YOUNG AND UNEMPLOYED –
DOES THE TRADE CYCLE MATTER
FOR HEALTH?

A study of young men and women during times of
prosperity and times of recession

Mehmed Novo

Umeå 2000
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Abstract

During the post-war period the Swedish labour market has been characterised by a high intensity of gainful employment in combination with low unemployment rates. At the beginning of the 1990s a new trade cycle began, characterised by an economic recession and a sharp increase in unemployment. Young people are especially sensitive to unemployment, since several critical periods for human development occur in this age group. Although unemployment has been proved to cause ill health, recent studies question that these findings are relevant during an economic recession.

The objective of this thesis was to analyse if and how the change of trade cycle influenced the health of young unemployed men and women. The population consisted of two groups of all pupils in the ninth year of compulsory school in a middle-sized industrial Swedish town. They were surveyed five years later at the age of 21 in 1986 (the boom group, n=1083), and in 1994 (the recession group, n=898) respectively. All participants were investigated with a comprehensive self-administered questionnaire (with 90 questions about working life, health and health behaviour, family situation and leisure time) as well as with register data. The non-response rate was 2% in the boom group and 10% in the recession group. The higher non-response rate in the recession group may have underestimated the alcohol consumption and poor psychological health among men.

The experience of unemployment status as well as studies was more frequent in the recession group, while fewer were in employment compared to the boom group. The unemployed men and women had most somatic and psychological symptoms in both the boom and the recession. The levels of ill health among long-term unemployed did not differ with the trade cycle. However, during the recession poorer health was found among students, as well as among women in work and in labour market programmes, compared to the boom.

There was no obvious correlation between the trade cycle and health behaviour among the long-term unemployed either. An association between the length of unemployment and alcohol consumption was found in the boom group and also among women only in the recession group. Unemployment was associated with tobacco consumption, especially among women and during the boom. The decrease in the number of smokers during the recession followed the general decrease of smoking in society as a whole. Stronger selection into the labour market during the boom due to positive individual features was not confirmed. Negative selection, i.e. selection out of the labour market due to individual features was found among both men and women, and during both trade cycles.

Lack of control, high demands, financial position, pessimism about the future and low level of education were found as moderating factors which negatively influence the health of young men and women. The gendered division of labour was discussed as a possible cause for the deteriorated health among women during recession.

Thus, the trade cycle seemed to have no impact on the health of young unemployed men and women. On the other hand, high levels of unemployment in society correlated negatively with the health in the population as a whole, especially among women.

Key words: youth, unemployment, health, health behaviour, labour market, trade cycle, gender, Sweden
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Mehmed Novo

Umeå 2000
To my beloved and patient family
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Abstract

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The objective of this thesis was to analyse if and how the change of trade cycle influenced the health of young unemployed men and women. The population consisted of two groups of all pupils in the ninth year of compulsory school in a middle-sized industrial Swedish town. They were surveyed five years later at the age of 21 in 1986 (the boom group, n=1083), and in 1994 (the recession group, n=898) respectively. All participants were investigated with a comprehensive self-administered questionnaire (with 90 questions about working life, health and health behaviour, family situation and leisure time) as well as with register data. The non-response rate was 2% in the boom group and 10% in the recession group. The higher non-response rate in the recession group may have underestimated the alcohol consumption and poor psychological health among men.

The experience of unemployment status as well as studies was more frequent in the recession group, while fewer were in employment compared to the boom group. The unemployed men and women had most somatic and psychological symptoms in both the boom and the recession. The levels of ill health among long-term unemployed did not differ with the trade cycle. However, during the recession poorer health was found among students, as well as among women in work and in labour market programmes, compared to the boom.

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Key words: youth, unemployment, health, health behaviour, labour market, trade cycle, gender, Sweden
Original papers

The thesis is based on the following papers, which are referred to in the text by their Roman numerals:


II. Novo, M. Hammarström, A. Janlert, U. Do high levels of unemployment influence the health of those who are not unemployed? A gendered comparison of young men and women during boom and recession. Social Science & Medicine, in press.


IV. Novo, M. Hammarström, A. Janlert, U. Alcohol consumption among unemployed young men and women during different trade cycles (submitted)

V. Novo, M. Hammarström, A. Janlert, U. Does selection to unemployment change with the trade cycle? – Alcohol consumption among young people as an example (submitted)


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Preface

When I started my research on youth unemployment and health I had a solid experience of work as a doctor in occupational medicine. During that time I met older workers who were redundant and threatened by unemployment, but I did not have professional contact with young unemployed people. When I was invited to participate in a project on youth unemployment and health I was excited and curious since that was something new for me. I immigrated to Sweden a couple of years before I started my work on this thesis. Thus, I needed knowledge about Sweden, especially the labour market and the situation of young people and their attitudes, culture and so forth. This part of my work was not so difficult since I needed the knowledge for my everyday life in Sweden.

However, I believed that my medical education, together with the knowledge of sociology, which I already had, would be enough for me to carry out my work. Soon, I found out that I could not explain the differences between men’s and women’s reactions to unemployment merely by sex differences interpreted within the medical model. I needed some other explanations for the obvious differences between young men and women. Moreover, I realised that I would need more knowledge about gender in relation to work, the labour market and as unemployment. I attended many gender courses and seminars, read stacks of books and articles and brooded upon words like post-modernism and post-structuralism or dual and segregated labour market, the public and private sector and so forth.

In that way, my views widened, but sometimes that caused misunderstanding and confusion. When I described what my study dealt with, a common response was that this kind of research was important since we needed more knowledge of young unemployed immigrants, alluding to my background. Raised eyebrows used to follow my reply that my study had almost nothing to do with immigrants. There were similar reactions when I told people about my interest in gender. The definition of women’s studies as research on women by women for women prevailed at that time. When I talked with scholars they did not want to hear anything about biological sex and hormones, and they were suspicious of men as gender researchers. Besides, colleagues told me that gender was nonsense and that biology was of more importance. Fortunately, many of my colleagues at the department were skilful in the field of feminism. I could say that our coffee breaks were my best source of information for further research. That helped me to develop my own point of view on gender as both a biological and a social issue. In addition, I have a feeling that scholars nowadays are all more interested in biology, while scientists are discovering the advantages of socially constructed gender.

It has often been considered that quantitative studies are cold and dry since they are just plain facts and numbers without the knowledge of individuals’ feelings. I agree
that qualitative studies can give better information about individuals’ thoughts and intentions. However, if you work for many years with the same quantitative data you will become almost personally acquainted with the participants. I have never got to know the personal data of the participants since they are unidentified according to the rules of research. I know them just as ordinal numbers. However, during the statistical work some of them appeared as so-called outliners, i.e. the individuals who deviated noticeably from others. I checked, of course, whether there were some mistakes in data transference, I found and read their unidentified paper forms, checked whether the forms were carefully completed and so forth. Finally, I realised that these young persons were just in a disadvantageous situation and they were not a statistical error. Behind each ordinal number there was a person with his or her own life story and destiny, which made me reflect upon my data. That helped me to get to know and empathise with my “data”.

I really enjoyed the work with my thesis, and the papers included here, although it was demanding and time-consuming. Experts within different research fields will surely find things that they will criticise, comment on and discuss from the point of view of their own areas. However, I hope that I have given a fairly accurate picture of the associations between unemployment and ill health during the different phases of the trade cycle from a gender perspective.

Umeå, October 2000
Introduction
I start my thesis with a short review of different concepts of work and unemployment as well as young people's and women's work during the history. Previous research on unemployment and health is also presented in this part of the thesis. Some important questions such as the direction of causality and unemployment as a public health problem are also raised here. I think that a comprehensive introduction like this is required to understand the consequences of the changes in the Swedish labour market that occurred in the 1990s and how this issue is related to health. After a presentation of the methods and results from this thesis I discuss different possible explanations for the association between unemployment and ill health as well as if this association changes with time. Finally, I give some personal reflections on the consequences of the 1990s recession on the people's health and on the future of unemployment research.

Work and unemployment

The concepts of work and unemployment
During different periods of history, work and unemployment have had different meanings and importance for human beings. Thus, we can suppose that the changes, which occurred on the Swedish labour market during the 1990s, influenced the meaning of work and unemployment. However, some of the problems regarding work and unemployment are common, independent of space and to certain extent of time. In this thesis, the discussion is limited to the importance of work and unemployment in the contemporary industrial and post-industrial countries of today. This, however, does not mean that an event is without history and association with other similar events.

A common definition of work is that it is a state or condition of engaging in remunerative work. Hence, unemployment is a lack of remunerative work. This concept of work defines paid work, i.e. employment. The concept is the product of the nineteenth century and it was, and in many cultures still is, associated with the concept of man as breadwinner. However, this definition cannot explain experiences in e.g. domestic or care work, the work that is usually performed by women.

Thus, a wider definition of work is necessary to understand all the properties of work. Such a definition should include the experiences of both paid and unpaid as well as manual and intellectual work. Some broader definitions of work are: productive or purposeful activities; the expenditure of effort to accomplish tasks or solve problems; human actions in the sphere of necessity (Cornell 1988). These terms show work as an active process, either as physical or intellectual or, most
commonly, both. Each work results in a certain outcome, either material or intellectual.

Since this thesis deals mainly with unemployment, i.e. with the lack of paid work, the concept of work as remunerative is adopted. However, when gender differences are discussed, a wider concept cannot be excluded. Employment is a central prerequisite for meeting the socially defined needs of people in Western societies (Nordenmark and Strand 1999). Four key expectations are considered to be fulfilled by work, i.e. employment (Ransome 1995): income, security, creativity and social interaction. It will be shown in the further parts of this thesis that most of the theories, e.g. Marie Jahoda’s functional theory (Jahoda 1981), which deal with the negative effects of unemployment are based on discussion of one or more of these key expectations of work.

The concept of unemployment has also changed during history. It is argued that the concept of unemployment we use today was completely different, if not quite unknown, in the times before the era of industrialism (Garraty 1979). The term unemployed today refers to a person without paid work. This definition also includes those who are studying, those who are sick or disabled, prisoners, early-retired persons and so forth. The official definition of unemployment in Sweden is that an unemployed person is one without paid work, but who is looking for a job and can take it without any reservation (Folkhälsogruppen 1992). Moreover, these persons have to be registered at an employment office in order to be classified as “open unemployed”. The persons who are registered at employment office and participate in labour market programmes are not considered as unemployed in unemployment statistics. In this thesis the official Swedish definition of open unemployment as above is adopted. Different definitions of unemployment which occur in unemployment research make it difficult to compare the effects of unemployment in different national labour markets.

Another concept that has to be indicated is underemployment, that is, employed individuals who work less than they would like because of the labour market situation. Underemployment occurred more during the 1990s and it has been shown to have as negative health effects as unemployment than during the 1908s (Leana and Feldman 1995).

Young people’s and women’s work in the past
It seems as if there are two ideal types of employed and unemployed persons in the research on work and unemployment. A 30-year-old male metalworker is a typical example of an employed person, while a middle-aged male building worker is a common example of an unemployed person. Research on women’s and young people’s experience of work and unemployment has been very scarce. However,
historical and anthropological research shows that both women and children once had an important role in all kinds of work. In prehistoric times the woman’s duty as a gatherer had the same importance in the struggle for family survival as the man’s duty as a hunter (Hubbard 1990). There is not so much evidence of children’s work in this time, but it can be supposed that they played a notable role in everyday activity within the family and society. During the centuries, in agrarian society, women and children continued to work alongside men, although their participation was different in different times and in different societies. It is recorded that Swedish women, particularly those in Northern Sweden, participated in almost all kinds of work and thereby had a freer position in relation to men than did women in other European countries (Cornell 1988). Children used to start to work on the family farm at the age of 7 or 8. They also participated in handicraft work as apprentices or journeymen. In that way they contributed to family maintenance and, at the same time, they learned a trade (Hammarström 1996).

In the early phase of mechanical industrialisation children and women were considered as a cheap and effective workforce. Thus, the family providers consisted of women and children rather than men. Yet, the foremen and bosses were men. The working conditions (work environment, working hours, job safety) as well as wages for children and women were extremely poor (Cornell 1988). Many of these children and women were recruited by compulsion, the alternative being to lose their pauper benefits. During the nineteenth century in some countries, e.g. Sweden, it was a punishable offence for persons above 15 years of the age to be unemployed (Hammarström 1986).

The introduction of industrial machines, which were heavy to handle for women and children, again made the male workers attractive for employers. Moreover, a permanent workforce who worked at the same factory for their whole working life became common. This meant that women were excluded from the labour market since most of them stopped working after marriage. Individual wages were replaced with family wages, i.e. a man as a household breadwinner was supposed to earn enough to provide for the family. Housekeeping and care of children became the main duty of women. In this transformation lies part of the cause of the ideology that a woman’s place is in the home. A consequence of this remains even to the present day; it is argued that women are best capable of doing service and care work (Westberg 1998). The concept of women as housewives prevailed, at least in Sweden, until the 1960s (Cornell 1988). Subsequently the women’s gainful employment increased, but now in the public sector, where they were employed in education, health and child care.
Gender perspective

Since health is influenced not only by biology but also by sociological and cultural factors (Evans, Morris and Marmor 1994) it is reasonable to consider that different experiences of work and unemployment will also affect the health of men and women in different ways. Bird and Rieker (Bird and Rieker 1999) argue that, although biological factors such as genetic and hormonal exposure may contribute to the differences between men’s and women’s health, a wide range of social processes can create, maintain and exacerbate underlying biological differences. For example, it has been shown that women have a more robust immune system than men and that women have lower risk of cardiovascular disease owing to the protective effects of oestrogen. However, this biological advantage can be reduced by differences in the positions that men and women have in society. An example of this is the finding that women produce sustained high levels of stress hormones during a day with a peak in evening, whereas men’s stress levels peak during the working hours and decline when they return home (Frankenhaeuser et al. 1989). The explanation offered is that women’s multiple responsibilities as worker and housewife are the cause of the gender difference in stress hormones response. In this example women’s disadvantaged position in society appears to diminish some of their biological advantages. Thus, gender can be considered as an interactive process between biological sex and a human being’s social and cultural environment. During this process, which occurs in a specific social and cultural context, our ideas of femininity and masculinity (i.e. qualities, attributes and behaviours considered, in a specific social and cultural context, to be “normal” or “acceptable” for female and male human beings) are constructed and maintained (Courtenay 2000, Doyal 2000).

Thus, we need to analyse all sectors of society as organised according to the positions that men and women have in society, but also in relation to class, race and ethnicity (Walby 1986). To carry out an analysis from a gender perspective we need to include both men and women in the analysis and to apply a gender theory. However, it is sometimes difficult in quantitative studies to develop possible explanations for the gender differences between men and women from the empirical data. Therefore, in order to interpret the results, gender theories can be used to pose questions and hypotheses rather than to give definitive answers (Hammarström 1999).

According to Connell (1987) the gender relationships between men and women can be seen as part of a larger pattern, a gendered system of production, consumption and distribution, i.e. gender order, which creates the domination of the men in society as a whole. One of the structures is characterised by the gender division of labour: the organisation of housework and child care, the division between paid and unpaid work, the segregation of education and the labour market etc. The organisation of the labour market is seen as a continuation of the division of labour at home (Harding 1986, Gonäs 1994). The concept of what work is suitable for
men and women has been directed by the ideas of masculinity and femininity (West and Zimmerman 1987). Male and female occupations have developed during a historical process in which new categories of work and workers are formed along gender lines (Connell 1987). Occupations become gendered as they are characterised by qualities, attributes and behaviours assigned to men or women in different historical and cultural contexts. There is a rule of distinctive separation – the division of practically all areas and levels of life into male and female categories (Hirdman 1988). The horizontal segregation of the labour market means that men mainly work in male-dominated sectors while women mainly work in female-dominated sectors (Lagerlöf 1993). Another structure in society is characterised by the gendered division of power expressed in decision-making, authority, control and coercion (Connell 1987). According to Harding (1986) this masculine domination is manifested on different levels in society – from symbols to social organisations. During the time a division of labour between those who give the premises for the work, as a rule men, and those who perform the work, men in lower positions and women, has occurred. Men have hereby acquired the power to define and control women’s work. This definition is based on the assumption of the male norm (Hirdman 1988). The vertical segregation of the labour market means that men are over-represented on the highest levels with regard to status, power and income (Statistics Sweden 1998b).

Thus, the gendered labour market acts as an oppressive force on women and their health. Sometimes this oppression can act in both directions, with both positive and negative effects. Paid work has been a characteristic usually associated with masculinity. However, during the last few decades the concept of the man as the main family breadwinner has been changed and paid work has become a central feature of young women’s striving for independence and equal opportunities. Although men’s work is valued higher than women’s, because of the level of power and influence that it possess, paid work is no longer considered as a characteristic associated merely with masculinity. This also means that women have been as vulnerable to the changes in trade conditions as men have (Leana and Feldman 1991). The fact that women still do most of the domestic work and the fact that their jobs generally have lower status and are lower paid than those of men leads to a situation of lower control for women compared to men, which increases women’s risk of ill health (Doyal 1995).

**Research on unemployment**

The discussion about the connection between unemployment and health existed already in the nineteenth century (Garraty 1979). However, it was the great economic crisis in the 1930s that brought the first scientific studies on this issue. These were studies made by Jahoda, Lazarsfeld and Zeisel (1972) in Austria and by Bakke in the USA (Bakke 1933). A new wave of increased interest in research on
unemployment came at the beginning of the 1970s as a consequence of the oil crisis, which caused a growth of unemployment rates all over the world. Each increase of unemployment has usually been followed by an increase of publications dealing with the consequences of unemployment on health (Janlert 1991).

Unemployment and health

Educational qualifications, occupational and social class as well as employment and marital status, particularly among women, have been pointed out as the key structural factors associated with illness (Arber 1996). Unemployment is usually considered to be a serious moment in the life of each individual. The economist J.K. Galbraith writes about the consequences of the high levels of unemployment in USA: “Let us remind ourselves what lies behind those numbers – personal and family trauma, the loss of self-esteem, the tight-lipped fear about the future, the wonder as to whether there will be a job and income soon or ever again” (Galbraith 1991 quoted in Smith 1991). This quotation shows that unemployment is not only an individual issue but also hits the surroundings of the unemployed and provokes a gloomy picture of the future. Research has shown that unemployment means poorer physical and psychological health, alcohol and tobacco consumption and other health consequences (Brenner 1987, Jin, Shah and Svoboda 1995, Janlert 1997).

However, research on the health effects of youth unemployment is a proportionally new research field, which has been developed during the last few decades. These studies have shown that unemployment can have as strong effects on the health of young people as on the health of adults (for review see Hammarström 1994b, Winefield 1995, Hagquist 1997). Moreover, different researchers have argued that unemployment is not as destructive for women as it is for men (Ovesen 1978, Jahoda 1982), but their arguments have been questioned in the light of recent research (Leana and Feldman 1991, Arber 1997). Fryer and Payne have found that the differences in the way men and women experience unemployment do not derive from the differences in personality or biological constitution, but from the structural position which they occupy in society (Fryer and Payne 1986).

Youth is one of the most important periods in human development as regards the relation between health and social circumstances. Since young people are generally healthy, the probability that serious deterioration in health, particularly somatic health, will show up as a consequence of unemployment is low. Bartley and colleagues (Bartley, Blane and Montgomery 1997) point out nine socially critical periods in human development. Six of them (transition from primary to secondary school, school examination, entry to the labour market, leaving the parental home, establishing a residence of one’s own and the transition to parenthood) occur in youth. Two further periods (job insecurity, change and loss of job as well as onset
of chronic illness) can be shared with adults, while the ninth period (exit from the labour market) is mainly characteristic of older people, although it sometimes occurs among young people. Those periods can have both material and psychosocial effects on individuals and their families. Thus, the young years are an important period when socially related health is established, which may have consequences for health in later life.

A large number of studies have shown a relationship between unemployment and mental complaints among both young men and women (Hammarström, Janlert and Theorell 1988, Hammer 1993, Hammarström and Janlert 1997). Some of the studies on adults show negative effects of unemployment on somatic health (Claussen, Bjørndal and Hjort 1993) while others do not find any such associations (Jackson and Warr 1984). A Danish study has examined relative mortality among Danish men and women who were unemployed and employed during the period 1970–80 (Iversen, Andersen, Andersen, Christoffersen and Keiding 1987). The authors found that the ratios between the death rates for the unemployed and employed were higher in lower ages among both men and women. However, this is an area that is not sufficiently studied.

Alcohol, tobacco and drug misuse are the most important health-related behaviour studied among young people. Some researchers have found a relationship between youth unemployment and increased alcohol consumption (Power and Estaugh 1990, Janlert and Hammarström 1992). In contrast, other investigations have not indicated any such correlation (Peck and Plant 1986). Smoking and tobacco consumption increase among unemployed young people, particularly women, during unemployment (Hammarström and Janlert 1994). Regarding narcotics it has been found that unemployment increases the risk of drug abuse among both men and women (Hammer 1992, Hammarström 1994a).

The interest in studies of the association between health, unemployment and the trade cycle increased during the 1980s and the 1990s in the light of the changes occurring in the labour market in many industrial countries (Brenner 1987, Dooley, Catalano and Hough 1992, Morrell, Taylor, Quine and Kerr 1993, Bartley and Owen 1996, Arber 1997), in particular in the Nordic countries, which have gone through a period of a rapid increase of unemployment rates (Martikainen and Valkonen 1996, Åberg, Strandh, Nordenmark and Bolinder 1997, Julkunen and Malmberg-Heimonen 1998). These studies have shown that the relationship between unemployment and health may be weaker during a recession than a boom (Martikainen and Valkonen 1998) while the relationship between unemployment and alcohol consumption has been shown to be stronger during a recession than a boom (Luoto, Poikolainen and Uutela 1998). Total alcohol consumption and cigarette smoking in Sweden declined during the 1990s, simultaneously with an increase in alcohol consumption, and to a certain extent smoking, among young men and women (Public Health Report 1997). A Finnish study carried out in
similar conditions of socio-economic change as in Sweden has found that gender differences in health are remarkably resistant to the labour market crisis (Lahelma, Martikainen, Rahkonen and Silventoinen 1999). However, they found that gender differences in mental and somatic symptoms declined simultaneously as the prevalence of these symptoms rose.

**Research design**

Research on unemployment has been carried out within different scientific disciplines and methodologies. Regarding the design we can distinguish between four categories based on the independent dimensions: aggregate versus individual and cross-sectional versus longitudinal data (Dooley and Catalano 1980). Most of the studies within the field of unemployment research have been carried out as *cross-sectional studies on individual data*. In this design two groups of individuals are compared: a group of unemployed and a matched control group. These studies usually find some differences between the unemployed group and the control group, which can be attributed to unemployment. However, it is difficult to establish causal relationships, which is a weakness of this design.

*Longitudinal studies* on individual data are considered a better way of analysing causal connections. This design includes running two or more observations on the same subject over time. The problem with longitudinal studies is that they take a long time and the attrition rates are usually high.

*Aggregate studies* analyse the data collected in different social or geographical settings either as cross-sectional or longitudinal. Although these studies can generate important results, in particular for public health purposes, it is difficult to generalise the results to individual processes – “the ecological fallacy”. Besides, it is difficult to generalise the individual findings to communities – “the atomistic fallacy”. In this case conclusions are drawn as if a community is the simple sum of individuals’ characteristics.

*Qualitative research* methods mean any kind of research that produces findings not arrived at by means of statistical procedures or other means of classification (Strauss and Corbin 1990). Qualitative methods are suited to explore and analyse the distinguishing features and characteristics of persons and phenomena. This method makes it possible to study people’s experiences, thoughts, expectations, motives and relationships in a way that cannot be achieved by quantitative methods. Although this method has been developed and is mostly used within the humanities, it has recently been spread and recognised as a part of medical research (Malterud 1996).
How does unemployment affect health?

Despite the fact that unemployment research has been a particular scientific discipline, there are few theories or models which can explain the health consequences of unemployment. A considerable number of the studies make use of so-called ad-hoc or post-facto theories and models. They are constructed afterwards to find some plausible explanation for the results obtained rather than being theoretically derived from them.

According to Janlert (1991) research on the connection between unemployment and ill health within the field of public health has been pursued within three general perspectives.

- The first one is that ill health, health-related behaviour and poor social conditions lead to unemployment. This was a common point of view until World War I.
- The research carried out during the great depression in the 1930s has shown that unemployment leads to different kinds of welfare loss, e.g. poverty, which in turn leads to impaired health and health-related behaviour.
- The third perspective prevails in the unemployment research of today. It is argued that unemployment can lead to ill health, health-related behaviour and welfare loss without resulting in economic trouble or poverty.

Most of these theories are based on the presumption that deprivation of work/employment, (i.e. the key expectations that are considered to be fulfilled by work: income, security, creativity and social interaction (Ransome 1995)), leads to poor health. Another presumption is that unemployment is associated with poor health and health-related behaviours. However, the theories developed during the late 1980s and 1990s take into consideration not only the negative effects of unemployment but also the possibility that disadvantageous work conditions might have negative consequences for health.

Specific models

A glance at different papers about theories and models within unemployment research will show that a certain issue is called a theory in one paper while in another it is called a model, and vice versa. It is hard to draw a clear-cut borderline between theory and model. A definition could be that a model is a simplified and hypothetical picture of the real world while a theory is a system of axioms, definitions, laws, hypotheses and facts intended to explain a phenomenon.

After a wide review of research on unemployment in the first decades of the twentieth century, Eisenberg and Lazarsfeld (1938), suggested a three-stage model. The idea of the model is that a person who has recently become unemployed goes
through three phases – shock, pessimism and fatalism or adaptation. The three-stage model has been tested in several studies with ambiguous results (Ezzy 1993). Although it is a descriptive framework rather than a theory, it has been one of the most influential models in unemployment research.

The model which probably is most commonly referred to within the field of research on unemployment is Marie Jahoda’s functional model (Jahoda 1979). Basing her model on Merton’s functional middle range theory as well as Freud’s concept of work as a human being’s most powerful tie to reality, Jahoda distinguishes manifest and latent functions of employment. “The manifest functions – pay and conditions – account more often than not for negative feelings about employment. The latent functions account for positive motivation: First among them is the fact that employment imposes a time structure on the working day. Secondly, employment implies regularly shared experiences and contacts with people outside the nuclear family. Thirdly, employment links an individual to goals and purposes which transcend his own. Fourthly, employment defines aspects of personal status and identity. Finally, employment enforces activity” (Jahoda 1979, p 312-313).

These five latent functions satisfy our psychological need to work and they are our ties to reality. Employment is thus of great importance for people’s mental health. Jahoda concludes that people wish to work, i.e. to be employed, even when they find work unsatisfying. She thinks that even unpleasant ties to reality are preferable to their absence. Thus, the negative psychological effects of unemployment can be explained as a consequence of an individual’s elimination from an institution, i.e. work.

However, Jahoda’s model has been criticised from several angles (Fryer 1986, Ezzy 1993). Her model reflects the experiences and view of the middle-class: any work is better than idleness. Some studies suggest that that employed young people who work with unsatisfactory jobs do not report better health than unemployed young people (Winefield, Tiggemann and Winefield 1991). Moreover, the individuals in Jahoda’s model are passive onlookers without the power to influence their situation. A further objection is that this model is not precise, we do not know what level of time structure is necessary, how regularly the activity is needed, etc. Jahoda, as well as Eisenberg and Lazarsfeld, exclusively use male gender when they describe their theories. This feature was characteristic of older research when the man was the breadwinner, although the assumption about men as the main family breadwinners still exists in practice, even in countries like Sweden with high employment rate among women (Ahlgren and Hammarström 2000).

Peter Warr (1987) has developed the vitamin model, which includes experiences of employment as well as unemployment. His starting point is that both of them have good as well as bad sides. This model specifies features and conditions in our
environment of importance for humans’ well-being. He formulates nine criteria of a good activity or job, which he denotes as vitamins. Lack of a certain "vitamin" as well as its abundance can cause problems for mental health. Like Jahoda’s model, this model is also environment-centred rather than individual-centred. However, Warr’s model is broader since it includes both pros and cons of employment and unemployment.

David Fryer, looking from the point of view of cognitively oriented psychology, has criticised Jahoda’s model (Fryer 1986). His model is built upon the assumption that people are active agents. They initiate and influence events and are intrinsically motivated. Thus, he assumes that people are fundamentally proactive and independent, while the functional model assumes them to be reactive and dependent. Fryer’s agency restriction model is based on the assumption that negative consequences of unemployment depend on the circumstances that restrain the individual in his or her capacity as an active actor. The total quality of life rather than the question of having a job determine a person’s well being. According to this model, what is important is not whether or not we have employment but how we organise our activities. Fryer’s model has been criticised because people’s active scope for action is emphasised without respect for restrictions of the social environment.

Perhaps the most sociological model of all is Douglas Ezzy's status passage model (Ezzy 1993). According to him unemployment as well as employment are processes where the individual moves from the status of having a job to the status of having none and vice versa. Thus, people move from one part of social structure to another. Mental health is not only a psychological manifestation but also the individual’s response to the influence of the environment. According to Ezzy each attempt to explain the socio-psychological consequences of losing a job has to explain what importance work has for an individual in relation to his/her other life projects aimed at developing and maintaining the picture of himself/herself. This model is proved in several studies on youth (Hagquist and Starrin 1996) and adult unemployment (Nordenmark and Strand 1999).

**The relative deprivation models**

The economic deprivation models assume that unemployment leads to poverty and other forms of disadvantage which we know are associated with poor health. These models dominated in the 1930s. However, it is difficult to state that today’s unemployment will lead to absolute poverty in most of the industrial countries. Instead, models of relative deprivation characterised by income inequalities and social cohesion are constructed to explain why and how social factors, through chronic stress, affect health and health-related behaviours.
Most of those models have been developed within research where unemployment is not the main object of research, but they have been found useful for research on unemployment. They are closely connected with each other and they can be considered as parts of the conflict-theory paradigm (Gerhardt 1989). The idea behind this paradigm is that changes are the results of conflicts, which arise owing to deprivation-domination, or loss of certain resources.

In a longitudinal study of laid-off workers after a factory closure Leana and Feldman (1995) did not find any large differences in psychological well-being between unemployed and re-employed individuals. A further analysis of this finding has shown that there are fewer differences between unemployed and unsatisfactorily re-employed individuals than between those later and satisfactorily re-employed. They conclude that relative deprivation, i.e. the discrepancy between people’s expectations of the work and achievement, i.e. what they actually receive (no job, unsatisfactory or satisfactory job) have consequences for psychological well-being.

A criticism which can be raised against this study is the fact that the authors take into consideration individuals’ motivation, their coping resources as well as their strategies and behaviours without accounting for structural factors. However, they acknowledge that labour market factors can be of importance for the group of job seekers as a whole but may not be good predictors of individual success or failure in job search efforts.

In his analysis of the relationship between ill health and income, Wilkinson (1996) has found that this relationship is stronger within a country, in particular a developed one, than between countries. This trend became obvious at the beginning of the 1990s when most developed countries went through a phase of economic and social changes. Wilkinson developed a model that takes into consideration income inequalities and social cohesion. He suggests that the relative distribution of income within a society, and subsequent social exclusion, rather than individual characteristics, lead to chronic stress and thereby to poorer health and unhealthy behaviours. Wilkinson (1997) also suggests that reduced unemployment, material and job security and narrowed income differences lead to a more cohesive society and thereby to improved public health. It has been found that the positive association between income and health might be interpreted as an interrelationship between employment status, income and health, especially among women (Stronks, van de Mheen, van den Bos and Mackenbach 1997).

**The stress model**

All these models have a common feature: relative deprivation, income inequality and lack of social cohesion lead to increased and prolonged stress. However, *the stress model* as a particular model has been commonly used within the field of
unemployment research. According to this theory unemployment or threat of job loss can provoke a physical stress reaction (Kagan and Levi 1975). The result can be stress symptoms, changed behaviour, increased secretion of stress hormones and increase of blood pressure. The model has been tested in studies of adult unemployment among men (Cobb and Kasl 1977, Mattiasson, Lindgarde, Nilsson and Theorell 1990) as well as women (Arnetz et al. 1987, Brenner and Levi 1987).

The individual handling of the stress situation, so-called coping, is an important part of the stress model. However, the effects of the coping process in unemployment have been analysed in only a few studies (Janlert 1991). The stress model has been a basis for other models, e.g. social support, network and control models.

According to theories of social support and network, high levels of social support – from family, friends and others – protect against increased vulnerability to illness of various kinds associated with high stress (Caplan 1981). For young adults parents are the primary source of tangible aid and friends are a major source of informational and emotional support (Schultz and Ran 1985). In times and areas of high unemployment, the unemployed young people can form or discover new social networks, preventing further psychological deterioration.

Karasek-Theorell’s two-dimensional model is developed from, and has often been applied in, the research on work-related ill health (Karasek and Theorell 1990). The idea behind this model, which is derived from the stress model, is that the meaning and contents of work exert a great influence on people’s health. According to the model the work situation can be described as two dimensions: psychological demands and the decision latitude, i.e. level of control. A work situation characterised by high levels of psychological demands and a high level of control is predicted to lead to the “desirable stress” and consequently to a regeneration process with decreased excretion of cortisone. On the other hand, a high-strain work situation, where a high level of psychological demands is combined with a low level of control, is predicted to increase the negative stress and illness. A hypothesis behind this model is that low level of control is associated with degenerative bodily reactions and increased vulnerability of the organ systems (Theorell 1997).

It has been found that women express a higher frequency of stress-related disorders (Hall 1990). The combination of high demands, which occur in both gainful employment and in domestic work, can explain a part of this feature. The demand-control model has also been used the research on unemployment, since unemployment can be considered as a passive occupation with low levels of psychological demands and a low level of control (Hammarström 1996).
Selection and exposure

One of the main questions in the research on unemployment is whether the connections between unemployment and ill health are due to the fact that unemployment makes people ill (effect of exposure) or whether those who are ill will become unemployed (effect of selection). The assumption that unemployment leads to ill health prevails in the earlier research, while the issue of selection is a newer feature (Fryer 1997, Hallsten 1998). By selection we mean that the flow into or out of the labour market is influenced by other factors than merely haphazard ones. Hence, there is a systematic difference between those who disappear from (negative selection) or enter into the labour market (positive selection) and the group that remains in the labour market. We can distinguish between “direct health selection”, i.e. poorer health increases the risk of unemployment, and “indirect selection”, i.e. there may be social and individual features which put individuals at higher risk of both unemployment and ill health (Montgomery, Bartley, Cook and Wadsworth 1996). By exposure is meant that the effects of unemployment can be assigned to the unemployment itself, whether it is one’s own unemployment or the general unemployment rate in society.

Both the hypotheses, of selection and of exposure, have received support from research. They have been found in several longitudinal studies to occur at the same time (Winefield 1995, Janlert 1997, Hammarström and Janlert 1997, Janlert and Hammarström 1992, Claussen 1999). A review shows that epidemiologic evidence suggests that the direction of causation from unemployment to ill health is greater than the converse. However, the authors hold that the relation is complex and further research is needed (Jin, Shah and Svoboda 1995). Fryer (1995) suggests that both selection and exposure occur in all trade cycles, but their proportions change – during times of prosperity selection prevails over exposure, while during a recession the effects of exposure will increase.

![Figure 1 Patterns and magnitudes of the relationship between unemployment and health during a boom (a) and a recession (b).](image-url)
A hypothetical model of patterns and magnitudes of selection and exposure during a boom (a) and a recession (b) is shown in Figure 1.

During a boom, when the flow of labour on the labour market is intensive, selection into the labour market is low, i.e. there are no particular demands on the recruits. Conversely, the selection out of the labour market can be strong, i.e. those who have become unemployed represent individuals who differ to a great extent from those who continue to work. During a recession, on the other hand, selection out of the labour market is low: those who have become unemployed are, to a great extent, similar to those who keep on working. In contrast, selection into the labour market is strong. Employers make high demands of those who will be employed, and they can select among many job seekers. Two types of effects of exposure to unemployment can be distinguished: a strong effect on the unemployed and a weak one on the non-unemployed, which prevails during a boom, and a strong effect on both unemployed and non-unemployed, which prevails during a recession. In the second case we talk about unemployment as a climatic factor which influences the entire population.

The question of selection and exposure is of significance for measures that will be taken to improve health among unemployed people. If unemployment makes people unhealthy there is a need for strong actions against unemployment. On the other hand, if people with ill health become unemployed the measures will be directed to improving their health and working capacity by different rehabilitation measures.

**Unemployment as a public health problem**

Public health represents society’s organised and publicly supported efforts to improve the health status of the entire population; its focus is on the reduction of health inequalities by optimising the underlying determinants of health and preventing disease (Beaglehole and Bonita 1998). Thus, the place of the public health action is on the macro level, i.e. in society as a whole. Public health is threatened by many factors: disease, social inequality, unhealthy environments, and economic and social polices. The role of public health is to reduce these threats. During the nineteenth century public health was based on sanitation and hygiene and the interface between the body and the natural environment (Armstrong 1988). In the early twentieth century a shift to a concern with personal hygiene and a greater focus on the individual occurred. Public health became an activity dominated by medical models and medical experts, and epidemiology was the main research model. The focus was on improving the physical infrastructure as well as on disease prevention. Health was seen as the absence of illness. During the 1980s and the 1990s several changes due to economic recession and increased unemployment occurred in the industrial countries: economic rationalism and
managerialism and a more individualistic point of view on people’s rights and duties towards health. A call for new definitions and a more appropriate public health was requested. A new definition of public health as a holistic, multidisciplinary activity that is far more concerned with the social, economic and environmental basis of health has been suggested (Baum 1998).

There is not enough discussion of how high and enduring unemployment rates affect public health. A reason for this is that unemployment is still mainly looked upon as an economic question. It has been shown that labour market position is the key determinant of health in Western societies (Arber 1996). The consequences of unemployment on the health of those who are unemployed are well documented (Janlert 1997). But what happens when unemployment is high in a community as a whole? Does the health of such a community become worse, better or unchanged? Is the health of those who are not unemployed affected by high unemployment rates? The data on these topics are ambiguous, but we can distinguish three possible outcomes (Hammarström and Janlert 1996):

- **Unemployment has no importance for public health.** This can be true when unemployment periods are very short or when the unemployment is a part of career. It seems that unemployment has no importance for health if the future is assured.

- **Unemployment leads to improved public health.** This may seem like a paradox, but some studies have shown that, e.g. after a shipyard closure, the risk of accidents at work decreased and hence the risk of hospital admissions also decreased (Iversen, Sabroe and Damagaard 1989). Some studies have shown that certain circumstances, e.g. many unemployed in a limited area, unemployment can lead to improved psychological health among men (Jackson and Warr 1987). Other studies show that unemployment can lead to improved somatic health, but at the same time, psychological problems increase (Westin and Norum 1977). Thus, the net result can be negative since the psychological problems can be more distressing than the somatic ones.

- **Unemployment leads to impaired public health.** Mass unemployment certainly has an impact on the health of the population just by means of its magnitude. This issue is well elaborated in many studies, both in the past and in present times (Jahoda, Lazarsfeld and Zeisel 1972, Brenner 1975). An insecure work situation, which prevails during mass unemployment, influences the health of those who are not unemployed. It has been shown that increased unemployment levels as well as insecure work prospects lead to stress (Arnetz et al. 1991) and consequently to impaired health (Bartley 1994). The deterioration of health in Sweden during the 1990s is explained by deteriorated working conditions (Public Health Report 1997). Analysing the recent trends in
the labour market of Great Britain and the European Community and their impact on health, Burchell concludes that research into job insecurity and health will take over from research into unemployment and health as a future research topic (Burchell 1994).

The Swedish labour market in the 1990s

My sister who is ten years older grew up in a go-ahead spirit, you know, things were better when she finished school, there was some unemployment but it was low. But today, everybody is saying that we young people are more unfortunate, we are the first generation for whom things are worse and it is quite true. I notice the difference.

Bibi, 21-year-old unemployed actress, 1994 ¹

During the post-war era the Swedish labour market was characterised by a high intensity of gainful employment and low unemployment rates. Even if Sweden, like most industrial countries, has gone through different trade cycles, the country has been spared dramatic turbulence. The concept of the Swedish welfare state has been based on economic solidarity, which is achieved by taxes. Therefore high levels of production are important to maintain the welfare state. Although there were some minor economic disturbances, the post-war period in Sweden can be considered as a time of prosperity.

However, at the beginning of the 1990s there was a radical change of the situation on the Swedish labour market, which resulted in an economic recession. This crisis was caused by several interacting factors. One of these was the international recession. However, the majority of causes were attributed to internal factors: higher rates of inflation after the devaluation of the Swedish crown, a decrease of the demand for labour, as well as a partially changed view of full employment (SNS 1993). The structure of the labour marked was also changed, which resulted in the discharge of employees and the demands for new types of professions (Gonäs 1994).

The main sign of these changes was increased unemployment rates (Figure 2). Within a few years, between 1990 and 1993, the unemployment level rose from 1.6 per cent to 8 per cent (Statistics Sweden 1995). Unemployment rates increased more among men, 9.7 per cent, than among women, 6.6 per cent. The level of youth unemployment increased even more, from 3.7 to 18.4 per cent. These unemployment rates were the highest ever in the post-war period but compared to other industrial countries they were quite normal and near their average rates

¹ Quotation from an interview study (unpublished data).
during the 1990s (OECD 1998). During the late 1990s the economic situation in Sweden improved, but the unemployment rate has remained high (Statistics Sweden 1982-98). The differences between unemployment rates among men and women also decreased in the late 1990s.

![Unemployment rates in Sweden 1981-1997](image)

**Figure 2** Unemployment rates in Sweden 1981-1997. (Source Statistic Sweden, Labour Force Surveys 1982-97)

Besides increased unemployment, other changes in the labour market occurred in Sweden during the 1990s. New forms and technologies were introduced in the production (Aronsson 1999), the physical work environment improved but the psychological work environment deteriorated (Järvholm 1996) and social as well as unemployment security also deteriorated (Hagquist 1997). These changes resulted in poorer health for the population as a whole (Public Health Report 1997) and proportionally high unemployment (Statistics Sweden 1982-98).

Experiences from other Western industrial countries show that it is hard to reduce unemployment once it has become extremely high. Moreover, the changes in the organisation of the labour market led to poorer health among the population as a whole (Burchell 1994). Sweden has thus become a country with "mass unemployment", particularly regarding youth unemployment, with the same problems as in most other Western countries.

To understand how and why these dramatic changes have an impact on the health during a recession we need to have the knowledge of what work and unemployment has meant during the time and what previous research has said about the connection between unemployment and health.
Changes in the organisation of the labour market

The Swedish labour market is a post-industrial one that is characterised by a changed composition of the labour force (the proportion of women in the labour force has increased) as well as technological developments and improved productivity. Sweden has one of the most gender-equal labour markets in the Western world as regards participation in the labour market. Eighty per cent of women of working age participate in the labour market compared to eighty-five per cent of the men (OECD 1998). On the other hand, the Swedish labour market is one of the most gender-segregated (Westberg 1998). The segregation is present on both vertical as well as horizontal levels. The vertical segregation means that men are over-represented on the highest levels with regard to status, power and income. More men than women are managers – 81 per cent of the managers being men (Statistics Sweden 1998b), have full-time employment – 71 per cent vs. 45 per cent of the male and female work force respectively (Statistics Sweden 1998b) and have higher wages when in the same jobs (Asplund, Barth, Smith and Wadensjö 1996). The horizontal segregation of the labour market means that men mainly work in male-dominated sectors while women work in female-dominated sectors. More than 70 per cent of all employed women work in the public or private service sector while more than 50 per cent of men were employed in industry, agriculture and forestry in Sweden (Lagerlöf 1993, Statistics Sweden 1998b). Thus, men are employed within so-called core occupations with high wages, opportunities for advancement and so forth. On the other hand, women’s occupation are characterised by low wages and fewer fringe benefits, poor working conditions, high labour turnover, little chances of advancement as well as arbitrary and capricious supervision. However, later studies have shown that during recession men shift from traditional men’s to traditional women’s occupations (Gonäs and Spånt 1997). The authors suppose that this shift will increase the competition between men and women for the new work opportunities in both the private and the public sector.

This gender division of the labour market was a reason why the increasing unemployment did not affect men and women in the same way. The male-dominated sectors, e.g. manufacturing and construction sectors, were affected first. However, during the second half of the 1990s, large cuts were made in the public sector, which resulted in increased unemployment among women. On the other hand, the employment reduction, i.e. the decrease in the creation of new jobs, hit young women and men equally, as the changes occurred simultaneously in both the female- and male-dominated sectors of the economy (Statistics Sweden 1995)

Different career pathways can be distinguished among young men and women during a boom and a recession. Permanent, full-time jobs are defined as ordinary work. Part-time, temporary and other forms of non-ordinary work as well as labour market programmes are considered as a transition phase towards ordinary work.
During boom an ordinary pathway among young men and women is from education to work - ordinary or maybe more often to a temporary job, i.e. those jobs that were limited by duration and season. However, these jobs cannot be called precarious since they are training for working life as well as an entrance ticket to the labour market. During a boom even part-time work is considered as a tool by which most working women can keep their attachment to the labour market through childbearing periods. The path from education to unemployment is also frequent during a boom but unemployment is of short duration. Moreover, many young people cross over from unemployment to ordinary work, although the path through the transition phase occurs more often.

During recession these pathways work in both directions. During the recession in the 1990s more of those who were temporarily employed during the boom become unemployed while those who had permanent and/or full-time jobs became temporary and/or part-time workers (Jacobsen and Levin 1995, Nätti 1995). To reduce the negative effects of the recession the employers introduced new forms of organisation of production in the 1990s. New management strategies such as lean production and just-in-time production have had a strong impact during the last decade in industrial countries like Sweden. The idea behind this strategy is concentration on the core activity only and production according to the current demands of the market. This organisation requires flexibility, i.e. temporary contracts related to ups and downs in production, of both producers, through contracts with under-suppliers and contractors, and individuals, through temporary employment contracts. The consequences of these changes are extended work tasks (more tasks have to be done with fewer workers), increased overtime work, as well as an increased number of precarious jobs among both men and women (Statistics Sweden 1998a). The demands for adaptability, teamwork, loyalty toward employer and fellow workers lead to poorer health (Aronsson 1999). New technologies are also introduced to keep high levels of production despite cuts in the work force. However, this rationalisation of production is mainly possible in male-dominated occupations. In female-dominated branches such as health care, cuts led to fewer staff, but the workload is either unchanged or increased as ill health in society increases during recession. The consequences of these changes are increased demands and decreased influence regarding the work environment, particularly in female-dominated workplaces (Gonäs 1994).

At the same time, measures against unemployment have been taken in Sweden. It is known that qualifications are of importance for young long-term unemployed people to succeed in the labour market (White and McRae 1989). In the 1990s the number of education places as well as of labour market programmes increased. New forms of labour market programmes were introduced to increase the competence of the unemployed on the labour market. During the 1980s different labour market programmes (such as youth jobs, youth teams and induction places) were offered to all unemployed young people in the 16–19 age group. They
differed with regard to content, payment, as well as working time. They were mainly workplaces with little opportunity for education. In the 1990s a new programme was introduced – youth practice. It included young people in the 16–24 age group and was intended to be an educational rather than an employment programme (Björn, Hernæs, Eriksson and Wadensjö 1996). Thus, education and labour market programmes can be considered as ways to increase already existing competence rather than to be a step towards an ordinary job. However, only some of the unemployed get a job while most of them continue to be long-term unemployed and participated repeatedly in those measures.

The Swedish welfare state also suffered from the changes in the 1990s. Social and unemployment security decreased and more rigorous norms were introduced (Julkunen and Malmberg-Heimonen 1998). At the same time, the proportion of poor people increased and subsequently income differences increased (Statistics Sweden 1996). Increased unemployment among parents also had an effect on the psychological health of their children (Hagquist and Starrin 1994).

Generally, the work environment has improved in many respects (Vogel 1997) but the psychological work environment has deteriorated during the last decade, particularly for women in female-dominated sectors. The health of the population as a whole deteriorated during the 1990s, which is mainly explained by changed working conditions (Public Health Report 1997). The consequences of these changes are increased demands and decreased influence on the workplace as well as threatened unemployment (Gonäs 1994), which has resulted in increased ill health, particularly among women (Järnholm 1996, Stockholm County Council 1999). Comparing the results of several studies, Bartley (1994) concludes that when unemployed people are compared with those who work under pressure of imminent unemployment, far fewer differences are found in mental and psychological well-being. Insecure jobs also involve high exposure to work hazards of various kinds (Robinson 1986).

"The new unemployment"

The changes which occurred in the labour market during the 1990s have resulted in changes in the nature of unemployment (Table 1). This "new unemployment" has had an effect on the entire society, not only on certain groups. It hits groups which have not previously been threatened with unemployment, e.g. university and college graduates. Moreover, unemployment has been prolonged and the chances of coming back into the labour market again have decreased. Certain groups of the labour force became permanently unemployed but it seems as if nobody is spared from unemployment (Åberg, Strandh, Nordenmark and Bolinder 1997, Nordenmark 1999b).
The changes have profoundly affected young people. Many young people have experiences of unemployment. Previously, unemployment hit the most disadvantaged group of young people often, but these periods lasted just a short time. With high unemployment rate during a recession, many young people do not have any chance to establish themselves in the labour market. High education is no longer a guarantee of getting a job. Thus, these young people are in a situation of permanent impermanence.

The number of long-term unemployed people as well as the length of unemployment increased during the 1990s (Statistics Sweden 1995). This group of unemployed has gradually been excluded from the labour market. David Fryer (1997) puts forward a suggestion that long-term unemployed people through time become selected out of the labour market irrespective of any previous causal effect. Those who become unemployed because of health problems (selection) are at risk of having their problems exacerbated or compounded (exposure) and hence become even more at risk of further selection. On the other hand, those who become unemployed and then suffered a deterioration of health (exposure) must be at risk of remaining unemployed because of selection. Thus, long-term unemployment has a snowball effect which increases the exclusion of the long-term unemployed from the labour market.

**Boom and recession or times of prosperity and depression?**

This thesis deals with two terms, boom and recession, which have a very wide range of technical and colloquial meaning. According to dictionary (Merriam-Webster’s Collegiate Dictionary 1999), boom is explained as a rapid widespread expansion of economic activity. A synonym is prosperity – a state of high general economic activity marked by relatively full employment, welfare and growth. The
dictionary defines recession as a period of reduced economic activity while depression is a period of low general economic activity marked especially by rising levels of unemployment. Business (trade) cycle is a cycle of economic activity usually consisting of recession, recovery, growth, and decline. It was necessary to consider how to use these terms in a study intended both for readers who come from the medical profession, where these terms are unknown or have another meaning (e.g. depression as a mood), and for people in other fields of research where these terms have different meaning.

These terms have been used freely in this study. My intention was to describe, above all, the health effects of unemployment during two trade cycles, and the choice of terms seemed to be of less importance. When this study was planned in 1992–93 Sweden was going through the deepest economic crisis since World War II. It was followed by a fall of the Swedish currency, a decrease in the rate of inflation, as well as changes in the labour market, mostly expressed as an increase in levels of unemployment. However, it is doubtful to call this period a depression, since the economic activity was proportionally high and the unemployed individuals did not become unprotected or absolutely poor. Thus, this period can be denoted as a recession rather than a depression. On the other hand, 1986 looked like a time of prosperity compared to 1994, particularly because of the low levels of unemployment. Yet, in 1986 Sweden went through a period of recovery after a recession at the beginning of the 1980s (see Figure 2).

Objectives

The objective of this thesis was to analyse if and how the change of trade cycle influenced the health of young unemployed men and women. The objective was also to describe connections, to test hypotheses and to develop models. These objectives were studied from a gender perspective.

More specific questions and hypotheses were:

- Did the trade cycle matter for the health of young unemployed people?
- What were the main explanations for the differences in health between the unemployed and the employed, if they existed?
- Did high levels of unemployment as a climate factor have a negative effect on those who were not unemployed?
- Were there any gender differences in health?
- Does low willingness to respond introduce bias in studies on unemployment?
- Did selection or exposure to unemployment prevail during different trade cycles?
Population and methods
The empirical basis for this thesis consists of two cohorts of young people who can all be defined as pupils who attended or should have attended the last year of compulsory school in the municipality of Luleå during the spring term 1981 and 1989.

Quantitative methods of collecting and analysis of data were used, in order to make it possible to compare variables between and within the groups included in the study. Moreover, conclusions could be made which were valid for larger populations than those surveyed. This method also made it possible to estimate the size of effects as well as to study the interactions and connections between the different variables.

Setting
This study was carried out in the municipality of Luleå, an industrial town in northern Sweden. Two cohorts were surveyed during the 1980s and 1990s. Each of these groups represented different periods of the trade cycle in Sweden. The group from the 1980s represented a period when economic situation was relatively good and unemployment was low. The second group, from the 1990s, represented a time when the economy was on the downturn and the unemployment rate was enormously high by Swedish standards. In this thesis the first period is called a boom while the second is called a recession. Although the 1980s were not just a period of the economic prosperity and the 1990s were not merely a period of serious economic crisis, we shall retain these terms for the sake of clarity.

Luleå is a cathedral city and the seat of the Norrbotten County government as well as a university town. The area of the town is 1782 km² and the number of inhabitants during the study was about 70,000. The main employee, besides the local government and the County Council, was the steel company, SSAB (Swedish Steel, AB). The growth of production was obvious until the middle of the 1970s due to heavy international demand for steel. A huge enlargement of steel plant was planned (Steelwork 80). However, due to rapidly decreasing demands the plans were abolished. As a consequence unemployment rose among construction workers and others recruited to the town in order to built the new plant and the infrastructure which the enlargement demanded. The courses at the University of Luleå are in the field of technology. Thus, both the labour market and higher education in the Luleå are male-dominated.

There are several reasons why we chose to carry out the study in Luleå. The town is comparable to other medium-sized Swedish industrial. Besides, unemployment is considerably higher than in other towns, which makes it easier to study the associations between unemployment and ill health.
**Population**

The pathways of data collection in the boom and recession group are given in Figure 3. A more comprehensive description of data collection is given in the following sections.

The boom group

- 1981: Age of 16 year, 9th year at school, Baseline survey, Questionnaire, m=577, w=506
- 1983: Age of 18 year, 1st follow-up, Questionnaire, m=569, w=504
- 1986: Age of 21 year, 2nd follow-up, Questionnaire + Interviews, m=560, w=500

The recession group

- 1989: Age of 16 year, 9th year at school, m=469, w=428
- 1994: Age of 21 year, Questionnaire, m=421, w=388

**Figure 3** Pathway of data collection in the boom and recession group.

The first group of participants to be surveyed was a part of a longitudinal study that began in 1981. This group is defined as all pupils who attended or should have attended the last year of compulsory school in Luleå municipality during the spring term 1981, consisting of 1083 persons – 557 men and 506 women. The first survey was made in the last year of compulsory school when the participants were aged 16 years (1981) and the group was followed-up three times: 1983, 1986 and 1995. This study mainly uses the data from the 1986 follow-up.

During 1986 all 1083 participants were invited to a class meeting as the first step of the follow-up. Their addresses were obtained with the aid of the school register as well as the local population register. Those who attended the class meeting were asked to fill in a questionnaire. The attendance rate for the class meetings was 56 per cent among men and 57 per cent among women. The questionnaire was send by post to those who could not attend the meeting. More than 81 per cent of the men and 91 per cent of the women replied to the questionnaire either at once or after a reminder letter.

After that telephone contact was established with the non-respondents, who were asked to return the answers or a telephone interview was carried out. The last phase
of this survey consisted of personal interviews with those who failed to respond to the questionnaire in the previous stage or who could not be reached by telephone. Personal interviews were also performed with all long-term unemployed persons in this group for the purposes of a qualitative study.

The total response rate to the 5-year follow-up was 97 per cent among men and 99 per cent among women, i.e. the total non-response rate was 2 per cent. Thus, the total number of the responders in the 1986 survey was 560 men and 500 women.

The recession group
The recession group was identified as all 898 pupils – 469 men and 428 women – who attended or should have attended compulsory school in the municipality of Luleå during the spring term 1989. This group was surveyed only once, in 1994, when the participants were aged 21 years. During 1994 a self-administered questionnaire was mailed to all of the participants whose addresses were provided by school lists and the local population register. The questionnaire included the same questions as the questionnaire used in the boom group. The response rate to mailed questionnaires was 77 per cent among men and 83 per cent among women. Telephone interviews were conducted in the same manner as for the boom group. The non-respondents were asked to return the answers or a telephone interview was performed. The total non-response rate after this phase of the data collection was 10 per cent among men and 9 per cent among women. Owing to the limited resources no personal interviews were carried out in this group. Thus, 421 men and 388 women were respondents in this group.

Questionnaire
A self-administered questionnaire, consisting of roughly 90 questions, was used in both groups. It was constructed according to questions which are well known and validated in Scandinavian research (Hibell and Jonsson 1982, Thorslund and Wärneryd 1985, Hammarström 1986).

The questionnaire was divided into several sections: social background, experiences of education, work and unemployment, health, home and leisure time, as well as plans for the future.

Description of variables
Different measures of health, both physical and psychological as well as health behaviour and so forth, have been used in this study. Those measures have been used and validated in previous research (Hammarström 1986, Johansson 1970, Lavik 1976, Hammarström, Janlert and Theorell 1988, Hammarström 1994a).
The data about the length of unemployment for the boom group were taken from a specially constructed battery of questions, which was repeated three times during the follow-up period (see Appendix). The battery consisted of a cross-ruled net where the time measure was set as columns and occupation activities as rows. Each calendar year was divided according to school year terms – autumn and spring term, and summer holidays. Each term square was considered to be 20 weeks long while summer holidays were 12 weeks long. This robust measure of the length of labour market status was sufficient for the purpose of this study, since we mainly analysed the labour market status from occupations longer than 26 weeks. In the rows 13 occupational activities were offered: upper secondary school, university, other education, 3 different labour market programmes, full-time, part-time and casual job, unemployment, vacations, military service, and one square where the participant could state if her or she was occupied with something other than the offered alternatives. Moreover, the participants were asked to report how many months and weeks they were unemployed, employed, studying or participating in labour market programmes. If necessary, these data were completed with registered individual data. This question was asked in two follow-ups, after 2 and 3 years respectively. Hence the periods were relatively short and the retrospective data may therefore be considered reliable.

A similar measure of unemployment could not be used in the recession group because of the cross-sectional design. Therefore, the corresponding self-reported data of labour market status for the recession group were supplemented with data from the Swedish Labour Market Board’s database. This database has registered individual data on all listed unemployed people: age, gender, citizenship, education, and current labour market status – measures as openly unemployed, engaged in labour market programmes. This database was used to avoid recall bias regarding retrospective data about the length of unemployment and labour market programmes, which was avoided in the boom group using the battery of questions on two occasions. These database were not available for the boom group.

There was an incongruity in observation time between the self-reported unemployment data in the boom group, which covers the whole five-year period between age 16 and 21, and the unemployment data in the recession group fetched from the Labour Market Board’s database, which covers only the three-year period between 18 and 21 years of age. The reason for this was that the registration in the database did not start until July 1991. In the recession group 92 per cent of the participants continued to study at upper secondary school compared to 83 per cent in the boom group. Only 7 per cent of those who were long-term unemployed in the boom group were that in the 2-year follow-up. Therefore, the under-estimation of unemployment in the recession group is probably small.

The population was divided into four groups according to the main occupation during the observed period of five years: (1) long-term unemployed, i.e. those with continuous unemployment of 26 weeks or more, (2) workers, i.e. those who mainly
had a paid job, (3) students, i.e. those who were studying for more than one school term in higher education after secondary school, and 4) labour market programme participants, i.e. those who were taking part in different labour market programmes for more than 26 weeks. The last three groups, i.e. workers, students and labour market programmes participants were referred to as not long-term unemployed in Papers I, III and VI.

A composite index of somatic complaints was constructed, consisting of 31 different somatic symptoms on a three-grade scale, from 0 (no problems) to 2 (serious problems) (Johansson 1970). The questions dealt with current symptoms during the last twelve months: headache, weight problems, gastric complaints, problems with locomotive apparatus, infections, accidental injuries, etc.

In a similar manner a composite index of psychological symptoms was constructed, consisting of nervous and depressive symptoms on a four-grade scale (Lavik 1976). The nervous component of the psychological index consisted of five items about restlessness, lack of concentration, worries, palpitation, and anxiety, and their frequency during the last twelve months. The depressive component of the psychological index consisted of two questions regarding depression and sleeping problems.

The amount of alcohol consumed was estimated as per annum consumption (Hibell and Jonsson 1982). The volume of different alcoholic beverages was converted into decilitres of pure alcohol. Beer was considered to contain 4.5 per cent alcohol, wine 10 per cent and sprits 40 per cent alcohol. The estimate average alcohol volume for each type of alcohol was calculated by multiplying the occasions per year on which alcohol was drunk by the volume of alcohol on each occasion. The resulting product was the approximate per annum alcohol consumption in decilitres of pure alcohol. Those with alcohol consumption above 2 centilitres of pure alcohol per day among women and 3.5 centilitres among men were considered as high alcohol consumers (Hollstedt and Rydberg 1981).

The measures of control and demand were applicable to everybody in the study, regardless of whether they worked or not. Each index was constructed from three questions about the participants’ current situation at work, as students, as unemployed, etc. Control was measured with three questions: “Can you decide on different matters in your current situation?” “Can you make use of abilities and interests in your current situation?” and “Do you have the chance to do what you would prefer?” Demands were also measured with three questions: “Do you have a hectic time in your current situation?”, “Do you have a monotonous time in current situation?” and “Do you have too much to do in current situation?” Those with at least two negative answers to the control questions were considered as a group with lack of control. “High demands” was defined as having at least two positive answers to the questions about demands.
The Work Involvement Scale (WIS) was developed by Warr et al. (Warr, Cook and Wall 1979). It consists of six seven-grade questions about work commitments. The questions are coded according to a Likert scale; the higher the sum of WIS values, the higher the work commitment. For those who work, high WIS is of positive importance for good mental health. It has also been shown that for the mental health of the unemployed it can be better not to commit themselves too much to work (Ullah, Banks and War 1985). However, low work involvement can also decrease the motivation for job seeking.

Three indicators of socio-economic background were used: the parents’ socio-economic group (workers or salaried employees), and unemployment among parents at the time when the participants were in the 9th grade as well as the participants’ own education. As an indicator of social support, questions about relations to friends and the family situation were chosen. Spending most of the time with friends or living with a family, i.e. with parents or spouse, were regarded as favourable situations. Financial position (cash margin) was measured with one question about the possibility to get a certain amount of money within a week by one’s own means.

Statistics

Frequency and cross-classification tables, comparison of means as well as the logistic and linear regression analyses were used in the analysis of the data. Some of these analytical tools will be explained below (Altman 1991, Dawson-Saunders and Trapp 1994).

When different indices are used in a statistical analysis the concept of reliability must be considered. This concept refers to how accurate, on average, an estimate of the true score is in a population of objects to be measured. The reliability is usually estimated as a Cronbach’s alpha coefficient and it should be higher than 0.75. In this study the Cronbach’s alpha coefficient for somatic symptom index was 0.78 for the boom group and 0.81 for the recession group. Cronbach’s alpha coefficient for psychological symptom index was 0.79 and 0.81. Thus, the indices used in this study could be considered to give a proportionally correct picture of the health of the studied population.

Missing observations arise either because of random omission or because of concealment of disagreeable behaviour. The frequency of missing observations was low in both trade cycle groups, especially regarding the questions that were of interest in this thesis, such as symptoms, alcohol and tobacco consumption as well as different measures of labour market status – less than 1 per cent among both men and women. These small percentages of missing observations did not introduce a bias in results. However, after control for statistical significance, the
missing continuous data were replaced with the overall series mean, and discrete data were replaced with more advantageous value.

Logistic regression analysis was used in order to study how different moderating factors influenced the probability of an occurrence. The outcome (dependent) variable is always a binary or dichotomous variable. The independent variables, i.e. different factors that are expected to influence the dependent variable, can include both numerical and nominal measures. The results are presented as odds ratios, i.e. the ratio between two odds. Odds ratio is the ratio between the probability that an event will occur and the probability that it will not occur. The group that is used as a reference group has odds ratio set to 1. As a measure of significance in logistic regression analysis the 95% confidence interval is used. This means that the probability that an event occurs is 95%. If the interval does not include 1, we are 95% confident that an independent variable runs an elevated/lower risk of the issue presented as the dependent variable.

When the indices were used as a dependent variable in the logistic regression analysis (Paper I) they were dichotomised according to the median split. The median split facilitates an equal distribution of the observation and impedes the effects of skewed distribution.

Multiple regression analysis was performed in Paper II. This analytical tool was more appropriate as continuous variables were used as dependent variables. Three results of the multiple regression analysis were calculated: beta, p-value and adjusted R². The standardised regression coefficient – beta – is a standardised measure of the power in the correlation between the dependent variable and a moderating factor. Beta makes it possible to compare the effects of different moderating factors. The p-value shows the statistical significance level, i.e. the conditional probability that a relationship as strong as the one observed in the data would be present, if the null hypothesis were true. Adjusted R² shows the explanatory power of the model, i.e. how well the model fits the data.

Multicollinearity in the linear regression analysis is the undesirable situation where one of the independent variables is a linear function of another independent variable. This issue was avoided by collinearity diagnostics, and only variables with a low correlation coefficient were included in the analysis. However, sometimes we needed to include variables with a correlation coefficient higher than 0.30 since they were important for the model (Paper I), but these results were interpreted with caution. A similar problem in the logistic regression analysis is interaction; i.e. the effects of the factors are mutually dependent. This issue was avoided with the inclusion of variables with low correlation coefficient and control for interactions.
All data were analysed using a standard statistical package for microcomputers (SPSS for Windows version 6.1). The $\chi^2$ test for discrete data and analysis of variance for continuous data were used. A confidence interval of 95 per cent for odds ratio and p-value < 0.05 for frequency and means were chosen to be statistically significant.

Results

_Labour market status during the boom and recession (Papers I, II, and V)_

Almost all types of unemployment were more frequent in the recession group than in the boom group. The long-term unemployment was the most noticeable difference between the two groups, particularly among men. Approximately over three times as many men (35 per cent) and more than twice as many women (25 per cent) in the recession group had experience of an unemployment period longer than 26 weeks compared to the boom group (11 per cent and 10 per cent respectively). However, at the time of both inquiries there was a similar distribution of women who were unemployed at the time of inquiry (9 per cent in the boom and 10 per cent in the recession group), while among men this kind of unemployment was higher in the recession group (18 per cent) than in the boom group (9 per cent).

At the time of inquiry 58 per cent of men and 64 per cent of women in the boom group compared to 31 per cent men and women in the recession group were working. More young men (26 per cent) and women (37 per cent) in the recession group were studying at the time of inquiry than in the boom group (14 and 17 per cent respectively. Even if the frequency of men (12 per cent) and women (10 per cent) who participate in labour market programmes was higher in the recession group than in the boom group (4 per cent among both men and women) this difference was not significant.

Those in the boom group who mainly worked and participated in labour market programmes during the observed period of five years had a more advantageous situation regarding the time spent in paid work and unemployment compared to the recession group. On the other hand, those in the recession group who mainly studied spent more time in studies than did the boom group. Women in the boom group were occupied for a longer time than men in their main occupation, i.e. as workers in work, as students in studies or as labour market programme participants in labour market programmes, compared to the men in the same groups. There were no such gender differences in the recession group.
**Who were the long-term unemployed?**

Few differences were found among young long-term unemployed men and women in the boom compared to the recession group (column b in Table 2). Generally, the long-term unemployed in the recession group had a higher level of education. There were more men in the recession group who were still living with their parents and they had fewer children than the boom group. Moreover, there was no significant difference between the two groups regarding work involvement. WIS scores for men were 32.64 (SD=9.74) in the boom group compared to 32.94 (SD=5.58) in the recession group (p=0.851). The corresponding figures for women were 35.21 (SD=7.42) in the boom group and 35.21 (SD=7.71) in the recession group (p=0.856).

**Table 2** Background characteristics and differences between long-term unemployed (LTU) and not long-term unemployed (NLTU) young men and women during boom and recession (per cent).

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th></th>
<th>Women</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>LTU</td>
<td>NLTU</td>
<td>a</td>
<td>LTU</td>
</tr>
<tr>
<td>No upper secondary school</td>
<td>55.9</td>
<td>9.8</td>
<td>&lt;0.001</td>
<td>14.6</td>
</tr>
<tr>
<td>Live with parents</td>
<td>37.3</td>
<td>50.6</td>
<td>0.053</td>
<td>57.9</td>
</tr>
<tr>
<td>Have child/children</td>
<td>12.6</td>
<td>5.2</td>
<td>0.011</td>
<td>2.8</td>
</tr>
<tr>
<td>High demands</td>
<td>22.0</td>
<td>25.3</td>
<td>0.578</td>
<td>29.9</td>
</tr>
<tr>
<td>Lack of control</td>
<td>37.3</td>
<td>41.7</td>
<td>0.513</td>
<td>32.6</td>
</tr>
<tr>
<td>Low cash margin</td>
<td>66.1</td>
<td>42.7</td>
<td>&lt;0.001</td>
<td>60.4</td>
</tr>
<tr>
<td>Working class family</td>
<td>64.4</td>
<td>47.3</td>
<td>0.013</td>
<td>53.5</td>
</tr>
<tr>
<td>Pessimism</td>
<td>30.5</td>
<td>9.8</td>
<td>&lt;0.001</td>
<td>18.8</td>
</tr>
<tr>
<td>No upper secondary school</td>
<td>58.3</td>
<td>14.6</td>
<td>&lt;0.001</td>
<td>16.7</td>
</tr>
<tr>
<td>Live with parents</td>
<td>12.5</td>
<td>20.4</td>
<td>0.190</td>
<td>20.2</td>
</tr>
<tr>
<td>Have child/children</td>
<td>25.0</td>
<td>12.4</td>
<td>0.015</td>
<td>12.5</td>
</tr>
<tr>
<td>High demands</td>
<td>27.1</td>
<td>33.0</td>
<td>0.408</td>
<td>34.4</td>
</tr>
<tr>
<td>Lack of control</td>
<td>39.6</td>
<td>38.1</td>
<td>0.836</td>
<td>42.7</td>
</tr>
<tr>
<td>Low cash margin</td>
<td>87.5</td>
<td>56.0</td>
<td>&lt;0.001</td>
<td>75.0</td>
</tr>
<tr>
<td>Working class family</td>
<td>70.8</td>
<td>42.7</td>
<td>0.002</td>
<td>54.2</td>
</tr>
<tr>
<td>Pessimism</td>
<td>43.8</td>
<td>19.1</td>
<td>&lt;0.001</td>
<td>32.3</td>
</tr>
</tbody>
</table>

a – p-value between LTU and NLTU for respective variable; b – p-value between the boom group and the recession group among LTU for respective variable

However, there were several gender differences in the trade cycle groups (p-values not shown in Table 2). There were significantly more women than men in both trade cycle groups who could not get a certain amount of money by their own means (p=0.010 for the boom group and p=0.019 for the recession group). On the other hand, fewer women lived with their parents (p<0.001 for both groups).
Women in the recession group were more pessimistic about the future (p=0.004) and had a higher WIS score than the men in the same group (p<0.001).

Table 2 also shows differences between long-term unemployed and not long-term unemployed young men and women in each of the groups (column a). Here also long-term unemployed men and women in both trade cycle groups report a more unfavourable situation than those who were not unemployed. They had a lower level of education, worse financial position and were more pessimistic about the future, with the exception of men in the recession group. More of them came from working-class families, with the exception of women in the recession group, and had more children, except for men in the recession group. Long-term unemployed men in both trade cycle groups scored lower in WIS compared to not long-term unemployed men. In the recession group only, the long-term unemployed men experienced lack of control while long-term unemployed women reported higher demands than those who were not long-term unemployed.

The differences between those who were not long-term unemployed in the boom and the recession group are more extensively explained in Paper II. In short, young men and women in the recession group had higher levels of education, fewer children and felt that their occupations were more demanding compared to the recession group.

**Does low willingness to respond introduce a bias? (Paper III)**

The response rates in both trade cycle groups that were proportionally high – about 98 per cent and 90 per cent respectively. The non-response rate in the boom group was significantly lower (2.8 per cent among men and 1.4 per cent among women) than in the recession group (10.2 per cent and 9.6 per cent respectively). There was no significant difference in non-response between men and women in either of the two groups. In both surveys there were more men than women who were late respondents, i.e. those who replied to the questionnaire after a reminder, as well as non-respondents. Long-term unemployment and lack of upper secondary school for both men and women, as well as living with a partner for men, corresponded to low willingness to respond to a survey. Higher alcohol consumption – between 1.5 and 6.5 times – was observed among those with lower willingness to respond. Our hypothesis was that those who were late respondents in our study should be non-respondents in a study with higher non-response rate. Our conclusion was that even a low rate of non-response could introduce a serious bias and produce uncertain results in studies on alcohol consumption.

A similar analysis of other health measures that were used in this study was also carried (unpublished observations). As Table 3 shows, the late respondents generally reported more psychological symptoms. Women who were the late respondents in the recession group reported fewer somatic symptoms than the early
respondents did. Regarding daily cigarette smoking, the higher non-response in the recession group did not introduce a bias in the study (data not shown here).

Table 3 Average yearly alcohol consumption in decilitres of pure alcohol, average somatic and psychological symptom index x and standard deviations SD among early and late respondents in the boom and recession group.

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>p boom/</th>
<th>Men</th>
<th>Women</th>
<th>p boom/</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Boom x SD</td>
<td>Recession x SD</td>
<td>recess x SD</td>
<td>Boom x SD</td>
<td>Recession x SD</td>
<td>recess x SD</td>
</tr>
<tr>
<td>Early respondents</td>
<td>36.68 69.53</td>
<td>32.33 44.90</td>
<td>0.204</td>
<td>8.39 11.20</td>
<td>12.77 18.82</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Late respondents</td>
<td>247.59 538.62</td>
<td>49.60 68.98</td>
<td>0.007</td>
<td>29.12 57.88</td>
<td>19.11 36.52</td>
<td>0.335</td>
</tr>
<tr>
<td>Total</td>
<td>70.60 234.57</td>
<td>34.44 49.05</td>
<td>0.002</td>
<td>10.10 20.14</td>
<td>13.25 20.89</td>
<td>0.024</td>
</tr>
<tr>
<td>p early/late</td>
<td>&lt;0.001</td>
<td>0.013</td>
<td>&lt;0.001</td>
<td>0.096</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Alcohol consumption *  

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
</tr>
</thead>
<tbody>
<tr>
<td>Somatic symptoms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Early respondents</td>
<td>6.06 4.45</td>
<td>6.98 5.25</td>
</tr>
<tr>
<td>Late respondents</td>
<td>6.58 4.93</td>
<td>6.63 4.83</td>
</tr>
<tr>
<td>Total</td>
<td>6.14 4.53</td>
<td>6.93 5.18</td>
</tr>
<tr>
<td>p early/late</td>
<td>0.327</td>
<td>0.626</td>
</tr>
</tbody>
</table>

| Psychological symptoms |                   |                    |
| Early respondents     | 4.61 2.06         | 4.82 2.38          | 0.180         | 5.05 2.15         | 6.05 2.78      | <0.001        |
| Late respondents      | 6.29 3.15         | 5.95 2.33          | 0.481         | 6.69 3.25         | 6.63 2.80      | 0.941         |
| Total                 | 4.88 2.21         | 4.98 2.35          | 0.519         | 5.18 2.32         | 6.10 2.78      | <0.001        |
| p early/late          | <0.001            | <0.001             | <0.001        | 0.243             |                    |               |


However, there were no differences between the two trade cycle groups among the late respondents regarding somatic and psychological symptoms. The differences between the two trade cycles among late respondents who smoked followed the general lower frequency of the smokers in the recession group. Thus, the higher non-response rate in the recession group could introduce a bias especially among men.

**Somatic and psychological health (Papers I and II)**

Generally, young men and women reported more somatic (Figure 4) and psychological symptoms (Figure 5) during recession than boom. The only exception was psychological symptoms among men, which were of the same magnitude during both periods.

**Long-term unemployed**

Overall, young people in the recession group reported more somatic symptoms, measured as means of symptom index, compared to the boom group (Figure 4). The differences between the long-term unemployed and the not long-term unemployed were significant among women in the boom group only. There was no
difference between the two groups in the somatic symptoms among the long-term unemployed. Long-term unemployed men reported a variety of symptoms including prolonged bronchitis, asthma, fatigue, and breathlessness. They also reported involvement in traffic accidents resulting in injuries. Women in the same situation reported complaints such as allergy, nausea, gastric pains, pain in the hands, fatigue and breathlessness.

Among women only, psychological symptoms were more frequent during the recession than during the boom (Figure 5). The differences between the long-term unemployed and the not long-term unemployed were more pronounced in the boom group and statistically significant for both men and women, while in the recession group the differences were significant for women only. In the boom group long-term unemployed men and women reported different nervous and depressive complaints: restlessness, lack of concentration, anxiety, worries, as well as depression and sleeping problems. In the recession group long-term unemployed women reported restlessness and worries.

The level of somatic and psychological symptoms among long-term unemployed was of the same magnitude during both boom and recession, while the level of symptoms among not long-term unemployed increased. As a result most significant differences between long-term unemployed and not long-term unemployed observed during the boom disappeared during the recession. The effect of the trade cycle on health symptoms lay mainly in the not long-term unemployed group. This
result underlines that health hazards of unemployment are a highly relevant problem even during a recession. It also highlights working conditions as an important field for further research.

![Graph showing average psychological symptom index by occupation and gender]

**Figure 5** Average psychological symptom index in the boom group (not shaded) and the recession group (shaded) according to main occupation during the observed period.


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**Not long-term unemployed**

Poorer health during a recession was found among women in work and in labour market programmes, as well as among both male and female students. Overall, women recorded more somatic and psychological ill health compared to men. The gender differences in health were more pronounced during the recession, except for psychological ill health among students. As paper II shows, the effects of unemployment in society on young people's health may be mediated through pessimism about the future, high demands and financial problems. Lack of control over the work situation may also be an important contributing factor to ill health among women during recession. However, the trade cycle, i.e. recession, was correlated with poor health among non-unemployed women only. The risk of strained work situations and deteriorated health was greater when cuts were made in female-dominated occupations.

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**Health behaviours – alcohol and tobacco consumption (Papers IV, V, and VI)**

The average yearly alcohol consumption among young men was significantly (p=0.002) higher in the boom group (70.60 decilitres of pure alcohol) than in the
recession group (34.44 decilitres). The opposite was found among young women (p=0.024): the consumption was lower in the boom group (10.10 decilitres) than in the recession group (13.25 decilitres). An association between the length of unemployment and alcohol consumption was found except for men in the recession group (Figure 6). Higher alcohol consumption among women in the recession group was discussed in relation to deteriorated working conditions for women.

**Figure 6** Average yearly alcohol consumption in the boom group (unbroken line) and the recession group (dashed line) compared to the length of unemployment. Logarithmic scale on the y-axis.
Source: Novo et al. Paper IV

Daily cigarette smoking (Figure 7) was of a lower magnitude during the recession (9.7 per cent among men and 21.9 per cent among women) than during the boom (19.8 per cent and 37.8 per cent respectively). Compared to the boom group, there were more young men and women in the recession group who never smoked.

**Figure 7** Proportions of young not long-term unemployed (NLTU) and long-term unemployed (LTU) men and women who have never smoked and those who are daily smokers
Source: Data from Novo et al, Public Health 2000, in press
There were also more not long-term unemployed men and women who never smoked compared to the long-term unemployed in each of the trade cycle groups. Low level of education and among women also financial problems and motherhood were associated with more frequent smoking.

Unemployment was associated with tobacco consumption, especially among women and during the boom. The frequency of snuff users was of the same magnitude during the trade cycles and was not associated with unemployment. On the other hand, both the unemployment and smoking trends in society were found to influence smoking among young people. The increased unemployment rates during the 1990s were followed by decreased cigarette consumption. The decrease in the number of smokers in this study followed the general decrease of smoking in society as a whole (Paper VI). However, these positive effects on the decrease of smoking, attained primarily by public health action, seemed to diminish during the recession in the 1990s. Thus, smoking habits were found to be a question of both unemployment and tobacco trends in society.

**Selection and exposure (Papers I, IV, V, and VI)**

It has been suggested that the harmful effects of unemployment on health decrease during a recession, which indicates that health selection may be just as important as unemployment causation. The idea is that during a boom those without jobs are likely to be “health-selected” to a greater extent than during a recession, i.e. they will tend to have chronic ill health or behavioural characteristics that make them both hard to employ and at risk of illness (negative selection). During a recession those unemployed are not specially health-selected, but the whole labour force tends to be health-selected (positive selection), i.e. a healthier work force faces harsher competition in the labour market.

A model of exposure to high unemployment rates in society and selection into and out of the labour market during a boom and recession was proved (Paper V). The idea behind the model was that during a recession selection into the labour market (positive selection) depended on the individual features rather than structural factors. On the other hand, selection out of the labour market (negative selection) during a boom depended on individual features while during a recession it depended on structural rather than individual factors.

Exposure to high unemployment rates in society had an effect on alcohol consumption among women only. Selection into the labour market was due to structural factors rather than positive individual features (Table 4). On the other hand, negative selection, i.e. selection out of the labour market due to negative individual features, was found among both men and women. However, the association between negative selection and recession was significant among men only (Table 4).
Table 4 Odds ratios (OR) and 95% confidence intervals (95% CI) for positive and negative selection among young men and women.

<table>
<thead>
<tr>
<th></th>
<th>Men Bivariate</th>
<th>Multivariate</th>
<th>Women Bivariate</th>
<th>Multivariate</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR 95% CI</td>
<td>OR 95% CI</td>
<td>OR 95% CI</td>
<td>OR 95% CI</td>
</tr>
<tr>
<td><strong>Positive selection</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recession</td>
<td>0.37 0.28-0.48</td>
<td>0.37 0.28-0.48</td>
<td>0.31 0.23-0.41</td>
<td>0.31 0.24-0.41</td>
</tr>
<tr>
<td>At risk of selection</td>
<td>1.02 0.75-1.38</td>
<td>0.95 0.69-1.30</td>
<td>0.85 0.61-1.23</td>
<td>0.86 0.61-1.22</td>
</tr>
<tr>
<td>High alcohol</td>
<td>1.31 0.84-2.03</td>
<td>1.07 0.68-1.68</td>
<td>0.36 0.13-1.02</td>
<td>0.43 0.15-1.26</td>
</tr>
<tr>
<td><strong>Negative selection</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Recession</td>
<td>2.06 1.34-3.19</td>
<td>2.42 1.54-3.81</td>
<td>1.13 0.66-1.92</td>
<td>1.08 0.63-7.85</td>
</tr>
<tr>
<td>At risk of selection</td>
<td>1.82 1.15-2.90</td>
<td>1.83b 1.14-2.95</td>
<td>1.70 0.94-3.06</td>
<td>1.56 0.85-2.85</td>
</tr>
<tr>
<td>High alcohol</td>
<td>2.35 1.31-4.25</td>
<td>2.76a 1.49-5.11</td>
<td>5.93 2.03-17.3</td>
<td>5.27b 1.78-15.6</td>
</tr>
</tbody>
</table>

a - significant on the 0.05 level or less (the results of a separate analysis of the boom group).
b - significant on the 0.05 level or less (the results of a separate analysis of the recession group).

Source: Novo et al Paper V

The results for somatic and psychological symptoms could not confirm the hypothesis that health hazards due to unemployment are only a boom phantom. Moreover, the findings could not confirm the hypothesis of a healthier work force during recession, i.e. that high general unemployment would introduce a positive health selection in the whole labour force. On the contrary, both somatic and psychological health complaints rose during the recession in the not long-term unemployed group. Regarding cigarette smoking it was suggested that both exposure to unemployment, particularly among women, and selection might have an effect.

**Discussion**

Examination of the methods used, as well as the applicability of the results, can show the strengths and weaknesses of a study. To begin with I will discuss some methodological considerations of my thesis. The applicability of the results will be discussed later.

**On the methods**

A bias in a study is an error that leads to an incorrect conclusion. We can distinguish different types of biases that can occur due to the ways in which the population is selected, the data are collected and analysed, as well as in the manner in which the conclusions are drawn (Dawson-Saunders and Trapp 1994).
Selection and data collection bias

A selection bias means error due to systematic differences in characteristics between those who are selected for study and those who are not. In this study all individuals of a certain age from a municipality who attended or should have attended the last year of the compulsory school in a certain year were included. Even pupils who had dropped out of the compulsory school were included. Hence, there was no selection bias in this study.

The levels of unemployment in the boom and recession group were of the same magnitude as the levels of youth unemployment in Sweden in the respective periods. The municipality of Luleå could be considered to be representative for middle-sized industrial towns because of its size of population, proportion of urban and rural population, kind of industry and limited opportunities for higher education. However, a certain bias might occur because of the life styles, attitudes to work and unemployment, which are characteristic for northern Sweden (Hägg 1993, Waara 1996).

The data were collected in several ways, as described in Paper III. The response rate in this thesis, especially in the boom group, was high. The analysis of the late responders (Paper III) showed that a probable underestimation of alcohol consumption and psychological health occurred among men in both trade groups and among women in the boom group, as well as an overestimation of the somatic ill health in the recession group. On the other hand, high response rates as in this thesis are usually considered to give a fair picture of the studied population (Siemiatycki and Cambell 1984). Thus, this bias was probably of low magnitude.

The problem of accuracy of the research questions and methods used often occurs in longitudinal studies (Blane 1996) or cross-sectional studies where two different periods are compared. The questionnaire was constructed using mainly questions from the well-known and validated research that was accessible at the time when the project, which this thesis was part of, was planned at the beginning of the 1980s: the Swedish national survey on living conditions (Statistics Sweden 1979), the Low Income study (Johansson 1970) and the Swedish council for information on alcohol and other drugs (Hibell and Jonsson 1982). The reliability of our questionnaire was tested by comparisons with a national survey, using similar questions about alcohol, tobacco and narcotics abuse used in the same population, and was found to be satisfactory (Hammarström 1986). Thus, even if new and better measures and tools have been established, we continued to use the same measures in order to make comparisons possible.

Another consideration with these kind of studies, which are partly based on retrospective data, is recall bias, i.e. how well the respondents remember the events from the past. The data about labour market status and health were mainly
collected retrospectively. It has been shown that occupational information can be recalled with useful accuracy, with the exception of respondents who change jobs frequently (Berney and Blane 1997). In this thesis recall bias was minimised in two ways. (1) In the boom group, the respondents answered a battery of questions, which was repeated in the follow-ups after 2 and 3 years respectively (see Appendix). The question was divided into shorter time periods and offered several alternatives regarding labour market status. Thus, recall periods in this group were short, which did not introduce a bias. Moreover, the self-reported data were supplemented with an interview for all long-term unemployed young people and if necessary with register data from the county labour market board. (2) In the recession group the recall period was long – 5 years. Therefore, data from the Labour Market Board data were used regarding the length of unemployment and labour market programmes. These data were not available for the boom group.

The comparability of the two sources of occupation data – the self-reported in the boom group and the register-data in the recession group – could be discussed. The self-reported data, besides the recall bias, might be unreliable due to individual interpretation of the definition of unemployment. A person who had a paid labour market programme or work on the side might consider himself/herself as employed. This underreporting did not occur in the register-data from the Labour Market Board. On the other hand, a certain over-reporting of unemployment might occur in the register-data since some people worked on the side and were, at the same time, registered in the employment service with the intention of retaining unemployment benefit. Moreover, the register-data did not include people who were not registered in the employment service. Besides, the data about the time spent in work and education were not included in the register. This data were, therefore, taken from the questionnaire. An uncertainty was also that the register-data were drawn out from the database at a certain date and not at the time of the inquiry. Since this thesis mainly dealt with long-term occupations during the observed time, this bias was of lower importance.

Measures of health

The questions about somatic and psychological symptoms covered the period of the previous twelve months, since the aim of the study was to focus on the issue of long-term unemployment. Two issues might appear with regard to these measures: long recall period and influence of emotional load attached to particular item information (Blane 1996). This means that an event that is emotionally laden, for example unemployment, can produce an over-reporting of symptoms related to the period of unemployment. A comparison of interview and register data has shown a tendency towards underreporting among those who experience their health as good and a tendency towards over-reporting among those who experience their health as poor (Brorsson and Smedby 1982). Tobacco smoking (Krall, Valdian, Dwyer and
Gardner 1989) as well as alcohol consumption (Grant, Arciniega, Tonigan, Miller and Meyers 1997) appear to be recalled with useful accuracy during a longer period.

Self-reported health problems such as somatic and psychological symptoms rather than medical diagnoses were studied in this thesis. As young people are generally healthy, the probability is low that serious deterioration in health will appear as a consequence of unemployment. Moreover, clinical diagnoses are unfamiliar to young people (Power, Matthews and Manor 1998). Self-reported symptoms are also more suitable in a questionnaire, which is filled in by layman. Therefore self-rated symptoms and disorders rather than diagnosis were studied. A consideration regarding our use of indices rather than diagnosis is that the borderline between health and ill health was indistinct, since we do not know what score means good or poor health. However, indices offer a method of comparing those who suffer frequent illness with those who experience little or none and have shown to have reliable correlation with more objective indicators of health (Bird and Fremont 1991). Thus, these indices were interpreted as indicators of, rather than as actual measures of, the health status. In many of the papers the terms "ill health" and "poor health" were used to denote that a certain group of participants scored more than others on different scales of health measures.

The questionnaire used in this thesis measured tobacco and alcohol use rather than diagnoses related to tobacco and alcohol use. In certain cases it is more plausible to measure risk indicators than diagnoses. Young people usually do not develop symptoms and diseases that are consequences of substance use. As discussed above, the questions about alcohol and tobacco consumption are also easy to measure in a questionnaire compared to the diagnosis, because young people are more acquainted with them. A further advantage of the use of risk factors is that they are more frequent than diagnoses, which gives a larger data material for analyses.

Confounding bias
Confounding bias occurs when two factors are closely associated and the effects of one confuses or distorts the effects of the other. The distorting factor is a confounding variable. Janlert (1991) has pointed out that traditional confounders may be important determinants in the causality chain between unemployment and health. Thus, it is difficult to make a decision as to whether a factor is a confounder or a determinant. Schaufeli and Van Yperen (1992) distinguish between factors which are supposed to be influenced by employment status (mediating factors) and those which are not influenced by the individual’s current employment status (moderating factors). Winefield (1995) finds that the distinction between these factors is vague, since it is far from clear which factors should be assigned to which
category. He suggests that we do not need to make a clear distinction between these factors and he labels them as moderating factors. In this thesis the terms confounding factors and moderating factors were used alternatingly. However, moderating factors were interpreted as determinants rather than as confounders.

It is impossible to control for all conceivable circumstances that can influence the groups. One of them is the cohort effect. Besides changes in the labour market, young people also experience different expositions in a number of other aspects, due to the fact that they were born on different points of time. Cohort effect can thus be an alternative explanation for certain findings. An alternative would have been to look at the same group at different times, i.e. a longitudinal study. This should have eliminated the cohort effect, but instead introduced an age bias which could be influenced by marital status, children, education, i.e. socially critical periods in human development (Bartley, Blane and Montgomery 1997). As this thesis looks at what is happening to a young group during a period of rapid transition, my opinion is that the cohort effect would probably be smaller than the age effect. The variables "The trade cycle", i.e. "Recession" (Papers I, II and V) can be considered as representative of the cohort effect. Since I was interested in the effects of unemployment in society, I considered the cohort effect as a moderating factor rather than as a bias.

On results

Gender perspective in this thesis means the construction of the division of the labour when men and women were allocated in different occupations according to the attributes and behaviours assigned to men and women respectively (Connell 1987). This means that education, labour market programmes, unemployment benefits and so on are divided according to the gender order. Different positions also mean an asymmetric distribution of influence, resources and income, which leads to different health outcome (Hammarström 1994b, Doyal 1995). Different researchers, including some of the few female researchers within the field, state that unemployment is not as destructive for women as it is for men. The explanation given is that women can go back to their domestic tasks, which could compensate for the negative effects of unemployment. (Kommarovsky 1940, Ovesen 1978, Jahoda 1982). During the last few decades women in Sweden have established a more stable connection to the labour market as well as a working identity. The work has been a central feature of young women’s striving for independence and equality of opportunity (Hägg 1993). This in its turn means that women have been as vulnerable to the changes in the labour market as men, and the differences between women’s and men’s reactions to unemployment have decreased (Leana and Feldman 1991, Lahelma, Rahkonen and Huuhka 1997, Alm 1998).
The main research questions of my thesis will now be discussed in relation to the findings from the papers.

**Did the trade cycle have an impact on the health of unemployed people?**

The answer to this question is no. Although there were some differences between the two trade cycles – in psychological symptoms and alcohol consumption among men, and cigarette smoking among men and women, the variable trade cycle showed hardly significant outcome in the statistical analyses.

The difference between the two trade cycle groups in daily cigarette smoking relied on the total decrease of smoking rather than on a decrease in smoking among the long-term unemployed women in the recession group. Among men, on the other hand, lower alcohol consumption can partly be explained by lower alcohol consumption in the recession as a whole. In the boom group, the long-term unemployed men reported a more disadvantaged situation regarding health and health behaviour compared to those who were not long-term unemployed. In the recession group, the long-term unemployed also reported disadvantaged health and health behaviour, but this difference was not significant.

Thus, poor health due to long-term unemployment constitutes a highly relevant problem during a boom as well as during a recession.

**What were the main explanations for the worse health among the unemployed compared to the employed?**

Several factors were found to be different between the long-term unemployed and the not long-term unemployed men and women (Table 3): level of education, financial position, family situation, working class background, pessimism about the future and work involvement. The long-term unemployed women in both groups had a worse financial situation compared to the men in the same group, while the long-term unemployed women in the recession group were more pessimistic about the future and had higher work involvement than men.

**Education**

The importance of education for opportunities on the labour market is self-evident. However, the higher level of education among the long-term unemployed men and women in the recession group was not a guarantee that they would get a job. This is also found in other studies from Sweden (Nordenmark 1999b). The changes in the organisation of production, which occurred during the 1990s, mean that new abilities and skills have been requested. However, the profile of education stayed unchanged during the 1990s, although educational measures were given high
priority during this time (SOU 1996). Thus, an inadequate educational spectrum offered to young men and women in the recession group could be a reason for the higher levels of unemployment in this group compared to the boom group. In my thesis the importance of education was tested in Papers II and VI. Lower level of education was associated with lower willingness to respond and a higher level of cigarette smoking.

Family background

Unemployment was higher among young people with a working class background, which is a common finding in unemployment research (Montgomery, Bartley, Cook and Wadsworth 1996). This can be quite surprising since the opportunities for education in Sweden are not connected with the parents’ economic situation. Family background, rather than study motivation, talent and ambition, has proved to be of more importance for continued education after compulsory school (Murray 1994). An explanation offered can be that young people choose similar professional carriers as their parents (Erikson and Jonsson 1993) and that children from disfavoured families have difficulty in being admitted to prestige courses (SOU 2000). In the recession group, this difference was weaker. A possible explanation could be that unemployment also hits those young men and women from families with a higher level of education. However, it has been shown that achieved social position determines health more strongly than class of origin (Karvonen, Rimpela and Rimpela 1999) which is supported in this thesis (Papers II and VI).

Financial position

The most striking difference was found concerning the financial position: the long-term unemployed had a worse financial position compared to the not long-term unemployed. The cash margin is usually defined as the possibility to get a certain amount of money within a week by own means, loan or in another way. However, this definition also includes a certain amount of social support, and the definition used in my thesis (possibility to get a certain amount of money by own means) may be a better measure of financial position.

The importance of the financial position for health and health behaviours among unemployed individual has been found in many studies. Several theories on the association between unemployment and health have been developed on this issue. Marie Jahoda (1979) has suggested that the manifest functions of employment, i.e. income, have importance for the negative feelings about unemployment. David Fryer (1992) assumes that financial difficulties during unemployment are important for the association between unemployment and ill health. The discrepancy between needs, which are often created by society, and what people actually receive can
lead to a prolonged stress situation, which has impact on the health and health-related behaviours. However, bad financial position does not have the same effect on, for example, the mental health of young men and women (Hagquist and Starrin 1996). Unemployed women are harder hit by financial difficulties, which have more negative effects on their health compared to men.

In Sweden there are two unemployment insurance systems with different conditions for attendance qualification: unemployment insurance funds and the state scheme of cash labour market assistance. Common conditions for compensation are that the applicant is registered as a job seeker in the public Employment Service, and that he/she either had paid work or has participated in labour market programmes before the unemployment period. To qualify for unemployment benefit funds, the applicant must belong to an unemployment benefit fund for at least one year and must have had a paid job during a certain period. The compensation from the unemployment benefit fund consists of a certain per cent (80% at present) of the previous income up to a certain limit. On the other hand, cash labour market assistance does not request membership in the unemployment benefit fund or having paid work before the period of unemployment. However, the compensation from cash labour market assistance is considerably lower than the compensation from unemployment benefit funds and covers shorter time period.

Since young people alternate between unemployment, education, training schemes and temporary employment, i.e. they are in a cycle of "permanent impermanence" many of them do not qualify for the unemployment benefit funds. Thus, they obtain much lower compensation from cash labour market assistance. The situation of young women is worse than that of the men, since women are more often employed in jobs with time limitations (Arbetslivsfakta 1993). Moreover, they have lower salaries even while in a job (Asplund, Barth, Smith and Wadensjö 1996), which also implies lower compensation from unemployment benefit funds if they at all qualify for them.

It has often been stated that financial position is of less importance for young people since their families support them financially (Schultz and Ran 1985, Schaufeli 1997). In the population which was studied in this thesis, there were more young unemployed men who lived with their parents compared to women, particularly during the recession. Research has shown that young women in Sweden are less dependent on parental resources than men, and leave their parent’s home earlier than men do. Women more often decide on leaving the parent’s home due to the educational and labour market opportunities than men do (Nilsson and Strandh 1999). However, during a recession there is a lack of work chances, which might have a negative influence on women’s financial position.
In many studies, economic deprivation is regarded as a major reason for decreased drinking among unemployed people (Ettner 1997). The men who were long-term unemployed during recession consumed less alcohol compared to the boom group. An explanation could be that the financial position became worse during the recession, which could lead to a decrease of alcohol consumption. This explanation can also, besides the public health campaign, be applicable for the lower cigarette smoking among young unemployed people in the recession group. It has been shown that the decrease of smoking is associated with financial position among young people (Grossman and Chaloupka 1997).

**Work involvement**

Paid work means not only income but also different non-economic features, for example Jahoda’s (1979) latent function, some of Warr’s (1987) vitamins as well as social status (Ezzy 1993). Work involvement measured by the WIS-scale can be considered as a measure of these non-economic features of work. The work involvement was proportionally stable between the two periods, a finding which is supported by other studies (Gamberale, Bracken and Mardones 1995). In this thesis those men who were long-term unemployed scored lower on the WIS-scale compared to those who were not long-term unemployed. On the other hand, the long-term unemployed young women in the recession group had both higher work involvement and poorer health than men had in this trade cycle group. It has been shown that for the mental health of the unemployed it can be better for them not to commit themselves too much to work (Ullah, Banks and War 1985). Studies that analysed work involvement among different age groups of unemployed people have found that the association between high work involvement and poor health is stronger among young women and older men (Nordenmark 1999a). Research has also found that young women rate the importance of the work characteristics higher than men do (Gamberale, Bracken and Mardones 1995). For women work means not only an opportunity to gain income, but also a possibility to maintain their identity as individuals and as a group in the male-dominated labour market. At the same time, young men have a given position in the gendered labour market, although it can be somewhat weakened in a recession. Diminished chances of work during a recession result among women in both deteriorated finances, as well as the impossibility of equality of opportunity. Thus, during a recession, the unemployed women suffer both from financial well as non-financial work deprivation, which results in poor health.

A further explanation for these gender differences could be the life styles, attitudes to work and unemployment, which are characteristic for people from northern Sweden. The municipality of Luleå, where the study was carried out, lies in a forest county with many opportunities for outdoor life: hunting, fishing and driving snowmobiles. These activities are ascribed as a part of the masculine culture of
northern Sweden, and they are sometimes seen as work rather than as leisure time activities (Hägg 1993). Although the income from paid work is required to fulfil these interests, the employment is considered to hinder the realisation of them (Waara 1996). Some of these activities may be profitable for men, for example the sale of a quarry, and they can fulfil some of Jahoda’s latent functions. On the other hand, young women have neither access to this informal sector nor interest in these activities, which increases the risk of poor health (Hammarström 1996). Qualitative studies carried out on the youth from the municipality of Luleå have shown that this explanation is valid for those young men from the rural rather than the urban parts of the municipality (Hammarström 1996). An additional explanation can be that male-dominated skills, such as building or mechanics, give the unemployed men an opportunity of working outside the ordinary labour market and earning beyond their unemployment benefit. This moonlighting is an important source of income among unemployed men (Lysestøl and Skjærvold 1997).

An explanation offered for the weaker association between unemployment and health among men in the recession group may be that men can more easily adapt to strained financial and social circumstances. Jackson and Warr (1987) have found that mean levels of distress among unemployed people are higher where prevailing levels of unemployment are lower. They suppose that individual unemployment is more stigmatised in such circumstances.

**Pessimism**

Occupational position has been found to influence pessimism about the future, especially among young women (Hammarström, Janlert and Theorell 1988). The long-term unemployed men in the boom group, and women in both trade cycle groups, were more pessimistic about the future compared to the not-unemployed people. However, long-term unemployed men in the recession group reported lower levels of pessimism than women in the same group did. Pessimism, as a negative affect, can be both a mental representative of poor health, as well as be based on real circumstances, for example, bad prospects in the labour market. Research has shown that self-reported negative affect is related to higher levels of stress, depression, poor psychological and physical health (Dua 1993). Thus, lower levels of pessimism among men in the recession group can partly explain that their psychological health was not deteriorated during the recession compared to women in the same group.

**Did the trade cycle have an impact on the health of the not-unemployed?**

Paper I showed that the effect of the trade cycle on health lay mainly among not-long-term unemployed people. Paper II was, therefore, carried out in order to analyse this heterogeneous group.
Students in the recession group reported poorer health compared to the students in the boom group. A Swedish survey has shown that during a recession young people, particularly young women, choose to study at university instead of being unemployed or employed in insecure jobs (Voltaire 2000). It has already been discussed that the educational profile in Sweden was not changed between the 1980s and 1990s (SOU 1996), which implies that the education did not respond to the demands of the labour market. Another possible explanation for the poor health among students in the recession group could be that, even if they did not work, it might have been stressful to live with the insecurity of not knowing whether they would get a job after their studies. Unemployment among well-educated people has increased during the 1990s (Åberg, Strandh, Nordenmark and Bolinder 1997). This could have a negative influence on their expectations for the future and consequently on their health.

The labour market programmes are an important part of the traditional labour market policy in Sweden. Because of the recession in the 1990s new programmes were introduced (Björn, Hernæs, Eriksson and Wadensjö 1996) but it has been shown that they have less effects in recession compared to times of prosperity (Larsson 2000), particularly among women (SOU 1996). An explanation offered can be that the labour market programmes are adapted to the demands of male-dominated occupations, and that they favour this sector of the labour market (Bystedt 1995). Even during a boom, labour market programmes do not lead to permanent jobs, which is the main aim of these programmes (Gonäs and Westin 1993). However, the poor prognosis of labour market programmes (Hammarström and Janlert 2000) and poor health among participants in those programmes (Alm 1998, Hammarström and Olofsson 1998) were found among women only.

Women in the recession group who mainly worked showed poorer health compared to their equivalents in the boom group. One explanation for the gender difference could be the gendered face of rationalisation. In male-dominated branches, production can more easily be cut or rationalised in times of recession, without causing increased workload among the employees. In female-dominated sectors, on the other hand, cuts will lead to fewer staff, but the workload will be either unchanged or increased, as ill health in society increases during recession. The consequences of these changes are increased demands and decreased influence regarding the work environment, particularly in female-dominated workplaces (Gonäs 1994). Research has shown that the experience of control is quite different in male- and female-dominated occupations (Kjellberg 1998). In female-dominated occupations work is often characterised by relations to others e.g. patients, pupils, children. The male-dominated occupations are more characterised by work with objects such as machines, ore, paper, which in contrast to human beings have no requests. Thus, in female-dominated occupations the employees may – especially during recession – be torn between their own, the employers’ and the third party’s requests, which may negatively affect the worker’s experience of control and also
their health. Surveys show that high demands and low levels of control, as well as increased workload, are most common in female-dominated occupations (Stockholm County Council 1999). The division of labour along gender lines, at home as well as at work, leads to a situation of lower control for women compared to men, which increases the risk of ill health for women (Doyal 1995, Hunt and Annandale 1993).

Selection or exposure?

David Fryer (1997) states that the issue of selection and exposure to unemployment is usually analysed with regard to the labour market and economic context. He suggests that other factors such as time eras, geographical region, gender, age and so forth should be taken into consideration when this issue is analysed and discussed. These and other factors may operate in interaction, and give varied outcome in different studies. Thus, conclusions drawn in one study may not be valid in another. The model presented in Paper V, as well as other results in this thesis, confirms that the issue of selection and exposure is different for men and for women as well as for trade cycle.

Since this thesis was mainly based on cross-sectional data, conclusions about causality should be drawn with caution. However, we did not confirm that positive health selection into the labour market was stronger during the recession compared to the boom. On the other hand, negative selection out of the labour market differed between the trade cycles and between men and women.

Direct health-related selection was found in Paper V – those who consumed more alcohol run a higher risk of being unemployed. A similar association was found among smokers in Paper VI – fewer cases of those who never smoked were found among the long-term unemployed young men and women compared to the not long-term unemployed. Thus, direct health selection prevailed in the boom group, which was in concordance with studies that have suggested that health-related selection is stronger during a boom than a recession (Bartley 1996). On the other hand, the indirect selection, that is selection due to social and individual factors, prevailed in the recession. A possible explanation was the demands for new competence and skills (Aronsson and Sjögren 1994) and the difficulty of being admitted to prestige courses (SOU 2000) for young people from disfavoured families.

Among women direct health-related selection prevailed mainly during the recession. An explanation offered for the lower indirect selection among women in the recession group might be that female-dominated occupations were not hit by recession at the beginning of the 1990s. Moreover, female-dominated occupations such as care and education did not demand new skills. On the other hand, men’s
drinking and smoking, as a masculine activity, is more approved of than women’s, and is without reproach from other members of the community. Hence, an employer would probably be more tolerant towards a man with excessive drinking.

It was difficult to measure the individual effects of exposure to unemployment in this thesis, since previous information on health could not be obtained. Another consideration regarding the issue of exposure lay in the fact that long-term unemployed people were studied. Poor health among long-term unemployed people can be considered as a measure of selection rather than as a measure of exposure, since long-term unemployed will become selected in the end, irrespective of any previous causal effect (Winefield and Fryer 1996). However, many studies have shown that both selection and exposure are of importance for both health and health behaviours (Bartley 1994, Jin, Shah and Svoboda 1995) and that they occur at the same time but with varying intensity (Fryer 1997). Previous analyses of the boom group have shown that both selection and exposure to unemployment were significant for both men and women regarding ill health (Hammarström, Janlert and Theorell 1988) in particular psychological symptoms (Hammarström and Janlert 1997), alcohol consumption (Janlert and Hammarström 1992) and tobacco use (Hammarström and Janlert 1994). Thus, there is no reason to doubt that this would also be the case in the groups studied here. If we look at the effect of exposure to the high levels of unemployment in society as a whole, then we can conclude that this effect was stronger during the recession. The direction was indicated in higher levels of somatic and psychological symptoms, higher alcohol consumption among women, as well as levelled decline in the frequency of cigarette smoking in the recession group.

Conclusions
The main objective of this thesis was to analyse if and how the change of trade cycle influenced the health of young long-term unemployed men and women. The focus of this thesis was somatic and psychological health as well as alcohol and tobacco consumption. The main as well as specific research questions are summarised below:

- **Did the trade cycle matter for the health of young unemployed people?**
  - No (in general)
  - Unemployment was associated with poor health in both trade cycles

- **What were the main explanations for the worse health among the unemployed compared to the employed?**
  - Worse financial situation
  - More pessimism about future
  - Work involvement
• Did high levels of unemployment as a climate factor have a negative effect on those who were not unemployed?
  • Yes, (women in particular)

• Were there any gender differences in health?
  • Yes, (during recession in particular)

• Does low willingness to respond introduce a bias in studies on unemployment?
  • Yes,

• Did selection and exposure to unemployment prevail during different trade cycles?
  • Both occurred at the same time (but selection was somewhat stronger during the boom, and exposure during the recession)

**What about the future?**

In this last part of my thesis I will first reflect on what might happen to the people’s health and the labour market in the future. Thereafter I will discuss some interventions to improve the health of the unemployed. Last, I will draw some conclusions and put forward some suggestions for future research.

When the survey of the recession group was carried out in 1994 the economic recession was at its peak. During the second half of the 1990s there was an upturn in the trade cycle and the levels of unemployment dropped. However, it seems as if Sweden has become an ordinary European industrial country with the problems that usually follow a period of high unemployment: increased demands and lower control at the work place, marginalisation of certain groups (women, low-educated, immigrants) and increased competition.

What happens to people’s health during times of economic recession? Will it become better or worse? It seems as if the health of the public will deteriorate during a recession (Public Health Report 1997). This is partly based on the fact that the health of the unemployed is poor and that the number of unemployed people increases. Likewise the health of those who are not unemployed becomes deteriorated during the recession compared to the boom. Thus, we have an additive effect of the economic recession on the health. The high levels of unemployment in society even hit the children of both the employed and unemployed parents. It has been shown that not only the parent’s actual unemployment, but also the children’s worries that the parent will become unemployed, have a negative influence on the mental well-being of children (Hagquist and Starrin 1994). The fathers’ rather than mothers’ unemployment also has an effect on infant health, for example low-weight births. Estimation shows that about 329 very low-weight births could have
been averted in Sweden if quarterly increases in male unemployment had been constrained (Catalano, Hansen and Hartig 1999).

There are researchers and public health advocates who consider that, from the public health point of view, the direction of causality when the health of the unemployed is considered is not important. Baum (1998), for example, states that the fact that the unemployed experience high levels of morbidity should be sufficient to undertake public health action. However, we can see that the direction of selection and exposure is different due to the trade cycle. Thus, during a boom, the action should mainly be directed towards the improved health of the unemployed, while during a recession it should be directed towards measures for increased opportunities and competence in the labour market. These two actions, however, do not exclude each other and they occur at the same time but with varying intensity. During a recession there is a need of both medical and social measures, since even those who are employed have poor health.

Primary medical care and rehabilitation medicine are two of the branches that will bear the burden of the changes that have arisen from the recession in the 1990s. An increased number of people in poor health, both unemployed and employed, as well as an increased number of people in need of medical rehabilitation (unemployed and employed) meet a new slimmed organisation of medical care (Gonäs, Johannson and Svärd 1995). However, the poor health among the unemployed and the employees in precarious jobs should be addressed with social rather than medical interventions. It appears as if patients have a strong influence on sick-listing practice (Englund and Svärdssudd 2000), emphasising their working and social conditions besides poor health as causes for sick-listing (Mikaelsson et al. 1999). Medical gender research has emphasised the need to problematise the importance of gender in the medical encounters. The research has shown that women’s health problems related to work are met with neglect in medical care (Hamberg 1998, Johansson 1998) as well as in vocational rehabilitation (Selander, Marnetoft, Bergroth and Ekholm 1998, Ahlgren and Hammarström 1999).

Nevertheless, doctors cannot solve all the problems related to work and unemployment (Claussen 1994). Social measures to increase the competence of unemployed people in the labour market, such as education and labour market programmes, have not obtained the desired results. Here also, women are in a disfavoured situation due to the fact that those programmes are suited to the demands of the male labour force (SOU 1996) and that the government favours jobs for male-dominated sectors rather than female-dominated ones in times of high unemployment (SOU 1996).

During recession competition between men and women about new work opportunities both in the private and the public sector can increase. It has been found that men shift from traditionally men’s to traditionally women’s occupations
(Gonäs and Spånt 1997). Another shift is that in times of restrain women are appointed as managers, which is a traditionally male occupation (Holmquist 1997). The idea behind this is that, owing to the construction of the dominant femininity in relation to responsibility-taking orientation, women are supposed to be more capable at soothing, allaying and consoling whereas than men. Yet, as Carin Holmquist (1997) remarks, in this situation women are allocated a position of "the tender executioner" rather than a manager. These shifts can also have an impact on health. Research has shown that in both female-dominated as well as male-dominated occupations men report higher levels of control and consequently better health compared to women in the same occupations (Hall 1989).

Thus, youth unemployment has been and still is a public health problem that demands action from both medical as well as social authorities. The analyses of the trends in the labour market of the European countries during the 1990s and their impact on health show that research on job insecurity and health might take over from research into unemployment and health, as a future research topic (Burchell 1994). Indeed, the research on the health of employed people is important, but should not be a reason to diminish the importance of research on unemployment. This thesis shows that health problems among unemployed people are more frequent than among not unemployed people. The research on youth unemployment is even more important, since the negative events at this age may have a negative impact on their health as adults. The research needs to continue to deal with questions of what gendered impact "the new unemployment" has on health during the upswing of the economy at the turn of the century.
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Appendix

The battery of questions used in the boom group for collecting he retroactive data about occupations between two follow-ups. The battery presented here was used in the 1986 follow-up.

49. What have you done since we met in 1983? Put in one or more cross in appropriate squares. Start with the spring term, 1983.

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