

**Negative automatic thoughts and metacognitions as predictors of symptom reduction in social phobia**

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Foreword:

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## Introduction

According to the Institute of Public Health in Norway (Kringlen, Torgersen, Cramer 2001), social phobia is one of the three most prevalent mental disorders, beside depression and alcohol abuse. The core feature of social phobia is defined by a persistent and marked fear of social or performance situations, linked to fears that he or she will be humiliated or embarrassed. The social phobic either tries to avoid situations related to social performance, or experiences intense stress if these situations are endured (APA 2013). Usual symptoms that persons with social phobia are experiencing are sweating, trembling and blushing (WHO, 1992). Social phobia can be generalized, or it can be specific to only one type of situation. These situations could be for example, eating in front of other people, giving a public speech, or talking to strangers.

Between 7 and 12% in Western countries will meet the criteria of a diagnosis of social phobia at some point in their lives (Furmark, 1999). A study indicates the prevalence to be as high as 16.6% (Kessler et. al, 2005). In a Norwegian study on 2200 subjects from Oslo, estimated that 9 % of the men and 17 % of the women had suffered from social phobia at some point in their lives, and between 5 and 11 % had experienced symptoms of social phobia at some point during the last year (Kringlen et al. 2001). Social phobia affects males and females equally (Moutier & Stein, 1999; WHO, 1992). A study (Grant et al. 2005) reports mean age of onset to be 15,1 years, and the disorder will typically follow a chronic course if it is not treated, possibly leading to problems concerning everyday situations like attending school or work, in addition to impairments in social functioning (Davidson, Hughes, George & Blazer, 1993; Schneier et al., 1994; Shneier, Johnson, Hornig, Liebowitz & Weissman, 1992; Stein & Kean, 2001; Stein, Torgrud, & Walker, 2000, Stein, Walker & Forde, 1996).

What maintains social phobia?

*Post- event processing* is thought to be a key maintenance factor in social phobia (Wells, 1997; Shikatani et al, 2014). Post event processing is a repetitive cognitive process characterized by constant rumination about what happened in a social situation, seen the way

one thinks others perceives him or her (Brozovich & Heimberg, 2008). Because of this self-focused attention, the person fails to acquire objective information about the situation, and the post-mortem rumination focus on negative feelings and self-perceptions that can strengthen the already negative beliefs about ones social performance (Wells, 2007). It is not clear whether people with social phobia actually perform worse than non-social phobics in social situations, but there is some evidence that they do not perform more poorly than control groups (Rapee & Lim, 1992).

Post-event processing has been found to have a high degree of association with social phobia in student samples (Lundh & Sperling, 2002; Mellings & Alden, 2000; Rachmann, Grüther-Andrew, Shafran, 2000), and the extent of post-event processing has been found to correlate with the severity of the anxiety reported in social situations, and also that subjects in the high social anxiety group were more likely to use ruminative coping strategies compared to those in the low social anxiety group, (Kocovski, Endler, Rector & Flett, 2005). In fact, the process of post-event processing might explain why the anxiety associated with social performance does not decline after repeated exposure to social situations; because the post-event rumination replaces the actual situation with distorted facts, making negatively biased information more available to the person, rather than neutral and correct information (Fehm, Schneider & Hoyer, 2007; Wells, 1997). Mellings & Alden (2000) support this hypothesis and suggest that post-event rumination may lead to differential coding and consolidation of negative self-relevant information. In addition to this, another study suggests that post event rumination serves to prolong state anxiety (Blagden & Craske, 1996). It has been suggested that subjects with social phobia find post-event processing helpful, because they held metacognitions regarding the need to reflect over perceived social mistakes and use problem-solving to find out how they could have done it differently (Rachmann et al, 2000; Field & Morgan, 2004).

A huge part of this post event rumination is marked by *self-focused attention*, which is seen as another maintaining factor of social phobia (Bögels & Mansell, 2004; Clark & McManus, 2002; Mor & Winqvist, 2002; Beck & Emery, 1985). According to the cognitive model of Wells (1997) dysfunctional beliefs about the social self and performance are activated as soon as the subject enters a social situation. Because of this a shift in attention from external to internal focus occurs, in the form of detailed self-observation and monitoring of bodily sensations such as sweating, trembling and blushing. The self focused attention often takes the form of an observer-perspective which consists of images of the subject the

way he or she thinks an observer would see them; with highly visible signs of embarrassment such as sweating or blushing (Hackman, Clark & McManus, 2000; Hackmann, Surawy & Clark, 1998; Hofmann & Heinrichs, 2003; Wells 1997, 2007). According to some research (Clark & Wells, 1995; Rapee & Heimberg, 1997; Stopa & Clark, 2000), social phobics shows a bias in their information processing where they only select negative information regarding their own performance in social situation, thus strengthening their negative mental representations of themselves as social incompetent. This negative information bias might be due to the lack of inhibition when processing negative information, as seen in depressed individuals (Joormann & Gottlib, 2010). In a study by Nolen-Hoeksema and Lubomirsky (1995), a group of dysphoric subjects were induced to use self-focused rumination as a problem solving strategy, and another group of dysphoric subjects were taught to distract themselves. The study found that self-focused rumination endorsed negative interpretations of hypothetical situations than did the distractive-strategy. The group that was told to ruminate also exhibited more pessimistic beliefs about upcoming positive events, and they contributed to less effective solutions to interpersonal problems. Interestingly enough, in a similar study conducted by the same authors (Lubomirsky & Nolen-Hoeksema, 1993) the ruminative group felt they gained insight into themselves and their problems, even though their solutions were not that good.

*Anticipatory processing* is the third cognitive process, which has been suggested in maintaining social anxiety. Subjects with social phobia often engage in planning and rehearsing coping strategies before entering a social situation, but they also review everything that might possibly go wrong (Wells, 2007). This coping process is dysfunctional in two ways; first it prevents the possible discovery that the feared social catastrophe is unlikely, and second, it can cause the individual to enter a social situation in a state of already heightened anxiety and self-consciousness (Wells, 2007). Thus, the social phobic is already afraid and alert, before even finding himself in the feared situation. Some researchers have found that patients with social phobia are more likely to have negative thoughts before, and during social events, compared to controls (Glass & Furlong, 1990; Kocovski et al, 2005).

#### Treatment of social phobia

SSRI has shown to produce significant symptom reduction for patients suffering from social anxiety disorder (Blanco et al 2003; Blomhoff et al, 2001; Davidson et al 2004). The

treatment recommended by the Norwegian health directorate is cognitive behavioural therapy (CBT), which usually consists of cognitive restructuring and behavioral experiments. CBT has been proven to have a large effect size on symptom reduction than both waitlist and placebo, and is equivalent to pharmacological treatment (Gould, Buckminster, Pollack, Otto & Yap, 1997). CBT is a more economical option thus pharmacological treatment since medication often lasts up to several years (Myhr & Payne 2006). Even though CBT is the treatment which has proven to be the most effective form of psychotherapy treating social phobia, nearly 40-50 % receiving cognitive therapy shows none, or modest improvement (Hofmann & Bogels, 2006; Marom, Gilboa-Schechtman, Aderka, Weizman, & Hermesh, 2009). This implicates the need to further investigate which mediators that can make the therapy even more effective.

Metacognitive therapy is a recently developed therapy that focuses on the cognitive processes leading to psychological distress (Wells, 2007), rather than the focusing on specific contents of the thoughts occurring in relation to the phobic situation like in CBT. Metacognition refers to thinking about thinking. It is the modification, control and interpretation of thinking itself and it is often manifested in the shape of negative or positive metacognitions (Wells & Cartwright-Hatton, 2004).

There are different forms of metacognitions which influence how we interpret our thinking and our behavior. They can be positive, meaning that one finds it is useful to use cognitive strategies like rumination and worry, for example "If I ruminate about the situation afterwards, I will find out what I did wrong." On the other hand, the metacognitions can be negative, in the sense that the rumination and worry are experienced as uncontrollable and dangerous, which then will provoke anxiety in themselves. An example of this could be; "I won't be able to stop worrying." According to the metacognitive approach to social phobia, the negative beliefs about the social self are products of the style of processing that in turn is driven by the person's metacognitions (Wells, 2007). In this sense, cognitive strategies become non-adaptive coping-mechanisms, which serve as the main source to psychological distress. This is problematic because worrying might lead to unlimited negative hypothetical scenarios, which might serve as anxiety triggers and in their turn require further ruminating to handle the distress (Wells & Carter, 2001).

In the MCT theory, rumination and a rigid, self-focused attention are regarded as a general response style that makes the patient vulnerable to psychological distress of any kind. It is therefore crucial to modify the metacognitive beliefs that continuously feed the person

with negative beliefs about the social self, and also the beliefs that make the non-adaptive response style of worrying and ruminating seem like a good way to cope with problems. Metacognitive treatment of social phobia therefore targets the processes before, during, and after social situations (Wells, 2007).

The cognitive behavioral treatment-model by Clark and Wells (1995) is actually somewhat of a hybrid between the cognitive behavioral framework and metacognitive theory. This model explains how a person diagnosed with social phobia, negatively interprets how other people think of them, in other words they engage in a metacognitive process that is non-adaptive. This could be an argument for why one should look closer at the specific components of the treatment of social phobia from a metacognitive point of view, thus if there is a reduction in positive and negative metacognitions after treatment, this could indicate that one should aim at treating the processes of thinking instead of content of thoughts.

There is a lack of controlled studies on the effect of metacognitive treatment of social phobia. In a study by Wells and Carter (2001), they examined the prevalence of positive and negative metacognitions in patients with GAD, social phobia, panic, depression and in a non-patient group, and found that patients with social phobia reported significantly more negative meta beliefs than the non-patient group, but less than GAD, depression, and panic. They also found that the group of social phobia reported a higher prevalence of positive metacognitions than the other groups. Abbott and Rapee (2004) investigated change in post-event processing in a group of social phobics after treatment with cognitive therapy. Even though the therapy did not specifically target metacognitions, the prevalence of post event processing was significantly reduced after the treatment. These findings are supported by McEvoy et. al (2009), who found that CBGT reduced post- event processing and symptoms of social phobia, as well as negative metacognitions. The study showed that changes in negative metacognitions were related to changes in post-event processing. Perhaps the explicit targeting of metacognitions could reduce post-event processing, anticipatory processing and self-focused attention in a larger degree?

#### Aims of the study

Both CBT and MCT suggest that cognitive processes function as maintaining factors regarding social phobia. While CBT is about changing the negative content that stems from these processes, MCT specifically targets the cognitive processes themselves, thus attempting



to modify the tendency to respond to stress in a non-helpful manner. Could it be that the automatic tendency to respond to stress by using post-event rumination, anticipation anxiety and self focused attention are recurrent also after treatment, because the processes responsible for them are left untargeted in therapy? Could this be a part of the reason why half of the treated patients do not recover with CBT? The aim of this study is therefore to investigate whether changes in two types of metacognitions; uncontrollability of thought-control and positive beliefs about worry could lead to symptom reduction of social phobia-symptoms, compared to changes in negative automatic thoughts.

## Method

### Design and sample

The aim of the original study was to compare the efficacy of paroxetine, cognitive therapy, their combination and placebo, on patients diagnosed with social phobia (Nordahl & Wells, 2005). The inclusion criteria to enroll in the study were the following: age between 18-65 years, and symptoms of social phobia for at least a year. The exclusion criteria were: known somatic diseases, pregnancy, psychosis, acute suicidal symptoms, major depressive disorder, generalized anxiety disorder or post traumatic stress disorder, cluster A or B personality disorder, drug-abuse or addiction, body dysmorphic disorder, not willing to accept randomization, any form of intake of SSRI during the last 6 months, patients not willing to take psychotropic medication during the four weeks before the study, or patients taking herbal drugs that might affect the response to the treatment.

Two factors were used in the stratified randomization in order to make the different treatment conditions as equal as possible. First, gender and second the presence or absence of avoidant personality disorder (APA, 1994). A hundred subjects with primary diagnosis general or specific social phobia (APA, 1994), were divided into four treatment conditions namely 1) Seroxat plus clinical management, 2) cognitive therapy, 3) Seroxat plus cognitive therapy, and finally 4) placebo plus clinical management (with 25 persons in each group I). In the final data set the sample consisted of 85 participants with the mean age of 30.79 (SD = 10,51). The majority of the sample was of male gender (51.8 %). Mostly of the patients were single and were fully employed (see table 1 for further details)

Table 1 here

## Measures

All the diagnoses related to the participants in the study were assessed by two experienced diagnosticians using structured clinical interviews ADIS-IV (Brown, Dinardo, Barlow, 1994), and SCID- I+II (DSM-IV; APA, 1994) in week 0, 12 and 64. Symptoms were assessed pre-treatment, post-treatment, in weeks 12 and 24, and at 6 months and 12 months follow-up, using the following self-report measures:

*Fear of Negative Evaluation Questionnaire* (FNE; Watson & Friend, 1969) is an instrument designed to measure one of the core concepts in the cognitive model of social anxiety, namely a focus on external cues that can be taken as a sign of negative evaluation by others (e.g. “When I am talking to someone, I worry about what they may be thinking about me”, “I am afraid that other people will find fault with me”.) FNE consists of 30 items in which one responds to either true or false. Scores may range between 0 and 30, and high scores close to 30 indicate higher levels of social anxiety symptoms. The cutoff is 22 for the diagnosis social phobia in the English population (Stopa & Clark 2001) and 18 in the Norwegian population. Responders that get a high score tend to avoid situations in which they will be evaluated, and they are very concerned with the approval/disapproval from others. High and low FNE groups produce similar results as comparisons between groups that have social phobia and controls (Stopa & Clark 2001). FNE has been proven to show high internal consistency (Musa, Costogianni, & Lepine 2004) and good convergent validity (Ibid).

*Automatic Thought Questionnaire* (ATQ; Kendall and Hollon 1980), is a self-report measure which try to assess for negative automatic thought typical in depression. It consists of 30 items (e.g. “I ’m no good”, “What’s wrong with me?” etc), and each item has a 5 point scale ranging from 1 (Not at all), to 5 (All the time). Total scores are obtained by summing up the individual item values that can range between 30 and 150 points. The recommended clinical cutoff is 34 (Pintea & Moldocan 2009). Higher scores indicate greater frequency of depressive rumination. It has shown to have high internal reliability (Breiter & Dobson 1983, Chioqueta & Stiles, 2004), and good concurrent validity (Neytemeyer et al 2002, Harell & Ryon 1983, Chioqueta, & Stiles, 2004).

*Metacognition Questionnaire-30* (MCQ-30; Wells & Cartwright-Hatton, 2004) is an instrument measuring metacognitive beliefs, which is related to “thoughts about thoughts” (beliefs about thinking). Responses are required on a four-point scale ranging from 1 (do not agree) to 4 (agree very much), with scores ranging between 30 and 120. MCQ-30 is also divided up in five subscales which are: (1) positive beliefs about worry (e.g. “worrying helps me cope”); (2) negative beliefs about the controllability of thoughts and corresponding danger (e.g. “when I start worrying I cannot stop”); (3) cognitive confidence; (e.g. “my memory can mislead me at times”) (4) negative beliefs about thoughts in general/need to control thoughts (e.g. “not being able to control my thoughts is a sign of weakness”); and (5) cognitive self-consciousness (e.g. “I pay close attention to the way my mind works”). The higher score the subject gets, meaning the closer to 120, the more problems are associated with this particular item. It has shown to have good internal consistency and convergent validity (Wells & Cartwright-Hatton, 2004).

#### Treatment

The therapists were experienced therapists trained in CBT for social phobia. Professor Adrian Wells, University of Manchester, supervised the therapist. Two experienced psychiatrists were involved in the assessments of the patients’ physical health and in the administration of medications. The cognitive treatment program was based on Wells’ manual (see appendix). The subjects in paroxetine+ clinical management and placebo plus clinical management met with a psychiatrist in week 0, 2, 6 and 12, in addition to maintenance-phase in week 16 and 20. The groups cognitive therapy and paroxetine + cognitive therapy, met with a therapist once a week for 12 weeks, to receive cognitive therapy and/ or medications. In week 16 and 22 the subjects in paroxetine+ cognitive therapy received booster sessions from their cognitive therapist.

#### Statistical analysis

First, changes in pre to post-score for the positive beliefs about worry-subscale, and the negative belief about controllability of thought were calculated. In order to investigate the impact they might have on the FNE change score, compared to the ATQ change score, a correlational analysis was performed. Further, a correlational analysis was done to explore the

relationship between negative and positive metacognitions, negative automatic thoughts, and treatment outcome.

Several regression analyses were done in order to explore the influence of the metacognitive variables and the negative automatic thoughts on treatment outcome. In the first regression analysis, ATQ change was entered as the first step, and the negative belief about uncontrollability of thoughts subscale as the second step. In the second regression analysis this sequence was reversed. In the next regression analyses the same procedure was followed with the change pre to post score of the positive belief subscale as the first step, and the change score for ATQ as the second, and then reversed this in the final regression.

## Results

The changes scores on the different instruments from pre treatment to post treatment were calculated and could be studied in table 2.

Table 2 here

Table 3 shows the correlations with the changes scores on the ATQ, FNE, and the change- pre to post scores on the positive belief about worry-subscale, and the negative beliefs about control of thoughts. They were all significantly correlated with each other ranging from 0,28 to 0,48.

Table 3 here

In order to test whether changes in negative cognitions or in positive and metacognitions could predict symptom change related to social phobia measured by the FNE, four regression analyses were performed. Due to the relatively modest sample size only two steps were used in all the regression analyses. In the two first first regression analysis, the FNE change scores was set as the dependent variable and the change scores in negative cognitions was set as step 1, and the change pre- to post score for negative belief about thought control subscale was put in step 2. Changes in negative cognitions explained 22,5% of the variance in the treatment outcome variance, and changes in negative metacognitions added 8% of the variance. Both this was significant (see table 4 for further details)

Table 4 here

In the second regression analysis, the order in the regression analysis was reversed. The change pre- to post scores in negative beliefs about thought control was put in as step 1, and changes in negative cognitions was put in step 2. The changes on the MCQ-30 subscale negative beliefs about thought control now explained 20,8 % of the variance, while changes on the ATQ added 10% of the variance related to treatment outcome on the FNE. Both of these were significant (see table 5 for further details).

Table 5 here

The third and fourth analysis were done in the same manner as the first and second, with the FNE change score as the dependent variable, the positive beliefs about worry subscale was entered as step 1, and changes in negative automatic thoughts beliefs as step 2. The positive beliefs about worry explained 14,7% of the outcome on the FNE, and additionally negative automatic thoughts explained 14,4% ( see table 6).

Table 6 here

In the final regression analysis this order was reversed, and now the negative automatic thoughts explained 22,5% whereas the positive beliefs explained 6% on the FNE. Both the third and the fourth regression analysis were significant (see table 7 for further details).

Table 7 here

## Discussion

The aim of the study was to explore whether metacognitions were reduced after a cognitive behavioral therapy intervention for social phobia, and further more to explore whether a reduction of metacognitions compared to a reduction in negative automatic thoughts predicted a reduction in social phobia symptoms. The findings from this study suggest that changes in two types of metacognitions; uncontrollability of thought-control and

positive beliefs about worry, might predict a reduction of social phobia-symptoms. In this study the change scores in metacognitions explained the reductions in social anxiety symptoms almost as the same level as the change score of negative automatic thoughts. Furthermore, a reduction in negative metacognitions explained 20 % of the variance in social phobia-symptoms when they were entered as the first step in a regression analysis. Interestingly, CBT seem to cause a reduction in metacognitions, although metacognitions are not directly targeted in therapy.

The findings that a reduction of metacognitions explains a great part of the reduction in social phobia-symptoms might lend support to a metacognitive understanding of social phobia. Based on this model, the mechanisms behind the reduction in social phobia symptoms can be explained as firstly, as the decrease of the non-adaptive metacognitions, which in turn leads to a change in the rigid style of processing, also known as CAS. The results from the present study thus support the metacognitive assumption that the cause of psychological disorders is a pattern of negative thinking and rigid attention.

Since previous research on the relationship between change in metacognitions and a reduction of social phobia-symptoms is scarce, there are not many studies to compare the results from this study to. Research shows changes in metacognitions after CBT-treatment for social phobia (McEvoy et al, 2009) and OCD (Solem et al, 2009). McEvoy et al (2009) found a larger reduction in negative metacognitions compared to positive metacognitions in their study. Solem (2009) found that the changes in metacognitions explained more of the reduction in OCD-symptoms than in cognitions. Both McEvoy (et al 2009) and Solem (2009) suggest that a treatment focusing on the metacognitions might produce even more effective or faster outcomes regarding symptom-reduction than traditional CBT. The finding from our study that negative metacognitions explained more of the symptom-reduction than the change in cognitions is consistent with the finding of Solem et al (2009), and which further lends support for a metacognitive approach to treating psychological illness like social phobia.

Negative metacognitions explained a great proportion of the symptom-reduction in social phobia, which is consistent with the study of Solem et al (2009). These results are consistent with McEvoy et al, (2009), that has found an association between changes in the uncontrollability-subscale of the MCQ30 and changes in social phobia-symptoms, as measured by the Social Interaction and Anxiety-Scale. The positive metacognitions did also explain a great deal of the reduction in social phobia-symptoms, but they did not explain more of the variance than the negative automatic thoughts did. Still, they have been slightly reduced

as a result of therapy. These results are different from the study of McEvoy et al (2009) in which they found that all but the positive metacognitions had been reduced after a cognitive behavioral treatment. The authors suggest this might indicate that positive metacognitions are more resistant to change. Social phobics have been found to score higher on positive metacognitions about worry, and lower on negative metacognitions over all, compared to patients with generalized anxiety disorder, panic disorder, and depression (Wells & Carter, 2001).

Even though the treatment provided in this study was cognitive behavioral, the subjects did report a decrease in metacognitions after completed treatment. McEvoy and Perini (2009) suggest that standard cognitive therapy might promote a metacognitive mode of processing and thus interrupt the CAS activity, and by amongst others things increase attention flexibility and control. They further speculate that both behavior-experiments and the challenging of dysfunctional beliefs makes the patient adopt a metacognitive mode of processing, by discussing that thoughts might not be true, and also by externalizing the attention outwards, and thus replacing the self-observer perspective, which is a maintenance factor in social phobia.

There is a lack of studies exploring a possible effective outcome in metacognitive treatment of social phobia, and a reason for this is simply because that a metacognitive treatment-model for social phobia has not yet been developed. Still there are studies that might suggest that the metacognitive principles for treatment can be effective. Attention Training Technique is an intervention that consists of focusing attention. (Wells, 1990). This technique was developed on the basis of metacognitive theory, and has been associated with significant improvement in social phobia symptoms (Wells, White & Carter, 1997). A study comparing ATT to CBT for social phobia (Donald et al, 2014) found that ATT had a greater effect in reducing self-focused attention than CBT. The finding that ATT reduced more of the self focused attention than the cognitive behavioral therapy might suggest that further treatment studies would benefit from focusing more explicitly on the role of the processes responsible for the CAS in treating social phobia. On the other hand, a study by McEvoy & Perini (2009) found that when they combined CBGT with ATT, and compared symptom relief with a control group which only recieved CBGT, there was no significant differences between the two groups in symptom reduction. An explanation for this finding might be that ATT being primarily a technique developed as a part of metacognitive therapy, does not function well in a cognitive behavioral treatment-setting.

Although the reduction of maladaptive metacognitions is important in therapy, the reduction in negative automatic thoughts measured by the ATQ also explains more of the changes in symptoms than metacognitions when they are entered as the first step in the regression analysis. This is not unexpected since the treatment that was given focuses more on challenging negative thoughts. Another explanation for this finding could be that patients with social phobia show comorbidity with symptoms of depression, and since ATQ is primarily an instrument developed to measure symptoms of depression, so the results from the regression analysis might be interpreted as a reduction in depressive symptoms. Another explanation according to the metacognitive framework (Wells, 2007), is that negative automatic thoughts are related to metacognitions. The metacognitions are responsible for selecting strategies for thinking and attention. When the metacognitions are biased to select worry and a rigid self-focus as cognition-strategies, the CAS will focus on thoughts and events that are related to danger, and in this way maintain the endless stream of negative automatic thoughts. Therefore, the negative automatic thoughts will naturally decrease when the metacognitions are changed into less fear-biased metacognitions.

### Limitations

The study has some limitations, firstly that ATQ was used as a measure of negative thoughts in patients with social phobia when it originally is a measure of depression. It might therefore be that symptoms of depression have been confounded into the results, and that the reduced ATQ-score is a result of subjects getting better from their depression. Furthermore, the treatment that the subjects underwent does not specifically target metacognitions, which makes it difficult to properly investigate changes as reported in the MCQ30. There were also a small proportion of patients (N=12) that did not complete the MCQ30 at post-treatment, and this might have introduced some error in the measurements of changes in the metacognitions. Changes in patients in the group receiving SSRI might be due to other mechanisms than changes in beliefs, and this might be a confounding bias in this sample.

### Clinical implications and conclusions

This study identifies two groups of maladaptive metacognitions. First there is the positive metacognitions about the benefit of using worry, rumination and a rigid self-focus. The



negative metacognitions, as represented by the uncontrollability of thoughts-subscale also seems important, which is related to the problem of inhibiting the use of worry and rumination

Because of this, the metacognitions are the maintaining factor of the anxiety that the patients struggle with, and if they are not challenged, the anxiety will just reoccur. A clinical implication of this is that the most important thing to work on in therapy is altering both positive and negative metacognitions (related to uncontrollability). Therefore, the therapist should focus on working with maladaptive strategies of cognition, and not the content of these cognitions.

The modest, yet important finding that change in metacognitions after a cognitive behavior treatment also implicates the need to elaborate a metacognitive treatment model of social phobia. Future studies should therefore aim at directly target the metacognitions, by for an instance giving treatment based on the metacognitive principles, as suggested by Wells (2007).

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Tables

Table 1: Demographics of the sample

Marital status	%	Occupational status	%
Single	50,6 %	Fully employed	56,5 %
Married	18,8 %	Sick leave	10,6 %
Cohabitant	22,4 %	Disability pension	1,2 %
Separated/Divorced	1,2 %	Housewife	2,4 %
Missing	7,1 %	Student	12,9 %
		Unemployed	1,2 %
		Missing	7,1 %
		Under rehabilitation	7,10 %



Table 2. Change scores, and pre- and post-scores for the variables

	<b>mean</b>	<b>SD</b>
FNEchange	8,026	7,46
ATQchange	11,107	15,37
MCQ1change	1,875	3,838
MCQ2change	0,839	2,853
FNEPre	24,31	4,29
FNEPost	16,3	7,52
ATQPre	62,8	22,7
ATQPost	48	17,29
MCQ1Pre	13,57	3,72
MCQ1Post	11,54	3,675
MCQ2Pre	8,48	2,672
MCQ2Post	7,6	1,963

Note: FNE= Fear of Negative Evaluation Scale; ATQ= Automatic Thoughts Questionnaire; MCQ1 = Negative beliefs about thought control Subscale, MCQ 2= Positive beliefs about worry subscale

Table 3: Correlation analyses of change scores for the different variables

Variables	1	2	3	4
1 FNEchange		0.485**	0.458**	0.385**
2 ATQchange			0.408**	0.289**
3 MCQ1change				0.352**
4 MCQ2change				

Note: \* $p < 0,05$ , \*\* $p < 0,01$ , \*\*\* $p < 0,001$ . FNE= Fear of Negative Evaluation Scale; ATQ= Automatic Thoughts Questionnaire; MCQ1 = Negative beliefs about thought control Subscale, MCQ 2= Positive beliefs about worry subscale

Table 4: Regression analysis one

	Variables	Fcha	R2cha	$\beta$	T
Step1	ATQchange	15,37	0,225	0,346	2,735
Step2	MCQ1	6,217	0,083	-0,315	-2,49

Note: \* $p < 0,05$ , \*\* $p < 0,01$ , \*\*\* $p < 0,001$ . MCQ1= Metacognitions Questionnaire, Negative beliefs about thought control; ATQ= Automatic Thoughts Questionnaire, FNE= Fear of Negative Evaluation Questionnaire.

Table 5: Regression analysis two

	Variables	Fcha	R2cha	$\beta$	T
Step1	MCQ1	13,917	0,208	-0,315	-2,49
Step2	ATQchange	7,482	0,1	0,346	2,735

Note: \* $p < 0,05$ , \*\* $p < 0,01$ , \*\*\* $p < 0,001$ . MCQ1= Metacognitions Questionnaire, Negative beliefs about thought control; ATQ= Automatic Thoughts Questionnaire, FNE= Fear of Negative Evaluation Questionnaire.

Table 6: Regression analysis three

	Variables	Fcha	R2cha	$\beta$	T
Step1	MCQ2	9,162	0,147	-0,27	-2,21
Step2	ATQchange	10,57	0,144	0,396	3,251

Note: \* $p < 0,05$ , \*\* $p < 0,01$ , \*\*\* $p < 0,001$ . MCQ2 = Metacognitions Questionnaire, subscale, Positive beliefs about worry subscale ; ATQ= Automatic Thoughts Questionnaire, FNE= Fear of Negative Evaluation Questionnaire

Table 7. Regression analysis four

	Variables	Fcha	R2cha	$\beta$	T
Step1	ATQchange	15,37	0,225	0,396	3,251
Step2	MCQ2	4,886	0,067	-0,27	-2,21

Note: \* $p < 0,05$ , \*\* $p < 0,01$ , \*\*\* $p < 0,001$ . MCQ2= Metacognitions Questionnaire, Positive beliefs about worry subscale; ATQ= Automatic Thoughts Questionnaire, FNE= Fear of Negative Evaluation Questionnaire.

## **COGNITIVE THERAPY OF SOCIAL PHOBIA**

### **TREATMENT PROGRAM**

**(c) Wells, 2002**

#### **SESSION 1**

- (i) Generate individual case formulation**
- (ii) Socialise to model**
- (iii) Run safety behaviours/attention manipulation (video-tape it)**
- (iv) Homework: Practice dropping safety behaviours and external attention (DSET)**

#### **SESSION 2**

- (i) Check level of safety behaviours/attention on the SPRS and review homework**
- (ii) Safety behaviour/attention manipulations (practice in-vivo, therapist guided)**
- (iii) Discuss role of anticipatory processing and post mortem and ban them**
- (iv) Homework: Specific exposure experiments with application of DSET**

#### **SESSION 3**

- (i) Check level of safety behaviours/attention on the SPRS and review homework.**
- (ii) Deal with any difficulties arising**
- (iii) Focus on negative self-processing part of model-socialise**
- (iv) Implement video feedback experiment**
- (v) Homework: Specific exposure experiments with application of DSET**

#### **SESSION 4**

- (i) Check level of safety behaviours/attention on the SPRS and review homework.**
- (ii) Check beliefs on SPRS as guide to remaining aspects of negative self-image**
- (iii) Continue with refinements of video feedback if required**
- (iv) If not required proceed to "interrogating the environment"**
- (v) Homework: behavioural experiments to test predictions**

#### **SESSION 5**

- (i) Check beliefs on SPRS and safety behaviours/attention**
- (ii) Explore beliefs and avoidance as marker for devising new experiments.**
- (iii) Implement in-session experiments to test predictions: interrogate environment**
- (iv) Homework: behavioural experiments to test predictions**

#### **SESSIONS 6-8**

- (i) Check belief ratings/avoidance on SPRS**
- (ii) Continue behavioural experiments to modify beliefs**
- (iii) Homework: Behavioural experiment to test beliefs**

#### **SESSIONS 9-10**

- (i) Explore schemas, especially: Self as social objects, and rules**
- (ii) Modify schemas**
- (iii) Homework: Experiments, bandwidth strategies, lifestyle/appearance changes**

**SESSIONS 11-12**

**(i) Review scores on outcome measures**

**(ii) Relapse prevention (a) Check residual beliefs/avoidance and work on them**

**(iii) Relapse prevention (b) Construct therapy blue print**

**(iv) Decatastrophise future anxiety and schedule follow-up sessions**



### Fear of Negative Evaluation Questionnaire

This questionnaire is composed of 30 statements regarding your confidence with other people. Circle YES if you consider that the statement is true of your feelings most of the time. Circle NO if you consider that the statement is rarely true of you. Remember that this information is completely ***confidential***

	<b>Please circle</b>	
	<b>YES</b>	<b>NO</b>
I rarely worry about seeming foolish to others	<b>YES</b>	<b>NO</b>
I worry about what people will think of me even when I know it doesn't make any difference	<b>YES</b>	<b>NO</b>
I become tense and jittery if I know that someone is sizing me up	<b>YES</b>	<b>NO</b>
I am unconcerned even if I know that people are forming an unfavourable impression of me	<b>YES</b>	<b>NO</b>
I feel very upset when I commit some social error	<b>YES</b>	<b>NO</b>
The opinions that people have of me cause me little concern	<b>YES</b>	<b>NO</b>
I am often afraid that I may look ridiculous or make a fool of myself	<b>YES</b>	<b>NO</b>
I react very little when other people disapprove of me	<b>YES</b>	<b>NO</b>
I am frequently afraid of other people noticing my shortcomings	<b>YES</b>	<b>NO</b>
The disapproval of others would have little effect on me	<b>YES</b>	<b>NO</b>
If someone is evaluating me I expect the worst	<b>YES</b>	<b>NO</b>
I rarely worry about what kind of impression I am making on someone	<b>YES</b>	<b>NO</b>
I am afraid that others will not approve of me	<b>YES</b>	<b>NO</b>
I am afraid that others will find fault with me	<b>YES</b>	<b>NO</b>
Other people's opinions of me do not bother me	<b>YES</b>	<b>NO</b>
I am not necessarily upset if I do not please someone	<b>YES</b>	<b>NO</b>
When I am talking to someone, I worry about what they may be thinking of me	<b>YES</b>	<b>NO</b>

I feel that you can't help making social errors sometimes, so why worry about it	<b>YES</b>	<b>NO</b>
I am usually worried about what kind of impression I make	<b>YES</b>	<b>NO</b>
I worry a lot about what my superiors think of me	<b>YES</b>	<b>NO</b>
If I know someone is judging me, it has little effect on me	<b>YES</b>	<b>NO</b>
I worry that others will think I am not worthwhile	<b>YES</b>	<b>NO</b>
I worry very little about what others may think of me	<b>YES</b>	<b>NO</b>

**Continues.....**

	<b>Please circle</b>	
Sometimes I am too concerned with what other people may think of me	<b>YES</b>	<b>NO</b>
I often worry that I will say or do the wrong things	<b>YES</b>	<b>NO</b>
I am often indifferent to the opinions others have of me	<b>YES</b>	<b>NO</b>
I am usually confident that others will have a favourable impression of me	<b>YES</b>	<b>NO</b>
I often worry that people who are important to me won't think very much of me	<b>YES</b>	<b>NO</b>
I brood about the opinions my friends have about me	<b>YES</b>	<b>NO</b>
I become tense and jittery if I know I am being judged by my superiors	<b>YES</b>	<b>NO</b>