for a weak indirect effect on emotional exhaustion via emotional strain.

Conclusions about emotional exhaustion

Maslach's proposition about the importance of emotional demands for the experience of emotional exhaustion has been confirmed here. Using the modified DC model has given additional explanatory power to this proposition. The combination of high emotional demands with low control, meaning skill discretion and decision authority, showed to be the most important factor behind feelings of emotional exhaustion.

However, the DC model in its original formulation did not hold for analysis of emotional exhaustion. Quantitative strain had no independent relation at all. For human services, I conclude that the demand concept in the DC model should be modified. Maslach's emphasis on emotional demands is a contribution in this context. A corollary of this finding is that application of theoretical models should be done considering the context in

which they are constructed. The argument in the burnout literature for connection to theories in occupational stress research cannot be met by mechanical application of any model.

There were also other factors important for emotional exhaustion. Role conflicts, work position, especially being a supervisor, supervisory support and feelings of loneliness in work were all independently related to exhaustion. A few individual attributes, marital status and self-esteem, had also some importance for the experience of exhaustion.

A further conclusion is more methodologically oriented. Many of the suggested correlations to emotional exhaustion were found also here, in bivariate analysis. In the multivariate models, many of them disappeared. Bivariate correlations in the burnout literature should be interpreted with caution. In the literature, a frequent combination is bivariate analysis and a wholly a-theoretical approach. The value of such research is questionable.

In the burnout literature, there are two standard clichés that emotional exhaustion is related to stress and to organization. No support was found here for any of them. The results concerning the stress indicators were inconclusive. Insofar as the indicators indicate stress, emotional exhaustion cannot be regarded as stressrelated. Concerning organization, practically no organizational variance could be found. Weak indirect effects via emotional strain cannot be excluded. In social science and social psychology, connections to higher and lower levels are often taken as self-evident. Such ideas should be questioned.

This will conclude the section about emotional exhaustion. Before any final conclusions about "burnout" can be done, the depersonalization component has to be investigated.

11. DEPERSONALIZATION

As pointed out before, emotional exhaustion is considered to be the core dimension of burnout by most burnout researchers. Many efforts have been directed towards an understanding of that component. This is not true for depersonalization. There are few burnout studies that put attention to this dimension. Searches in Psychological and Sociological Abstracts yielded only three articles on burnout with the term depersonalization in the title (Garden, 1987; Ogus, Greenglass, & Burke, 1990; Zabel, Dettmer, & Zabel, 1984). Of the three, only one discusses the concept. The other two are only empirical applications of the MBI in different groups.

Maslach described depersonalization as negative and cynical attitudes and feelings about the clients, similar to Freudenberger's characterization of burnout signs like cynicism and emotional distance to clients. In my opinion, it is important to note that depersonalization has explicit reference to interaction with clients, while emotional exhaustion refers to feelings in the individual human service worker[1]. Maslach's original interest in burnout began in the concepts "detached concern", meaning the ideal of blending compassion and emotional distance, and "dehumanization in self-defense", meaning protection from overwhelming emotional feelings by

[1] As pointed out by Leiter (1988), it is important to note that the meaning of depersonalization in a burnout context differs from the psychiatric condition "depersonalization disorder". According to DSM-IV, this disorder is characterized by four disctinct diagnostic criteria. It primarily concerns feelings of detachment from one's self, and a loss of personal identity.

responding to others as to objects. These two concepts were the origins of the depersonalization aspect of Maslach's burnout conception. Maybe an example of the *Zeitgeist*, these ideas were brought to the fore at a fashion period of Goffman's institutional criticism (Goffman, 1961/1987). No explicit references can be found to such ideas, however.

Dehumanization as well as depersonalization imply that there are situations leading to inhumane treatment of others (Zimbardo, 1970). Zimbardo describes different such situations. A particular situation where dehumanization is more probable to occur is whenever a continuous flow of people has to be managed efficiently. Another situation occurs when an individual is confronted with clients whose plight arouses extreme empathy, e.g. a mental patient or a welfare recipient. In such situations, the human service worker must defend her/himself and does so through distance and dehumanization. This is called "the institutional sergeant" syndrome by Zimbardo and is described like this:

> "After repeated exposure, with improvement slow or not apparent, the individual feels helpless to effect any change and views such people as emotional burdens, to be serviced without personal involvement" (Zimbardo, 1970, p 298).

In the conceptual system here, the "institutional sergeant" syndrome bears resemblance to outcome control related to the client. Still another situation is the one where "special training in dehumanization is required". This occurs when an individual must perform roles violating social taboos. Zimbardo takes the example of a surgeon, who must violate the integrity of the human body. In order to act effectively, the surgeon must learn

to perceive the person under the scalpel not as a person, but as a body.

The concept of dehumanization inspired Maslach, who was a co-worker to Zimbardo. One of her earliest works on burnout focussed on depersonalization, not on emotional exhaustion (Maslach, 1976). There, she described burned out workers as distanced in a way that was bad both for themselves and for the clients. Burned out workers were portrayed as cold, unsympathetic, callous, and detached.

> "They lose all concern, all emotional feeling, for the persons they work with and come to treat them in detached or even dehumanized ways" (Maslach, 1976, p 16).

Further, she stated that one major sign of burnout among social workers is

> "..the transformation of a person with original thought and creativity on the job into a mechanical, petty bureaucrat" (Maslach, 1976, p 18).

The ideas of depersonalization or dehumanization are however by no means unique for the burnout discourse. Also Miss Jones, the nurse whom we met in the introduction as an early example of a burned out person, was distanced from her patients and treated them bad (Schwartz & Will, 1953). In a review by Peloquin (1993), several patients described experiences of depersonalizing behaviors by health care practitioners. In the earliest example in the review, from the 1950's, a patient who suffered from a stroke argued that the helpers established a distance and failed to recognize that illness was charged with personal meaning for the patient (Hodgins, 1964) cited in (Peloquin, 1993). In 1971, Wasserman described professional

social workers as objectifying their clients and regarding them as objects rather than people (Wasserman, 1971). In the cited studies, noone however discussed such phenomena as burnout.

Presently, the first task is a closer analysis of the meaning of depersonalization. It is, in my opinion, important in a human service context. As pointed out many times, the core of human service work is the human relation. Depersonalization is more explicitly focussed on the client relation than emotional exhaustion. It relates to one of Hasenfeld's questions about the moral implications of the client relation: "Should clients be treated as objects or subjects?" (Hasenfeld, 1992a, p 6). The cynicism and negativism described by Maslach, Freudenberger and others imply objectification of the client (Daley, 1979; Freudenberger, 1974; Maslach, 1976). It is assumed to be a negative feature of the relation, and is therefore different from the "impersonalization of organizational action" (Clegg, 1990, p 40) in Weber's "good bureaucracy". The perfect Weberian bureaucrat is neutral, strictly rational, and clearly depersonalized by only regarding legal, not human, subjects. There is, however, no room for his personal feelings or values. The depersonalized social worker is different and certainly has values and feelings, although they are *negative* in relation to the client.

The aim here is first to analyze the meaning of the concept and second to answer two empirical questions in analogy to the two leading questions of this thesis:

- are human service workers depersonalized ?
- which are the causes of depersonalization ?

In the causal analysis, the relation between emotional exhaustion and depersonalization naturally becomes a prime object of

analysis. The fact that the burnout literature largely has neglected the depersonalization aspect makes the analysis more difficult as compared to the one of emotional exhaustion. We can however get some help in a discussion of burnout as alienation.

Burnout as alienation ?

Already in 1981, i.e. early in the burnout research, Karger drew an analogy between burnout and industrial alienation (Karger, 1981). His main criticism of burnout research focussed on its lacking connection to a societal level. Referring to Marx' concept of alienation, Karger meant that burnout is:

> "..the objectification of the social worker's means of production; his skills of human interaction become a market commodity. The transformation of those skills into merely a means of production results in the distancing of a social worker from the client. This in turn results in the reification of the client relationship into an inanimate commodity. It is this reification, which alienates the worker from the authentic expression of his skills, that fits within the reported symptoms of burnout." (Karger, 1981, p 275).

This process of alienation and its similarities to industrial alienation were described by Karger so that the social worker objectifies the production process, because she/he is being objectified by the same process. In human services, this objectification takes place between two persons, where both parties, the worker as well as the client, are turned into objects:

> "It is within this process of the worker becoming an object of production for the bureaucracy that the basic client-

worker experience is objectified and the interactive process becomes a reified commodity." (Karger, 1981, p 276).

Karger concludes that burnout among human service workers appears to be more connected to traditional notions of alienation than to the "..emergence of a new disorder" (p 276). Human service organizations are microcosms of a social reality, where human interaction is subordinated to the reified world of production. Therefore, Karger's suggestion to redefine burnout as alienation is not a semantic question. It concerns the way the problem is perceived and how research on the topic should be designed. Burnout conceptualized as alienation requires research directed towards an understanding of the organizational, social, political, and economical reality in which it exists. Karger does not believe that this form of alienation can be totally ameliorated, but that reflection and research at least can begin to stem the tide.

In my opinion, Karger's conceptualization of burnout as alienation refers to depersonalization. Unfortunately, like many others, he does not question the burnout concept, but in contrast to many others, he locates the causes of burnout to the societal level. There are similarities to Walker, presented in chapter 2, in this respect, but Karger does not discuss burnout in terms of a social construction. A conclusion from his analysis is that the premises of modern working life imply alienation, and that alienation in human service work reveals itself as depersonalization. Human relations become objectified, and encounters between two equal persons are not possible. The causes behind this process are social and organizational. We have seen that emotional exhaustion only indirectly may have some organizational determination, via emotional strain. A hypothesis

from Karger will be that depersonalization has a more direct relation to organization *per se*, more closely tied to organization the more the organization is modelled on industry and market mechanisms.

Another analysis of burnout, by Asplund, bears resemblance to Karger's criticism. Asplund does not use the concept of alienation, but instead his own concept "asocial responslessness" (Asplund, 1987). His discussion about burnout is part of a book where he generally analyses interactions between human beings in modern society. Burnout constitutes only one aspect of the book, but Asplund puts burnout in a context of social interactions. He means that there is no doubt that burnout is real, acute, and widespread in society. He also considers it to be a relatively new phenomenon, non-existing in pre-industrial society. The causes of burnout are said to lie in the specific kinds of social interactions which are characteristic of modern society. According to Asplund, burnout means that the burnt out person does not feel anything for his fellow men. He is totally indifferent and all feelings are gone. In an interaction process, this means that the two involved persons do not act as real and equal human beings. Instead, they act according to differently assigned roles. For example, in a human service context, a social worker interacts with the client in the role of being a social worker, while the client acts in the role of being a client. Real encounters and equal exchanges between two persons become impossible.

In my opinion, Asplund's description of burnout seems to refer more to the Weberian bureaucrat than to the depersonalized social worker, who indeed has values and feelings in relation to the client, but negative ones. The important implication of

burnout is, according to Asplund, that the burnt out person has no feelings towards others. On this point, Asplund differs from all others in burnout research.

There are great differences between Karger and Asplund, but also some similarities. Both locate burnout in a sociological and historical context. They place the phenomenon on the societal level and consequently do not discuss possible psychological or biological aspects of burnout. In this respect, their analyses are similar to Walker and a few others (Arches, 1985; Barr, 1984). One difference between Asplund and Karger is that Asplund conceives burnout to be a general experience, related to all social interaction between humans, while Karger discusses burnout as a consequence of the premises of human service work. Asplund is also more deterministic and pessimistic, since he implies that "burned out" social interactions are inherent in modern society. He does not believe that there are any solutions to the problem.

One remark should be made here concerning Asplund. Initially, in referring to a popular presentation by Maslach of burnout theory, he criticizes the idea of emotional exhaustion with the argument that feelings are no "things" that can be drained out. Humans are no containers that eventually become empty. However, later on, he verbally equals burnout with emotional exhaustion, but describes it similar to depersonalization, in his interpretation of lack of (not of negative !) feelings.

Recalling the discussion about practice concepts above, another common trait of Karger's and Asplund's analyses becomes obvious: they both search the essence of burnout. They tell the reader what burnout "really is", even if their suggestions for essences are different from the mainstream of burnout research.

In Asplund's case, this is obvious when he replaces emotional exhaustion with his version of depersonalization. Maybe the suggestion of societal and organizational determination of burnout is another example of the self-evident clichés, stated by many and tested by noone.

All researchers do not agree with the idea of burnout as alienation. Pines and Hallsten suggest many differences between burnout and alienation. Pines (1993) means that the initial expectation to derive existential significance from work differentiates it from job alienation. This expectation is according to Pines a prerequisite for burnout. She states that; "While people who are burned out often feel alienated, they did not feel that way initially" (p 38). Alienation is, according to Pines, a general experience that can occur in people whose only interest lies in the paycheck. Burnout occurs among people who initially cared most about their clients or patients, and least about their paychecks. Assembly line workers can experience alienation while human service workers can experience burnout. Hallsten (1988) states that both burnout and alienation are characterized by powerlessness and meaninglessness, but the meaninglessness in burnout is related to lack of personal accomplishment, while it is related to lack of discretion in alienation. He also states that the initial engagement is typical in the development of burnout, but not in alienation. Both Pines and Hallsten have individually oriented conceptions of burnout compared to Karger's and Asplund's sociological approaches. Further, both Pines and Hallsten define burnout as exhaustion. It is thus unclear if they refer to depersonalization when they compare burnout and alienation.

Controversy is possible regarding emotional exhaustion, whether it is a social psychological or an individual psychological phenomenon. Here, it was shown that job characteristics were more important for emotional exhaustion than any individual attribute. In my opinion, this result gives arguments for a social psychological view on emotional exhaustion. This situation is different for depersonalization. That concept explicitly refers to human relations and is therefore inherently a social psychological concept. There ought to be no controversy of that. The social character of it does however not imply some kind of determinism, as Asplund can be interpreted to mean. If so, one would expect almost all human service workers to act or behave as depersonalized or alienated people. By proceeding to the first question of the chapter, we can investigate if this is the case.

Depersonalized social workers ?

In chapter 5, the items of the MBI were briefly presented. Five of the 22 items constituted the depersonalization factor. Here, these items will be studied closer. First, the self-reported prevalence of depersonalization will be reported among human service workers, in this case personnel in IFC and SIO.

The first item aimed at measuring depersonalization was:
• *I feel I treat some recipients as if they were impersonal objects*
This item directly refers to the dehumanization aspect, as well as to the objectified client-worker relation described by Karger. It explicitly addresses what the concept is about, i.e. treating the clients as objects. It could be interpreted in terms of the rational Weberian bureaucrat, but this is not plausible in a Swedish cultural context. In my opinion, the item is probably interpreted by the HS workers as referring to a negative behavior.

Responses were given on a seven point scale ranging as follows; 0 = never, 1= a few times a year or less, 2= once a month or less, 3 = a few times a month, 4= once a week, 5= a few times a week, and 6= every day. The frequency distribution is stated in figure 12.

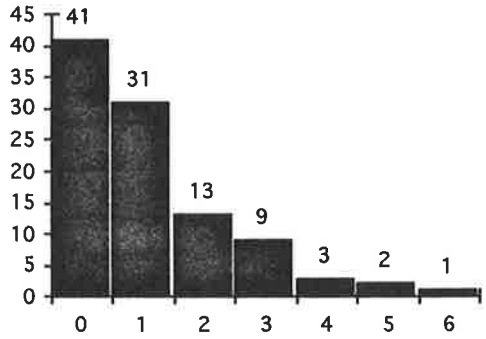

Figure 12. Feelings of impersonal treatment of clients. Percent (n=5590).

Almost half of the respondents reported that they never felt like treating the clients as impersonal objects. Only five percent responded "once a week" or more often. This aspect of depersonalization is thus rare, at least in self-reports. The skewed distribution indicates that the item is interpreted in a negative way. The second item was:

• *I've become more callous toward people since I took this job*

This item refers to callousness towards other human beings. It makes the negative value-laden attitude explicit, especially in my opinion in a Swedish context, where it is very negative to concede that you are callous towards others, particularly when you work in the human services. The frequency distribution can thus be expected to be very skewed. It is shown in figure 13.

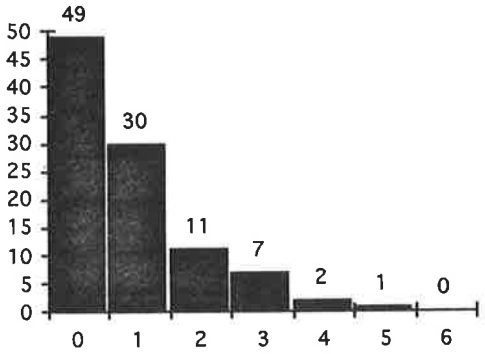

Figure 13. Callousness toward people. Percent (n=5613).

Similar to the previous item, almost half answered "never". Only three percent answered "once a week" or more often. Further, the respondents did not worry that they would become emotionally hard by the job, as indicated by the third item:

• *I worry that this job is hardening me emotionally*

Also this item implicitly implies less care for the clients. The frequency distribution in percentages is shown in figure 14.

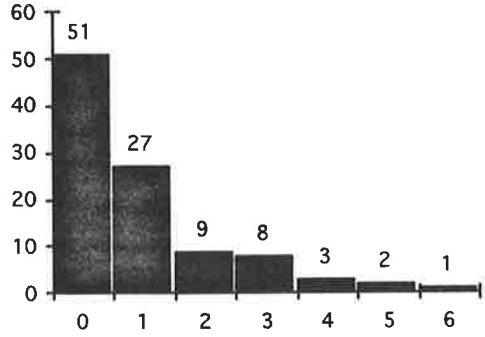

Figure 14. Worry about emotional hardening. Percent (n=5615).

The same pattern was obtained here, and only five percent indicated "once a week" or more often. The fourth item concerned care about clients and was:

• *I don´t really care about what happens to some recipients*

This item is in line with the other ones explicitly referring to a "bad" attitude towards the clients. The frequency distribution was also here skewed, and is stated in figure 15.

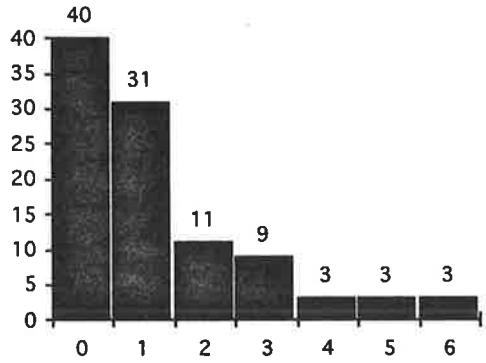

Figure 15. Do not care about some recipients. Percent (n=5471).

The responses indicated that the personnel perceived themselves to care about their recipients. Nine percent answered that they felt themselves not to care "once a week" or more often. The fifth and last item was:

• *I feel recipients blame me for some of their problems*

A difference between this item and the others is that it concerns the behavior of the clients and not of the social worker. Indirectly, it can be negatively interpreted, taken as criticism of the clients. The frequency distribution in percentages is shown in figure 16.

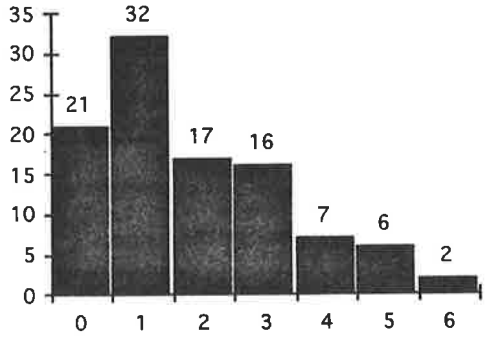

Figure 16. Feelings of blaming by the recipients. Percent (n=5536).

Here, we find a somewhat different distribution. About a fifth of the respondents indicated "never", as compared to between 40-50 % on the other items. Still, more than half of the respondents answered "a few times a year or less" or "never".

Despite the somewhat different distribution on the fifth item, the pattern of responses was very clear. The distributions were all skewed, and about half of the respondents answered in general "never". The responses are thus consistent between the items. Recalling the factor analysis of the MBI in chapter five, we know that the five items loaded on one of the three factors. Further, Cronbach's α was high, 0.84 in IFC and 0.77 in SIO. The principal components analysis of only the five items yielded a one-factor solution explaining 48% of the variance. There was a clear "knee" in the scree-plot between the first and second factor. It seems as if the five items can be considered to sufficiently capture depersonalization in the sense of callousness,

objectification, and impersonal treatment of others, i.e. as a negative attitude towards clients.

A further observation from the frequency distributions can be made. Workers in IFC and SIO say in their self-reports that they do not treat their clients in a depersonalized way. In strongly value-laden matters like these, self-reports can be questioned. The social workers are probably reluctant to admit that they treat their clients in a depersonalized way, even if they in fact might do that. Scores on depersonalization were accordingly low as shown in table 9 above. This result is similar to other studied samples, e.g. Dutch nurses (Schaufeli & Janczur, 1994), British nurses (Firth, et al., 1985), Italian nurses (Pedrabissi & Santinello, 1988), and from different American samples of social services, medicine, and mental health (Maslach & Jackson, 1986).

Returning to the conceptual discussion, depersonalization as operationalized by the MBI is empirically not very prevalent, in contrast to the interpretation of Asplund that it is one of the most widespread problems in modern society. Recalling the principal components analysis, the items are clearly unidimensional. Considering this, and the interpretations of the items, I think that they do not only measure an impersonal attitude towards clients. In other words, the measure cannot be said to be an indicator of the value-free Weberian bureaucrat. The existence of such creatures may certainly be a main problem in modern society, but it is irrelevant for burnout as depersonalization.

The value-laden nature of the items in the DP scale create, however, another problem. A callous and negative attitude towards clients is not in accordance with the moral stance of

human services, according to HSO theory. There is probably strong bias in the scores. However, using a gradient meaning of relation, this problem can be handled. In regression analysis, for example, the issue is not the level of a variable, but what happens if it changes. The requirement is then that there is sufficient variation in the variable to investigate this. That is the case here, even more so when the single items are summed into an index. In addition to improvement of the approximation of an interval scale, improving variation is another rationale behind using indices in social science.

A result here is, in my opinion, that the DP subscale could be used in a gradient oriented analysis of the causes of depersonalization. Going into the causal question, the process model of burnout returns as an interesting problem. It is widely contended that emotional exhaustion causes depersonalization. The results in chapter six were, however, that emotional exhaustion explained less than one fourth of the variance in depersonalization. That model was hardly fully specified, and it is now time to attack the causal problem using also other variables than the EE subscale.

What causes depersonalization ?

Which organizational factors, and which job and individual attributes are related to depersonalization ? As pointed out before, there has been little interest in such matters in the burnout research. Most findings in the literature on different correlates to depersonalization are closely linked to findings on emotional exhaustion. Correlates that have been found are e.g. education (Hagen, 1989), value conflict (Himle, et al., 1986a),

role conflict and ambiguity (Schwab & Iwanicki, 1982). In the Landsbergis study (Landsbergis, 1988), the original DC model variables decision latitude, workload demands, and social support were positively correlated with depersonalization in bivariate analysis. The common association of depersonalization to the same variables as emotional exhaustion is probably an effect of the widespread use of the MBI, and the view of burnout as consisting of its components. It is therefore difficult to build a theoretical model for depersonalization in the same way as was done for emotional exhaustion. The models will coincide to a large extent, which would be a consequence not of some independent theory of depersonalization, but rather of the syndrome idea.

As a starting point for the empirical analysis of depersonalization, I will use a similar approach as in most other studies, i.e. use the first individual model of emotional exhaustion (table 48), but substituting emotional exhaustion for depersonalization. The aim of this model is to compare the patterns that emerge, beginning the investigation if there are similar mechanisms behind the two, as problemized by Leiter. In table 53, two regression models are stated. In the first model, emotional exhaustion is used as dependent variable. This model is thus identical to the one presented in table 48, stated again for convenience. In the second model, emotional exhaustion is substituted for depersonalization as dependent variable. There were many differences between the two models. Concerning the demand, control and strain variables, two patterns emerged for emotional exhaustion and depersonalization.

Table 53. Regression models of emotional exhaustion and depersonalization.

	Regression coefficients Emotional exhaustion		Depersona -lization	
Demand, control and strain				
Emotional demands	0.3	***	0.1	(*)
Quantitative demands	0.1	(*)	0.0	
Role conflict	0.2	***	0.2	***
Role ambiguity	0.0		0.0	
Skill discretion	0.0		-0.1	*
Decision authority	0.0		0.0	
Administrative control	0.0		0.0	
Outcome- client	-0.1	***	-0.2	***
Outcome- routine	0.0		0.1	***
Emotional strain	0.5	**	0.1	
Quantitative strain	0.0		-0.1	
Job attributes				
Much client contact	0.1		-0.2	
Little client contact	0.1		-2.6	***
Much coworker contact	-0.2		0.6	
Little coworker contact	-0.1		-0.7	
Feeling isolated in work	2.7	***	1.1	(*)
Management style	0.0		0.0	
Psychosocial climate	-0.1	***	0.0	
Supervisor support	0.0		0.0	
Coworker support	0.0		0.0	*
Supervisor	-4.8	***	-1.8	*
Non-HS worker	-2.5	**	-1.6	
Social welfare allowance	3.6	***	8.4	***
Rehabilitation	-0.3		-2.2	***
Disability allowance	0.1		0.2	
Individual attributes				
Gender - woman	-2.0	***	-3.5	***
Age < 35	-0.1		2.6	***
Age > 50	-0.8		-1.4	*
Marital status - married	-2.0	***	-0.3	
Having small children	-0.1		-0.1	
Work experience	0.0		0.0	
Low education	0.1		-1.7	**
High education	0.9		1.2	(*)
Self-esteem	-0.1	***	-0.1	***
Intercept	7.8		25.6	
Adj. R^2	0.52		0.27	
F/df	133/4203		46/4186	
Signif. F	0.0000		0.0000	

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

Emotional demands and emotional strain were not related to depersonalization. Only the two outcome control variables, role conflict and skill discretion were independently related to depersonalization. Job variety, opportunities to learn and seeing results of the job influenced depersonalization. This result is reminiscent of another study (Jayaratne & Chess, 1983), where job challenge was the only significant predictor of depersonalization in a multiple regression model.

There were also differences concerning the other job attributes. Little client contact was related to decrease in depersonalization, but not to emotional exhaustion. This result is not surprising since depersonalization, as pointed out before, conceptually is more tied to the client relation. Having much client contact did however not increase depersonalization, compared to having medium contact.

A striking difference was that working with social welfare allowance was more than twice as strongly related to depersonalization than to emotional exhaustion. The opposite result was obtained for rehabilitation work, which was negatively related to depersonalization, and lacked relation to emotional exhaustion. It seems as if work task and amount of client contact, i.e. factors related to the content of the work, are important factors for the experience of depersonalization. Work position was however less important for depersonalization than for emotional exhaustion.

The individual attributes also displayed a different pattern for depersonalization than for emotional exhaustion. The covariation with gender was stronger for depersonalization; women were less depersonalized. This result confirms earlier findings (Maslach & Jackson, 1985). Age showed a gradient relation to

depersonalization, where young persons were more depersonalized and old less, compared to middle-aged persons, also similar to the results by Maslach & Jackson (1986). Persons with low education, i.e. junior high school or less, reported less depersonalization than more highly educated persons. Education was not independently related to emotional exhaustion.

Before proceeding, a short comment on the models is needed. In the model where depersonalization was used as dependent variable, R^2 was 0.27, compared to 0.52 for emotional exhaustion. The residual plots for the depersonalization-model also indicated heteroskedasticity, which is an indicator of omitted variables. This is probably due to the weak relations between depersonalization and the demand and strain variables. The results from the comparisons between the two models raise questions for further investigation. A first provisional hypothesis seems however reasonable: there are different mechanisms behind emotional exhaustion and depersonalization. This would support Leiter's development of the process model (Leiter, 1993), one of the few instances of problemizing depersonalization. He retains the process model, but considers depersonalization to be an effect not only of emotional exhaustion.

Leiter suggests that supervisor and coworker support, as well as client cooperation, will affect depersonalization. Client cooperation was not specifically operationalized in this study. Outcome control related to the client could be regarded as an indicator of this, and it was indeed independently related to depersonalization. Leiter's suggestion about the role of supervisory support was not confirmed here. In addition to these suggestions, it was found here that work with social welfare allowance and rehabilitation affected depersonalization, although

in different directions. This could indicate that people-sustaining work implies higher risk for depersonalization than people-changing work. Before a more conclusive discussion about modelling depersonalization, some attention should be devoted to the role of the work tasks for depersonalization.

Work tasks and depersonalization

In the previous analyses of emotional exhaustion and depersonalization, only three of all the work tasks in IFC and SIO were included. They were judged to be especially interesting for emotional exhaustion. However, recalling the description of the personnel in chapter 4, we know that the majority of the respondents worked with more than one work task. It is thus possible for a social welfare worker also to work with people-changing work tasks, and for a rehabilitation worker to work with people-sustaining work tasks. To investigate the effect of such combinations, a regression model of depersonalization was analyzed, identical to the model in table 53, but where the work task categories included those working *only* with that particular work task. The results are shown in table 54. There, only the coefficients for the pure work tasks are stated, although all independent variables from previous analysis were included.

Table 54. Pure work tasks in the regression model of depersonalization.

	Regression coefficients	
Social welfare allowance (only)	9.3	***
Rehabilitation (only)	-2.8	**
Disability allowance (only)	-1.4	
Intercept	25.8	
Adj. R^2	0.26	
F/df 43/4186	Signif F: 0.0000	

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

There were no noteworthy changes, except that the regression coefficient for high education changed from 0.9 to 2.2 (p=0.0004), indicating a positive relation to depersonalization. As in the previous model, there was no independent relation between disability allowance work and depersonalization. The coefficient for social welfare allowance work increased to 9.3 from 8.4, and for rehabilitation work it changed to -2.8 from -2.2. The effect of studying the pure work tasks was thus a somewhat more explicit pattern of associations in the expected directions. The stability of the model in the reanalysis increases the credibility of the results.

Above, it was suggested that social welfare allowance work distinguished itself by being the only work task combining the sustaining-malfunctioning category of human service work with detailed and individual needs assessment. That work task certainly distinguished itself as a risk factor for emotional exhaustion. It is obvious here that the special character of this work task was even more important for depersonalization. People-sustaining work in itself does not covary with depersonalization. People-changing work seems however to be related to somewhat *lower* degree of depersonalization, even if such work is directed towards malfunctioning clients. Nor were malfunctioning clients in themselves a risk factor for depersonalization.

Above, a provisional hypothesis was formulated: there are different mechanisms behind emotional exhaustion and depersonalization. The results concering the work tasks add support for this hypothesis. However, the role of emotional exhaustion has so far not been considered in the model of depersonalization. According to the literature, it should be the most important

factor for the development of depersonalization. It is thus one of the few factors that can be theoretically justified to include as independent variable in the regression model of depersonalization.

The relation emotional exhaustion - depersonalization

Unfortunately, the theoretical relation between depersonalization and emotional exhaustion is not as clear as often suggested in the burnout literature. The very early burnout research focussed on depersonalization, and there was then no discussion about emotional exhaustion as a cause. On the contrary, Maslach (1976), stated that burnout (meant as depersonalization) ".. often leads to a deterioration of physical well-being. The professional becomes exhausted.." (p 19). Others can be interpreted as having a similar view. Daley defined burnout in terms of depersonalization and meant that it was manifested in workers becoming emotionally detached from their clients and treating them in a dehumanized way, giving way to exhaustion (Daley, 1979). Kahn defined burnout as "..inappropriate attitudes towards clients and towards self.." (Kahn, 1978, p 61). He associated it with emotional symptoms like exhaustion, but did not explicitly suggest a process from depersonalization to emotional exhaustion. The implicit meaning in the early contributions to burnout research was that a depersonalized behavior leads to exhaustion, which proposes the opposite process, compared to Maslach's later process model.

A causal relation between depersonalization and emotional exhaustion seems to be as theoretically plausible as the currently most frequent suggestion. For me, treatment of people in a

dehumanized way could certainly lead to emotional exhaustion as well as the other way around. In the burnout research, the directionality of the relations between emotional exhaustion and depersonalization has to my knowledge not been empirically analyzed. To be sure, Golembiewski's phase model starts with depersonalization which is supposed to lead to emotional exhaustion, via reduced personal accomplishment. But, recalling the phases in this "hip-hop" model, there was no suggestion of a consistent pattern between depersonalization and emotional exhaustion (Golembiewski, et al., 1983). The early discussions about burnout give arguments for putting depersonalization as an independent variable in a model of emotional exhaustion, as well as the other way around. Already here, it can however be pointed out that the settling of this issue requires longitudinal data, limiting the possibilities here of determining the direction of the causality.

In table 55, the two models from table 53 are restated with emotional exhaustion added as independent variable in the model of depersonalization and vice versa. For each model, there are two columns. In the first, the regression coefficients are stated, and in the second, changes due to the inclusion of the new independent variable are stated. In the table, only the variables that changed in any of the models are stated.

Table 55. Regression models of emotional exhaustion and depersonalization, including depersonalization and emotional exhaustion as dependent variables.

	Regression coefficients			
	Depersona-lization	Change to	**Emotional exhaustion**	Change to
Demand, control and strain				
Emotional demands	0.1	0.0		
Quantitative demands				
Role conflict			0.2	0.1
Outcome- client			-0.1	0.0
Emotional strain	0.1	0.0	0.5	0.4
Quantitative strain	-0.1	-0.2	0.0	0.1
Job attributes				
Little client contact	-2.6	-2.4	0.1	0.8
Much coworker contact	0.6	0.8	-0.2	-0.5
Little coworker contact	-0.7	-0.6	-0.1	0.0
Feeling isolated in work	1.1	0.1	2.7	2.4
Supervisor support			0.0	-0.1
Supervisor	-1.8	-0.1	-4.8	-4.2
Non-HS worker	-1.6	-0.8	-2.5	-1.9
Social welfare allowance	8.4	7.1	3.6	1.2
Rehabilitation	-2.2	-1.9	-0.3	0.2
Disability allowance	0.2	0.1		
Individual attributes				
Gender - woman	-3.5	-2.8	-2.0	-0.9
Age < 35	2.6	2.7	-0.1	-1.0
Age > 50	-1.4	-1.0	-0.8	-0.4
Marital status - married	-0.3	0.4	-2.0	-1.8
Having small children			-0.1	0.0
Low education			0.1	0.6
High education	1.2	0.9	0.9	0.5
Emotional exhaustion		0.4		
Depersonalization				0.3
Intercept	25.6	25.4	7.8	-.70
Adj. R^2	0.27	0.35	0.52	0.57

The models remained significant. In the model of depersonalization, there was a strong independent covariation with emotional exhaustion. One percent increase in exhaustion increased depersonalization by 0.4 %. The same result, although somewhat less covariation, 0.3 %, was obtained in the model of emotional exhaustion. Emotional exhaustion is as important for

the development of depersonalization, as depersonalization is for the development of emotional exhaustion. In multivariate modelling, there is no symmetry between dependent and independent variables. From the result, two conclusions are possible: Either are the two MBI components reciprocally related, or does each variable capture different segments of variation related to different mechanisms. If the nowadays valid Maslach process model would hold, the model with depersonalization as independent variable for emotional exhaustion should show a zero coefficient for depersonalization. It did not.

To find indications for possible different mechanisms behind the two "burnout process" components it is however necessary to look at the effect on other variables, when introducing one of them in the model of the other. This gives clues for indirect effects, following the principles formulated by Davies (1985). If emotional exhaustion is the mediating variable between the modified DC model variables (emotional demands and emotional strain) and depersonalization, there would be a tangible association between them in the model without emotional exhaustion that would disappear when including it. This was not the case. All the DC model variable coefficients remained practically unchanged.

As a whole, there were very moderate changes in the depersonalization model when introducing emotional exhaustion. This makes it less probable that emotional exhaustion would capture any indirect effects, supporting the hypothesis of different mechanisms. If anything, there were greater changes introducing depersonalization in the model of emotional

exhaustion, at least concerning the social welfare allowance work task.

These results rather support the original reversed "burnout process" model, that depersonalization leads to emotional exhaustion, at least for people working with social welfare allowance. Recalling Studenmund's four criteria for deciding whether a variable belongs in an equation or not, we can see that they are all fulfilled. The inclusion of depersonalization in the model of emotional exhaustion is theoretically motivated in the early burnout literature. The coefficient was significantly different from zero, and the overall fit of the equation was improved. Finally, the inclusion of depersonalization caused changes in the other variables.

Before an assessment of the hypothesis about different mechanisms, there remains some work for model specification. The strong association between social welfare allowance work and depersonalization could be due to the needs assessment in such work, many times bringing in an adversary relation to the client. In the study, there was a question with relevance in this context, experience of violence or threats from clients. This is unquestionably an adversary relation.

There are in my opinion theoretical reasons to include this variable. Further, the procedure to exclude variables has not been performed in the case of depersonalization. The next section will attack these issues.

In the personnel questionnaire, one question was:

- *Have you ever been exposed to violence or threat of violence by a client ?*

The question did not specify a time period. The respondents thus should consider threat or violence during their whole work experience. The responses are shown in table 56 in a comparison with all those working with social welfare allowance.

Table 56. Reported experience of threat or violence. Percent and numbers for social welfare allowance workers and others.

	Social welfare allowance		Others	
Response alternative	**%**	**n**	**%**	**n**
No	24	152	53	2654
Yes, once	20	126	17	854
Yes, two to three times	32	203	20	988
Yes, three to five times	11	68	5	243
Yes, more than five times	13	79	6	302
V= 0.19				

As expected, there were considerably more experiences reported among those working with social welfare allowance. The relation was however not perfect, motivating separate inclusion of the variable in a model aiming at full specification. For the regression model, the violence variable was dichotomized with the response alternative "no" in one category, and the four "yes" alternatives in the other.

Continuing the work on model specification, the procedure above concerning emotional exhaustion should be repeated, i.e.

considering if variables could be excluded. The following exclusions were done: administrative control, role ambiguity, coworker contact, feelings of isolation, marital status and having small children. There were no theoretical reasons to keep them. The coefficients were not significantly different from zero. The overall fit of the equation remained unchanged when the variables were discarded.

Except these modifications, the regression model was the same as in table 55, thus including emotional exhaustion. Lacking theoretical basis for more extensive specification, the model stated in table 57 is as far as it is possible to go in specification of depersonalization on the individual level.

Table 57. An individual level model of depersonalization.

	Regression coefficients				
Demand, control and strain			Job attributes		
Emotional demands	0.0		*Much client contact*	-0.2	
Quantitative demands	0.0		*Little client contact*	-2.2	***
Role conflict	0.2	***	*Management style*	0.0	
Skill discretion	-0.1	*	*Psychosocial climate*	0.0	
Decision authority	0.0		*Supervisor support*	0.0	
Outcome- client	-0.2	***	*Coworker support*	0.0	
Outcome- routine	0.1	***	*Supervisor*	0.0	
Emotional strain	0.1		*Non-HS worker*	-1.0	
Quantitative strain	-0.2		*Social welfareallowance*	6.4	***
Individual attributes			*Rehabilitation*	-1.9	***
Gender - woman	-2.7	***	*Disability allowance*	0.0	
Age < 35	2.6	***	*Experience of violence*	2.3	***
Age > 50	-1.1	*			
Work experience	0.0				
Low education	-1.5	**			
High education	0.2				
Self-esteem	-0.1	***			
Emotional exhaustion	0.4	***			
Intercept	26.4		Adj. R^2 = 0.35	F/df 80/4233, Signif. F: 0.0000	

(*) 0.10≥p>0.05 * 0.05≥p>0.01 **0.01≥p>0.001 ***0.001≥p

The results were not particularly different from those in table 55, except on one point. It seems as if experience of violence drew its effect from the social welfare allowance work task since the coefficient of that work task shrunk a bit. A general impression is however that the patterns of associations were rather different from the individual level model of emotional exhaustion. However, an assessment of the relevance of this result for the hypothesis of different mecha-nisms requires also modelling organizational determinations.

Organization and depersonalization

As pointed out above, there are many suggestions in burnout literature about organizational determination. Recalling the results from the previous chapter, there were no such determinations of emotional exhaustion. Indirect effects via emotional strain could not be excluded, although such effects are weak if they exist. Concerning depersonalization, the theoretical situation is different. Karger clearly contended that alienation/depersonalization was an organizational phenomenon. Thus, it seems possible that depersonalization might have a more direct relation to organization *per se*. This will be the next task to investigate. The individual level model above will be supplemented with the organizational level variables: size, centralization, formalization, and specialization/group orientation, in a multilevel model.

Four models were constructed, gradually bringing in blocks of variables into the first null model (model A). Since the individual attributes had relatively strong associations with depersonalization, they were brought in as a first variable block

in model B. This was not done for emotional exhaustion because of the weaker associations with these variables in that case. The next variable block to be brought in were the job related variables, the job attributes and the DC model variables, together with emotional exhaustion. This was done in model C. Finally, the full multilevel model (model D) was constructed, including also the formal organizational variables.The null model is stated in table 58a, and the three random intercept models are stated in table 58b.

Table 58a. Multilevel estimates for models of depersonalization. (n=246 units, 3859 individuals). Regression coefficients and standard errors.

	Null model A		Random intercept B	
	b	SE	b	SE
Fixed effects				
Intercept	21.1	0.4	40.2	1.5
Individual attributes				
Gender - woman			-3.7	0.7
Age < 35			3.5	0.7
Age > 50			-1.0	0.7
Work experience			-0.1	0.04
Low education			-2.2	0.6
High education			3.0	0.7
Self-esteem			-0.2	0.01
Random effects variances				
Level 1 between individual variance.	232.1	5.4	214.5	5.0
Level 2 between organization variance.	20.1	3.5	9.4	2.2
-2LL	32157		31783	
p improvement			0.000	

In table 52, there was no direct influence of organization in any of the models on emotional exhaustion. The results here are different. In the null-model, 8 percent of the total variance drew

from level 2, i.e. the organizational level. This result gives a first indication that depersonalization has organizational determination.

In model B, the individual attributes were included. This decreased the level 2 variance by more than half, which means that the individual attributes were differently distributed in different organizational units. One may suspect that this pertained very much to educational and age differences. Still, there remained a significant level 2 variance in model B.

Inclusion of the job variables and emotional exhaustion in model C further reduced the level 2 variance, rendering it non-significant, as shown in table 58b.

Table 58b. Multilevel estimates for models of depersonalization. (n=246 units, 3859 individuals). Regression coefficients and standard errors.

	Random intercept C		Random intercept D	
	b	SE	b	SE
Fixed effects				
Intercept	23.1	7.8	21.2	8.1
Formal organizational variables				
No. of employees	-		-0.007	0.006
Centralization	-		-0.0007	0.009
Formalization	-		0.01	0.01
Group oriented work	-		-0.7	0.5
High specialization	-		1.6	0.8
Medium specialization	-		1.0	0.8
Demand, control, and strain				
Emotional demands	-0.05	0.05	-0.05	0.05
Quantitative demands	-0.01	0.05	-0.01	0.05
Role conflict	0.2	0.02	0.2	0.02
Skill discretion	-0.1	0.06	-0.1	0.06
Decision authority	-0.02	0.06	-0.02	0.06
Outcome- client	-0.2	0.02	-0.2	0.02
Outcome- routine	0.1	0.02	0.1	0.02
Emotional strain	0.02	0.2	0.02	0.2
Quantitative strain	-0.2	0.14	-0.2	0.14

Table 58b, cont'd. Multilevel estimates for models of depersonalization. (n=246 units, 3859 individuals). Regression coefficients and standard errors.

	Random intercept C		Random intercept D	
	b	SE	b	SE
Job attributes				
Much client contact	-0.2	0.5	-0.2	0.5
Little client contact	-2.3	0.7	-2.2	0.7
Management style	-0.03	0.02	-0.03	0.02
Psychosocial climate	0.03	0.02	0.03	0.02
Supervisor support	-0.03	0.01	-0.03	0.01
Coworker support	-0.05	0.02	-0.05	0.02
Supervisor	0.2	0.9	0.1	0.9
Non-HS worker	-1.7	1.2	-1.8	1.1
Social welfare allowance	5.6	0.8	5.6	0.8
Rehabilitation	-1.9	0.6	-1.9	0.6
Disability allowance	-0.1	0.6	0.02	0.6
Experience of violence	2.4	0.5	2.4	0.5
Individual attributes				
Gender - woman	-2.4	0.6	-2.3	0.6
Age < 35	2.6	0.6	2.7	0.6
Age > 50	-0.8	0.6	-0.9	0.6
Work experience	-0.02	0.03	-0.02	0.03
Low education	-1.3	0.5	-1.2	0.5
High education	0.2	0.6	0.2	0.6
Self-esteem	-0.1	0.01	-0.1	0.01
Emotional exhaustion	0.4	0.02	0.4	0.02
Random effects variances				
Level 1 between individual variance.	160.5	3.7	160.6	3.7
Level 2 between organization variance.	1.5	0.9	0.9	0.8
-2LL	30579		30571	
p improvement	0.000		0.005	

When introducing the formal organizational variables in model D, the model was however improved, as indicated by the -2LL. Differently from the emotional exhaustion models, there were thus some effects from the formal organizational variables on depersonalization. Of the single organizational variables, high

specialization had a significant effect as indicated by the standard error. In highly specialized organizational units, the personnel were on the average 1.6 % more depersonalized controlling for all the other variables. Calculating the explained variance from model A to model D, 36% of the variance in model A was explained by model D. This is an improvement of the individual model, although not large. There is however clearly an element of organizational effects for depersonalization.

The hypothesis from Karger's discussion about a more direct relation between depersonalization and organization received support although the organizational determination hardly is overwhelming. This adds support also to the hypothesis here about different mechanisms behind emotional exhaustion and depersonalization. The differences in organizational determination was only one of several differences. Considering the overall pattern of associations, Maslach's two burnout components cannot be explained through the same regression model. However, inspecting the residual plots revealed an impression of greater heteroscedasticity for the depersonalization model than for the emotional exhaustion model. This could be a reason for the lower variance explanation, and is definitely an indication of shortcomings in the model specification. What is certain is that specification improvement cannot be found among the variables explaining emotional exhaustion. The differences in specification give additional support for the hypothesis about different mechanisms.

The only road towards improvement of specification is through theory. This is not the place to develop a "theory of depersonalization", but the theoretical tenets above about the

phenomenon can be reconsidered in the light of the present results.

Conclusions about depersonalization

Asplund's view of burnout/depersonalization as more or less unavoidable in modern society could not be confirmed here, if depersonalization is to be equaled with the meaning he gives to burnout. Then, all human service workers would be depersonalized, which they are not. Furthermore, the regression analyses showed that there are differences between personnel in different work tasks. On the other hand, with the interpretation that Asplund rather means the "Weberian bureaucrat", then the present results lack relevance for his theses. However, that means of course that Asplund's discussions also lack relevance for burnout research, except his arguments around what burnout "really is", which of course are relevant for the never-ending and futile search for the essence of burnout.

The results here that individual attributes played a relatively greater role for depersonalization than for emotional exhaustion might be interpreted as support for the more individualistic approaches of Hallsten and Pines. However, their process models of the engaged and caring human service workers getting frustrated do not receive support here. If their hypotheses were correct, then work experience would be associated with depersonalization. It was not so. The individual attributes that were related to depersonalization were instead gender, education and age, but the young persons were *more* depersonalized, and not less.

In contrast, Karger's argument received some support here. However, most of his discussion relates alienation/ depersonalization to general social factors, especially the capitalist mode of production. These ideas were not tested here, lacking data about e.g. the extent of market incentives, customer orientation and other phenomena that could have relevance in such a context. I hesitate if there would be sufficient variation in those respects to allow modelling along the lines here. The local systems are not that different in these overarching aspects. Conclusive studies of this angle of the problem would necessitate cross-national studies, provided that other than capitalist modes of production can be found in today's world. There remains in any case an organizational effect on depersonalization, supporting Karger's theory.

In burnout research, the purpose of the work has not been considered. The general consensus has been that human service workers in general are at risk for burnout. This does not seem to be the case as far as depersonalization goes. Karger's emphasis on the importance of a political analysis can be interpreted in terms of the relation between depersonalization and the different Hasenfeld human service work categories. The combination of people-sustaining work, malfunctioning clients, and needs assessment led to depersonalization. The objectification of the client-worker relation is greater when the worker has to assess and decide the economic needs of the client. However, assessment of needs occurs also in people-changing work. The combination of sustaining work and needs-assessment is what increases depersonalization.

Client relations based on economy reveal the different interests of the worker and the client. As pointed out by Hasenfeld:

> "The roots of the power of social workers are not only in expertise and interpersonal skills but also in the fact that they are members of an organization that controls critical resources needed by the client". (Hasenfeld, 1992b, p 261).

In the 1970's in Sweden, there was a discussion about making social welfare allowance work more similar to sickness allowance work, eliminating the individual detailed needs assessment. From the present results, it seems probable that such a change could have led to a change in the social workers' attitudes towards their clients. On the other hand, the austerity policies in the 1990's have rather led to the opposite development. The restrictivity has increased in e.g. sickness and disability allowance work. If time series data were available, HS workers with those work tasks would probably reveal increasing depersonalization. So far, this can only be a speculation, although such a study presently is underway.

The empirical exercises can now be finished. In a way, they have not been necessary for the main point here about burnout: that it is a practice concept without any essence. However, in the conceptual discussions, there was a clear suggestion of a burnout syndrome by Christina Maslach which fitted well with the practice concept. Through her suggestion, the theoretical issue became empirical: that the burnout components were related to each other in a distinct process. After 58 tables, I now feel ready to say that the syndrome idea, in terms of a common mechanism, cannot be supported as far as Maslach's suggestion is concerned.

12. BURNOUT ?

A summary of the main argument

There were two questions in the beginning: *What is burnout ?* and *What causes burnout?* It is now time to answer them. Doing that, I contend that the second question in a way must be answered before the first one. The idea behind that seemingly contradictory statement is of course the proposition that burnout only can be characterized as a practice concept.

The suggestion of a burnout syndrome is the only possible reasonable meaning of the concept; a provisional answer to the first question. This obviously requires a statement concerning the meaning of a syndrome. If one wants to transcend the simple mechanical correlation between symptoms as a defining criterion of "syndrome", I contend that some kind of connection between symptoms in terms of a mechanism should be required. In the burnout literature, I have found no clearer suggestion of such a syndrome than Maslach's model of the three burnout components, which by now ought to be known to the reader. However, the issue whether Maslach's syndrome concept should be accepted as "burnout" then becomes a question of the presence of a mechanism between the three components. That constitutes the second question here, since a causal relation is a prime form of a mechanism. The burnout syndrome can be accepted if causal relations can be found, tying the three components together.

On this point, the argument changes into an issue of what a causal mechanism is. This kind of focus change from one

complex concept to another is abundant in social science. Fortunately, there are operationally useful answers to the problem of causality. The analysis here thus relies on the theoretical and empirical Hill criteria as necessary requirements for causality and on Bunge's analysis of causality requiring a mechanism as a sufficient requirement. Application of this view of causality however demands empirical study.

After finding this reasonable and possible conceptual meaning of burnout, the remainder of the thesis was devoted to finding theoretical and empirical indications of mechanisms connecting the three MBI components. Already an empirical criterion was enough to dispose of one of the components, personal accomplishment. It did not fulfill the necessary criterion of empirical association. The research task showed to be more complicated concerning the remaining two components and five chapters had to be devoted to the problem of finding a mechanism connecting the two.

A unanimous suggestion in the burnout literature, including Maslach, is that burnout is tied to occupational stress in human services. The quest for a mechanism between the two MBI components thus had to start in the discourses of occupational stress and of human services. There, it was necessary to develop and modify a theory of occupational stress in order to connect it to human services. The final result of the consequential empirical analyses can be summarized in figure 17. There, the important independent variables and their effects on the two MBI components are shown.

	Emotional exhaustion	Depersonalization
Formal organizatio-nal variables		Specialization +
Demand, control and strain	Emotional strain ✣ Emotional demands ✣ Role conflict +	Outcome control client ▫ Role conflict ✣ Skill discretion - Outcome control routine +
Job attributes	Feelings of isolation + Psychosocial climate - Supervisor support - Supervisor -	Little client contact - Welfare allowance work ✣ Rehabilitation work - Experience of violence +
Individual attributes	Marital status - married - Self-esteem -	Gender - woman - Age < 35 years + Low education - Self-esteem -
	Depersonalization ✣	Emotional exhaustion ✣

Figure 17. Covariates to depersonalization and emotional exhaustion. (A strong positive effect is indicated by ✣, a strong negative by ▫. Minor effects indicated by + and -).

The figure depicts in my opinion clearly different mechanisms behind the two MBI components. Maslach's suggestion about emotional exhaustion as the main cause of depersonalization hardly exhausts the explanatory possibilities. The statement by Leiter, that emotional exhaustion and personal accomplishment are "reactions to different aspects of the work environment that pose difficulties for human service workers" (Leiter, 1993, p 246), could refer also to emotional exhaustion versus depersonalization.

Depersonalization showed to be more directly related to factors concerning the client relation compared to emotional exhaustion, which related to the occupational stress factors emotional demands and emotional strain. Depersonalization also had an amount of organizational effects, which lacked completely in the models of emotional exhaustion. Work implying an adversary relation to the client was not independently related to emotional exhaustion. The two components were clearly associated with each other, but evaluating indirect effects, there was no indication that emotional exhaustion mediates any relation between occupational stress and depersonalization. The conclusion is that different mechanisms produce the phenomena operationalized by the two MBI components.

Maslach's idea about a burnout process is often and persistently professed by burnout researchers. Just one example is a recent meta-analysis where it is said that emotional exhaustion is directly affected by demands and resources in work, while depersonalization is indirectly affected through emotional exhaustion (Lee & Ashfort, 1996). If the present results should be believed, there should be an end to statements like these, if they are not supported by as careful empirical evaluation as attempted here.

The thesis of a burnout syndrome is untenable, as far as the present results indicate. In my opinion, the proper conclusion becomes that the syndrome is a social construction. In this respect, Walker's analysis, presented in chapter 2, seems sound. Still, Schaufeli, Maslach and Marek say that "...burnout emerged as a social problem rather than as a scholarly issue.", (Schaufeli, et al., 1993b, p 254). This can be interpreted to mean that "burnout" first existed in social reality and then was discovered

by researchers. That is incorrect. "Burnout" is rather a construction by researchers and imposed by them on social reality. However, such a blunt statement does not imply that Maslach and other burnout research pioneers did not meet exhausted and/or cynical human service workers during observations and interviews, many of them probably considering themselves to do a poor job. What is questionable is the unification of these three phenomena into some kind of common entity. That is the point where the burnout syndrome can be regarded as a social construction.

Unfortunately, the fact that something is a social construction does not imply that it lacks existence, but rather that it gets existence in a peculiar way. Recalling Walker's analysis of burnout, she meant that definitions of burnout are produced in science and media, and then re-entered into the general culture. The fourth interpretation of social constructivism above, "*concepts initially without empirical reference can affect social reality and thereby gain reference*", seems to be applicable to the "burnout syndrome". This contention can however be interpreted in a deeper way. It contains an unclear point, that the concept "can affect" social reality.

This can be regarded as referring to the more qualified context of the syndrome concept (Feinstein, 1967; Juul Jensen, 1987), that it is a stage in the development of a disease label. This development is a complex social process where the profession plays a decisive role. There is no determinism involved - many syndromes disappear, others become diseases, and still others are split up and differentiated. Connecting symptoms or parts of syndromes through causal mechanisms is an important part of this process.

Suppose that the present results had been different, supporting Maslach's process model. Then, the results would possibly had played a part in that process, increasing acceptance of burnout in the social work and psychological (semi-?)professions. Maybe even the medical profession, the real power in the disease development process, would have been impressed. Unfortunately, the results are what they are, and in my opinion should rather lead to reluctance in acceptance of a burnout syndrome by any profession.

The results here give however no reason to question the existence of emotional exhaustion and depersonalization. They only say that they are not particularly closely related to each other. In ordinary language, there are different reasons for people becoming tired or mean.

The results were obtained by integrating "burnout" in different theoretical frameworks. Already in the early burnout research, it was urged that the use of theories, especially from the field of occupational stress, would be beneficial for the explanation of burnout (Handy, 1988; MacNeill, 1981). In a discussion about the future of burnout, researchers state that theory-driven research is needed in future research, as an alternative to "..the blind empiricism that was typical for so many early studies on burnout." (Schaufeli et al., 1993, p 256). Following this request has here unfortunately led to the dissolution of burnout, provided that the present results are reliable and valid.

Validity and reliability of the results

As in all research, there are of course problems also in the present study. Probably, most research creates more problems than it solves. In this context, it should first be pointed out that the empirical material here is unusually large. To my knowledge, this is in fact the largest single study ever on burnout. It relies on nationally representative samples, on questionnaires filled out by well-educated people professionally working with filling out forms, and it furthermore utilizes sophisticated analytical methods in connection with theory. As far as possible, all variable measures have been constructed using well established and documented scales. Both higher - organization - and lower - psychophysiology - levels of analysis have been connected to the social psychological individual level. There remains however several problems.

Karasek's original DC model could not be confirmed here. None of the variables in it had noteworthy relevance for emotional exhaustion and depersonalization. The modification was however highly relevant. Still, inconclusive relations were found between psychophysiological stress indicators and emotional exhaustion. A possible explanation of these results could be that the original DC model indeed is stress related, but that emotional exhaustion is not. Thus, the present results cannot be interpreted as falsifying the DC model.

The strong relations between emotional demands, their interaction with control, and emotional exhaustion cannot readily be interpreted so that such stress causes emotional exhaustion. There are at least two possible alternative explanations to this result, either that there is a common underlying factor rendering

the relation spurious, or that the results are due to common method variance, building on self-reports as they are.

In the literature, negative affectivity as a personality construct is an often suggested candidate for spuriousity of associations between many social psychological constructs, *nota bene* between stressors and their effects (Jex, 1996). It may be possible that people with a personality making them prone to experience demands as emotionally taxing also tend to report more emotional exhaustion.

Unfortunately, there were no data available in the studies reported here to control for this. However, in relation to the main argument here, this possible error does not matter very much. It would rather strengthen the argument that burnout is a social construction. Maybe the relation between emotional demands and emotional exhaustion will end into a statistical artefact, even more dissolving the burnout syndrome.

I think that there may well be a spurious effect on this point, but it is probably not particularly great, if reports in the literature are to be believed (Jex, 1996). This can only be an opinion in this context, although it is also based in my paradigmatic conviction that social psychological phenomena should not be reduced to individual properties only.

There is another methodological problem related to the spuriousity problem, namely the common method variance problem (Spector, 1987b). Contemplating the items constituting the EE scale, the possibility of an interpretation for the respondent in terms of emotional demands cannot be excluded. Consequently, the strong associations with emotional demands

found in the models of emotional exhaustion might be due to this similarity. This is certainly possible.

This problem can however be handled in the same way as the spuriousity problem. If the results are due to common method variance, the worse for burnout. In the burnout literature, the statement that emotional exhaustion is caused by emotional demands is abundant. Despite this, I have never before seen an attempt at operationalization and testing of this contention, as done here. The explanation in terms of this error cannot be excluded, lacking independent data on emotional demands. It is, however, more difficult to see this as an explanation to the even stronger associations with the emotional strain variable. No control interpretation appears possible of the EE items.

There is another aspect of the problem of common method variance, the fact that the data in this as well as in practically all other studies are based on self-reports. That is of course a shortcoming here. A poor argument is that this study is in good company on this point. A somewhat better argument is that the present study contains elements of other kinds of data, in the organizational and in the psychophysiological substudies. A very persuasive argument is that in studies of this issue, self-reports have been found to be "... better than is often assumed" (Semmer, Zapf, & Greif, 1996, p 304). However, also on this point, the error can be admitted without harm for the main argument.

A more fundamental problem in the present study related to the concept of causality. An important one of the empirical Hill criteria has not been investigated, the requirement of a temporal sequence. This requirement is obviously fulfilled concerning the

individual attributes, but not in the analysis of the burnout process. There, longitudinal data would be necessary to evaluate if there is a temporal sequence as predicted in Maslach's model. However, it has been possible to show that the associational patterns behind the MBI components are distinctly different, and that no indirect effects could be found, which there should be if the process model were correct. To make this point clear, a longitudinal study is funded and presently in the planning stage.

Finally, the main argument could be interpreted in a purely semantic way: that the label "burnout" should be replaced with two other labels, "emotional exhaustion" and "depersonalization". One of the merits of the Maslach model is however that is transcends mere correlation and labelling - in fact, Maslach herself is one of the foremost critics of such practices (Maslach, 1986). The issue here has thus not been an issue of labelling, but of finding actual social mechanisms. I regard the process model as a serious attempt at scientific theory building, but it did not prove its mettle. There are different reasons for people getting tired or mean.

An argument against burnout

Burnout is a social construction without essence, having real effects. If there is a reality in it, it can be found in practice. To finish the long way towards this conclusion, it is appropriate to take a final tour out of the academic ivory tower.

In a convenience sample of acupuncturists, homeopaths, psychotherapists, and two health food stores, I asked "*Do you*

have any treatment for burnout?" I got many different answers and advices.

Health food stores. The personnel in two health food stores gave different suggestions. In one, the remedy was ginseng in combination with vitamines and minerals and to sleep more. Winter, dark and cold was said to be a risk factor for burnout. The suggested medicine cost about 200 SEK. In the other, "chisandra" medicine was recommended, as good for general fatigue. It was endorsed in a tabloid article by a "professor" (masters degree in physics and math) stating that "Chisandra removes hangover and increases your sexual appetite". One bottle cost about 100 SEK.

A holistic clinic. A Chinese physician told me that the correct treatment was acupuncture combined with incense. Six visits would probably be enough to cure me. The first visit cost 250 SEK, and the following five 200 SEK per visit, in sum 1250 SEK.

A medical forum. Here, zone therapy was stated as the most effective method. The therapist could not guarantee any improvement if I had too deep psychological problems. However, "eleven years of experience have shown that zone therapy for 1.5 hours usually help even for such problems". Each consultation cost 240 SEK.

A clinic for holistic therapy and health. I was recommended Dr Bach's drops, a flower therapy. "They have a deep effect on your soul, which is good because you cannot relax when you are burned out. Dr Bach's drops change your mind and are very effective in combination with zone therapy". There were

different kinds of drops affecting: worry and fear, uncertainty, dissatisfaction with ones present situation, dispiritedness and despair, and exaggerated care of others (do you get depersonalized by the drops?). One bottle of Dr Bach's drops contains 38 drops, and I was recommended to take 4 drops 5 times a day. A consultation cost 220 SEK and one bottle of 38 drops cost 109 SEK.

A holistic practice. I was offered a health check up, vitamines and minerals. One hour consultation cost 250 SEK.

A health clinic. The same recommendation as above, but the consultation cost 300 SEK.

A health practice. Here, I was offered a check of the immune defence. My energy balance in the body ought to be analyzed in blood samples to see "if the blood is totally jammed". I might need some medicine, and I should undergo a second energy balance analysis after five weeks.The therapist equalized burnout with chronic fatigue, and stated "when I have set the diagnosis, it is easy to find the right treatment". Each analysis cost 420 SEK.

An acupuncturist. Here, it was stated that it is not good to be burned out, but it can be cured by therapy and acupuncture. Five consultations, 200 SEK per consultation, was suggested as enough to solve such a problem.

A holistic health center. Here, they could certainly cure burnout. "We use the most effective method of weeding out that there is right now. You get rid of the dross in the body, the heavy metal you have in your guts. We are harmed by the environment, by the mercury in the amalgam fillings. It affects

the cells in the body, you get a sort of cellstress, i.e. the body gets stressed on the cellular level, which leads to burnout". A nine-day long treatment which includes weeding out, relaxation, acupressure, massage, and lectures on short cuts to health had the price of 8.900 SEK.

An alternative health clinic. I was recommended a check if I lacked minerals and vitamines in the body, if I had any blocking toxins, and a diet program. Two hours consultation cost 500 SEK.

An institute for life therapy. Conversation therapy was suggested as relevant for burnout. "It concerns how your life is just right now, and there might be threads backwards in life which are important for the present situation". Each consultation cost 500 SEK.

An institute for psychotherapy. Here, I was offered psychotherapy to learn how to care for myself. "We treat some persons for burnout here". 45 minutes consultation cost 460 SEK.

A balance practice. The treatment for burnout here was the "Rosen method", a sort of massage. "I touch your body according to a specific philosophy, in order to reach tensions in the body, e.g. suppressed emotions like anger or sadness. The aim is to get to know what is true for you, what you want with your life." The "Rosen method" could be combined with psychosynthesis which has a spiritual dimension and joins the western way of thinking with eastern holistic thinking. One consultation cost 500 SEK.

A center for psychotherapy. Here, a treatment program for burnout was available. "We have a kind of therapy that is specifically developed for burnout and similar states like chronic fatigue. It consists of 10 individual consultations, 1-2 times a week. We create a process in order to increase consiousness of why things have gone this way, and also what can be done about it. The therapy is based on conversations, but you can also make drawings, act instead of just talking or you can get "supervised meditation". Each consultation cost 550 SEK.

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A conservative estimate of all the costs, had I taken all the treatments, gives a total sum of 21.000 SEK, (about $3000), about twice the cost of using the MBI in this study.

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