Future Thinking and Depression

Ali Sarkohi



Linköping University FACULTY OF ARTS AND SCIENCES

Linköping Studies in Arts and Science No. 548 Linköping studies in Behavioural Science No. 160

Linköping University Department of Behavioural Sciences and Learning

Linköping 2011

Linköping Studies in Arts and Science • No 548 Linköping Studies in Behavioural Science • No. 160

At the Faculty of Arts and Science at Linköping University, research and doctoral studies are carried out within broad problem areas. Research is organized in interdisciplinary research environments and doctoral studies mainly in graduate schools. Jointly, they publish the series Linköping Studies in Arts and Science. This thesis comes from the unit for Clinical and Social Psychology (CS) at the Department of Behavioural Sciences and Learning, Linköping University, Sweden.

Distributed by: Department of Behavioural Sciences and Learning Linköping University 581 83 Linköping

Ali Sarkohi Future Thinking and Depression

Edition 1:1 ISBN 978-91-7393-020-8 ISSN 0282-9800 ISSN 1654-2029

© Ali Sarkohi Department of Behavioural Sciences and Learning, 2011 Printed by: LiU-Tryck, Linköping 2011

Dedicated to:

Salumeh Bastami, Aydin and Ayda Sarkohi, my parents and my siblings for your unconditional love.

Gerhard Andersson for your kindness, support and wisdom.

Faraj Sarkohi for your fight for the freedom of speech and the heavy burden of duty that you have carried throughout your life.

All those that in various ways have helped me to extend my view on humanity and knowledge.

CONTENTS

SWEDISH SUMMARY 6 LIST OF PAPERS 7 ABBREVIATIONS. 8 INTRODUCTION 9 Outline of the thesis 10 Definition and classification of depression 10 Comorbidity 11 Assessments methods 12 Epidemiology 13 Theoretical model on depression 14 Biological theories 14 Psychological theories 15 Psychological theories 15 Behavioural model 16 Cognitive model 16 COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Neurophysiologic abnormalities and neuropsychological functioning 17 QUALITATIVE STUDIES ON DEPRESSION 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24	ABSTRACT	5
LIST OF PAPERS. 7 ABBREVIATIONS. 8 INTRODUCTION 9 Outline of the thesis 10 Definition and classification of depression 10 Comorbidity 11 Assessments methods 12 Epidemiology 13 Theoretical model on depression 14 Biological theories 15 Psychological meories 15 Behavioural model 16 Cognitive model 16 Cognitive model 16 Cognitive model 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 QUALITATIVE STUDIES ON DEPRESSION 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 22 Pharmacological therapy 2	SWEDISH SUMMARY	6
ABBREVIATIONS. 8 INTRODUCTION 9 Outline of the thesis 10 Definition and classification of depression. 10 Comorbidity 11 Assessments methods 12 Epidemiology 13 Theoretical model on depression. 14 Biological theories. 14 Psychological theories. 15 Psychological theories. 15 Psychological model 16 Cognitive model. 16 COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Neurophysiologic abnormalities and neuropsychological functioning 17 QUALITATIVE STUDIES ON DEPRESSION 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24	LIST OF PAPERS	7
INTRODUCTION	ABBREVIATIONS	8
INTRODUCTION 9 Outline of the thesis 10 Definition and classification of depression. 10 Comorbidity 11 Assessments methods 12 Epidemiology 13 Theoretical model on depression. 14 Biological theories 14 Psychological theories 15 Psychological theories 15 Psychological model 16 Cognitive model 16 Cognitive model 16 COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Vaure thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 <td< th=""><th></th><th></th></td<>		
Outline of the thesis 10 Definition and classification of depression 10 Comorbidity 11 Assessments methods 12 Epidemiology 13 Theoretical model on depression 14 Biological theories 14 Psychological theories 15 Psychological theories 16 Cognitive model 16 Cognitive model 16 Cognitive model 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 20 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment <td>INTRODUCTION</td> <td>9</td>	INTRODUCTION	9
Definition and classification of depression 10 Comorbidity 11 Assessments methods 12 Epidemiology 13 Theoretical model on depression 14 Biological theories 14 Psychological theories 15 Psychological theories 16 Cognitive model 16 Cognitive model 16 Cognitive model 16 Cognitive model 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Neurophysiologic abnormalities and neuropsychological functioning 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 EMPERICAL STUDIES 25 Aims 25 Disconting and procedure 26 Methods 26 Participants a	Outline of the thesis	10
Comorbidity 11 Assessments methods 12 Epidemiology 13 Theoretical model on depression 14 Biological theories 14 Psychological theories 15 Psychological theories 15 Psychological theories 15 Psychological theories 16 Cognitive model 16 COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition. 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 22 Pharmacological therapy 23 ComMON TREATMENTS 22 Pharmacological therapy 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment	Definition and classification of depression	10
Assessments methods 12 Epidemiology 13 Theoretical model on depression 14 Biological theories 14 Psychological theories 15 Psychological theories 15 Behavioural model 16 Cognitive model 16 COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Internet therapy and guided self-help 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Methods <td< td=""><td>Comorbidity</td><td>11</td></td<>	Comorbidity	11
Epidemiology 13 Theoretical model on depression 14 Biological theories 14 Psychological theories 15 Psychological theories 15 Behavioural model 16 Cognitive model 16 Cognitive model 16 Cognitive model 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure	Assessments methods	12
Theoretical model on depression 14 Biological theories 14 Psychological theories 15 Psychodynamic model 15 Behavioural model 16 Cognitive model 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 26 <tr< td=""><td>Epidemiology</td><td>13</td></tr<>	Epidemiology	13
Biological theories 14 Psychological theories 15 Psychodynamic model 15 Behavioural model 16 Cognitive model 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 26 Participants and procedure 26 Measures 28 Statistical analyses 30	Theoretical model on depression	14
Psychological theories 15 Psychodynamic model 15 Behavioural model 16 Cognitive model 16 Cognitive model 16 COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking	Biological theories	14
Psychodynamic model 15 Behavioural model 16 Cognitive model 16 Cognitive model 16 COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 Will future thinking change following treatment 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study I: Live thivere thinking	Psychological theories	15
Behavioural model 16 Cognitive model 16 COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 26 Participants and procedure 26 Methods 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study I: Liess	Psychodynamic model	15
Cognitive model 16 COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study I: Lies between future thinking and autobiographical memory 32 </td <td>Behavioural model</td> <td>16</td>	Behavioural model	16
COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition. 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION. 22 COMMON TREATMENTS 22 Pharmacological therapy 23 Internet therapy and guided self-help. 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods. 26 Participants and procedure 26 Measures 28 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study I: Like between future thinking and autobiographical memory 32	Cognitive model	16
COGNITIVE PROCESSES IN DEPRESSION 17 Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Metasures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study I: Links between future thinking and autobiographical memory 32	0	
Link between cognition and emotion 17 Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study I: Links between future thinking and autobiographical memory 32	COGNITIVE PROCESSES IN DEPRESSION	17
Neurophysiologic abnormalities and neuropsychological functioning 17 Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 26 Participants and procedure 26 Methods 26 Participants and procedure 26 Metsures 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Link between future thinking and autobiographical memory 32	Link between cognition and emotion	17
Memory bias 18 Implicit versus explicit cognition 19 Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 22 Pharmacological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Livk between future thinking and autobiographical memory 32	Neurophysiologic abnormalities and neuropsychological functioning	17
Implicit versus explicit cognition	Memory bias	
Future thinking on depression 20 Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Implicit versus explicit cognition	19
Future thinking and autobiographical memory 21 QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: 1inks between future thinking and autobiographical memory 32	Future thinking on depression	20
QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Future thinking and autobiographical memory	21
QUALITATIVE STUDIES ON DEPRESSION 22 COMMON TREATMENTS 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	8 8 I V	
COMMON TREATMENTS 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	OUALITATIVE STUDIES ON DEPRESSION	22
COMMON TREATMENTS 22 Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32		
Pharmacological therapy 22 Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	COMMON TREATMENTS	22
Psychological therapy 23 Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Pharmacological therapy	22
Internet therapy and guided self-help 23 Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Psychological therapy	23
Combination of pharmacological and psychological therapy 24 Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Internet therapy and guided self-help	23
Will future thinking change following treatment 24 EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Combination of pharmacological and psychological therapy	24
EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Will future thinking change following treatment	
EMPERICAL STUDIES 25 Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 26 Statistical analyses 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32		
Aims 25 DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 26 Statistical analyses 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	EMPERICAL STUDIES	25
DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 26 Statistical analyses 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Aims	25
DESCRIPTION OF THE STUDIES I-IV 26 Methods 26 Participants and procedure 26 Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32		
Methods	DESCRIPTION OF THE STUDIES I-IV	
Participants and procedure. 26 Measures 28 Statistical analyses. 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Methods	
Measures 28 Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Participants and procedure.	
Statistical analyses 30 RESULTS 31 Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression 31 Study II: Links between future thinking and autobiographical memory 32	Measures	
RESULTS	Statistical analyses	
RESULTS	······································	
Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression	RESULTS	
in mild to moderate depression	Study I: Less Positive or More Negative? Future directed thinking	
Study II: Links between future thinking and autobiographical memory 32	in mild to moderate depression	31
Study II. Links between future timiking and autobiographical memory	Study II: Links between future thinking and autobiographical memory	

Study III: Effects of two forms of Internet-delivered CBT on future thinking Study IV: Representations of the future in depression	33 34
GENERAL DISCUSSION	36
Limitations	38
MAIN CONCLUSIONS	40
FUTURE STUDIES	40
ACKNOWLEDGMENT	41
REFERENCES	43

ABSTRACT

The ability to imagine negative or positive future events is associated with psychological well-being. The present thesis deals with depressed individual's ability to imagine negative or positive future events. It consists of three quantitative studies (I-III) and one qualitative study (IV).

Participants in studies I-III were assessed in connection with a randomized controlled trial of two ways to deliver Internet-based treatment for major depression disorder (MDD). Their ages ranged between 19-65 years. In addition to receiving treatment participants completed the Controlled Word Association Test; the Autobiographical Memory Test (AMT) and the Future Thinking Task (FTT). Participants in study IV were recruited from a psychiatric clinic in Sweden. The sample sizes varied between study I (N=40), II (N=88), III (N=47) and IV (N=15).

The aim of study I was to compare positive and negative future thinking in a group of depressed individuals (n=20) who were compared with a matched group of non-depressed persons (n=20). The results showed that depressed persons reported lower scores regarding anticipated future positive events, but that they did not differ in terms of anticipated future negative events. The aim of the second study was to examine the association between FTT and AMT in a depressed sample. The results showed that positive future thinking was significantly correlated with retrieval of specific positive autobiographical memories (r = 0.23). The results only gave weak support for an association between FTT and AMT. The aim of the third study was to investigate if scores on the FTT would change following two forms of Internet-delivered cognitive behaviour therapy for major depression (guided selfhelp and e-mail therapy). A second aim was to study if changes in depression scores as measured by the Beck Depression Inventory would correlate with changes in future thinking. The results showed that FTT index scores for negative events were reduced after treatment. There was no increase for the positive events. Change scores for the FTT negative events and depression symptoms were significantly correlated. The aim of the forth study was to investigate representations of the future in depressed individuals by using open-ended methodology inspired by grounded theory. The results showed that depressed individuals experienced a state of "ambivalence". Ambivalence and its negative emotional and cognitive effects were substantially reduced in strength when they were asked about their more distant future.

The conclusions drawn from these studies are that depressed persons report lower scores regarding anticipated future positive events but do not differ from controls as concerned future negative events (Study I). There is some support for a positive association between FTT and AMT, but the association is weak and only concern positive FTT and positive AMT (Study II). Negative future thinking may be reduced after Internet-delivered treatment, and changes in depression symptoms correlate to some extent with reductions in negative future thinking (Study III). The concept of ambivalence in depression and/or anxiety in the present may be an important feature of depression which deserves more attention from both a theoretical and clinical perspective (Study VI).

Key words: Future thinking, cognitive processing, depression, suicide, autobiographical memory, Internet treatment, cognitive behaviour therapy, ambivalence and time dimensions

SWEDISH SUMMARY

Förmågan att föreställa sig negativa eller positiva framtida händelser är förknippad med vårt psykiska välbefinnande. Denna avhandling fokuserar deprimerade individers förmåga att föreställa sig negativa eller positiva framtida händelser. Den består av tre kvantitativa studier (I-III) och en kvalitativ studie (IV).

Deltagare i studie I-III rekryterades i samband med en randomiserad kontrollerad studie av två sätt att ge Internet-baserad behandling för egentlig depression (vägledd självhjälp och e-postterapi). Deltagarnas ålder varierade mellan 19-65 år. Förutom att gå igenom behandling fick deltagarna genomföra olika tester (Controlled Word Association Test (COWAT), Autobiographical Memory test (AMT) och Future Thinking Task (FTT)). Deltagarna i studie IV rekryterades från en vuxenpsykiatrisk klinik i Sverige. Sampelstorleken varierade mellan studie I (n = 40), II (n = 88), III (n = 47) och IV (n = 15).

Syftet med den första studien var att undersöka positiva och negativa framtidstankar hos deprimerade individer (n = 20) vilka jämfördes med en matchad grupp av icke-deprimerade individer (n = 20). Resultaten visade att deprimerade individer rapporterade färre förväntade framtida positiva händelser, men att de inte skiljer sig åt vad gäller framtida negativa händelser. Syftet med den andra studien var att undersöka sambandet mellan FTT och AMT hos deprimerade individer. Resultaten visade att positivt framtidstänkande var signifikant korrelerat med specifika positiva självbiografiska minnen (r = 0.23). Dock visade resultaten enbart ett svagt stöd för ett statistiskt signifikant samband mellan FTT och AMT. Svftet med den tredie studien var att undersöka om poäng på FTT ändrades som en fölid av två former av Internetbaserad kognitiv beteendeterapi hos deprimerade individer. Ett andra syfte var att studera om förändringar i depressionspoäng mätt med Beck Depression Inventory skulle korrelera med förändringar i FTT. Resultaten visade att FTT indexpoäng för negativa händelser minskade efter behandling. Det fanns ingen ökning gällande positiva händelser. Ändrade poäng för FTT negativa händelser och depressionssymtom var signifikant korrelerade. Svftet med den fjärde studien var att undersöka representationer av framtiden hos deprimerade individer genom att använda en "open-ended" metodik inspirerad av grundad teori. Resultaten visade att deprimerade individer upplevde ett tillstånd av "ambivalens". Ambivalensen och dess negativa emotionella och kognitiva effekter minskade betydligt i styrka när de tillfrågades om en mer avlägsen framtid.

Slutsatserna från dessa studier är att deprimerade individer rapporter färre förväntade framtida positiva händelser, men att de inte skiljer sig från en kontrollgrupp avseende antal negativa framtida händelser (Studie I). Det finns visst stöd för ett positivt samband mellan FTT och AMT, men sambandet är svag och avser endast positiva FTT och positiva AMT (Studie II). Negativt framtidstänkande kan reduceras efter Internetbaserad behandling, och förändringar i depressionssymtom korrelerar till viss del med minskning av negativt framtidstänkande (studie III). Koncepten ambivalens vid depression kan vara ett viktigt inslag av depression som förtjänar mer uppmärksamhet från både ett teoretiskt och kliniskt perspektiv (Studie VI).

Nyckelord: Framtidsorienterade tänkande, kognitiv bearbetning, depression, självmord, självbiografiskt minne, Internet, kognitiv beteendeterapi, ambivalens och tidsdimensioner

LIST OF PAPERS

The thesis is based on the following papers, referred to the text by their Roman numerals.

- I. Bjärehed, J., Sarkohi, A., & Andersson, G. (2010). Less positive or more negative? Future directed thinking in mild to moderate depression. *Cognitive Behaviour Therapy*, *39*, 37-45.
- II. Sarkohi, A., Bjärehed, J., & Andersson, G. (2011). Links between future thinking and autobiographical memory specificity in major depression. *Psychology, Vol.2, No.3,* 261-265.
- III. Andersson, G., Sarkohi, A., Karlsson, J., Bjärehed, J., & Hesser, H. (2011). Effects of two forms of Internet-delivered cognitive behaviour therapy on future thinking. Submitted and under review in the Journals of Cognitive Therapy and Research
- IV. Sarkohi, A., Forslund Frykedal, K., Holmberg Forsyth, H., Larsson, S., & Andersson, G., (2011). Representations of the future in depression. A qualitative study. Submitted and under review in the Journal of Qualitative Studies

ABBREVIATIONS

ADHD	Attention-Deficit/Hyperactivity Disorder
AMT	Autobiographical Memory Test
ANOVA	ANalysis Of Variance
APA	American Psychiatric Association
BAI	Beck Anxiety Inventory
BDI	Beck Depression Inventory
BT	Behavioural Therapy
CBT	Cognitive Behavioural Therapy
COWAT	Controlled Word Association Test
СТ	Cognitive Therapy
DALY	Disability Adjusted Life Years
DSM-II	Diagnostic and Statistical Manual of Mental Disorders, Second Edition
DSM-III	Diagnostic and Statistical Manual of Mental Disorders, Third Edition
DSM-IV	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
FTT	Future Thinking Task
DSM-III-R	Diagnostic and Statistical Manual of Mental Disorders, Third Edition
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition
GT	Grounded Theory
HPA	Hypothalamus, Pituitary feedback and Adrenal cortex
HRSD	Hamilton Rating Scale for Depression
ICBT	Internet-delivered Cognitive Behaviour Therapy
ICD-10	The International Statistical Classification of Diseases and Related Health
	Problems - Tenth Revision
IPT	Interpersonal Therapy
М	Mean
MADRS	Montgomery Åsberg Depression Rating Scale
MAOI	MonoAmine Oxidase Inhibitors
MDD	Major Depression Disorder
MRI	Magnetic Resonance Imagining
PD	Personality Disorder
PDT	Psychodynamic Therapy
PET	Positron Emission Tomography
QoLI	Quality of Life Inventory
SCID-I	Structured Clinical Interview for DSM IV
SD	Standard Deviation
SEK	Swedish Krona
SNRI	Selective serotonin and Norepinephrine Reuptake Inhibitors
SPSS	Statistical Package for Social Sciences
SSRI	Selective Serotonin Reuptake Inhibitors
TCA	Tricyclic Antidepressants
YLD	Years Lived with Disability
WCST	Wisconsin Card Sorting Test
WHO	World Health Organisation

INTRODUCTION

People suffering from depression commonly have a pessimistic and negative view of their future (Beck, Rush, Shaw, & Emery, 1979), which may be affected by various factors and influence their everyday life. The ability to imagine expectations about the future and the way an individual perceives and interprets the future seem to play an important role in the process of recovery, persistence and relapse of depression (MacLeod & Moore, 2000).

In the early 1990s, MacLeod and his colleagues investigated the significance of negative and positive expectations of the future. They pointed out that research to date had focused on the importance of negative thoughts about the future and that less attention had been devoted to the importance of positive expectations. They further emphasized that positive and negative thinking has long been regarded as opposite poles on a single scale. Subsequent research has shown that positive and negative thinking rather should be regarded as two separate systems, where an increase in one domain will not necessarily mean a decline in the other (MacLeod & Moore, 2000).

In order to measure future-oriented thinking (MacLeod, Rose, & Williams, 1993) developed the Future Thinking Task (FTT), which is based on a verbal fluency task (Lezak, 1995). In FTT the person is asked to generate as many positive and negative anticipated events as possible within one minute along three time periods (upcoming week, upcoming year, and 5 to 10 years. The main outcome of the research on future thinking in depression, using FTT, indicated that depressed individuals perceived fewer positive future events than the control group, and sometimes more negative future events (MacLeod & Byrne, 1996).

While previous studies on FTT and depression have often targeted clinically depressed persons, often in-patients with suicidal ideation (Conaghan & Davidson, 2002; Hunter & O'Connor, 2003; O'Connor, Connery, & Cheyne, 2000), I focus on mildly to moderately depressed and non-suicidal outpatients in study I-III. However, in study IV I focus on moderately to severely depressed individuals. The present thesis consists of three quantitative studies and a qualitative study.

In the first study I focused on depressed individuals and compare their ability to generate future positive and negative events with the ability of a matched control group to do the same. Since future thinking and autobiographical memory seem to be important aspects of cognitive functioning, which both influence and can be influenced by depression, I will also study the association between these two cognitive aspects in the second study. In the third study, in order to see if research on future thinking may have implications for the treatment of depression, I investigated the effect of two forms of Internet-delivered cognitive behaviour therapy (ICBT) on future thinking. The effects of psychological treatments are most often tested with self-report inventories and seldom with tests of cognitive function. Therefore I correlated pre-post changes in future thinking with pre-post changes in depression symptoms.

The FTT may not capture the deeper experiences in relation to the future among depressed individuals. Therefore I decided in study four to investigate in a qualitative study future thinking in both a positive and a negative sense, and along different time horizons.

Outline of the thesis

This thesis starts with a brief overview of depression, including definition/classification, comorbidity, assessments methods, epidemiology, aetiology and various theoretical models used to explain depression. A research review on different aspect of cognitive processes in depression is presented in the second chapter. The third chapter focuses on qualitative studies on depression and common treatments. Then brief descriptions of studies I-IV are presented including presentations of the findings in each study. Finally a few ideas for future research are suggested.

Definition and classification of depression

Feelings of sadness, disappointment, failure are considered as a normal part of human existence, and can be associated with various factors including failure in work, education or relationships, deteriorating economic situation, loss of a loved one, etc. Hence, a person may react in a negative manner on emotional, cognitive, behavioural and physical levels with varying intensity over a few days, but then return to a normal functioning life.

If the condition becomes intense, prolonged (more than 2 weeks, most of the day, nearly every day) and results in decreased daily functional capacity with various negative consequences, the diagnosis of depression should be considered by a professional person. However, each individual response to the various negative life events and the individual's ability to deal with those events vary both qualitatively and quantitatively. It is important to distinguish depressive symptoms as a normal reaction to a negative life event and depression as a medical condition.

The classification of depression has developed over the past 50 years and is covered by both Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition [DSM-IV;(American Psychiatric Association, 2000)] and The International Statistical Classification of Diseases and Related Health Problems - Tenth Revision [ICD-10, (World Health Organisation, 1992)]. These classification systems cover several mental health disorders for both children and adults. Originally the "reactive" aspect of depression was emphasized in DSM-I, and the psychodynamic aspects including the difference between neurotic and psychotic depression were emphasized in DSM-II. More recent DSM-systems (DSM-III, DSM-III-R, DSM-IV, and DSM-IV-TR) have put forward a non-etiologic and less theoretically informed diagnostic system (American Psychiatric Association, 2000).

DSM-IV classifies MDD as a mood disorder, which is more suitable name for the condition than affective disorder (Åsberg, 1991). That is because affect refers to a transient change in mood state, whereas mood refers to a more persistent feeling. Depression may take different forms. DSM-IV distinguishes between two categories of unipolar depression, namely major depression (Table 1), which I primary focused in my studies and dysthymia (Table 2). MDD is characterized by an all-encompassing low mood accompanied by low self-esteem, and by loss of interest or pleasure in normally enjoyable activities. It is a disabling condition which adversely affects a person's family, work or school life as well as sleeping and eating habits and general health (see Table 1).

Table 1. Summary of the DSM-IV criteria for MDD

Five (or more) of the following symptoms have been present during the same 2-week period and represent a change from previous functioning; at least one of the symptoms is either (1) depressed mood or (2) loss of interest or pleasure.

- depressed mood, loss of interest or pleasure
- insomnia or hypersomnia
- psychomotor agitation or retardation
- fatigue or loss of energy
- decrease or increase in appetite (e.g., a change of more than 5% of body weight in a month)
- feelings of worthlessness or excessive or inappropriate guilt
- diminished ability to think or concentrate, or indecisiveness
- recurrent thoughts of death, suicidal ideation without a specific plan, or a suicide attempt or a specific plan for committing suicide

The symptoms cause clinically significant distress or impairment in social, occupational, *or* other important areas of functioning. The symptoms do not meet criteria for a Mixed Episode and are not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition (e.g., hypothyroidism). Finally the symptoms are not better accounted for by Bereavement, i.e., after the loss of a loved one, the symptoms persist for longer than 2 months or are characterized by marked functional impairment, morbid preoccupation with worthlessness, suicidal ideation, psychotic symptoms, or psychomotor retardation.

MDD may be a primary condition (the state has not arisen in the course of another disease) or secondary condition (the state has arisen in the course of another disease).

Dysthymia is a chronic long-lasting form of depression sharing many characteristic symptoms of MDD (in the form of the melancholic depression subtype). It is distinguished from MDD by the duration, type and number of symptoms. These symptoms tend to be less severe but do not fluctuate in intensity. People suffering from dysthymia are usually well capable of coping with their everyday lives, usually by following particular routines that provide certainty. People around them may believe that the sufferer is "just a moody person". The key difference between dysthymia and MDD is chronicity. The symptoms tend to be worse if people do not receive treatment (Klein, Shankman, & Rose, 2006). Some people experience both MDD and dysthymia (double depression). As MDD passes they return to dysthymia rather than normal mood (Kring, Johnson, Davison, & Neale, 2010; Nolen-Hoeksema, 2007).

 Table 2. Summary of the DSM-IV criteria for dysthymia

Depressed mood more than half of the time for two years. At least two of the following symptoms during that time:

- Poor appetite or overeating
- insomnia or hypersomnia
- low self esteem
- low energy or fatigue
- Trouble concentrating or making decisions
- Feeling of hopelessness

The symptoms do not resolve for more than two months at a time. No major depressive disorder was present during the first two years of symptoms

Comorbidity

The concept of comorbidity has several meaning such as epidemiological co-morbidity, which means that the person who has a particular disorder (e.g. anxiety) more often than expected has another disorder (e.g. depression). This could mean that the first disorder is a risk factor for the second, but it could also mean that both conditions reflect a shared physiological

process. Another aspect is clinical co-morbidity, which means that the person has a disorder (e.g. depression) and also gets another (e.g. alcoholism) so that there may be a change in disease course and perhaps a different response to treatment. Finally there is familial co-morbidity, which means that the person has a disease (such as bipolar syndrome) to a greater extent than expected, and that there is also another disease (e.g. ADHD) among their first degree relatives (Merikangas et al., 1996; The Swedish Council on Technology Assessment in Health Care, 2004).

Patients who are diagnosed with MDD often manifest other psychiatric symptoms like anxiety (Beekman et al., 2000; Lamers et al., 2011), personality disorders (PD) (Hirschfeld, 1999; Rimlinger, 2010; Skodol et al., 1999), alcohol and/or drug abuse (Davis, Uezato, Newell, & Frazier, 2008; Hasin & Grant, 2002), and different kinds of somatic disorders (Ahlberg et al., 2002; Ohayon & Schatzberg, 2003).

MDD is strongly related to anxiety, which may be expressed, for example, in the form of panic attacks. According to one study (Melartin et al., 2002) 79 per cent of patients who are in psychiatric care have at least one additional diagnosis. MDD was most often co-morbid with anxiety disorders (57 per cent), alcohol-related syndromes (25 per cent) and personality disorder (44 per cent). Some researchers (Emmanuel, Simmonds, & Tyrer, 1998; Tyrer, 2001) have argued that the mixed-state of MDD and anxiety should be considered as an independent syndrome, and Tyrer (2001) proposed a new term for this syndrome, "cothymia".

Alcoholism increases the risk of concomitant MDD by a factor of two to three times (Kessler et al., 1996; Swendsen et al., 1998). Depressive symptoms are very common in the abstinence phase of alcohol dependence (Brown et al., 1995; Liappas, Paparrigopoulos, Tzavellas, & Christodoulou, 2002), but an increased risk of depression remains even with alcoholics who have stopped consuming alcohol (Hasin & Grant, 2002). Research indicates a genetic link between alcoholism and depression (Kendler, Heath, Neale, Kessler, & Eaves, 1993; Merikangas, Risch, & Weissman, 1994; Winokur, 1997).

The prevalence of co-morbidity between MDD and PD varies between 41 and 81 per cent (Hirschfeld, 1999). MDD shows the strongest relationship with Narcissistic Personality Disorder and Borderline Personality Disorder (Skodol, et al., 1999). Co-morbid MDD and PD increase the risk of suicide (Hansen, Wang, Stage, & Kragh-Sorensen, 2003). However, the reasons for the overlap of MDD and PD are not as clear and definitive as DSM-IV suggested. In some cases, depression may influence personality pathology, and may even lead to personality disorders. In other cases, personality disorders may lead to MDD (Farabaugh, Mischoulon, Fava, Guyker, & Alpert, 2004).

Assessments methods

Various methods, such as clinical interview, observation, psychological testing and self-rating scale can be used to obtain data on the prevalence and stability of depressive symptoms. Combination of these methods increases the diagnostic reliability. Using specified criteria based on DSM-IV and ICD-10 classification systems greatly reduces the variance criteria in research (Nilzon, 1996). In addition to these classification systems structured interview manuals such as Structured Clinical Interview for DSM-IV Axis I Disorders [SCID I, (First, Gibbon, Spitzer, & Williams, 1997)]and/or rating scales like Montgomery Åsberg Depression Rating Scale [MADRS; (Svanborg & Åsberg, 2001)], Beck Depression Inventory [BDI; (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961)] and Hamilton Rating Scale for Depression [HRSD;(Hamilton, 1960)] can be used.

Epidemiology

Depression affects individual lives and also places a socioeconomic burden on society. Depression costs the USA more than 43 billion dollars yearly in both medical treatment and lost production (Greenberg, Stiglin, Finkelstein, & Berndt, 1993). The cost for sick leave due to depression and related conditions has increased dramatically in Sweden, since 1997 (Åsberg, Nygren, Rylander, & Rydmark, 2002). Direct and indirect costs have been calculated to be 12 billion SEK for the year 1997. The drug costs in the world (World Health Organisation, 1997) were calculated to about 1.6 billion in 2002.

According to the World Health Organisation (WHO, 1997) depression is the leading cause of disability in the world, as measured by YLD (Years Lived with Disability). It has been the 4th leading contributor to the global burden of disease (DALY, Disability Adjusted Life Years) in 2000. Depression is projected to reach second place in the ranking of DALYs calculated for all ages and both sexes in year 2020. It is already the second cause of DALYs in the age category 15-44 years for both sexes combined.

Depression has become more common during the past 50 years. About 121 million people are suffering from depression worldwide (WHO, 1997). Depression with slightly different symptoms than those seen in adults can also occur in toddlers (Luby et al., 2003) and with similar symptoms as adults in children of school age. Depression increases strongly in the years around puberty, in particular among girls (Rutter, Tizard, Yule, Graham, & Whitmore, 1976). The difference is greater among young adults than in older (Angold, Costello, & Worthman, 1998; Blazer, 2003). Swedish studies (Olsson & von Knorring, 1997, 1997) show that prevalence of depression for teenager between 16-17 years old is 5% for boys and 14% for girls. Depression in the elderly is often more moderate (Beekman, Copeland, & Prince, 1999; Beekman, Deeg, Braam, Smit, & Van Tilburg, 1997; Begley et al., 2001), but lasts for a longer duration. It may depend on the age-related changes in the brain, neurological (Wetherell, Gatz, Johansson, & Pedersen, 1999; Zubenko et al., 2003) and/or cardiovascular disease (Alexopoulos et al., 2002; Alexopoulos et al., 1997; Fergusson & Woodward, 2002).

Results from survey studies in many parts of the world have shown that depression is about twice as common in women as in men (Piccinelli & Wilkinson, 2000). In most studies people between 18-60 years have been included. Only a few studies have included people between 15 and 18 years and studies up to 65 years or older. At some point 4% to 10% of the adult population meets the criteria for MDD. The lifetime risk varies in different studies from Europe, North America and Australia between 5% and 25% for women and between 3% and 10% for men (Lepine, Gastpar, Mendlewicz, & Tylee, 1997). In a Swedish study (called the Lundby study) in the late 1940s the researchers interviewed 2 500 persons in a few communities outside of the city of Lund. The study was repeated 25 years later. The researchers found that 27% of men and 45% of women were at risk of developing some form of depression before age 70 (Hagnell, Ojesjo, Otterbeck, & Rorsman, 1994; Rorsman, Hagnell, & Lanke, 1983).

The duration of an episode of depression varies, with a median duration from 3-12 months and chronicity (with duration of more than 2 years) of between 10% and 30% (Furukawa, Kitamura, & Takahashi, 2000; Keller et al., 1992; Keller, Shapiro, Lavori, & Wolfe, 1982; Mueller et al., 1996; Solomon et al., 1997). Mortality in patients who received treatment for depression is clearly elevated, not only by suicide, but also by somatic diseases (Ganguli, Dodge, & Mulsant, 2002; Harris & Barraclough, 1998).

A majority of people who suffer from depression experience one more episode of depression later in life. The healthy intervals between depressive episodes tend to become shorter and shorter. Risk of recurrence of depression up to three years after treatment is between 20-40%. The risk of relapse is more than doubled later in life (after age 50). The process later in life is unfavourable, with repeated relapses, chronicity or suicide in 75-80% of cases (Angst & Preisig, 1995, 1995; Kennedy, Abbott, & Paykel, 2003; Kiloh, Andrews, & Neilson, 1988).

Theoretical models on depression

Below I present a summary of the biological, psychological/social psychological explanatory models regarding depression. One should remember, however, that the interaction between the organism and its environment is very complex and that the emergence of new factors in the external world can have profound consequences for endogenous processes.

Biological theories

A number of biological factors, such as genes (Southwick, Vythilingam, & Charney, 2005), dysregulated neurotransmitter (Hasler, Drevets, Manji, & Charney, 2004), neuroendocrine abnormalities (Young & Korszun, 1998), neurophysiologic abnormalities (Southwick, et al., 2005), and immunological factors (Chen et al., 2011; McNally, Bhagwagar, & Hannestad, 2008) have been implicated in depression.

Based on family studies (Wallace, Schneider, & McGuffin, 2002), and twin studies (MacKinnon, Jamison, & DePaulo, 1997) there is a significant genetic component in the risk for developing depression. However, exactly what genes are involved is still unknown. Research shows that heredity is important for whether the environment increase or decrease the risk of depression (Kendler et al., 1995). In the studies based on family history (MacKinnon, et al., 1997; Wallace, et al., 2002) researchers have found that the first degree relatives of people with depression are two to three times more likely to have depression compared with the first degree relatives of people without depression.

One biological theory on depression suggests that the brain's neurotransmitter/hormone (monoamines such as serotonin, norepinephrine, dopamine, and noradrenalin) system is malfunctioning. Serotonin is the most studied neurotransmitter which has resulted in the wide ranging dissemination of Selective Serotonin Reuptake Inhibitors (SSRI). Neurotransmitters transmit impulses between nerve cells. Large concentrations of neurotransmitter have been found in the limbic system, which is associated with the regulation of sleep, appetite and emotional processes. Most depressed patients have disturbances in the hormonal systems that control the body's response to stress. Individuals with depression often have high levels of cortisol and other stress hormones in the blood. It is possible that the body's mechanism to start and end the stress reaction is not functioning as it should (Hasler, et al., 2004; Southwick, et al., 2005).

The neuroendocrine system regulates hormones that affect our basic functions such as appetite, sleep, sexual drive, and ability to experience pleasure. Hypothalamus, pituitary feedback and adrenal cortex (HPA) are the three key component of the neuroendocrine system. HPA helps people to regulate the body's response to stress. People with depression have chronic hyperactivity of the HPA axis and slow return to baseline after a stressor which affects the functioning of neurotransmitters (Southwick et al., 2005; Young & Korzan, 1998).

Psychological theories

The psychological theories of depression have targeted different aspects and symptoms of depression. The following is a brief description of some of these theories.

Psychodynamic model

Psychodynamic theories have been developed and diversified over the years (Busch, Rudden, & Shapiro, 2004). For example, there is a comprehensive theory construction in object-relational schools (e.g. Otto Kernberg), self-psychology (e.g., Heinz Kohut), and a more recent focus on relational aspects.

Freud's thoughts on depression are described in the essay Mourning and Melancholia (Freud, 1917/2008). In Freud's view depression may begin in a grief reaction that has not healed. Depressed individuals, unlike grieving individuals, display self-hate and self-blame. They are unconsciously punishing themselves because they feel abandoned by another person but cannot punish that person. Depression is about aggression that is directed against the transposed image ("interjected") by someone who has been in an intense but ambivalent relationship with another. Depressed individuals have poor self-esteem and are unable to express anger openly (Mendelson, 1992).

Depression in psychoanalytic terminology (Cullberg, 1993) has also been described as a disturbance in the ego's capacity for narcissistic gratification (self-love). After that disturbance, a gap emerges between ego and "ego ideal" that is excessive. According to Bibring (Bibring, 1953) the ego ideal contains the following aspirations that the depressive individuals feel unable to live up to; 1) be valuable, loved and appreciated. Not inferior and worthless, 2) be strong and secure. Not weak and uncertain, and 3) be good and loving. Not aggressive, full of hate and destructiveness. Lack of skills to deal with such situations can lead to a variety of psychological problems.

The significance of our psychological defences was raised by Anna Freud (Freud, 1980), but she did not relate any specific defence mechanism to depression. However, she noted that displacement may play a role when the superego attacking self. Again, the aggression against the self is a central theme. More comprehensive and central to the psychodynamic approach to depression is the unconscious conflict, which may be a more or less aware of nuclear conflict that the depressed individual is struggling with (Wassermann, 2003).

Melanie Klein and Donald Winnicott mentioned the concept of the "depressive position", by which they meant that the individual may realize that love and hatred can be directed against the same person (Malan, 1981). Ambivalence is another theme that often occurs in the psychodynamic literature. According to Freud, a loss of someone important causes grief - which in itself is a normal reaction, but ambivalent feelings of loss could ultimately lead to depression. According to Busch et al. (2004) the earlier models of depression had more focused on narcissistic vulnerability, trauma/losses during early development, disappointment and aggression/anger, which are directed at oneself rather than others.

Later psychodynamic theories on depression follow the rest of the theory's development and themes of aggression and sexuality. An important inspiration for contemporary psychodynamic oriented clinicians and also cognitive therapists and researchers is Bowlby's attachment theory (Broberg, Granqvist, Ivarsson, & Risholm Mothander, 2007). According to Sidey Blatt's there are two types of depression; one being related to interpersonal problems (anaclitic depression) and the other has more with self-esteem to do (introjective depression) (Blatt & Zuroff, 1992).

Behavioural model

Skinner (1953) suggested that our behaviour is the result of learning through reinforcement and punishment. Behaviourists focus on how behaviour is maintained through the individual's activity in the context and the resulting consequences (Gotlib & Hammen, 2009). Behaviourism is based on two core principal/processes, Pavlov's classical conditioning and Skinner's operant conditioning. The fundamental explanation of this perspective is that the individual over a period of time has been in a context that the individual has reacted to with aversion and has tried to avoid. The passivity that is associated with depression is considered to be an adaptive behaviour because the context works aversively. Seligman (1975) argued that repeated experience with uncontrollable events leads a person to develop learned helpless, the general expectation that future events will be uncontrollable. It is natural that an individual who is experiencing a decreased enjoyment in activities tries to escape. Lewinsohn and Gotlib (1995) argued that avoiding discomfort leads to less reinforcement, which in turn leads to increased discomfort. The main explanation from a behavioural perspective is that there is a low rate of events that provide positive reinforcement in the environment.

Hammen (2005) suggested that depression often arises as a reaction to stressful negative events. Life stress leads to depression because it reduces the level of positive reinforcement (Lewinsohn, Clarke, Hops, & Andrews, 1990; Lewinsohn & Gotlib, 1995). The rate of reinforcement is functionally related to the availability of reinforcing events, personal skills to act on the environment, or the impact of certain types of events. If an individual cannot reverse the negative balance of reinforcement, a heightened state of self-awareness will follow that can lead to self-criticism and behavioural withdrawal (Lewinsohn, Hoberman, Teri, & Hautzinger, 1985). This model also suggests that there may be a negative feedback loop of social reinforcement for depressive behaviours when family members and social networks are mobilized to provide support for the depressed individual. It has been found that depressed patients have low rates of pleasant activities and obtained pleasure; their mood covaries with rates of pleasant and aversive activities; their mood improves with increases in pleasant activities, and they lack social skills, at least during the depressed phase, all of which contribute to the depression (Lewinsohn, Sullivan, & Grosscup, 1980).

Cognitive model

The cognitive approach to depression can be summarized in a "cognitive triad". This consists of a negative self-image, a negative worldview, and negative expectations about the future (Beck & Alford, 2009; Beck, Rush, Shaw, & Emery, 1979). The cognitive triad is manifested in the contents of the individual's automatic thoughts, i.e. his or her immediate, involuntary, non-reflective cognitive response to a particular situation. Many negative automatic thoughts such as "I am not good enough", "I've never actually succeeded ", are common. This contributes to the development of feelings of sadness and hopelessness. From a cognitive perspective, an individual's schemas, beliefs and assumptions are continuously and automatically forming his or her way of perceiving reality and to process the impression intensifies the effect of dysfunctional beliefs.

The way a person perceives and evaluates situations and events in a negative manner may be a characteristic feature in a depression. There are a number of factors that tend to prolong a depression. The depressed person's lack of motivation often results in decreased activity, which can lead to various consequences such as the scope for depressive ruminations increases, concern or self-critical accusations of not being with the things that brings joy and meaning increases. Changes in behaviour of the depressed person can also affect the social relations negatively, which could also prolong the depression period (Freeman, J, B, & K.M, 1994).

According to Bandura (1979 &1986) high self-efficacy contributes to people's sense of wellbeing and motivation. When people believe that they are unable to control an event, they do not attempt to control it or give up when they have difficultly controlling it.

COGNITIVE PROCESSES IN DEPRESSION

Link between cognition and emotion

Cognition and emotion have, historically, often been viewed as separate components. Research in the last two decades has however focused on interactions between cognition and emotion in the hope of understanding the complexity of human behaviour and how cognition and emotion are integrated in the brain.

Cognition and emotion cannot always be separated (Bishop, 2007; Duncan & Barrett, 2007; Leventhal & Scherer, 1987), and both affect and are affected by our mood, memory, attention, personality and information processing (Anderson, 2005; Colombel, 2007; Ohman, Flykt, & Esteves, 2001). Gray et al. (Gray, Braver, & Raichle, 2002) argued that cognition and emotion conjointly and equally contribute to the control of thought and behaviour.

Several studies (Risold, Thompson, & Swanson, 1997; Southwick, et al., 2005; Swanson, 2000) have shown that the prefrontal areas, the amygdala and the hypothalamus play an important role in receiving and integrated sensory, cognitive and emotional information. Ochsner and Gross (2005) argued that cognitive reappraisal seems to depend on interactions between prefrontal and cingulate regions that are frequently implicated in cognitive control and systems like the amygdala and insula that have been implicated in emotional responding.

Neurophysiologic abnormalities and neuropsychological functioning

Studies using neuroimaging techniques such as computerized tomography (CT) scans, positron –emission tomography (PET), and magnetic resonance imagining (MRI)) have found an involvement of at least four areas of the brain (prefrontal cortex, hippocampus, the anterior cingulated cortex and amygdala) in people with mood disorders (Southwick, et al., 2005).

Neuropsychological dysfunctions are a risk factor for depression in addition to being a consequence of depression. Depressed patients often complain of difficulty concentrating, and of experiencing poor memory and indecisiveness. Studies by Cronholm and Otteson (1961) showed that a particular part of the memory process that involves learning and recording new material is impaired in depression. According to Hartlage (Hartlage, Alloy, Vazquez, & Dykman, 1993) the mental processes that require attention and effortful concentration are reduced in depressed people, while the automatic mental functions operate normally. Structural and functional abnormalities in the amygdala have been found in people with depression (Davidson, Pizzagalli, Nitschke, & Putnam, 2002). The amygdala helps direct attention to stimuli that are emotionally salient and have significance for the individual. Studies of depressed people have shown an enlargement of the amygdala (Altshuler, Bartzokis, Grieder, Curran, & Mintz, 1998; Mervaala et al., 2000).

In addition to memory (implicit and explicit), executive function, which is considered to be dependent on intact functioning of the prefrontal cortex, may be impaired in depression (Elliott, 1998). This finding agrees well with the results of several studies of cerebral blood flow that found that there are disruptions in blood flow to the prefrontal and limbic cortex in depression, especially in the frontal lobes and the inside of the anterior cortex cingulate (Bench et al., 1992; Dolan, Bench, Brown, Scott, & Frackowiak, 1994; Drevets, 2000). The prefrontal cortex is involved in approach-related goals and lack of activity in this area is associated with lack of motivation and goal orientation. MRI and PET studies of depressed people show a smaller volume in the hippocampus and lower metabolic activity in this region (Saxena et al., 2001). The hippocampus is critical in memory and fear-related learning.

The anterior cingulate cortex plays an important role in the body's response to stress, in emotional expression, in social behaviour, and in the processing of difficult information (Davidson, et al., 2002). The lack of activity in this area may be associated with attention problems and with the planning of suitable responses, in coping and with anhedonia (Pizzagalli et al., 2001).

Neuropsychological studies of depressive and schizophrenic patients have revealed that dysfunctions in the anterior cingulate cortex (as indexed with the Stroop task; Peterson et al., 1999) and the dorsolateral cortex (as assessed with the Wisconsin Card Sorting Test (WCST); are evident in patients with both of these disorders but are not present in healthy controls (Moritz et al., 2002).

Depressed patients also tend to selectively remember material that is affectively negatively charged, i.e., they have a depression-congruent bias in the information that they can draw upon (Blaney, 1986). This observation fits very well with cognitive models of depression, as discussed in detail by Teasdale and Barnard (1993)Teasdale et al (2002) also noted that depressed people compared with healthy people have more difficulty seeing their thoughts just as thoughts. Depressed people perceive their thoughts as self-evident truths (lack of "meta-cognitive awareness"). Both standard cognitive therapy and mindfulness-therapy patients have been trained to become aware of their own thoughts and of the nature of mental events (Segal, Williams, & Teasdale, 2002).

Memory bias

Cognitive theories claim that depression is associated with irrational beliefs (Ellis, 1987) or biased inferential processes (Beck, 1987). A cognitive bias is a person's tendency to make errors in judgment or information processing. The notion of cognitive biases was introduced by Tversky and Kahneman in 1972 (Kahneman & Frederick, 2002). Bias may arise from various processes and can sometimes be difficult to recognize. Biases include information-processing shortcuts (heuristics), motivational factors, social influence or rules of thumb, which people employ out of habit or evolutionary necessity.

Memory bias can either enhance or impair the recall of a memory. There are many types of memory bias such as choice-supportive bias (remembering chosen options as having been better than rejected options) (Mather, Shafir, & Johnson, 2000), change bias after an investment of effort in producing change, and remembering one's past performance as having been better than it actually was (Schacter, 1999).

Biases can be distinguished on a number of dimensions. For example, there are biases specific to groups (such as the risky shift) as well as biases at the individual level. Some cognitive

biases belong to the subgroup of attentional biases, which arise when a person pays increased attention to certain stimuli. Common psychological tests to measure these biases are the Stroop Task (Kunda, 1990; Schacter, 1999) and the Dot Probe Task. Some biases affect decision-making (e.g., Sunk Cost fallacy)¹, others affect memory (Gilovich & Griffin, 2002) motivation and attention.

Implicit versus explicit cognition

Research on cognitive processes involved in the treatment of depression has increased over the past two decades (Teasdale, Lloyd, & Hutton, 1998). There is evidence that one memory process concerned with learning and recording of new material is impaired in depression (Cronholm & Ottosson, 1961). According to Hartlage and colleagues (1993) mental processes that require attention are impaired in depressed individuals, but the automatic mental functions operate normally.

Much research has focused on the differences between *explicit memory* (declarative) and *implicit memory* (procedural) (Bowers & Schacter, 1990; Graf & Schacter, 1985; Roediger, 1990; Roediger & McDermott, 1992). While interest in implicit memory in depression has increased during the past two decades memory research has historically concentrated largely on explicit memory. Explicit memory describes as a conscious and controlled state that processes information slowly, while implicit memory describe as an unconscious and automatic state that processes information fast and our behaviour becomes unconsciously influenced by our past experience.

Explicit memory includes *episodic memory* (memory for events) and *semantic memory* (memory for facts). Episodic memory is the memory of autobiographical events and entails the collection of data in time and space, associated emotions and contextual knowledge that can be explicitly stated. Semantic memory is related to general knowledge and does not entail any data collection in time and space. Implicit memory consists of *procedural memory* (motor skills e.g. cycling) and *perceptually representation systems* (knowledge of object forms). Whether explicit or implicit memory refers to memory task (specific method) or to the memory process (mental event) is unclear. According to (Dunn & Kirsner, 1989) these terms as used in the cognitive literature often refer to both memory tasks and memory processes. It seems that implicit and explicit memories sometimes interact. Semantic memory is often explicit, but may at times also be implicit. Perceptual representation systems are often implicit, but may at times also employ explicit memory.

There is often a striking discrepancy between the subjective perception of the reduction of cognitive functions and the reduction that can be measured by testing. The measured change is usually much less pronounced than change reported subjectively.

The effect of depression on implicit memory is unclear. Some research show no significant differences in implicit memory tasks in relation to depression (Bazin, Perruchet, De Bonis, & Feline, 1994), whereas other studies show better memory performance in mood-congruent implicit memory tasks (Bradley, Mogg, & Millar, 1996; Watkins, Vache, Verney, Muller, &

¹ Sunk costs in economics decision-making are often related to retrospective costs and sometimes even prospective costs (costs that may be incurred or changed if an action is taken). Behavioral economics suggests this theory fails to predict real-world behavior. Sunk costs greatly affect actors' decisions, because many humans are loss-averse and thus normally act irrationally when making economic decisions.

Mathews, 1996). In fact, one study found that depressed persons performed worse than controls on a neutral implicit memory task (Elliott & Greene, 1992), but three other studies showed no performance deficits in depressed participants (Danion et al., 1991; Hertel & Hardin, 1990). A review of four early studies suggested that mood-congruent memory effects may be found in implicit memory tasks, even though the reported results were not significant (Roediger & McDermott, 1992).

Future thinking on depression

It is known that the ability to imagine negative or positive future events affect psychological well-being and can play an important role in the process of recovery, persistence and relapse of depression (MacLeod, Tata, Kentish, & Jacobsen, 1997). A characteristic feature of many depressed individuals is a pessimistic and negative view of their personal future. This clinical observation is covered in several conceptualisations of depression (Abramson, Metalsky, & Alloy, 1989; Beck, et al., 1979; Klinger, 1993). For example Beck et al. (1979) have described a cognitive triad and argued that hopelessness about the future plays an important role in depression. Hopelessness, in turn, was conceptualised by Abramson, Alloy and Metalsky (1989) as a deficit of positive expectancy and excess of negative projected thoughts. Macleod, Rose and Williams (1993) argued that the despair about the future is characterized by the lack of positive expectations, not necessarily by increased negative expectations. According to Klinger (1993), hopelessness in depressed persons often concerns future periods when the wished for goal seems to be out of reach (e.g., "I will never get married"). In an early paper Melges and Bowlby (1969) proposed that hopelessness is about reduced expectancy of success. In sum, several authors have argued the expectancies about the future are a central component in depression.

In the early 1990s, MacLeod and his colleagues investigated the significance of negative and positive expectations of the future. They pointed out that research to date had focused on the importance of negative thoughts about the future and devoted less attention to the importance of positive expectations. They further emphasized that positive and negative thinking has long been regarded as opposite poles on a single dimension. Subsequent research has found that positive and negative thinking rather could be regarded as two separate systems, where increase in one domain will not necessarily mean the decline in the other (MacLeod & Moore, 2000).

In order to measure future-oriented thinking (MacLeod, et al., 1993) developed the Future Thinking Task (FTT). The FTT is based on a verbal fluency task (Lezak, 1995), and the person is asked to generate as many positive and negative anticipated events as possible within one minute along various time periods, from the near future (within a week) to a longer period of time (next year and the next 5-10 years).

Future thinking has been studied in several clinical groups, including depressed patients (MacLeod & Salaminiou, 2001), anxious patients (with or without depression) (MacLeod, Pankhania, Lee, & Mitchell, 1997; MacLeod, et al., 1997), individuals who have previously attempted suicide (Hunter & O'Connor, 2003), patients with eating disorders (Godley, Tchanturia, MacLeod, & Schmidt, 2001), personality disorders (MacLeod et al., 2004), older adults who have attempted suicide (Conaghan & Davidson, 2002), patients with multiple sclerosis (Moore, MacLeod, Barnes, & Langdon, 2006), tinnitus (Andersson, Kyrre Svalastog, Kaldo, & Sarkohi, 2007), and finally in healthy participants including adolescents (MacLeod & Conway, 2005; Miles, MacLeod, & Pote, 2004). The test has also been examined in relation to cognitions about the future and other specific factors such as rumination (Lavender

& Watkins, 2004)), mood induction (de Jong-Meyer, Kuczmera, & Tripp, 2007), perfectionism and subjective well-being (Hunter & O'Connor, 2003).

The main outcome in these studies is that a decrease in perceived positive future events is a characteristic finding in depression, whereas anxiety is characterized by an increase in the number of anticipated negative future events. Thus anxious patients generally generate more negative events than controls, but do not differ in terms of positive events. Depressed patients may generate fewer positive events than controls, and sometimes more negative future events (MacLeod & Byrne, 1996). The latter finding has been viewed as an effect of overlapping anxious and depressive symptoms in depression (MacLeod & Byrne, 1996). Depressed and non-depressed parasuicidals showed essentially the same result (Conaghan & Davidson, 2002; MacLeod, et al., 1997). They reported fewer anticipated positive experiences than controls, but no overall increased anticipation of negative future experiences. These findings indicate that a reduced anticipation of future positive events is a characteristic feature of depression even in the absence of suicidal ideation.

Studies on future-directed thinking and depression have often targeted clinically depressed persons, generally in-patients with suicidal ideation or people seeking emergency care. There are however studies on non-clinical depression in which scores on self-report inventories are used to define depressive symptoms (Miles, et al., 2004). The ability to generate future events might not be stable. For example, in one study rumination was found to increase both positive and negative future thinking (Lavender & Watkins, 2004). In more recent studies the qualitative aspects of future-directed cognitions have been incorporated in the future thinking task, such as the perceived likelihood and importance of future events (Godley, et al., 2001).

Future thinking and autobiographical memory

Future thinking and autobiographical memory are both regarded as important aspects of cognitive functioning, and both influence and can be influenced by depression. The ability to retrieve specific autobiographical memories is most likely important for the maintenance of mental health. Pillemer suggested that memories have important directive functions, as they inform, guide, motivate and inspire behaviour (Pillemer, 2003). Memories provide models for present and future activities and contribute to successful interpersonal communication, problem solving, organizing activity and performance (Williams, 2006). A reduced ability to generate specific autobiographical memories is a well replicated phenomenon in clinical depression (Williams et al., 2007). Dalgleish et al. systematically examined eight studies and found that increased depressed mood was significantly related to reduced autobiographical memory specificity and that it was also associated with decreased executive control and poorer problem solving performance (Dalgleish & Brewin, 2007).

Several researchers have suggested that autobiographical memory specificity and the ability to report future events are related in the sense the non-specific memories would be linked to a decreased ability to foresee future events. (Williams et al., 1996) suggested that the factors that influence the phenomenology of past events influence future events in the same way. Retrieving past events and imaging future events requires the binding of details into a coherent event. There is however not much research on depressed samples to support a link between autobiographical memory specificity and ability to report future events. Dalgleish et al. did a study on patients with eating disorders and found that autobiographical memory specificity was significantly correlated with the number of specific events generated on the FTT (Dalgleish et al., 2003). This was consistent with a finding by Williams et al. (1996) who studied a non-clinical sample and found a correlation between autobiographical memory

specificity and specificity of future imaged events (Williams, et al., 1996). Kremers et al compared outpatients with borderline personality disorder and controls on social problem solving capabilities and specificity of imagined future events. Patients with borderline personality disorder reported having fewer active means to solve interpersonal problems and depressed patients with borderline personality disorder tended to have more difficulties in imagining positive future events in a specific way compared to controls (Kremers, Spinhoven, & Van der Does, 2004). Specificity and problem solving were hardly related in patients with borderline personality disorder. The authors suggested that social problem solving deficits in borderline personality disorder may be a consequence of disturbed emotion regulation rather than a consequence of restricted memory accessibility.

QUALITATIVE STUDIES ON DEPRESSION

The main rationale for qualitative research and grounded theory is that a careful analysis can be used to aid an interpretative understanding of a phenomenon (Glaser & Strauss, 1967). Compared with quantitative methods qualitative approaches have the advantage of being flexible and open-ended. The researcher is able to add new pieces to the research puzzle, both during data collection and process of analysis. The flexibility of qualitative research may facilitative discovery as search for unexpected material is part of the process (Charmaz, 2006). One method to get information is the qualitative interview, in which each participant has the chance to express his/her own point of view. Even if there are boundaries for the interview set up by the researcher, participants have more free to elaborate in response to the open-ended interview questions. The aim of a qualitative interview is often to gather information about the research topic/phenomena. The researcher may combine interviewing with other methods used in the qualitative research in order to come up with a theory.

Although various aspects of depression have been studied with qualitative methods (Furler et al., 2010; Gask, Ludman, & Schaefer, 2006; Johnston et al., 2007; Rodrigues, Patel, Jaswal, & de Souza, 2003; Saver, Van-Nguyen, Keppel, & Doescher, 2007; Smith, Walker, & Gilhooly, 2004; Verbeek-Heida & Mathot, 2006), little if anything has been written about how persons with depression represent their future.

COMMON TREATMENTS

Depression is usually treated by pharmacotherapy and / or psychotherapy. In some cases experimental methods are prescribed such as ElectroConvulsive Therapy (Sackeim, 1999), Transcranial Magnetic Stimulation (Martin et al., 2003; Martin et al., 2009), and Vagus Nerve Stimulation (Kosel, Brockmann, Frick, Zobel, & Schlaepfer, 2011; Kosel & Schlaepfer, 2002; Schlaepfer et al., 2008). Complementary medicine like St. John's Worth (Canning et al., 2010; Lecrubier, Clerc, Didi, & Kieser, 2002), light therapy (Lewy & Sack, 1986) and physical activity (Carek, Laibstain, & Carek, 2011; Perraton, Kumar, & Machotka, 2010) are also investigated in research and sometimes prescribed (albeit not in all countries).

Below, I will briefly describe pharmacotherapy and psychotherapy with a focus on Cognitive Behavioural Therapy (CBT).

Pharmacological therapy

There are different categories of antidepressants (selective / non-selective). Usually depression is treated with *selective serotonin reuptake inhibitors* (SSRIs) or selective

serotonin and norepinephrine reuptake inhibitors (SNRI) which affect the levels of norepinephrine and serotonin. Morover there are also *Tricyclic* (TCA) and / or *MAOinhibitor* (MAOIs) medications.

Researcher have in several studies compared single drugs with either placebo (Bech et al., 2000; Bech, Tanghoj, Andersen, & Overo, 2002; Entsuah, Rudolph, & Chitra, 1995), or with particular drugs within the same subgroup such as SSRI and/or with TCA (Edwards & Anderson, 1999; Zanardi, Franchini, Gasperini, Perez, & Smeraldi, 1996). Moreover, studies have been done comparing anti-depressant drugs in different subgroups such as SSRI vs TCA. (Anderson, 1998, 2000; Barbui & Hotopf, 2001; Zanardi, et al., 1996). Results from these studies do not clearly indicate superiority of one drug over the other, but they may differ in terms of side effects (Socialstyrelsen, 2010).

Psychological therapy

Psychological treatments with for depression usually require 8-20 hours of treatment and can be provided individually, in pairs or in groups (The Swedish Council on Technology Assessment in Health Care, 2004).

There are many different psychological treatments available for depression. It has been shown that seriously intended treatments (bona fide) are about equally effective (Cuijpers, van Straten, Warmerdam, & Andersson, 2008). For example there is empirical support for both psychodynamic (Abbass & Driessen, 2010; Driessen et al., 2010) and interpersonal psychotherapy (Cuijpers et al., 2011). The psychotherapy forms which have the most extensive support in terms of number of clinical trials are behaviour therapy (BT), cognitive therapy (CT) and various combinations of these two. CBT is a collective name for Beck's cognitive therapy (Beck, et al., 1979) and a more behaviourally-oriented version of CBT (Martell, Addis, & Jacobson, 2001). CBT is often manualized and time-limited. The focus is on the "here and now", and on alleviating symptoms. In cognitive therapy the focus is on the content of the depressive thoughts and how these may be changed (e.g. cognitive restructuring). Behavioural therapy focuses on increasing activities that positively reinforcing for the individual. Examples of interventions in the various forms of CBT are identifying and challenging negative automatic thoughts, exposure, skills training, activity planning and mindfulness.

A major challenge in the treatment of depression is how to predict and eliminate relapse after remission or successful treatment. Mindfulness-based cognitive therapy has been developed to prevent relapse in recovered depressed individuals by making them aware of negative thinking patterns that may trigger subsequent episodes of depression (Segal, et al., 2002; Teasdale, et al., 1998; Williams, Teasdale, Segal, & Soulsby, 2000). Studies suggest that mindfulness-based cognitive therapy may significantly reduce the probability of future relapse (Ma & Teasdale, 2004).

Internet therapy and guided self-help

Internet-based therapies use mainly text-based programs presented via the Internet and are delivered with (Andersson et al., 2005) and without therapist support (Meyer et al., 2009). Guided Internet-delivered CBT has been developed and tested for a range of conditions including anxiety disorders, mood disorders and health complaints (Andersson, 2009). With regards to depression, several trials have been conducted in Sweden with medium to large effect sizes (Andersson, et al., 2005; Hollandare et al., 2011; Vernmark et al., 2010) Computer-based psychotherapy in general has been shown to work for depression (Andersson, 2009; Andersson & Cuijpers, 2009; Cuijpers, van Straten, & Andersson, 2008;

Cuijpers, van Straten, van Schaik, & Andersson, 2009) and the effect of these is comparable to traditional psychological treatment for depression, but there seems to be a major significant difference between computer-based treatments where there is a treatment support or not (Andersson & Cuijpers, 2009).

Combination of pharmacological and psychological therapy

Numerous studies have compared drug therapy with cognitive therapy or CBT in mild to moderate depression (Cuijpers, van Straten, Hollon, & Andersson, 2010; Cuijpers, van Straten, Warmerdam, & Andersson, 2009), and a smaller number have combined interpersonal and psychodynamic therapy with medication (Burnand, Andreoli, Kolatte, Venturini, & Rosset, 2002; Spinelli & Endicott, 2003). Studies generally show that pharmacotherapy and psychotherapy have equal effects when it comes to mild to moderate depression. However, for more severe forms of depression pharmacotherapy tends to work better. Normally, the effect of drugs occurs faster, but long term effects are more likely following psychological treatment. If antidepressant medication is added to the psychological treatment. This additional effect is, however, small. The effect also applies when the combination of psychological therapy and antidepressant therapy are compared with psychological treatment combined with placebo medication (Cuijpers, et al., 2010).

Will future thinking change following treatment?

While future thinking has been studied in several clinical groups (MacLeod, 1999). I found only one study on changes in future thinking following treatment. MacLeod, Tata et al. (MacLeod et al., 1998) administered the FTT before and after treatment to a group of parasuicidal patients. The results indicated an improvement in positive future thinking following manual-assisted CBT.

Although there is a lack of pre-post treatment studies on future thinking in depressed people, one experimental study found that rumination lead to increased negative future thinking (Lavender & Watkins, 2004), and in another study a positive mood induction lead to decreased negative future anticipations (de Jong-Meyer, Kuczmera, & Tripp, 2007). Since both ruminative think and mood may be influenced by treatment it is likely that scores on the FTT change following treatment

EMPERICAL STUDIES

Aims

The general purpose of the studies in this dissertation was to study future thinking in depressed people, using both quantitative and qualitative methods.

Study I

The aim of study I was to compare positive and negative future-directed thinking in persons with mild to moderate depression who did not express suicidal thoughts or intent.

Study II

The aim of study II was to examine the relationship between future-oriented thinking and autobiographical memory in a sample of depressed subjects.

Study III

The aim of study III was to investigate if scores on the FTT would change following two forms of ICBT for major depression (guided self-help and e-mail therapy). A second aim was to study if changes in depression scores as measured by the Beck Depression Inventory would correlate with changes in future thinking.

Study IV

The aim of study IV was to investigate the substantive content of representations of the future in depressed individuals by using open-ended methodology inspired by grounded theory

DESCRIPTION OF STUDIES I-IV

Methods

Table 3 presents an overview of the methods used in the four studies.

	- ej			
Study	Total n*	Statistical method	Age	Instrument
I.	40	ANOVA; t-tests	22-65	SCID-I; MADRS; COWAT; FTT
П.	88	Pearson correlations	19-65	SCID-I; MADRS; QoLI; BDI; BAI; COWAT; FTT, AMT
III.	47	ANOVA; Bonferroni- corrected t-tests, residualized	19-65	SCID-I; MADRS; BDI; COWAT; FTT
IV.	15	Grounded Theory	26-63	Interview guide based on the FTT (Macleod et al., 1993)

Table 3. Summary of methods in each study

Note= final data for analysis*

Participant and procedure

Studies I-III

Participants in the study were assessed in connection with a randomized controlled trial of two ways to deliver Internet-based treatment for major depression (Vernmark, et al., 2010). In studies I and II pre-treatment data are presented, and in study III both pre-and post-treatment data will be included. The group in study I ranged in age from 22 to 64 years and in studies II and III between 19 to 65 years. The experiment and control groups were matched as closely as possible in terms of age, sex, and educational level.

Participants in studies I. II and III were recruited through a variety of print media (press release and articles in newspaper) and electronic media in Sweden. General information regarding the study was given in these announcements, and the address of a website where additional information and instructions on how to proceed for participation in the study was provided. Application to participate included giving informed consent. At the website participants were instructed to answer questions regarding gender, age, occupation, use of medication, previous therapy, expectations and were also asked to complete a set of selfreport inventories. Four self-report measures were used. The Montgomery Åsberg depression rating scale (MADR-S) was used to measure depressive symptoms (Svanborg & Åsberg, 2001). As a second measure of depressive symptoms the Beck Depression Inventory - BDI (Beck, et al., 1961) was used. Anxiety was measured with the Beck Anxiety Inventory - BAI (Beck, Epstein, Brown, & Steer, 1988). The BAI is designed to distinguish anxiety from depression. Finally, the Quality of Life Inventory - QoLI (Frisch, Cornell, Villanueva, & Retzlaff, 1992) was included. This measure covers 16 dimensions of life (e.g. health, economy). For each dimension a rating is made regarding importance (scored 0 to 2) and of how pleased the person is with that dimension (scored -3 to +3, but with no 0 alternative). The OoLI has been reported to have satisfactory reliability and validity (Frisch, et al., 1992). Psychometric properties for the MADRS-S, BDI and BAI are also robust when administered over the Internet (Carlbring et al., 2007).

Those who met the criteria for major depression according to the self-report inventories at the screening phase were invited to a structured interview using the Structured clinical Interview for DSM IV (SCID-I)(First, et al., 1997). The reliability of the SCID-I varies between.70-1.0

(Segal, Hersen, & Van Hasselt, 1994) and depends on the circumstances under which the instrument is used . Thereafter participants completed the Controlled Word Association Test; COWAT (Lezak, 1995), the AMT (Williams, 2001) and the FTT (MacLeod, et al., 1993).

The following inclusion criteria were used: age 18 years or older; a diagnosis of major depression according to Structured Clinical Interview for DSM (First, et al., 1997), a total score on the MADRS above 14 but below 31 indicating mild to moderate but not severe depression; did not express suicidal thoughts or intent as measured by the MADRS; no psychotic states, bipolar disorder, alcohol and/or substance abuse problems; were not currently receiving any other form of psychological treatment and had not recently been prescribed antidepressant drugs or changed a prescription more recently than 1 month previously.

Participants in study I consisted of 40 persons. The depressed group was derived from the larger group of the treatment trial. A healthy control group was also recruited and both groups were matched as close as possible regarding demographic characteristics such as age and gender. We estimated that a total sample size of 40 would be in line with previous FTT research and would lead to sufficient power to detect meaningful differences. Mean age in the depressed group was 39.1 years (SD=13.5) and in the control group 38.9 years (SD=13.2). There were 13 women and 7 men in each group.

In study II, all 88 persons from the treatment trial were included. Only pretreatment data are presented. There were 28 (31.8%) males and 60 (68.2%) females aged 19-69 years (M=36.8, SD= 12.9).

In study III FTT posttreatment data are reported. A total of 47 persons completed both test sessions of FTT after having completed the treatment, yielding a completion rate of 79.6% (47/59). The sample comprised of 13 men and 34 women. Ages ranged between 19 and 65 vears, with a mean age of 38.1 years (SD=13.3). More details regarding procedures and treatment outcome are provided in the original trial (Vernmark, et al., 2010). A no treatment control group was included in the original treatment trial but not included here as they differed at baseline on FTT scores and also reduced their depression scores during the waiting period. Participants were tested in live interviews, but all other assessments were completed via the Internet as part of the controlled trial. The FTT was administered following the online screening during a scheduled live interview and at a posttreatment interview. The posttreatment interview was scheduled after the 8-week treatment period. Briefly, the e-mail therapy was tailored and did not use any self-help texts. All e-mails were written with the specific patient in mind. The guided Internet-based self-help consisted of text chapters dealing with CBT components such as behavioural activation and cognitive restructuring, and had been developed in a previous study. Home-work assignments were given to both groups. Both treatments lasted for 8 weeks

Study IV

Participants in study IV was recruited from a clinic. Written and oral information about the study was provided to participants by the psychiatry staff. In addition to information about the purpose of the study, participants were given the names, phone numbers, and e-mail addresses of the researchers in case a participant wanted to ask questions about the study. Both the written and oral information made clear that participation was voluntary and confidential, and that the contents of the interview would not affect their ongoing treatment at the clinic in any way. Those who gave informed consent all met the criteria of major depression using DSM-

IV (American Psychiatric Association, 2000). Those with psychotic or manic symptoms, ongoing drug and/or alcohol abuse, current suicide plans and/or had been depressed before but not at the studied time were not asked to participate. Included participants were contacted by a nurse to make an appointment for an interview at psychiatric clinic, Linkoping's university hospital.

A total of 15 participants were included. There were 8 women and 7 men, and ages ranged between 26 to 63 years. Participants differed in many respects. For example many were on sick-leave and some were unemployed. A few were inpatients due to earlier suicide attempts. Different educational levels and occupational backgrounds were represented, as well as differences regarding marital status. For most, the onset of depression occurred after puberty, but for a few the first episodes had occurred earlier.

The participants completed a semi-structured qualitative interview which lasted between 45 to 60 minutes. Interviews were recorded and transcribed after the interview before the analysis. The interviews were conducted in a quiet room in the clinic. The interviewers were trained in qualitative interviewing, were advised to be empathic, show a genuine interest in the participant, and listen actively. They were also instructed to encourage the participants to explore their thoughts by using relevant follow-up questions such as: "would you tell me more about that?" The study was part of an ongoing clinic based study on the treatment of depression for which ethical approval had been obtained.

Measures

Studies I-III

Montgomery, Åsberg Depression Rating Scale - Self-rated [MADRS-S, (Montgomery & Asberg, 1979)]

MADRS-S consists of 9 items. A total score on the MADRS-S between15-30 (mild-tomoderate depression). MADRS was originally a structured interview designed to measure symptoms of depression and to be particularly sensitive to treatment effects. It has subsequently been transformed into a self-assessment format (Svanborg & Åsberg, 2001). The Internet-administered self-rated version of the MADRS-S has been found comparable to the "pencil and paper" version in terms of validity and reliability (Carlbring, et al., 2007), with a Cronbach's alpha of .82.

Becks Depression Inventory [BDI; (Beck, et al., 1961)]

BDI consists of 21 items that assess depressive symptoms. Internal consistencies for the BDI ranges from .73 to .92 (alpha coefficients) (Beck, Steer, & Garbin, 1988). The BDI has a splithalf/Cronbach's Alpha reliability co-efficient of .93.

Becks anxiety Inventory[BAI; (Beck, et al., 1988)]

BAI was specifically designed to discriminate anxiety from depression. Physiological and cognitive components of anxiety are addressed in 21 items. BAI has obtained a high reliability in terms of internal consistency and appropriate validity. BAI has showed high internal consistency (α =.92) and test–retest reliability over 1 week, *r*=.75

Quality of Life Inventory [QoLI; (Frisch, et al., 1992)]

The QoLI includes 16 dimensions of life (e.g., health, economy, work). For each dimension a rating is made regarding importance (scored 0 to 2) and of how pleased the person is with that

dimension (scored -3 to +3, but with no 0 alternative). The QoLI has been reported to have satisfactory reliability and validity.

Controlled Oral Word Association Test [COWAT; (Lezak, 1995)]

The Controlled Oral Word Association Test (COWAT) is a standard verbal fluency test roughly estimating mental flexibility and executive functioning. The participant (or patient) is asked to generate as many words as possible beginning with the letters F, A, and S. The participant is given one minute for each of the letters, which are presented in a fixed order. Proper names, numbers and inflection of the same word are disregarded in the total score. The score is the sum of all acceptable words produced within the three 1-minute trials. The COWAT was used in study II to analyse if the groups differed from each other on lexical retrieval under time pressure (control for verbal fluency) and as a "warm-up" for the FTT (in studies I-III).

Future thinking task [FTT; (MacLeod, et al., 1993)]

The future thinking task is a test adapted from the verbal fluency paradigm. The participant is asked to name as many things as possible that they believe are going to happen in three timeperiods of the future - the next week, the next year, and the next 5-10 years. Both perceived positive and negative future events are asked for. The participant is given one minute under each condition to generate as many perceived future events as possible during a specified time period. The time periods are presented in a fixed order (next week, next year, and upcoming 5-10 years). When both positive and negative future events have been generated for the three time periods the participant is also asked to rate the likelihood (rated between 1-7 with a higher rating indicating more likely) that each event will actually happen and to indicate their expected emotional response (between -3 and +3, with minus indicating a negative response) if the predicted event were actually to occur. In studies I-III, the future thinking task was scored using the revised scoring procedure (Godley, et al., 2001; MacLeod, et al., 1998). In this procedure composite scores are calculated by multiplying the number of generated items for each time period with the mean likelihood rating and the mean emotional rating for that period and summing these scores for each of the three time periods. For the emotional ratings, negative scores were transformed to positive numbers to make them comparable to the positive condition scores. Hence, the number of events generated was weighted according to likelihood and emotional strength. Raw scores of the FTT (i.e., the number of events only) were used in study I in addition to the index.

Autobiographical Memory Test [AMT; (Williams, 2001)]

The AMT has been used in numerous studies (Williams, et al., 2007) since it was developed by Williams and Broadbent (Williams & Broadbent, 1986). In study II the AMT consisted of 36 words (18 x 2 word sets) to cue the memories. Each word set consists of 6 positive/ pleasant, 6 negative/unpleasant and 6 neutral words. Participants were given 1 min in each case to retrieve a specific autobiographical memory that happened to them either recently or a long time ago. Participants were told that the memory they recalled could be something that happened recently or a long time ago and that it could be an important or trivial event but that the memory should be of something that happened at a particular time on a particular day. Examples of acceptable and unacceptable responses were given. A printed version of the recall instructions was given to the participants to read. Cue words were presented on 10×10 cm white paper and were written in black ink in capital letters 3.5 cm high. Words were presented in a random order for each participant. To ensure that participants understood the instructions two practice cues were given ("relieved" and "tired"). Generated memories were tape-recorded and transcribed for coding according to the criteria outlined by Williams (Williams, 2001). Specific memories were defined as events that happened in a particular instance or lasted for 1 day or less. Non-specific memories included extended memories (events that lasted for longer periods of time) and categorical memories (events that occurred repeatedly over a period of time). If the participants failed to recall a memory within the time limit or talked about things that were not memories (e.g., an opinion that is associated with the cue), their responses were classed as "no memories." If the type of memory that the participants recalled was unclear, or if participants retrieved the same memory to more than one cue or offered responses that related to future events, they were prompted with the words "What is the memory that you are thinking of there?" or "Can you tell me a bit more about that memory?" In study II AMT scores refer to number of specific memories generated to the entire set of words.

Study IV

In this study we prepared a qualitative interview guide inspired by Macleod et al's (MacLeod, et al., 1993) FTT, but only used the questions from the FTT and presented them in an openended version with no time constraints. The interviewer asked the participants what they thought was going to happen in the future and added some other questions, including a question about the time before the participants became depressed. More specifically, the interview guide included questions about how participants look at their situation right now, before they became depressed and how they saw their future (nearest time, about a year and the coming 5-10 years). Moreover, we added questions in an open-ended manner about how participants viewed their relatives' future and their thoughts about the future in Sweden, Europe and worldwide. Finally, they answered questions about whether they saw any obstacles and/or opportunities in their future. Any open question was followed by one or more follow-up questions to get more detailed descriptions from the participants.

Statistical analyses

Study I

A mixed-design analysis of variance (ANOVA) was used for the experimental data, with one group factor (depressed/nondepressed) and two within-group factors (valence: positive/ negative; period: week, year, 5–10 years). We used t tests for further clarification of between-group differences and also used t tests for the background variables. Data were analyzed with SPSS version 16 for Windows.

Study II

Pearson product moment correlations were used to analyze associations between variables. All variables were checked for normality and found to be suitable for parametric analyses. Data were analyzed using the Statistical Package for Social Sciences (SPSS) version 17.

Study III

Treatment effects on the FTT were tested using a mixed design ANOVA with one between group factor (e-mail therapy vs. guided self-help), and one within-group factor (pre and post treatment). Bonferroni-corrected t-tests were used for further clarification of differences and t-tests for the background variables. Correlations between BDI change scores and change on the FTT scores were tested with Pearson correlations. To take into account the measurement err(Glaser, 1978)or of repeated administration of the instruments and the initial differences between individuals at the pre assessment, residual gain scores were calculated for the BDI and FTT (Steketee & Chambless, 1992).

Study IV

The analysis started after the first interview and continued simultaneously with the additional interviews. Grounded theory (GT) (Charmaz, 2006; Glaser, 1978; Glaser & Strauss, 1967) was used as the analytic approach which inspired data collection and analyses. The data collection process was guided by theoretical sampling, where data collection and analysis ran in parallel. By careful analysis, through substantive coding (open and selective), an interpretive understanding of what the participants were occupied with and which was their main concern was developed. The main steps during the analysis of data were coding (initial/open coding, focused/selective coding and theoretical coding), constant comparison, memo writing and memo sorting.

The data were constantly compared with codes, subcategories,, categories, and core category. During the analysis ideas about relationships between the codes and other theoretical ideas that came to mind were registered, compared and sorted (memo writing and sorting).

Theoretical coding was applied to understand how the substantive categories were related to each other, to the core category and to derive a theoretical model. Theoretical codes are used as tools to theorize the substantive codes (Stern, 2007). The important issues in this process is to examine if the categories fit with the core category, subcategories, and how a theoretical model can be built based on comparative analysis between the data.

The open coding ended when the core category appeared. The theory was delimited to the core category. The core category became a guide for further questioning (Glaser, 1978). Follow-up questions in the last five interviews were theoretically sampled after the core category had emerged. The initial codes were integrated to conceptualize and theorize how the substantive codes and categories may relate to each other as a hypothesis to be transformed into a theory (Glaser, 1978).

In the analysis I aimed to adhere to the Strauss and Corbin (Strauss & Corbin, 1998) principle of interaction between sensitivity (i.e. sensitive proximity - the ability to feel/read the subtle nuances and hints in the data) and objectivity (analytic distance - the distance between the empirical material and the emerging results).

RESULTS

Study I: Less Positive or More Negative? Future directed thinking in mild to moderate depression

Results on the FTT-index for positive and negative future events are presented in Table 4. The two groups were compared by means of independent samples t-test which showed no statistically significant differences in age or on the verbal fluency control-task. The groups differed significantly on the MADRS-S. There were no gender differences.

Variable	Depressed	Controls	t (38)	Р	
Age	39.1 (13.5)	38.9 (13.2)	0.71	0.94	
COWAT	13.5 (3.4)	15.4 (3.6)	1.7	0.11	
MADRS-S	21.2 (3.2)	3.2 (2.7)	18.8	0.001	

Table 4. Means and standard deviations for demographical data for the two groups

FTT-index

The results on the FTT-index were analyzed by means of a mixed design ANOVA, with one Group factor (depressed/none-depressed), and two within-group factors (Valence: positive/negative, and Period: week, year, 5-10 years). Means and standard deviations are presented in Table 5.

Table 5. Means and standard deviations for positive and negative future thinking task- index scores for each time-period

Variable		Depressed	Non-depressed	t (38)	Р
		M (SD)	M (SD)		
Positive response	Next week	51.6 (26.0)	70.5 (48.6)	1.5	0.134
	Next year	56.8 (28.8)	80.4 (41.4)	2.1	0.043
	Next 5-10 years	48.4 (27.4)	47.6 (26.2)	0.1	0.919
Negative responses	Next week	21.1 (18.7)	10.9 (9.8)	2.2	0.038
	Next year	21.7 (14.7)	16.7(12.0)	1.4	0.159
	Next 5-10 years	22.4 (13.1)	20.7 (24.2)	0.15	0.88

There was a significant main effect for valence due to participants reporting higher scores for positive future events than negative events. There was also a significant main effect for time period. Three interaction effects were found. One was for Group x Valence and the second for Valence x Period. These two were in turn qualified by a significant three-way interaction. Differences between the two groups on positive and negative scores for each time-period were compared independently. This yielded significant differences for "the next year" under the positive condition, with significantly higher scores for the control group (p = .043), and for "the next week" in the negative condition with higher scores for the depressed group (p = .038). The overall trend in the data suggested that differences between the groups were found for earlier future events and not for future events in the upcoming 5-10 years. Planned contrasts of the repeated measures effect for each group separately suggested that there was no interaction between valence and time for the depressed group, and no main effect of time period. For the control participants however, both the time effect, and the valence x time interaction were statistically significant.

As previous studies have collapsed the FTT scores across time periods I also calculated the Group × Valence interaction for the FTT-index total scores. The group × valence interaction was significant, and between group differences were tested further. Higher positive scores were found for the control group (p < .05). The higher negative scores for the depressed group did not reach statistical significance.

Analyses based on FTT raw scores

Overall, the results using the FTT raw scores tended to be smaller and the index procedure mainly had the effect of increasing the between group effects.

Study II: Links between future thinking and autobiographical memory

Results on the FTT-index for positive and negative future events are presented in Table 6. The result showed that positive future thinking was significantly correlated with the number of specific positive autobiographical memories. Positive future thinking was also associated with negative future thinking. Furthermore, the number of specific positive autobiographical memories was correlated with both negative autobiographical memory and results on the COWAT. Finally the positive autobiographical memory was negatively correlated with extended autobiographical memory, repeated autobiographical memory, semantic association autobiographical memory and non-response autobiographical memory. As verbal fluency may account for the association between positive future thinking and the number of specific

positive autobiographical memories we controlled for the COWAT in a partial correlation. The association remained statistically significant (r=.24). Mean results on the self-report inventories are presented in the Table. None of the self-report measures were correlated with either FTT or the AMT.

Table 6. Intercorrelations (Pearsoncorrelations), Mean and SD of the future thinking task, the autobiographical memory task, and controlled word association test

Measure	1	2	3	4	5	6	7	8	9	10	11	12	Mean(SD)
1. FTT index pos													11.24 (4.68)
2. FTT index neg	.31**												9.00 (4.41)
3. AMT pos	.23*	.07											2.91 (1.59)
4. AMT neg	09	.06	.39**										2.89 (1.72)
5. AMT ext	.03	03	27**	37**									1.63 (1.46)
6. AMT repeat	.05	.14	30**	41**	.24*								1.57 (1.71)
7. AMT sem ass	02	15	37**	35**	.25*	.26*							1.99 (2.12)
8. AMT non resp	21	05	29**	17	09	21	23*						3.81 (2.67)
9. COWAT	.12	.20	.26*	.12	16	07	15	09					13.25 (3.82)
10. BDI	11	.11	.13	.15	.8	12	17	03	03				21.9 (5.9)
11. MADRS	13	.09	06	.05	.05	.05	.01	.02	05	.63**			21.8 (3.9)
12.BAI	06	.11	.00	.11	.17	10	.19	.06	10	.45**	.46**		15.1 (7.7)
13. QOLI	.15	.03	04	.05	6	07	.03	04	19	37**	44**	24*	02>(1.5)

*p<0.05, ** p<0.01, *** p<0.001

Study III: Effects of two forms of Internet-delivered CBT on future thinking

Table 7 shows data on age, verbal fluency (COWAT), and self-reported depression in the two treatment groups (self-help and e-mail therapy). Also presented are BDI change scores (pre minus post) for the immediate treatment results and at six months follow-up. The groups were compared by means of *t*-tests which showed no statistically significant differences in age, verbal fluency, baseline depression (BDI) or changes in depression scores.

scores on the (BDI)				
Variable	E-mail (n=26)	Guided self-help (n=21)	t	р
	M (SD)	M (SD)		-
Age	38.8 (14.2)	37.0(12.0)	0.49	0.62
COWAT	13.5(3.7)	13.6 (4.0)	0.46	0.92
BDI	21.8(5.4)	22.2(6.8)	-0.19	0.85
BDI change	12.0 (5.9)	9.2(7.5)	1.46	0.15
BDI change 6 m	13.6(6.9)	10.1(11.1)	1.24	0.22

Table 7. Means and standard deviations regarding age, verbal fluency and Beck Depression Inventory (BDI) scores at pre-treatment for the two groups. Also presented are pre-post and pre-six months follow-up change scores on the (BDI)

Results on the FTT-index for positive and negative future events are presented in Table 8. Separate analyses for the different time periods did not result in any differential outcomes and hence we used to total FTT-index scores (across the three time periods). The results on the FTT-index scores were analyzed by means of a mixed design ANOVA, with one Group factor (e-mail therapy/guided self-help), and one within-group factor (Pre- and posttreatment).

Regarding the FTT positive events there was no time effect. However, there was a trend indicating an interaction between group and time (p=.07). For the negatively valenced future events, there was a signification reduction across the two groups, and no interaction between group and time F(1,45)=0.2, p=.65. As seen in the Table 8 both treatment groups had decreased their FTT index scores for negative events after the treatments.

Correlations between changes on the FTT and changes in depression

Change scores for the two FTT index scores (positive and negative) and for the BDI (pre and post-treament) were calculated. In addition, change scores for the six months follow-up BDI scores (pre-six month follow-up) were calculated as well. Change scores for the BDI and the

FTT were all in the form of residual gain scores. These scores were then correlated, and in order to gain power the combined treatment group was used. There was a significant correlation between FFT negative index changes and changes on the BDI at post treatment, (r=.33) and at six months follow-up (r=.46). The correlations between FTT negative index changes and changes on BDI at post treatment and at six month follow-up remained statistically significant when controlling for COWAT scores. Changes on the FTT positive events index were not correlated with BDI change scores (either at post treatment or six months follow-up). Subsequently, controlling for the effect of COWAT did not change the results.

Pre-treatment values	Email M (SD)	Guided self-help M (SD)
Positive responses, next week	53.3 (28.6)	54.7 (27.2)
Positive responses, next year	55.4 (29.4)	61.6 (25.5)
Positive responses, next 5-10 years	51.8 (29.9)	55.8 (30.4)
Total positive future events index	160.4 (75.9)	172.1 (65.2)
Negative responses, next week	22.7 (19.1)	26.9 (18.5)
Negative responses, next year	29.9 (15.1)	36.3 (23.2)
Negative responses, next 5-10 years	25.4 (15.8)	28.6 (13.8)
Total negative future events index	78.0 (35.7)	91.8 (44.1)
Post-treatment values		
Positive responses, next week	57.2 (28.9)	53.4 (24.7)
Positive responses, next year	69.4 (30.5)	56.8 (28.2)
Positive responses, next 5-10 years	53.3 (30.3)	45.2 (22.7)
Total positive future events index	179.8 (65.3)	155.3 (58.3)
Negative responses, next week	12.3 (9.6)	15.6 (14.4)
Negative responses, next year	17.7 (9.5)	22.0 (16.9)
Negative responses, next 5-10 years	22.5 (11.6)	23.3 (17.2)
Total negative future events index	52.6 (21.6)	60.9 (33.4)

Table 8. Means and standard deviations of Positive and Negative Future Thinking Task -index scores for positive and negative valance at pre- and posttreatment

Study IV: Representations of the future in depression

Recurrently and in various ways participants described a state of *ambivalence* that was expressed in the following three domains: thoughts, feelings and behaviour. Shifting between choosing and not choosing, and to dare or not dare took place in the three time dimensions: the past and the present, the present and the future with varying degrees of emotional, cognitive and behavioural responses.

In some degree, there was an oscillation between past and present, where attempts of the participants to free themselves from the burden of the present had failed (even suicide attempts) and created disappointment and depression. The disappointment seemed to permeate the thoughts about the nearest future, thoughts that led to a generalization of perceived disappointments over time. When participants did not make any significant distinction between the past and the possible future disappointments they became apathetic. In such situations, they neither wanted nor dared to think and believe in the future.

For some there was an oscillation between the present and the near future which gave an experience of "threat", "fear" and "worry". The fear of facing new disappointments was considered as the "villain of the piece", giving a sense of "going into a bubble" and becoming increasingly depressed. This gave a feeling of being "mentally handicapped", which created suicidal ideation and the thought that suicide was the only option. In addition to their

depression and poor financial situation they were afraid of losing their social network and possible employment.

In order to avoid anxiety and experience of "being in a bubble" the participants reported using various survival strategies (e.g. "here and now focus", "is and should world", "must-rules", "as-if-rate", "suicide attempt" etc). The strategies used varied depending on the time dimension. Even if one year is still perceived as a "too short time perspective" some participants dared to think forward, even if in both positive and negative terms and in general and/or specific terms. Once again, they expressed fears and worry about being disappointed, but at the same time they expressed a cautious hope for a turnaround, where they could do some things (start work/study) and have good relationships. Despite some cautious expressions of hope, participants expressed a fear of "not embracing change" and/or of "making mistakes". Furthermore, self-blame and self-devaluation occurred regardless of the fact that they realized that the environment had signalled other things than their own perceptions.

In a 5-10 year perspective participants hoped that depression would lead to some positive opportunities. They also hoped for a therapeutic effect and began both to wish and dare to think and plan ahead. Hope was often expressed in general terms, but sometimes in more specific terms. They felt more energetic and mentally on the way out of "the bubble". They were more willing and receptive to major changes in both family and working life. They could, for instance, imagine that they would separate from someone and/or move in with someone, have children, go from sick leave to their former occupations (e.g., job/studies) or apply for new jobs.

It was not uncommon for participants to condition their future positive thoughts by expressing themselves in "as-if "terms", which can be considered as another lifeline/survival strategy in the long perspective of time in the same way as "must rules" function in the limited time frame. Participants occasionally told us that "there is a deeper meaning with the condition" and you should not only see the illness as a barrier but also wonder about what positive things depression can bring.

Finally, some participants made no distinction between thoughts and feelings in a traditional way. Participants seemed to believe that feelings are to be considered as a form of thoughts, causing individuals with depression to feel that they are not able to solve problems. In other words, the problem for some people in depression arose from the emotionally coloured thoughts, which were seen as maintaining the depression (instead of rational thoughts).

In Figure 1 I present a derived model of how the depressed informant may oscillate between thoughts about the future and thoughts about the past. In the near past the person may predominately remember "bad" things, and in the near future the person may also foresee aversive experiences and anxiety about the future. However, when thinking about the more distant future and past, the emotional valence may decrease. These possible future experiences and recollections of good events in the past are, however, not accessed as the person wanders between the near past and the very near future. In therapy it is common to focus on both past experiences and future planning and hence the person may be helped to overcome being stuck oscillating between the near future and the near past. The model shows that retrospective and prospective negative thoughts create and maintain anxiety and depression. As a way to avoid the discomfort associated with conflicting thoughts, different survival strategies are applied depending on which time dimension they find themselves in

with their thoughts. Retrospective and prospective thoughts along different time dimensions may raise different types of emotional reactions. The coexistence of both negative and positive prospective cognitions simultaneous with the coexistence of both negative retrospective and negative prospective cognitions in the present moment seems to create ambivalence if survival strategies are not applied. This in turn may increase the risk for suicidal behaviour.



Figure 1. Model of ambivalence. The strength of depression and anxiety varies as a consequence of the time perspective. Ambivalence is most present ("the bubble" i.e., gray zone), when depression and anxiety peak in the here and now.

GENERAL DISCUSSION

Study I

The findings further support the established view that depression is characterized by a cognitive bias related to positive future events (MacLeod, 1999) but adds to this view the finding that cognitive bias is also found in depressed participants who do not express suicidal thoughts or intent. In addition to this effect, I expected that the groups would not differ on the index scores for negative events. This was found to be true in study I with the exception of one difference in the next-week condition for negative events, which was higher in the depressed group. One explanation for this might be that previous studies have used FTT raw scores. From a clinical point of view, particularly in a sample with mild to moderate depression, it cannot be excluded that comorbid anxiety influences the rating and reporting of anticipated future negative events. It is possible that comorbid anxiety symptoms (Kessler et al., 2003) might have influenced the outcome. Mild to moderate depressive symptoms may have an impact on the anticipation of positive events, whereas the anticipation of negative events increases only with more severe depressive symptoms or with anxiety symptoms.

Study II

The results indicated a small but statistically significant positive correlation between positive future thinking and positive autobiographical memory specificity. Positive future thinking was associated with both negative future thinking and positive autobiographical memory specificity, but not with negative autobiographical memory specificity.

The question is why negative specific memories were not correlated with either positive or negative future-oriented thoughts. One possible explanation is that future thinking as measured by the FTT index and memory specificity as measured by the AMT reflects different processes. Indeed, while memory specificity has been found to correlate with measures of working memory (Raes et al., 2006) the association between positive future thinking and memory specificity are related to the different subsystems that can partially operate independently of each other and may also be influenced by valence (e.g., positive versus negative events). It may be that our positive and negative experiences are relatively independent of each other, a view that has also been suggested in the literature on positive and negative affect (Watson, Clark, & Tellegen, 1988). Indeed, other researchers have also suggested that positive and negative thoughts reflect the operations of different systems rather than different change of a single system (MacLeod & Moore, 2000).

Results on the AMT and FTT were not correlated with self-reported symptoms of depression and anxiety. However, a consistent finding in the literature is that individuals with depression report fewer specific memories on the AMT (Dalgleish & Brewin, 2007) and fewer future events on the FTT (MacLeod, et al., 1997). From a theoretical point of view it could be expected that memory specificity would be more affected in depression, whereas future thinking would be more affected in anxiety (for example generalized anxiety disorder). However, since comorbidity between depressive and anxious states is substantial, it is difficult to separate the effects of depression and anxiety.

Study III

There were no effects of treatment on positive events, but a reduction of negative events as assessed by the FTT index which covers number of events, their emotional strength and likelihood. Changes on the FTT index for negative events were correlated with reductions in depressive symptoms, indicating that treatment-related changes in self-reported depressive symptoms and decreased FTT index scores for negative events tended to go together. The observed correlations between residualized change scores on FTT and the BDI were small but statistically significant. However, since there was no control condition for which no changes in depressive symptoms were observed it is not possible to draw firm conclusions regarding causality. From a clinical point of view the results suggest that modifying negative future thinking may be an integral part of CBT for depression, in particular the cognitive therapy components. It is plausible that a treatment that more specifically targets rumination would have a larger effect on negative future thinking. It is also possible that a reduction of depressive symptoms may lead to improved positive mood and in that way reduces negative future thinking. While both treatments in study III were delivered via the Internet, there is evidence to suggest that guided self-help is as effective as face-to-face therapy for mild to moderate depression. However, it cannot be inferred that the same changes on the FTT would apply to face-to-face or group psychotherapy.

Study IV

In study IV ambivalence was a main finding and was significant in the present moment in terms of thoughts, feelings and behaviours. Further into the future the ambivalence appear to be reduced and worries also decreased. Ambivalence in the moment was created by a fear of being disappointed and once again failing. This ambivalence, caused by the fear of disappointment, is a seemingly insurmountable obstacle to getting out of the described "bubble". Ambivalence can lead to a feeling of hopelessness, which according to (Beck, et al., 1979) has an obstructive effect and plays an important role in depression and we suggest that it plays an important role in anxiety as well. Hopelessness may be due to past memories, lack of positive future thoughts, or a surplus of negative future thoughts, but it might as well be due to a few qualitatively strong and persistent negative future thoughts.

The participants in study IV reported that they were willing and able to think positively about their future; although in general terms, but they also reported that they were afraid to experience new disappointments. It is understandable that this situation often leads to *avoidance*, which is a central feature of behavioural conceptualisations of depression (Martell, et al., 2001). This may occur when an individual chooses to refrain from approaching a seemingly desirable situation in order to avoid experiencing any negative consequences that may be associated with it. It is a condition in which the individual perceives fear for something they wish. When the target is far away, both positive and negative feelings about the situation become less strong. Failing to regulate the cognitive dissonance can create disharmony and experience in the form of anxiety, guilt, shame, anger, insecurity, stress and other negative emotional states.

For the ambivalent depressed individuals the "here and now focus" becomes a lifeline and a choice of situations that do not require any immediate decisions. A disadvantage of this strategy, like other life-lines set out in the "must-rules" and "if-as" terms, is that the individual will not dare to think, plan and make decisions about future goals. Focussing on the here and now will be of help only when the individual dares to set up concrete goals. However, in clinical situations it is always up to the individuals to choose to expose themselves and strive towards their goals.

Limitations

The studies had several limitations which are presented below. As studies I-III were derived from the same data set limitation mentioned under study I apply to study II and III as well.

Study I

First, participants were all self-recruited and the depressed patients were entering a treatment trial, which can lead to increased expectations of getting help, which, in turn, could influence anticipation of future positive events. Second, willingness to go to a university clinic and a positive attitude toward Internet-delivered treatment might have an impact on the test results. A third problem lies in the test procedure. Generating as many plausible future events as possible (e.g. the verbal fluency paradigm) generates "behavioural" data, but by introducing the likelihood and emotionality ratings into the index results in the introduction of variance attributed to self-reported status. These ratings are most likely influenced by negative affect (Watson & Clark, 1984), and given the role of negative affect in depression, this procedure is likely to inflate differences between the two groups in this study. On the other hand, it could be argued that it is not only the number of events per se but also their perceived importance that deserve careful investigation in depressed persons because it is known that depression can lead to minor cognitive dysfunction. Incorporating self-rating in the index does not

necessarily increase between-group differences. Fourth, the FTT may not capture the qualitative aspects of how depressed individuals perceive their future. The limited time given to restricts the possibility to reflect and situate the expected future within a broader framework.

While the valence of the generated future expected events is scored (e.g., likelihood) it may still not be what the depressed person view as most important. Finally, as the FTT rely on cognitive function (i.e., speed of processing), some depressed individuals may fail to generate future events on the FTT while still having thoughts about their future.

Study II

The cross-sectional character of the analyses in study II is a limitation. Another limitation of study II is the lack of a non-depressed control group for the AMT data. This would have made it possible to investigate if the association between the FTT and the AMT is stronger in persons without depression. In addition, it can be argued that the measures of autobiographical memory and future thinking target different processes (specificity vs. verbal fluency combined with likelihood and valence). Hence, a study in which number of memories and their likelihood and valence had been measured would perhaps have yielded stronger associations with the FTT. Vice versa, a study of specificity of future events instead of their numbers, likelihood and valence would perhaps have been more strongly associated with memory specificity as measures by the AMT. On the other hand, in such a study shared methodology (e.g., specificity) would be a competing explanation of association. Finally, it may be that memories of the past and notions about what might occur in the future are not overlapping constructs in major depression. Indeed, in Beck's original model of depression a negative view of the future was included in the cognitive triad (Beck, et al., 1979), whereas non-specific memories of the past may be an equally important or even more distinct feature of depression.

Study III

First, the test-retest characteristics of the FTT are not known and regression to the mean and test effects cannot be excluded. However, ratings of emotional response and likelihood are probably less influenced by repeated testing, and in study III the FTT index was used which incorporates all three aspects (number, emotional response and likelihood). Second, data from an untreated control group was not included which would have facilitated interpretation. It is also not possible to know if changes in both negative FTT scores and depression are caused by other factors than the treatment. A third limitation is that the verbal reports on the FTT were not coded in terms of content (apart from not counting repeated events).

Study IV

First, the results were based on a limited number of interviews with volunteer participants who were recruited from an outpatient psychiatric clinic. While this may be enough to capture the phenomena of future beliefs, it is likely that other subgroups of patients, for example with less severe depression, fewer comorbid problems, and dropouts from treatment are not represented. A second limitation concern the risk that the participants were not able to provide full answers to the open questions. If this is correct they may have more full representations of the future when feeling better. On the other hand, this is less of a problem as participants had longstanding problems and not only a single episode of depression. Third, as with most research, observations and conclusions are subject to potential bias from preconceptions and prejudices among the researchers.

MAIN CONCLUSIONS

- Depressed persons report lower scores regarding anticipated future positive events but do not differ from controls as concerned future negative events (Study I).

- There is some support for a positive association between future thinking and memory specificity, but the association is weak and only concerns positive future thinking and positive autobiographical memory specificity (Study II).

- Negative future thinking may be reduced after Internet-delivered CBT. Changes in depression symptoms correlate to some extent with reductions in negative future thinking (Study III).

- Depressed individuals experience a state of "ambivalence" with negative cognitive, emotional, physical and socio-economic consequences when they are asked to think about the nearest future. Ambivalence and its negative emotional and cognitive effects are reduced in strength in a longer time perspective such as 5-10 years (Study IV).

FUTURE STUDIES

There are different aspects of future thinking that would be interesting to continue studying. Future research could for example investigate whether scores of the FTT index are responsive to treatment in face-to-face treatments and whether the number of positive future events can be increased by behavioural activation, problems solving therapy, mindfulness and/or medication. Other patient groups and treatment formats could also be investigated to see if the FTT can be influenced by treatment.

Future research could also investigate FTT and AMT in relation to the different biological markers. FTT and AMT are known as two established paradigms that measure two aspects of cognition in different ways. It would be interesting to measure both the number of specific memories generated in a cued task (which is now done in FFT), and to look at the specificity of future thinking rather than just the number (which is done in AMT). In other words it is possible that differences in test format shadow the correlation between AMT and FTT and that it may be stronger.

Another area to study would be the neurophysical/neurobiological functioning following psychological and/or pharmacological treatment. A related question would be if similar areas of the brain are involved in future thinking and in autobiographical memory, and indeed if changes in performance can be captured using brain imaging methods.

Finally, further study of the FTT from a qualitative perspective is motivated. Hopefully this mix between quantitative and qualitative approaches will inform our understanding of cognitive functioning in depression from both a theoretical and practical point of view.

ACKNOWLEDGMENT

What is required to get a seed to bloom? There is undoubtedly an interaction between various factors such as light, nutrients, and of course a suitable place to grow and so on. Often, the seeds also need to be taken care of by a skilled gardener and be in the company of good neighbours.

My very unusual fate seems to be to "bloom" on a cold December day in Linköping. Interpret freely! I have no knowledge of what kind of flower I have become, nor do I know who will enjoy it's beauty. However, I do hope that I will spread joy and knowledge in someone's life. The time has come to direct my warmest and heartiest THANKS to all who in various ways have helped me to grow.

I will start with my very talented, generous and friendly gardener Professor Gerhard Andersson for giving me the opportunity to complete my dissertation at the Linköping University's Unit of Clinical and Social psychology (CS). I will admit that during my doctoral studies, I have sometimes had the need to be taken care of like an orchid, while sometimes I might have behaved like a dandelion. As a PhD student I have tried to find balance in a situation where you are expected to be self-sustaining, but still be/are dependent on others, especially your supervisor. It is not an easy situation for a supervisor or for the supervisee. Gerhard, THANKS for your support and encouragement to continue working on my dissertation, especially at the time when I did stop working on my thesis and prioritized my regular clinical duties. Thanks for your patience and for all the light, especially when the darkness was taking over me and for all the nutrients that quenched my thirst/hunger during this time.

This thesis was partly the fruit of KLARA-project that started in 2005. KLARA-project was sponsored in part by a grant from the Swedish Research Council to Professor Gerhard Andersson. I will therefore extend a big THANKS to Swedish Research Council and the members of KLARA-projects research group: Kristofer Vernmark, Jan Lenndin, Jonas Bjärehed, Mattias Carlsson, Johan Karlsson, Jorgen Oberg, Professor Per Carlbring and dr. Thomas Eriksson, for their exemplary cooperation and that I could take part in the project and for shared data collection.

I will also like to THANK my co-author, Ph.D-student Jonas Bjärehed, Ph.D-student Hugo Hesser, Study nurse Hazel Holmberg Forsyth, University lecturer Karin Forslund Frykedal and Professor Staffan Larsson for a valuable collaboration in various ways and at different stages of my dissertation. It was a great pleasure to work with you all.

To my great joy and gratitude I received permission and support from my previous chief Stellan Svensson at the Department of Psychiatry in Norrköping where I worked towards the beginning of my studies and my current chief dr Bengt Olof Bengtsson and Ann-Sofie Ringkvist at the Department of Adult Psychiatry, University Hospital, Linköping. Their support was essential for me to be able to start my PhD-studies and I am enormously grateful for this opportunity. THANKS even to all my lovely colleagues at the Department of Psychiatry in both Norrköping, Linköping for all kindness and support.

Great THANKS also to associate professor Dr Ina Marteinsdottir, Uuniversity Lecturer Björn Philips, University Lecturer Malin Gren Landell, Associate Professor Ingrid Hylander and Associate Professor Lars-Håkan Thorell for reading all or parts of my manuscript and giving me valuable feedback. I am very grateful and deeply appreciate your very valuable advice, opinions and assistance. Furthermore, I would like to convey my appreciation to all participants that voluntarily took part in the studies and contributed to increased understanding of the phenomenon and future thinking on depression.

Special THANKS to Professor Emeritus Larry Lundgren for a very careful proof-reading of my thesis. THANKS even to Farideh Zebarjad and Fereidon Bahramian for the very aesthetic book cover.

THANKS to the IBL's very pleasant and knowledgeable administrators Linda Snecker, Ellinor Sellgren, Åsa Wrede, Isa Lundgren, Britt-Marie Alfredsson-Svensson and Tobias Lindberg for all help with formalities. Special THANKS to Anna Bäcklin Lindén for her kindness and help with proof reading of parts of the theses.

My dear colleagues and friends: Eva Hammar Chiriac, Erika Viklund, Maria Jannert, Johan Näslund, Catharine Lidberg, Per-Olof Svedin, Ann-Charlotte Hermansson, Chato Rasoal, Charlotta Einarsson, Gunvor Larsson Abbad, Annet Sundqvist, Ulrika Birberg Thornberg, Lars Back, Michael Rosander, Robert Johansson, Lise Bergman Nordgren, Kristin Silfvernagel, Hoa Ly, Jesper Dagöö, Kristoffer N T Månsson, Jakob Dahl, Henrik Danielsson, Nina Bendelin, Clara Möller, Elisabet Classon, Jerker Rönnberg, Björn Lyxell, Rolf Sandell, Rolf Holmqvist, Doris Nilsson, Anna Malmquist, Börje Lech, Sofia Johnson Frankenberg, Tomas Carlsson, Maliheh Taheri, Helena Mårtensson, Linnéa Rosell Olsson, Rebecca Alamaa, Erica Skagius Ruiz, Viktor Kaldo, Jan Grenerfors, Monica Grenerfors, Hanna Grenerfors, Alireza Ghodosi, Fatemeh Sedaghat, Alireza and Sofia Assadi, Alireza ale Mansour, Nilofar Rahimipour, Afsaneh Roshanaie, Rahman and Freshteh Mokhtari, Massod and Sepideh Mafan, Nader and Shala Mirlashari, Sanat and Soheila Janati, Srinivas and Karin Uppugunduri, Narmin Khobehi and Massod Kamali, Padideh Davoodpour, Nima Salari, Åsa Fors, Elisabeth Nilsson-jobs, Margita Palmqvist, Helena P Söderström, Marita Thoren and Ove Almkvist THANKS for all support, kindness, many interesting, creative and valuable conversations and all the knowledge you brought me. I do appreciate our friendship and all the intellectual and/or psychosocial support from all of you.

Enormous THANKS to the lovely members of Procedo network and the members of southern Red Cross circuit in Linköping and its board for all the support.

Finally, I want to thanks my nearest and dearest Faraj, Esmail, Fatemeh, Nasrin, Arash, Bahar and Luna Sarkohi, Farideh Zebarjad, Siamak, Sheida, Soheila, Soudi, Sassan, Pouneh Bastami, Ozra Habibolahzadeh, Sabine Kalinock, Barbro and Helge Wahlberg. I wish that my lovely parents and my brother Akbar were alive and here today to share my joy. I miss you enormously. My deepest gratitude goes to my loyal, supporting and loving family: Salumeh Bastami, Aydin and Ayda Sarkohi without whose support and sacrifice I do not know what had happened to my thesis. Enormous THANKS!

REFERENCES

- Abbass, A., & Driessen, E. (2010). The efficacy of short-term psychodynamic psychotherapy for depression: a summary of recent findings. *Acta Psychiatrica Scandinavica*, 121(5), 398; author reply 398-399.
- Abramson, L. Y., Metalsky, G. I., & Alloy, L. B. (1989). Hopelessness Depression: A Theory-Based Subtype of Depression. *Psychological Review*, 96(2), 358-372.
- Ahlberg, A. C., Ljung, T., Rosmond, R., McEwen, B., Holm, G., Akesson, H. O., & Bjorntorp, P. (2002). Depression and anxiety symptoms in relation to anthropometry and metabolism in men. *Psychiatry Research*, 112(2), 101-110.
- Alexopoulos, G. S., Buckwalter, K., Olin, J., Martinez, R., Wainscott, C., & Krishnan, K. R. (2002). Comorbidity of late life depression: an opportunity for research on mechanisms and treatment. *Biological Psychiatry*, 52(6), 543-558.
- Alexopoulos, G. S., Meyers, B. S., Young, R. C., Campbell, S., Silbersweig, D., & Charlson, M. (1997). 'Vascular depression' hypothesis. *Archives of General Psychiatry*, 54(10), 915-922.
- Altshuler, L. L., Bartzokis, G., Grieder, T., Curran, J., & Mintz, J. (1998). Amygdala enlargement in bipolar disorder and hippocampal reduction in schizophrenia: an MRI study demonstrating neuroanatomic specificity. *Archives of General Psychiatry*, 55(7), 663-664.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders (4th ed., text revision ed.)*. Washington, DC: American Psychiatric Press.
- Anderson, A. K. (2005). Affective influences on the attentional dynamics supporting awareness. *Journal of Experimental Psychology: General, 134*(2), 258-281.
- Anderson, I. M. (1998). SSRIS versus tricyclic antidepressants in depressed inpatients: a meta-analysis of efficacy and tolerability. *Depression and Anxiety*, 7 Suppl 1, 11-17.
- Anderson, I. M. (2000). Selective serotonin reuptake inhibitors versus tricyclic antidepressants: a meta-analysis of efficacy and tolerability. *Journal of Affective Disorders*, 58(1), 19-36.
- Andersson, G. (2009). Using the Internet to provide cognitive behaviour therapy. *Behaviour Research and Therapy*, 47(3), 175-180. doi: S0005-7967(09)00029-1
- Andersson, G., Bergström, J., Holländare, F., Carlbring, P., Kaldo, V., & Ekselius, L. . (2005). Internet-based self-help for depression: a randomised controlled trial. *British Journal of Psychiatry*, 187, 456-461.
- Andersson, G., & Cuijpers, P. (2009). Internet-based and other computerized psychological treatments for adult depression: a meta-analysis. *Cogn Behav Ther*, *38*(4), 196-205.
- Andersson, G., Kyrre Svalastog, O., Kaldo, V., & Sarkohi, A. (2007). Future thinking in tinnitus patients. *Journal of Psychosomatic Research*, 63(2), 191-194.
- Angold, A., Costello, E. J., & Worthman, C. M. (1998). Puberty and depression: the roles of age, pubertal status and pubertal timing. *Psychological Medicine*, 28(1), 51-61.
- Angst, J., & Preisig, M. (1995). Course of a clinical cohort of unipolar, bipolar and schizoaffective patients. Results of a prospective study from 1959 to 1985. Schweizer Archiv fur Neurologie und Psychiatrie, 146(1), 5-16.
- Angst, J., & Preisig, M. (1995). Outcome of a clinical cohort of unipolar, bipolar and schizoaffective patients. Results of a prospective study from 1959 to 1985. Schweizer Archiv fur Neurologie und Psychiatrie, 146(1), 17-23.
- Bandura, A. (1979). Self-efficacy: Toward a unifying theory of behavioural change. . 84, pp. 191–215. . *Psychoticall. Review* 84, 191-215.
- Bandura, A (1986). *Social Foundations of Thought and Action*. Englewood Cliffs, NJ: Prentice-Hall.

- Barbui, C., & Hotopf, M. (2001). Amitriptyline v. the rest: still the leading antidepressant after 40 years of randomised controlled trials. *British Journal of Psychiatry*, 178, 129-144.
- Bazin, N., Perruchet, P., De Bonis, M., & Feline, A. (1994). The dissociation of explicit and implicit memory in depressed patients. *Psychological Medicine*, *24*(1), 239-245.
- Bech, P., Cialdella, P., Haugh, M. C., Birkett, M. A., Hours, A., Boissel, J. P., & Tollefson, G. D. (2000). Meta-analysis of randomised controlled trials of fluoxetine v. placebo and tricyclic antidepressants in the short-term treatment of major depression. *British Journal of Psychiatry*, 176, 421-428.
- Bech, P., Tanghoj, P., Andersen, H. F., & Overo, K. (2002). Citalopram dose-response revisited using an alternative psychometric approach to evaluate clinical effects of four fixed citalopram doses compared to placebo in patients with major depression. *Psychopharmacology*, 163(1), 20-25.
- Beck, A. T, & Alford, B. A. (2009). *Depression : causes and treatment (2nd ed.)*. Philadelphia: University of Pennsylvania Press.
- Beck, A. T., Epstein, N., Brown, G., & Steer, R. A. (1988). An inventory for measuring clinical anxiety: psychometric properties. *Journal of Consulting and Clinical Psychology*, 56(6), 893-897.
- Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979). *Cognitive therapy of depression*. New York: Guilford press.
- Beck, A. T., Ward, C. H., Mendelson, M., Mock, J., & Erbaugh, J. (1961). An inventory for measuring depression. Archives of General Psychiatry, 4, 561-571.
- Beck, A.T. (1987). Cognitive models of depression. *Journal of Cognitive Psychotherapy*, 1 (!), 5-37.
- Beck, A.T., Steer, R.A., & Garbin, M.G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review*, 8, 77-100.
- Beekman, A. T., Copeland, J. R., & Prince, M. J. (1999). Review of community prevalence of depression in later life. *British Journal of Psychiatry*, 174, 307-311.
- Beekman, A. T., de Beurs, E., van Balkom, A. J., Deeg, D. J., van Dyck, R., & van Tilburg, W. (2000). Anxiety and depression in later life: Co-occurrence and communality of risk factors. *American Journal of Psychiatry*, 157(1), 89-95.
- Beekman, A. T., Deeg, D. J., Braam, A. W., Smit, J. H., & Van Tilburg, W. (1997). Consequences of major and minor depression in later life: a study of disability, wellbeing and service utilization. *Psychological Medicine*, 27(6), 1397-1409.
- Begley, C. E., Annegers, J. F., Swann, A. C., Lewis, C., Coan, S., Schnapp, W. B., & Bryant-Comstock, L. (2001). The lifetime cost of bipolar disorder in the US: an estimate for new cases in 1998. *Pharmacoeconomics*, 19(5 Pt 1), 483-495.
- Bench, C. J., Friston, K. J., Brown, R. G., Scott, L. C., Frackowiak, R. S., & Dolan, R. J. (1992). The anatomy of melancholia--focal abnormalities of cerebral blood flow in major depression. *Psychological Medicine*, 22(3), 607-615.
- Bibring, E (Ed.). (1953). The mechanisms of depression. I: Greenacre, P. (red.): Affektive disorders. New York: Internat. Univ. press.
- Bishop, S. J. (2007). Neurocognitive mechanisms of anxiety: an integrative account. *Trends Cogn Sci*, *11*(7), 307-316.
- Blaney, P. H. (1986). Affect and memory: a review. Psychological Bulletin, 99(2), 229-246.
- Blatt, S. J, & Zuroff, D. C. (1992). Interpersonal relatedness and self-definitions: Two prototypes for depression. *Clinical Psychology Review*, 12, 527-562.
- Blazer, D. G. (2003). Depression in late life: review and commentary. Journals of Gerontology. Series A, Biological Sciences and Medical Sciences, 58(3), 249-265.

Bowers, J. S., & Schacter, D. L. (1990). Implicit memory and test awareness. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 16*(3), 404-416.

- Bradley, B. P., Mogg, K., & Millar, N. (1996). Implicit memory bias in clinical and nonclinical depression. *Behaviour Research and Therapy*, 34(11-12), 865-879.
- Broberg, A, Granqvist, P, Ivarsson, T, & Risholm Mothander, P. (2007). *Anknytningsteori*. *Betydelsen av nära känslomässiga relationer*. Stockholm: Natur och Kultur.
- Brown, S. A., Inaba, R. K., Gillin, J. C., Schuckit, M. A., Stewart, M. A., & Irwin, M. R. (1995). Alcoholism and affective disorder: clinical course of depressive symptoms. *American Journal of Psychiatry*, 152(1), 45-52.
- Burnand, Y., Andreoli, A., Kolatte, E., Venturini, A., & Rosset, N. (2002). Psychodynamic psychotherapy and clomipramine in the treatment of major depression. *Psychiatric Services*, 53(5), 585-590.
- Busch, F, Rudden, M, & Shapiro, D. (2004). *Psychodynamic treatment of depression* Washington: American Psychiatric Publishing, Inc.
- Canning, S., Waterman, M., Orsi, N., Ayres, J., Simpson, N., & Dye, L. (2010). The efficacy of Hypericum perforatum (St John's wort) for the treatment of premenstrual syndrome: a randomized, double-blind, placebo-controlled trial. *CNS Drugs*, 24(3), 207-225.
- Carek, P. J., Laibstain, S. E., & Carek, S. M. (2011). Exercise for the treatment of depression and anxiety. *International Journal of Psychiatry in Medicine*, *41*(1), 15-28.
- Carlbring, P., Brunt, S., Bohman, S., Austin, D., Richards, J., Öst, L. G., & Andersson, G. (2007). Internet vs. paper and pencil administration of questionnaires commonly used in panic/agoraphobia research. *Computers in Human Behavior*, 23(3), 1421-1434.
- Charmaz, K. . (2006). Constructing grounded theory: A practical guide through qualitative analysis. *London: Sage Publications*.
- Chen, Y., Jiang, T., Chen, P., Ouyang, J., Xu, G., Zeng, Z., & Sun, Y. (2011). Emerging tendency towards autoimmune process in major depressive patients: a novel insight from Th17 cells. *Psychiatry Research*, 188(2), 224-230.
- Colombel, F. (2007). [Memory bias and depression: a critical commentary]. *Encephale, 33*(3 Pt 1), 242-248.
- Conaghan, S., & Davidson, K. M. (2002). Hopelessness and the anticipation of positive and negative future experiences in older parasuicidal adults. *British Journal of Clinical Psychology*, 41(3), 233-242.
- Cronholm, B., & Ottosson, J. O. (1961). Memory functions in endogenous depression before and after electroconvulsive therapy. *Archives of General Psychiatry*, *5*, 193-199.
- Cuijpers, P., Geraedts, A. S., van Oppen, P., Andersson, G., Markowitz, J. C., & van Straten, A. (2011). Interpersonal Psychotherapy for Depression: A Meta-Analysis. *American Journal of Psychiatry*.
- Cuijpers, P., van Straten, A., & Andersson, G. (2008). Internet-administered cognitive behavior therapy for health problems: a systematic review. *J Behav Med*, *31*(2), 169-177.
- Cuijpers, P., van Straten, A., Hollon, S. D., & Andersson, G. (2010). The contribution of active medication to combined treatments of psychotherapy and pharmacotherapy for adult depression: a meta-analysis. *Acta Psychiatrica Scandinavica*, 121(6), 415-423.
- Cuijpers, P., van Straten, A., van Schaik, A., & Andersson, G. (2009). Psychological treatment of depression in primary care: a meta-analysis. *British Journal of General Practice*, 59(559), e51-60.
- Cuijpers, P., van Straten, A., Warmerdam, L., & Andersson, G. (2008). Psychological treatment of depression: a meta-analytic database of randomized studies. *BMC Psychiatry*, 8, 36.

- Cuijpers, P., van Straten, A., Warmerdam, L., & Andersson, G. (2009). Psychotherapy versus the combination of psychotherapy and pharmacotherapy in the treatment of depression: a meta-analysis. *Depression and Anxiety*, 26(3), 279-288.
- Cullberg, J. (1993). Dynamisk psykiatri (4:e rev. uppl.). Stockholm: Natur och Kultur.
- Dalgleish, T., & Brewin, C. R. (2007). Autobiographical memory and emotional disorder: a special issue of Memory. *Memory*, 15(3), 225-226.
- Dalgleish, T., Tchanturia, K., Serpell, L., Hems, S., Yiend, J., de Silva, P., & Treasure, J. (2003). Self-reported parental abuse relates to autobiographical memory style in patients with eating disorders. *Emotion*, 3(3), 211-222.
- Danion, J. M., Willard-Schroeder, D., Zimmermann, M. A., Grange, D., Schlienger, J. L., & Singer, L. (1991). Explicit memory and repetition priming in depression. Preliminary findings. Archives of General Psychiatry, 48(8), 707-711.
- Davidson, R. J., Pizzagalli, D., Nitschke, J. B., & Putnam, K. (2002). Depression: perspectives from affective neuroscience. *Annual Review of Psychology*, 53, 545-574.
- Davis, L., Uezato, A., Newell, J. M., & Frazier, E. (2008). Major depression and comorbid substance use disorders. *Current Opinion in Psychiatry*, 21(1), 14-18.
- de Jong-Meyer, R, Kuczmera, A, & Tripp, J. (2007). The impact of mood induction on the accessibility of positive and negative future events in a group of dysphoric adolescent in-patients. *Br J Clin Psychol*, *46*, 371-376.
- de Jong-Meyer, R., Kuczmera, A., & Tripp, J. (2007). The impact of mood induction on the accessibility of positive and negative future events in a group of dysphoric adolescent in-patients. *British Journal of Clinical Psychology*, *46*(3), 371-376.
- Dolan, R. J., Bench, C. J., Brown, R. G., Scott, L. C., & Frackowiak, R. S. (1994). Neuropsychological dysfunction in depression: the relationship to regional cerebral blood flow. *Psychological Medicine*, 24(4), 849-857.
- Drevets, W. C. (2000). Neuroimaging studies of mood disorders. *Biological Psychiatry*, 48(8), 813-829.
- Driessen, E., Cuijpers, P., de Maat, S. C., Abbass, A. A., de Jonghe, F., & Dekker, J. J. (2010). The efficacy of short-term psychodynamic psychotherapy for depression: a meta-analysis. *Clinical Psychology Review*, 30(1), 25-36.
- Duncan, S., & Barrett, L. F. (2007). Affect is a form of cognition: A neurobiological analysis. Cogn Emot, 21(6), 1184-1211.
- Dunn, J.C., & Kirsner, k. (Eds.). (1989). Implicit memory: Task or process? In S. Lewandowsky, J. C. Dunn, & K. Kirsner (Eds.), Implicit memory: Theoretical issues. Hillsdale, NJ: Erlbaum.
- Edwards, J. G., & Anderson, I. (1999). Systematic review and guide to selection of selective serotonin reuptake inhibitors. *Drugs*, 57(4), 507-533.
- Elliott, C. L., & Greene, R. L. (1992). Clinical depression and implicit memory. *Journal of Abnormal Psychology*, *101*(3), 572-574.
- Elliott, R. (1998). The neuropsychological profile in unipolar depression. *Trends Cogn Sci*, 2(11), 447-454.
- Ellis, A. (1987). A sadly neglected cognitive element of depression. *Cognitive Therapy and Research 11*, 121-145.
- Emmanuel, J., Simmonds, S., & Tyrer, P. (1998). Systematic review of the outcome of anxiety and depressive disorders. *British Journal of Psychiatry. Supplement*(34), 35-41.
- Entsuah, A. R., Rudolph, R. L., & Chitra, R. (1995). Effectiveness of venlafaxine treatment in a broad spectrum of depressed patients: a meta-analysis. *Psychopharmacology Bulletin*, 31(4), 759-766.

- Farabaugh, A., Mischoulon, D., Fava, M., Guyker, W., & Alpert, J. (2004). The overlap between personality disorders and major depressive disorder (MDD). *Annals of Clinical Psychiatry*, 16(4), 217-224.
- Fergusson, D. M., & Woodward, L. J. (2002). Mental health, educational, and social role outcomes of adolescents with depression. *Archives of General Psychiatry*, 59(3), 225-231.
- First, M.B., Gibbon, M., Spitzer, R.L., & Williams, J.B.W. (1997). Structured clinical interview for DSM-IV Axis I Disorders (SCID-I). Washington, D.C: American Psychiatric Press.
- Freeman, A, J, Pretzner., B, Fleming., & K.M, Simon. (1994). Kognitiv psykoterapi i klinisk tillämpning. Danderyd: Pilgrim Press.
- Freud, A. (1980). Jaget och dess försvarsmekanismer. Stockholm: Natur och Kultur.
- Freud, S. (1917/2008). Sorg och melankoli (E. Backelin, Trans.). In Metapsykologi. Stockholm: Natur och Kultur.
- Frisch, M. B, Cornell, J, Villanueva, M, & Retzlaff, P. J. (1992). Clinical validation of the Quality Of Life Inventory: A measure of life satisfaction for use in treatment planning and outcome assessment. *Psychological Assessment*, 4, 92-101.
- Furler, J., Kokanovic, R., Dowrick, C., Newton, D., Gunn, J., & May, C. (2010). Managing depression among ethnic communities: a qualitative study. *Annals of Family Medicine*, 8(3), 231-236.
- Furukawa, T. A., Kitamura, T., & Takahashi, K. (2000). Time to recovery of an inception cohort with hitherto untreated unipolar major depressive episodes. *British Journal of Psychiatry*, 177, 331-335.
- Ganguli, M., Dodge, H. H., & Mulsant, B. H. (2002). Rates and predictors of mortality in an aging, rural, community-based cohort: the role of depression. *Archives of General Psychiatry*, 59(11), 1046-1052.
- Gask, L., Ludman, E., & Schaefer, J. (2006). Qualitative study of an intervention for depression among patients with diabetes: how can we optimize patient-professional interaction? *Chronic Illness*, 2(3), 231-242.
- Gilovich, T, & Griffin, D (Eds.). (2002). *Heuristics and Biases: Then and Now. In Thomas Gilovich, Dale Griffin, Daniel Kahneman. Heuristics and Biases:* . Cambridge: Cambridge University Press.
- Glaser, B.G. (1978). Theoretical sensitivity. Mill Valley: The Sociology Press.
- Glaser, B.G, & Strauss, A. (1967). The discovery of grounded theory: Strategies for qualitative research. (New York: Aldine de Gruyter.).
- Godley, J., Tchanturia, K., MacLeod, A., & Schmidt, U. (2001). Future-directed thinking in eating disorders. *British Journal of Clinical Psychology*, 40(3), 281-295.
- Gotlib, I. H, & Hammen, C. L. (2009). *Handbook of depression (2nd ed.)* New York: Guilford Press.
- Graf, P., & Schacter, D. L. (1985). Implicit and explicit memory for new associations in normal and amnesic subjects. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 11(3), 501-518.
- Gray, J. R., Braver, T. S., & Raichle, M. E. (2002). Integration of emotion and cognition in the lateral prefrontal cortex. *Proceedings of the National Academy of Sciences of the United States of America*, 99(6), 4115-4120.
- Greenberg, P. E., Stiglin, L. E., Finkelstein, S. N., & Berndt, E. R. (1993). The economic burden of depression in 1990. *Journal of Clinical Psychiatry*, *54*(11), 405-418.
- Hagnell, O., Ojesjo, L., Otterbeck, L., & Rorsman, B. (1994). Prevalence of mental disorders, personality traits and mental complaints in the Lundby Study. A point prevalence study of the 1957 Lundby cohort of 2,612 inhabitants of a geographically defined area

who were re-examined in 1972 regardless of domicile. *Scandinavian Journal of Social Medicine. Supplementum, 50*, 1-77.

- Hamilton, M. (1960). A rating scale for depression. *Journal of Neurology, Neurosurgery and Psychiatry*, 23, 56-62.
- Hammen, C. (2005). Stress and depression. Annu Rev Clin Psychol, 1, 293-319.
- Hansen, P. E., Wang, A. G., Stage, K. B., & Kragh-Sorensen, P. (2003). Comorbid personality disorder predicts suicide after major depression: a 10-year follow-up. Acta Psychiatrica Scandinavica, 107(6), 436-440.
- Harris, E. C., & Barraclough, B. (1998). Excess mortality of mental disorder. *British Journal of Psychiatry*, 173, 11-53.
- Hartlage, S., Alloy, L. B., Vazquez, C., & Dykman, B. (1993). Automatic and effortful processing in depression. *Psychological Bulletin*, *113*(2), 247-278.
- Hasin, D. S., & Grant, B. F. (2002). Major depression in 6050 former drinkers: association with past alcohol dependence. *Archives of General Psychiatry*, 59(9), 794-800.
- Hasler, G., Drevets, W. C., Manji, H. K., & Charney, D. S. (2004). Discovering endophenotypes for major depression. *Neuropsychopharmacology*, 29(10), 1765-1781.
- Hertel, P. T., & Hardin, T. S. (1990). Remembering with and without awareness in a depressed mood: evidence of deficits in initiative. *Journal of Experimental Psychology: General*, 119(1), 45-59.
- Hirschfeld, R. M. (1999). Personality disorders and depression: comorbidity. *Depression and Anxiety*, *10*(4), 142-146.
- Hollandare, F., Johnsson, S., Randestad, M., Tillfors, M., Carlbring, P., Andersson, G., & Engstrom, I. (2011). Randomized trial of Internet-based relapse prevention for partially remitted depression. *Acta Psychiatrica Scandinavica*.
- Hunter, E. C., & O'Connor, R. C. (2003). Hopelessness and future thinking in parasuicide: The role of perfectionism. *British Journal of Clinical Psychology*, 42(4), 355-365.
- Johnston, O., Kumar, S., Kendall, K., Peveler, R., Gabbay, J., & Kendrick, T. (2007). Qualitative study of depression management in primary care: GP and patient goals, and the value of listening. *British Journal of General Practice*, 57(544), 872-879.
- Kahneman, D, & Frederick, S (Eds.). (2002). Representativeness Revisited: Attribute Substitution in Intuitive Judgment", in Thomas Gilovich, Dale Griffin, Daniel Kahneman, Heuristics and Biases: . Cambridge: Cambridge University Press.
- Keller, M. B., Lavori, P. W., Mueller, T. I., Endicott, J., Coryell, W., Hirschfeld, R. M., & Shea, T. (1992). Time to recovery, chronicity, and levels of psychopathology in major depression. A 5-year prospective follow-up of 431 subjects. *Archives of General Psychiatry*, 49(10), 809-816.
- Keller, M. B., Shapiro, R. W., Lavori, P. W., & Wolfe, N. (1982). Recovery in major depressive disorder: analysis with the life table and regression models. *Archives of General Psychiatry*, 39(8), 905-910.
- Kendler, K. S., Heath, A. C., Neale, M. C., Kessler, R. C., & Eaves, L. J. (1993). Alcoholism and major depression in women. A twin study of the causes of comorbidity. *Archives* of General Psychiatry, 50(9), 690-698.
- Kendler, K. S., Kessler, R. C., Walters, E. E., MacLean, C., Neale, M. C., Heath, A. C., & Eaves, L. J. (1995). Stressful life events, genetic liability, and onset of an episode of major depression in women. *American Journal of Psychiatry*, 152(6), 833-842.
- Kennedy, N., Abbott, R., & Paykel, E. S. (2003). Remission and recurrence of depression in the maintenance era: long-term outcome in a Cambridge cohort. *Psychological Medicine*, 33(5), 827-838.

- Kessler, R. C., Berglund, P., Demler, O., Jin, R., Koretz, D., Merikangas, K. R., . . . Wang, P. S. (2003). The Epidemiology of Major Depressive Disorder: Results from the National Comorbidity Survey Replication (NCS-R). *Journal of the American Medical Association*, 289(23), 3095-3105.
- Kessler, R. C., Nelson, C. B., McGonagle, K. A., Liu, J., Swartz, M., & Blazer, D. G. (1996). Comorbidity of DSM-III-R major depressive disorder in the general population: results from the US National Comorbidity Survey. *British Journal of Psychiatry*. *Supplement*(30), 17-30.
- Kiloh, L. G., Andrews, G., & Neilson, M. (1988). The long-term outcome of depressive illness. *British Journal of Psychiatry*, 153, 752-757.
- Klein, D. N., Shankman, S. A., & Rose, S. (2006). Ten-year prospective follow-up study of the naturalistic course of dysthymic disorder and double depression. *American Journal* of Psychiatry, 163(5), 872-880.
- Klinger, T. (1993). The persistence of haplodiploidy in algae. *Trends Ecol Evol, 8*(7), 256-258.
- Kosel, M., Brockmann, H., Frick, C., Zobel, A., & Schlaepfer, T. E. (2011). Chronic vagus nerve stimulation for treatment-resistant depression increases regional cerebral blood flow in the dorsolateral prefrontal cortex. *Psychiatry Research*, 191(3), 153-159.
- Kosel, M., & Schlaepfer, T. E. (2002). Mechanisms and state of the art of vagus nerve stimulation. *Journal of ECT, 18*(4), 189-192.
- Kremers, I. P., Spinhoven, P., & Van der Does, A. J. (2004). Autobiographical memory in depressed and non-depressed patients with borderline personality disorder. *British Journal of Clinical Psychology*, 43(Pt 1), 17-29. doi: 10.1348/014466504772812940
- Kring, A.M, Johnson, S.L, Davison, G.C, & Neale, J.M. (2010). *Abnormal psychology, Eleventh Edition*. Hoboken, NJ: Wiley.
- Kunda, Z. (1990). The case for motivated reasoning. Psychological Bulletin, 108(3), 480-498.
- Lamers, F., van Oppen, P., Comijs, H. C., Smit, J. H., Spinhoven, P., van Balkom, A. J., ... Penninx, B. W. (2011). Comorbidity patterns of anxiety and depressive disorders in a large cohort study: the Netherlands Study of Depression and Anxiety (NESDA). *Journal of Clinical Psychiatry*, 72(3), 341-348.
- Lavender, A, & Watkins, E. (2004). Ruminations and future thinking in depression. Br J Clin Psychol, 43, 129-142.
- Lavender, A., & Watkins, E. (2004). Rumination and future thinking in depression. *British Journal of Clinical Psychology*, 43(2), 129-142.
- Lecrubier, Y., Clerc, G., Didi, R., & Kieser, M. (2002). Efficacy of St. John's wort extract WS 5570 in major depression: a double-blind, placebo-controlled trial. *American Journal* of Psychiatry, 159(8), 1361-1366.
- Lepine, J. P., Gastpar, M., Mendlewicz, J., & Tylee, A. (1997). Depression in the community: the first pan-European study DEPRES (Depression Research in European Society). *International Clinical Psychopharmacology*, 12(1), 19-29.
- Leventhal, H, & Scherer, K.R (1987). The relationship of emotion to cognition: A functional approach to a semantic controversy. *Cognition & Emotion 1*, 3-28.
- Lewinsohn, P. M, Hoberman, H, Teri, L, & Hautzinger, M (Eds.). (1985). An integrative theory of depression. In: S. Reiss, & R. R. Bootzin (Eds.), Theoretical issues in behavior therapy. San Diego, CA: Academic Press.
- Lewinsohn, P.M, Clarke, G.N, Hops, H, & Andrews, J. (1990). Cognitive Behavioral Treatment for Depressed Adolescents. *BehaviorTherapy*, *21*, 385-401.
- Lewinsohn, P.M, & Gotlib, I.H (Eds.). (1995). Behavioral therapy and treatment of depression. In E. E. Beckman & W. R. Leber (Eds.). Handbook of depression. New York: Guilford.

- Lewinsohn, P.M, Sullivan, J.M, & Grosscup, S.J. (1980). Changing reinforcing events: An approach to the treatment of depression. *Psychotherapy: Theory, Research, and Practice*, 47, 322-334.
- Lewy, A. J., & Sack, R. L. (1986). Light therapy and psychiatry. Proceedings of the Society for Experimental Biology and Medicine, 183(1), 11-18.
- Lezak, M. D. (1995). *Neuropsychological Assessment (3 ed)*. New York: Oxford university press.
- Liappas, J., Paparrigopoulos, T., Tzavellas, E., & Christodoulou, G. (2002). Impact of alcohol detoxification on anxiety and depressive symptoms. *Drug and Alcohol Dependence*, 68(2), 215-220.
- Luby, J. L., Heffelfinger, A. K., Mrakotsky, C., Brown, K. M., Hessler, M. J., Wallis, J. M., & Spitznagel, E. L. (2003). The clinical picture of depression in preschool children. *Journal of the American Academy of Child and Adolescent Psychiatry*, 42(3), 340-348.
- Ma, S. H., & Teasdale, J. D. (2004). Mindfulness-based cognitive therapy for depression: replication and exploration of differential relapse prevention effects. *Journal of Consulting and Clinical Psychology*, 72(1), 31-40.
- MacKinnon, D. F., Jamison, K. R., & DePaulo, J. R. (1997). Genetics of manic depressive illness. *Annual Review of Neuroscience*, 20, 355-373.
- MacLeod, A. K. (1999). Prospective cognitions. Handbook of Cognition and Emotion, 267-280.
- MacLeod, A. K., & Byrne, A. (1996). Anxiety, depression, and the anticipation of future positive and negative experiences. *Journal of Abnormal Psychology*, 105(2), 286-289.
- MacLeod, A. K., & Conway, C. (2005). Well-being and the anticipation of future positive experiences: The role of income, social networks, and planning ability. *Cognition and Emotion*, 19(3), 357-374.
- MacLeod, A. K., Pankhania, B., Lee, M., & Mitchell, D. (1997). Parasuicide, depression and the anticipation of positive and negative future experiences. *Psychological Medicine*, 27(4), 973-977.
- MacLeod, A. K., Rose, G. S., & Williams, J. M. G. (1993). Components of hopelessness about the future in parasuicide. *Cognitive Therapy and Research*, 17(5), 441-455.
- MacLeod, A. K., & Salaminiou, E. (2001). Reduced positive future-thinking in depression: Cognitive and affective factors. *Cognition and Emotion*, 15(1), 99-107.
- MacLeod, A. K., Tata, P., Evans, K., Tyrer, P., Schmidt, U., Davidson, K., Catalan, J. (1998). Recovery of positive future thinking within a high-risk parasuicide group: Results from a pilot randomized controlled trial. *British Journal of Clinical Psychology*, 37(4), 371-379.
- MacLeod, A. K., Tata, P., Kentish, J., & Jacobsen, H. (1997). Retrospective and Prospective Cognitions in Anxiety and Depression. *Cognition and Emotion*, 11(4), 467-479.
- MacLeod, A. K., Tata, P., Tyrer, P., Schmidt, U., Davidson, K., & Thompson, S. (2004). Personality disorder and future-directed thinking in parasuicide. *Journal of Personality Disorders*, 18(5), 459-466.
- MacLeod, C., & Moore, R. (2000). Positive thinking revisited: Positive cognitions, well-being and mental health. *Clinical Psychology and Psychotherapy*, *7*, 1-10.
- Malan, D. H. (1981). *Psykoterapi och psykodynamisk vetenskap*. Stockholm: Natur och Kultur.
- Martell, C.R., Addis, M.E., & Jacobson, N.S. (2001). Depression in context. Strategies for guided action. New York: W. W Norton.

- Martin, J. L., Barbanoj, M. J., Schlaepfer, T. E., Thompson, E., Perez, V., & Kulisevsky, J. (2003). Repetitive transcranial magnetic stimulation for the treatment of depression. Systematic review and meta-analysis. *British Journal of Psychiatry*, 182, 480-491.
- Martin, P. I., Naeser, M. A., Ho, M., Doron, K. W., Kurland, J., Kaplan, J., Pascual-Leone, A. (2009). Overt naming fMRI pre- and post-TMS: Two nonfluent aphasia patients, with and without improved naming post-TMS. *Brain and Language*, 111(1), 20-35.
- Mather, M., Shafir, E., & Johnson, M. K. (2000). Misremembrance of options past: source monitoring and choice. *Psychological Science*, 11(2), 132-138.
- McNally, L., Bhagwagar, Z., & Hannestad, J. (2008). Inflammation, glutamate, and glia in depression: a literature review. *CNS Spectr*, *13*(6), 501-510.
- Melartin, T. K., Rytsala, H. J., Leskela, U. S., Lestela-Mielonen, P. S., Sokero, T. P., & Isometsa, E. T. (2002). Current comorbidity of psychiatric disorders among DSM-IV major depressive disorder patients in psychiatric care in the Vantaa Depression Study. *Journal of Clinical Psychiatry*, 63(2), 126-134.
- Melges, F.T., & Bowlby, J. . (1969). Type of hopelessness in psychopathological process. *Archives of General Psychiatry*, 20, 690-699.
- Mendelson, M (Ed.). (1992). *Psychdynamics. In: E. S. Paykel, editor. Handbook of affective disorders.* New York: The Guilford Press.
- Merikangas, K. R., Angst, J., Eaton, W., Canino, G., Rubio-Stipec, M., Wacker, H., Kupfer, D. J. (1996). Comorbidity and boundaries of affective disorders with anxiety disorders and substance misuse: results of an international task force. *British Journal of Psychiatry. Supplement*(30), 58-67.
- Merikangas, K. R., Risch, N. J., & Weissman, M. M. (1994). Comorbidity and cotransmission of alcoholism, anxiety and depression. *Psychological Medicine*, 24(1), 69-80.
- Mervaala, E., Fohr, J., Kononen, M., Valkonen-Korhonen, M., Vainio, P., Partanen, K., Lehtonen, J. (2000). Quantitative MRI of the hippocampus and amygdala in severe depression. *Psychological Medicine*, 30(1), 117-125.
- Meyer, B., Berger, T., Caspar, F., Beevers, C. G., Andersson, G., & Weiss, M. (2009). Effectiveness of a novel integrative online treatment for depression (Depressi): randomized controlled trial. *Journal of Medical Internet Research*, 11(2), e15.
- Miles, H., MacLeod, A. K., & Pote, H. (2004). Retrospective and prospective cognitions in adolescents: Anxiety, depression, and positive and negative affect. *Journal of Adolescence*, 27(6), 691-701.
- Montgomery, S. A., & Asberg, M. (1979). A new depression scale designed to be sensitive to change. *British Journal of Psychiatry*, 134(4), 382-389.
- Moore, A. C., MacLeod, A. K., Barnes, D., & Langdon, D. W. (2006). Future-directed thinking and depression in relapsing-remitting multiple sclerosis. *Br J Health Psychol*, *11*(Pt 4), 663-675.
- Moritz, S., Birkner, C., Kloss, M., Jahn, H., Hand, I., Haasen, C., & Krausz, M. (2002). Executive functioning in obsessive-compulsive disorder, unipolar depression, and schizophrenia. *Archives of Clinical Neuropsychology*, 17(5), 477-483.
- Mueller, T. I., Keller, M. B., Leon, A. C., Solomon, D. A., Shea, M. T., Coryell, W., & Endicott, J. (1996). Recovery after 5 years of unremitting major depressive disorder. *Archives of General Psychiatry*, 53(9), 794-799.
- Nilzon, K.R. (1996). *Childhood depressive disorder: Social withdrawal, anxiety and familial aspects*. Göteborg: Göteborg University.
- Nolen-Hoeksema, S. (2007). *Abnormal Psychology, Fourth Edition*. New York: McGraw-Hill.

- O'Connor, R. C., Connery, H., & Cheyne, W. M. (2000). Hopelessness: The role of depression, future directed thinking and cognitive vulnerability. *Psychology, Health* and Medicine, 5(2), 155-161.
- Ochsner, K. N., & Gross, J. J. (2005). The cognitive control of emotion. *Trends Cogn Sci*, 9(5), 242-249.
- Ohayon, M. M., & Schatzberg, A. F. (2003). Using chronic pain to predict depressive morbidity in the general population. *Archives of General Psychiatry*, *60*(1), 39-47.
- Ohman, A., Flykt, A., & Esteves, F. (2001). Emotion drives attention: detecting the snake in the grass. *Journal of Experimental Psychology: General, 130*(3), 466-478.
- Olsson, G., & von Knorring, A. L. (1997). Beck's Depression Inventory as a screening instrument for adolescent depression in Sweden: gender differences. *Acta Psychiatrica Scandinavica*, 95(4), 277-282.
- Olsson, G., & von Knorring, A. L. (1997). Depression among Swedish adolescents measured by the self-rating scale Center for Epidemiology Studies-Depression Child (CES-DC). *European Child and Adolescent Psychiatry*, 6(2), 81-87.
- Perraton, L. G., Kumar, S., & Machotka, Z. (2010). Exercise parameters in the treatment of clinical depression: a systematic review of randomized controlled trials. *Journal of Evaluation in Clinical Practice*, 16(3), 597-604.
- Piccinelli, M., & Wilkinson, G. (2000). Gender differences in depression. Critical review. British Journal of Psychiatry, 177, 486-492.
- Pillemer, D. B. (2003). Directive functions of autobiographical memory: the guiding power of the specific episode. *Memory*, 11(2), 193-202.
- Pizzagalli, D., Pascual-Marqui, R. D., Nitschke, J. B., Oakes, T. R., Larson, C. L., Abercrombie, H. C., . . . Davidson, R. J. (2001). Anterior cingulate activity as a predictor of degree of treatment response in major depression: evidence from brain electrical tomography analysis. *American Journal of Psychiatry*, 158(3), 405-415.
- Raes, F., Hermans, D., Williams, J. M., Demyttenaere, K., Sabbe, B., Pieters, G., & Eelen, P. (2006). Is overgeneral autobiographical memory an isolated memory phenomenon in major depression? *Memory*, 14(5), 584-594.
- Rimlinger, B. (2010). [Depression and personality disorders: mutual influences]. *Encephale,* 36 Suppl 5, S123-126.
- Risold, P. Y., Thompson, R. H., & Swanson, L. W. (1997). The structural organization of connections between hypothalamus and cerebral cortex. *Brain Research. Brain Research Reviews*, 24(2-3), 197-254.
- Rodrigues, M., Patel, V., Jaswal, S., & de Souza, N. (2003). Listening to mothers: qualitative studies on motherhood and depression from Goa, India. *Social Science and Medicine*, 57(10), 1797-1806.
- Roediger, H. L., 3rd. (1990). Implicit memory. Retention without remembering. *American Psychologist*, *45*(9), 1043-1056.
- Roediger, H. L., 3rd, & McDermott, K. B. (1992). Depression and implicit memory: a commentary. *Journal of Abnormal Psychology*, 101(3), 587-591.
- Rorsman, B., Hagnell, O., & Lanke, J. (1983). Mortality and hidden mental disorder in the Lundby Study. Age-standardized death rates among mentally ill 'non-patients' in a total population observed during a 25-year period. *Neuropsychobiology*, 10(2-3), 83-89.
- Rutter, M., Tizard, J., Yule, W., Graham, P., & Whitmore, K. (1976). Research report: Isle of Wight Studies, 1964-1974. *Psychological Medicine*, 6(2), 313-332.
- Sackeim, H. A. (1999). The anticonvulsant hypothesis of the mechanisms of action of ECT: current status. *Journal of ECT*, 15(1), 5-26.

- Saver, B. G., Van-Nguyen, V., Keppel, G., & Doescher, M. P. (2007). A qualitative study of depression in primary care: missed opportunities for diagnosis and education. *Journal* of the American Board of Family Medicine, 20(1), 28-35.
- Saxena, S., Brody, A. L., Ho, M. L., Alborzian, S., Ho, M. K., Maidment, K. M., Baxter, L. R., Jr. (2001). Cerebral metabolism in major depression and obsessive-compulsive disorder occurring separately and concurrently. *Biol Psychiatry*, 50(3), 159-170.
- Schacter, D. L. (1999). The seven sins of memory. Insights from psychology and cognitive neuroscience. *American Psychologist*, 54(3), 182-203.
- Schlaepfer, T. E., Frick, C., Zobel, A., Maier, W., Heuser, I., Bajbouj, M., Hasdemir, M. (2008). Vagus nerve stimulation for depression: efficacy and safety in a European study. *Psychological Medicine*, 38(5), 651-661.
- Segal, D. L., Hersen, M., & Van Hasselt, V. B. (1994). Reliability of the Structured Clinical Interview for DSM-III-R: an evaluative review. *Comprehensive Psychiatry*, 35(4), 316-327.
- Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression*. New York: Routledge.
- Skinner, B.F. (1953). Science and human behavior. New York: Mammillan.
- Skodol, A. E., Stout, R. L., McGlashan, T. H., Grilo, C. M., Gunderson, J. G., Shea, M. T., Oldham, J. M. (1999). Co-occurrence of mood and personality disorders: a report from the Collaborative Longitudinal Personality Disorders Study (CLPS). *Depression and Anxiety*, 10(4), 175-182.
- Seligman, M.E.D. (1975). Helplessness: On Depression, Development and Death.San Francisco:W.H.Freeman.
- Smith, L., Walker, A., & Gilhooly, K. (2004). Clinical guidelines of depression: a qualitative study of GPs' views. *Journal of Family Practice*, 53(7), 556-561.
- Solomon, D. A., Keller, M. B., Leon, A. C., Mueller, T. I., Shea, M. T., Warshaw, M., Endicott, J. (1997). Recovery from major depression. A 10-year prospective follow-up across multiple episodes. *Archives of General Psychiatry*, 54(11), 1001-1006.
- Southwick, S. M., Vythilingam, M., & Charney, D. S. (2005). The psychobiology of depression and resilience to stress: implications for prevention and treatment. *Annu Rev Clin Psychol*, 1, 255-291.
- Spinelli, M.G, & Endicott, J. (2003). Controlle clinical trial of interpersonal psychotherapy versus parenting education program for depressed pregnant women. *Am J Psychiatry* 160(3), 555-562.
- Steketee, G., & Chambless, D.L. (1992). Methodological issues in prediction of treatment outcome. *Clinical Psychology Review*, *12*, 387-400.
- Stern, S.L. (2007). On solid ground: Essential properties for growing grounding theory. I A. Bryant & K. Charmaz (eds.), The SAGE handbook of grounded theory. Los Angeles: Sage Publication.
- Strauss, A., & Corbin, J. . (1998). *Basics of qualitative research (2nd ed.)*. Thousand Oak: Sage Publications.
- Svanborg, P., & Åsberg, M. (2001). A comparison between the Beck Depression Inventory (BDI) and the self-rating version of the Montgomery Åsberg Depression Rating Scale (MADRS). *Journal of Affective Disorders*, 64(2-3), 203-216.
- Swanson, L. W. (2000). Cerebral hemisphere regulation of motivated behavior. Brain Research, 886(1-2), 113-164.
- Swendsen, J. D., Merikangas, K. R., Canino, G. J., Kessler, R. C., Rubio-Stipec, M., & Angst, J. (1998). The comorbidity of alcoholism with anxiety and depressive disorders in four geographic communities. *Comprehensive Psychiatry*, 39(4), 176-184.

- Teasdale, J, & Barnard, P (1993). *Affect, Cognition and Change*. Hove: Lawrence Erlbaum Associates
- Teasdale, J. D., Lloyd, C. A., & Hutton, J. M. (1998). Depressive thinking and dysfunctional schematic mental models. *British Journal of Clinical Psychology*, *37 (Pt 3)*, 247-257.
- Teasdale, J. D., Moore, R. G., Hayhurst, H., Pope, M., Williams, S., & Segal, Z. V. (2002). Metacognitive awareness and prevention of relapse in depression: empirical evidence. *Journal of Consulting and Clinical Psychology*, 70(2), 275-287.
- The Swedish Council on Technology Assessment in Health Care. (2004). *Behandling av depressionssjukdomar. En systematisk litteraturöversikt* (Vol. 1-3). Stockholm: Socialstyrelsen.
- Tyrer, P. (2001). The case for cothymia: mixed anxiety and depression as a single diagnosis. *British Journal of Psychiatry*, 179, 191-193.
- Wallace, J., Schneider, T, & McGuffin, P. (2002). In I. H. Gotlib & C.I. Hammen (Eds.), Handbook of depression. New York: Guilford Press.
- Wassermann, D. (2003). Depression. En vanlig sjukdom: Symtom, orsaker och behandlingsmöjligheter. Stockholm: Natur och Kultur.
- Watkins, P. C., Vache, K., Verney, S. P., Muller, S., & Mathews, A. (1996). Unconscious mood-congruent memory bias in depression. *Journal of Abnormal Psychology*, 105(1), 34-41.
- Watson, D., & Clark, L. A. (1984). Negative affectivity: The disposition to experience aversive emotional states. *Psychological Bulletin*, *96*(3), 465-490.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality* and Social Psychology, 54(6), 1063-1070.
- Verbeek-Heida, P. M., & Mathot, E. F. (2006). Better safe than sorry--why patients prefer to stop using selective serotonin reuptake inhibitor (SSRI) antidepressants but are afraid to do so: results of a qualitative study. *Chronic Illness*, 2(2), 133-142.
- Vernmark, K., Lenndin, J., Bjarehed, J., Carlsson, M., Karlsson, J., Oberg, J., . . . Andersson, G. (2010). Internet administered guided self-help versus individualized e-mail therapy: A randomized trial of two versions of CBT for major depression. *Behaviour Research* and Therapy, 48(5), 368-376.
- Wetherell, J. L., Gatz, M., Johansson, B., & Pedersen, N. L. (1999). History of depression and other psychiatric illness as risk factors for Alzheimer disease in a twin sample. *Alzheimer Disease and Associated Disorders*, 13(1), 47-52.
- Williams, J. M., Barnhofer, T., Crane, C., Herman, D., Raes, F., Watkins, E., & Dalgleish, T. (2007). Autobiographical memory specificity and emotional disorder. *Psychological Bulletin*, 133(1), 122-148.
- Williams, J. M. G (2006). Capture and rumination, functional avoidance and executive control (CaRFAX): Three processes that underlie overgeneral memory

Cognition and Emotion 20, 548-568

- Williams, J. M. G, & Broadbent, K. (1986). Autobiographical memory in suicide attempters. Journal of Abnormal Psychology, 95, 144-149.
- Williams, J. M. G., Ellis, N. C., Tyers, C., Healy, H., Rose, G., & MacLeod, A. K. (1996). The specificity of autobiographical memory and imageability of the future. *Memory* and Cognition, 24(1), 116-125.
- Williams, J. M., Teasdale, J. D., Segal, Z. V., & Soulsby, J. (2000). Mindfulness-based cognitive therapy reduces overgeneral autobiographical memory in formerly depressed patients. *Journal of Abnormal Psychology*, 109(1), 150-155.
- Williams, J. M.G. (2001). The Autobiographical Memory Test. Bangor: University of Wales.

- Winokur, G. (1997). All roads lead to depression: clinically homogeneous, etiologically heterogeneous. *Journal of Affective Disorders*, 45(1-2), 97-108.
- World Health Organisation, WHO. (1992). The ICD-10 Classification of Mental and Behavioural Disorders : Clinical Descriptions and Diagnostic Guidelines Geneva: World Health Organisation.
- World Health Organisation, WHO. (1997). The World Health Report. Geneva: World Health Organisation.
- Young, E., & Korszun, A. (1998). Psychoneuroendocrinology of depression. Hypothalamicpituitary-gonadal axis. *Psychiatric Clinics of North America*, 21(2), 309-323.
- Zanardi, R., Franchini, L., Gasperini, M., Perez, J., & Smeraldi, E. (1996). Double-blind controlled trial of sertraline versus paroxetine in the treatment of delusional depression. *American Journal of Psychiatry*, 153(12), 1631-1633.
- Zubenko, G. S., Zubenko, W. N., McPherson, S., Spoor, E., Marin, D. B., Farlow, M. R., Sunderland, T. (2003). A collaborative study of the emergence and clinical features of the major depressive syndrome of Alzheimer's disease. *American Journal of Psychiatry*, 160(5), 857-866.
- Åsberg, M. & Herlofson, J. (1991). Psykiatri 91. Stockholm: Pilgrim Press.
- Åsberg, M., Nygren, Å., Rylander, G., & Rydmark, I. X. (2002). Stress och utmattningsdepression. In: R. Ekman and B. Arnetz, editors. Stress: Samhället – individen – molekylerna. Stockholm: Liber förlag.