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# **RETURN TO WORK**

- Assessment of Subjective  
Psychosocial and Environmental Factors

**Elin Ekbladh**



**Linköping University**  
**FACULTY OF HEALTH SCIENCES**

Department of Social and Welfare Studies  
Linköping University, Sweden

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# ABSTRACT

**Introduction:** In Swedish society the sick-leave rate is high and a better understanding is required of the factors that facilitate return to work. In the return to work process, assessments of peoples' work ability play an important role. However, the lack of usable, valid, reliable, and theoretically sound assessment instruments for assessing work ability is a concern. Credible and theoretically sound assessment methods for assessing clients' work ability strengthen the possibilities for making valid interpretations and obtaining important information for composing further intervention strategies which can guide suitable interventions in the process of returning to work. Such interventions need multi-professional expertise. In this area occupational therapists can offer valuable contribution. In the overall assessment of work ability the unique individual's subjective perception of the situation needs to be considered since this has been found greatly relevant for return to work. The Worker Role Interview (WRI) and the Work Environment Impact Scale (WEIS) are two work-related interview assessment instruments that have been developed to assess subjective psychosocial and environmental factors of work ability. The WRI and the WEIS have been primarily tested for reliability and validity and are theoretically founded in the Model of Human Occupation (MOHO), which is an occupation-focused model addressing psychosocial factors. They have been adapted and translated to Swedish and are used among Swedish occupational therapists working with clients experiencing work-related problems.

**Aim:** The overall aim of this thesis was to evaluate the usefulness of the assessment instruments the Worker Role Interview and the Work Environment Impact Scale for identifying psychosocial and environmental rehabilitation needs essential for returning to work.

**Methods:** Five empirical studies were performed, all of which were analysed quantitatively, with the exception of study IV in which both qualitative and quantitative analysing methods were used. Studies I, III and IV were cross-sectional while studies II and V were two-year longitudinal studies. In study I, data were collected by a questionnaire, in studies II, III and V the primary data constituted of ratings on the WRI items. In study IV the primary data were ratings of the WEIS items and the written notes beside the rating on each item.

**Results:** In study I, theoretical approaches and professional models that influenced psychiatric care and psychiatric occupational therapy practice among occupational therapists in Sweden was investigated. The most common approach in psychiatric care was the psychosocial approach, and the practice model which was most often used was the Model of Human Occupation. The results indicated that the psychosocial approach and the Model of Human Occupation seemed applicable in occupational therapy, motivating further use of that model. However, it was also found that occupational therapists in psychiatric care used

professional practice models to a rather low extent. One way to enhance the application of theory into practice is the use of theory- based assessment instruments. Consequently, the Model of Human Occupation- based assessment instruments, the WRI and the WEIS, have been evaluated and used in the other studies in the present thesis

The value of the WRI for predicting return to work after long term sick-leave was investigated in studies II and V. The content area in the WRI with best overall predictive validity for return to work was 'Personal causation'. Its items focus on the individual's motivation for return to work in relation to the individual's feeling of competence and effectiveness in doing work tasks and facing challenges at work. The two WRI items which best predicted whether the participants would be in the working or the non-working groups at the two-year follow up were 'Expectations of job success', which concerns beliefs in personal abilities in relation to returning to work, and the item 'Daily routines' which concerns the individual's routines and organisation of time outside work. These results suggest that knowledge about how to strengthen the person's belief in his or her abilities, how routines impact occupational performance, and how to support the individual in structuring his or her daily doings are needed in interventions aiming at supporting the individual to return to work.

In study III the construct validity of the WRI was investigated in an international study. All the WRI items except those related to the environment area seemed to capture the intended construct of the WRI, namely psychosocial ability for return to work. The construct of the WRI seems to be stable and valid across different countries and populations, and the WRI showed an ability to separate clients into three distinct levels of psychosocial ability for return to work.

In study IV the impact of the work environment was investigated by using the WEIS among people with experiences of sick-leave. Social interactions at work and the meaning of the work had the most supportive impact and different work demands and the rewards received for the work were perceived as most interfering with work performance, well-being, and satisfaction.

**Conclusion:** The WRI seems to be suitable for estimating psychosocial work ability. In addition it contains items which can predict return to work up to two years after the assessment is conducted. The use of the WEIS revealed supportive and interfering factors for work performance, well-being, and satisfaction among people with experiences of long term sick-leave. The interview format of the WRI and the WEIS seems valuable since it provides comprehensive information which can contribute to the planning of rehabilitation interventions for the unique client. Thus, the WRI and the WEIS, which are theoretically founded in the Model of Human Occupation are judged to be useful for identifying psychosocial and environmental rehabilitation needs in order to support the individual in returning to work after sick-leave.

# SVENSK SAMMANFATTNING (SUMMARY IN SWEDISH)

**Introduktion:** Sjukfrånvaron i Sverige är hög och kunskap om vad som påverkar återgång i arbete efter sjukskrivning behöver utvecklas. I processen kring återgång i arbete är bedömning av arbetsförmåga en viktig del. Bristen på valida, reliabla och teoretiskt förankrade bedömningsinstrument inom området är dock ett bekymmer eftersom tillförlitliga bedömningar av arbetsförmåga är en förutsättning för utformning och genomförande av interventioner för att stödja återgång i arbete. Denna typ av interventioner kräver multidisciplinär kompetens där arbetsterapeuter utgör en viktig funktion. Vid bedömning av arbetsförmåga bör personens subjektiva uppfattning om sin situation beaktas, då den har betydelse för utfallet av återgång i arbete. Worker Role Interview (WRI) och Work Environment Impact Scale (WEIS) är två arbetsrelaterade intervjuinstrument, som har utvecklats i syfte att bedöma subjektiva psykosociala och miljömässiga faktorer påverkan på arbetsförmåga. Den teoretiska grunden till WRI och WEIS är Model of Human Occupation, som är en modell med fokus på aktivitetsutförande i relation till psykosociala faktorer. Inledande prövningar av WRI och WEIS reliabilitet och validitet har genomförts. Bedömningsinstrumenten har bearbetats och översatts till svenska och används främst av arbetsterapeuter, som arbetar med personer med arbetsrelaterad problematik.

**Syfte:** Det övergripande syftet med avhandlingen är att undersöka användbarheten av bedömningsinstrumenten Worker Role Interview och Work Environment Impact Scale för identifiering av psykosociala och miljömässiga rehabiliteringsbehov av betydelse för återgång i arbete.

**Metod:** Avhandlingen består av fem empiriska studier. I samtliga studier har erhållen information bearbetats kvantitativt. I studie IV har även kvalitativ bearbetning genomförts. Studie I, II och IV är tvärsnittsstudier och studie II och V är två års longitudinella studier. I studie I samlades information in via enkät. I studie II, III och V bestod den huvudsakliga informationen av skattningar utifrån WRI variabler och i studie IV var bedömningar utifrån WEIS i form av skattningar och nedskrivna kommentarer till skattningarna den huvudsakliga informationen.

**Resultat:** I studie I undersöktes vilka teoretiska utgångspunkter och professionsspecifika modeller arbetsterapeuter i Sverige ansåg påverka den psykiatriska vården och den psykiatriska arbetsterapien. Det psykosociala perspektivet var den teoretiska utgångspunkt som hade störst påverkan både på psykiatrisk vård och på psykiatrisk arbetsterapi. Den arbetsterapeutiska modell som flest identifierade var Model of Human Occupation. Detta resultat indikerar att Model of Human Occupation verkar vara användbar inom arbetsterapi och motiverade vidare användning av modellen i denna avhandling. Det som dock också framkom i studie I var att arbetsterapeuter inom psykiatrisk vård använde professionsspecifika modeller i en relativt

liten utsträckning. Ett sätt att öka tillämpningen av teori i praktik är att använda teoretiskt grundade bedömningsinstrument. I studie II, III, IV och V har endera av de Model of Human Occupation- baserade bedömningsinstrumenten WRI och WEIS använts och värderats.

I studie II och V prövades WRI:s förmåga att predicera återgång i arbete efter långvarig sjukskrivning. Det område i WRI som uppvisade bäst prediktivitet var området "Självuppfattning" vars variabler beaktar personens motivation för återgång i arbete i form av personens upplevelse av kompetens och effektivitet för att utföra arbetsuppgifter och hantera utmaningar i arbetet. De två WRI variabler som bäst kunde predicera vilka som skulle återgå respektive inte återgå i arbete vid uppföljning efter två år var: "Tro på sin arbetsförmåga", och "Dagliga vanor och rutiner". Resultaten tyder på att kunskap om hur tro på den egna förmågan stärks och kunskap om dagliga vanor och rutiners påverkan på utförande av arbete är central vid genomförande av interventioner i syfte att stödja personer att återgå till arbete efter sjukskrivning.

I studie III prövades WRI:s konstruktorella validitet i en internationell studie. Samtliga variabler i WRI, förutom de som tillhör miljöområdet, uppvisade en god konstruktorell validitet dvs mätte psykosociala faktorer påverkan på arbetsförmågan. WRI:s skattningsskala verkar stabil och valid mellan olika länder och för personer med olika diagnoser. I analysen framkom att WRI kunde särskilja mellan personers psykosociala arbetsförmåga på tre olika nivåer.

I studie IV undersöktes hur personer med erfarenhet av långtidssjukskrivning uppfattar att faktorer i arbetsmiljön stödjer respektive hindrar personens utförande av arbete och välbefinnande genom bedömningar utifrån WEIS. De faktorer som uppfattades som mest stödjande var olika former av sociala interaktioner på arbetet samt uppfattningen om arbetets värde och mening. De faktorer som uppfattades som mest hindrande var olika krav i relation till arbetsgenomförandet samt den belöning som erhålls för arbetet.

**Konklusion:** Sammanfattningsvis så kan WRI användas för bedömning av psykosociala faktorer påverkan på arbetsförmågan. I WRI ingår variabler som kan predicera återgång till arbete upp till två år efter genomförd bedömning. WEIS verkar användbart för att identifiera arbetsmiljöfaktorer som stödjer respektive hindrar personers välbefinnande och utförande av arbete. Att komplettera olika datainsamlingsmetoder är en förutsättning för att uppnå en så god bedömning av arbetsförmåga som möjligt. Den information som WRI- och WEIS-intervjuer genererar är värdefull, då den kan utgöra en viktig grund för planering av individspecifika rehabiliteringsinsatser. Bedömningsinstrumenten WRI och WEIS med sin teoretiska förankring i Model of Human Occupation kan anses vara användbara för att identifiera psykosociala och miljömässiga rehabiliteringsbehov i syfte att stödja personer i processen åter till arbete efter sjukskrivning.

## ORIGINAL PAPERS

The present thesis is based on the following papers, which will be referred to in the text by their roman numerals:

- I. Haglund L, Ekbladh E, Thorell LH, Rahm Hallberg I. Practice models in Swedish psychiatric occupational therapy. *Scandinavian Journal of Occupational Therapy*, 2000; 7; 107-113.
- II. Ekbladh E, Haglund L, Thorell LH. The Worker Role Interview – Preliminary data on the predictive validity of return to work of clients after an insurance medicine investigation. *Journal of Occupational Rehabilitation*, 2004; 14; 131-141.
- III. Forsyth K, Braveman, B, Ekbladh E, Kielhofner G, Haglund L, Fenger K, Keller J. Psychometric properties of the Worker Role Interview. *Work*, 2006; 27; 313-318.
- IV. Ekbladh E, Thorell LH, Haglund L. Perceptions of the work environment among persons with experience of long term sick leave. *Manuscript submitted for publication*.
- V. Ekbladh E, Thorell LH, Haglund L. Return to work – the predictive value of the Worker Role Interview (WRI) over two years. *Manuscript submitted for publication*.

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# INTRODUCTION

## The worker role; an important role in adult life

Work fulfils a central and valued place in people's everyday lives (Brown et al, 2001) and, after sleep, occupies most of our time in adult life (Harvey & Pentland, 2004). To be working has practical purposes in the form of economic possibilities and symbolic functions since it implies the ability to participate in society in a social accepted manner (Bäckström, 1997). In the early forties Marie Jahoda (1942) conducted research on incentives to work. She found that work had other important meanings besides economic compensation, such as providing a structure for how to handle time, providing daily social contacts with others outside the family, giving social status and identity, and offering the possibility of taking part in common strivings (Jahoda, 1942). Her findings that work has other meanings than solely economic ones is still relevant at the beginning of the 21st century (for example see; Brown et al, 2001; Edén et al, 2007; Gunnarsdóttir & Björnsdóttir, 2003; Lindin Arwedson et al, 2007; Polanyi & Tompa, 2004; Svensson et al, 2006). Work can have positive health implications for the individual as a result of well functioning social interactions in the work place (Lindin Arwedson et al, 2007; Polanyi & Tompa, 2004; Gunnarsdóttir & Björnsdóttir, 2003, Arneson & Ekberg, 2005) and the worker role contributes significantly to an individual's identity, and meaning and satisfaction in life (Brown et al, 2001; Svensson et al, 2006).

## Sick-leave in Sweden

There are numerous reasons why adult people do not work e.g. unemployment, disabilities and diseases, and there is a risk that those who do not work are excluded from important areas of society (Edén et al, 2007; Hansen-Falkdahl, 2005, Svensson et al, 2006). In Sweden the sickness-benefit insurance intends to offer people economic security if they cannot work due to disease or injury. To be eligible for sickness-benefit it is not enough to have a diagnosed disease; only if the disease or injury impairs the work ability in relation to the demands of the work can sickness benefits be received (Alexanderson & Norlund, 2004a, Socialstyrelsen, 2006). Long-term sick-leave can have considerable negative effects on the individual and can also involve great cost for society (Alexanderson & Norlund, 2004a; Labriola et al, 2007; Sundqvist et al, 2007), but in Sweden today criteria for how to assess workability are unclear and ambiguous, and research about how to assess work ability is needed (Alexanderson & Norlund, 2004b; Ekberg, 2007). Such research is particularly important since decisions concerning entitlement to sickness benefits have a substantial impact on the lives of individuals and on society (Söderberg, 2005).

During the late nineties and the beginning of the 21st century, the number of persons in Sweden on sick-leave increased explosively (SOU, 2002) but the number of periods of long-term sick-leave, i.e. periods longer than 60 days, as well as shorter sick-leave periods has decreased during the last few years (FK, 2007b; FK, 2008). However, from an international perspective the sick-leave rate is still at a high level (FK, 2007b; Gerner, 2005; Socialdepartementet, 2007). In February 2008, almost 13% of the working population in Sweden (people between 16-64 years) had sick-leave benefits or disability pension (FK, 2008; SCB, 2008).

The mean age among those on long-term sick-leave in Sweden is 46 years and the most common reasons for sick-leave are mental disorders and diseases related to the musculoskeletal system. Sixty-five percent of those on long-term sick leave are women and among them, 24% are personal care workers in health services, which is the most common occupational group of long-term sick-listed women. The most common occupational group among men is building related trades workers, representing 16% of long-term sick-listed men (FK, 2007a).

In a large review of research on factors influencing sick-leave, it was found with moderate evidence that the design of the sickness insurance system influences sick-leave, that opportunities to influence the work situation reduce the occurrence of sick leave, and that people with lower socioeconomic status have a higher likelihood of receiving a disability pension (Allebeck & Mastekaasa, 2004). Further it was concluded that although sickness absence has a heavy impact on society and the individual, knowledge of this subject is limited and more knowledge about causes, consequences, and how sick leave could be influenced is needed. For example, more knowledge is necessary in order to gain a better understanding of the factors causing long term sick leave, how to help people avoid sick-leave, and what factors facilitate return to work (Alexanderson & Norlund, 2004b).

## Assessing work ability and evaluation of assessment instruments

Assessment of peoples' work ability plays an important part in the return to work process (Gobelet et al, 2007; Innes & Straker, 1998a, Matheson et al, 2001). However, the concept of work ability is complex and embraces different meanings in different contexts (Alexanderson et al, 2005; Alexanderson & Norlund, 2004b; Ludvigsson et al, 2006; Mathiowetz & Wunderlich, 2000, Tengland, 2006). In the literature there are three main dimensions of the concept of work ability used, namely, the physical, the psychological, and the social. In the physical dimension it is often the client's physical function which is discussed and assessed and not the work ability per se (Ludvigsson et al, 2006) even though the relation between function and work ability is unclear (Ludvigsson et al, 2006; Sandqvist & Henriksson, 2004; Velozo, 1993). It is hard to distinguish between the factors in the psychological and social dimensions, and consequently these factors are often named psychosocial factors and

include, for example, factors such as motivation and social interactions (Ludvigsson et al, 2006).

Work ability assessments aim to help people with disabilities to find, return to, or remain in work (Jackson et al, 2004). In order to understand a client's work ability personal factors as well as environmental factors needed to be accounted for since the client's work ability depends on the dynamic interaction between the client and his or her environment (Innes & Straker, 1998b; Liedberg, 2004; Sandqvist & Henriksson, 2004; Kielhofner, 1993; Kielhofner, 2008, Velozo, 1993). Objective assessments assess work ability from an outside perspective and are often gathered by professionals by observation. Subjective assessments assess work ability from an inside perspective and information is often gathered by self-reports or interviews. Objective assessments as well as subjective assessments are required for assessing work ability. Objective assessments need to be complemented with subjective assessments (Sandqvist & Henriksson, 2004; Shaw et al, 2002) since they concern the individual perspective and give an important understanding of the individual's perception of his or her situation (Feuerstein & Theborge, 1991; Sandqvist et al, 2006; Shaw et al, 2002) which have been shown to have great relevance for return to work (Cole et al, 2002; Hansen Falkdahl, 2005; Marhold et al, 2002; Reiso et al, 2001).

In estimating work ability the use of valid and reliable assessment instruments is essential (Innes & Straker, 1999b). The reliability of an assessment instrument concerns the extent of consistency in the assessment of the attribute that the instrument is designed to assess, and this can be investigated in several ways (Innes & Straker, 1999a, Polit & Beck, 2004). The reliability of assessment instruments is crucial for clinical practice since changes in clients' abilities found by reliable assessment instruments are likely to be due to real changes and not just due to measurement error (Innes & Straker, 1999a).

However, validity is considered to be the most fundamental characteristic of an assessment instrument (Clark & Watson, 1995) and needs to be considered by the users since it concerns the extent to which the instrument assesses what it is intended to assess, which is essential information to have when making decisions about the instrument's relevance in clinical practice. Validation of assessment instruments is a never-ending process and various forms of validity must be examined, thus a single study is not sufficient to investigate the validity of an assessment instrument (Clark & Watson, 1995; Innes & Straker, 1999b, Polit & Beck, 2004). When investigating validity, the interpretation of the assessment results is most often the main concern (Innes & Straker, 1999b; McDowell & Newell, 1996; Streiner & Norman, 1995). To successfully determine possibilities for return to work for a client who is on sick leave assessments based on valid interpretations of assessment results are a prerequisite. (Baptiste et al, 2005; Innes & Straker, 1999b). Content, criterion-related, and construct validity are different forms of validity (Innes & Straker, 1999b, McDowell & Newell, 1996; Polit & Beck, 2004 Streiner & Norman, 1995) which are all relevant to work-related assessments (Innes & Straker, 1999b). Two validity concepts are used in the present thesis, namely predictive validity which is one type of criterion-related validity and construct validity. Construct validity is a vital process in the development of assessment instruments

and refers to the extent to which the items in the assessment instrument measure a theoretical construct (Clark & Watson, 1995; Polit & Beck, 2004). In construct validity evaluations, analysis of item distributions which is dependent on the response distributions on the individual items of the assessment instrument, needs to be considered. Another critical qualification in construct validity evaluations, and particularly for theory-based assessments, is unidimensionality, which refers to whether the assessment instrument assesses only one thing i.e. the construct it is intended to measure (Clark & Watson, 1995). Predictive validity refers to the ability of an assessment instrument to differentiate between behaviours of clients with respect to a future criterion (Innes & Straker, 1999b, McDowell & Newell, 1996; Polit & Beck, 2004 Streiner & Norman, 1995). Predictive validity is considered to be one of the most objective and practical approaches for estimating validity. When investigating the predictive validity of work-related assessment instruments a highly valued criterion is return to work because of its relevance for practice and because it is not linked to assessment results obtained beforehand (Innes & Straker, 1999b).

The utility of an assessment instrument concerns factors such as relevance, availability, time effectiveness, ease of learning, ease of administration, ease of interpreting the results, and the cost of the assessment and is considered very important since it has significant influences on its use in clinical practice (Law et al, 2005). According to Matheson and co-workers (2000) utility is the overarching value of an assessment instrument and includes the assessment instrument's safety in administration, its reliability, validity and practicality.

The use of accurate and appropriate assessment instruments is one critical component in identifying efficacious intervention strategies and implementing useful findings into practice (Haglund, 2000; Innes & Straker, 1998a; Innes & Straker, 1998c; Travis, 2002). In order to select appropriate and relevant assessment instruments, professionals need to know the purpose of the assessment as well as its strengths and limitations (Innes & Straker, 1998a). However, the shortage of sufficiently reliable and valid assessment instruments is a major concern in relation to the ability to make proper clinical decisions concerning clients' work ability (Alexanderson et al, 2005; Innes & Straker, 1999a; Innes & Straker 1999b). Further, assessment instruments estimating work ability often lack theoretical underpinnings; a fact which underlines the need to conduct theoretically grounded evaluations of such assessment instruments (Wasiak et al, 2007). This is essential since assessment instruments based on theoretical models have the advantage that they create conditions that are conducive to valid interpretations of assessment results and yield intervention strategies (Kielhofner, 2004; Sandqvist et al, 2006). To facilitate return to work or prevent loss of work the use of multi-disciplinary interventions is a prerequisite. In this area occupational therapists represent a professional group (Gobelet et al, 2007) that can make a valuable contribution to the rehabilitation process (Jackson et al, 2004; Keough & Fisher, 2001; Thurgood & Frank, 2007; Åkerstedt & Johnsson, 1997).

## Theory-based occupational therapy and the use of assessments

In order to offer clients adequate treatment, occupational therapists in Sweden are obliged to deliver health care which is founded on research results and comprehensive clinical experience (Socialstyrelsen, 2001). The use of theory in practice provides necessary understanding in occupational therapy (Kielhofner, 2004) and also helps the occupational therapist to explain actual intervention alternatives and strategies to the client (Law & Baum, 2005) which professionals in Sweden are obliged to do (Socialstyrelsen, 2001). To articulate the theoretical thinking behind the doing and the decisions in daily work is also a prerequisite if scientifically sound occupational therapy is to be offered to the clients (Parham, 1987; Duncan, 2006).

The concept of occupation has a central place within occupational therapy practice, theory development and research. Occupation relates to doing but there is no confirmed definition of the concept in the field. In other disciplines, occupation often refers to paid work (Persson, 2001) while occupation in occupational therapy concerns all occupations in the domain of play, self care, and work (paid and unpaid). The doing of occupations can be subdivided into the following three levels; occupational participation, occupational performance, and skills. 'Occupational participation' refers to overall engagement in play, self care, and work, and is part of the individual's socio-cultural context and is desired and/or necessary to one's well being. 'Occupational performance' refers to the doing of tasks which are part of the specific occupation, and 'skills' are the observable purposeful actions which are carried out within the occupational performance (Kielhofner, 2008). The actual occupational performance depends upon the interaction between the characteristics of the individual, the occupations the individual engages in, and the environment (Law & Baum, 2005).

Occupational therapy aims to maximise the client's ability to engage in valued occupations. An ideal way in which occupational therapists can conceptualise client's difficulties and shape and evaluate intervention in a structured and theoretical manner is by using conceptual models of practice (Duncan, 2006). Conceptual practice models in occupational therapy focus on explaining clients' occupational problems such as how people choose, experience and engage in occupations. To be able to explain occupational problems and guide practice the models need to be built on an interdisciplinary base, have a technology which supports applying the model into practice, and must have been tested through research. Assessments in the form of gathering and analysing data about the phenomenon addressed by the model is an important way to apply models into practice (Kielhofner, 2004). Assessment instruments in occupational therapy are used to improve clinical decisions. Information gathered through assessment instruments helps occupational therapists to design interventions and evaluate outcomes, and it enables the occupational therapist to include the client in the reasoning about selecting the most compatible and effective intervention for the unique individual.

Thus, a valid assessment process is essential in providing effective occupational therapy (Dunn, 2005).

## Assessment instruments related to work, with the Model of Human Occupation as the theoretical foundation

Model of Human Occupation (MOHO) is a model which seeks to explain humans' occupations by understanding the motivation for occupation, how people organize their occupation into everyday patterns, and how the subjective experience of performing occupations contributes to performance capacities. These interacting factors are understood in conjunction with the surrounding physical and social environment influences on occupational behaviour (Kielhofner, 2002; Kielhofner 2008).

In the present thesis the occupation of main concern is paid work, which is one of the most important occupations in adult life. By extraction from theoretical constructs in the MOHO, two work-related interview assessment instruments have been developed (Kielhofner, 1995; Kielhofner, 2002; Kielhofner, 2008), namely the Worker Role Interview (WRI), designed to identify psychosocial and environmental factors that impact a client's ability to return to work (Veloza et al, 1998), and the Work Environment Impact Scale (WEIS), designed to gather information on clients' perceptions of their work environment (Moore-Corner et al, 1998). Other work-related assessments that also have the MOHO as a theoretical foundation are the Assessment of Work Performance (AWP) (Sandqvist et al, 2006; Sandqvist, 2007) and A Dialogue About Ability related to Work (DOA) (Linddahl et al, 2003; Norrby & Linddahl, 2006). The AWP is an observation instrument which can be used with clients with different work-related problems. It assesses working skills by observing the individual's motor, process, and interaction and communication skills when performing work tasks in realistic or real life work situations (Sandqvist et al, 2006). In DOA the individual's own active participation in goal setting as well as in the rehabilitation process is the focus (Norrby & Linddahl, 2006) and DOA is directed to be used with individuals who have psychiatric and/or psychosocial problems (Linddahl et al, 2003). These MOHO related assessment instruments are used in rehabilitation settings in Sweden.

About 800 professionals, mainly occupational therapists, have bought the Swedish WRI and about 500 have bought the Swedish WEIS since the year 2000. The fact that the instruments are bought is no guarantee that they are used but it has been found that 50% of those who have bought the WRI use it quite frequently (Fredriksson & Larsson, 2005). Those who use it work in different work-settings such as in primary-care, rehabilitation units, private rehabilitation companies, Swedish public employment service, and insurance medicine centres. There is no requirement to take a course on either the WRI or WEIS before using the assessment instruments but sound knowledge of the MOHO and careful reading through the

manual is recommended. Since there has been great demand for a course in the assessment instruments from those who use or intend to begin using the WRI and WEIS, about 15 courses on the two instruments have been held in Sweden.

In the present thesis - the WRI, the WEIS and the MOHO have a central role and these assessment instruments will be further explained in terms of the related concepts in the MOHO, with focus on the occupation of work.

### **The Worker Role Interview**

The WRI is designed to be used to identify psychosocial and environmental factors that impact a client's ability to return to work after injury or disease. It was developed by Velozo, Kielhofner and Fisher at the University of Illinois in Chicago, in 1991. The WRI consists of a semi-structured interview and a four-point rating scale administered by the therapist to indicate how each of the included seventeen items impact on the client's ability to return to work; either to work in general or to a specific job (Velozo et al, 1998) (Appendix 1).

The WRI is theoretically based on the MOHO (Kielhofner, 1995; Kielhofner, 2002; Kielhofner, 2008). Through the WRI interview, information is obtained about the client's perception about him or herself as a worker in relation to past work situation, present work situation, present life situation and future work situation. The interview is semi-structured and the recommended questions in the interview-guide are designed to help the interviewer keep track of the content of the interview, but they need to be adapted in relation to the unique situation of the clients who are interviewed, thus the recommended questions are not standardised. The WRI items are presented in table 1. Items 1-7 conceptualize the client's motivation for work by the three theoretical constructs; personal causation, values, and interests. 'Personal causation' refers to the feeling of competence and effectiveness in relation to doing work tasks and facing challenges at work. 'Values' refers to the feeling of importance and meaningfulness obtained from one's job and from being a worker. 'Interests' refers to the enjoyment and stimuli one finds inside and outside work. A client's motivation for work has a great impact upon his or her perceptions of work-related opportunities and challenges and thereby also determines much of what the client does and the experience of the doing (Kielhofner et al, 1999a; Kielhofner, 2008).

Items 8-13 concern the influence of lifestyle patterns on work, which is conceptualized by the two theoretical constructs; roles and habits (Velozo et al, 1998; Kielhofner, 2002; Kielhofner, 2008). 'Roles' refers to attitudes and ways of behaving in a manner that is socially relevant (Kielhofner, 2008). An internalized worker role is a support for understanding which behavior is appropriate in a specific situation (Kielhofner et al, 1999a). Further roles outside work can support or interfere with having a worker role (Braveman et al, 2005). 'Habits' refers to ways of doing things which are internalized through repeated performance and which become semi-autonomous and efficient when they are performed in familiar environments (Kielhofner, 2008). Habits that affect work belong to the whole daily routine such as complete self care, travel to work, doing work tasks. Functional routines are

considered necessary for successful work (Kielhofner et al, 1999a). Lifestyle patterns in the form of roles and habits concern the recurrent pattern of our daily routines, which helps us do things regularly in a variety of roles and in an efficient manner (Forsyth & Kielhofner, 2006; Kielhofner, 2008).

Items 14-17 concern the environment and include the person’s perception of the physical and social environment in relation to the client’s work situation (Veloza et al, 1998). The environment inside and outside work has a significant influence on the individual as a worker (Braveman et al, 2005) since the interaction between the person and the environment can both support and interfere with work behaviour (Kielhofner, 2008).

Table 1. Theoretical concept in MOHO and responding WRI items

Theoretical concept in MOHO	WRI item
Personal Causation	1. Assesses abilities and limitations 2. Expectations of job success 3. Takes responsibility
Values	4. Commitment to work 5. Work-related goals
Interests	6. Enjoys work 7. Pursues interests
Roles	8. Identifies with being a worker 9. Appraises work expectations 10. Influence of other roles
Habits	11. Work habits 12. Daily routines 13. Adapts routine to minimize difficulties
Environment	14. Perception of work setting 15. Perception of family and peers 16. Perception of boss 17. Perception of co-workers

For each of the 17 WRI items a four-point rating scale is used (Appendix 1). In this, a value of ‘1’ implies that the item strongly interferes with returning to work, ‘2’ implies that the item interferes, a value of ‘3’ implies that the item supports return to work, and value ‘4’ implies that the item strongly supports returning to work. If there are WRI items which are not applicable to the client’s specific situation, for example when a client does not have a boss and/or co-workers, ‘not applicable’ is used. Thus the number of rated items across clients may vary. In addition, qualitative rating information on each item could be added to

the rating form by the interviewer in a note explaining why the actual rating has been chosen. The notes yield important information in planning for further intervention strategies since they describe the subjective psychosocial and environmental factors relevant to the unique client's ability to return to work (Velozo et al, 1998).

Since the first version of WRI was developed in 1991 it has been tested for reliability (Biernacki, 1993) and validity (Haglund et al, 1997; Velozo et al, 1999; Fenger & Kramer, 2007). Biernacki (1993) examined the reliability of the WRI on clients with hand injuries and found sound test-retest reliability and an acceptable inter-rater reliability for the overall assessment. Haglund and co-workers (1997) examined the construct validity of the Swedish WRI. The WRI ratings were gathered from clients with psychiatric diseases. The results indicated that the Swedish WRI seemed to have construct validity since all but two of the 17 WEIS items captured the construct of psychosocial work ability. The two items which did not fit the construct were 'Perception of boss' and 'Perception of co-workers' related to the environment content area. The study also showed that the construct of WRI was valid across Sweden and the US and for clients with different diagnoses. In another study on the construct validity of the WRI, this time on the Icelandic version, Fenger & Kramer (2007) found the WRI had sound construct validity. This was because all WRI items except the two environmental items 'Perception of work setting' and 'Perception of family and peers' seemed to represent the underlying construct of psychosocial ability to return to work. Velozo and co-workers (1999) reported three studies on the WRI. Two of them examined the construct validity and the third examined the predictive validity of the WRI of returning to work. The findings showed that the WRI items, except some in the environment content area, constituted a uni-dimensional construct for assessing psychosocial work ability. Concerning the predictive validity, neither WRI nor other variables such as chronicity, diagnosis, number of surgeries, attorney involvement or age were found to be useful in predicting return to work.

The WRI has subsequently been revised to take account of these investigation results. In 1996 the WRI was translated and adapted to the Swedish context and in studies II, III and V in the present thesis the second version of the Swedish WRI (Ekbladh & Haglund, 2000a) has been used which in turn is based on the ninth version of the US WRI (Velozo et al, 1998). The tenth revised version of the US WRI (Braveman et al, 2005) presented in 2005, was developed in collaboration between researchers in the US, UK and Sweden. The main change was that the interview and the rating scale were adjusted so that they also suited clients who have a limited work history or none at all and who have been out of work for an extended period of time due to long standing illness. Depending on the unique situation of the client the 10th WRI version could be used to assess ability to return to work and also to assess how psychosocial and environmental factors impact the client's ability to find and keep a job in general (Braveman et al, 2005). These revisions have also been made to the Swedish WRI and are presented in a third Swedish version (Ekbladh & Haglund, 2007).

### The Work Environment Impact Scale

The Work Environment Impact Scale (WEIS) is designed to gather information on how clients perceive their work environment (Moore-Corner et al, 1998). The first version of the WEIS was developed by Corner, Kielhofner and Lin in 1997 and the theoretical basis of the WEIS is the MOHO (Kielhofner, 2002; Kielhofner, 2008). The structures of the WRI and the WEIS are similar since both consist of a semi-structured interview and a therapist-administered four-point rating scale. However, the WEIS interview yields qualitative information about the client’s perceptions of how factors in the work environment support or interfere with the client’s work performance, satisfaction, and well-being. The interview focuses on the unique client’s perception of opportunities and constraints in the work environment related to physical spaces, social groups, objects and tasks (Kielhofner et al, 1999b). The environment both provides opportunities and resources and places demands and constraints on individuals to choose and act in their environment (Kielhofner, 2008). How the client perceives the environmental impact at work is dependent upon the social and physical characteristics of the work environment and on each person’s values, interests, personal causation, habits, roles and performance capacities (Moore-Corner et al, 1998). Thus, the same environment has different impacts on different individuals (Kielhofner, 2008) and the WEIS yields the client’s subjective perception of the work environment and is not an objective assessment of the work environment. The WEIS contains 17 items (table 2), which are organized around the physical and the social work environment.

Table 2. Items in Work Environment Impact Scale

Theoretical concept in MOHO	WEIS item
Environment	1. Time demands
	2. Task demands
	3. Appeal of work tasks
	4. Work schedule
	5. Co-worker interaction
	6. Work group membership
	7. Supervisor interaction
	8. Work role standards
	9. Work role style
	10. Interaction with others
	11. Rewards
	12. Sensory qualities
	13. Physical arrangement
	14. Social atmosphere
	15. Properties of objects
	16. Physical amenities
	17. Meaning of work

After completing the interview the items are rated on a four-point rating scale, by the therapist. The rating scale has four values indicating how each item relates to the factors of

work performance, satisfaction and well-being (Appendix 2). A value of '1' implies that the item strongly interferes, '2' implies that the item interferes, '3' implies that the item supports, and '4' implies that the item strongly supports work performance, satisfaction, and well-being. In addition to the rating qualitative information on each item can be added to the rating form by the interviewer in the form of a note explaining the participant's perception of the actual item and the reason why the actual rating has been chosen. The notes could consist of illuminating citations that the client had given during the WEIS interview or could be a summary of the interviewee's perceptions of the actual item. This information yields important information in planning for further intervention strategies since it describe client's subjective perception of his or her work environment (Moore-Corner et al, 1998).

In 1997 the WEIS was translated and adapted to the Swedish context and in the present thesis study IV is based on the second version of the Swedish WEIS (Ekbladh & Haglund, 2000b). The validity of the WEIS has been investigated (Corner et al, 1997; Kielhofner et al, 1999b). The first validity study on WEIS concerned construct validity and was conducted on clients with psychiatric disorders. The results showed that the WEIS items generally worked well to measure environmental impact but the items were not well matched to the clients' abilities and did not discriminate between clients who perceived different environmental impacts (Corner et al, 1997). These results resulted in a revision of the WEIS and a second US version was presented (Moore-Corner et al, 1998). The construct validity of the WEIS was further investigated in a study in which WEIS ratings from clients in Sweden and the US were used. The results showed that the items together measured the concept of environmental impact and were suitably matched to the clients' abilities and could discriminate between different levels of environmental impact (Kielhofner et al, 1999b).

### **Combining the interviews of the WRI and the WEIS**

Some of the recommended questions in the WRI and WEIS interview-guides overlap and the recommended questions of each assessment instrument can be combined into one comprehensive interview. However each assessment instrument's rating scale should be used after completing a combined WRI and WEIS interview. It takes approximately 30 minutes to conduct a WRI or a WEIS interview, depending on the interviewer and the interviewee, while a combined WRI and WEIS interview takes about 40 minutes to complete. Thus if information is required about how psychosocial factors influence the client's ability to return to work and about how the work environment impacts upon the client a combined WRI and WEIS interview can save time (Ekbladh & Haglund, 2007).

# AIMS

The overall aim of this thesis was to evaluate the usefulness of the assessment instruments the Worker Role Interview and the Work Environment Impact Scale in order to identifying psychosocial and environmental rehabilitation needs essential for returning to work.

The specific aims of the five studies were as follows:

## Study I

- to investigate Swedish occupational therapists' ratings of which theoretical approaches they consider influence (a) the psychiatric care service and (b) the psychiatric occupational therapy service
- to investigate the relationship between the influences of approaches on the psychiatric care service and the occupational therapy service
- to investigate the relationship between influences of professional models and influences of approaches in the psychiatric occupational therapy service
- to investigate which practice models in occupational therapy the Swedish occupational therapists use in their clinical work, and differences between the occupational therapists who identify and those who do not identify such practice models

## Study II

- to investigate the predictive validity of the Worker Role Interview for return to work at a two-year follow up of clients at an insurance medicine investigation centre

## Study III

- to examine whether the items in the rating scale of the Worker Role Interview form a valid measure of the construct, psychosocial ability for work, and whether they were targeted to and could effectively discriminate between persons at different levels of psychosocial ability for work

## Study IV

- to describe and analyze how people who have experience of long-term sick leave perceive that social and physical factors in their work environment support or interfere with their work performance, satisfaction, and well-being

## Study V

- to investigate if and how the WRI can predict return to work
- to investigate how the predictive validity of the WRI for return to work changes over a two-year period

# METHODS

## Characteristics of the five papers

The five studies in the present thesis were all empirical and they were analysed quantitatively, with the exception of study IV in which both qualitative and quantitative analysing methods were used. Studies I, III and IV were cross-sectional while studies II and V were two-year longitudinal studies. Different data collection methods have been used in this thesis. In study I a questionnaire was used; in studies II, III and V the primary data was ratings on the WRI items, and in study IV, rating of the WEIS items and the written notes to the rating on each item constituted the primary data (Table 3).

Table 3. Characteristics of the five studies underlying the present thesis.

<b>Charac- teristics</b>	<b>Study I</b>	<b>Study II</b>	<b>Study III</b>	<b>Study IV</b>	<b>Study V</b>
<b>Design</b>	Quantitative Descriptive Cross-sectional	Quantitative Descriptive Longitudinal	Quantitative Descriptive Cross-sectional	Qualitative and quantitative Descriptive Cross-sectional	Quantitative Descriptive Longitudinal
<b>Focus</b>	Theoretical approaches and professional models in psychiatric care and psychiatric occupational therapy	Preliminary predictive validity of WRI for return to work	Construct validity of the WRI	Perceptions of influences of environmental work factors on work performance, satisfaction and well-being,	The predictive validity of WRI for return to work
<b>Data collection methods</b>	Questionnaire	WRI interview and follow-up questionnaire questions	WRI interview	WEIS interview	WRI interview follow-up interview questions
<b>Partici- pants</b>	Swedish occupational therapists in psychiatric care (n =334)	Swedish clients investigated at a hospital adherent to the National Social Insurance Board (n=48)	Icelandic, Swedish and American clients in vocational rehabilitation (n=440) Occupational therapists (n=21)	Swedish clients on sick-leave living at one specific municipality in Östergötland, Sweden (n=53)	Swedish clients on sick-leave living at one specific municipality in Östergötland, Sweden (n=53)
<b>Analysis</b>	Spearman's rho Student's <i>t</i> -test Chi-square Mann-Whitney <i>U</i> -test	Mann-Whitney <i>U</i> -test Fisher's exact probability test Student's <i>t</i> -test Chi-square	Rasch analysis	Manifest qualitative content analysis Mann-Whitney <i>U</i> -test	Mann-Whitney <i>U</i> -test Fisher's exact probability test Chi-square Forward stepwise Wald logistic regression

In studies II, IV and V the participants occupations were organized according to the International Standard Classification of Occupations (ISCO) (Elias & Birch, 1994) and the diagnoses of the participants were classified according to the International Classification of Diseases (ICD-10) (WHO, 1994).

## Procedure, participants and data collection

### Study I

This study was part of a larger project where the work situation of personnel (assistant nurses, nurses, occupational therapists) involved in psychiatric care was investigated. In study I all occupational therapists recognized by the Swedish Association of Occupational Therapists as working in the psychiatric care were sent a questionnaire. In total, 334 out of the target group of 499 occupational therapists answered, which gave a response rate of 70%. The participants mean age was 44 and they had worked in psychiatric care for 12 years on average. Ninety-six percent were women, 73% were working as occupational therapists, 24% were principals, and 3% had other positions. Of the participants, 58% had taken one or more post graduate course. The county councils were the employer for 80% of the participants and the municipalities employed 15%. Fifty percent of the participants worked in outpatient care.

The questionnaire used in the larger project consisted of different questions concerning the work situation in Swedish psychiatric care, of which questions regarding demographics, approaches influencing psychiatric care, approaches influencing psychiatric occupational therapy service, and the use of practice models in occupational therapy were used in study I. In these questions the participants were asked about the extent to which theoretical approaches influence psychiatric care and psychiatric occupational therapy. The following theoretical approaches were listed: biomedical, psychoanalytic, psychosocial, cognitive, behavioural and therapeutic milieu. In the questions concerning psychiatric occupational therapy the participants were also asked to what extent practice models in occupational therapy influence the occupational therapy service. The response alternatives for these questions were: not at all, slightly, quite a lot, and a lot. Further the participants were asked to identify the practice models they used in the psychiatric occupational therapy service in an open-ended question.

### Study II

The clients in study II were consecutively selected from those who a team at a hospital adherent to the National Social Insurance Board (NSIB) had met during a period of 10 months. These 189 clients were contacted by mail two years after their investigation at the NSIB hospital. They were asked to participate in the study, which implied an agreement that

the authors would read their case reports and that the clients would report their status of the present work situation. After one reminder, a total of 61 clients replied, of which 59 agreed and two refused to participate. Of those 59 clients who agreed, the occupational therapist at the NSIB hospital team had conducted WRI assessments with 48 of the clients and these 48 clients constituted the primary participant group i.e. 25% of the selected clients. The eleven clients who agreed to participate but did not have an WRI assessment in their case report constituted a secondary participant group together with the clients who agreed (n=63) when they were asked again to participate but only by reporting their present work situation, i.e. they were not asked again to let the authors read their case reports. These 74 participants constituted the secondary participant group i.e. 39% of the selected clients.

The following information was retrieved from the primary participants case reports; diagnosis, occupation, country of origin, social status, time since they last worked, employment status and the NSIB hospital team's joint assessment of the clients' work ability and WRI ratings. The participants' nationality of origin was categorized as Swedish or other origin. Social status was categorized as having children living at home or not. Time since working was counted in months between the last month working and the time when the NSIB investigation took place. Employment status was categorized as employed or unemployed when the NSIB investigation took place. The team's joint assessment of the clients' work ability was categorized as 0%, 50% or 100% work ability. The four-point rating scale of the WRI was used for each participant but the number of rated WRI items of each rating varied since not all items were applicable to all participants. The work situation of the participants in the primary participant group and the secondary participant group at the time of the two year follow-up was obtained by a mailed question about their work situation. Participants who answered that they were working at least 25% of fulltime work were classified as working, and all others as non-working. This dichotomized working variable was used as a target variable for testing the predictive validity of WRI for return to work.

### **Study III**

This study was based on WRI ratings collected by 21 occupational therapists in Iceland, Sweden and the USA. In Iceland, twelve occupational therapists collected WRI ratings on 144 participants, in Sweden three occupational therapists collected WRI ratings on 123 participants, and in the USA six occupational therapists collected data on 173 participants. In total, WRI ratings from 440 participants were included in the study, of which 238 (54%) were women. The participants mean age was 41 years with a range from 20 to 62 years. The participants had a wide range of diagnoses; the three most common diagnosis groups were medical (n=195), orthopedic / musculoskeletal / soft tissue (n=182) and mental health (n=38).

### **Study IV and V**

The study population for these studies was derived from the Swedish Social Insurance Board register. The study included all employed workers aged between 20 and 60 in a municipality

(with about 130,000 inhabitants) in the province of Östergötland in Sweden, who on one specific day in 2004 were on a sick leave period of between 60 and 89 days in length, to an extent of at least 50% of full-time work. People with cancer (n=3), pregnancy-related diagnoses (n=7), people with protected personal information (n=1) and those who did not have a phone-number (n=6) were excluded. After applying the inclusion and exclusion criteria 130 clients were asked to participate in the study by a mailed letter. Subsequently, 22 of the clients declined participation using the attached reply letter. The other clients were phoned and subsequently an additional 43 clients declined participation. Twelve clients did not answer by mail and could not be reached by telephone. In total, 53 people (41%) agreed to participate in the study. The participants mean age was 43 years and there were 34 (64%) women in the participant group. The non participants (n=77) i.e. those who declined participation or were not reached had a mean age of 44 years, and 43 (56%) were women. Among the participants as well as the non participants the two most common diagnosis groups reported to the Swedish Social Insurance Board register as reasons for sick-leave were diseases of the musculoskeletal system and mental, behavioural disorders. The most common occupation group represented among the participants as well as the non participants were service and shop sales workers.

Studies IV and V formed part of a research project in which various types of written and verbal data concerning work and life situations were collected from the participants four times over a period of two years, i.e. at baseline and at the 6, 12 and 24-month follow-ups. Studies IV and V concern data collected from telephone interviews. In the baseline interview the study participants were interviewed with a combined WRI and WEIS interview which, after completion, was rated on each assessment instrument's rating scale. The author interviewed 25 while two occupational therapists who had a sound knowledge of the Model of Human Occupation and the two assessment instruments (WRI and WEIS) interviewed 15 and 13 of the participants respectively. On the inclusion day, 45 of the study participants were on full-time sick leave and eight were on part-time sick leave. The combined WRI and WEIS interview was conducted at baseline, two to three months after the inclusion day. By then, 14 participants were on full-time sick leave, 17 participants were on part-time sick leave, and 22 participants were working full time.

In study IV the rating and the written notes of the 17 WEIS items for each of the 53 participants constituted the main data. The diagnoses were dichotomized to somatic and mental diseases, and participants with diseases related to mental and behavioural disorders were classified as having mental diseases (n=14) while participants with all other diseases were classified as having somatic diseases (n=39).

In study V the WRI ratings on the 17 items for each of the 53 participants constituted the main data together with the participants' stated work situation at the 6, 12 and 24-month follow-ups. The participants were dichotomized according to their actual work situation in each of the follow-ups. Those who were in full or part-time work, in education or unemployed were classified into the working group, and those that were full-time sick-listed were classified into the non-working group. The participants and the non participants'

diagnoses were classified into the following three diagnosis groups: diseases related to the musculoskeletal system (n=47), diseases related to mental and behavioural disorders (n=42), and other diseases, disorders or symptoms (n=41).

## Analysis

In the present thesis the rejection limit of the null hypothesis for statistical tests in studies I, II, IV and V was set to  $\alpha=0.05$  and all tests were two-sided. In these studies the SPSS was used for statistical analyses.

### Study I

To investigate the correlation between approaches influencing the psychiatric care service and approaches influencing the psychiatric occupational therapy service, and to test the correlation between approaches influencing the psychiatric occupational therapy and the influence of professional models, Spearman's rho was used. To examine differences between the group of respondents who identified practice models in occupational therapy and the group who did not, three tests were used, namely; the Student's *t*-test to test differences in number of years in the profession, the chi-square test to test the differences in education and clinical setting, and finally the Mann-Whitney *U*-test to test differences in used approaches in psychiatric care and in psychiatric occupational therapy.

### Study II

In study II the preliminary predictive validity of the WRI was tested with the Mann-Whitney *U* test. To investigate statistically significant differences in WRI ratings, age, number of months since they last worked, and work ability between the working group and the non-working group the Mann-Whitney *U* test was used. In order to test the differences in sex, origin, employment status and children living at home or not between the working and non-working group, Fisher's exact probability test was used. The Student's *t*-test was used to test differences in age and the chi-square test was used to test differences regarding working or not working, and differences in sex between the primary and the secondary participant groups. The Student's *t*-test was also used to test differences in age, and the chi-square test was used to test statistically significant differences in sex between the primary participant group and the secondary participant group together with the non-participants.

### Study III

To investigate the construct validity of the WRI, many-faceted Rasch analysis was accomplished by the FACETS computer program. The WRI ratings are ordinal but the Rasch

analysis converts the ordinal ratings into interval measures (Wright and Linacre, 1989). The Rasch analysis was used to determine whether a) the WRI items had construct validity, b) the participants were validly measured and separated along the construct, and c) the occupational therapists used the rating scale in a valid manner. These validity measures were tested by mean square (*MnSq*) fit statistics, mean square being the ratio between observed and expected scores. The standardised mean square (*ZSTD*) is used to test the significance of the *MnSq*. The ideal value for the *MnSq* is 1.0 and values above 1.4 associated with a *ZSTD* value of 2 or higher indicate a misfit i.e. a validity problem. Items with *MnSq* lower than 0.6 associated with *ZSTD* lower than -2.0 are not considered as misfitting but they do not yield much information since they are redundant (Wright and Linacre, 1994).

The WRI has been developed with the intention that the 17 WRI items delineate a single construct measuring psychosocial ability for return to work and was investigated by determining whether and how the WRI items corresponded to a continuum representing psychosocial ability for return to work i.e. how they formed a single construct, which is conceptualized as uni-dimensionality. Item calibrations were used to investigate how much of the underlying construct each WRI item represented. The WRI items which represented more of the construct would have higher calibrations than those with lower calibrations. Items with lower calibrations are less challenging to the client than those with higher calibrations (Wright and Masters, 1982). The construct validity of the scale was assessed by examining if the WRI items were calibrated across the continuum in a logical manner. All participating occupational therapists rated the same videotaped WRI interview which linked the WRI ratings to each other by taking rater severity/leniency into account. By examining the pattern of each person's responses to the items the validity of each person's responses was verified. If persons, regardless of their ability, performed better on the easy items than on the hard items, they were said to fit the expectations of the measurement model. This enabled the determination of whether the person's psychosocial ability for work was validly measured.

An assessment instrument which validly separates clients into many levels is sensitive. In the Rasch analysis, person separation statistics which determine whether the scale differentiates between clients with different levels of psychosocial ability for return to work were given. Items and persons were calibrated on the same continuum, which made it possible to determine whether items were appropriately targeted to the levels of the characteristic of the clients i.e. ceiling and floor effects of the scale. Finally rater fit statistics were used to investigate whether each occupational therapist rater used the rating scale in a valid manner by examining whether he or she demonstrated a different rating pattern compared to all other included raters.

#### **Study IV**

A qualitative approach inspired by Granheim and Lundman's (2004) description of manifest content analysis was used to analyse the written notes of the WEIS items. A manifest content analysis refers to a descriptive analysis of the content. This differs from a latent content analysis, which incorporates more interpretations. The items as defined in the WEIS manual

constituted different content areas and provided direction for the analysis of the notes. The amount of text i.e. the notes for each of the 17 items was around 900 words. All the notes to each item were read carefully several times in order to obtain a sense of what each specific item concerned. Thereafter meaning units in the notes were identified for each item. The same note could consist of more than one meaning unit. The identified meaning units in the notes depended upon the content area of the specific item analyzed, e.g. if some of the text in the notes described something not related to the particular item it was not classified as a meaning unit. Then the meaning units with the same meaning were organized into codes. The number of meaning units representing each code was counted.

To test statistically significant differences in the WEIS ratings between women and men, between participants with somatic and mental diseases, and between those who were working and those who were on full-time sick leave in study IV the Mann-Whitney *U* test was used.

### **Study V**

The Mann-Whitney *U* test was used to test statistically differences in the WRI ratings between the working and non-working groups on the three follow-up occasions. The Student's *t*-test was used for testing differences in age and Fisher's exact probability test was used to test differences in sex between the working and non-working groups. To identify WRI items useful in making predictions of return to work, forward stepwise Wald logistic regression analysis was used. All WRI items with a statistically significant difference in the ratings between the working and non-working groups were included in the logistic regression analysis for each of the follow-ups, i.e. at 6, 12 and 24 month follow-up. To test differences in age, sex and diagnosis groups between the study participants and those who did not participate, the student's *t*-test and the chi-square test were used respectively.

## **Ethical considerations**

In Studies I, II, IV and V, participation was voluntary by informed consent and assurances were given that obtained information would be handled confidentially. In study III the WRI ratings used were unidentified, but ethical approvals to use the WRI data from all included countries were retrieved. The use of the Swedish WRI ratings in study III was approved on behalf of the chairman of the ethical research committee at the Faculty of Health Sciences at Linköping University. Approval for study II was obtained from the ethical research committee at Karolinska Institutet, Stockholm, Sweden, and approval for studies IV and V was obtained from the ethical research committee at the Faculty of Health Sciences at Linköping University, Sweden.

# RESULTS

## **Study I, Practice models in Swedish psychiatric occupational therapy**

This study focused on the use of theoretical approaches and models by occupational therapists involved in psychiatric care. The psychosocial approach was the approach which influenced both the psychiatric care and the psychiatric occupational therapy most. In total, 62% of the participants responded that the psychosocial approach influenced psychiatric care to a great extent (quite a lot or a lot) and 67% responded that it influenced psychiatric occupational therapy to a great extent. The approach which influenced psychiatric occupational therapy least was the biomedical approach, where 83% responded that it influenced the service to a small extent (not at all or slightly). A total of 130 (39%) occupational therapists responded that professional models influenced the psychiatric occupational therapy to a small extent.

The correlation coefficient between the influence of the different approaches in psychiatric care and the psychiatric occupational therapy was around 0.60 for all approaches except for the biomedical approach, where the correlation coefficient was 0.38. The correlation between influence of different approaches in psychiatric occupational therapy and professional models varied with correlation coefficients between 0.02 and 0.16.

Thirty-eight percent (n=127) of the participants responded to the open-ended question about practice models they used in psychiatric occupational therapy. In total these 127 participants gave 227 answers including those indicating practice models (40%), clinical practice ideas (23%) and related knowledge (37%). The practice model which was identified as used by most of the participants was the Model of Human Occupation, which was identified by 82 (25%) of the 334 participating occupational therapists. There were no statistically significant differences concerning number of years in the profession, education, or clinical setting between those who identified practice models that they used and those who did not identify practice models. In regard to approaches, those who identified practice models in occupational therapy were influenced by the psychoanalytic approach to a lesser extent and by professional models to a greater extent than those who did not identify practice models.

## **Study II, Worker Role Interview-preliminary predictive validity of return to work**

This study aimed to investigate the predictive validity of the WRI for return to work at a two-year follow-up of clients at an insurance medicine investigation center. There were 28 (58%) women in the primary participant group, 44 (59%) in the secondary participant group, and among those who did not participate (non participants) 31 (46%) were women. The mean age was 51 years in the primary participant group, 52 years in the secondary participant group and among the non participants the mean age was 47 years. The two most common diagnosis-groups reported as reasons for sick-leave among the primary participants were

diseases related to the musculoskeletal system, and diseases related to mental, behavioural disorders. The two most common occupation groups represented among the primary participants were service workers and shop sales workers, and plant and machine operators and assemblers. Twenty-seven (56%) of the primary participants were employed when the NSIB investigation took place, 11 (23%) were of foreign nationality and 18 (38%) had children living at home.

At the two-year follow-up, six (13%) of the 48 persons in the primary participant group had returned to work to an extent of 25% or more of full-time work, and of those, two participants were women. Five of the 17 WRI items showed significant differences between the working and the non-working group, namely item; 1 ‘Assesses abilities and limitations’, 2 ‘Expectation of job success’, 3 ‘Takes responsibility’, 9 ‘Appraises work expectations’, and 14 ‘Perception of work setting’ (see the study II part in table 4). These items were generally rated as more supportive for returning to work for the working group than for the non-working group.

Table 4. Statistical differences in WRI ratings between the working and the non-working groups at the two-year follow-up in Study II and at 6, 12, and 24 month follow-ups in Study V.

WRI item	Study II	Study V		
	<i>p</i> -value 2-years follow-up	<i>p</i> -value 6-month follow-up	<i>p</i> -value 12-month follow-up	<i>p</i> -value 24-month follow-up
1. Assesses abilities and limitations	0.043*	0.147	0.425	0.362
2. Expectations of job success	0.003**	0.000***	0.005**	0.002**
3. Takes responsibility	0.018*	0.009**	0.029*	0.003**
4. Commitment to work	0.151	0.059	0.116	0.044*
5. Work-related goals	0.564	0.957	0.981	0.382
6. Enjoys work	0.726	0.828	0.534	0.528
7. Pursues interests	0.762	0.006**	0.136	0.046*
8. Identifies with being a worker	0.155	0.092	0.528	0.061
9. Appraises work expectations	0.034*	0.363	0.261	0.490
10. Influence of other roles	1.000	0.115	0.284	0.033*
11. Work habits	1.000	0.480	0.165	0.361
12. Daily routines	0.299	0.005**	0.132	0.003**
13. Adapts routine to minimize difficulties	0.208	0.005**	0.016*	0.021*
14. Perception of work setting	0.020*	0.082	0.927	0.702
15. Perception of family and peers	0.649	0.010**	0.005**	0.019*
16. Perception of boss	0.792	0.146	0.764	0.418
17. Perception of co-workers	0.258	0.178	0.311	0.278

Note. Mann-Whitney *U* test is used  
\* *p* < 0.05; \*\* *p* < 0.01, \*\*\* *p* < 0.001

There were no statistically significant differences between the working and non-working group concerning age, sex, origin, having children living at home or not, employed or unemployed when the investigation took place, months since work when the investigation took place, or the clients' work ability as assessed by the investigation team.

In the secondary participant group 12 out of the 74 participants were working to an extent of 25% or more of full-time work at the two-year follow-up, and of those, six persons were women. There were no differences between the primary and the secondary participant group concerning age, sex or whether they were working or not. Further, no statistically significant differences were found between the group of primary participants and the group of secondary participants and non-participants concerning age or sex.

### **Study III, Construct validity of the Worker Role Interview**

This study aimed to examine the construct validity of the WRI. All the WRI items except the four environmental ones (WRI item 14-17) demonstrated acceptable fit with the measurement model, which indicates that the items define a single construct and that the scale has internal validity for measuring psychosocial ability for return to work. The least amount of the construct was represented by item 4 'Commitment to work'; item 9 'Appraises work expectations'; and item 6 'Enjoys work'. The largest amount of the construct among the valid items was represented by item 7 'Pursues interests'; item 13 'Adapts routine to minimize difficulties'; and item 12 'Daily routines'.

Ninety percent of the rated participants had valid response patterns, i.e. they fitted the measurement model. Concerning sensitivity, the WRI scale and its items were able to reliably separate the participants into three levels of psychosocial ability for return to work. Seventeen of the 21 raters fitted the measurement model, i.e. they used the rating scale in a valid manner.

### **Study IV, Perceptions of the work environment among people with experience of long term sick leave.**

This study focused on how people with experience of long term sick leave perceive that factors in their work environment support and interfere with their work performance, satisfaction, and well-being. The Work Environment Impact Scale (WEIS) was used as the data collection method.

The three WEIS items which were rated as supportive of work performance, satisfaction and well-being for most of the 53 participants were item 10 'Interaction with others', item 17 'Meaning of work', and item 6 'Work group membership'. For 43 (81%) of the participants the item 'Interaction with others', which concerns the perception of interactions with people at work who are not work colleagues, was rated as being supportive of their work performance, satisfaction and well-being. Identified codes describing supportive factors within this item were; interaction with others works well (n=26), the interaction is

stimulating (n=13) and the interaction is the best thing about work (n=8). The item 'Meaning of work', which concerns the individual's perception of the meaning of what is done at his or her work, was rated as supportive of work performance, satisfaction and well-being for 41 (77%) of the 53 participants. Identified codes describing supportive factors within this item were; the work per se is important (n=15); finds value in the things done at work (n=9); does useful and valued things at work (n=9); the work is important for the participant (n=7); proud of the work they do (n=4) and proud of being regarded as competent (n=3). Thirty-nine (73%) of the participants perceived that the item 'Work group membership', which concerns the perception of social involvement with co-workers, contributed to their work performance satisfaction and well-being. Identified codes describing supportive factors within this item were; the social fellowship is good and positive (n=30); likes meeting co-workers outside work (n=18), the social relationship with co-workers is an important part of making the work pleasant (n=4), and support from co-workers (n=3).

The three WEIS items which were rated as most interfering with work performance, satisfaction and well-being for most of the participants were item 2 'Task demands', item 11 'Rewards', and item 1 'Time demands'. Thirty-eight (72%) of the participants perceived the item 'Task demands', which concerns the perception of physical, cognitive and emotional work demands, as interfering with work performance, satisfaction, and well-being. Identified codes describing interfering factors within this item were that the work task demands were: too physically challenging (n=24); too emotionally challenging (n=11); too cognitively challenging (n=6), and codes describing that performing work tasks results in suffering from pain (n=6) and that work task demands do not provide sufficient cognitive challenge (n=4). There were 32 (60%) of the participants who perceived the item 'Rewards', which concerns the perception of received rewards for personal effort, as interfering with their work performance, satisfaction, and well-being. Identified codes describing interfering factors within this item were: insecure employment (n=12); lacks employer rewards in the form of encouragement (n=11); wishes that the rewards were of a different form (n=10); the salary is too low (n=7); lacks rewards (n=6) and had previously had rewards but they were taken away (n=3). For 31 (58%) of the participants the item 'Time demands', which concerns the perception of time in relation to what the person perceives that he or she is expected to accomplish at work, was rated as interfering with their work performance satisfaction and well-being. Identified codes describing interfering factors within this item were; not having enough time to do the work tasks (n=26); lack of time impacts negatively on quality of the work (n=6); expectations from the employer of working overtime (n=4); lack of time results in a feeling of being inadequate (n=3); lack of time results in complaints from the employer or customers (n=3); tedious not having enough work to do (n=3); expectations of taking over co-workers work-tasks when they are absent (n=1).

No statistically significant differences in the WEIS ratings were found between women and men. Item 6 'Work group membership', and item 14 'Social atmosphere' showed a statistically significant difference between participants who were working and those who were on full-time sick leave when the interview took place. These items were rated as more supportive of work performance satisfaction and well-being for the participants who were

working than for the participants who were on full-time sick leave. There were statistically significant differences between the group with somatic diseases and the group with mental diseases in five items, namely item 3 ‘Appeal of work tasks’, item 4 ‘Work schedule’, item 12 ‘Sensory qualities’, item 15 ‘Properties of objects’ and item 17 ‘Meaning of work’. Of these, items 3 and 17 were rated as more interfering with work performance satisfaction and well-being for the participants with mental diseases than for the participants with somatic diseases. On the other hand, items 4, 12 and 15 were rated as more supportive of work performance satisfaction and well-being for the participants with mental diseases than for the participants with somatic diseases.

### **Study V, Return to work – the predictive value of the Worker Role Interview**

This study focused on further investigation of the predictive validity of the WRI for return to work, which was examined over a two-year period. At the first follow-up, 6 months after the WRI interview was conducted, 45 participants were in the working group and eight in the non-working group; after 12-months, 40 participants were in the working group and 11 in the non-working group; and after 24 months, there were 41 participants in the working group and six participants in the non-working group. Fifteen participants had been working full-time and five had been sick-listed full-time between the time the WRI interview was conducted at baseline and the 24-month follow-up.

There were four WRI items which showed statistically significant differences in the ratings between the working and non-working groups on all three follow-up occasions, namely item 2 ‘Expectations of job success’, item 3 ‘Takes responsibility’, item 13 ‘Adapts routine to minimize difficulties’, and item 15 ‘Perception of family and peers’. Two additional WRI items showed statistically significant differences in the ratings between the working and non-working groups at the 6-month and 24-month follow-ups, namely item 7 ‘Pursues interests’, and item 12 ‘Daily routines’. At the 24-month follow-up there were two additional WRI items, namely item 4 ‘Commitment to work’, and item 10 ‘Influence of other roles’, which showed statistically significant differences in ratings between the working and non-working groups (see the study V part in table 4). These items were generally rated as more supportive for returning to work for the working group than for the non-working group. Nine of the WRI items, namely, items 1,5,6,8,9,11,14,16,17 showed no statistically significant differences in the ratings between the working and non-working group at any of the three follow-ups.

The logistic regression analysis for the 6-month follow-up showed that WRI item 2 ‘Expectations of job success’ and item 12 ‘Daily routines’ together explained 56% of the variance of the outcome. At the 12-month follow-up, item 2 ‘Expectations of job success’ explained 24% of the variance of the outcome. The two WRI items, item 2 ‘Expectations of job success’ and item 12 ‘Daily routines’ together explained 62% of the variance of the outcome at the 24-month follow-up. The logistic regression analysis resulted in a regression model for each follow-up, which showed the observed and predicted group membership concerning working versus non-working participants. The regression model correctly

predicted the group for 49 of the 53 participants, with an overall correct prediction rate of 93% at the 6-month follow-up. At the 12-month follow-up the regression model had an overall prediction rate of 81%, and correctly predicted the group for 42 of the participants. All except two of the participants were correctly predicted to the working versus non working groups by the regression model at the 24-month follow-up, which gave a final overall correct prediction rate of 96%.

There were no statistically significant differences between the working and non-working groups at any of the three follow-ups concerning age or sex. Further, no statistically significant differences could be found between the participants (n=53) and those in the study population who did not participate (n=77) concerning age, sex or diagnosis groups.

# DISCUSSION

In this thesis two Model of Human Occupation theory-based assessment instruments, the Worker Role Interview and the Work Environment Impact Scale, were evaluated regarding their usefulness for identifying psychosocial and environmental rehabilitation needs essential for return to work. Before addressing methodological considerations and discussion of the main findings, the interrelations between the included studies will be explained.

## Interrelations between the included studies

Little was known about if and which theoretical approaches and professional models that were used in occupational therapy practice in Sweden. This was partly investigated in study I, in which it was found that the most common approach among occupational therapists in psychiatric care was the psychosocial approach. It was also found that occupational therapists in psychiatric care used professional practice models to a low extent. However, the practice model which was most often used by the occupational therapists was the Model of Human Occupation (MOHO), which is an occupation-focused model that addresses psychosocial factors (Kielhofner, 2004). These results indicated that the psychosocial approach and the MOHO seemed applicable in occupational therapy and motivated further use of the MOHO. One way to enhance the application of theory into practice is the use of assessment instruments, and in the other studies in the present thesis the work-related MOHO assessments Worker Role Interview (WRI) and the Work Environment Impact Scale (WEIS) was evaluated and used.

In study II the predictive validity of the WRI for assessing return to work was tested and the results showed preliminary promising results which led to the predictive validity of the WRI being further investigated in study V within another population and with slightly different evaluation methods in comparison to study II. In study III the construct validity of the WRI was investigated in an international study and it was found that all the WRI items except those related to the environment area seemed to capture the intended construct of WRI, namely psychosocial ability for return to work. The environmental items in WRI seemed to belong to another construct. These results motivated more comprehensive investigation of the environment, which was done in study IV where the impact of the work environment was investigated by using the WEIS as a data collection method to describe and analyse perceptions of the work environment among people with experiences of sick-leave.

# Methodological considerations

## **Sample representativity, internal and external drop-outs**

In study I, all occupational therapists in the field of psychiatric care recognised by the Swedish Association of Occupational Therapists were included and sent a questionnaire. Since the association organises 95% of the Swedish occupational therapists (FSA, 2008) and the response rate was 70%, the study sample could be considered representative of occupational therapists in Sweden working in psychiatric care at the time of the study. The use of a questionnaire in study I raises concerns about the reliability and validity of the answers. In the development of the questionnaire for the larger project of which study I is a part, steps were taken to obtain face and content validity of the overall questionnaire (Hallberg, 1997). In study I the intention was to estimate the influence of approaches in psychiatric care and the use of practice models in the area of the psychiatric occupational therapy service. In the questionnaire the approaches were listed in order to avoid misunderstandings and the internal drop-out rate for these questions was between 6 and 11 percent. Concerning occupational therapy practice models, no models were listed since no uniform terminology in occupational therapy was available. The open-ended question gave the respondents the opportunity to choose the language they generally use but it probably also made it harder for the respondents to find out what to answer, which may be reflected in the fact that only 38% answered that question. However, those who identified practice models in occupational therapy in the open-ended question also answered, more frequently than those who did not identify these practice models, that professional models influenced the occupational therapy service, which indicates that the respondents answered in a reliable way.

In study III which aimed to examine the construct validity of the WRI, the selection of participants seems relevant since quite a similar number of clients from the three participating countries (Iceland, Sweden and the USA) were included and since the clients had a variety of somatic or mental diseases and ranged in age from 20 to 62 years, which are ages when paid work plays an important role in people's lives. These facts together with the fact that the participating raters also represented the three countries made it possible to draw conclusions about the construct validity of the WRI when used with people with different diagnoses and in the contexts of the different countries.

The large rate of non participants constitutes a generalization problem in studies II and V, which investigated the predictive validity of the WRI, and in study IV in which the WEIS was used to investigate the perception of the work environment among the long term sick-listed. The reasons clients did not participate in study II is unknown, but it may be because these clients had often been involved in several other investigations before they took part in the investigation at the hospital adherent to the National Social Insurance Board (NSIB) (SOU, 2000) and therefore participating in a study could have been perceived as an

additional burden. Further, many of these clients had been in a vulnerable situation when their work ability was investigated by the insurance medicine professionals at the NSIB hospital since their subsequent working life could have been dependent on those investigations results. There may also have been clients who were involved in proceedings concerning these judgments. The clients in studies IV and V who declined participation when they were contacted by phone stated different reasons for not participating, e.g. not having time, not wanting to participate, having decided not to take on anything more, death in the family, their situation not fitting in to the study, and life being too chaotic. The low response rate may be partly explained by the fact that the researchers were totally unknown to the clients, which can have a negative impact on the response rate (Domholdt, 2005). A similar phenomenon with large rates of clients not participating has occurred in other studies of people with experience of long term sick-leave, and this also was linked to clients with different diagnoses (Klanghed et al, 2004; Müssener et al, 2007; Müssener, 2007).

On the other hand, the internal drop-outs of the participants which were followed over two-year periods in studies II and V were low. In study II there were no internal drop-outs among the participants. However, the internal drop-outs on the WRI items ranged from 2% to 60% in study II. This could partly be explained by the fact that some of the items were not applicable to the client's specific situation, for example when a client did not have any employment, 'not applicable' was used for items such as 'Work habits', 'Perception of boss' and 'Perception of co-workers'. In study V all participants were reached and participated in the 6 and 12-month follow-ups. At the 24-month follow-up six (11%) of the participants did not participate. Of these six participants, five could not be reached either by phone or mail and one participant declined further participation because of lack of time. Only two items in the WRI in study V had internal drop-outs, namely item 15 'Perception of boss' and 'Perception of co-workers', which had drop-out rates of 8% and 6% respectively. In study IV, there were seven WEIS items with internal drop-outs ranging from 2% to 8%. The explanation for these internal drop-outs in studies IV and V is that for clients who had no boss or no co-workers some items were rated as 'not applicable' and the overall low internal drop-out in studies IV and V could be explained by the fact that all the clients were employed when they were included in the study and therefore had a specific job situation to describe when interviewed.

Among the participants in studies II, IV and V the most common diagnoses were related to the musculoskeletal system, and the next most common were related to mental and behavioral disorders. Those diagnoses are and have been the most common for people in Sweden on long-term sick leave (more than 60 days) (FK, 2007a; Riksförsäkringsverket, 2001). Further, service workers and shop sales workers are over-represented among long-term sick-listed persons in Sweden in general (FK, 2007a) and also formed the most common professional group among the participants in studies II, IV and V. The proportion of women is 65% among long term sick-listed in Sweden (FK, 2007a), which is similar to the proportion of women in study II where 58% of the primary participant group were women, and in studies IV and V where 64% were women. The fact that the participants in studies II, IV and V were similar to the general Swedish population on long-term sick-leave concerning

sex, diagnosis and professional groups, along with the fact that no statistically significant differences were found concerning age and sex between the participants and non participants in the studies, implies that the participants in the studies are probably representative of those on long term sick-leave in Sweden. This enables tentative conclusions to be drawn about the predictive validity of the WRI in studies II and V and about the perception of the work environment among long-term sick listed persons in study IV.

The small size of study samples and the difference in proportions of participants in the working and non-working groups in study II and in study V may lead to a risk of a type II error (Bacchetti et al, 2005; Domholdt, 2005) when comparing differences in WRI ratings between the working and non-working groups in studies II and V. The difference in proportions of participants in the groups may be explained by the nature of the study groups. In study II the working group consisted of 6 clients, and the non-working group consisted of 42 participants. At the two-year follow-up in study V the distribution was almost the opposite, where the working- and non-working group consisted of 41 and 6 participants respectively. Study II included clients who had been investigated at a NSIB hospital whose clients often had complex problems related to their work situation (SOU, 2000). In study V all clients in the actual municipality who had been sick-listed for between 60 and 89 days were included, which meant that clients with both light and more severe work-related problems were included. Further, the proportion of those with mental or behavioral disorders among the participants in study V was less compared to the proportion of those on long-term sick-leave in Sweden in general. People with mental or behavioral disorders have in general the longest sick-leave periods in Sweden (FK, 2007a) and this could be one explanation for the large proportion of participants in the working group in study V.

The WRI and the WEIS interviews are commonly accomplished by face-to-face interviewing, but in studies IV and V telephone interviews were used for practical and economic reasons. However, the impression is that the participants responded honestly and were willing to share their perceptions by telephone. Young and Murphy (2002) found that telephone interviews give almost the same responses as face-to-face interviewing. The main difference they found between the two interview methods was that face-to-face interviewing took a longer time since it included more social niceties.

### **Rationale of using the WRI and the WEIS and in comparison to other work related psychosocial assessment instruments**

Several factors underlie the choice of the assessment instruments WRI and WEIS and thereby their theoretical foundation, the MOHO, for identifying subjective psychosocial and environmental rehabilitation needs essential for return to work. McMillan (2006) states that in order to understand clients' occupational problems the clients need to be viewed as occupational beings, and conceptual practice models which focus on occupation should be used (McMillan, 2006). The MOHO offers a comprehensive explanation of how occupation is motivated, patterned and performed in interaction with the surrounding physical and social environment, and its profound occupational focus was found to have a great relevance when

wanting to understand working behaviour in terms of return to work after sick-leave. In the present thesis the occupational dysfunction among the participants was disruption of work, and the participants had a wide variation of diagnoses. Further, the MOHO is intended to be used with any person experiencing occupational problems, and in the model, the occupational dysfunction is in focus and not the diagnosis (Kielhofner et al, 1999a). The choice of the WRI and WEIS with the MOHO as a theoretical foundation for identifying rehabilitation needs essential for return to work was further motivated by the study by Braveman (1999) who, in a review, found that factors predictive for return to work were supported by the underlying concepts in the MOHO. In addition, since the WRI and WEIS have a theoretical foundation, the possibilities of making valid and reliable assessments which supply a structured way of deciding about possible further rehabilitation interventions are strengthened (Haglund, 2000; Sandqvist, 2007). To be able to assess a client's work ability the client's subjective perception about his or her workability in relation to physical, psychological and social constraints and resources needs to be considered (Hansen Falkdal, 2005). This factor is reflected in the WRI and the WEIS.

However, there are other assessment instruments assessing subjective psychosocial and environmental factors related to work. One of the most well known in Sweden is the Demand-Control-Support Questionnaire (Sanne et al, 2005). This has its theoretical foundation in the demand-control-support model, which claims that job strain and ill-health occur when high demands at work are combined with low control and low social support (Karasek & Theorell, 1990). The 'effort/reward' imbalance questionnaire is another assessment based on the effort reward imbalance model which claims that an imbalance between perceived efforts invested by the worker and perceived rewards in the form of pay, status, and advancement opportunities at work is related to ill health (Siegrist, 1996; Tsutsumi & Kawakami, 2004). Another assessment is the Work Role Functioning Questionnaire which was developed to assess the client's perception of how health problems impact the ability to perform the actual job (Durand et al, 2004). In this, the work role is conceptualized as consisting of the following five work demand categories: work scheduling, physical, mental, social and output demands (Amick et al, 2000). The General Nordic Questionnaire (QPSNordic) is designed for assessment of psychological, social and organizational working conditions and was developed as a result of collaboration between researchers from Nordic countries. The QPSNordic consists of questions relating to: job demand and control, role expectations, predictability and mastery of work, social interaction with co-workers and clients, leadership, organizational climate, interaction between work and private life, work centrality, organizational commitment and work motives (Lindström et al, 2000). An overview of additional assessment instruments assessing occupational psychosocial factors is provided in a review by Tabanelli and co-workers (2008).

In contrast to the WRI and the WEIS, all the assessment instruments mentioned above are self-report questionnaires consisting of questions with closed-format response alternatives. As far as is known, the WRI and the WEIS are the only interview assessment instruments which are focused on the subjective perspective of psychosocial and environmental factors related to work, and which are not directed to specific diagnosis groups and which have been

psychometrically investigated. The interview format of the WRI and the WEIS was found valuable since the interviews yield comprehensive information about how each unique client perceives different psychosocial and environmental factors related to their work situation, which in turn can contribute considerably to the planning of further specific rehabilitative interventions for the unique client. Asmundsdottir (2004) has also found the WRI useful since client's perceptions obtained from the interview provide directions for goal setting and rehabilitative interventions.

### **Data analysing methods**

#### Statistical analyses

The quality of obtained data determined whether parametric or non-parametric statistical methods were applied. Since the WRI and the WEIS provides data on an ordinal level and the sizes of the compared groups were fairly small, which jeopardized normal distribution, mainly non-parametric tests were used. However, in study III the use of Rasch analysis implied that the ordinal data obtained from the WRI ratings were transformed to interval measures (Wright and Linacre, 1989) which is one reason that Rasch analyses have been suggested for use when evaluating assessment instruments which generate data on an ordinal level (Fisher, 1993a; Fisher 1993b; Velozo et al, 1995). In study V, forward logistic regression analysis which is a parametric method was used since corresponding non-parametric methods were not available. The reason for not using logistic regression analyses for investigating the validity of the WRI for predicting return to work in study II was that all the WRI items ratings had internal drop-outs, which made logistic regression analyses unusable.

#### Qualitative analysis

The content analysis used in study IV was inspired by Granheim and Lundman (2004). Manifest analysis, which involves less interpretation than latent analysis (Berg, 2004; Granheim & Lundman, 2004) was used since the written notes besides the rating were somewhat abstracted by the interviewer when written down. The trustworthiness of study IV might have been strengthened since the participants in the study included both men and women and had a wide variation in ages, professions, diagnoses and length of sick leave, which hopefully resulted in a richer variation in their perceptions of the environment. During the analysis process discussions were held between the author and one of the co-authors for paper IV concerning the classification of the content of the item notes into meaning units and codes. In order to shed light on the process, examples of the analysis were given, from notes to meaning units to codes and further, quotations to illustrate the perceptions of the participants were presented in paper IV. The strategies above are also suggested by Graneheim and Lundman (2004) to enhance the trustworthiness of studies using content analysis.

# Discussion of the main findings

## Use of theoretical approaches and models in occupational therapy

The influences of theoretical approaches and professional models among Swedish occupational therapists working in psychiatric care were investigated in study I. The psychosocial approach was the theoretical approach which influenced the occupational therapists to the greatest extent in their daily work. This finding reflects the fact that in occupational therapy psychosocial factors are important for understanding occupational performance, at least in psychiatric care. The relevance of psychosocial factors to occupational performance has also been pointed out in occupational therapy literature (Baum et al, 2005; Kielhofner, 2004). Of the 25% of the respondents who identified practice models in occupational therapy, 96% used the Model of Human Occupation (MOHO). This may be explained by the fact that the occupational therapists found the MOHO useful in practice. Other explanations may be that the MOHO was presented in Swedish (Kielhofner, 1996), there are assessment instruments available for application of the model and the literature about the model is substantial. The relevance of the MOHO for the practice of occupational therapy has been scrutinized for almost 30 years and more than 100 peer-reviewed studies discussing theoretical, applied or research aspects of the MOHO have been published (Kielhofner, 2008) resulting in the MOHO being the model in the field of occupational therapy on which, to date, most research has been focused.

The fact that only 54% of the occupational therapists answered that they based their practice on occupational therapy models suggests that many of the respondents did not rely much on knowledge of occupational therapy. This could imply problems for practice since occupational therapists need to use practice models which focus on occupation in order to understand clients' occupational problems (McMillan, 2006) and the use of models offers insights and tools that enhance practice (Kielhofner, 2004). Further, occupational therapists in Sweden are obliged to offer scientifically sound occupational therapy and must explain actual intervention alternatives and strategies to the clients (Socialstyrelsen, 2001). One way to enhance the application of theory in practice is the use of theoretically sound assessment instruments. Study I has revealed the need to better articulate the theoretical thinking behind the doing since lack of theoretical foundation and evidence of methods in the profession may cause uncertainty in practice and thereby cause a threat to the clients.

## The use of the WRI and the WEIS for identifying rehabilitation needs essential for returning to work

### **Predictive validity of the WRI**

The value of the WRI for predicting return to work after long term sick-leave was investigated in studies II and V. The content area in the WRI, which had the overall best predictive validity for return to work, was 'Personal causation'. In the MOHO personal causation is conceptualized as a part of the human's motivation for occupation. It reflects a person's unique awareness of his or her capabilities for doing things that matter and what the person perceives his or her doing has in regard to effects on reaching desired outcomes. Items 2 'Expectation of job success' and item 3 'Takes responsibility' in the WRI, which both belong to personal causation, showed statistically significant different ratings between the working and the non-working groups at the two-year follow-up in study I and at all three follow-ups in study V. Item 2 'Expectations of job success', which concerns the individual's belief in his/her abilities in relation to returning to work also emerged as a significant predictor for returning to work by the regression model in all follow-ups in study V. These results suggest that this psychosocial factor is an important prerequisite for return to work and is in line with results from other studies (Bergendorff et al, 2001; Berglind & Gerner, 2002; Feuerstein & Theborge, 1991; Hansen et al, 2006; Hansen et al, 2005; Isaksson Mettävainio & Ahlgren, 2004; Labriola et al, 2007; Marhold et al, 2002) in which people's motivation in the form of their belief in their ability to work has been shown to be of vital importance for returning to work after sick-leave. The WRI item 3 'Takes responsibility', which also showed a predictive value for return to work at the follow-ups in studies II and V, concerns to what extent the person takes responsibility for his/her work situation, and the sense of who is in charge of the situation, for example whether the person perceives internal or external control. This result supports the results of two other studies which showed that the ability to take control over one's life and work situation was perceived as an important factor for return to work when sick-listed (Holmgren & Dahlin Ivanoff, 2004; Medin et al, 2006).

The results from the logistic regression analysis in study V showed that item 2 'Expectations of job success' and item 12 'Daily routines' had the best value for predicting return to work. 'Daily routines' concerns how the person manages time outside work i.e. if the person perceives it as chaotic or organised and if the person's routines outside work support or interfere with the worker role. The regression model based on the WRI ratings correctly predicted into which group, working versus non-working, the participants would fall at the two-year follow-up to an extent of 96%, which indicates that the WRI could be a useful instrument for assessing factors that are significant for return to work after sick-leave.

These results differ from the results obtained by Velozo and co-workers (1999) who found that neither the WRI nor other variables such as chronicity, diagnosis, number of operations, attorney involvement and age were predictive for returning to work three months after discharge from rehabilitation. In comparison to studies II and V in the present thesis the

predictive validity of the WRI was not tested item by item in the study by Velozo and co-workers (1999). Instead they used an overall WRI estimation.

Since the content area 'Personal causation' in the WRI, which focuses on the individual's motivation for return to work in relation to the individual's feeling of competence and effectiveness in doing work tasks and facing challenges at work, had the overall best predictive validity for return to work these aspects need to be considered when supporting clients in the return to work process. The need to focus more on the individual's motivation in order to reduce sick-leave has also been pointed out by researchers in the vocational rehabilitation field (Alexanderson et al, 2005; Berglund & Gerner, 2002; Dahle, 2005; Gard & Larsson, 2003). In the present thesis, 'Expectations of job success', 'Takes responsibility' and 'Daily routines' were found to be important predictors for returning to work, even after as long as two years. This indicates that these factors are fairly stable over time and thereby take time to change. These psychosocial factors need to be accounted for in interventions aiming at supporting the person in returning to work. To do that, knowledge about how to strengthen the person's belief in his/her occupational abilities, as well as knowledge about activity patterns and how to support the person in structuring his or her daily activities is needed. In planning for such interventions the MOHO seems useful since it not only provides the user with an assessment instrument but also offers a theoretical context and a framework for how to plan for and accomplish future interventions adapted for the unique individual. Haglund and Kjellberg (1999) have also argued that it is important to take into account an individual's motivation as conceptualized in the MOHO since it is decisive for the result of interventions.

In total, nine of the 17 items in the WRI showed a predictive value for return to work at one or more of the follow-ups in studies II and V. Together these nine predictive items represent those theoretical constructs in the MOHO which are conceptualized in the WRI. Thus, WRI items which belong to the construct of personal causation, values, interests, roles, habits and the physical and social environment showed tentative abilities to predict return to work. That the included constructs in the MOHO have relevance for predicting return to work has also been pointed out by Braveman (1999). The findings in the present thesis show that the WRI seems to hold possibilities for predicting return to work, which in turn implies that the WRI is useful for identifying individual rehabilitation needs of people who are sick-listed in order to support the individual in returning to work. These promising results motivate further investigation of the predictive validity of the WRI for returning to work, and further studies could be conducted with other samples for example with, people who are unemployed and experiencing difficulties obtaining employment, and with people on disability pensions who want to try to return to the labour market.

### **Construct validity of the WRI**

In Study III it was found that all the WRI items, except those items related to the environment, together constituted a uni-dimensional construct of psychosocial ability to return to work. The easiest items, i.e. the items that claimed the least psychosocial ability for

return to work, were work-related items concerning the value, enjoyment and organisation of the work (WRI items 4,9,6, 11). Of the items which fitted the construct items related to the life outside work were most difficult, i.e. they claimed most psychosocial abilities for return to work. These more difficult items concerned the client's adaptation to his or her situation in terms of daily routines and interests and the client's beliefs in his/her capabilities (WRI items 7, 13, 12, 2). The distribution of the items on the continuum from easy to difficult in study III are similar to the distributions of the WRI items which have been found in other studies (Fenger & Kramer, 2007; Haglund et al, 1997; Velozo et al, 1999). This implies that the construct of psychosocial ability to return to work seems to remain stable and valid across different countries and different populations. The WRI items ranged across the continuum of psychosocial ability to return to work and separated the clients into three distinct levels of ability. This result supports the use of the WRI for estimating psychosocial work ability.

It should also be noted that WRI items 2 'Expectation of job success' and 12 'Daily routines', which were two of the items assessing most of the psychosocial ability for return to work in study III, are also the two items which the regression model in study V found had the best predictive value for explaining return to work.

All environmental items (items 14-17) showed a misfit to the construct of psychosocial ability for return to work. The environmental items in the WRI showed a misfit in earlier studies (Haglund et al, 1997; Velozo et al, 1999) and were revised to better fit the construct of the WRI. However the results from study III and the study by Fenger and Kramer (2007) suggest that the environmental items in the WRI still do not assess psychosocial abilities for return to work. Since the environmental WRI items misfit the intended construct they have been considered for removal from the WRI but they are still retained in the WRI assessment since they provide vital information for occupational therapists planning for work rehabilitation interventions, and therefore are clinically useful. It was also shown in study II that the environmental WRI item number 14 'Perception of work setting' had a tentative predictive value for return to work. That co-worker relations at work, which is assessed in WRI item 16, are important has been pointed out by Post and co-workers (2005) who found that the presence of co-worker support is predictive for return to work after sick leave. Also, another study found that weak social support from co-workers was a predictor for long-term sick leave (Lidwall & Marklund, 2006). This suggests that information about how work environmental factors interact with personal factors, which in turn influence the client's ability to return to work, are important to consider.

### **Perceptions of the work environment gathered by the WEIS**

The WEIS was used in study IV, which aimed to illuminate how people with experience of long term sick leave perceived their social and physical work environment. Items related to social interactions at work and the perceived meaning of the work were perceived as most supportive of work performance, well-being and satisfaction (WEIS items 6, 10, 14, 17). Items 6, 10 and 14 all concern perceptions of different social relationships at work. These results suggest that positive perceptions of social interactions at work could be a source of

well-being, which is in line with the results from several studies (Arneson & Ekberg, 2005; Gunnarsdóttir & Björnsdóttir, 2003; Lindin Arwedson et al, 2007; Polanyi & Tompa, 2004) who stress the importance of the quality of social interactions for well-being and/or health at work. The WEIS item 17, which was also found to be supportive of work performance, satisfaction, and well-being, concerns the worker's perception of the underlying meaning of the work he or she does. Workers' perceptions of the meaning of what they do at work and the feeling that they are successfully achieving the purpose of work deserves a central place in explorations of the impacts of work on health. This has also been stressed by Polanyi and Tompa (2004) since they found these factors were significant in regard to how work is experienced.

The items found most interfering with work performance, well-being, and satisfaction at work concerned different work demands and the rewards received for the work (WEIS items 1, 2, 11). Item 1 and item 2 in the WEIS refer to the temporal, physical, cognitive and emotional demands the worker perceives are made on him or her. Similar work demands are also considered in the well-known job demand-control-support model (JDCS) which claims that job strain and ill-health occur when high demands at work are combined with low control and low social support (Karasek & Theorell, 1990). In studies where the JDCS has been used, high work demands have been found to be a threat to health (Cheng et al, 2000; Mcclenahan et al, 2007; Vand der Doef & Maes, 1999) and to constitute a risk for low enthusiasm and low satisfaction about work (Josephson & Vingård, 2007). The WEIS item 11 'Rewards', which was also found to be one of the most interfering with work performance, satisfaction, and well-being, concerns how the worker perceives received rewards for personal efforts. This item has similarities with components of another well known work health model, namely the effort reward imbalance model (ERI), which claims that an imbalance between perceived efforts invested by the worker and perceived rewards in the form of pay, status and advancement opportunities at work are related to ill health (Siegrist, 1996). In studies where the ERI model has been used, an imbalance between personal efforts and received rewards has been found to be related to subsequent sickness absence (Head et al, 2007) and various types of ill health (Tsutsumi, 2004). That receiving benefits for efforts is important for a worker's health has also been found in a study by Lindin Arwedson and co-workers (2007).

Differences in perceptions of the work environment are related to our values, interests, thoughts about our capacity and our expectations about work (Kielhofner, 2008), and personal factors like this indicate that health implications could not be assessed from work characteristics (Polanyi & Tompa, 2004). This suggests that to bring about improvements in work conditions, employee involvement is needed (Josephson & Vingård, 2007) where the match between workers and given working conditions needs to be considered rather than just the conditions themselves (Polanyi & Tompa, 2004). In this, the WEIS could be a useful assessment instrument since a fundamental principle of the WEIS is that similar work characteristics have different impacts on different workers and that individuals are most satisfied and productive when there is a match between the environment and the needs and skills of the worker (Moore-Corner et al, 1998). Moreover, the qualitative information

obtained by the WEIS provides important clues in the development of vocational rehabilitation plans, whereas alterations and accommodations of the work environment supplied by the WEIS is one way of supporting each unique worker to sustain or return to work. Gaining more knowledge in this area could reveal useful keys to the complex phenomenon of reducing sick leave and may motivate further studies examining the validity and reliability of the WEIS and investigating how the individual's perceptions of the work environment are related to health and satisfaction.

## Implications for practice

Assessment instruments are only as good as the manner in which they are applied in practice, but through application and use of tools that are usable, reliable and valid, practitioners can feel more assured that the assessment also has some degree of credibility. The possibilities of assisting clients to achieve a safe, early and durable return to work are dependent upon being able to identify the complex interrelationships of multiple factors that comprise and influence work ability. When assessing a complex phenomenon such as work ability a single assessment instrument is not enough to capture all aspects of a client's work ability. It is the professional assessor's responsibility to bear in mind what the assessment instrument can contribute, i.e. to consider which aspects of work ability it does and does not address. Without sound clinical reasoning and critical thinking, assessment results will lack relevance to individual workers and their futures. In relation to this discussion both the WRI and the WEIS concern a subjective perspective of work ability. Whereas the WRI addresses psychosocial factors and environmental factors in relation to return to work, and the WEIS addresses the impact the work environment has upon the client in relation to work performance, well-being and satisfaction. To get a comprehensive assessment of a client's work ability multiple data collection methods which combine objective and subjective perspectives are a prerequisite and require observational as well as interview methods. In this the WRI and the WEIS, which capture the subjective perspectives of psychosocial and work environmental factors, can contribute but they must be combined with other assessment instruments in assessing clients' work ability. The WRI and the WEIS could for example be used in conjunction with the observational instrument Assessment of Work Performance (AWP) (Sandqvist et al, 2006) which is based on the same theoretical foundation, the MOHO. Evaluations of the usefulness of such a combination for estimating work ability would be valuable.

# CONCLUSIONS

- The Worker Role Interview can be used for estimating psychosocial work ability since all the included items except the four related to the environment were related to the construct of psychosocial ability for return to work. The construct seems stable and valid across different countries and populations, and the Worker Role Interview could separate clients into at least three distinct levels of psychosocial ability for return to work.
- The Worker Role Interview contains items which could predict return to work up to two years after the assessment is conducted. The interview format of the Worker Role Interview can be valuable since it provides comprehensive information which could contribute to the planning of rehabilitation interventions for the unique client. In occupational therapy practice the psychosocial approach and the Model of Human Occupation were highlighted as important theoretical perspectives. This implies that the Worker Role Interview and its theoretical foundation, the Model of Human Occupation, is useful for identifying individual rehabilitation needs of people who are sick-listed in order to support the individual in returning to work.
- The content area ‘Personal causation’ in the Worker Role Interview had the overall best predictive validity for return to work. This content area contains items that focus on the individual’s motivation for return to work in relation to the individual’s feeling of competence and effectiveness in doing work tasks and facing challenges at work.
  - The item ‘Expectations of job success’ in the Worker Role Interview, which concerns beliefs in personal ability in relation to returning to work was found to be the strongest predictor for return to work. This finding is in line with several other studies focusing on predictors for return to work and suggests that knowledge about how to strengthen the person’s belief in his or her abilities is needed in interventions aiming at supporting the individual to return to work.
- In the content area ‘Habits’ in the Worker Role Interview, the item ‘Daily routines’ which concerns the individual’s routines and how he or she organises time outside work was found to be a significant predictor for returning to work. This suggests that knowledge about how routines impact occupational performance and how to support the individual in structuring his or her daily doings can be important in supporting the individual to return to work.

- The use of the Work Environment Impact Scale among people with experience of long term sick-leave revealed that social interactions at work and the meaning of the work had the most supportive impact, and different work demands and the rewards received for the work were perceived as most interfering with work performance, well-being, and satisfaction. The qualitative information obtained by the Work Environment Impact Scale interview provided important explanations which could be useful in development of rehabilitation plans to support each unique worker to sustain or return to work.
- The evaluation of psychometric properties of assessment instruments is a continual process and further evaluations of the Worker Role Interview and the Work Environment Impact Scale are needed. The Worker Role Interview could, for example, be evaluated within other populations such as people who are unemployed and people with disability pensions. Further, evaluations of the result of combining the WRI and the WEIS with other assessment instruments for assessing workability and identifying rehabilitations needs for return to work would be valuable. Of particular importance is that such combinations should be conducted using observational assessments since the WRI and the WEIS are interview instruments.

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## APPENDIX 1

Examples of two WRI items and extraction of the rating form of the second Swedish WRI version (In Swedish)

### 2 TRO PÅ SIN ARBETSFÖRMÅGA

**Information bör inhämtas om:**

- Personens tro på att hon/han ska komma tillbaka till arbete.
- Graden av optimism personen har inför återgång till arbete.

**Rekommenderade frågor:**

- Tror du att du kommer att kunna arbeta igen?
- Hur känner du inför att börja arbeta igen?

**Skattningsnivåer:**

- 4 Personen är optimistisk angående återgång till arbete och det utgör ett starkt stöd för att återgå till arbete.
- 3 Personen visar viss optimism angående återgång till arbete. Personens självförtroende ger ett visst stöd för att återgå till arbete även om en viss osäkerhet finns.
- 2 Personen är osäker om han/hon kommer att återgå till arbete. Personens självförtroende hindrar till viss del återgång till arbete.
- 1 Personen har tydligt uttalat att hon/han inte tror sig kunna återgå till arbete. Denna pessimism är ett hinder för återgång till arbete.

### 4 ARBETES BETYDELSE

**Information bör inhämtas om:**

- Vikten av att ha ett arbete och arbeta.

**Rekommenderade frågor:**

- Vad är viktigast för dig med att ha ett arbete?
- Det du gör på arbetet känns det viktigt för dig?
- Är du rädd att förlora ditt arbete?
- Vad skulle det betyda för dig om du inte kunde få komma tillbaka till ditt arbete?

**Skattningsnivåer:**

- 4 Personens arbetshistoria visar på att det har varit och är viktigt för personen att ha ett arbete och att arbeta. Arbetshistorian visar på att personen har haft åtaganden och förpliktelser till sitt arbete, vilket ger ett starkt stöd för återgång till arbete.
- 3 Personens arbetshistoria visar på att det till viss del har varit och är viktigt för personen att ha ett arbete och att arbeta. Åtaganden och förpliktelserna till arbete är inte starka men ger ändå ett visst stöd för återgång till tidigare arbete.
- 2 Personens arbetshistoria visar på att det inte har varit och inte är speciellt viktigt för personen att ha ett arbete och att arbeta. Arbetshistorian visar på svaga åtaganden och förpliktelser till arbete, vilket till viss del hindrar återgång till arbete.
- 1 Personens arbetshistoria visar på att det inte har varit och inte är viktigt för personen att ha ett arbete och att arbeta. Arbetshistorian visar inte på några speciella åtaganden eller förpliktelser till arbete, vilket hindrar återgång till arbete.

**SAMMANSTÄLLNINGSBANKETT**

## THE WORKER ROLE INTERVIEW (WRI)

Namn: \_\_\_\_\_ Arbetsterapeut: \_\_\_\_\_

Personnummer: \_\_\_\_\_ Datum: \_\_\_\_\_

Bedömning sker utifrån: återgång till tidigare arbete                      0  
 återgång till arbete i allmänhet    0

**Skattningsskala: 4 STARKT STÖD**

Aktuell variabel utgör ett starkt stöd för personen att återgå till arbete.

**3 VISST STÖD**

Aktuell variabel utgör ett visst stöd för personen att återgå till arbete. Positiva aspekter överväger negativa.

**2 VISST HINDER**

Aktuell variabel hindrar till viss del personen att återgå till arbete. Negativa aspekter överväger positiva.

**1 HINDRAR**

Aktuell variabel utgör ett hinder för personen att återgå till arbete.

**IA** = Inte Aktuellt

Variabel	Skattning	Kommentarer
<b>SJÄLVUPPFATTNING</b>		
1 BEDÖMNING AV FÖRMÅGA OCH BEGRÄNSNINGAR	1 2 3 4 IA	
2 TRO PÅ SIN ARBETSFÖRMÅGA	1 2 3 4 IA	
3 TAR ANSVAR	1 2 3 4 IA	
<b>VÄRDERINGAR</b>		
4 ARBETETS BETYDELSE	1 2 3 4 IA	
5 ARBETSRELATERADE MÅL	1 2 3 4 IA	

## APPENDIX 2

### Examples of three WEIS items and extraction of the rating form of the second Swedish WEIS version (In Swedish)

#### **10 INTERAKTION MED ANDRA:**

Interaktion och kommunikation med kunder, klienter, patienter, elever eller andra förutom överordnade och arbetskamrater.

##### **Information bör inhämtas om:**

- Beteende, attityder, känslor samt reaktioner från andra och deras påverkan på personens utförande av arbetet.
- Förekomst av språkliga-, kulturella-, professionella- eller andra hinder som kan påverka arbetet.

##### **Rekommenderade frågor:**

- Har du kontakt med andra under arbetstid förutom dina arbetskamrater och överordnade (t ex kunder, klienter, patienter, elever)?
- Vad tycker du fungerar bra och mindre bra i kontakten med (t ex kunder, klienter, patienter, elever)?
- Anser du att du har tillräcklig kunskap för att kunna samarbeta med (t ex kunder, klienter, patienter, elever)?

#### **12 ARBETSPLATSENS FYSISKA UTFORMNING:**

Disponering av arbetsutrymmen.

##### **Information bör inhämtas om:**

- I vilken utsträckning arbetsplatsen är disponerad för att underlätta trivsel, säkerhet, effektivitet och samarbete med andra.
- Framkomlighet mellan arbetsutrymmen (t ex golvytor, korridorer, dörröppningar, arbets- och lagerytor, utrymmen mellan möbler, trappor, räcken, hissar, ställningar, stegar).
- Kognitiv komplexitet vid förflyttning i och mellan arbetsutrymmen (t ex skyltars direktiv samt ordning och system i arbets- och lagerutrymmen).

##### **Rekommenderade frågor:**

- Kan du beskriva hur det ser ut på din arbetsplats?
- Påverkar disponering och ordning i arbetslokaler och bland arbetsredskap dina möjligheter att utföra dina arbetsuppgifter?
- Är det något du skulle vilja ändra på i dina arbets- och personalutrymmen?

#### **13 VÄRDET I ARBETSUPPGIFTERNA:**

Personens uppfattning om värdet i det han/hon utför på arbetet.

##### **Information bör inhämtas om:**

- Stolthetskänsla i arbetet.
- Personens uppfattning om vikten och betydelsen av det arbete han/hon utför.

##### **Rekommenderade frågor:**

- Det arbete du gör känns det viktigt för dig?
- Vad är du mest stolt över i ditt arbete?
- Vad är du minst stolt över i ditt arbete?

**SAMMANSTÄLLNINGSBANKETT**

## THE WORK ENVIRONMENT IMPACT SCALE (WEIS)

Namn: \_\_\_\_\_

Arbetsterapeut: \_\_\_\_\_

Personnummer: \_\_\_\_\_

Datum: \_\_\_\_\_

**Skattningsskala: 4 STARKT STÖD**

Miljöområdet ger ett starkt stöd för personens utförande av arbetsuppgifter och känsla av tillfredsställelse och välbefinnande.

**3 VISST STÖD**

Miljöområdet ger ett visst stöd för personens utförande av arbetsuppgifter och känsla av tillfredsställelse och välbefinnande.

**2 VISST HINDER**

Miljöområdet utgör ett visst hinder för personens utförande av arbetsuppgifter och känsla av tillfredsställelse och välbefinnande.

**1 HINDRAR**

Miljöområdet hindrar personen utförande av arbetsuppgifter och känsla av tillfredsställelse och välbefinnande.

**IA = Inte Aktuellt**

Variabel och variabel definition	Skattning	Kommentarer
1 TIDSKRAV: Den tid man har i förhållande till det arbete man förväntas utföra.	1 2 3 4 IA	
2 ARBETSUPPGIFTENS KRAV: Fysiska, kognitiva och emotionella möjligheter och krav i arbetsuppgifterna.	1 2 3 4 IA	
3 ARBETETS STATUS: Statusvärde i arbetet och stimulans i arbetsuppgifterna.	1 2 3 4 IA	
4 ARBETSTIDER: Arbetstidens inflytande på roller och aktiviteter utanför arbetet.	1 2 3 4 IA	
5 SAMARBETE MED ARBETSKAMRATER: Möjligheter och krav på och i samarbetet med arbetskamrater för att utföra arbetsuppgifter.	1 2 3 4 IA	