From the DEPARTMENT OF CLINICAL NEUROSCIENCE
SECTION OF PSYCHIATRY
Karolinska Institutet, Stockholm, Sweden

TREATMENT OF SOCIAL PHOBIA
Development of a method and comparison of treatments

Ewa Mörtberg

Stockholm 2006
To Jan and Johannes
ABSTRACT

Social phobia is a common (13 %) and disabling anxiety disorder associated with considerable social and occupational handicap. It is not likely to remit without treatment. Although the efficacy of cognitive behavioural and pharmacological interventions are relatively well established there is a need for further development, as many patients remain disabled at the end of treatment. There is still a lack of understanding of the factors involved in incomplete treatment responses. In addition, it is important to examine how treatments actually work in clinical practice.

The aims of the present thesis were to examine the effectiveness of an intensive (3 weeks) cognitive behavioural group treatment (CBGT) in a pilot study and in a waiting list controlled study. Taking into account some recent developments in psychological treatment the intensive CBGT was modified (and renamed intensive group cognitive treatment /IGCT/) and compared to individual cognitive therapy (ICT) and treatment as usual (TAU), involving medication, in a randomized controlled study of 100 patients. Finally, a trait-based study of personality patterns before and after treatment was conducted aiming to outline personality characteristics in patients with social phobia, and patterns of change following treatment.

The result of the pilot study as well of the waiting list controlled study showed that patients improved significantly after three weeks of treatment, with reduced levels of social phobia related symptoms. The treatment effects were maintained at one year post-treatment. The efficacy of the intensive treatment was further confirmed in the randomized, controlled trial of IGCT, ICT and TAU. ICT was, however, more effective than IGCT and TAU, which showed equal efficacy. The personality patterns of patients were characterised by pronounced levels of harm avoidance and character traits associated with personality disorders. Dysfunctional traits were changed following treatments: however, non-responders still exhibited high levels of harm avoidance.

To conclude, brief intensive group treatment is a feasible and effective option in the treatment of social phobia in routine psychiatric practice. It works fast and shows maintained or improved effects at one year post-treatment. IGCT, ICT and TAU are all effective and enduring treatments for social phobia. However, ICT is superior to IGCT and TAU. The 3-week IGCT seems to be more accepted and is as effective as the 12-month medication focused TAU. Pronounced harm avoidance is a general vulnerability trait in patients with social phobia and may be a general predictor of poor treatment response. Further studies are needed for additional understanding of factors contributing to incomplete treatments responses.
LIST OF PUBLICATIONS

This thesis is based on the following studies that will be referred to by their Roman Numerals.


Studies I and II were reprinted by the permission of publishers.
CONTENTS

INTRODUCTION .......................................................................................................................... 9
  Background ............................................................................................................................... 9
  Description of social phobia ...................................................................................................... 9
  Diagnosis and definition .......................................................................................................... 9
  Social phobia subtypes ............................................................................................................ 10
  Social phobia and avoidant personality disorder (APD) ....................................................... 11
  Prevalence and demographic characteristics .......................................................................... 12
  Age of onset ............................................................................................................................ 12
  Clinical course and comorbid conditions ................................................................................ 12
  Personality traits associated with social phobia ......................................................................... 13
  Shyness ..................................................................................................................................... 13
  Behavioural inhibition ............................................................................................................. 13
  Harm avoidance ....................................................................................................................... 14
  Aetiology and models of explanations for social phobia .......................................................... 14
  Genetic factors ....................................................................................................................... 14
  Environmental factors ............................................................................................................ 15
  Conditioning and evolutionary factors .................................................................................... 15
  A cognitive model of social phobia ........................................................................................... 16
  Treatments of social phobia ..................................................................................................... 17
  Cognitive and Behavioural Treatments (CBT) ......................................................................... 17
    Cognitive Behavioural Group Therapy (CBGT) ..................................................................... 18
    Other formats of CBT ........................................................................................................... 18
    Individual Cognitive Therapy (ICT) ...................................................................................... 19
  Psychodynamic and interpersonal psychotherapy ..................................................................... 19
  Pharmacological treatments ..................................................................................................... 20
    Benzodiazepines (BDZs) ....................................................................................................... 20
    Monoamine oxidase inhibitors (MAOIs) ............................................................................... 20
    Reversible inhibitors of monoamine oxidase (RIMAs) ......................................................... 20
    Beta-blockers ........................................................................................................................ 21
    Selective serotonin reuptake inhibitors (SSRIs) .................................................................... 21
    Other medications ................................................................................................................ 21
  How effective are CBT and pharmacological treatments? ....................................................... 21
    Efficacy versus effectiveness ............................................................................................... 21
    Effect size (ES) .................................................................................................................... 21
    Efficacy of CBT .................................................................................................................... 22
    Efficacy of pharmacological treatments ................................................................................ 23
    CBT versus pharmacological treatment .............................................................................. 25
    Efficacy of combined CBT and pharmacological treatment .................................................. 25
    Empirically supported treatments for social phobia: Conclusions of a Swedish review ....... 26
  Predictors of treatment response to CBT ................................................................................. 27
  Recognition and treatment ...................................................................................................... 27
  AIMS ......................................................................................................................................... 28
  MATERIAL AND METHODS ................................................................................................. 29
Patients and procedures .................................................................................................................. 29
Treatments and therapists .................................................................................................................. 30
IGCT and ICT (Study III) .................................................................................................................. 30
Treatment As Usual (TAU) (Study III) ............................................................................................ 31
Assessments, measures and statistical analyses .............................................................................. 32
Assessments ................................................................................................................................... 33
Measures ......................................................................................................................................... 33
RESULTS ......................................................................................................................................... 35
Characteristics of patients .................................................................................................................. 35
The effectiveness of the intensive CBGT (IGCT) .............................................................................. 36
Study II: Intensive Cognitive Behavioural Group Treatment for Social Phobia: a randomized controlled study ................................................. 37
Study III: Intensive Group Cognitive Treatment and Individual Cognitive Therapy versus Treatment as Usual in Social Phobia: a randomized controlled study .......................................................................................... 37
Dropout rates .................................................................................................................................. 38
Effects of treatment on social phobia symptoms: Effect sizes ....................................................... 39
Maintenance of treatment gains ..................................................................................................... 39
Clinical significant changes ............................................................................................................ 39
Personality traits in social phobia: Changes following treatments?.................................................. 40
Summary of Study IV: Temperament and Character dimensions in patients with social phobia: Patterns of change following treatments? .......................................................... 40
GENERAL DISCUSSION ................................................................................................................... 42
Is intensive CBGT a feasible and effective option in routine psychiatric practice? 42
Is intensive CBGT more effective than no treatment (a waiting list group)? .......... 43
How effective is IGCT compared to ICT and TAU? ................................................................. 44
IGCT versus ICT ............................................................................................................................. 44
IGCT versus TAU ............................................................................................................................ 45
The effectiveness of ICT compared to IGCT and TAU ............................................................... 46
Personality traits in social phobia and patterns of change following treatment... 47
CONCLUSIONS ............................................................................................................................... 49
SVENSK SAMMANFATTNING ......................................................................................................... 50
ACKNOWLEDGEMENTS ................................................................................................................. 51
REFERENCES ................................................................................................................................. 54
PAPERS I-IV
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>AA</td>
<td>Anticipatory Anxiety</td>
</tr>
<tr>
<td>ANCOVA</td>
<td>Analysis of covariance</td>
</tr>
<tr>
<td>ANOVA</td>
<td>Analysis of variance</td>
</tr>
<tr>
<td>APA</td>
<td>American Psychiatric Association</td>
</tr>
<tr>
<td>APD</td>
<td>Avoidant personality disorder</td>
</tr>
<tr>
<td>AR</td>
<td>Applied Relaxation</td>
</tr>
<tr>
<td>BAI</td>
<td>Beck Anxiety Inventory</td>
</tr>
<tr>
<td>BDI</td>
<td>Beck Depression Inventory</td>
</tr>
<tr>
<td>BDZ</td>
<td>Benzodiazepine</td>
</tr>
<tr>
<td>CBGT</td>
<td>Cognitive Behavioural Group Treatment</td>
</tr>
<tr>
<td>DSM</td>
<td>Diagnostic and Statistical Manual of Mental Disorders</td>
</tr>
<tr>
<td>ES</td>
<td>Effect size</td>
</tr>
<tr>
<td>FQ</td>
<td>Fear Questionnaire</td>
</tr>
<tr>
<td>GAD</td>
<td>Generalized Anxiety Disorder</td>
</tr>
<tr>
<td>ICT</td>
<td>Individual Cognitive Therapy</td>
</tr>
<tr>
<td>IGCT</td>
<td>Intensive Group Cognitive Treatment</td>
</tr>
<tr>
<td>ITT</td>
<td>Intention To Treat</td>
</tr>
<tr>
<td>LMM</td>
<td>Linear Mixed Models</td>
</tr>
<tr>
<td>MAOI</td>
<td>Monoamine Oxidase Inhibitors</td>
</tr>
<tr>
<td>PD</td>
<td>Personality Disorder</td>
</tr>
<tr>
<td>RIMA</td>
<td>Reversible Inhibitors of Monoamine Oxidase</td>
</tr>
<tr>
<td>SIDL</td>
<td>Symptoms Influence of Daily Life</td>
</tr>
<tr>
<td>SIAS</td>
<td>Social Interaction Anxiety Scale</td>
</tr>
<tr>
<td>SBQ</td>
<td>Social Behaviours Questionnaire</td>
</tr>
<tr>
<td>SCID</td>
<td>Structured Clinical Interview for Psychiatric Disorders</td>
</tr>
<tr>
<td>SCQ</td>
<td>Social Cognitions Questionnaire</td>
</tr>
<tr>
<td>SDS</td>
<td>Sheehan Disability Scale</td>
</tr>
<tr>
<td>SPS</td>
<td>Social Performance Scale</td>
</tr>
<tr>
<td>SPWSS</td>
<td>Social Phobia Weekly Summary Scale</td>
</tr>
<tr>
<td>SSRI</td>
<td>Selective Serotonin Reuptake Inhibitor</td>
</tr>
<tr>
<td>TCI</td>
<td>Temperament and Character Inventory</td>
</tr>
</tbody>
</table>
INTRODUCTION

Background

Social phobia is characterised by a strong fear of being scrutinized by others accompanied by avoidance of situations associated with such a risk, which seriously interfere with the person’s adjustment to work, social and family life. The aetiology is still inconclusive; however, it seems reasonable to assume that an interaction of certain inherited temperament traits, early family and peer environment, critical development periods, and specific cognitive and behavioural processes are involved in the onset, course and maintenance of the disorder. Social phobia is a prevalent and disabling disorder that runs a chronic course, and is not likely to remit without treatment. Despite this, it is still a rather unrecognized and untreated disorder. It is important to develop interventions in order to broaden treatment options, and to implement effective treatments in regular psychiatric practice.

The field of knowledge regarding the epidemiology and development of treatments has advanced considerably during the past 25 years. To date, the efficacy of both cognitive behavioural treatment (CBT) and pharmacological treatment in particular is relatively well established. Although effective interventions exist it is generally agreed that there is a need for further development, as about one third of patients remain impaired at the end of treatment. So far, the findings indicate that one particular treatment does not work for everyone or that the treatment needs to be modified. There is still a lack of understanding about which treatment works best for particular individuals and what factors lead to a better treatment outcome. In addition, long-term effects have not been sufficiently studied. Moreover, in order to establish treatment utility in regular clinical conditions, there is a need for controlled studies conducted in such contexts.

The present thesis focuses on examining the treatment utility of an intensive (3-weeks) cognitive group behavioural treatment (CBGT) carried out within the routine service of a psychiatric clinic (Studies I and II). Based on some more recent findings, the treatment was modified (renamed IGCT) and compared with individual cognitive therapy (ICT) and treatment as usual (TAU) involving medication (Study III). Finally, a trait-based study of personality patterns before and after treatment was conducted in order to examine if certain patterns were related to a non-successful treatment outcome (Study IV).

Description of social phobia

Diagnosis and definition

Social phobia has been known since the days of Hippocrates and was described by Janet in 1903 (cited in Heimberg et al, 1995). However, it was not until 1980 that it was
introduced as a specific diagnostic entity in the Diagnostic and Statistical Manual of Disorders (DSM-III) (American Psychiatric Association 1980). The diagnosis has evolved considerably since then. The central feature of social phobia was initially described as an excessive fear of observation or scrutiny in discrete, performance-oriented situations, for example public speaking or writing in front of others. Anxiety associated with interpersonal interaction (for example attending a party or speaking to an employer) was absent from this early view and was instead considered as part of the criteria for avoidant personality disorder (APD). The diagnostic revision, DSM-III-R, introduced the generalised subtype of social phobia, defined by fear of most situations i.e. both performance and social interaction situations (American Psychiatric Association 1987). Whereas prior versions of the DSM were based on the judgement of experienced clinicians and researchers, an effort was made in the fourth (DSM-IV) (American Psychiatric Association 1994) and most recent revision of the DSM to base revisions on empirical data. In DSM-IV, social phobia is defined as:

A) A marked and persistent fear of one or more social and performance situations, in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will show anxiety symptoms or act in a way that will be humiliating or embarrassing.

B) Exposures to the feared situations almost always provoke anxiety, which may take the form of a situationally bound or situationally predisposed panic attack.

C) The person recognizes that the fear is excessive or unreasonable.

D) The feared situations are mostly avoided or else endured with intense anxiety or distress.

E) The avoidance, anxious anticipation, or distress in the feared social or performance situations interferes significantly with the individuals’ normal routine, occupational (academic) functioning or social activities and relationships, or there is a marked distress about having social phobia.

F) In individuals under the age of 18 years, the duration is at least 6 months.

G) The fear or avoidance is not due to the direct physiological effects of a substance (e.g. a drug of abuse, a medication) or a general medical condition and is not better accounted for by another mental disorder.

H) If a general medical condition or another medical disorder is present the fear of criterion A is unrelated to it.

Generalized social phobia should be considered when the fears include fears of most situations.

The fear of public speaking has been found to be the most typical fear, followed by situations such as entering a room where other persons are gathered, being addressed in front of others and meeting with strangers (Furmark et al. 2000). Typical worries involve being embarrassed or judged to be anxious, weak, crazy, inadequate or stupid. The anxiety provoked in feared situations is often accompanied by physical symptoms such as blushing, palpitations, sweating or trembling. Occasionally the symptoms meet the criteria for a panic attack.

Social phobia subtypes

The generalized and non-generalized classifications of social phobia are generally accepted and are defined in the DSM-IV. However, the number of fears described for
each of the subtypes has not been validated, and are open to criticism (Wittchen and Fehm 2003). The non-generalised subtype of social phobia (often described as “discrete”, “circumscribed”, “specific”, “performance”) is, defined by fear in only one or two situations, typically in performance situations such as public speaking or writing and eating in public. Individuals with generalised social phobia defined by fear in “most situations” often experience similar fears but they also fear social interactions such as informal conversations, speaking to authority figures and attending social gatherings (Heimberg et al. 1993a; Mannuzza et al. 1995; Wittchen and Fehm 2003). Individuals with generalized social phobia have usually been found to have an earlier onset, to be less educated, and to be more anxious, depressed, and functionally impaired than individuals with the non-generalised subtype (Heimberg et al. 1993a; Heimberg et al. 1990b; Holt et al. 1992a; Schneier et al. 1991; Turner et al. 1992). Fear in “most situations” (DSM-IV) can be difficult to define operationally, which has resulted in suggestions of specific procedures of sub-typing patients, for use in clinical practice (Baker et al. 2002; Holt et al. 1992b).

It remains unclear if the subtypes are merely quantitatively different or if they reflect distinct qualitative features of social phobia. It remains uncertain whether generalized social phobia is an exacerbation of a single social phobia that has been generalized in the course of learning and avoidance. In addition, it is unclear if risk and vulnerability factors for the subtypes could be differentiated with regard to familial genetic factors, the role of childhood temperament, and the type of onset (Wittchen and Fehm 2003). Support for sub-typing based on the extent or pattern of social fears was not provided in the community survey of Stein and co-workers. Rather, social phobia seems to exist on a continuum of severity, with a greater number of feared situations associated with greater impairments in multiple domains of functioning (Stein et al. 2000). Ascertaining the number of feared situations might not be an adequate method for identifying qualitatively distinct sub-groups. Hofmann and co-workers (2004) proposed an alternative approach involving identification of certain dimensions (e.g. acquired vs. inherited shyness, shyness due to dismissive vs. fearful attachment styles, fearful vs. self-conscious shyness) that may better capture the heterogeneity among social phobia individuals (Hofmann et al. 2004).

Social phobia and avoidant personality disorder (APD)

According to the DSM-IV avoidant personality disorder (APD) is defined by a persistent pattern of social inhibition, feelings of inadequacy, and hypersensitivity to negative evaluation as indicated by: (1) avoidance of activities involving significant personal contact; (2) unwillingness to get involved with people; (3) restraints in intimate relationships; (4) preoccupation by being criticized or rejected; (5) inhibition in new personal situations; (6) views of self as personally inept, unappealing or inferior and; (7) reluctance of taking personal risks (American Psychiatric Association 1994).

A number of articles have addressed the considerable overlap between generalized social phobia and APD, suggesting that the distinction is quantitative and indicative of a continuum of severity and may be alternative conceptualisations of the disorder rather than representing two diagnostic entities (Alden et al. 2002; Herbert and Hope 1992; Holt et al. 1992a; Ralevski et al. 2005; Reich 2000; Schneier et al. 1991; Turner et al. 1992). Despite differences in sampling procedures, subtype definitions and diagnostic
instruments, the reported overlap (25-89 %) between the two disorders remains relatively high. Most studies show that patients with comorbid APD experience more anxiety and show more impairment than those without APD (Boone et al. 1999; Holt et al. 1992a; Turner et al. 1992).

Prevalence and demographic characteristics

Reported lifetime prevalence estimates vary considerably, ranging from 0.5-16 % (Furmark 2002). Typical earlier studies, such as the Epidemiologic Catchment Area study using the DSM-III system, tend to have lower prevalence rates (2-3 %) (Schneier et al. 1992) relative to studies using the DSM-III-R system, which is probably an effect of altering the diagnostic threshold. A markedly increased rate (13.3 %) was, for instance, reported in the National Comorbidity Survey (Kessler et al. 1998), which was consistent with the reported rates (13 %) in the Ontario Mental Health Supplement Survey (Stein and Kean 2000). Studies using the current DSM-IV report similar prevalence rates. The point prevalence of social phobia in Sweden is estimated at 15.6 % (Furmark et al. 1999) and in the most recent National Comorbidity Survey Replication study, the estimated lifetime prevalence of social phobia is 12.1 % (Kessler et al. 2005).

More women than men suffer from social phobia, the female-male ratio being approximately 1.5: 1 (Furmark et al. 1999; Magee et al. 1996). However, in clinical practice this difference is less apparent, men seem more likely than women to seek treatment (Weinstock 1999). Younger persons (late adolescence and early adulthood) as well as persons with lower levels of income and educational attainment and unmarried persons tend to be more often affected than older, married or educated people (Furmark et al. 1999; Magee et al. 1996; Schneier et al. 1992; Stein et al. 2000). About 50 % of patients are shown to be unmarried, divorced or separated (Furmark et al. 1999; Schneier et al. 1992).

Age of onset

The age of onset of social phobia has reported to be from 13 to 24 years in clinical studies and from 10 and 17 years in epidemiological studies. New cases of social phobia after the age of 25 are unusual (Wittchen and Fehm 2003). The generalized subtype of social phobia typically has an earlier onset (Brown et al. 1995; Heimberg et al. 2000; Holt et al. 1992a). For example, Holt and co-workers found that the onset of generalized social phobia was 13 years, whereas the onset of non-generalised social phobia was 22.6 years, which was consistent with the findings by Brown et al. In the most recent NCS study the median age of onset was 13 years (Kessler et al. 2005).

Clinical course and comorbid conditions

Several lines of evidence suggest that social phobia runs a chronic and unremitting course and has a serious effect on role functioning and quality of life. These effects are most severe for generalized social phobia with APD and least severe for non-generalized social phobia. An early onset is associated with a more disabling clinical course, which might be due to the fact that the untreated condition becomes exacerbated by comorbid conditions (Bruce et al. 2005; Kessler 2003; Wittchen and Fehm 2003).
About 50–80 % of patients with social phobia have at least one other mental disorder, typically other anxiety disorders, depression or substance abuse disorders. In cases with more than one disorder, social phobia has usually appeared first (Magee et al. 1996; Rapee and Spence 2004; Schneier et al. 1992; Wittchen and Fehm 2003). In the National Comorbidity Survey study (Magee et al. 1996), 81.0 % of individuals with social phobia (DSM-III-R) reported at least one other lifetime psychiatric diagnosis, of whom 18.9 % had one other, 14.1 % two others and 48.0 % three others. The most common comorbid disorders were other anxiety disorders (56.9 %), affective disorders (41.4 %), and substance abuse disorders (39.6 %). Social phobia has also been associated with increased rate of suicidal attempts, impaired school and work performance, impaired medical health, increased health-seeking behaviour, poor employment performance, poor quality of life in various domains, reduced social interaction and social support (Davidson et al. 1993; Stein et al. 2000; Stein and Kean 2000). Comorbidity accounted for some, but not all observed differences. Histories of comorbid disorders have shown to be significantly more common in patients with multiple social fears (Kessler et al. 1998).

In a recent 12-year prospective naturalistic study (Bruce et al. 2005), social phobia was found to have the smallest probability of recovery, relative to other anxiety disorders. However, those who recovered were less likely to have a recurrence, and tended to stay well over the period.

**Personality traits associated with social phobia**

Aside from the descriptive diagnosis of avoidant personality disorder (APD) in the DSM-IV (p.11), shyness, behavioural inhibition and the concept of harm avoidance are interrelated personality traits associated with social phobia. Shyness and behavioural inhibition are related to higher risk of social phobia in children and adults (Biederman et al. 2001; Gladstone et al. 2005; Van Ameringen et al. 1998).

**Shyness**

Shyness and social phobia overlap with regard to characteristics of negative cognitions in social situations, heightened physiological reactivity and a tendency to avoid social situations. Negative cognitions include fear of negative evaluation, self-consciousness, devaluation of social skills, self-depreciating thoughts and self-blaming attributions for social difficulties (Beidel and Turner 1999; Turner et al. 1990). It has been suggested that the two conditions differ more quantitatively than qualitatively with social phobia being the more extreme condition (Rapee 1995). Shyness is far more prevalent in the general population (40-50 %) and is considered as a “normal” personality trait in contrast to social phobia which has a lower prevalence, a later onset, and follows a more chronic course as well as being associated with more pervasive functional impairment (Turner et al. 1990).

**Behavioural inhibition**

Behavioural inhibition (estimated in 20 % of newborn children) is defined as a stable and early detectable personality trait, characterized by high emotional reactivity to unfamiliar situations and people, who are feared and avoided (Kagan 1999; Kagan and Snidman
However, only a smaller proportion of the newborn children with behavioural inhibition (about 18%) remain, inhibited over several years but are, nevertheless, suggested to be more vulnerable to anxiety disorders in the future. Behavioural inhibition is also functionally related to anxiety and depression as well as to the personality trait of introversion (Turner et al. 1996).

Harm avoidance

A temperament concept that is closely related to behavioural inhibition is that of harm avoidance, defining individuals who tend to be “cautious, careful, fearful, tense, apprehensive, nervous, timid, doubtful, discouraged, insecure, passive, negativistic, or pessimistic even in situations that do not worry other people” (Cloninger et al. 1994). Studies using the Temperament and Character Inventory (TCI) and the Tridimensional Personality Questionnaire (TPQ) have shown that patients with social phobia have significantly elevated levels of harm avoidance compared to a healthy control population. Other consistent findings are decreased levels of self-directedness and cooperativeness (Chatterjee et al. 1997; Marteinsdottir et al. 2003; Pelissolo et al. 2002), character dimensions that are shown to be highly correlated with personality disorders in general (Svrakic et al. 1993). While character dimensions are suggested to predict the presence of personality disorder the temperament dimensions are suggested to differentiate between them. For example, the DSM personality disorders clusters A (aloof), B (impulsive) and C (fearful), could be discriminated by low reward dependence, high novelty seeking and high harm avoidance, respectively.

Aetiology and models of explanations for social phobia

There is no conclusive picture about the mechanisms leading to the onset and subsequent course of social phobia. Rather than assuming that one single factor underlies the aetiology, an interaction between evolutionary-genetic predisposition, environmental factors and maintaining behavioural and cognitive processes is often suggested (Heimberg et al. 1995; Rapee and Spence 2004). This general theory requires however, research from diverse areas offering different theories and perspectives of the disorder.

Genetic factors

Family and twin studies support a hereditary contribution to social phobia. Several studies have found that first-degree relatives of patients with social phobia have an increased risk of the disorder (Fyer 1993; Fyer et al. 1995), particularly relatives of patients with generalised social phobia (Stein et al. 2001). The strongest evidence of a heritable contribution comes from twin and adoption studies (Daniels and Plomin 1985; Kendler et al. 2002; Kendler et al. 1992; Stein et al. 2002), which also found evidence for a genetic factor in shyness. The Colorado Adoption project (Daniels and Plomin 1985) observed that shyness in infants was related to shyness in their biological but not adoptive mothers. In addition, behavioural inhibition is shown to be highly heritable and supposed to underlie both shyness and social phobia (Kagan 1999; Robinson et al. 1992). Genetic and temperament factors provide, however, only a partial proportion of
the risk of developing social phobia and many individuals with such predispositions do not in fact develop the disorder.

**Environmental factors**

The early social environment including parenting style, the influence of social interactions with family members and peers as well as aversive life events could be other important determinants for social phobia. Patients with social phobia have more commonly reported that their parents were overprotective, less warm, more critical and less likely to encourage them in taking challenges (Hudson and Rapee 2000). Negative peer-relations (bullying) and inappropriate parental approaches (overprotection) might also be consequences of shyness and behavioural inhibition. In epidemiological studies parental dysfunction and abuse, lack of close relation with an adult, and failing an exam have emerged as potential childhood risk factors for social phobia (Chartier et al. 2001). In one study it was found that parents with anxiety disorders were more critical of their inhibited than their uninhibited children than were non-anxious parents (Hirshfeld et al. 1997). Nevertheless, later environmental factors could determine the actual onset of the disorder, thus affecting a selected group of individuals. Negative life events such as criticism, bullying, rejection, humiliation or exclusion by others have been reported to be associated with the onset of social phobia (Hackmann et al. 2000).

**Conditioning and evolutionary factors**

Early models focused on classic and operant conditioning; the view that the phobia develops as a consequence of associative learning from one or more traumatic experiences that would form future reactions to similar stimuli. Some individuals have reported the onset of social phobia to aversive experiences such as being humiliated or embarrassed in front of others (Hackmann et al. 2000; Stemberger et al. 1995; Öst and Hugdahl 1981) while other individuals report that they have been anxious as long as they can remember (Menzies and Clark 1995). As originally described by Pavlov (1927) (cited in LaBar & Ledoux 2003), emotionally neutral stimuli can acquire affective properties when they occur in conjunction with a biologically significant event. In fear conditioning, a previously neutral stimulus that has been paired with some noxious stimulus and becomes a warning cue that prepares the individual for a threatening situation. In this process, innate defensive reactions i.e. autonomic (heart rate, blood pressure), endocrine (hormone release), skeletal (immobility or “freezing”), modulation pain sensitivity (analgesia) and somatic reflexes (fear-potentiated startle), are activated (LaBar and LeDoux 2003). Both in humans and animal models the amygdala complex, located in the anterior temporal lobe, is found to be the key brain area for fear conditioning as well as for mediating emotional and social behaviours. It has been suggested that social anxiety might be a result of dysregulation or hyperactivity in this area associated with the elevated preparedness to detect social threats (Amaral 2002). Exposure based psychotherapy (CBT) and SSRI treatment have been shown to reduce neural activity in this area, which could predict 1-year follow-up status (Fredrikson and Furmark 2003).

The evolutionary model is an extension of the classical conditioning model and suggest that humans (and non-humans) have an evolutionary preparedness (Seligman
1971) to easily acquire fears of objects, situations and of other humans that for example show angry faces. The preparedness to facial expressions of anger would be part of a social submissiveness system that is enhanced in social phobia. The preparedness theory was supported by Öhman and co-workers (Morris et al. 1998; Öhman and Wiens 2003) in experiments which demonstrated that individual acquired a conditioned response more readily to evolutionary based (e.g. an angry face) than to neutral cues. This response was demonstrated even when the stimuli were presented below the threshold of conscious awareness.

A cognitive model of social phobia

Negative experiences in family and peer relations are likely to result in an increased preoccupation with possible negative evaluation, and further experiences might lead to misinterpretation of ones social acceptability. Cognitive theories suggest that information-processing biases play a central role in the development and maintenance of social phobia. Based on the work of several authors, Clark and Wells (1995) developed a model in an attempt to explain why social phobia persists despite everyday non-aversive experiences and the notion that social phobia is unlikely to be maintained by avoidance alone (Clark and Wells 1995). In particular, it is suggested that information-process biases lead patients to view social situations in a markedly negative fashion. Such biases are likely to maintain anxiety and behaviours (e.g. avoidance) that prevent improvement. Figure 1 illustrates the processes that are suggested to occur when patients are entering feared social situations.

*Figure 1. A cognitive model of social phobia (Clark and Wells, 1995)*

On the basis of early experiences a series of assumptions (negative idiosyncratic beliefs) are activated. These assumptions are based on excessively high standards for
social performance (“I must be interesting”), conditional beliefs concerning the consequences of performance (If I blush people will make fun of me”) and unconditional beliefs about the self (“I’m odd”). The assumptions lead individuals to appraise social situations as dangerous and to predict that they will fail to perform in a desired way (“I will make a fool of myself”) and to interpret ambiguous social cues as a sign of disapproval or negative evaluation. When a situation is appraised in this way, anxiety will occur and several interlinked vicious circles will maintain the person’s distress and prevent disconfirmation of the negative beliefs. These key maintaining processes are: a) a shift to self-focused attention with detailed monitoring and observation of themselves and the use of internal information to infer how they appear to others; b) the use of safety-behaviours aiming to prevent or minimize a catastrophic outcome; and c) negative processing before and after a social situation. Several line of evidence reveal empirical support of the cognitive model (Clark 2001; Clark and McManus 2002; Hirsch 2004), which has been adapted to a specialized cognitive treatment aiming to reverse the maintaining processes specified in the model (Clark 1997; Clark and Wells 1995; Wells and Clark 1997).

Treatments of social phobia

The efficacy of cognitive and behavioural treatment (CBT) and pharmacological treatment is relatively well established. In contrast, controlled studies of psychodynamic and interpersonal therapies of social phobia are rare and so far, these methods are not regarded as the treatment of choice for social phobia.

Despite general advances, it is generally agreed that there is a need for further treatment development, as many patients are still impaired after treatment. Therefore, researchers have continued to explore processes responsible for the maintenance of social phobia as well as techniques that might improve treatment outcome. One example is the recent development of an individual cognitive therapy (ICT) programme based on Clark and Wells (1995) model of social phobia. Other efforts for increasing treatment outcome have been to combine CBT and medication. There is limited research on the possible impact of length and format of treatment, for example time-concentrated versus extended treatment, or standard treatment versus extended treatment. Studies of time-concentrated modes of delivery are described in the literature but controlled studies are lacking. Long-term effects of treatment have not been sufficiently studied. The recent development of self-help programmes delivered via Internet might provide a future complement to therapist-administered treatment.

Cognitive and Behavioural Treatments (CBT)

Cognitive Behavioural Treatment (CBT) represents a class of psychological treatments including a number of different techniques that are often employed in various combinations. The major strategies applied to the treatment of social phobia presented in comprehensive reviews (Heimberg 2001; Juster and Heimberg 1998) have included: (1) social skills training, or specific training of behavioural skills in social interaction follows from the assumption that individuals with social anxiety lack necessary skills in social interaction; (2) relaxation training, designed to control and attend to the degree of physiological arousal during or in anticipation of a situation; (3) exposure, a series of techniques designed for approaching a feared situation and staying psychologically engaged within the situation so that habituation and extinction processes can occur; (4)
cognitive restructuring, a series of techniques designed to change biased cognitions of self and others.

Several variations of CBT for social phobia have been tested, for example Rational Emotive Therapy (RET) (Ellis 1962), Anxiety Management Training (AMT) (Suinn and Richardson 1971), Self-instructional Training (SIT) (Meichenbaum 1975), Social Skills Training (SST) (Stravynski et al. 1982), Applied Relaxation (AR) (Öst 1987), and Beck and Emery’s cognitive therapy (1985) (Beck and Emery 1985) developed specifically as a group treatment for social phobia by Heimberg and co-workers (Heimberg and Barlow 1991). A recent treatment approach is the individual cognitive therapy (ICT) developed by Clark and co-workers. Most CBT has been delivered in a weekly group format and is usually run for 12–16 weeks.

Cognitive Behavioural Group Therapy (CBGT)

An example of an integrated method is Cognitive Behavioural Group Therapy (CBGT), developed by Heimberg and co-workers. It is one of the most extensively researched treatment programmes. It has been widely used, is empirically validated and regarded as a standard treatment for social phobia. The programme is administered in 12 weekly group sessions for about 2 hours and is lead by two therapists. It comprises: (1) a cognitive-behavioural explanation of social phobia; (2) structured exercises for training of patients in prerequisite cognitive restructuring skills; (3) within-session exposure of patients to anxiety provoking situations; (4) use of cognitive restructuring procedures in combination with exposure; (5) homework assignments for in vivo exposure; (6) self-administered cognitive restructuring routine for use prior to and after completion of homework assignments. Several controlled studies have shown the efficacy of CBGT (Heimberg 1993; Heimberg 2001; Heimberg and Barlow 1991; Heimberg et al. 1990a; Heimberg and Juster 1994; Heimberg et al. 1993b). A particularly encouraging finding is that the treatment gains are maintained 5 years after treatment. Long-term follow-up studies are rare. Usually the maintenance of treatment outcome has been evaluated after 3 and 6 months. However, in recent studies there is a trend toward 1-year follow-ups.

Other formats of CBT

Another example of an integrated model is a time-intensive group treatment developed by Andrews et al. (Andrews et al. 1994). This is delivered over a period of three weeks containing 80 hours of treatment and includes a package of mainly behavioural interventions: (1) education about anxiety and social phobia; (2) breathing and hyperventilation control; (3) relaxation training; (4) cognitive restructuring (rational vs. irrational thinking); (5) graded exposure (habituation rationale); and (6) assertiveness training. Delivered as a routine service in a hospital-based specialist clinic this programme has been reported to be effective in a non-controlled study (Hunt and Andrews 1998). The intensive format provides a more concentrated and prolonged exposure that was assumed to be better at overcoming phobic avoidance than weekly treatment. A time-limited (41-hour) version of this model was implemented at a psychiatric clinic in Kungälv, Sweden (Jönnsson Unpublished manuscript, 1995).

A pilot study of Heimberg’s CBGT in a brief 6-week version showed treatment gains comparable to those produced by previous studies using the 12-week treatment (Herbert et al. 2002). In addition, Herbert et al. examined Heimbergs model adapted to individual therapy in a trial comparing the standard (12 week) with the extended (18 week) treatment. The results suggested no benefit for extending the course of CBT over
an greater period of time, and suggested that such an extension might in fact increase the likelihood of premature termination (Herbert et al. 2004).

Recent developments of self-help programmes delivered via the Internet indicate that they might be a future complement to therapist-administered treatments. To date, one open study and one randomized controlled study of Internet-based self-help with minimal therapist support, have demonstrated credible effects after 9 weeks treatment. Treatment gains were maintained at the 1-year follow-up (Andersson et al.; Carlbring et al. 2006).

Individual Cognitive Therapy (ICT)

A recent development is the individual cognitive therapy (ICT) programme developed by Clark and co-workers. It is based on Clark & Wells’ (1995) cognitive model (p. 18) of social phobia (Clark and Wells 1995), which is largely focused on the maintenance of social phobia and attempts to explain why persons with social phobia fail to benefit from naturalistic exposure provided by everyday interactions with other people. It provides a wide range of therapeutic procedures, all of which are explicitly aimed to reverse the maintaining processes specified in the model. Although exposure to feared situations and sensations is a key procedure in ICT, it is used in a different way to traditional behavioural approaches (Clark 1999). Rather than conducting repeated tasks of exposure assignments (habituation) it aims to test how dangerous the individual predicts a social situation to be (a cognitive change model). It comprises: (1) deriving an individualized version of the model using patient’s own thoughts, images, anxiety symptoms, safety-behaviours and strategies of attention; (2) experimentation with safety behaviours experiment; (3) video-feedback to modify distorted self-imagery; (4) shifting focus of attention; (5) behavioural experiments in order to maximize belief disconfirmation; (6) problematic anticipatory and post-event negative processing are identified and modified; 7) dysfunctional assumptions are identified and modified by behavioural experiments and cognitive restructuring techniques. ICT is usually delivered in 16 weekly sessions.

Clark and co-workers have recently reported that this individual cognitive therapy (ICT) programme is associated with particularly large effect sizes across studies, both at post-treatment and follow-up. ICT has been found to be superior to: fluoxetine plus self-exposure and placebo plus self-exposure (Clark et al. 2003); a group-version of the model (Stangier et al. 2003) and; exposure plus applied relaxation (Clark et al. 2005 In press). When a modified version of the CT-model was tailored to a weekly group treatment, Stangier et al. (2003) (Stangier et al. 2003) noted a moderate effect size (0.55), which was suggested to be related to the negative effects of a raised internal avoidance associated with the group format.

Psychodynamic and interpersonal psychotherapy

One controlled study of psychodynamic therapy and one open study of interpersonal therapy (IPT) are reported.

The focus of psychodynamic therapy for social phobia is usually related to the exploration of shame, anger, trauma and unresolved grief in the aetiology (Zerbe 1994). Knijnik and co-workers examined the effects of psychodynamic group therapy based on the hypothesis that unconscious thoughts and conflicts are connected to the symptoms. Thus, the aim of therapy was to make the conflicts conscious by therapist interpretations, which would provide psychological changes and self-recognition of defence mechanisms.
The study, a single-blind randomized trial of psychodynamic group treatment (containing 12 weekly sessions) and a placebo control group, showed that both groups demonstrated significant treatment changes. However, the psychodynamic group was superior to the placebo group (Knijnik et al. 2004).

Interpersonal psychotherapy (IPT) was initially a manual-based research programme developed for the treatment of depression, and has subsequently been modified for treatment of several psychiatric disorders (Weissman 1997). The results of the open study, containing 9 patients who received 14 weeks of IPT, indicated effectiveness in clinician-ratings as well as patients self-ratings (Lipsitz et al. 1999).

Further controlled studies are needed in order to evaluate the efficacy of these methods in the treatment of social phobia.

Pharmacological treatments

Several pharmacological drugs have been used in the treatment of social phobia such as: monoamine oxidase inhibitors (MAOIs), reversible inhibitors of monoamine oxidase subtype A (RIMAs), benzodiazepines (BDZs), beta blockers, selective serotonin reuptake inhibitors (SSRIs) and tricyclic antidepressant drugs (Hood and Nutt 2001). Meta-analytic studies (Blanco et al. 2003b; Fedoroff and Taylor 2001; Gould et al. 1997; van der Linden et al. 2000) and comprehensive reviews of treatments (Blanco et al. 2003a; Hood and Nutt 2001) conclude that the most validated treatments are; BDZs, MAOIs and SSRIs of which the well tolerated and safer drugs such as the SSRIs, which also have an impact on comorbid conditions, are recommended to be the first line treatments (Blanco et al. 2003b).

Benzodiazepines (BDZs)

BDZs are known to be anxiolytic and have long been used for treatment of anxiety. Meta-analyses consistently indicate that BDZs yield large effect sizes independently of whether the analyses included placebo controlled studies (as for clonazepam, bromazepam and alprazolam) or open studies. However, BDZs are associated with a higher risk for dependency which makes this drug a less preferred option (Blanco et al. 2003a).

Monoamine oxidase inhibitors (MAOIs)

MAOIs (phenelzine, tranylcypromine) were long considered the most established treatment of social phobia with indicated efficacy in open studies as well as in controlled trials (phenelzine). However, concerns regarding side effects and safety of the drug have subsequently led to the development of reversible inhibitors of monoamine oxidase (RIMAs) that in contrast to MAOIs do not require specific dietary restrictions (Blanco et al. 2003b; Hood and Nutt 2001).

Reversible inhibitors of monoamine oxidase (RIMAs)

RIMAs (e.g. brofaromine and moclobemide) were potentially providing the efficacy of MAOIs without dietary restrictions and risks of side effects. Efficacy of the drugs is shown in many controlled trials of moclobemide e.g. Oosterbaan et al (2001) (Oosterbaan
et al. 2001) as well as of brofaromine e.g. Fahlén et al. (1995) (Fahlén 1995b). However moclobemide appears to be somewhat less effective than phenelzine (Blanco et al. 2003a).

**Beta-blockers**

Beta-blockers (propanolol, atenolol) are commonly used on an “as needed” basis and are regarded to be effective in controlling autonomic symptoms like tachycardia, tremor, sweating, blushing and dry mouth. The prevailing view is that beta-blockers have limited efficacy regarding social phobia. However, some impact on performance anxiety is indicated (Blanco et al. 2003a; Hood and Nutt 2001).

**Selective serotonin reuptake inhibitors (SSRIs)**

The efficacy and tolerability of SSRIs in various disorders have encouraged researchers to study the effects of these drugs (paroxetine, fluvoxamine, sertraline, fluoxetine, citalopram) on social phobia. Among the SSRIs, controlled trials have established the superiority of fluoxetine (Davidson et al. 2004), fluvoxamine, sertraline and paroxetine (Blanco et al. 2003b; Hood and Nutt 2001) over placebo medication. It is suggested that discontinuation of medication after 12-20 weeks increases the risk for relapse compared to maintenance of medication after that period. It is therefore recommended to maintain treatment for at least 3–6 months after treatment response. Longer treatment periods could be considered in individual cases (Ballenger et al. 1998; Blanco et al. 2003a).

The studies have essentially examined generalized social phobia, making the efficacy for non-generalized social phobia less clear (Hood and Nutt 2001).

**Other medications**

Venlafaxin and gabapentin have been shown to be significantly superior to placebo whereas studies of buspirone have failed to find such differences (Blanco et al. 2003a).

**How effective are CBT and pharmacological treatments?**

**Efficacy versus effectiveness**

Efficacy (research therapies) refers to the effects of psychotherapies in randomized controlled trials that are usually conducted in university settings involving recruited patients, using highly structured treatment manuals for a narrow problem focus and trying to establish a high degree of internal validity. In contrast, effectiveness (clinical therapies) refers to a therapy conducted in a non-university setting, for example in private practise or within the regular service of a psychiatric clinic using available therapists that are free to use a variety of therapeutic procedures and involving patients that are referred through the usual clinical routes. Thus, the effectiveness therapy uses a quasi-experimental design and aims to establish a high degree of external validity (Chambless and Hollon 1998; Lincoln 2003).

**Effect size (ES)**

Numerous studies have been conducted to evaluate various classes of CBT and medications. Meta-analytic reviews are instructive and provide comparisons of the
quantitative outcome of several studies simultaneously by reducing the results of each study to a common metric, the effect-size (ES). ES is usually calculated according to Cohen’s $d$ statistics (Cohen 1988) expressing the magnitude of change (small=0.20-0.49, moderate/medium=0.50-0.79, large=0.80 and above) from pre- to post-treatments or post-treatment to follow up. Controlled ES, which are calculated in comparison with a control group ($M_{\text{treatment}} - M_{\text{control}}$ / $SD_{\text{pooled}}$), are usually more conservative compared to uncontrolled (within-group) ES, which are calculated by comparing means at pre-treatment to means at post and follow-up scores ($M_{\text{pre-test}} - M_{\text{post-test}}$ / $SD_{\text{pre-test}}$). Moreover, ES estimations based on all randomized patients (intention-to-treat analyses) are usually more conservative than estimations based on completers of treatment (Rodebaugh et al. 2004).

Efficacy of CBT

Five meta-analyses assessing the efficacy of CBT are presented in Table 1.

Feske and Chambless (1995) compared the treatment outcome of exposure interventions and integrated CBT-models, and found the interventions to be equally effective on measures of social anxiety, cognitive symptoms and depressive mood. Length of treatment (5-16 sessions) was generally unrelated to treatment outcome. However, a larger number of exposure sessions was related to better results on social phobia measures at post-test (Feske and Chambless 1995).

Table 1 Effect sizes of cognitive and behavioural treatments (CBT) in meta-analyses

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Post/Fu</td>
<td>Post/Fu</td>
<td>Post/Fu</td>
<td>Post/Fu</td>
<td>Post/Fu</td>
</tr>
<tr>
<td>EXP+CR (n)</td>
<td>0.90 (12)/1.10 (10)</td>
<td>1.06 (11)/1.08 (9)</td>
<td>-</td>
<td>0.80 (8)/-</td>
<td>0.84 (21)/0.95</td>
</tr>
<tr>
<td>EXP (n)</td>
<td>0.99 (9)/1.04 (7)</td>
<td>0.82 (8)/0.93 (8)</td>
<td>-</td>
<td>0.89 (9)/-</td>
<td>1.08 (7)/1.31 (7)</td>
</tr>
<tr>
<td>Heimbergs CBGT (n)</td>
<td>0.86 (6)/0.94 (6)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>CR (n)</td>
<td>-</td>
<td>0.63 (5)/0.96 (8)</td>
<td>-</td>
<td>0.60 (4)/-</td>
<td>0.72 (7)/0.78 (5)</td>
</tr>
<tr>
<td>SST (n)</td>
<td>-</td>
<td>0.65 (4)/0.99 (3)</td>
<td>-</td>
<td>0.60 (3)/-</td>
<td>0.64 (7)/0.86 (4)</td>
</tr>
<tr>
<td>Overall CBT (n)</td>
<td>-</td>
<td>-</td>
<td>0.94 (14)/1.05 (12)</td>
<td>0.74 (27)/-</td>
<td>-</td>
</tr>
<tr>
<td>AR (n)</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>0.51 (4)/-</td>
</tr>
</tbody>
</table>

Notes. n=Number of studies; Fu=Follow-up; EXP=Exposure; CR=Cognitive restructuring; CBGT=Cognitive Behaviour Group Therapy; SST=Social Skills Training; AR=Applied relaxation
In Chambless & Hope (1996), Overall CBT=EXP, SST, Rational Emotive Therapy (RET), Self-Instructional Training (SIT) and Group Anxiety Management Training (GAMT).

Chambless and Hope (1996) found that CBT treatments overall were superior to control conditions (waiting list, education and support, and pill placebo). Pre- to post-treatment (uncontrolled) effect sizes ranged from 0.50 to 1.81 (0.94 on average) There was no significant difference in effects of individual versus group treatment or in the effects of the various active treatments (Chambless and Hope 1996).

Taylor (1996) included 42 treatment outcome trials comparing 6 conditions: waiting-list control, placebo (pill and attention), exposure (EXP), cognitive restructuring (CR), EXP+CR, and social skills training (SST). The mean effect sizes across treatments ranged from moderate (SST) to large (EXP+CR) at post-treatment and were large at follow-up (3 months). The post-treatment ES for the waiting list was – 0.13. All interventions, including placebo (ES=0.48) were found to be superior to
waiting list control and did not differ with regard to dropout frequency (12.2\%-18\%). Only CR+EXP yielded significantly larger effect than placebo. The duration of treatments was 9.3 weeks on average. Effects of treatment tended to increase during the follow-up period (Taylor 1996b).

Gould et al (1999) examined treatment interventions in 40 trials presented with a control condition, 27 trials were CBT and 13 trials were pharmacotherapy (see below). CBT treatments overall, were found to be superior to control conditions. Studies using EXP techniques alone and EXP+CR yielded the largest effect sizes. CR alone or SST yielded moderate effect-sizes. There was no significant relationship between duration of treatment (5-30 sessions, 15 sessions in average) and change in social anxiety, and there were no significant differences in outcome between group (n=17) and individual (n=10) formats. The controlled effect-sizes at post-treatment ranged from 0.60 to 0.89 (0.74 in average). Analysis at follow-up (3 and 6 months) indicated that subjects had maintained treatment gains or had continued to improve after treatment had ended (Gould et al. 1997).

Fedoroff and Taylor (2001) examined the efficacy of psychological and pharmacological interventions (see below), whether they differed in attrition rates and whether treatment gains were maintained at post-treatment. Forty-six trials of CBT of which about 70\% were delivered in a group format were included. The mean duration of sessions ranged from 9.7 to 11 weekly sessions and the dropout rates ranged from 10-18\%. Effect size at post-treatment ranged from 0.5 to 1.1. Pre-treatment to follow-up (2.3 to 6 months in average) effect sizes were 0.87 to 1.3. The result of observer rated effect size (which tends to be higher) found support for EXP plus CR. There was no difference in treatment efficacies among the types of interventions (Fedoroff and Taylor 2001).

To summarize, although some variations of the results are reported, the meta-analyses consistently demonstrate that CBT interventions overall are helpful for patients suffering from social phobia. All techniques examined show moderate to large effect sizes at post-treatment in comparison to waiting-list controlled conditions as well as moderate to large within group effect sizes from pre- to post-treatment. In addition, treatment gains are maintained or further improved at follow-up assessments (usually at 3 or 6 months). The majority of included studies are group treatments. However, no difference is found between group and individual formats (Fedoroff and Taylor 2001; Gould et al. 1997; Taylor 1996b). Nevertheless, future research is needed to evaluate recent development of individual cognitive therapy (ICT), not yet included in meta-analyses. Among treatment interventions EXP and EXP plus CR are found to have equal efficacy, and tend to yield larger effect sizes than other interventions. However, only EXP plus CR are shown to be superior to placebo, a finding that was partly replicated (observer ratings) by Gould et al. (1997). Dropout rates are moderate (10-20\%) across meta-analyses and have not been found to differ among treatment interventions. Future studies need to be improved by including long-term follow-up assessments and to track patients that are lost to follow-up.

**Efficacy of pharmacological treatments**

Table 2 shows the average effect sizes (ES) for groups of pharmacological treatments, presented in five meta-analyses.
The first meta-analysis to assess efficacy of medication was presented by Gould et al (1997), who included 13 trials with a control condition. Moderate to large ES (Glass’s $d$) was indicated across treatments. The average ES was moderate (0.62). Overall pharmacotherapy was superior to placebo. However, buspirone (“Other medications”) and atenolol (Beta-blocker) did not differ from placebo. SSRIs and BDZs yielded the largest ES. The length of treatment ranged from 6 to 12 weeks. Only one study (Versiani et al. 1992) reported data on follow-up (3 months), indicating no further treatment gains over the period. Dropout rates ranged from 1.5% (SSRIs) to 22% (buspirone and beta-blockers).

Van der Linden et al. (2000) examined the efficacy of 18 controlled trials of patients with generalized social phobia. A wide range of ES (Cohen’s $d$, calculated using the Liebowitz Social Anxiety Scale) was found within each medication group. For example, the ES range of SSRIs varied from 0.30 to 2.2. However, with the exception of two studies of RIMAs (moclobemide) the medications were superior to placebo. SSRIs and BDZs yielded large ES, consistent with Gould et al (1997). Follow-up effects or dropout rates were not reported. The length of SSRI treatment ranged from 11 to 20 weeks.

### Table 2 Effect sizes of pharmacological treatments in meta-analyses

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall medication (n)</td>
<td>0.62 (13)</td>
<td>0.82 (18)</td>
<td>1.6 (31)</td>
<td>0.63 (22)</td>
<td></td>
</tr>
<tr>
<td>Range</td>
<td>-0.50-1.89</td>
<td>0.53-1.0</td>
<td>1.08-2.10</td>
<td>0.40-1.54</td>
<td></td>
</tr>
<tr>
<td>SSRIs (n)</td>
<td>1.89 (2)</td>
<td>1.0 (8)</td>
<td>1.70 (12)</td>
<td>0.65 (6)</td>
<td></td>
</tr>
<tr>
<td>MAOIs (n)</td>
<td>0.64 (5)</td>
<td>0.53 (2)</td>
<td>1.08 (15)</td>
<td>1.02 (3)</td>
<td></td>
</tr>
<tr>
<td>RIMAs (n)</td>
<td>-</td>
<td>0.58 (6)</td>
<td>-</td>
<td>0.48 (7)</td>
<td></td>
</tr>
<tr>
<td>BDZ (n)</td>
<td>0.72 (2)</td>
<td>1.0 (1)</td>
<td>2.10 (4)</td>
<td>1.54 (2)</td>
<td></td>
</tr>
<tr>
<td>Beta-blockers (n)</td>
<td>-0.08 (3)</td>
<td>-</td>
<td>-</td>
<td>0.10 (2)</td>
<td></td>
</tr>
<tr>
<td>Other medications (n)</td>
<td>-0.50 (1)</td>
<td>-</td>
<td>-</td>
<td>0.40 (2)</td>
<td></td>
</tr>
</tbody>
</table>

Notes. n=Number of studies; SSRI=Selective Serotonin Reuptake Inhibitor (Fluvoxamine, Paroxetine, Sertraline); MAOI=; RIMA= Reversible inhibitors of monoamine oxidase (Moclobemide, Brofaromine); BDZ=Benzodiazepines (Clonazepam, Bromazepam, Alprazolam); Beta-blockers (Atenolol, Propanolol); Other medications= Gabapentin and Buspirone

Fedoroff & Taylor (2001) examined classes of pharmacological treatments rather than specific medications and also included uncontrolled trials. ES (Cohen’s $d$) based on self-report measures of patients, who completed treatments, were large on average. BDZs and SSRIs were found to be equally effective and more effective than control conditions. Assessment of durability of treatment gains was not possible as an insufficient number of studies included follow-up data. Duration of treatment ranged from 8 to 12 weeks and dropout rates were from 18 to 23% in average.

The meta-analysis by Blanco (2005) included 22 placebo-controlled trials in an intention-to-treat analysis. Most studies involved patients with generalized social phobia. The primary outcome measure was the LSAS for which ES (Hedges’ $g$) was estimated. The ES of SSRIs and MAOIs (phenelzine) were similar to each other but smaller than BDZs (clonazepam). There was no significant difference among SSRIs that
had been tested in placebo-controlled studies (paroxetine, sertraline, fluvoxamine). Duration of treatment ranged from 6 to 20 weeks. Follow-up effects were not reported.

**CBT versus pharmacological treatment**

The two meta-analyses, which have compared pharmacological treatment and CBT show contrasting results (Fedoroff and Taylor 2001; Gould et al. 1997). Gould and co-workers (1997) found similar efficacy of CBT (ES=0.72) and pharmacological treatment (ES=0.62) across 24 controlled trials. Both approaches were superior to control conditions and there was no difference in attrition rates at post-treatment and follow-up. However, the results must be interpreted with caution as several pharmacology studies failed to include follow-up data. In contrast, Fedoroff and Taylor (2001) concluded that pharmacological treatment was more effective than CBT, at least in the short-term. Specifically BDZs were more effective than most CBT treatment, while SSRIs and MAOIs were not. Again, assessments of the durability of pharmacological treatment were not possible as too few trials involved follow-up data.

Only a few studies have been published on the relative efficacy of CBT versus a specific medication. In one study, patients randomized to clonazepam (BDZ) or CBGT were equally likely to respond to the acute treatment (Otto et al. 2000). A comparative study of a 12-week cognitive behavioural group treatment (CBGT) and the MAOI phenelzine sulfate, showed no differences between CBGT and phenelzine with regard to the percentage of patients classified as responders (58 % and 65 % respectively) in the intention-to-treat sample, and both treatments were superior to placebo (Heimberg et al. 1998). The effect of phenelzine was, however, produced faster (after 6 weeks). Interestingly, a subsequent study assessing the long-time outcome of these patients, found that 50% of patients in the phenelzine group had relapsed during follow-up compared to only 17 % in CBGT (Liebowitz et al. 1999). In addition, Clark et al. (2003) found that individual cognitive therapy (ICT) was superior to fluoxetine (SSRI) plus self-exposure at post-treatment and 1-year follow-up (Clark et al. 2003). No difference in relapse rate between conditions was indicated.

Whereas, pharmacotherapy might be more effective on a short-term basis (Fedoroff and Taylor 2001), further research comparing the approaches is required for additional support of the view that CBT is a more effective treatment across longer treatment periods associated with more durable effects. The combination of medication and CBT might reduce the relapse rates that are usually associated with discontinuation of medication.

**Efficacy of combined CBT and pharmacological treatment**

A few studies have examined the efficacy of combining medication and psychotherapy. Clark & Agras (1991) found that CBT plus buspirone (a drug that has not performed better than placebo), were more effective than CBT plus pill placebo (Clark and Agras 1991). Another study combined phenelzine (MAOI) with exposure and alprazolam (BDZ) plus exposure, showing that the first set was more effective (Gelernter et al. 1991). Blomhoff and co-workers examined the efficacy of sertraline or exposure therapy alone, or in combination. They found that combined sertraline and exposure as well as sertraline alone were superior to placebo (Blomhoff et al. 2001). Interestingly, at the 1-year follow-
up patients who had received exposure therapy alone reported further improvement, whereas exposure therapy with sertraline and sertraline alone, showed a tendency towards deterioration after the completion of treatment (Haug et al. 2003). Clark and colleagues found that individual cognitive therapy (ICT) was superior to fluoxetine plus self-exposure. At the one-year follow-up both treatments showed maintained treatment gains. It is possible that the risk of relapse previously shown with medication was prevented by adding exposure to fluoxetine treatment (Clark et al. 2003). In addition, all active treatments were superior to placebo in a randomized trial comparing fluoxetine (SSRI), CBGT, placebo, CBGT plus fluoxetine, and CBGT plus placebo. Combined treatment did not yield any further advantage (Davidson et al. 2004).

It has been argued that there is no certainty that combining treatments would enhance the effects, unless they add to each other or target different aspects of the disorder (Rodebaugh et al. 2004; Zaider and Heimberg 2003). The former view is hypothesised, for example, by Svrakic and co-workers, who suggested that medication temporarily controls inherited temperament traits while psychotherapy targets character dimensions that are supposed to change in the course of learning and maturity (Svrakic et al. 2002). Although it is possible that one treatment has properties that enhance the other (for example, medication reduces anxiety that facilitates a therapeutic relationship) it is equally possible that one treatment has negative effects on the other (for example patients who respond well to medication may have little motivation for psychotherapy) (Zaider and Heimberg 2003). However, combined treatments could also mean a sequencing of CBT and pharmacotherapy. For example, Rosser et al. (2003) showed that pre-existing antidepressants did not significantly enhance or detract from the positive treatment outcome of group CBT treatment (Rosser et al. 2003). The question as to whether to combine treatments or not must necessarily be related to some knowledge of which patients respond to one or the other treatment, or whether some basic personality patterns in fact predict non-response to treatment. Further research is required for determining possible interaction of the approaches. So far, the evidence for combined treatments is lacking.

Empirically supported treatments for social phobia: Conclusions of a Swedish review

The Swedish Council of Technology Assessment in Health Care, a Swedish authority, evaluates methods used in Swedish health care. By reviewing the empirical evidence of various treatments contrasted with actual clinical practice, the authority aims to provide a basis for decision making when planning future directions in health care. Recently the empirical evidence of treatments of anxiety disorders was analysed (SBU 2005). In the review of treatments for social phobia, CBT and pharmacological treatment were considered to have strong empirical evidence (i.e. supported by at least two methodologically sound studies or a systematic review). However, it was noted that the overall effects are not sufficient. Among pharmacological treatments, strong empirical evidence was found for fluvoxamine, sertraline, paroxetine venlafaxin, and escitalopram, moderate evidence for phenelzine and moclobemide, and limited evidence for clonazepam. It was further concluded that combinations of treatments (e.g. CBT and medication) do not enhance treatment effects. In addition, it was noted that length of treatment as well as long-term effects have not been sufficiently studied.
Predictors of treatment response to CBT

Several studies have examined possible predictors of treatment outcome. Demographic variables such as age, gender, marital status, employment, as well as educational status are found to be generally unrelated to treatment outcome (Juster and Heimberg 1998). Some relationship between patients’ expectancy of treatment and outcome has been observed. Expectancy for change during treatment is related to treatment outcome. In one study, it was reported that patients who expected to benefit from treatment or believed in the efficacy of treatment were more likely to improve and maintain their gains (Chambless et al. 1997). Another study found that lower expectancies of a positive outcome were related to greater severity and longer duration of social phobia as well as depression (Safren et al. 1997). As most patients do not present pure social phobia, some of the heterogeneity among patients may account for variation in treatment response. However, subtype of social phobia (non-generalized versus generalized) (Brown et al. 1995; Hope et al. 1995), comorbid APD (Brown et al. 1995; van Velzen et al. 1997), mood disorders (Chambless et al. 1997) and anxiety disorders (Mennin et al. 2000) have not been associated with treatment improvement. Nevertheless, patients with greater severity of social phobia and with comorbid disorders that exacerbate the social phobia are usually more impaired, and are less likely to demonstrate clinically significant changes or experience full remission of symptoms, at the end of treatment (Wittchen and Fehm 2003; Zaider and Heimberg 2003). Comorbid generalized anxiety disorder (GAD) is particularly associated with lower likelihood of recovery and a higher likelihood of its subsequent recurrence (Bruce et al. 2005; Mennin et al. 2000). Consequently, it is suggested that patients with greater severity would require more extensive treatments in order to achieve remission (Hope et al. 1995). Traits-based studies of personality patterns before and after treatment and patterns of change following treatment may further add to the understanding of treatment response.

Recognition and treatment

There is a strong consensus that social phobia is one of the least recognized and treated mental disorders. For example, in the National Comorbidity Survey only 22.6 % of individuals with generalised social phobia had ever sought treatment. The majority seek help several years after the onset of social phobia. Various clinical and epidemiological studies report a mean duration of illness of 20 years. Moreover, the majority of those who seek mental health treatment do so because of comorbid disorders (Furmark et al. 1999; Heimberg et al. 2000; Katzelnick and Greist 2001; Kessler 2003; Kessler et al. 1998; Magee et al. 1996).
In this thesis, an intensive group cognitive treatment (CBGT) was implemented, modified and examined within a psychiatric clinic. The treatment utility of the intensive CBGT, not previously tested in controlled studies, was examined in a pilot study and in a waiting list controlled study conducted within the routine service of a psychiatric clinic. Taking into account some recent developments in psychological treatments it was further modified (and renamed IGCT), and compared to individual cognitive therapy (ICT) and treatment as usual (TAU), in a randomized controlled trial. Finally, a trait-based study of personality patterns before and after treatments of social phobia was conducted. Trait-based studies of personality patterns in patients with social phobia could provide additional diagnostic information, which would be useful for further treatment planning as well as evaluation of the association between personality patterns and response to treatments. To date, no study of treatments of social phobia has addressed the issue of changes in baseline temperament and character patterns following treatments.

The general aims of the present thesis were:

1. To examine the feasibility and effectiveness of an intensive cognitive behavioural group treatment (CBGT) in a pilot study (Study I).
   Is the intensive CBGT feasible and effective in routine psychiatric practice?

2. To examine the effectiveness of the intensive CBGT in a waiting list controlled study (Study II).
   Does the intensive CBGT show effectiveness in a waiting list controlled condition?

3. To examine the efficacy of intensive group cognitive treatment (IGCT) compared to individual cognitive therapy (ICT) and treatment as usual (TAU) (Study III).
   How well does IGCT compare to routine pharmacological treatment and individual treatment?

4. To outline personality characteristics of patients with social phobia and to examine patterns of change following IGCT, ICT and TAU (Study IV).
   Are social phobia patients characterised by specific personality traits? Do treatments have an impact on dysfunctional personality traits?
MATERIAL AND METHODS

Patients and procedures

In total, 153 patients were included in Study I-III (Table 3). Study IV comprised of a
subgroup of patients recruited to Study III.

Table 3 Patient samples in Study I-IV

<table>
<thead>
<tr>
<th>Study</th>
<th>Excluded (Declined)</th>
<th>Included N</th>
<th>Women, N (%)</th>
<th>Age M (SD)</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>6 (3)</td>
<td>27</td>
<td>14 (52)</td>
<td>35 (8.3)</td>
<td>CBGT</td>
</tr>
<tr>
<td>II</td>
<td>0 (3)</td>
<td>26</td>
<td>17 (65)</td>
<td>33.3 (7.5)</td>
<td>CBGT</td>
</tr>
<tr>
<td>III</td>
<td>15 (2)</td>
<td>100</td>
<td>63 (63)</td>
<td>34.6 (9.1)</td>
<td>IGCT/ICT/TAU</td>
</tr>
<tr>
<td>IV*</td>
<td>-</td>
<td>59</td>
<td>34 (58)</td>
<td>34.9 (8.6)</td>
<td>IGCT/ICT/TAU</td>
</tr>
</tbody>
</table>

Notes. CBGT=Cognitive Behavioural Group Treatment; IGCT=Intensive Group Cognitive Treatment; ICT=Individual Cognitive Therapy; TAU=Treatment as Usual. *Study IV comprised of a subgroup of patients recruited to Study III.

Patients were offered inclusion in the treatment studies if they fulfilled the following criteria: (a) had a primary diagnosis of social phobia (DSM–IV) (APA, 1994); (b) were aged 18 to 65 years, (c) and were without current depressive episode, bipolar disorder, adjustment disorders, addiction or psychoses. In Study III there were two additional criteria for exclusion: (d) present psychotropic medication and (e) current psychotherapy. Study IV (n=59) involved a sub-group of patients recruited to Study III, who completed diagnostic evaluation and assessments by means of the Temperament and Character Inventory (TCI) at baseline and 1-year follow-up.

In Studies I and III, 6 and 15 patients respectively, did not meet the inclusion criteria. In Study II, three patients declined further participation after the diagnostic interview.

Patients in Study I (n=27) and II (n=26) represent two different samples of outpatients recruited among referrals to a psychiatric clinic in the central area of Stockholm. They were referred to the treatment by psychiatrists, who established the diagnosis of social phobia (DSM-IV). Additionally, in Study II a clinical psychologist interviewed all patients prior to randomization using the Structured Clinical Interview for DSM-IV diagnoses (First et al. 1995). A flow-chart of Study II is shown in Paper II.

In Study III (n=100) patients were recruited from the population of the county of Stockholm, by advertisements in local papers. They were screened on the telephone for possible social phobia and received self-report questionnaires and written information about the trial by post. Subjects who expressed interest in participating in the trial and returned the screening questionnaires were invited to a diagnostic interview using the Structured Clinical Interview for DSM-IV (SCID I) (First et al. 1995) for establishing the
diagnosis of social phobia and assessing additional psychiatric and personality disorders. Three senior SCID-trained psychiatrists conducted the interviews, which were repeated at 1-year follow-up when assessors were blind to the treatment condition patients had received. Patients received written information prior to the diagnostic interview, including the rationale for not revealing treatment condition. All diagnostic interviews were audio taped. The inter-rater reliability for the social phobia diagnosis was satisfactory (kappa=0.76). A flow-chart of the study is shown in Paper III.

In Study I, the generalized subtype of social phobia was assessed by the number of feared situations in the Liebowitz Social Anxiety Scale (LSAS), when assessors considered the individual fears to be related to “most social situations” and involved fear of “both public and performance situations and social interaction situations” (American Psychiatric Association 1994). In Study II-IV, specification of social phobia subtypes was based on a procedure described by Baker et al. (2002), categorizing patients’ ratings of the LSAS into four domains of social anxiety; formal speaking/interaction, informal speaking/interaction, assertive interaction and observation by others. Patients were considered to have generalised social phobia if they rated one or more social situations from each domain, as at least inducing moderate levels of fear (rating of 2 or higher on a 0-3 point scale). All other patients were classified as non-generalised (Baker et al. 2002).

Treatments and therapists

Intensive CBGT (Study I and II)

The origin of the treatment format (p. 18) stems from an 80-hour model developed by Andrews et al. (Andrews et al. 1994) and was implemented in a shorter version (41 hours) at a psychiatric clinic in Kungälv (Jönsson Unpublished manuscript, 1995). Although the main structure of the treatment was retained in the present CBGT, it was modified with regard to delivery and time used for cognitive restructuring interventions including daily assignments. In addition, the content of psycho-educative interventions was changed including the central role of safety behaviours and self-focused attention, for maintaining social phobia. The present CBGT incorporated central aspects of Heimberg’s cognitive behavioural group therapy whilst using the time format of the model developed by Andrews et al. The cognitive process model developed by Clark and Wells served as a general framework for therapeutic and didactic interventions. Treatment (41 hours) involved two weeks of daily treatment sessions separated by one week of homework assignments. Patients usually attended a 3-hour morning session and a 2-hour afternoon session and had lunch with other members of the group. Booster sessions were provided at 3 months, and at 6 and 12 months. Two experienced cognitive therapists administered 34 hours of cognitive-behavioural therapy, and a physiotherapist delivered 7 hours of relaxation training. A treatment manual guided the treatment. For detailed descriptions of CBGT see Papers I and II.

IGCT and ICT (Study III)

The intensive CBGT was modified (and renamed IGCT) adapting the specific procedures for interventions of the key maintaining processes (idiosyncratic negative
beliefs, safety behaviours and self-focused attention) of social phobia described in the
Clark & Wells’ model (1995) and developed for ICT (p. 16) (Clark Unpublished
manuscript, 1997). According to the model, exposure should be designed to test
predictions about how dangerous a situation is rather than to design exposure by
repetition to promote habituation. In order to maximize belief disconfirmation it is
necessary to reverse the maintaining processes. Relaxation training and psycho-
educative interventions were retained in the new model of IGCT. IGCT involved 16
group sessions spread over three weeks, followed by a booster session at 4, 8 and 12
months. ICT involved 16 shorter weekly sessions in 4 months followed by a booster
session at 8 and 12 months.

Seven therapists (5 clinical psychologists, 1 psychiatric nurse and 1 psychiatrist)
with 5-25 years of practice and experience of treatment of anxiety disorders delivered
ICT and IGCT, which were guided by treatment manuals. Five of the therapists were
licensed cognitive therapists and two had a basic level of CBT-training. Four of the
therapists had attended 1-2 day workshops on ICT by David M. Clark. During the trial,
therapists had supervision once a month to check adherence to the protocol and for
planning of future sessions. The supervisor was a highly experienced therapist who had
also supervised ICT in an earlier Stockholm trial. All sessions were video-recorded and
the tapes were viewed during supervision to check treatment integrity. David M. Clark
also reviewed a random selection of videotapes as a further check. No examples of
deviation from the treatment protocol, as described in the study manual were observed.
However, the quality of treatment delivery was not rated. For detailed descriptions of
IGCT and ICT see Paper I.

Treatment As Usual (TAU) (Study III)

TAU comprised medication plus standard psychiatric care. In contrast to the protocol
used in most drug trials (designed per protocol including placebo control, predetermined
dose regimens and fixed numbers of visits) the TAU condition is an example of routine
practice by allowing psychiatrists to choose from a range of indicated medications and
to individually tailor treatment. For 89% of patients, the medication consisted of an
antidepressant with indicated efficacy for social phobia in either randomized controlled
trials (fluoxetine, paroxetine, sertraline, moclobemide) (Blanco et al. 2003a; Blanco et
al. 2003b; Davidson et al. 2004; Hood and Nutt 2001) or open trials (citalopram)
(Bouwer and Stein 1998). The remaining 11% received a benzodiazepine (oxazepam).
Selective serotonin reuptake inhibitors were most common (83%), and were maintained
for 12 months, in line with current clinical recommendations (Ballenger et al. 1998).
Daily doses were: fluoxetine (20–60mg), paroxetine (20-40mg), sertraline (50-100mg),
moclobemide (600 mg) citalopram, (20-40 mg), and oxazepam (15 mg). Five senior
psychiatrists with 10 to 30 years of clinical practice and extensive experience in the use
of SSRIs delivered TAU. The psychiatrist and the patient discussed and decided
numbers of visits, telephone consultations between visits, and choice of medication and
other steps in treatment. Sessions usually lasted about 45 minutes and included routine
psychiatric procedures such as support, a review of progress, side effects and any other
adverse effects. The project leader had regular meetings with the psychiatrists in order
to monitor that part of the trial.
# Assessments, measures and statistical analyses

The measures and the statistical analyses used in each study are seen in Table 4. For detailed descriptions of statistical analyses, see Papers I-IV.

*Table 4 Measures and statistics in study I-IV*

<table>
<thead>
<tr>
<th>Study</th>
<th>Measures</th>
<th>Statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Symptoms Influence of Daily Life (SIDL)</td>
<td>$\chi^2$ and t-tests</td>
</tr>
<tr>
<td></td>
<td>Liebowitz Social Anxiety Scale (LSAS)</td>
<td>Analysis of variance (ANOVA), repeated measures</td>
</tr>
<tr>
<td></td>
<td>Anticipatory Anxiety (AA)</td>
<td>Effect size (ES) Cohen’s $d$</td>
</tr>
<tr>
<td></td>
<td>Beck Anxiety Inventory (BAI)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beck Depression Inventory (BDI)</td>
<td></td>
</tr>
<tr>
<td>II</td>
<td>Symptoms Influence of Daily Life (SIDL)</td>
<td>$\chi^2$ and t-tests</td>
</tr>
<tr>
<td></td>
<td>Liebowitz Social Anxiety Scale (LSAS)</td>
<td>One way ANOVA</td>
</tr>
<tr>
<td></td>
<td>Beck Depression Inventory (BDI)</td>
<td>Analysis of covariance (ANCOVA)</td>
</tr>
<tr>
<td></td>
<td>Social Interaction Anxiety Scale (SIAS)</td>
<td>ES, Cohen’s $d$</td>
</tr>
<tr>
<td></td>
<td>Social Performance Scale (SPS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Behaviour Questionnaire (SBQ)</td>
<td></td>
</tr>
<tr>
<td>III</td>
<td>The Social Phobia Composite: $^1$</td>
<td>$\chi^2$ and t-tests</td>
</tr>
<tr>
<td></td>
<td>Liebowitz Social Anxiety Scale (LSAS)</td>
<td>Intention-to-treat analyses (ITT)</td>
</tr>
<tr>
<td></td>
<td>Social Interaction Anxiety Scale (SIAS)</td>
<td>Completers-only analyses</td>
</tr>
<tr>
<td></td>
<td>Social Performance Scale (SPS)</td>
<td>ANOVA, One way</td>
</tr>
<tr>
<td></td>
<td>Fear of Negative Evaluation Scale (FNE)</td>
<td>ANCOVA, Repeated measures</td>
</tr>
<tr>
<td></td>
<td>Social Phobia Weekly Summary Scale (SPWSS)</td>
<td>Linear mixed model (LMM)</td>
</tr>
<tr>
<td></td>
<td>The Process Composite: $^1$</td>
<td>ES, Cohen’s $d$</td>
</tr>
<tr>
<td></td>
<td>Social Behaviour Questionnaire (SBQ)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Cognition Questionnaire (SCQ)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Attitudes Questionnaire (SAQ)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Beck Depression Inventory (BDI)</td>
<td></td>
</tr>
<tr>
<td>IV</td>
<td>Temperament and Character Inventory (TCI)</td>
<td>$\chi^2$ and t-tests</td>
</tr>
<tr>
<td></td>
<td>SCID-II (DSM-IV) Screen</td>
<td>Repeated measures analyses of variance (ANOVA)</td>
</tr>
<tr>
<td></td>
<td>Liebowitz Social Anxiety Scale (LSAS)</td>
<td>One-way ANOVA</td>
</tr>
<tr>
<td></td>
<td>Social Interaction Anxiety Scale (SIAS)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Social Performance Scale (SPS)</td>
<td>Analysis of covariance (ANCOVA)</td>
</tr>
<tr>
<td></td>
<td>Beck Depression Inventory (BDI)</td>
<td>Pearson $r$ correlation</td>
</tr>
<tr>
<td></td>
<td></td>
<td>ES, Cohen’s $d$</td>
</tr>
</tbody>
</table>

*Notes.* Social phobia measures=LSAS, AA, SPS, SBQ, SIAS, FQ-SOC, FNE, SPWSS, SCQ, SAQ; Disability ratings=SIDL, SDS; Depressive /anxious mood measures=BDI, BAI; Personality measures=TCI and SCID-II Screen.

$^1$ Social Phobia and the Process Composite: Patients’ scores on each of the six social phobia measures were standardized (M=0, SD=1) across pre- and post-treatment assessment by converting to Z-scores. The composite at each assessment occasion was the mean of the Z-scores on that occasion.
Assessments

In Studies I and II patients were assessed by self-report measures at pre-treatment, post-treatment (3 weeks), 3 months, 6 months and 12 months. In Study III patients in each group (IGCT, ICT, and TAU) were assessed at 4 months (end of ICT), 8 months and 12 months. In addition, the IGCT condition had an assessment at 3 weeks (the end of that treatment).

Measures

Social phobia: The Liebowitz Social Anxiety Scale (LSAS) (Baker et al. 2002; Liebowitz 1987); the Social Phobia Scale (SPS) and the Social Interaction Anxiety Scale (SIAS) (Mattick and Clark 1998); the Fear Questionnaire Social Phobia sub-scale (FQ-SOC) (Marks and Mathews 1979); the Fear of Negative Evaluation scale (FNE) (Watson and Friend 1969), are widely used standardized measures associated with credible validity, reliability and sensitivity to treatment changes. The 5-item Social Phobia Weekly Summary Scale (SPWSS) (Clark et al. 2003) has good internal consistency (Cronbach’s alpha=0.81) and consists of 0-8 ratings of social anxiety, social avoidance, self-focused versus external attention, anticipatory processing and post-event rumination. The Anticipatory Anxiety (AA) was used to assess the intensity and duration of anticipatory anxiety (Fahlén 1995a).

For assessing the key variables in the Clark and Wells’ model (1995) the following measures were used: The Social Cognitions Questionnaire (SCQ) (Wells et al. 1993) assessing the frequency and believability of social phobia related negative automatic thoughts; the Social Behaviours Questionnaire (SBQ) (Clark et al. 1995), assessing safety behaviours; and the Social Attitudes Questionnaire (SAQ) (Clark et al. 1995) assessing social phobia related negative beliefs.

Depressive and anxious mood: The Beck Depression Inventory (BDI) (Beck et al. 1979; Beck and Steer 1995) was used to assess depressive mood and the Beck Anxiety Inventory (BAI) (Beck et al. 1988) was used to assess anxious mood.


Personality: The Temperament and Character Inventory (TCI) (Cloninger et al. 1993; Cloninger et al. 1994) is a self-report questionnaire designed to assess temperament and character dimensions of personality. The temperament dimensions are: Novelty Seeking (to respond actively to novel stimuli), Harm Avoidance (to respond intensively to signals of punishment or non-reward /behavioural inhibition/), Reward Dependence (to respond intensely to signals of reward and to maintain signals associated with reward), and Persistence (to be persistent and hardworking despite frustration and fatigue). The character dimensions are: Self-Directedness (the ability to control, regulate and adapt behaviour), Cooperativeness (identification with and acceptance of other individuals) and Self-Transcendence (acceptance of ambiguity and uncertainty, spiritual acceptance and identification with the wider world).
The SCID-II Screen (DSM-IV) is a 119-item self-administered, true-false questionnaire for screening of personality disorders. It was used for diagnosing personality disorders, with the cut-off level adjusted upwards so that one additional criterion was required for each of the personality disorders. The procedure has shown a high overall kappa agreement (0.78) between the SCID interviews and the SCID-II Screener (Ekselius et al. 1994).
RESULTS

Characteristics of patients

The demographic and clinical characteristics of the samples (studies I-IV) are shown in Table 5. Patients across Studies I-III were middle aged (33-35 years), 52-65 % were women, 37-50 % were married, 43-56 % had a higher education, 4-11.5 % were unemployed, and 7-11.5 % were on sick leave. Patients overall, had a long duration of social phobia (18-19 years) with an onset in the teenage years. Generalized social phobia was diagnosed in some 67 %. In Studies II and III, 58 and 65 % were diagnosed with avoidant personality disorder (APD), respectively.

Table 5 Demographic and clinical characteristics of patients

<table>
<thead>
<tr>
<th>Demographic and clinical characteristics</th>
<th>I</th>
<th>II</th>
<th>III</th>
<th>IV</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, mean (SD)</td>
<td>35.0 (8.3)</td>
<td>33.3 (7.5)</td>
<td>34.7 (9.2)</td>
<td>34.9 (8.6)</td>
</tr>
<tr>
<td>Women, n (%)</td>
<td>14 (52)</td>
<td>17 (65)</td>
<td>63 (63)</td>
<td>34 (58)</td>
</tr>
<tr>
<td>Married/cohabiting, n (%)</td>
<td>10 (37)</td>
<td>13 (50)</td>
<td>49 (49)</td>
<td>25 (42)</td>
</tr>
<tr>
<td>Higher education, n (%)</td>
<td>15 (56)</td>
<td>14 (54)</td>
<td>43 (43)</td>
<td>28 (47)</td>
</tr>
<tr>
<td>Occupation, n (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Employed</td>
<td>20 (74)</td>
<td>15 (58)</td>
<td>66 (66)</td>
<td>41 (69)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>1 (4)</td>
<td>3 (11.5)</td>
<td>8 (8)</td>
<td>4 (7)</td>
</tr>
<tr>
<td>Students</td>
<td>3 (11)</td>
<td>5 (19)</td>
<td>19 (19)</td>
<td>10 (17)</td>
</tr>
<tr>
<td>Sick list</td>
<td>3 (11)</td>
<td>3 (11.5)</td>
<td>7 (7)</td>
<td>4 (7)</td>
</tr>
<tr>
<td>Age of onset, mean (SD)</td>
<td>17.0 (6.1)</td>
<td>14.0 (3.7)</td>
<td>15.4 (7.3)</td>
<td>15.1 (7.2)</td>
</tr>
<tr>
<td>Duration of social phobia years, mean (SD)</td>
<td>18.0 (10.4)</td>
<td>19.3 (7.3)</td>
<td>19.3 (11)</td>
<td>19.8 (10.4)</td>
</tr>
<tr>
<td>Axis I co-morbidity, n (%)</td>
<td>27 (100)</td>
<td>21 (81)</td>
<td>45 (45)</td>
<td>24 (41)</td>
</tr>
<tr>
<td>Generalised social phobia, n (%)</td>
<td>27 (100)</td>
<td>12 (46)</td>
<td>63 (63)</td>
<td>39 (66)</td>
</tr>
<tr>
<td>Avoidant PD, n (%)</td>
<td>-</td>
<td>15 (58)</td>
<td>65 (65)</td>
<td>40 (68)</td>
</tr>
<tr>
<td>Any PD, n (%)</td>
<td>-</td>
<td>-</td>
<td>83 (83)</td>
<td>47 (80)</td>
</tr>
</tbody>
</table>

Notes. 1Higher education=University/University College. 2 Study II: There were 3 missing cases

In Study I, all patients had a lifetime comorbid disorder (mostly depressive disorders) and 85 % were on medication (typically an SSRI) when entering treatment. The medication had usually been maintained approximately one year prior to treatment with intensive CBGT.
In Study II, 81% of patients had a lifetime comorbid disorder (73% were depressive disorders and 39% were anxiety disorders), and 36% were on medication (typically an SSRI) due to some comorbid disorder when entering treatment.

In Study III, patients who had a psychotropic medication were excluded from the trial. The lifetime axis I comorbid disorders (Study III) were depressive disorder (27%), OCD (8%), panic disorder (7%), anxiety disorder NOS (6%), eating disorder (5%), alcohol or substance abuse (4%), dysthymia (3%), specific phobia (3%) and GAD (3%). Forty per cent of patients reported a negative life experience to be associated with the onset of social phobia. These were, for example, moving to another area, beginning a new education, moving away from home, being bullied, parents’ divorce, a parent’s alcohol abuse or a parent’s death. About 22% reported that they had been bullied during early school years.

The effectiveness of the intensive CBGT (IGCT)


The feasibility and effectiveness of the intensive CBGT was examined in 27 patients diagnosed with social phobia. The study was administered within the regular service of a psychiatric clinic using available therapists and involving patients that were referred through usual clinical routes. An intensive treatment prolonged over time may have potential benefits e.g. when devising effective exposure tasks, compared to a weekly treatment. However, the treatment might be too demanding for patients as they are constantly exposed to feared social situations. Moreover, the logistics could be impractical as patients need to attend during a concentrated period of time and therapist time is occupied at a usually busy psychiatric environment.

Patients were consecutively allocated to the treatment, with booster sessions provided at 4 months, and at 8 and 12 months. Self-administered assessments were conducted before and after treatment (3 weeks) and at the time of the booster sessions. Four groups, consisting of 6 to 8 participants received treatment.

All patients had some lifetime comorbid disorder, most frequently depression. The average duration of social phobia was 18 years. Eighty-five per cent were treated with pharmacotherapy (usually SSRIs) due to some comorbid condition. Seventy percent had maintained medication at least 1 year before they entered the treatment. At the 1-year follow-up 52% had discontinued medication. Treatment significantly reduced fear and avoidance of social interaction and performance (LSAS), anticipatory anxiety (AA), symptoms influence on daily life (SIDL) and general anxiety (BAI). Follow-up assessments indicated maintained or increased improvement from post-test to 1-year. Large average pre-treatment to post-treatment (after 3 weeks) effect sizes (0.88, range: 0.75-1.14) was shown. Clinically significant improvement (based on normative scores of the Liebowitz Social Anxiety Scale /LSAS/) was observed in 52% of patients. Patients who did not show a clinically significant improvement had higher scores on the LSAS and the Beck Anxiety Inventory (BAI) at baseline, and did not reduce scores of BAI during the course of treatment, in contrast to patients that showed a clinical significant change.
Intensive CBGT appears to be an effective treatment that could be an option in the treatment of social phobia at a psychiatric clinic. Controlled studies are warranted for determining efficacy.

**Study II: Intensive Cognitive Behavioural Group Treatment for Social Phobia: a randomized controlled study**

Twenty-six patients meeting DSM-IV criteria for social phobia were randomly assigned either to a CBGT treatment group or to a 6-month waiting list control group. Assessments were at pre-and post-treatment (3 weeks) and at 3-month and 6-month follow-up. The waiting list group entered active treatment after 6 months on the waiting list. The assessment at 6 months was used as a new baseline measure and further assessments were made at 3 weeks (end of treatment) and at the time of the booster sessions (3 months, and at 6 and 12 months).

Eighty-one per cent of patients had a lifetime comorbid disorder, most often a depressive disorder. Thirty-six per cent were on a medication, usually an SSRI. The duration of social phobia was 19.3 years. Typically, patients who received treatment improved significantly on self-report scales, whereas the waiting list patients did not. Treatment was associated with significantly reduced levels of symptoms influence on daily life (SIDL), safety behaviours (SBQ) and social anxiety and avoidance (LSAS, SPS, SIAS) and those gains were maintained or improved at follow-up. The Fear of Negative Evaluation (FNE) designed to measure apprehension about others evaluation and expectations of negative evaluation, did not change with treatment. The uncontrolled (within-group) average effect size was small (0.49) at post-treatment (3 weeks), and medium at 3-month (0.61) and 6-month (0.73) follow-up. The average effect sizes for the waiting list group ranged from 0.06 at post-treatment to 0.06 and 0.05 at 3 and 6-month follow-up (no effect). As the waiting list group received active treatment after the waiting list period, the effect sizes was calculated for the combined group (n=24) showing medium effect sizes (0.56) at post-treatment and 3-month follow-up (0.68), and large (0.81) at the 6 and 12-month follow-up.

In accordance with the pilot study, the overall pattern of results suggests that the intensive CBGT is effective in treating patients suffering from social phobia. It was discussed that the treatment might be further improved by adapting procedures recently developed by Clark and co-workers (Clark et al. 2003). For example procedures in how confrontations with feared situations are set up and processed. Rather than conducting exposure as a repetition of graded exposure assignments (habituation) it is conducted to test the predictions that the patient has about how dangerous a situation is (Clark 1999). The identification of processes that are suggested to maintain social phobia (e.g. the role of safety behaviours and self-focused attention) is then regarded as essential.

**Study III: Intensive Group Cognitive Treatment and Individual Cognitive Therapy versus Treatment as Usual in Social Phobia: a randomized controlled study**

The content of CBGT was modified (and renamed IGCT) to take into account some of the latest developments in psychological treatment described by Clark and co-workers (Clark et al. 2003). Specifically, the procedures for interventions of the key maintaining processes of social phobia (idiosyncratic negative beliefs, safety-behaviours and self-
focused attention) were adapted to IGCT. One hundred patients meeting DSM-IV criteria for social phobia were randomly assigned to intensive group cognitive therapy (IGCT) individual cognitive therapy (ICT), or treatment as usual (TAU). In ICT, patients had up to 16 sessions in 4 months followed by a booster session at 8 and 12 months. In IGCT, patients had up to 16 prolonged treatment sessions during a three week period, followed by a booster session at 4, 8 and 12 months. In TAU, patients were given an indicated medication on which they were maintained for 12 months. Each psychiatrist decided the number of visits. Assessments were at pre-treatment, three weeks (IGCT only), 4 months, 8 months and 12 months. The main outcome measure was the Social Phobia Composite that combined several standardised self-report measures. Diagnostic assessment was repeated at the 1-year follow-up with assessors’ blind to treatment condition.

It was predicted that all three treatments would bring about substantial changes and that ICGT would be as effective as ICT. As ICT had been shown to be superior to a single SSRI (fluoxetine), it might be expected that ICT and IGCT would be superior to TAU. However, the greater flexibility of drug choice in TAU could mean that it is more effective than the single medication studied in the previous trial (Clark et al. 2003). As a consequence, there was no clear prediction about how TAU would compare to ICT and IGCT.

Consistent with the first prediction, it was found that all three treatments were associated with significant and enduring improvements in social phobia. Contrary to the second prediction, the modified IGCT programme was less effective than ICT. No prediction was made about the relative efficacy of ICT and IGCT in comparison to TAU. In the event, ICT was consistently superior to TAU.

IGCT did not differ from TAU on most measures but was superior to TAU on the Liebowitz Social Anxiety Scale and the Fear Questionnaire. In addition, there was a trend for IGCT to be superior to TAU on the overall measure of social phobia (the social phobia composite) when the analysis was restricted to patients with generalized social phobia. Overall, the 3-week IGCT was shown to be as effective as the 12-month medication focused TAU, but requires more therapist contact.

The results for IGCT confirm previous findings that the brief, intensive treatment is effective. IGCT works fast, showing credible effect size on the social phobia composite (0.70 for the intention to treat sample and 0.84 for completers) after only 3 weeks (Table 6). The addition of CT procedures to the intensive treatment in this trial is associated with an improvement in effect size compared to previous studies, which suggests that the procedures may have enhanced the effectiveness of the intensive programme.

ICT was consistently superior to IGCT and TAU on measures of social phobia and was associated with substantially larger effect sizes. This result confirms and extends the findings of previous trials in which ICT was superior to an SSRI (Clark et al. 2003) and to two alternative psychosocial interventions (Clark et al. 2005 In press; Stangier et al. 2003). Repeated diagnostic evaluation and the 1-year follow-up revealed that 66 % of patients in IGCT, 75 % of patients in ICT and 48 % of patients in TAU no longer fulfilled the criteria for social phobia.

Dropout rates
Two patients (7%) from Study I and two patients (8 %) from Study II dropped out from intensive CBGT. In Study III, there was a significant difference in dropout rates between
treatments (IGCT: 26 %; ICT: 12.5 %; TAU: 45.5 %). The overall dropout rate in Study III was 28 %, of which 18 % of these dropped out before entering treatment and 10 % dropped out early in treatment. There were no significant differences between completers and dropouts in baseline self-report measures or in demographic and clinical characteristics. In IGCT, 6 of the 9 patients who dropped out did so before entering treatment. In TAU, the most common reason for dropping out was that patients did not accept the assigned treatment, which was evident in 30 % of patients randomized to TAU.

Effects of treatment on social phobia symptoms: Effect sizes

Table 6 shows the average effect sizes (Cohen’s $d$) of social phobia measures in each study. In Study III, effect sizes were based on the social phobia composite (see Table 4).

<table>
<thead>
<tr>
<th>Assessment occasion</th>
<th>Study I</th>
<th>Study II</th>
<th>Study III</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>CBGT ($n=12$)</td>
<td>Controlled ES</td>
<td>WL ($n=12$)</td>
</tr>
<tr>
<td>3 weeks</td>
<td>0.88</td>
<td>0.49</td>
<td>0.78</td>
</tr>
<tr>
<td>4 months</td>
<td>(1.36)</td>
<td>(0.61)</td>
<td>(0.88)</td>
</tr>
<tr>
<td>8 months</td>
<td>(1.25)</td>
<td>(0.73)</td>
<td>(0.88)</td>
</tr>
<tr>
<td>12 months</td>
<td>1.45</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Notes: CBGT = Cognitive Behavioural Group Treatment; WL = waiting list group; IGCT = Intensive Group Cognitive Treatment; ICT = Individual Cognitive Therapy; TAU = Treatment as Usual. 1 In Studies I and II, the follow-up assessments were at 3 and 6 months and in Study III they were at 4 and 8 months.

To summarize, the uncontrolled completers effect sizes of the intensive treatment across studies, were small, moderate or large at post-treatment, moderate to large at follow-up periods and were large at 1-year follow-up. In IGCT the effect size of completers were large at all assessment points.

Maintenance of treatment gains

Studies I-III showed that treatment gains achieved at 3-week post-treatment typically were maintained or further improved from post-treatment across follow-up periods to 1 year. Further reduction of social anxiety and avoidance of interaction and performance situations as well as ratings of symptoms influence on daily life (LSAS, SIDL, SIAS, SPS) were shown in Study I (LSAS, SIDL) and II (SPS, SIAS). In Study III, treatment overall showed continued improvement on the social phobia composite (see Table 4), from 4 months to 1 year. A separate analysis, comparing pre-test, 3 weeks and 4 months was conducted to determine whether the improvements observed with IGCT were already evident after 3 weeks or whether more time where required for improvements to emerge. It showed that IGCT appeared to achieve most of its effect after 3 weeks.

Clinical significant changes

In Study I, 52% of patients who completed treatment, were regarded to have achieved clinically significant improvement at the 1-year follow-up i.e., they within the scores of a
healthy population according to normative scores of the Liebowitz Social Anxiety Scale (Fresco et al. 2001; Ogles et al. 2001).

In Study III clinically significant change was calculated for all randomized patients, using Jacobsen and Truax’s (1991) stringent criterion that a patient’s post-treatment symptom score has to be at least two standard deviations below the pre-treatment mean. Using this criterion, 56% of ICT patients showed clinically significant improvement on the social phobia composite, compared to 26% in IGCT and 24% in TAU. Psychiatric assessors who were blind to treatment condition repeated the SCID social phobia module at 12 months, when 24 patients in ICT (75%), 23 patients in IGCT (66%) and 16 patients in TAU (48 %) were judged to have lost the diagnosis of social phobia.

**Personality traits in social phobia: Changes following treatments?**

**Summary of Study IV: Temperament and Character dimensions in patients with social phobia: Patterns of change following treatments?**

The aims of the study were to examine personality patterns, and to examine the nature of change following IGCT, ICT and TAU. Based on previous findings it was expected that patients would show high baseline levels of harm avoidance, and low levels of self-directedness and cooperativeness. It was predicted: 1) that dysfunctional character and temperament traits, independent of treatment condition, would be significantly improved following treatment; and 2) that improved personality traits would be significantly related to reduced social anxiety.

One hundred patients recruited by advertisements in local papers were randomized to IGCT, ICT and TAU (Study III). Patients (n=59) who completed diagnostic evaluation and assessments using the Temperament and Character Inventory (TCI) at baseline and 1-year follow-up were examined in this study. Sixty-eight per cent were diagnosed with an avoidant personality disorder (APD) and 80 % with some personality disorder (PD). Non-response to treatment was defined in patients who still fulfilled criteria for social phobia at 1-year follow-up.

The study replicated previous consistent findings of dysfunctional personality patterns in social phobia, i.e. high harm avoidance, low self-directedness and low cooperativeness. Elevated harm avoidance is associated with the DSM-IV cluster C (fearful) and low self-directedness and cooperativeness are indicated to be predictors of personality disorders in general (Svrakic et al. 1993), which most likely is reflected in our sample containing 68 % of patients with APD and 80 % with PD.

The further results were consistent with the initial predictions. Firstly, it was found that treatment overall was associated with a decrease in harm avoidance. However, improved self-directedness was observed after psychotherapy only. Secondly, it was shown that reduced social anxiety was correlated with decreased level of harm avoidance and increased level of self-directedness. Moreover, it was found that a high level of harm avoidance at baseline was related to poor outcome in all treatments.

Patients with social phobia show a temperamental vulnerability for developing anxiety and exhibit character traits associated with personality disorders. Successful treatment is related to a decrease of harm avoidance and increase in self-directedness. It
might be expected that increased abilities to control, regulate and adjust behaviour, reflected in improved self-directedness, would make the individual more prepared to handle the influence of elevated harm avoidance, thus preventing future relapse. High harm avoidance at baseline might be a predictor of poor treatment outcome that suggests a need for extensive treatment in order to achieve remission.
GENERAL DISCUSSION

In this thesis the treatment utility of an intensive CBGT, not previously tested in controlled studies, was examined in a pilot study and in a waiting list controlled study. Also the further modified version, IGCT, was compared with other active treatments in a randomized controlled trial. In addition, baseline personality traits as well as changes following treatments were examined with specific considerations of whether certain personality patterns were related to a non-successful outcome.

Is intensive CBGT a feasible and effective option in routine psychiatric practice?

The pilot study showed that the brief approach was a feasible and effective option in the treatment of social phobia within the routine service of a psychiatric clinic. Despite the intensive format where patients are highly exposed to social anxiety, and the more difficult logistics associated with CBGT, the dropout rate was low (7 %). The low drop out rate indicates that the treatment was well accepted. It is also comparable to the rates usually found with CBT across meta-analyses (10-20 %). Patients represent a chronic psychiatric population with comorbid disorders and severe social anxiety problems. In fact, the majority of patients had previous medication, which had been maintained more than one year prior to treatment. They did, however, still fulfill the criteria for social phobia. Thus, the main target of the previous treatment appears to have been a comorbid disorder, rather than social phobia. Possibly, patients might not have been actively identified until there actually existed a treatment option specifically focused on this problem (intensive CBGT). It is found that only a low percentage of patients with social phobia actually seek treatment and those who do so, typically wait more than 15 years. In addition, most patients seek treatment because of a comorbid disorder rather than social phobia (Kessler 2003). Social phobia is often not directly identified in those patients (Sheeran and Zimmerman 2002).

Patients were significantly improved after 3 weeks, the magnitude of treatment effect was large (ES=0.88), and the results were maintained or increased at the 1-year follow-up. Thus, this brief treatment show similar effects compared to protracted (12-16 weeks) standard treatments. Interestingly, 52 % of patients had discontinued medication at the 1-year follow-up and moreover, 72 % did not require further psychiatric treatment. These are encouraging findings considering that patients represent a chronic population with 18 years duration of social phobia. In addition, clinical significant improvement (according to reduction of LSAS scores) was indicated in 52 % of patients. Patients who did not reach this level showed greater severity of social phobia symptoms. However, they improved proportionally as much from treatment. Most certainly these patients would benefit from extended individualization in order to enhance effects. As SSRI
treatments targets anxiety symptoms, the social phobia symptoms might have been decreased in those patients, i.e. lower than otherwise would have been expected. It might be possible that the (unplanned) sequencing of medication and CBGT could have enhanced treatment effects for those patients. However, pre-existing antidepressants have not been found to significantly enhance or detract from the positive treatment outcome of group CBT treatment (Rosser et al. 2003).

A limitation when interpreting the results is the lack of a control group and the use of few standardized measures. However, the ES of the standardized Liebowitz Social Anxiety Scale at post-treatment (0.79) and follow-up assessments (1.18-1.35) did not detract from the major picture.

Is intensive CBGT more effective than no treatment (a waiting list group)?

The subsequent waiting list controlled study showed that intensive CBGT was more effective than being on a waiting list. Overall the findings were consistent with the results of the pilot study; however, the effect sizes were smaller at post-treatment. Treatment was associated with significant and enduring effects as well as a low dropout rate (8 %). Patients with greater severity of social anxiety did not seem to benefit less from the treatment. However, they were more impaired at the end of treatment than those with a less severe condition.

The observation that the Fear of Negative Evaluation (FNE) scale did not change in the course of treatment could mean that the treatment was less likely to have an impact on dysfunctional attitudes associated with social phobia, and more likely to affect symptoms of anxiety and avoidance of social situations as indicated by the other measures. However, the FNE is shown to be highly correlated to symptoms of general anxiety and depression (Clark et al. 1997), which was not the focus of this treatment.

Similar to the pilot study, this sample of patients was representative of psychiatric patients with a high frequency of lifetime comorbid disorders (81 %) and a long duration of social phobia. Fewer patients were, however, on an SSRI medication although most patients had received previous treatment.

A limitation of the study was the small sample size that (despite randomization) probably contributed to initial differences (proportion of sub-types and symptom severity) between groups. A larger sample as well as stratifying patients before randomization would have been a strategy to attain increased control.

Overall it can be discussed whether it is too premature to evaluate the full treatment effects of the intensive CBGT after only 3 weeks, considering that patients need time to practice in the “real world” to maintain and improve treatment gains. Nevertheless, the brief treatment has potential advantages compared to a weekly treatment. First, it provides a prolonged and extended exposure to a social context, which may limit “internal avoidance”. Secondly, it could provide rapid treatment with sufficient effectiveness preventing further deterioration. Thirdly, it could be an alternative for patients that cannot participate in a treatment extending over several weeks.
How effective is IGCT compared to ICT and TAU?

In the randomized controlled study of IGCT, ICT and TAU, more elaborate control conditions were applied. In addition, patients were recruited from outside the psychiatric clinic by advertisements in local papers. Nevertheless, this group of patients showed similar severity and duration of social phobia symptoms to patients in the previous studies. However, the frequency of lifetime comorbid disorders (45%) was lower. Fifty per cent had in fact never received psychiatric treatment.

The results for IGCT confirm the findings of previous studies that brief, intensive treatment is effective. Sixty-six per cent of patients did not fulfil criteria for social phobia at the 1-year follow-up. IGCT works fast, showing a credible effect size on the social phobia composite (0.70 for the intention to treat sample and 0.84 for completers) after only 3 weeks. As there was no significant difference between the 3-week and 4-month assessment it appeared that IGCT achieved most of its effects after only 3 weeks. In comparison, a moderate ES (0.55) at post-treatment (4 months) was shown in a previous trial where the CT model was tailored to weekly group treatment (Stangier et al. 2003). Possibly the intensive format of IGCT is better suited to deal with “internal avoidance” than weekly treatments. Another explanation for the better result of IGCT could be that therapists in the present trial were more experienced cognitive therapists.

The addition of CT procedures to the intensive treatment in this trial is associated with an improvement in effect size compared to Studies I and II which suggests that the procedures may have enhanced the effectiveness of the intensive programme. Although comparisons across studies are difficult considering differences in selection criteria, characteristics of patients as well as the assessment used for effect size calculations they provide a context of comparison. Meta-analyses of CBT programmes that take 12-16 weeks report medium to large completer effect sizes (0.51 to 1.08) at post-treatment and medium to large (0.78-1.31) effect sizes at follow-up (Fedoroff and Taylor 2001; Feske and Chambless 1995; Taylor 1996a). In comparison, the IGCT shows large effect sizes at 3-week post-treatment (0.84) and across follow-up assessments (0.96-1.23).

The dropout rate (26%) in IGCT was higher compared to the rates found in Studies I and II. However, 17% (6 patients) dropped out before entering treatment. Usually, each patient receives therapist information prior to treatment. Due to possible advantages for IGCT compared to ICT and TAU implied by this intervention it was excluded. It might however, partly explain the higher dropout rate, as it is reasonable to assume that a prior contact with a therapist would have facilitated the first meeting with the group.

IGCT versus ICT

IGCT was less effective than ICT, even though IGCT involved more within session exposure exercises, which are often seen as particularly important for successful treatment of social phobia. One possible explanation could be that ICT is better suited to maximizing the effectiveness of exposure. According to the model (Clark and Wells 1995) on which cognitive therapy is based, exposure exercises should be designed in a way that maximizes patients’ opportunities to test their predictions about how dangerous a situation is, rather than as exercises that rely on repetition to promote habituation. In order to maximize belief confirmation, it is necessary to: (1) identify
patients’ idiosyncratic predictions; (2) to help patients identify and drop their overt and
covet safety behaviours; and (3) to assist patients to reconfigure attention so that they
attend to the social interaction rather than to themselves. In IGCT, it is difficult to
provide each patient with the individual attention that is needed for these detailed
procedures. The same applies for other cognitive therapy procedures such as video
feedback and imagery modification, each of which focuses on information that is highly
idiosyncratic. If this analysis is correct, the effectiveness of IGCT might be improved by
paying more attention to individualization. An alternative explanation for the superiority
of ICT could be the length of treatment. The duration of IGCT may be too brief for
some patients, who might need therapist support and feedback during an extended period
of time to be able to maintain the motivation to explore and practice new
behaviours in a range of situations, some of which occur infrequently. In addition, some
patients may find a group format too interpersonally demanding, at least initially.

The Fear of Negative Evaluation (FNE) did not change with the intensive
treatment in Study II, which could mean that the treatment was less likely to have an
impact on dysfunctional attitudes associated with social phobia. Although the change of
FNE was significant with IGCT in Study III, it still differed from ICT, whereas no
significant difference was indicated by measures assessing anxiety and avoidance of
social situations (LSAS and FQ). Again, this could imply that the delivery of exposure
became closer to a habituation rationale than the cognitive process model, despite that
the procedures of the CT-model were added and carefully elaborated.

IGCT versus TAU

IGCT and TAU were associated with similar improvement overall, although IGCT was
superior on two measures (LSAS and FQ) and showed a trend towards better outcome in
patients with generalised social phobia (a result that was significant in the LMM
analysis). However, the 3-week IGCT was as effective as 12 months of medication. In
addition, TAU tended to have a larger dropout rate, suggesting that it was less well
accepted. A more structured TAU treatment involving a larger number of visits may have
increased patients’ motivation to remain in therapy. However, the attendance schedule in
TAU was modelled on existing, routine clinical practice. It could be suggested that
although TAU was less acceptable overall, individuals who persisted with medication
may have a particularly good response. Contrary to expectation, the completers’ only
effect sizes for TAU were not larger than those for IGCT. The effect sizes for TAU in all
randomized patients (0.44 after 4 months of treatment) appears low compared to effect
sizes showed for intention-to-treat samples in meta-analyses. However, the effect must be
related to the fact that very few sessions were used in TAU (5.2 sessions and 2 telephone
consultations on average), compared to clinical trials overall, and to ICT and IGCT. On
the other hand, patients in TAU were still in treatment at the 1-year follow-up in contrast
to patients in IGCT and ICT who had completed after 3 weeks and 4 months,
respectively. Moreover, the number of sessions in IGCT and ICT were decided a priori,
and were kept regardless of whether patients had an effect of treatment earlier.

The dropout frequency in TAU was markedly high (45.5 %) compared to the
rates (1.5-23 %) reported in pharmacological studies of social phobia. Thus, patients in
this sample seem less likely to expect that medication would help them compared to
psychotherapy. Low expectation of a treatment generally affects the treatment outcome
negatively. According to the Working Alliance Inventory (WAI), administered at the third session of IGCT and ICT, patients overall had high expectations of treatments. For example, regarding the items “I think the way we work with my problem is correct”, and “I trust that the therapist can help me” patients’ average ratings were approximately 6, on a 0-7 Likert scale (data are not published in Paper ΙΙΙ). However, high expectations of a treatment are not equal to the effectiveness of that treatment. If this study is representative for TAU with social phobia patients, the problem with dropouts needs attention, especially as medication, to date, is often the first treatment of choice in psychiatry.

Clinical psychotherapists often argue that research therapies, which often are presented with higher effect sizes, are not representative for clinical practice as clinical therapies involve more disabled patients resulting in more time-extended therapies. Sample restriction, has however, not been found to explain treatment effects. It rather seems that some of the criteria applied in research studies are positively correlated with outcome, i.e. recruiting specific patients to treatment, using specifically trained therapists and following and monitoring treatment manuals (Lincoln and Rief 2004). Similar to the suggestions made regarding TAU in this trial, TAU with psychotherapy in clinical practice could benefit from adapting procedures used in clinical trials. Even though controlled trials use a specified number of sessions, this is not equal to the number that should be used for the individual patient in clinical practice. Results of meta-analyses indicate that extended treatments are not more beneficial than shorter treatments. However, individual cases may be lost in statistical comparisons between groups.

The effectiveness of ICT compared to IGCT and TAU

ICT not yet included in meta-analyses has shown substantially higher effect sizes than other CBT treatments. While most treatments reported are group treatments no difference in effects are demonstrated between group and individual treatments.

ICT was consistently superior to IGCT and TAU on measures of social phobia and was associated with substantially larger effect sizes. This result confirms and extends the findings of previous trials in which ICT was superior to an SSRI (Clark et al. 2003) and to two alternative psychosocial interventions (Clark et al. 2005 In press; Stangier et al. 2003).

An important issue with psychological treatments is the extent to they can be successfully disseminated to other groups and settings. The initial evaluations of ICT (Clark et al. 2005 In press; Clark et al. 2003) were conducted by the group in the UK that developed the treatment. The present study was a largely independent investigation in a different country and a different setting (a psychiatric clinic versus a specialist psychological treatment centre). The therapists in the current trial attended a two-day workshop on ICT given by one of the treatment’s originators (David M. Clark), but there was no within trial supervision from, or contact with, the originating group and the trial therapists’ expectations were that ICT would not be the most effective treatment. Rather it was anticipated that the locally developed IGCT programme would be at least as effective as ICT. The observed superiority of ICT is therefore encouraging evidence that the treatment can be successfully disseminated and that positive results can be obtained by groups who do not have a strong allegiance to that particular treatment. The
procedures that made successful dissemination possible were not studied and will need to be delineated in future research. However, it was our impression that regular supervision from a local expert in cognitive therapy and the availability of therapist manuals in both English and Swedish were particularly helpful.

The superiority of ICT to TAU in the present trial complements the findings of a previous trial in which ICT was superior to fluoxetine (Clark et al. 2003). In that trial, a single SSRI was given in a highly structured per protocol treatment. In contrast, the present trial aimed to model routine practice by allowing psychiatrists to choose from a range of indicated medications and to individually tailor treatment. While treatment per protocol studies are essential for establishing drug efficacy, TAU studies may be seen as example of effectiveness in routine practice.

Personality traits in social phobia and patterns of change following treatment

Study IV showed that patients were characterised by pronounced harm avoidance and low levels of self-directedness and cooperativeness, which is consistent with previous studies of social phobia (Chatterjee et al. 1997; Marteinsdottir et al. 2003; Pelissolo et al. 2002). In addition, it was shown that treatment had an impact on harm avoidance and self-directedness, which was correlated to a decrease in social anxiety symptoms. Moreover, poor treatment outcome was related to pronounced harm avoidance at baseline, which remained unchanged in the course of treatment.

High harm avoidance seems to be a general vulnerability trait in social phobia however, present in other psychiatric disorders as well. Despite a decrease in harm avoidance patients remained different from healthy controls. Svrakic and co-workers (2002) suggested that psychotherapy acts on character dimensions (such as self-directedness), which are expected to change in the course of social learning and maturity, while medication targets extreme temperament traits (such as harm avoidance) (Svrakic et al. 2002). However, medication was not superior to IGCT and ICT in modifying harm avoidance. The result was consistent with a recent study of social phobia showing that harm avoidance is responsive to psychological interventions, thus indicating a state dependent influence of this personality trait (Hofmann and Loh 2006).

Interestingly, it was found that improved self-directedness was evident after psychotherapy only. It might be expected that increased abilities to control, regulate and adjust behaviour, a likely consequence of improved self-directedness (a likely consequence of psychotherapy), would make the individual more prepared to handle the influence of the vulnerability trait harm avoidance. Thus, improved personal abilities could most certainly serve to prevent future relapse and might be one explanation of the maintenance of treatment gains usually found with CBT treatments. We found that treatment effects across studies (I-III) and treatment conditions were maintained or further improved at the 1-year follow-up, which are encouraging results. Although patients in TAU maintained treatment gains, it is to be noted that patients were still in treatment with medication (as recommended) at the 1-year follow-up. Thus, it is unknown whether patients relapse after discontinuation of medication. Pharmacology studies usually do not report follow-up effects. However, some studies report higher relapse rates with medication than with psychotherapy (Haug et al. 2003; Liebowitz et
al. 1999). Overall, it is essential to evaluate outcome after even longer periods of time, such as the exclusive 5-year follow-up study of CBGT, reported by Heimberg and co-workers (Heimberg et al. 1993b). A similar long-term follow-up study is planned for patients involved in Study III.

Based on the observation that non-responders to treatments (IGCT, ICT and TAU) did not reduce harm avoidance and had higher scores at baseline, it was hypothesised that this temperament trait may be a general predictor of poor outcome. Non-responders also showed higher levels of baseline self-directedness, but improved proportionally as much as responders in this dimension. Depressive patients who fail to respond to antidepressant treatments are shown to have generally higher scores of harm avoidance before treatment (Kelley Yost Abrams et al. 2004), and this might also be the case in patients suffering from social phobia. Pronounced levels of harm avoidance may suggest the presence of a more stable trait and treatment resistant disorder with stronger association to early shyness, early behavioural inhibition and an earlier onset of social phobia. Such a sub-group need to be attended more carefully by extended individualization of treatment. These patients may benefit from treatment of longer duration and combined approaches of medication and psychotherapy, for example, by sequencing treatments. As the major effects of IGCT seems to be achieved already at three weeks, additional treatment interventions could be added at this early stage.

Further studies are required to examine the influence of elevated harm avoidance among other relevant predictors of treatment outcome in patients with social phobia. Qualitative methods, for example, the Adult Attachment Interview (Crittenden 2004) could generate further hypotheses about the possible impact of personality patterns on treatment outcome and may generate hypotheses of how to individualise treatment.
CONCLUSIONS

To summarize, the main findings in this thesis were as follows:

- Brief intensive CBGT is a feasible and effective option in the treatment of social phobia in routine psychiatric practice. It works fast and shows maintained or improved effects at one year post-treatment.

- IGCT, ICT and TAU are all effective and enduring treatments for social phobia.

- ICT is superior to IGCT and TAU.

- IGCT and TAU shows overall equal effectiveness. However, the 3-week IGCT is as effective as the 12-month medication focused TAU, but requires more therapist contact.

- IGCT and ICT seems to be more accepted than TAU

- Pronounced harm avoidance is a general vulnerability trait in patients with social phobia. Improved personal abilities achieved during treatments could serve to balance the negative influence of this personality trait.

- High baseline harm avoidance suggests the presence of more stable and treatment resistant problems that need further attention.

- The ability of psychotherapy to alter dysfunctional character traits such as self-directedness is suggested to explain the maintenance of treatment gains seen with IGCT and ICT.

- Further studies are needed for additional understanding of factors contributing to incomplete treatments responses.

Syftet med avhandlingen var att undersöka effekterna av en intensiv (3 veckors) kognitiv beteendeterapeutisk gruppbehandling (CBGT) i en pilotstudie och en väntlistekontrollerad studie. Med utgångspunkt i senare utveckling av psykologisk behandling modifierades gruppbekämpningen (IGCT). Den jämfördes därefter, med individuell kognitiv psykoterapi (ICT) och sedvanlig psykiatrisk behandling med läkemedel (TAU), i en randomiserad kontrollerad studie av 100 patienter. Därutöver studerades om personer med social fobi karakteriserades av specifika personlighetsmönster samt om dysfunktionella mönster förändrades som resultat av behandling.

Resultaten av pilotstudien och väntlistestudien visade att patienterna hade signifikant minskade besvär efter 3 veckors behandling. Behandlingseffekterna kvarstod vid 1-årsuppföljning. Effekterna bekräftades i den följande randomiserade kontrollerade studien där behandlingen jämfördes med individuell kognitiv psykoterapi och läkemedelsbehandling. Den individuella kognitiva psykoterapi var mer effektiv än både gruppbehandling och läkemedelsbehandling. Dessa senare var generellt lika effektiva. Patienternas personlighetsmönster karakteriseras av hög "harm avoidance" och karaktärsdrag associerade med personlighetsstörning. Dysfunktionella mönster förändrades efter behandling, men en subgrupp patienter med sämre behandlingseffekt visade ingen förändring av "harm avoidance".

Sammanfattningsvis är slutsatsen att en korttidsbehandling i grupp är effektiv och praktiserbar i rutinpsykiatrisk verksamhet. Den ger snabba effekter och bibehållna eller förbättrade effekter vid 1-års uppföljning. IGCT, ICT och TAU är alla effektiva behandlingar med bestående behandlingsresultat. ICT visar dock bättre resultat än IGCT och TAU. Tre veckors gruppbekämpning är lika effektiv som 12 månaders läkemedelsbehandling. Uttalad "harm avoidance" är en sårbarhetsfaktor hos personer med social fobi och kan vara en generell prediktor för ett sämre behandlingsutfall. Fortsatta studier behövs för att öka förståelse av faktorer som medverkar till ett sämre utfall.
I feel very privileged that I have been offered this opportunity to do complete doctoral studies. The time has finally come to express my gratitude to all the people who have encouraged and supported me during this special period of my life, and who have made this piece of research possible. This is a magic moment!

I wish to express my sincere gratitude to:

All the patients who have taught me what social phobia is and who have showed the courage needed for overcoming it.

My supervisor, Professor Anna Åberg Wistedt for your trust in me and for wise guidance and support, for your brilliant clarity and for encouragement, warmth and generosity throughout.

Professor David M. Clark, warm thanks for your great generosity and support, making it possible for me to use the unpublished treatment manual for cognitive therapy. Thank you for sharing your extensive knowledge of social phobia research, and for your tremendous hospitality at the Center for Advanced Study in The Behavioral Sciences at Stanford University when we finished the third article. California was an incredible experience!

Örjan Sundin, co-supervisor for encouragement and helpful methodological advices.

Karin Linnér, for encouraging and supporting the idea of implementing the brief CBGT at the Serafen psychiatric clinic and for your encouragement of my interest in this field of research.

My friend Seija Hiltunen, who developed the CBGT together with me in 1998. Thank you for being so dependable and kind, as well as for your perceptive comments along the way. Implementing the treatment was a fun adventure!

Jan Erik Jönsson and Stefan Lundberg, for your great generosity in allowing Seija and me to observe a 3-week treatment of intensive CBGT in 1997.

Astrid Palm-Beskow, a dear friend, supervisor in cognitive therapy and my mentor since my training in cognitive therapy at the Centre for Cognitive Therapy and Education in Kungälv.

Professor Jan Beskow, for inspiring lectures as well as for your warmth and support and for useful criticism of this thesis.

Cecilia Svanborg, for friendship, support and interesting scientific discussions, and for jogging with me in all kinds of weather during the AAI-courses in Kungälv and at Ellösgården.
Ann Ohlström, thank you for your fantastic ability in taking care of important logistics in this project. I am so happy that we met at the copying machine that day!

Madeleine Jeanneau, a dear friend and experienced researcher who offered me valuable assistance to navigate through the jungle of statistics

All the therapists involved in the intensive CBGT (IGCT), ICT and TAU: Seija Hiltunen, Ulrika Granath, Eva Axlid, Andreas Karlsson, Anna Högb erg, Elisabeth Hanser, Cecilia Svanborg, Michael Holmgren, Karin Bjerrehorn-Grepe, Michael Ragne, Gunnel Saxon-Craaford, Kristina Wessman, Ann Engström, Ritva Hemingstam and Stefan Lundin

Anna Kåver, supervisor for the cognitive therapists. Thank you for your generosity in sharing your therapeutic skills and knowledge of social phobia, and for the warmth, happiness and fun you brought into our supervision sessions.

A special thanks to Andreas Karlsson, co-writer, who despite becoming a father of twins sacrificed his sleep in order to contribute to our article.

Gunilla Berglund, co-writer who has offered me great support and valuable methodological pieces of advice.

A warm thanks to Susanne Bejerot, Mila Andersson, Kai Bruno, for carrying out all the diagnostic interviews in the project. I will never forget your willingness to help with the inter-reliability test despite your busy schedules.

A special thanks to Susanne Bejerot, co-writer, who has given me very valuable advice and has encouraged and supported me from the very start of this project.

Professor emeritus Lennart Wetterberg for valuable comments on articles and this thesis

All my colleagues at the Unit for Psychotherapy: Sandra Kempe, Karin Norling, Gisela Blomqvist, Pirkko Aalto Brock, Britt Skagerberg, Barbro Gammeltoft, Anneli Mark-Orbinski, Christina Elander, Christina Wennström, Bengt Matslofva and Aina Lindgren.

The research group at the Section of Psychiatry, St Göran for valuable seminar discussions and comments throughout this project.

Elisabeth Berg and Sead Omerov for statistical support.

Patricia Crittenden, for brilliant teaching of attachment theory and the AAI.

Steve Wicks, who reviewed the language. Possible errors may be due to alterations made after the review.

John Åkemark, for brushing up my English prior to the International Congress of Cognitive Therapy in 2005

My dear parents-in-law Kickan and Thomas, for your warmth and consideration

My siblings, Torsten, Birgitta and Kecke for always being there

My late parents Lena and Simon. I know you would have been proud of me.

Johannes, my beloved son for reviewing the language of the first article and for translating most of the AAI-interviews, but most of all for being the fantastic person you are.
Thank you Jan my beloved husband and dearest friend for loving and supporting me. Each and every day with you is a fantastic gift.

Finally, I would like to express my thanks for the grants received from the Boethius Foundation, the Söderström-Königska Foundation, the Organon Foundation, the FOU (The Research and Development Centre) of Stockholm County Council and the St Göran Psychiatric Clinic Foundation.
REFERENCES


Blomhoff, S., Haug, T. T., Hellstrom, K., Holme, I., Humble, M., Madsbu, H., and Wold, J. E. Randomised controlled general practice trial of sertraline, exposure therapy,


Fahlén, T. The Core Symptom Pattern of Social Phobia, Department of Clinical Neuroscience, Section of Psychiatry and Neurochemistry Mölndal Hospital. Gothenburg University, 1995a.


