

Sara, A Social Phobia Client with Sudden Change After Exposure Exercises in Intensive Cognitive-Behavior Group Therapy: A Case-Based Analysis of Mechanisms of Change

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ABSTRACT

This case study deals with Sara, a 37-year-old social phobic woman who suffered from a primary fear of blushing as well as comorbid disorders, including obsessive-compulsive disorder, generalized anxiety disorder and spider phobia. The client was treated in an intensive, one-week group cognitive-behavioral therapy program in an educational university clinic in Aarhus, Denmark. She achieved a remarkable and durable change in her longstanding social phobia after two in-session behavioral experiments conducted during the third and fourth days of the program. After treatment, the client was interviewed about her sudden gain, and she read and commented on the case study report. The primary aim of the study was to investigate the micro-level mechanisms of change for this particular client, and thereby illustrate the prospects of pragmatic case studies in meticulous process research focusing on one of the most intricate problems in psychotherapy: how does treatment work.

Key words: social phobia; cognitive-behavior therapy; group therapy; case study; clinical case study; change mechanisms; psychotherapy process

1. CASE CONTEXT AND METHOD

Clinical Setting

This case study took place in a clinical training program at the Anxiety Clinic of the Research and Teaching Clinic at the Department of Psychology, University of Aarhus, Denmark. The Anxiety Clinic offers cognitive-behavior therapy (CBT) free of charge for clients with anxiety disorders provided by psychology students under supervision.

The training program, which spans two semesters and includes a theoretical course on CBT for anxiety and depression, is described in other publications (Hougaard, 2008; Hougaard et al., 2008). The form of group CBT specified for social phobia (SP) in the program is inspired largely by David Clark's (1997, 2006) individual cognitive therapy. As part of the program, a

weeklong intensive group treatment program was arranged for clients with SP, who met each day from 9 am to 2 pm. The group consisted of nine clients, eight student therapists and two clinical psychologists, one of whom was an experienced CBT therapist. The psychologists structured the group therapy for the day and led it for the first 2- 2½ hours, and the students continued the therapy for the remainder of the day (see Appendix A for an overview of the group program). All clients borrowed an exemplar of the treatment manual (Hougaard, 2006), written for both clients and therapists, during the treatment period. The clients received two to four individual sessions provided by the student therapists prior to the intensive week of group therapy, and the individual treatment continued after the group program in most cases. The students received two hours of supervision every week in groups of eight provided by a certified psychologist throughout the period. The students were required to write a systematic case study report as part of the examination for the course. Most of the students had no previous experience in conducting psychotherapy, as was the case in the present case study.

The present case study of Sara is a reworked and expanded version of the student therapist's (VLJ, the first author) original case study report. The sections "Case Study Validity," "A Coherent Narrative of Sara's Change," "Chain diagram," and "Reflections on the case study" were added to the new edition. The one-year follow-up was conducted specifically for the present case study, as such a long-term follow-up is ordinarily not possible within the time frame of the Clinic's two-semester educational program.

The Rationale for Choosing the Client

The client, Sara, was chosen by the student therapist for the required case study report in the training program because of the client's sudden and highly remarkable change following two in-session exposure behavioral experiments in the intensive group program. This revised case report serves as a well-documented example of the sudden and durable change that can occur in a client suffering from a longstanding disorder, and therefore proves especially suitable for an analysis of mechanisms of change in therapy (some preliminary reflections on the case are included in Hougaard, 2008). The present case study aims to illustrate the contribution of pragmatic case studies to the illumination of therapeutic change mechanisms, which comprise a most complex and challenging area in psychotherapy research that has witnessed an upsurge within the last ten years (Kazdin, 2007). At a conference, "What works in psychotherapy?," in 2008 in Lund, Sweden, Robert DeRubeis advised psychotherapy researchers to study change points "early, intensively, [and] idiographically," especially in connection with "critical events" and "sudden gains." Although critical events are not statistically representative of what goes on in therapy, they may be considered transparent "windows" into the oblique therapeutic processes of change, possibly present in less concentrated forms elsewhere in psychotherapy (Elliott & Shapiro, 1992).

Methodological Strategies

Several strategies were employed to enhance the rigor of this case study. The client was diagnosed using a structured diagnostic interview, the Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV; Brown, DiNardo & Barlow, 1994), which was conducted in the presence of

the student therapist by the supervising psychologist (EH), who had more than ten years of experience using the interview in an outpatient psychiatric setting. All sessions were videotaped, and the student therapist wrote one to two pages of notes and reflections following each individual session after watching the videotapes (in accordance with the contract with the clients, all tapes were erased within one month). The students also took notes of what occurred in the intensive group therapy (the notes were mailed to the clients with first names only). Based on these various sources of information, the case was discussed between the two first authors, VLJ and EH, who had therapeutic contact with Sara, and the third author (DBF), who was invited to join the authorship to offer a “third opinion” on the methodological aspects of the paper.

Sara completed standardized self-report measures before and after the treatment, as well as at 3-month and 1-year follow-up interviews. In addition, she filled out an individualized scale measuring SP symptoms every week during the individual treatment, every day in the group program, and at 3-month and 1-year follow-ups. Sara also participated in an interview about her experiences of change that was conducted six months after therapy.

Measures

The following standardized outcome measures were completed by the client before and after the therapy, and at the two follow-ups:

- a. Beck Depression Inventory—second version (BDI-II; Beck, Steer & Brown, 1996). The BDI, in its first and second versions, is the most commonly used self-report measure of depression. The BDI-II consists of 21 items, each containing 4 statements. The client marks one statement in each item, and the statements are scored from 0-3. The rating is based on the client’s state within the last two weeks.
- b. Beck Anxiety Inventory (BAI; Beck & Steer, 1993). The BAI measures anxiety, primarily in relation to autonomic symptoms. It consists of 21 items rated on a scale from 0 (never) to 3 (almost all the time), based on the symptoms present in the week before.
- c. Social Interaction Anxiety Scale (SIAS; Mattick & Clarke, 1998). The SIAS measures anxiety in relation to common social interactions on 19 items, rated from 0 (not at all characteristic) to 4 (very much characteristic).
- d. Social Phobia Scale (SPS; Mattick & Clarke, 1998). The SPS consists of 20 items measuring fear of being scrutinized in relation to specific performance activities, e.g., eating and writing in front of others. The scale is scored in the same manner as SIAS.
- e. Symptom Checklist–90–Revised (SCL-90-R; Derogatis, 1977). The SCL-90-R measures general psychiatric complaints within the last two weeks in 90 items, rated from 0 (not at all) to 4 (very much). The scale is divided into 9 subscales: Somatization, Obsessive Compulsive, Interpersonal Sensitivity, Depression, Anxiety, Hostility, Phobic Anxiety, Paranoid Ideation, and Psychoticism. The Global Severity Index (GSI), calculated as a mean score of all filled items, is a measure of general psychiatric complaints. The SCL-90-R was not completed immediately after therapy.

f. Sheehan Disability Scale (SDS; Sheehan, 1983). The SDS measures disturbances in social and occupational functioning on 3 items (work/school, social life and family/domestic activities), each scored from 0 (not at all disturbed) to 10 (extremely disturbed). The number of lost days, and days with reduced work or school productivity because of the disturbances are also recorded.

All of the above scales are widely used measures with acceptable psychometric properties (cf. references above), except for the SDS, which has rather low internal consistency, as it is comprised of only 3 items (e.g., Hambrick, Turk, Heimberg, Schneier & Liebowitz, 2004). The SPS and SIAS measure different aspects of SP symptomatology that may be specifically relevant for specific and generalized SP, respectively. These two scales have been recommended as outcome measures in studies on SP (Strupp, Horowitz & Lambert, 1997).

Besides these standardized measures, clients made ratings on five individualized scales, the “Evaluation of Social Phobia” (see Appendix B), with ratings from “0-Not at all” to “10-Very much” of the extent of their anxiety, depression, and their specific SP patterns, including how much they “avoided your most feared social situations,” “used your most preferred forms of safety behaviors” in these types of situations, and “believed in your most common negative, anxiety provoking thoughts about what might happen in the feared social situations.” The individualized, qualitative content of the scales was filled collaboratively by the client and therapist after three individual sessions. The scales were used as idiographic measures of outcome throughout the therapy.

The client also filled out a scale at the 3-month follow-up about her general evaluation of outcome and processes in psychotherapy (see Appendix E).

Definitions of Outcome

Outcome on the standardized client self-report scales was categorized according to the following rules (cf. Hougaard et al., 2008; see Appendix C, “Measuring Change” for psychometric values and calculations):

1. *Statistically significant change* was calculated according to Jacobson and Truax’s (1991) method based on the psychometric properties of scales. We used standard deviations (*SDs*) and coefficients of internal consistency (Cronbach’s α) from non-clinical samples in the calculations in accordance with suggestions by Bauer, Lambert, and Nielsen (2004). In case of statistical reliable or significant change, the client may be referred to as “improved”.

2. *Clinically significant change*, defined according to Jacobson and Truax (1991) as end-point status below the cut-off point between a clinical and a non-clinical population on the scale, i.e., within the range of normal functioning rather than of psychopathological functioning. The *SDs* used in these calculations were taken from published norms in the scale manuals (or in other published information about the scales). In case of both statistical and clinical significant change, the client may be described as “recovered”.

3. *Amount of change or effect size* on a scale is defined in the form of *SD*-units on the scale based on information in the scale's manual (or in other published information about the scale) for the most relevant comparison group, that is, SP clients for the BAI, SPS and SIAS; and mixed psychiatric outpatients for the BDI-II and SCL-90-R. Amount of change based on this calculation is similar to the effect size of Cohen's (1988) *d*, although it is not based on group data and *SD*-units from the same study. Pre-post *d*-values ≥ 1.0 are considered large in accordance with a norm suggested for the anxiety disorders by Clark (2004).

Confidentiality

The client's name and some of the biographical information have been changed in order to protect her identity while simultaneously striving to preserve the "clinical meaning" of the case. The client gave written informed consent for the publication of her case study in anonymous form after having read a former version of the case study.

2. THE CLIENT

Sara was a 37-year old woman, who was married and had three children. She had been suffering from lifelong SP and Obsessive-Compulsive Disorder (OCD). About half a year prior to attending the clinic she took an early retirement from her office job on a public pension as a result of her OCD. When she applied for treatment at the clinic she considered her OCD well-managed as a result of a five years previous course of CBT together with medication (paroxetine, 60 mg pr. day). She had continued since then on the medication. Sara sought help to relieve her excessive social anxiety, which mainly concerned a strong fear of blushing, especially at meetings and gatherings, as well as informal situations involving face-to-face interaction with other persons. The SP was causing her a large amount of distress and prohibited her from speaking at public meetings, including parents' evenings at her children's school, or when she met with her choir. Sara also became very anxious when performing with her choir. At times, she also feared blushing when she was with a close friend or a family member.

3. GUIDING CONCEPTION WITH RESEARCH AND CLINICAL EXPERIENCE SUPPORT

Introduction

This case study includes two major components: (1) the application of cognitive behavior therapy (CBT) to the treatment of social phobia (SP) in the individual case of Sara; and (2) the design and analysis of Sara's case so as to yield insights into the change mechanisms in her treatment, with implications for generalization. This dual perspective is reflected in the two parts below of our discussion of the Guiding Conception in Sara's case. First we consider the CBT conception of and resulting treatment model for SP that we employed in her case. Second, we lay out some of the methodological and philosophy-or-science potentials and limitations in reaching rigorous and valid conclusions from quantitative and qualitative data in individual cases that guided us in the design and interpretation of Sara's case. .

Cognitive-Behavioral Conception of Social Phobia and Its Treatment

Social Phobia (SP)

Sara's main problem at the time of application for treatment was SP, or social anxiety disorder, with a primary fear of blushing. According to DSM-IV (American Psychiatric Association, 1994), SP is a marked and persistent fear of social or performance situations in which embarrassment may occur, leading to marked distress for the person, or significant interference with the individual's work, education or social activities. DSM-IV specifies a subtype of generalized SP, in which the fear and/or avoidance is present in most social situations; in this case the diagnosis of avoidant personality disorder should also be considered. Many persons with SP fear bodily symptoms of anxiety, since they are concerned that their anxiety could be visible to others. It has been suggested that SP with a primary fear of bodily symptoms (blushing, shaking or sweating) might constitute a separate subtype of SP (e.g., Scholing & Emmelkamp, 1993; Bögels, 2006), although this suggestion has not gained approval within the official diagnostic systems.

SP is highly comorbid with other Axis I disorders; particularly other anxiety disorders, depression and alcohol abuse. In such cases the SP usually precedes the onset of the comorbid disorders (Schneier et al., 1992). Many persons with SP also meet the criteria for a personality disorder (Dyck et al., 2001; Sanderson, Wetzler, Beck & Betz, 1994), primarily within the "anxious" Cluster C, which includes avoidant personality disorder, a disorder that is considered by some as a severe form of SP (Chambless, Fydrich & Rodebaugh, 2008).

First onset of SP typically occurs in adolescence; without treatment the course of the disorder will usually be life-long with resulting impaired social and occupational functioning (Keller, 2003). Most studies conducted in Western countries using DSM-III-R or DSM-IV have found lifetime prevalence estimates for SP from 7-13% (Furmark, 2002), while a recent, large cross-national European study reported a lifetime prevalence of only 2.4% (Alonso et al., 2004). The high variability in prevalence estimates of epidemiological studies is likely mainly due to different cut-off boundaries for clinical caseness, since the required degree of distress or functional impairment is not specified in the DSM.

Cognitive-Behavior Therapy for Social Phobia

CBT is generally considered the psychological intervention of first choice for SP (Ponniah & Hollon, 2008; Rodebaugh, Holaway & Heimberg, 2004). Within-group, pre- to post-therapy effect sizes (ESs) in the form of Cohen's (1988) *d* range from 0.84 to 1.16 in different meta-analyses of CBT for SP (Federoff & Taylor, 2001; Norton & Price, 2007); and between-group, controlled ESs between 0.62 and 0.80, with the lowest figure for placebo controlled studies (Gould, Buckminster, Pollack, Otto & Yap, 1997; Hofmann & Smits, 2008).

The two best-known and best researched treatment programs for SP are Heimberg's group CBT (Heimberg & Becker, 2001), and Clark's (1997; 2006; Clark & Wells, 1995) individual cognitive therapy. The two treatment programs are based on similar conceptions of SP. According to the Clark and Wells (1995) model, persons with SP have developed negative

assumptions about themselves in social situations, resulting in judgmental biases in the form of overestimation of both the probability and the costs of the occurrence of the feared outcome (the Clark and Wells model is illustrated in Figure 1; notice that all figures and tables are at the end of the paper). These negative interpretations of social situations trigger an anxiety program, consisting of somatic and cognitive symptoms, safety behaviors, and self-focused attention.

Safety behaviors are acts that persons carry out in an effort to reduce the perceived threats in the feared situations; for instance, over-preparing speeches, avoiding eye-contact, wearing make up to hide blushing, or carefully monitoring bodily symptoms in an effort to control them. Safety behaviors may actually reinforce the anxiety, since they can interrupt social performance, thereby increasing the social threats in a given situation. Furthermore, as attempts to control autonomic reactions usually do not succeed, engagement in such behaviors often amplifies the experience of uncontrollability, and thereby the anxiety. According to Clark & Wells (1995), safety behavior also plays a major role in maintaining SP, because the individual does not acknowledge that s/he can manage the situation without the safety behaviour. As a result, the situation is still perceived as dangerous in spite of repeated exposures.

Self-focus refers to a shift in attention that makes individuals direct excessive attention toward internal feelings and thoughts. On the basis of this internal information, they create an image of themselves from an observer perspective; an image that is frequently negatively distorted and highly discrepant from their actual appearance in the situation. According to the theory, self-focus is also assumed to maintain the SP, as it prevents the person from perceiving information in the environment that contradicts the negative expectations of others' reactions in the situation. Furthermore, self-focus will often worsen the feared symptoms, as when, for instance, a careful scrutiny of signs of blushing can lead to a worsening of the blushing.

Most persons with SP will also experience excessive worrying or rumination before and after social situations. Worrying before the situation may lead to avoidance of it, or it may strengthen the anxiety in the situation if the individual dares to appear. After an interaction episode the person may carefully review her or his performance in the situation for failures, a process Clark and Wells (1995) likened to a "post mortem" dissection. Such post-situation rumination may lead to demoralization and lowered self-efficacy in future social situations.

The Heimberg model (Rapee & Heimberg, 1997) is quite similar to the Clark and Wells model, although it stresses that individuals with SP scrutinize the surroundings for signs of negative evaluation, while they according to the Clark and Wells model primarily focus their attention inwards on themselves. According to reviews (Bögels & Mansell, 2004; Schultz & Heimberg, 2008), there is some, limited, empirical support for both hypervigilance and attentional avoidance of signs of negative evaluation in persons with SP; possibly indicating that sometimes an initial automatic vigilance for threat is succeeded by a later strategic avoidance.

The two treatment models are also similar in many ways. Both Clark's cognitive therapy and Heimberg's group CBT make use of cognitive restructuring directed at analysis and evaluation of negative thoughts, and exposure to feared social situations in their treatment for SP. More so than Heimberg, Clark stresses the importance of the clients' understanding of their

individual “model of SP,” their learning to focus outwards in social situations (to combat self-focused attention), avoidance of safety behaviors, and correction of a negative conceptions of the self as a social object via video-feedback. Heimberg’s treatment program is more focused on repeated exposure exercises in the group sessions via role plays. Both treatments are short-term, consisting of 12-16 sessions (Heimberg & Becker, 2002; Clark, 2006).

It has been suggested that persons with SP who primarily fear bodily symptoms, like Sara, may be in need of special treatment components, e.g., in the form of attentional training (Bögels, 2006). The Clark and Wells model of SP does, however, also include some attentional training in the form of helping clients to focus outwards in feared social situations. Clark’s treatment program may be considered highly relevant for bodily symptoms phobia, since self-focused attention can be assumed to play a major role in such cases (Dijk, Voncken & de Jong, 2009).

Mechanisms of Change in Cognitive-Behavior Therapy

Several meta-analyses have concluded that simple exposure treatment works as well for SP as CBT with exposure and cognitive restructuring (e.g., Feske & Chambless, 1997; Federoff & Taylor, 2001), although a recent study by Clark et al. (2006) may cast doubt on this conclusion. Anyhow, all established methods of CBT stress the importance of exposure in the treatment of phobias, including SP. Exposure is, however, merely a descriptive term for a CBT treatment component, which may be hypothesized to work in a number of different ways (e.g., Barlow, 2002). Classic conceptions of the mechanism behind exposure include habituation and extinction. Habituation refers to a decrement in response strength after repeated presentation of an unconditioned stimulus. It is considered a form of non-associative learning encompassing a number of characteristics; for instance, the original response to the stimulus reappears after a while (spontaneous recovery), but habituation may successively appear more quickly after several presentations of the stimulus (potentiation) (Groves & Thompson, 1970; Rankin et al., 2009). Extinction, on the other hand, refers to associative learning in the form of weakening of conditioned fear responses as a consequence of repeated, non-reinforced exposures to the conditioned stimulus. Although the two conceptions originally were defined as respectively non-associative and associative learning, they are often used interchangeable within psychology. For instance, habituation may be used synonymously with passive emotional decay, also covering associative learning, although in a strict sense this usage should be considered inappropriate and confusing (Moscovitch, Antony & Swinson, 2009). Both habituation and extinction are primarily descriptions of types of learning, each with different theories about which mechanisms are involved.

Modern learning theories of extinction stress the role of expectancy violation or disconfirmation; that is, the experience that contact with the feared stimulus does not result in the expected and feared consequences (e.g., Bouton, 2004; Craske et al., 2008). Most theorists assume that conditioned fear responses include expectations at both strategic/propositional and automatic/associative processing levels, with the latter most difficult to extinct (Craske et al., 2008; Öhman & Mineka, 2001). According to Öhman and Mineka (2001), fear modules are characterized by “encapsulation”; that is, they are relatively impenetrable to conscious influences

and require extensive behavioural learning experiences for extinction to take place (cf. also LeDoux, 2006). Extinction is considered a new, inhibitory learning, and not just an unlearning of the conditioned fear response (Bouton, 2004). The original conditioned fear may thus reappear in full strength under certain conditions; for instance after exposure to the unconditioned stimulus (reinstatement), change of context (renewal), or just the passage of time (spontaneous recovery). In contrast to conditioned fear that easily generalize extinction is mostly highly sensitive to context, which may necessity repeated exposure trials in different surroundings before the conditioned fear response is effectively inhibited.

Foa's emotional processing theory (Foa & Kozak, 1986; Foa & McNally, 1996) is a highly influential further development of classic extinction theory. According to emotional processing theory, the mechanism of exposure is explained as a result of an activation of a fear structure or network with semantic, stimulus and response representations, followed by an encoding of new information that is incompatible with the fear structure. A high degree of anxiety feelings in the beginning of the exposure is supposed to be an indicator of an activation of the whole fear structure (including its physiological response representations), which is considered necessary for its disconfirmation by contradictory information. However, according to Foa and McNally (1996), an overly heightened level of anxiety may hinder a realistic appraisal of the disconfirming information in the feared situation, so that a moderate degree of anxiety may be considered therapeutically optimal. A decrease in anxiety during the exposure (within-session habituation; i.e., passive emotional decay), and across different exposures (between-session habituation) are considered indicators of emotional processing. According to the theory, initial fear activation and fear reduction during the exposure should be considered necessary for emotional processing to take place. This latter condition is in accordance with the venerable "golden rule" of exposure: to continue the exposure until a marked reduction in anxiety has taken place (Mathews, Gelder & Johnston, 1981). Due to inconsistent support for in-session habituation as a necessary condition for effective exposure, Foa, Huppert & Cahill (2006) recently deemphasized this aspect in a reformulation of the theory. The key mechanism of change is supposed to be disconfirmation of specific propositions in the fear network, which according to the new formulation of the theory in some cases might consist in learning that anxiety did not escalate uncontrollably, or that cardiac arrest did not occur, even though anxiety may not have declined during the exposure.

Cognitive theories of exposure stress expectancy disconfirmation, primarily on a strategic or propositional processing level. According to Beck and Emery (1995), exposure exercises should be considered behavioral experiments to test hypotheses of negative, fearful thoughts about consequences of exposure. Clark's (1997) cognitive theory of change mechanisms in CBT for SP is closely connected to his model of maintaining mechanisms (see Figure 1). Exposure exercises, arranged as behavioral experiments with clear client predictions of expected outcome to be tested, are assumed to work primarily by disconfirming negative expectancies of feared consequences in the situation. According to Clark, the negative assumptions of persons with SP are not disconfirmed in their ordinary day-to-day experiences, even though they do expose themselves to social situations, due to their self-focused attention that hinders a realistic appraisal of the surroundings, and their attributions of eventual success to the use of safety behavior. Moreover, clients are ordinarily not able to get corrective feedback on their distorted view of

themselves in a field perspective. Thus, learning to focus attention outwards, obtaining realistic feedback on performance and appearance (e.g. via video replay), and refraining from safety behavior in the situation are considered crucial by Clark for efficient expectancy disconfirmation to take place in an exposure exercise.

Bandura's (1977) self-efficacy theory has been another influential cognitive explanation of the mechanism of exposure. Self-efficacy is defined as "the conviction that one can successfully execute the behavior required to produce the [desired] outcomes" (p. 193). It is hypothesized that expectations of personal efficacy determine whether coping behavior will be initiated, how much effort will be expended, and how long it will be sustained in the face of obstacles and aversive experiences. According to Bandura (1977), performance accomplishments based on personal mastery experiences are especially influential in changing self-efficacy, which may explain the central role of exposure in the treatment of phobias. In relation to SP, perceived self-efficacy may be related to the individual's confidence in his or her ability to behave in a manner that conveys a favourable impression to other people (Gaudiano & Herbert, 2003); that is, self-efficacy corresponds to beliefs in social skills in the situation (Hofmann, 2007). Self-efficacy may, however, also refer to one's confidence in the ability to master the anxiety feelings in the feared situations, as suggested as a mechanism of change for panic disorder in the form of panic-self-efficacy (Casey, Oei & Newcombe, 2004); and that may roughly correspond to perceived emotional control in Barlow's (2002) theory of anxiety. Failure to control negative emotions or bodily reactions may be especially relevant for SPs that panic over bodily symptoms (Hoffmann, 2007).

A newer conception that has achieved growing influence within the anxiety disorder area over the last ten years (cf. Rodabough & Heimberg, 2008) is based on emotion regulation theory. According to Gross (2002), emotional suppression, in the form of inhibition of outward expressions of inner feelings, is a maladaptive emotion regulation strategy that can lead to heightened physiological activation and failure to decrease negative emotional arousal. Emotional suppression has been found to be highly characteristic of persons with SP (Kasdan, 2007; Kashdan & Breen, 2008), in that they rigidly strive to conceal emotional experiences and inhibit emotional expressions. Exposure exercises may help clients with SP increasingly to accept and tolerate negative emotions, which could lead to symptomatic decline and a decrease in behavioral avoidance. Client acceptance of negative emotions, instead of experiential avoidance, is considered an important therapeutic goal in newer, so called "third wave" therapies like acceptance and commitment therapy (Hayes, Folette & Linehan, 2004). Attempts have been made to treat SP with mindfulness, partly based on the rationale of helping clients to achieve a higher degree of acceptance of negative feelings (Bögels, Sijbers & Voncken, 2006; Koszycki, Benger, Shlik & Bradwejn, 2007; Piet, Hougaard, Hechsher & Rosenberg, 2010).

Methods for Studying Change Mechanisms in a Case Study Design

Case Study Validity

Within quantitative empirical research, validity generally refers to trustworthiness or "truth value" with regard to (1) empirical operationalization of theoretical variables ("test

validity”, cf. Cronbach & Meehl, 1955), and (2) explanations of causal relationships between variables (“design validity,” cf. Campbell & Stanley, 1963). A similar distinction within qualitative research between “data quality” and validity of explanations of relationships between data is suggested by Miles and Huberman (1984).

Quantitative Case Studies

In his classic paper on how to draw valid inferences from case studies, Kazdin (1981) draws on these two forms of validity from a quantitative point of view. First, he considered the use of “objective data” (i.e., psychometrically sound scales) on outcome to be a necessity for a valid conceptualization of change (corresponding to test validity). Second, he noted that the major threats to internal (design) validity (Campbell & Stanley, 1963) in the causal attribution of outcome to the treatment (such as history, maturation, testing, instrumentation and statistical regression) could reasonably be ruled out in the case of continuous assessment, stability of problems prior to the intervention, and immediate and marked effects.

It is, however, much more difficult precisely to delineate the processes or mechanisms of change, which are necessary when answering questions of not only *if* a given treatment works, but also *why* and *how* it does so. The latter question is within quantitative research linked to the study of mediating variables or mediators (Baron & Kenny, 1986; Kazdin, 2007; Kraemer, Wilson, Fairburn, & Agras, 2002). A mediator is an operationalization of a construct in a theory of change that statistically accounts for at least a part of the relationship between the independent variable (treatment) and the dependent variable (outcome). Mediators may thus indicate mechanisms, although the two concepts should not be confused (Kazdin, 2007); mechanisms refer to a greater degree of specificity in a theory, while mediators are empirical variables that may elucidate the theory. Technically, to conclude that a variable functions as a mediator requires that it can be shown to be statistically associated with both the independent and the dependent variable, and that the degree of association between the independent and the dependent variable will be reliably reduced after adjusting for the contributions of the mediator (Baron & Kenny, 1986). Furthermore, it has to be shown that the mediator precedes the independent variable in time; otherwise the causal role of the variables could possibly be reversed (Kraemer et al., 2002).

As an example, according to cognitive theory (Beck, Rush, Shaw & Emery, 1979), CBT for depression is supposed to work by changing dysfunctional cognitive attitudes or assumptions. It has been shown that CBT changes dysfunctional attitudes for depressed patients, and that such changes are associated with, and statistically account for a part of the decline in depressive symptoms from pre- to post-therapy. The chronological sequence between cognitive and symptomatic change is, however, not well-established (Whisman, 1999), and thus the possibility cannot be ruled out that the decline in depressive mood precedes, and causes changes in dysfunctional thoughts; not vice versa. Since, for instance, cognitive changes also occur in antidepressant treatment (that unlikely works primarily by changing cognitions), this possibility does not seem far-fetched (cf. Longmore and Worrell, 2007). According to Kazdin’s (2007) methodological recommendations for studying mediators, experimental manipulations of mediators (the most rigorous way to establish causal relationships), and plausibility or coherence

with regard to a broader scientific knowledge base should also be helpful in deciding if a given variable functions as a mediator. As a most suitable process research strategy for studying mediators, he recommends intensive measurements of both mediators and outcome variables throughout therapy, preferably with more than one hypothesized mediator related to competing theories of change.

According to traditionalist quantitative methodology, objective or standardized measurement is considered a *sine qua non* for a scientific study. This was the original position of Kazdin in his 1981 paper on case studies, which he considered scientifically useless without objective measurement of outcome. From this perspective, studies focusing on therapeutic processes might also require objective measures of mediators, as well as of outcome, in order to attain valid scientific knowledge from case studies. Such a position was apparently taken by the American Psychological Association (2006) in their 2005 declaration on evidence-based practice, wherein traditional case studies were considered valuable sources of innovations and hypotheses, while single-case experimental designs with repeated measurements were seen as particularly useful for establishing causal relationships in the context of an individual. If the causal relationships include processes or mechanisms of change, single case (quasi-) experimental studies should include objective measures of both mediators and outcome. It should be noted, however, that Kazdin (2007) later has embraced a view that is more optimistic with regard to the role of qualitative studies as a research strategy for revealing mechanisms of change in psychotherapy.

Qualitative Case Studies

Traditional case studies primarily rely on qualitative data with regard to processes or mechanisms of change. The literature on validity of qualitative studies is wideranging, with many suggested criteria described in different vocabularies and based on divergent meta-theoretical positions (e.g., positivism, realism, critical theory, pragmatism, hermeneutics, or constructivism), some of which even deny a place for validity in a traditional sense within qualitative research (cf. Kvale, 1997). However, based on a review of more than 40 suggested criteria, Elliott, Fischer and Rennie (1999) were able to propose a single set of guidelines for publication of qualitative research studies in psychology with seven general recommendations shared by both quantitative and qualitative approaches, and seven especially pertinent to qualitative research. The seven specifically qualitative recommendations are: (1) owning one's perspective (authors specify their theoretical orientations); (2) situating the sample (describing the participants and their life circumstances); (3) grounding in examples (providing illustrative data, e.g. direct quotes); (4) providing credibility checks (e.g. checking with informants, using multiple analysts, or triangulations with other data sources, including quantitative scales); (5) coherence (the data fits together to form a data-based narrative); (6) accomplishing general vs. specific research tasks (e.g., specifying limitations to generalizations); and (7) resonating with readers (readers judge the material accurately to represent the subject matter).

Corresponding to internal validity in causal attributions within quantitative methodology (Campbell & Stanley, 1963), coherence, or "pattern matching" (Campbell, 1979), is often invoked as a validity criterion within qualitative methodology. In a recent publication in this

journal, Stiles (2009) argued, with reference to Campbell's (1979) analogy of the many degrees of freedom in a case study, that a close match between many pieces of data in a case, and many statements in a theory, might move case studies up in the evidence hierarchy from the context of discovery to the context of justification. Coherence, part-whole concordance, or good configuration ("gute Gestalt") may also be considered the central idea in the famous hermeneutic circle considered a crucial canon in the interpretation of texts (cf. Radnitzky, 1968). From a coherence perspective, the choice between different theoretical explanations of a certain case may be substantiated by how many details in the case the theory is able to explain. In a paper discussing which of several theories best explains, why Van Gogh cut off his ear, Runyan (1981) stressed this as a central criteria for evaluating explanations of case material, with the other, supplementary criteria being logical soundness, survival of attempted tests of falsifications, consistency with regard to more general knowledge, and the theory's credibility relative to other explanatory hypotheses. In answering the question of mechanisms of change in a given qualitative case study, a central touchstone of validity may be the presence of a plausible, coherent story or narrative of the sequential order of events in the process that covers all the details in the case, and with plausible explanations of the causal relationship between events. Miles and Huberman (1984) suggest qualitative chain analysis with diagrams of variables and their relationships as a strategy for analysis of mediators (or intervening variables as they call them) within qualitative studies.

The goodness of fit of a coherent story should be considered in relation to theory. "In essence," Stiles (2009, p. 11) states, "a case study asks how well the theory describes details of the case." The relevant theories could be well-established theories within the field, a broader scientific knowledge base, the common "theoretical underground" (Goldfried, 1980) of psychotherapists based on clinical experience, or psychological common sense (e.g., Nagel, 1995; Smedslund, 1981) in the sense of shared knowledge of competent members within a given culture. A distinction is sometimes drawn between clinical case studies, which primarily aim at a deeper understanding of a particular case, hypothesis/theory testing case studies, and theory-building case studies, which aim at achieving new theories (the two last types are combined in Stiles [2009]). The distinction is, however, not a clear-cut one (cf. Rennie, 2009), and often there is a skipping back and forth between theories (or at least preliminary conceptions) and case material. Thus, in comparing the present case with different theories of change mechanisms in CBT for SP, the theories could shed light on the clinical understanding of the case, but the case might also elucidate the theories and their respective relevance in explaining Sara's change. Although highly intertwined, the two perspectives on the relationship between theory and case are in the final evaluation section 8 of this paper stressed under the respective headings of "Mechanisms of Change" (focus primarily on theories) and "A Coherent Narrative of Sara's Change" (focus primarily on Sara).

Professional and Theoretical Background of the Authors

As mentioned above, one of Elliott, Fischer and Rennie's (1999) quality guidelines for the conduct of qualitative research is for the authors to "own" and make transparent their theoretical orientations. In line with this, we briefly set forth our backgrounds below.

The first author (VLJ) was Sara's student therapist. At the time of Sara's treatment, VLJ was in her 8th semester of graduate school, and she had taken courses in psychotherapy in general in addition to the present clinical program on CBT. Her required theoretical paper in the program was a systematic review of studies on mechanisms of change in CBT for SP. Although she was most firmly grounded in the CBT framework, she also had experience working with clients diagnosed with personality disorders at a specialty clinic in a psychiatric hospital using psychodynamic therapy.

The second author (EH) was responsible for the design of Sara's case. He also functioned as one of the psychologists in the intensive group-program. At the time of the case, he had had more than ten years of experience providing CBT for anxiety disordered clients. He also had experience conducting interpersonal psychodynamic therapy, including group therapy. He is the author of a Danish book on psychotherapy integration, and thus not solely committed to the CBT rationale. None of the authors particularly adhere to any of the compared exposure theories.

The third author (DBF), who is also the editor of this journal, is primarily identified with CBT, but has a background in other approaches and an interest in integration. His particular interest is in ways to mine the potential of systematic case studies for foundational knowledge in psychotherapy and other applied areas of psychology.

4. ASSESSMENT OF THE CLIENT'S PROBLEMS, GOALS, STRENGTHS AND HISTORY

Presenting Problems

Sara's presenting problems concerned her excessive fear of blushing and saying the wrong things at situations like parents' meetings, meetings with her choir, and social gatherings in general. She described a typical problematic situation in her enquiry letter:

For example, I feel anxious when I attend parents' meetings in my children's classes. I either go completely blank and cannot think of anything to say, or I excessively scrutinize the things I eventually could say, and I always end up discarding it, because I think it sounds stupid, and I am afraid that I will blush.

The SP often prevented Sara from expressing her opinions at the parents' meetings, a matter that concerned her greatly, since she wanted to be able to influence the formal education of her children. During the meetings, Sara experienced intense distress and anxiety, as well as a constant fear that someone might ask her a question and make her the center of attention. The SP was clearly inhibiting Sara from living her life, as she told the student therapist in her third individual session: "I can never enjoy anything fully. The SP is like a straitjacket." Although her presented SP problems all referred to rather circumscribed social situations, her blushing phobia ultimately proved to affect a range of social situations (cf. below).

History

Social and Occupational History

Sara grew up with her parents and her four year older sister in a small town. Sara's mother had done hard, manual labor all her life, and Sara's father had an office job. He took an early retirement at the age of 50 as a consequence of his OCD. He died in the beginning of this therapy course.

Sara described herself as a very shy and inhibited child who was often jealous of her outgoing sister, whom she felt garnered greater attention from her parents, especially her mother. However, Sara never doubted that her parents loved her, and she reported the general emotional climate in the family to be positive and supportive.

After Sara completed her upper secondary school, she moved to the United Kingdom to work as an au pair for a year. When she returned to Denmark, she completed a commercial education and subsequently worked at several different companies. She had various short-term employments, as her as-yet undiagnosed OCD symptoms were making it difficult for her to keep a single job. After she was diagnosed with the disorder in the late 1990s, she held part-time jobs for several years, but ultimately found them difficult and stressful due to her OCD symptoms. As a consequence, she took an early retirement on a public pension half a year before she applied for treatment at the clinic.

Sara had had two long-term romantic relationships in her lifetime. She was married to the second man, whom she met 13 years prior to beginning treatment at the Clinic. She confided in her husband about her OCD and SP, which she had never shared with her previous partner. She had three children with her husband. They divorced shortly before the 3-month follow-up session.

Mental Health History

Sara's OCD and SP symptoms started to emerge in her teens, when she also suffered from a serious anorexic eating disorder. She described herself as always shy and inhibited in social situations, even as a small child. Her SP escalated after a period in primary school when she was severely bullied. There was no specific theme to the bullying, but her peers often ridiculed her tendency to blush. She specifically remembered an episode that she believed was very important in the development of her SP. In the 6th grade, at age 12, Sara was placed in the middle of the classroom by a teacher, an incident considered by her as a punishment. She was crying and blushing in intense distress while her classmates were staring and laughing at her. After this episode, Sara was highly afraid of blushing when under others' watchful observation. As a teenager, Sara had a boyfriend, but she was very afraid that he would see her blush, so she would always turn the lights down when she was seeing him to make sure he would not notice her blushing. Presentations in front of her classmates in her commercial education program made her blush; in these situations, she was very anxious, nauseated, and barely able to speak.

When Sara's SP was at its worst, she was afraid to blush even in front of her closest relatives, and she made extensive use of safety behaviors, like wearing high-necked blouses and trying to hide her face with her hair hanging down. Furthermore, she avoided all meetings and other situations that could trigger her blushing.

At the beginning of the therapy at the Anxiety Clinic, Sara's fear of blushing was present and a major source of distress, primarily at meetings and social gatherings. The SSRI medication Sara received for her OCD had also relieved the SP somewhat. At that time, Sara had an extensive knowledge of CBT, and so she tried to expose herself to the feared situations and to avoid engaging in safety behaviors. Thus, she forced herself to attend the feared meetings without attempts at hiding her face, although she did not speak in the gatherings. Sara had not received any prior psychological treatment for her SP.

Sara had suffered from other mental health problems in addition to SP. Around the age of 12, she developed an eating disorder. She starved herself and was very obsessive about her eating behaviors. Her parents took her to their general practitioner, and they forced her to eat again, threatening her with hospitalization and the cancellation of her confirmation celebration (a very important event for her), if she continued restricting. After she began to eat again, she engaged in desperate attempts to control other areas of her life, which made her obsessions and rituals escalate. She developed OCD, characterized by compulsions to check, count, and systematize everything (e.g., her personal belongings, papers at work), and to repeat rhymes and long strings of words over and over again in her head. Sara had been suffering from OCD for many years when she came in for treatment; the disorder disturbed her working life and family life more and more as time passed. Her escalating rituals resulted in her being increasingly slow at executing tasks at her job and spending more and more time memorizing everything and repeating her rhymes. One day, in the late 1990s, after an especially stressful period of memorizing and repeating long strings of words, she had a "nervous breakdown" (i.e., a depressive episode), after which she told her husband about her symptoms and rituals. She was referred to a psychiatrist in private practice, who diagnosed her with OCD, initiated medical treatment with paroxetine, and referred her to a specialty clinic for CBT treatment. The treatment process with exposure and response prevention was hard and difficult for Sara, and she had several relapses. However, she said that her OCD no longer caused her significant distress as a result of the treatment. She had, however, no aspirations of ever returning to work, largely due to her OCD problems.

Sara had been highly motivated and information seeking in her former treatment for OCD, and she was rather well-informed about anxiety and CBT. Thus, she had read the clinic's treatment manual before she applied for treatment. On one occasion, she even corrected the student therapist as to the difference between avoidance and safety behavior. She used her knowledge to identify and alter her safety and avoidance behaviors, as well as her negative thoughts concerning the feared situations. Since 2006, Sara gave talks on her problems with OCD and SP in front of an audience of nurses, physiotherapists, and occupational therapists in a post graduate training program on CBT, as well as at informative meetings for a broader audience of patients and their relatives arranged by the educational department of the psychiatric hospital. Sara agreed to share her experience partly from an altruistic motive to inform others of

the disorders, but also because she knew about the beneficial effects of exposure from her prior CBT for OCD and her familiarity with self-help material about SP. She was, however, highly disappointed to learn that these performances had no influence on her blushing phobia.

Sara emphasized that her early retirement really had been helpful for her mental health, since the demand of work situations would increase the extent and intensity of her rituals.

In spite of the severity of Sara's symptoms, she reported that she had experienced a nearly symptom-free period during the year she spent in the United Kingdom as an au pair. Here, her OCD and SP symptoms almost vanished. Sara postulated that this remission of her problems occurred because she was away from the usual context of her problems. However, the symptoms returned again when she moved back to Denmark.

Diagnoses and Symptoms

The diagnostic interview, ADIS-IV, revealed that Sara's primary diagnosis was SP, with a severity rating of 5 on a scale from 0 to 8, indicating that Sara was experiencing a moderate-to-severe degree of distress and functional disability (Brown et al., 1994). She primarily mentioned the fear of blushing in specific social situations related to meetings, which corresponded to a diagnosis of non-generalized SP. However, it was later revealed that her blushing fear could include many other situations, including informal two-person relationships. (Note that the difference between generalized and non-generalized SP in the DSM-IV is not a clear-cut one). Moreover, she met the diagnostic criteria for OCD (although with a sub-threshold severity rating of 3 in her present life circumstances), generalized anxiety disorder (severity degree 4), specific phobia (spiders; severity degree 4), and skin-picking (severity degree 3), a problem mentioned, but never focused on in therapy. Clearly, Sara suffered from a rather high degree of comorbid anxiety disorders, although they were mostly of a moderate degree. Sara also experienced frequent migraine and tension-type headaches.

The prevailing symptoms that Sara experienced in the feared SP situation included a fear of blushing, heart palpitations, sweating, shaking or trembling, nausea, stomach discomfort, hot flashes, dizziness, and fear of losing control. All of these symptoms were rated as severe (6) in the ADIS-IV interview, except for fear of blushing, which was given the maximum rating of very severe (8). An analysis of her most prevalent symptoms, thoughts and behaviors as they occurred in one of her most feared situations—a parents' meeting—is presented in Table 1.

Sara's scores prior to therapy on the SP specific measures of SPS (37) and SIAS (39) were close to the mean of other SP clients (Mattick & Clarke, 1998). Her scores on the BAI (26) corresponded to moderate-to-severe anxiety (Beck & Steer, 1993), and her score on the BDI-II (19) was within the clinical, rather than normal, range. Her score on the SCL-90-R, GSI, (2.14) was almost one standard deviation above the mean for a mixed group of psychiatric outpatients in Derogatis' (1977) standardization sample. She endorsed experiencing a total of 58 DSM-IV personality disorder criteria on the SCID-II. This is an extremely high score that did not correspond to the clinical impression of no marked personality disorder (as mentioned, no personality disorder diagnostic interview was taken). The SCL-90-R and the SCID-II were,

however, collected shortly after her father's death (later than the other scales), which may have inflated her scores on these scales.

Problem List and Treatment Goals

Sara's problem list, filled out at the third individual session prior to the group program, is presented in Table 2. As can be seen, her primary fears concerned attending meetings and social gatherings, where she might be in the center of other people's watchful attention. In these places, she feared that she would be likely to blush or otherwise to make a fool of herself; such situations included attending parents' meetings, participating in choir sessions, dancing at parties, and playing ball at school arrangements. She would like to be able to participate in such situations with more self-confidence and less anxiety, and to speak up if she had something on her mind. So, this was agreed upon as the primary objectives of treatment. As revealed later, Sara actually hoped to be able to learn how to control, and thus stop, her blushing in the feared situations as a consequence of treatment. Since she mentioned no desire of returning to a job, this was not an aim of the treatment.

Strengths

Sara was a woman with several strength. She had a family that provided her with social support. She was highly motivated to engage in the treatment, since she had prior positive experiences with CBT for her OCD, and she had extensive knowledge of CBT for anxiety disorders. As mentioned above, she had taken the initiative to expose herself to feared social situations, and she had agreed to give public speeches on her life with OCD and SP, although these arrangements had not helped her to decrease her fear of blushing.

5. FORMULATION AND TREATMENT PLAN

Case Formulation

Sara had always been shy, and she might be predisposed toward anxiety disorders because of genetic factors and/or early family environmental factors, since her father suffered from OCD and her own problems started early in life. She also stressed the problematic relationship with her sister (characterized by feelings of inferiority) and the severe bullying in school as circumstances that may have contributed to her development of SP. Her key dysfunctional personal beliefs, later revealed in therapy, could be expressed as the following conditional assumptions: "Even though I exert myself, I am never able to do it well enough," and "If I make a mistake, or make a fool of myself, others will think I am weird and stupid." The two assumptions are related with regard to content; the first one was most evidently connected to her OCD and related perfectionism, while the other was in the center of her SP problems.

Sara's case formulation according to the Clark and Wells (1995) model was collaboratively worked out with the client in the second individual session, using one of her most feared situations, a parent meeting at school (see Figure 1). In the situation, Sara experienced anxiety symptoms (e.g. heart palpitations, trembling, warmth in her head), sadness, and self-criticism, with predominant negative automatic thoughts such as "I will blush and look foolish,"

and “They will think I am weird.” As mentioned, she attended the feared meetings or gatherings, but refrained from saying anything in front of the other people. Sara shifted her attention inward when confronted with the feared situation and constantly monitored sensations of warmth in her face for signs of blushing. On the basis of this introspective information, she developed a distorted mental image of herself from an observer perspective with a horrible looking, red, and swollen face. Sara clearly overestimated the costs of her blushing, since she related it to disastrous consequences, probably related to her traumatic childhood experience of sitting in the middle of the classroom, blushing, and crying to her classmates’ amusement.

Although Sara prior to therapy did attend the feared parent meetings, she said nothing at the meetings, and thus she avoided a crucial part of the feared situation. By not bringing any attention to herself she did not test her negative expectations of saying something stupid or others’ negative reactions in case of she made a mistake or blushed. Although she deliberately renounced some of her more obvious safety behaviors, like using make up and wearing scarves to hide blushing, she carefully monitored the warmth in her face to detect signs of blushing. This safety behavior may have strengthened her reddening tendency and her negative automatic thoughts about blushing. This behavior was not recorded in the individualized measure of SP seen in Appendix B, since Sara herself did not consider it a form of safety behavior, and her therapist did not insist on doing so. Another idiosyncratic, and perhaps OCD-related safety behavior was Sara’s decision to not wear earrings because she was afraid that the warmth in her face would make her ears too hot and swollen.

Treatment Plan

Almost all situations in Sara’s problem list (Table 2) were related to her excessive fear of blushing in situations characterized by a risk of being looked at or spoken to in front of other people. Since she did some exposure on her own and was well-informed regarding SP mechanisms, several hypotheses were considered regarding the reasons she had not been able better to handle her SP problems on her own in her former attempts. Based on the Clark and Wells (1995) model of SP, plausible explanations could be that she had never achieved realistic feedback in the feared situations (with regard to her own appearance or other people’s reactions to her), partly due to her self-focused attention and attempts to monitor and control her reddening tendency. It may also be significant that (1) she did not deliberately expose herself to what she really feared in the situations, namely to blushing or to saying something stupid; and (2) her attempts to control and suppress her blushing and corresponding negative feelings may be considered a dysfunctional emotion regulation strategy that paradoxically amplified her negative feelings.

Sara’s presenting problems made her an excellent candidate for the intensive group treatment, since her feared situations were related to speaking in front of a group of people, and it is easy to arrange behavioral experiments concerning this problem in group treatment. Video-recordings of the experiments could be used to correct her distorted image of herself in the situation; and the feedback from the audience would likely contradict her catastrophic misconception of the costs of her blushing (i.e., that blushing leads to rejection and ridicule). It was also considered important to convince Sara that it was not possible for her to control her

blushing, since it is an autonomic reflex, so that she could be more accepting about this bodily reaction. Other strategies might have been considered, for instance imagery-based reliving through writing of her severe bullying experience with her teacher in the primary school (cf. Wild, 2009), but this strategy was not part of the treatment plan. Sara was not considered a difficult client to treat, although we had some speculation on the possible influence of her comorbid OCD on the SP.

6. COURSE OF THERAPY

Sara received three weekly individual sessions after the ADIS-IV interview and prior to the group program. After the intensive group-week she had five weekly individual sessions: two for consolidating her SP treatment, two for treatment of her spider phobia, and one for a final evaluation of the therapy. After the end of therapy she was interviewed at 3-, 6-, and 12-month follow-up meetings.

Individual Sessions Prior to the Intensive Group-Week

The first of the three pre-group sessions was scheduled to obtain information on Sara's background and history, material needed for the mental health record. She gave the therapist a copy of the manuscript she used when she gave speeches on her life with OCD and SP, which included information on her background and problems. Shortly before the second session, Sara's father passed away, and most of the session was spent talking about her loss. Sara also wanted to save time to work on her SP, so an analysis of her thoughts, feelings, and behaviors in a feared situation was also executed (recorded in Table 1). In the third session, the problem list (Table 2), and her individualized measure of SP (Appendix B) were collaboratively worked out.

The Intensive Group Program

As mentioned, the intensive group program spanned five days in one week, each day from 9 am to 2 pm, with the group consisting of eight student therapists, nine clients with SP, and two psychologists (see Appendix A for an overview of the program). In the morning, the psychologists led the group therapy with the whole group present. Except for Days 3 and 4, the clients and students were split into two groups in the afternoon, and the students led the clients in small group exercises. Days 3 and 4 in the intensive group-week, during which the whole group worked together, can be considered crucial for Sara's improvement—it was during these sessions that she conducted two highly important behavioral experiments.

Days 1 and 2: Psychoeducation and Restructuring of Negative Thoughts

In the first day in the intensive group week, the morning program consisted of psychoeducation on SP and CBT conceptions of the disorder and its treatment. An individualized Clark and Wells model of SP was completed on a white board for each client in relation to a feared situation of the client's choice. Sara chose to go through the current situation of sitting in the group therapy (a theme suggested as a possibility by the therapists, and chosen by most clients). Her physical symptoms included sweating and heart palpitations. She felt very nervous and was thinking, "I am turning red in my face and down my neck; it can be seen," and, "The

others will think I am weird.” She shifted her attention inward and carefully monitored the feelings of warmth in her chin. Thus, the result of this analysis closely paralleled the case formulation seen in Figure 1.

In the afternoon, exercises were arranged in the smaller groups on self-focus and redirection of attention outwards. In the client feedback round after the exercises, Sara reported that she did not think that her attempts to redirect attention outward in the exercise made any difference for her problems. She did consider the possibility that an attentional redirection might be of some value for her, but she thought it unlikely that she would ever be able to control her attention in the feared situations due to her extremely high anxiety.

At the end of the day, Sara was rather frustrated and demoralized. On the one hand, she was disappointed about being the only client in the group with a primary fear of blushing (a rather unusual circumstance). On the other, she had hoped that the treatment could help her learn to control her blushing tendency. Instead she was told that blushing is an autonomic reflex that cannot be voluntarily controlled, and that the blushing tendency may worsen if one tries to suppress it. She emphasized strongly that she would *never* accept her blushing. At a follow-up session, she told the student therapist that when the psychologist had told her that she had to accept her blushing, her thoughts were: “Is this man really a psychologist?! He cannot be serious!” At that time, Sara could not imagine that she would ever be able to accept her blushing.

In the morning of the second day, the topic was cognitive restructuring of negative automatic thoughts. Sara chose as the target of her analysis a situation in which she was having lunch with her mother and had a sudden fear that she would blush. The group gave her feedback with their thoughts about people who blush, with the following opinions and reflections expressed:

“I have a friend who is always blushing, and I have never thought of this as a problem. Actually, I think it is charming.”

“I was once in an uncomfortable situation, and I decided to try to blush as much as possible.”

“A girl in my group blushed too, and we were able to laugh about it. It helped in creating a relaxed atmosphere, and as consequence we got closer to each other.”

“It can be a personal characteristic and charming.”

“I like it when people show their emotions. It proves that they are just human.”

“Maybe you could try to practice in deliberately blushing, for example by running and saying *Phew!* I really got moving there, now I am really red in my face!”

Sara was highly surprised that only positive statements came forth and that the group did not think negatively about blushing. This event seemed very important for Sara, because it seemed to help her to restructure her negative beliefs about people’s attitudes toward blushing. Furthermore, one of the psychologists told Sara that one of the best alternative thoughts for

people afraid of blushing is, “It’s okay to blush.” The feedback from group members was written down by her student therapist and Sara received a copy.

In the afternoon, behavioral experiments were carried out in the smaller groups. Sara tried to trigger her blushing by running up and down the stairs. However, this method did not work, and she was left wondering how she could make herself blush. This was an example of a paradoxical strategy, since Sara could not blush when she tried to evoke the reaction. This demonstrated to her the uncontrollable nature of the blushing response. It also shows that Sara now seemed somewhat convinced that the treatment strategy should not consist in helping her to control or suppress her blushing—a marked change from Day 1, and one that was likely facilitated by the group’s comments on blushing.

Days 3 and 4: Behavioral Experiments in the Large Group

On the third day of the intensive group week, behavioral experiments were carried out in the large group with all participants, including the two psychologists, for the whole day. Sara chose to deliver a speech on her problems in front of the group without using any notes for her presentation. This deviated from her previous public speaking experience, as she usually strictly followed a manuscript in her oral presentations at the psychiatric hospital. It was decided that she should try to not hold her blushing back, but just let it come and accept the sensations and feelings. Table 3 shows the cognitive work around this behavioral experiment, including her predictions of her performance and reactions, how the experiment actually turned out, and the feedback from the group. Sara expected that she would be extremely anxious, blush, tremble, experience heart palpitations, lose concentration with pauses and inconsistencies in the story, and that her face would become horribly red and swollen.

Sara delivered a speech about her childhood history of her eating disorder, explaining how it was forced back by her parents and doctor, which may have led her to develop OCD. The speech was highly emotionally charged. During the talk, Sara blushed and became tearful. After the exposure, Sara realized that her anxiety symptoms were not as bad as she had expected, and that most of the symptoms declined or even disappeared after a short while. The group members were touched by her story and told her that they did not pay much attention to her blushing, since they were absorbed in her story. The exposure exercise was video-recorded. After it was replayed, Sara declared: “It was not bad at all to watch the video. I look completely normal! I had imagined that I would look like a monster,” and “The blushing meant nothing when I first got started.” She expressed that it had been an amazing experience to let her blushing come forth, “not giving a heck about it!”

At the end of Day 3, Sara was highly enthusiastic about her accomplishments in the experiment. She told the group that this evening she would tell her choir about her SP, something she had never before dared.

The course of Day 4 was similar to that of Day 3, with behavioral experiments in the large group carried out all day. However, the exercises completed on this day were led by the students without the presence of the psychologists. In the morning, Sara told the group that she

had managed to tell her choir about her SP, although not without hesitation. She had informed her choir leader that she would like to give an announcement to the choir, and asked her to signal Sara to begin at a time that was not predetermined. Sara considered it a challenge to be unsure of when she would be asked, although responding to the leader's question was less fear provoking than simply speaking on her own. When she told the choir about her SP, they applauded her and praised her for her courage. Sara also told the therapy group that it had been very releasing to cry, blush, and just "let it come forth" during the behavioral experiment the day before.

On Day 4, Sara had planned that she would sing a song in front of the group and deliver a speech in French, allowing her blushing to come forth during both activities. The idea of singing in front of the group was particular groundbreaking for her; while she greatly valued singing in a choir, she doubted her ability to perform well, especially when giving a solo performance. The speech in French was a less demanding task than the singing, Sara stated, because she knew that she spoke French well. However, both situations would make her the center of attention, which was the main characteristic of her problem situations. Clearly, Sara was not setting easy tasks for herself. The predictions and actual outcomes of the behavioral experiment are presented in Table 4.

With regard to singing, the major task according to Sara, she expected that she would have heart palpitations, blush, and be so anxious that she would hardly be able to sing. However, she told the group that she did not care about her blushing after she had told herself to "just let it come forth" in the exposure exercise yesterday. Sara carried out the singing experiment. She experienced her symptoms decline after a time, and found that she was able to sing her song without being too bothered by her blushing. She carried out the short speech in French after the song, and her trembling declined significantly over the course of the speech. The singing experiment was particularly successful and left the audience deeply touched. After the song, Sara said: "It was extremely barrier-breaking, maybe the worst thing I have ever tried, and still I did not care if I was blushing." At the end of the day she declared: "To blush is not the end of the world. I never thought that I would come to feel this way." She said that she now knew she just had to let her feelings come in the feared situations without trying to control them. Thus, it seemed that she was fully convinced that a central point in overcoming her blushing phobia was accepting her blushing and the accompanying negative emotions.

Day 5: Working with Dysfunctional Assumptions

On the last day of the intensive group week, the clients worked with identifying and restructuring their basic assumptions/intermediate beliefs, or "rules of life," as they were called. They also had to present an overview of their strengths on the white board in front of the small groups in the afternoon, an exercise for which they had prepared for as homework by listing their possible positive characteristics. Sara stated that her most predominant assumption was, "Even though I exert myself, I never think it is good enough." This dysfunctional rule likely is closely related to her OCD, although Sara also thought it was relevant for her SP problems. With help from the group she worked out another formulation, which she thought she could strive to accept: "When I have done something once, I will tell myself that it is good enough." During the

small group discussion on personal resources, Sara mentioned among her most positive characteristics was that she considered herself to be brave, determined, honest, and persevering.

At the final “goodbye round” Sara told the group that she had greatly profited from the group-week and had come a long way in combating her SP problems. She was prepared to continue exposing herself to the feared situations and work to combat her SP problems. Even though she was a bit nervous about the future, she did not think she needed further therapy to keep her on track in this work. Rather, she felt able to continue on her own. In a break during the day, however, Sara asked the group leader if the Anxiety Clinic also treated spider phobias. After finding that it did, Sara agreed to focus on this problem in the following individual treatment, with conditions for the treatment to be arranged in the scheduled individual session after the group therapy.

Further Individual Therapy Focusing on Social Phobia

Two individual sessions after the group program focused on Sara’s SP. In the first session, Sara told her therapist how very pleased she was with her outcome of the group therapy and the need for continued frequent exposure work was discussed, a subject that Sara knew a great deal about from prior OCD treatment. She mentioned that her predominant alternative thoughts in the feared social situations were: “Well, if I turn red, then I turn red,” and “Yes, just let it come.” As seen in Sara’s completed individualized measure of SP (Appendix B), her belief in her negative thoughts concerning blushing had markedly declined during the group program. However, the thought, “I am ignorant about things other people know a lot about. They will think I am weird, because I do not know these things,” was given a high score of 7 after the group week (see Figure 2). This thought became the target of a cognitive restructuring task with the resulting alternative thought being: “I do not know much about politics because it does not interest me, and it would be unhealthy for me to learn about it because of my OCD.” The last sentence was added because of Sara’s fear that she would have compulsively to memorize information about politics if she wanted to learn about it.

The second session was devoted to her state of functioning with regard to her SP and possible strategies to prevent relapse. A form on relapse prevention was completed together with the therapist, and Sara received a copy (see Table 5). In the two weeks following the group program she had given a speech on her OCD at the psychiatric hospital without using her notes, and she had initiated a conversation with some of the “most scary” parents in her children’s school—in both cases without fear of blushing. Her general quality of life was now much better than before therapy; “I get much more out of life now,” she said. Concerning her problems on the list, she was now sure she would be able to attend parent meetings without experiencing her prior high degree of fear, and go further to say something at the meetings (the problem list was not rescored at this follow-up point, although it was at the 1-year follow-up meeting). Her fear of individual singing lessons had declined considerably, and she was not afraid of being addressed by the choir leader anymore. Sara thought that there might be a risk of relapse if, on some occasion, she suddenly blushed and panicked again. However, she was confident that she now knew how to fight that fear, should it reappear. In case of relapse she said that she would use the alternative thoughts identified in the treatment and reread the notes about other group members’

opinions of people that blush, as given in the first day of the group program. She decided not to use avoidance any more, but instead to continue exposing herself to the feared situations.

At the end of the second session, the arrangement of the following spider phobia treatment was shortly outlined. Two sessions were planned, with the last one being an extended one of two to three hours' duration ending with her having a spider crawl on her arm.

Exposure Treatment for the Spider Phobia

Sara's spider phobia was especially a problem for her, when she was at home alone with the children, since her husband would otherwise typically search for and catch any spider present. If a spider appeared in a certain room while she was alone, she would not be able to enter this room again until her husband had returned and checked to see if the spider was still there.

In the first session the rationale for the in vivo exposure was shortly outlined, that is, that exposure works by disconfirming her fearful expectations, and that her anxiety would decline if she stayed in the situation long enough. The therapist told her that exposure would be gradual with small steps, each of which would be first modeled by the therapist. Sara was reassured that she would have complete control over the procedure, with each new step initiated only after she had agreed to go on. In this first session, Sara was exposed to pictures of spiders in a book.

In this exposure exercise, pictures of small spiders were presented first, and pictures of large, bird spiders were presented last. The latter illustrations evoked the most amount of fear (8 out of 10) in Sara, who also experienced nausea, sweaty palms, and a strong desire to withdraw and look away from the pictures. She spontaneously commented on how disgusting she found the spiders. After the exposure, Sara revealed that she was primarily scared because the pictures reminded her that she would need to confront a real-life spider the following week in the culminating exposure exercise. At the end of the session, Sara's anxiety had markedly declined, and she was now able to flick through the pages in the book with pictures of spiders, touching the pictures and scrutinizing them. She was proud of braving her fear. Her homework for the following week was to look at the pictures in the book, which she borrowed until the next session.

In the following three-hour-long session, the therapist had brought a real-life spider in a jar, approximately 3 cm in diameter including legs. As agreed upon in the session before, the exposure was gradual. At first, the spider stayed in the jar at the other end of the room. Then it was step-wise brought closer to Sara. Thereafter, the therapist opened the jar to let the spider crawl on her own arms. At last, Sara was persuaded to let the spider sit on her hand. The exposure was extremely anxiety provoking, especially when Sara held the spider. She cried and trembled, but managed to stay in all of the situations until her anxiety had declined considerably. It took about ten minutes for her anxiety to wane with the spider on Sara's hand. In this final trial, she was scared that the spider would crawl very fast all over her body and she wouldn't be able to control it. These thoughts were challenged with questions like: "How likely is that? What would happen? How bad would it be?" The best alternative thoughts according to Sara were the

following: “The worst thing it can do is to scare me,” and “If I get a spider on me, I can just whisk it away.” After the session, Sara was exhausted, but happy and proud.

A week later, Sara and the therapist met for a final evaluative session, and Sara told the therapist that she was also very pleased with the outcome of her spider phobia treatment. She told about an episode in which she had been sitting in a garden with a friend and noticed a spider in her friend’s hair. Rather than getting anxious or fearful, Sara simply said, “You have a spider in your hair,” and whisked it away without too much thought. Clearly, the exposure sessions had been helpful in reducing her fear of spiders. As for her SP problems, she reported that they had almost disappeared. She reported, “I do not have to hide myself anymore,” relating this feeling to being “locked in a cage.”

Follow-Up Meetings

Three-Month Follow-Up

At the 3-month follow up appointment, Sara revealed that she had gotten a divorce from her husband in the time since treatment. However, she reported that she had managed to maintain her gains with regard to SP and the spider phobia, in spite of the distress and turmoil associated with the divorce. She expressed no desire to process the divorce in the session, simply mentioning the event in a matter-of-fact manner as a necessary decision that was best for both her and her husband.

Sara’s fear of blushing had reappeared on several occasions—especially when acquaintances asked her personal questions about the divorce and when she had had to set limits for her teenage daughter. The negative automatic thought, “I wish I do not blush,” had returned on such occasions. In an attempt to normalize her reaction, the therapist reassured her that such temporary relapses are common with problems such as hers, which had persisted for a long time. The blushing response in these situations was interpreted as an acceptable reaction to the frustration and anger she felt when people did not respect her personal space—an interpretation that she preferred to viewing her blushing response as an indication of her weirdness. The alternative thought she formulated was: “It is just a thought and it does not mean anything to me anymore.”

Six-Month Follow-Up

Six months after ending therapy, Sara met again with her student therapist, who had asked to interview Sara on her experience of the mechanisms of change in the exposure exercises. Prior to the interview, Sara had read a draft of the case study report on her treatment and had agreed to write down her comments on her experience of the marked changes in her blushing phobia following the two behavioral experiments in the group. Her written report is presented in Appendix D. With regard to her SP, Sara continued to do well, experiencing no relapse of her fear of blushing. As she expressed it:

It is so wonderful to have gotten rid of [the SP], it has been a straitjacket all my life. It has inhibited me so much... The SP inhibits you in relation to your social contact with other

people; even my own relatives—my mother, my husband, my sister... So there, you can see, it has been really hard.

Her fear of meetings had nearly vanished:

Today, I only rarely experience severe anxiety before I am doing something. Yesterday, when I brought my children to a concert with my choir, they asked me ‘Are you nervous, Mom?’ [I said,] ‘No, actually I am not...’ And earlier, I would feel anxious just being in the choir, even though it was not a concert, just standing there. Just being there. Just the thought that someone would say something to me.

One-Year Follow-Up.

Sara was invited to a one-year follow-up assessment to check the durability of her gains. At this time, Sara emphasized that she was still doing well and that she was very pleased with her new life, which was nearly free of SP symptoms. She stated, “Five years ago, I would never have imagined that I would get this well!” The therapist asked her about her divorce, which was finalized soon after the end of treatment, shortly before the 3-month follow-up session. Although she reported that she did not think the divorce was a direct consequence of her therapeutic gains, she noted that her progress in therapy had made it easier for her to break from her former husband, as she was more confident in her ability to take care of herself and her children. One year post-treatment, Sara was seeing a new boyfriend and reported being very happy about their relationship.

Her negative thoughts about blushing had only reappeared on a few occasions, and Sara had managed these situations with the strategies she learned in therapy, i.e., trying to accept, instead of combat, her blushing, viewing the negative thoughts as only thoughts, and concentrating on her ongoing activities. Sara was careful to continue exposure without using safety behaviors. The CBT techniques were now highly integrated with her daily behavior, and she used them without thinking much about it. For example, Sara occasionally felt uncomfortable and exposed in brightly lit rooms, because the light would make her blushing more visible. However, she never expressed a desire to shut the curtains or turn the lights down; she said that she behaved in this way automatically, without paying much attention. Whenever her SP threatened to reappear she was careful to brave her fears with renewed exposures.

The problem list was rated again by Sara during this follow-up (see Table 2). Sara had improved a great deal on almost every problem, rating her anxiety on six of the nine problems as 0 or 1 on the 0 - 10 scale. The anxiety she experienced in the situations she had feared most prior to treatment (meetings and public interaction with her choir leader) were rated as 1 on the scale. Only her anxiety related to the problem, “Being asked to dance at a party, when there is nobody else on the dance floor,” was still rated highly (8), as she reported that she would still be embarrassed to do this. However, this was not a problem that bothered Sara a great deal, and she never felt the need to systematically expose herself to such situations.

Sara’s gains with regard to the spider phobia had also been preserved, as she reported that she was no longer disturbed by spiders. She also stated that her OCD, which had not been

directly addressed during the present course of therapy, did not bother her in her present situation. Nonetheless, her OCD symptoms did cause some distress when she received forms from the local authorities that had to be completed correctly, as she experienced a familiar urge to check her responses repeatedly. She tried to avoid completing these forms when she was stressed, as these were the times when her checking compulsion was at its worst.

Sara remained retired, as she believed that her OCD would worsen markedly if she returned to work. While her few residual SP problems did not prevent her from resuming work, Sara was afraid that her SP would return if she discontinued the medication she took for her OCD, which also helped relieve her SP symptoms (60 mg paroxetine). Somewhat surprisingly, Sara stated that she was more concerned that discontinuing her medication would bring a relapse of SP, rather than OCD. Sara attributed some of the gain in the treatment to her medication:

I am not sure that I would have profited as much from the therapy if my SP was at its worst when I started here... If I had not received my medication, and the anxiety had been so strong, I would never have dared to do any of those things, I would not have dared to speak in front of the group... Because then it is really bad, and you are simply not able to do it.

7. THERAPY MONITORING AND USE OF FEEDBACK INFORMATION

Sara's individualized measure of SP, shown in Appendix B, was completed every week in the individual sessions, every day in the group week, and at three-month and one-year follow-up interviews). These ratings allowed the therapist to keep close track of the fluctuations in Sara's level of anxiety, depression, avoidance behavior, and belief in her most predominant negative thoughts (see Figure 3). In this case, the information was mostly used in therapy to confirm the clinical impression of a sudden and durable change in SP symptoms and problems. The individualized measure did, however, remind the therapist of a problem area that was not successfully dealt with in the group treatment program—namely Sara's fear of expressing her opinion to people who would be likely to know a great deal about a certain topic, such as politics (see the section above on the individual therapy after the group program). The CBT strategy of always reviewing homework with the client in the beginning of the session also helped the therapist monitor the client's progress outside of therapy.

After every individual session the therapist watched the videotapes of the meeting as an aid for writing case notes, and received weekly supervision on the case. At the end of each day during the group week, there was a supervision meeting with the psychologists and students to reflect on the day's group process.

8. CONCLUDING EVALUATION OF THE THERAPY'S PROCESS AND OUTCOME

Quantitative Evaluation of the Therapy

Standardized Self Report Scales

Table 6 shows the results on the standardized self-report scales; Table 7 contains the values of statistical significant change and clinical cut-off points; and Appendix C shows the statistical methods and the psychometric values used in the calculations of outcome. Figure 4 shows the results on the subscales of the SCL-90-R.

Immediately after therapy, Sara had achieved large improvements ($\geq 1 SD$) on all scales, except the BDI-II. All of her progress was clinically significant, except for her scores on the BAI. At 3-month and 1-year follow-up interviews she had further improved with large and clinically significant improvements on all scales. The magnitude of change on the specific SP scales (SPS and SIAS) were all considerable (1.04-1.75; see Table 6), with somewhat larger ESs on the SPS. This may reflect that the therapeutic work focused primarily on fear in specific situations.

Generally, results on the standardized self-report scales showed that Sara had improved markedly and enduringly, both in SP and general psychiatric symptoms.

Individualized measure of SP.

Figure 3 shows a graph of Sara's change on the individualized measure of SP (the scale is seen in Appendix B). Figure 2 shows the changes in Sara's most prominent negative thoughts in the feared situations. As can be seen in the figures, Sara's level of anxiety, depression, and belief in her negative thoughts concerning blushing all declined during the intensive group week. The temporary increase in her ratings of anxiety before days 3 and 4 was likely related to her fear about her next day's planned exposure exercises. Such temporary amplifications of participants' anxiety ratings at days 3 and 4 of the intensive therapy program is not unusual (cf. Hougaard et al., 2008). Sara's avoidance was low throughout the treatment program, a fact that corresponded with her tendency to expose herself to feared situations, even before therapy. Her negative thought about being ignorant about certain things declined less than the other negative thoughts during the group week, probably because this problem was not directly addressed in the group program (cf. the section above on individual therapy after the group program). A marginal increase in ratings for all items except avoidance can be seen at the three-month follow-up, but all ratings were down again at the one-year follow-up.

Altogether, the individualized measures of SP problems, the clinical impression, and the standardized scales showed that therapy was highly successful in treating Sara's SP within the frame of bettering her quality of life (resuming work was not an objective of treatment). The changes in her scores on the individualized SP scale during the intensive group program is

consistent with the clinical impression of a sudden and remarkable therapeutic gain made during the week.

The Client's Evaluation of the Therapy

Sara completed an evaluation of her experience of therapy at the 3-month follow-up. The first part of the questionnaire (see Appendix E) concerned her satisfaction with the treatment and its outcome, and the second part addressed her evaluation of the different parts of the therapy (e.g., the group week, the exposure exercises). Sara rated all items in the first part of the scale with one of the two highest ratings, four or five, on the five-point scale (i.e., as “much” or “very much”), and all items in the second part with a five (“very much important”). Thus, she showed a high degree of satisfaction with the treatment, although somewhat indiscriminately with regard to the importance of the different components of the treatment.

The Client's Experience of Change

As mentioned, an interview with Sara on her experience of change took place six months after termination. The client read a draft of the case report prior to the meeting and wrote a short commentary on her own view of the mechanisms that were discussed in the report (Sara's commentary can be found in Appendix D). When asked about the behavioral experiments, Sara replied:

I think that the turning point for me was when I said, ‘I accept it. It is what it is. I cannot control it.’ Then I have to accept it... It was so barrier-breaking for me, but still a great feeling to let go of all that confined control that I have had all my life. To let go of something, that has been so compulsive. Maybe, I think, it was by far the most important thing. And then to watch the video afterwards. That even though I let go, I could hear I was not singing perfectly, and that I looked nervous, it was not that bad. It was also really important... It was a very strange experience to have spent my whole life trying to fight it, and then during a few days come to accept it.

In her written comments, Sara's first four statements (and partly also her sixth statement) relate to her acceptance of her blushing and lack of control over this tendency. Simply being told that blushing is an autonomic symptom and attempting to accept this fact in the behavioral experiments seemed to be the most important aspects of treatment in Sara's view. The control aspect may have been an especially important topic in Sara's life, since she also mentioned it in relation to her OCD and her childhood anorexia. In her commentary she also mentioned her experience of hearing other members of the group express their opinions that blushing is not ridiculous and watching the videotape and realizing that her blushing did not look nearly as bad as she had imagined

In the interview, when asked about the image she had of herself when she saw the video recording of her behavioral experiment, she replied:

It got changed when I watched the video. I was actually very much against seeing myself on video, because I believed that it would confirm the fact that it [the blushing] looks awful, and then it would get worse... But it was not awful, when I saw the video... I looked quite

normal! Ordinary, so to speak. I could see that I blushed and looked shy, and that I did not look very self-confident. But it did not matter. You do not have to do that when you do something that is so barrier-breaking. So it changed my inner image of myself.”

Asked about how she had expected her image to look, she said,

I do not know what I had expected, but it was tremendous, the things I had imagined. Because, that’s the way it feels in your mind.

She went on to further emphasize the importance of other group members’ feedback in the interview:

It really surprised me that people do not think that someone who blushes is ridiculous and looks stupid, and feel pity for her ... There were actually many who even found it charming.

The importance of the group feedback component was also stressed in the relapse prevention part of the individual sessions after the group program, during which Sara stated that she would reread the group’s comments on blushing if she felt her fear of blushing returning.

Mechanisms of Change

The case of Sara is an example of a highly successful treatment of social phobia, in which the patient obtained large and sudden gains on a longstanding SP problem in a short-term intensive CBT group treatment (the mechanisms of change with regard to her spider phobia is not dealt with in the present study). The gains were maintained and even enhanced in the one-year follow-up period. Sara had obtained “recovery” on all measures according to the Jacobson and Truax (1991) criteria, with both clinically and statistically significant changes. The immediate and marked changes in her longstanding SP problems suggest, with a high degree of trustworthiness, that Sara’s gains were caused by the treatment (cf. Kazdin, 1981). Except from her sharing of her problems with the choir the evening after day 3 in the intensive group-program (presumably a direct consequence of the therapeutic work at day 3), nothing unusual happened in her life at that time that might have caused her change. Since Sara received the same dose of paroxetine (60 mg) for several years prior to this treatment, her change cannot be attributed to her medication, although, as mentioned, Sara herself believed it had played a contributory role.

Sara primarily attributed the change to the two behavioral experiments in the intensive group-week. Qualitative information from the treatment, as described above, also makes it highly plausible that the behavioral experiments or exposure exercises played the major role in Sara’s sudden and impressive change. Such a conclusion is in line with prior research findings of exposure as a primary effective component of CBT for SP (Feske & Chambless, 1997; Federoff & Taylor, 2001). It is, however, a more complex task to understand the mechanisms of change on a molecular level in these exposure episodes.

Sara’s view of her acceptance and tolerance of her blushing and negative emotions as the primary mechanisms of change fits nicely into Gross’ (2002) theory of emotion regulation. Prior to therapy, Sara had used suppression and over-control as a response-focused emotion regulation

strategy in the feared situations. The exposure exercises helped her to increasingly accept and tolerate her blushing and corresponding negative emotional reactions. This conception is also in line with that presented in Hayes' Acceptance and Commitment Therapy (Hayes, Strosahl & Wilson, 1999), which underlines the importance of the clients' acceptance of their problems and unpleasant emotions.

The Clark and Wells (1995) conception of exposure mechanisms may also find support in this case study, since Sara herself remarked that the video feedback had led to a correction of her distorted inner image of herself in a field perspective and viewed this as an important causal factor of her treatment gains. This correction may have also helped Sara better accept her blushing, since she told her therapist that it helped her to not fight her blushing tendency, because she knew that she did not look like the red-faced monster she had imagined. Thus, different mechanisms may interact in their causal influence on symptoms. While Sara did not initially find exercises in focusing outward helpful, and she did not mention this component of treatment in her comments or interview on change mechanisms, she did mark it as "very much" helpful in the Patient Evaluation Form (see Appendix E). As mentioned above, however, she scored all components of therapy in the highest degree of importance on the scale, perhaps indicating a general satisfaction with the treatment.

The third important factor, Sara mentioned, was group feedback on her blushing. Such acceptance by the group is generally considered an important non-specific therapeutic factor in group therapy (Yalom, 1975/1995). In addition to this, the factor may also have played a role in her acceptance of her blushing, as well as in the disconfirmation of her central negative cost-evaluation bias, which held that others would judge her to be "weird" if she blushed.

Some information from Sara supports the notion that enhanced self-efficacy (belief in one's own social skills) could also have operated as a possible mechanism of change in her treatment. In the group exposures, it seemed very important for Sara to realize that she could actually carry out her performances successfully in spite of her symptoms. Before the singing experiment on day four, she expected that the anxiety would totally block her performance (see Table 4). However, even though she experienced visible anxiety symptoms, she could sing and impress her audience. She realized the following alternative thought: "Oh well, if I blush, it actually does not matter as long as I perform what I intend to." Both the video feedback and the comments from the group further convinced her that she had given an acceptable performance. Her experience of being able to tolerate the panic related to her blushing in front of other people without trying to control it may also have served as a mastery-experience concerning panic self-efficacy or emotional control, since she seemed very proud of herself about this outcome of the behavioral experiments.

The information in Sara's case study also seems to be fully in accordance with the emotional processing theory of Foa (Foa & Kozak, 1986). As the model suggests, Sara's fear of blushing was high during the exposure but declined in and between sessions with the provision of information incompatible with her prior fear structure (the temporary rise in anxiety prior to day 4 was probably due to a scarier behavioral experiment planned for this day). Sara herself pointed out that her anxiety declined rather quickly during the behavioral experiment, so that her

experience was not nearly as bad as expected. According to emotional processing theory, central change mechanisms are to be found on a more primitive, automatic, associative processing level, and not only at the explicit, strategic cognitive level implied by traditional cognitive theories. Associative re-learning generally requires continued practice. Thus, although her change certainly seemed to be initiated by her cognitive insights provided by the two behavioral experiments in therapy, change was also likely brought about by her day-to-day exposure work outside of and after therapy. As she stated in the prior quote from her one-year follow-up, “There is much more work waiting for you after the intensive group-week.” This focus on implicit and automatic cognitive processes is also congruent with newer versions of extinction theories that stress the importance of expectation violation on different cognitive levels (Craske et al., 2008).

A Coherent Narrative of Sara’s Change

The former section can be considered as an attempt to evaluate the different relevant theories using the case material, with the conclusion that most of the major theoretically postulated mechanisms of change may have been active in Sara’s case. In fact, several of them were likely working in reciprocal interaction. This section will attempt to formulate a coherent, plausible story of the unfolding sequence of events in the process of Sara’s change.

Although Sara was largely well-informed about her disorder and its treatment with CBT, she initially incorrectly believed that treatment should help her learn to control her blushing. Thus, she was disappointed and demoralized when during the first day of the intensive group-week she was told that the treatment would not involve this strategy. At first she reacted negatively and blamed the psychologist (“Is this man really a psychologist?!”). She was, however, quickly persuaded to give up her attempts to control and suppress her blushing tendency, as can be seen from the behavioral experiment she chose in the afternoon of day 2 in the small group—to provoke her reddening by running up and down stairs. In Sara’s own words, just to be told by the psychologist (whom she knew beforehand as an authority figure who had authored a book on SP with which she was familiar) that blushing is an autonomic symptom persuaded her. However, the attitudes toward blushing expressed by the other group members most likely played an important role (see Appendix D).

A first step in her change process seems to have been her decision to try to change her habitual emotional suppression strategy in dealing with her blushing. The group’s comments on blushing may have also inspired a first step toward changing her cost-evaluation bias concerning other peoples’ reaction towards her reddening. The new acceptance strategy was tested in her behavioral experiments during days 3 and 4, and it turned out to be highly successful in that, (1) her negative emotions declined rather quickly; (2) it did not hinder her from fulfilling her tasks (giving a public speak and singing); (3) her appearance while blushing in the video-recording was far from the red and swollen face she had imagined; and (4) she was applauded by the group audience for her performance instead of being ridiculed for her blushing.

The first point best supports emotion regulation theory, emotional self-efficacy or control theory, emotional processing theory, and, perhaps, Clark’s theory of the negative consequences of safety behavior (since monitoring and attempting to control blushing could be considered a

form of safety behavior). The second point seems to be in accordance with social skills self-efficacy theory. The third point especially supports Clark's theory of the importance of realistic appraisal of the self as an object, as well as, more generally, theories of expectancy violation. The fourth point seems to resonate well with cognitive theories of challenging her cost-evaluation biases, with social skill self-efficacy theory (especially the day 4 experiment in which she was praised for her singing), and, perhaps, with theories of non-specific group-cohesion factors. In addition, points three and four may also be supposed to play a role in helping Sara accept her blushing tendency.

The action that Sara took in telling her choir about her SP in the evening between day 3 and 4 of the intensive group week was probably an important one. Being honest and open about one's problems is generally recommended by most psychotherapists. Since others' reactions on self-disclosure of anxiety problems are mostly positive, it may help persons with SP to attain emotional acceptance, change cost-evaluations biases, and reduce the felt need for safety behavior. Acceptance from others may also, over time, help an individual with self-acceptance—an important goal for the many SP persons with longstanding, low global self-esteem.

Although we do not have many details on Sara's day-to-day living after the intensive group-week, she repeatedly stated that she had to continue her work on combating her SP after therapy by exposing herself to feared situations. This need for continued exposure is congruent with associative theories according to which unlearning of conditioned, automatic responses is slow and in need of repeated trials as assumed by extinction theory and emotional processing theory. Many other things did, of course, happen to Sara after therapy (e.g., divorce, new boy friend), which may have influenced her problems and her life in general.

Chain Diagram

In accordance with suggestions put forth by Miles & Huberman (1984), a chain diagram was developed to map Sara's therapeutic change during the intensive group-week, corresponding to the narrative description in the preceding section (see Figure 5). As noted in the figure, full-drawn arrows indicate supposed (partial) causal relationships between events, while dotted arrows indicate supposed relationships between events and underlying mechanisms or mediating processes. It should be noted that a fully developed chain diagram should also include arrows from the oval "mediator boxes" to resulting outcome variables, as well as arrows between mediators (corresponding to their interaction), and from mediators to events (since change in mediators might be supposed to facilitate therapeutic events). Thus, a total picture of Sara's change processes would be even more complex than the multiple processes indicated in Figure 5.

The chain diagram is primarily an illustration of the change narrative from the section before. Each mode of analysis has its advantages, which are complementary. The diagram's snapshot picture has the advantage of highlighting the complex interplay of causal factors and relationships that plausibly was involved in Sara's therapeutic change, while the change narrative has the virtue of capturing the flow of the process. Both linear narrative and cross-sectional causal diagrams are thus important in doing justice to the complexity of clinical phenomena like the dramatic improvement in Sara's behavior and experience seemingly caused by her therapy.

Reflections on the Case Study

Case studies are faced with many difficulties, as there is less consensus on how to proceed with qualitative as opposed to quantitative data. The study of psychotherapeutic change mechanisms by means of case studies is a complex research genre with both conceptual and methodological challenges.

Conceptual Ambiguities

As noted by Stiles (2009), one of the central problems in qualitative research on psychotherapy is the issue of achieving precise and unambiguous meaning of terms. Qualitative studies to a large extent rely on ordinary language with its extensive and rich, but inherently imprecise vocabulary of psychic states, traits, and processes. Theoretical terms may, however, also often refer to vague concepts with overlapping meaning; different concepts may have similar meaning, while similar concepts can refer to different things. Conceptual ambiguities will, of course, limit the possibility of comparing and testing theories (Carey, 2011). As is the case in the present study, it is not always an easy task to choose between the different theories on the basis of the available information in the case. Data can be congruent with several theories and interpreted differently through different theoretical lenses. Combined with the limited definitional precision in, or conceptual overlap between theoretical constructs, this complicates the process of interpreting available data according to a single theory that best fits the information.

Sara's attempts at controlling her blushing and negative emotions may be seen as a maladaptive emotion regulation strategy, but from the perspective of Clark's theory it could also be considered a dysfunctional use of self-focus and safety behavior. "Safety behavior" is not a well-defined concept (cf. Thwaites & Freeston, 2005), and different scales for measuring the construct include different forms of behavior. The scale constructed by Clark (unpublished) to measure safety behavior among persons with SP, the Social Behavior Questionnaire, does not contain items on monitoring or control of bodily symptoms, but the following item might perhaps somewhat apply: "Try to keep tight control of your behavior." "Control" is a term notoriously laden with ambiguity (Weems & Silverman, 2006), and what in this case study is described as Sara's relinquishing of her attempts to control her blushing, may be conceived by others (e.g., Hofmann, 2007) as her achieving a higher degree of emotional (meta-) control through acceptance, since it allowed her no longer to be overwhelmed by her panic. From a cognitive theoretical perspective, Sara's better acceptance of her blushing may also be viewed as a change in her cost evaluation of the feared consequences of blushing. Thus, part of the difficulties in choosing between different theories of change in the case study could be due to limited precision in the definitions of terms or to overlaps in theoretical constructs.

Methodological Difficulties

The most intricately difficult problem in traditional quantitative group studies on mediators in psychotherapy relates to the documentation of the chronological order of events; that is, that change in the mediator precedes changes in outcome variables—a problem that has

been called “the Achilles’ heel” of mediator research (Kazdin & Nock, 2003). The problem is not easily overcome, since (1) it is not known how long it may take for a given mediator to affect outcome (so we do not know precisely when to measure variables); (2) the time period may vary between clients; (3) changes in mediator and outcome variables on a micro-level may occur almost simultaneously; and (4) there could be time-lags in the registration of both types of variables, as it takes some time before the client understands the meaning of a certain therapeutic strategy, or realizes that a change has taken place. The first three problems were mentioned by DeRubeis in his 2008 presentation, while Greenberg (Greenberg, 1986; Rice & Greenberg, 1984) has stressed the time-lag problem with regard to quantitative chain-analyses or time-series analyses in psychotherapy process research. As mentioned above, a further complicating factor is that causal relationships between mediators and outcome may be interactive and reciprocal. Mediators may work in patterns, and intermediate “micro-outcomes” during therapy (Orlinsky & Howard, 1986) may function as mediators of further change. As Cronbach (1975, p. 119) many years ago warned psychology, interactions may lead “into a hall of mirrors that extends in infinity.”

Delineating the chronological order of the supposed mechanisms of change in the case of Sara is therefore a highly difficult enterprise. The individualized measure, “Evaluation of Social Phobia” (Appendix B) includes theoretically supposed mediators in the form of negative automatic thoughts (e.g., “I wish, I do not blush”; “If they see me blush, they will think I am weird”), as well as a global measure of anxiety that may be considered an outcome variable. As can be seen in Figures 2 and 3, these negative thoughts gradually declined during the intensive group-week, while anxiety increased before day 3 and 4 in the week. Thus, diminished beliefs in negative automatic thoughts did not immediately precede a decline in anxiety, as they should to be considered mediators of anxiety reduction from a traditional quantitative point of view. However, as mentioned above, the rise in anxiety during the intensive group-week could plausibly be due to the influence of a “third variable,” namely scary thoughts about next day’s “barrier-breaking,” behavioral experiments.

Events in the chain diagram of Figure 5 are ordered in time, but no attempts have been made to chronologically order the change mechanisms. Even though a preliminary emotional acceptance seemed to precede the behavioral experiments of days 3 and 4, and thereby the other change mechanisms implied in the diagram, a more whole-hearted acceptance certainly followed the results of the behavioral experiments. Thus, emotional acceptance could be considered both a cause and a consequence of some of the other change mechanisms. Furthermore, even though the chronological order of the chain of events in Sara’s case was rather firmly established, treatment could likely have followed another course with the same resulting endpoint; for instance, she could have completed the behavioral experiments without preliminary emotional acceptance, and have achieved the same insight regarding the importance of accepting her blushing tendency without attempting to control or suppress it. Nonetheless, even though the change diagram is highly incomplete with regard to “causal arrows,” it may give a hint of the highly complex pattern of the many, interrelated and reciprocal causal relationships that are likely to have been involved in this case of psychotherapeutic change.

Generalizability

It is widely considered a truism that one cannot generalize from case studies, although this position has also been questioned. Thus Flyvbjerg (2006) in an influential paper on case study methodology points out that a single case may sometimes lead to general knowledge, as was the case with Galileo's famous rejection of Aristotle's law of gravity based on a single conceptual experiment. According to Flyvbjerg, formal generalization based on statistical representativeness of large samples is often overvalued, whereas "the force of example" of a thoroughly described case may be underestimated. Case studies may sometimes be considered "strong" or "good examples" that can be used for conceptual or theoretical generalizations, even though they are not statistically representative. Flyvbjerg makes the point that strategic sampling, for instance in the form of looking for extreme cases, can sometimes contribute to the generalizability of a case study. Evidence based on single cases can, however, never claim the intuitive general applicability as evidence based on large samples (McLeod, 2010; McLeod & Elliott, 2011). A meticulous case study may convincingly demonstrate that the applied therapeutic method is sometimes effective in treating a certain type of problems or disorders, but certainly not that it is so in general.

Generalizability applies to the questions of both: (1) to which other cases results may apply? and (2) which aspects of the case study may be generalized? These two questions are, however, related to a third one, namely (3) *how* should the knowledge from the case be applied to new cases?

With regard to the first question, Sara was certainly not an ordinary SP client. Her high degree of comorbidity is generally considered a negative prognostic factor. However, in her case it may have been counteracted by Sara's high degree of motivation and insistence on fighting her disorders. Almost no pre-treatment patient variables have been found to consistently predict the outcome of CBT for SP in group studies (Eskildsen, Hougaard & Rosenberg, 2010). The case of Sara may illustrate one plausible reason for the lack of consistent predictor findings, namely that complex interactions and idiographic manifestations of variables may be involved. The importance of helping clients give up attempts at controlling emotional expressions may particularly apply to SP clients with a high degree of emotional control strategies. According to Hofmann (2007), such emotional control strategies may be especially characteristic of bodily symptoms SP.

With regard to the second question, it should be noted that Sara's case was strategically chosen for its uniqueness and clarity. Therefore, it is the general principles of the treatment and change that may aspire for generalizations, rather than the effectiveness and rapidity of treatment. From a clinical point of view, the most notable addition to established CBT for SP in Sara's case was the insistence on helping her to accept her blushing tendency; a strategy that has been in the repertoire of the psychological therapist in the treatment for SP with bodily symptoms for a long time. As mentioned above, the importance of accepting negative emotions is primarily stressed within the so-called "third wave" of CBT (Hayes et al., 2004), sometimes in seemingly marked opposition to traditional CBT. Differences between the two traditions may, however, be less than often supposed (Arch & Craske, 2008). For instance, helping clients accept

their negative thoughts and emotions may also be included in traditional CBT (Arch & Craske, 2008), although this aspect of treatment is usually not accentuated in therapy texts. Symptomatic acceptance is, however, explicitly stressed in the CBT treatment program for SP by Hofmann (2007; Hofmann & Otto, 2008) based on the rationale of strengthening clients' experience of emotional control. Since a strong argument can be made from our above analysis that change mechanisms from various theories of exposure therapy were involved in Sara's change, her case study may also illustratively lend support to the suggestion made by Hofmann (2007) that treatment gains can be optimized by facilitating all empirically supported change processes in the treatment of SP (although they may be differentially involved in the change of different clients).

The most important aspect of Sara's case that may apply for generalization is its illustration of the complex interplay of mechanisms that may be plausibly involved in what initially may appear an obvious and transparent example of sudden change following critical incidents in psychotherapy. Since the case was strategically chosen for its apparent simplicity, it follows that no less complexity will be found for less straightforward cases of change covering more extensive periods of time. If the chain diagram of Figure 5 approximates reality and allows for generalization, change mechanisms on a molecular level in psychotherapy may prove to be highly complex.

With regard to the third question of how generalization is going to take place, it should be noted that case studies are generally considered good examples from an educational point of view. That is why many introductory psychotherapy texts include detailed case reports. The educational value, as well as the scientific legitimacy of case studies may be argued with reference to case-based, as opposed to rule-based reasoning (Fishman, 1999; 2005; Kolodner, 1997; cf. Hougaard et al., 2008). Case-based reasoning consists of matching a new case, person, or situation with a repertoire of earlier experienced or described cases; that is, it draws on specific knowledge in particular contexts (Prentzas & Hatzilugeroudis, 2007). According to Schön (1983), case-based reasoning is the rule rather than the exception among practitioners. Based on his analyses of various professionals at work, he concluded that it is rather unusual for practitioners strictly to follow scientific rules; more often they make use of "a repertoire of examples, images, understandings, and actions" (p. 138) that builds on their own experience, stories from colleagues or supervisors, dynamic patterns or change mechanisms they have read about, and (it could be added) formal case studies. The practitioners' knowledge base, often an implicit "knowledge in action," is used in a tentative and flexible way for individual clients focusing on both similarities and differences between the present case and the repertoire of examples in piecing the different pictures together into "a new theory of the unique case." Since practitioners' case-based reasoning according to Schön is always flexible and tentative, with possible continuous changes due to feedback in the interaction with the client, generalization based on single cases might be less problematic than is often supposed. It should be noted that such a flexible application of knowledge is fully in accordance with newer, idiographic versions of evidence-based practice like that endorsed by the American Psychological Association 2005 declaration (cf. Spring, 2007), since the clinician is responsible for integrating the relevant scientific knowledge with his or her clinical experience and considerations of client characteristics.

Concluding Remarks

In our view, the most important insight that emerges from this case study is its illustration of the complexities that may apply to the question of change mechanisms in psychotherapy. If the analyses are valid, and allow for generalization, change mechanisms on a molecular level in psychotherapy may prove to be highly intricate and multifaceted.

Although the study tried to take into account methodological suggestions by Kazdin (1981), Elliott et al. (1989), and Miles and Huberman (1984), the validity of the implied change mechanism does depend on plausibility, not on methodologically rigorous proof. “Plausibility” is a double-edged sword; for most complex theoretical and practical matters in the clinic we have to rely on it, yet we know that it can also gravely fool us. As succinctly stated by Miles and Huberman (1984; p. 217): “People are meaning-finders, even in the most genuinely chaotic data sets.” Sara’s own account of what worked might also be biased, since introspective reports of causal relationships (as opposed to conscious content) are often incorrect (Nisbett & Wilson, 1977).

Improvements in case study methodology dealing with change mechanisms may be brought about in two ways. First, from a quantitative point of view, the use of validated scales on mediators (together with outcome), may help achieve a higher degree of conceptual clarity; and, if they are used continuously during therapy, may also help validly document causal relationships among variables. Such a strategy would correspond to single case (quasi-) experimental mediation research (e.g., Borchardt, Nash, Murphy, Moore & O’Neil, 2008; Gaynor & Harris, 2008). This strategy is, however, complex when comparing two mediators (cf. Gaynor & Harris, 2008), and it may be practically unmanageable if a total picture of many change mechanisms in an individual client is sought. It should be possible to include some more idiographic mediators in individualized measures of change (like those in Appendix B) and in this way strengthen a pragmatic case study focusing on change mechanisms. The possibility that time-lags and third variables may be involved, as mentioned above in comments to Figure 2 and 3, should, however, be kept in mind.

Second, from a qualitative point of view, the case study material could be studied more intensively by keeping the recordings of therapy for analysis by means of systematic qualitative methods. Traditional case studies have been criticized for “taking the text for granted” (Labov & Fanshel, 1977), in that only the interpretations of raw data are presented, rather than the data themselves. Video material or transcripts from the therapy can be subjected to qualitative analyses in various degrees of detail. There are illuminating examples of detailed microanalyses of very short excerpts from psychotherapy session recordings (e.g., Elliott, 1983; Labov & Fanshel, 1977; Pittenger, Hockett & Danehy, 1960). Such strategies may help in illustrating the extremely complex nature of psychotherapy process, in that whole books can be dedicated to analyze just a few minutes of therapeutic interaction (Labov & Fanshel, 1977; Pittinger et al., 1960). They are, however, too complex and time consuming for analyzing whole therapy courses; besides, as stated by Pittenger et al. (1960), minute microanalyses may risk “overlooking the forest for the trees.” Some more global qualitative approaches may, however,

be more manageable and suitable for a practice context (see e.g., Elliott, Slatick & Urman, 2001; Stiles, 2007).

Results from case studies are based on plausibility, not on rigorous proofs, but so are at present results from all studies of psychotherapeutic mediators. Thus, in a systematic review of quantitative mediator studies, Johansson and Höglend (2007) concluded that all studies had methodological flaws and that “no causal mediator has yet been satisfactorily demonstrated.” (p. 7). While traditional quantitative studies focus on only a few hypotheses at a time, case studies may be the only available research strategy to fully elucidate change mechanisms in the context of an individual client. As shown by the present study, even in a seemingly obvious and transparent example of a sudden gain for a client in psychotherapy resulting from two behavioral experiments, it remains no simple matter to reveal micro-level change mechanisms by means of case studies. This case-study may be considered an example of some of the complexities involved in investigating change mechanisms in psychotherapy.

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Table 1. The Components of Sara’s Anxiety in a Parents’ Meeting

Physiological symptoms	Emotions	Thoughts	Behavior
Hot flashes Blushing (10 when she gets attention, or else 5) Sweaty palms If somebody talks to her: Heart palpitations Dizziness Fear of fainting	Anxiety (10 when she gets attention, or else 6) Sadness Self-criticism	”It is embarrassing that I am blushing, just because I have to say something” ”How much can it be seen?” ”My opinions are not good enough” ”I am a fool.” ”No matter what I do, it is not good enough”	Forced Tense, locking my muscles Remains quiet, does not say anything unless she has to (Years ago, she used safety behaviors, as wearing high-necked blouses to hide her blushing. Now, however, she intentionally avoids these behaviours)

Note: Some of the components are rated for severity on a scale from 0-10, in which 10 is the most severe.

Table 2: The Problem List

Mention the situations or activities, that are anxiety provoking and/or are avoided, as well as further problems separate from anxiety, for which you wish to receive treatment

Anxiety problem	Anxiety (0-10)		Avoidance (0-100%)	
	Before therapy	1-year follow-up	Before therapy	1-year follow-up
1. Meetings, in which I might have to say something or can be asked about something, e.g. at parents' meetings and choir meetings.	10	1	0%	0%
2. Being addressed by the choir leader at a choir session	10	1	0%	0%
3. Being asked to dance at a party, when there is nobody else on the dance floor	10	8	100%	100%
4. Playing ball at a function at my child's school	9	1	80%	0%
5. Being in a cafe with a friend, while there are men at the table next to us, looking at me.	8	1	0%	0%
6. Revealing personal/private things that might trigger blushing.	8	1	25%	0%
7. Being in brightly lit rooms	7	3	0%	0%
8. Individual singing lessons	6/7	2	0%	0%
9. Being at the hairdresser's, where I can be watched in the mirror by the hairdresser.	4	0	0%	0%

Table 3. Behavioral Experiment in Day 3: Delivering a Speech on her OCD Without Notes

What do you expect?	What happened?	Feedback from the group
Anxiety = 10	Anxiety started on 8, declined to 0	“I did not think that you spoke fast, and I did not think about your blushing”
Blushing = 10	Blushing = 7	“I did not at all notice your blushing, because it was not essential”
Heart palpitations = 8 Trembling = 8	Heart palpitations started on 8, declined to 0	“I wanted to hear more. It would seem wrong if an entertainer told this story”
Lacking concentration	Trembling started on 8, declined to 0	Two other group members stated that they did not notice her blushing.
Speaking fast without pauses	Lacked concentration in the beginning, but it improved when I got started I spoke fast without pauses, because I usually do this.	

Note: Some of the components are rated for severity on a scale from 0-10, in which 10 is the most severe.

Table 4. Behavioral Experiment in Day 4: Singing and Delivering a Speech in French

What do you expect?	What happened?	Feedback from the group
Anxiety = 10, will be blocking so I cannot sing very well.	The anxiety was not blocking so much	”Who tells you, you cannot sing?! I was touched. You sing really beautifully and touching”
Blushing = 10	Did not notice blushing	“It is completely unimportant if it went well or not. The story you tell is the most important thing”
Heart palpitations = 10	Heart palpitations started on 10, declined to 5	“I thought it was embarrassing, because I could never manage to do it. That is why it is so amazing that you did it, it is fantastic!”
Difficulties breathing It will be terribly embarrassing	Difficulties breathing started on 10 declined to 8 Trembling 10, declined at the speech	”We will take a picture of you Sara, and call it <i>courage</i> ”
Alternative thought: “Oh well, if I blush it actually does not matter, as long as I perform what I intend to.”	It was terribly embarrassing to sing	

Note: Some of the components are rated for severity on a scale from 0-10, in which 10 is the most severe.

Table 5: Status and Relapse Prevention

<p>1. Consider your results (you can have a look at the problem list from the beginning of the therapy). What are you able to do now, that you could not do before?</p> <ul style="list-style-type: none"> - I can attend meetings without a fear on maximum level 10. I think, I dare to say something. - Deliver speeches without manual - Learn songs more easily, I am now more capable of being in the present - Dare to sing strongly, I am not afraid to sing out of tune. I have more energy. - Not so afraid of being addressed by the choir leader anymore - Individual singing lessons are now only triggering an anxiety of 2-3 (before 6-7)
<p>2. Which of the methods, you have learnt, do you use the most?</p> <ul style="list-style-type: none"> - Alternative thoughts: It is ok to blush. - Reading the summaries of the group week. That expectations do not correspond to what actually happens.
<p>3. Which problem areas will you continue working on?</p> <ul style="list-style-type: none"> - Force myself to say something at parents' meetings if I have something on my mind. - Attend ballgames, and laugh at myself with the other participants. - Maybe sing a solo. <p>Which methods will you use?</p> <ul style="list-style-type: none"> - Alternative thoughts and reading the resumes of the group-week.
<p>4. Which high-risk situation could eventually lead to a relapse?</p> <ul style="list-style-type: none"> - Sudden, strong blushing, that results in the return of the fear of the fear . - If I get depressive <p>How will you manage these situations?</p> <ul style="list-style-type: none"> - Try to go through the situation: "It is not that bad!" - Think of the alternative thoughts - Contact Vicki (individual therapist) on telephone or e-mail. - Read the comments of the group on blushing - Read about SP - Tell people that it has gotten worse. That will help.
<p>5. Which goals do you have for the future? Like in 6 or 12 months?</p> <ul style="list-style-type: none"> - Say it, if I have something on my mind. - Sing some lines solo at the choir (I can ask the choir leader) - Attend sports arrangements in the school of my children <p>What will you do to reach the goals?</p> <ul style="list-style-type: none"> - In relation to saying something: Get myself together in the situation and say it quickly as soon as the thought appears. Thinking "It does not matter if I blush" - In relation to attending sports arrangements: Thinking "It does not matter if I look stupid" <p>What could prevent you from reaching your goals?</p> <ul style="list-style-type: none"> - A relapse of the anxiety: If the fear of the fear returns. Then I will try to hold it down before it grows to big.

Table 6. Results on the Standardized Self-Report Scales

Scale	Before therapy	After therapy	3-month follow-up	1-year follow-up	Effect size before-after	Effect size before-3-month/before-1-year follow-up
BDI II	19	10 *#	5 §#	1 §#	0.70	1.09/1.41
BAI	26	13 §	11 §#	2 §#	1.12	1.29/2.07
SIAS	39	22 §#	21 §#	16 §#	1.04	1.10/1.40
SPS	37	12 §#	11 §#	9 §#	1.56	1.63/1.75
SCL-90-R (GSI)	2.14	-	0.6 §#	0.11 §#	-	2.62/2.99
SDS	8	5	3	1	-	-

Note: Effect sizes or statistical/clinical significance have not been calculated on the Sheehan Disability Scale due to its very few items. Sara reported on no lost days or days with reduced productivity.

* Statistically significant change

§ Large statistical significant change (\geq one standard deviation from a clinical group)

Clinically significant change

Table 7. Statistical Significant Change Scores and Clinical Cut-off Points

Scale	BDI-II	BAI	SIAS	SPS	SCL-90 (GSI)
Statistically significant change score \geq	7.3	7.5	8.0	7.6	0.21
Clinically significant cut-off point \leq	16.9	11.2	25.4	24.9	0.76

Note: See Appendix C for the methods employed to calculate statistical significant change score and clinical significant cut-off point.

Figure 1. Clark's Model of Social Phobia for Sara

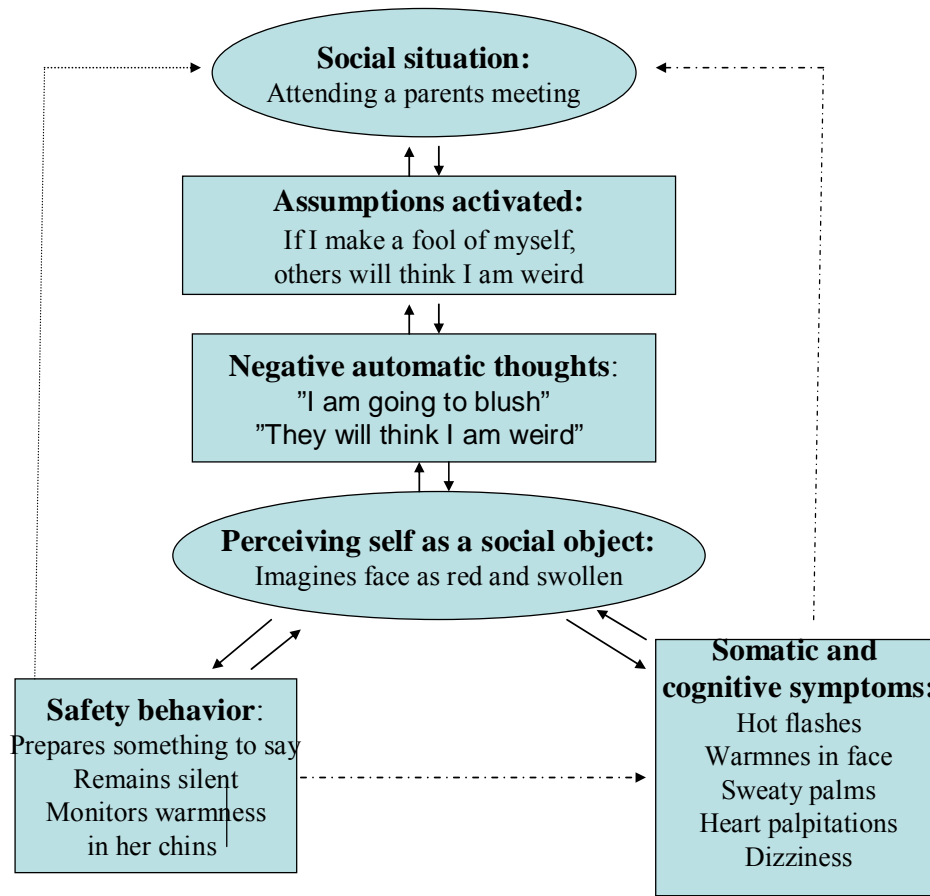
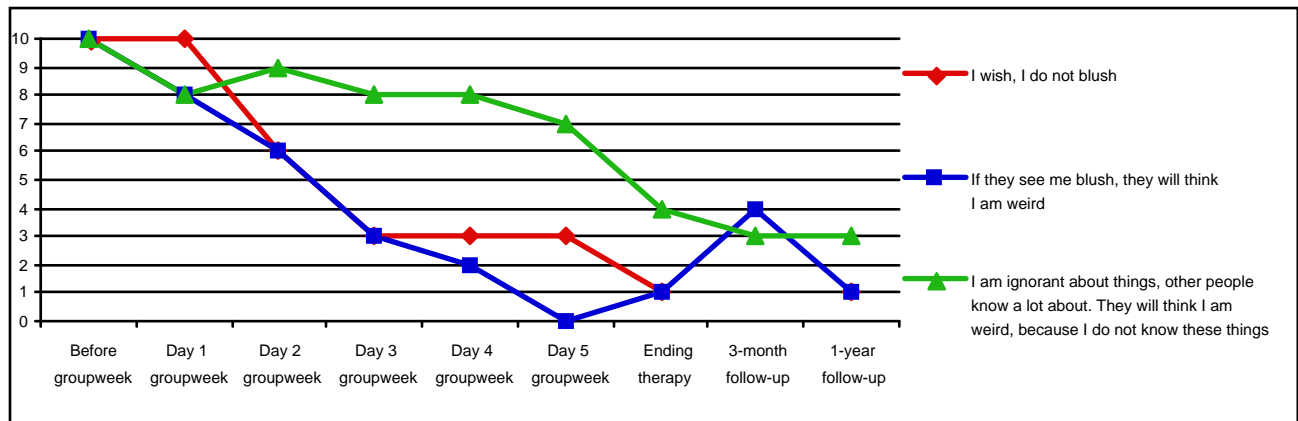
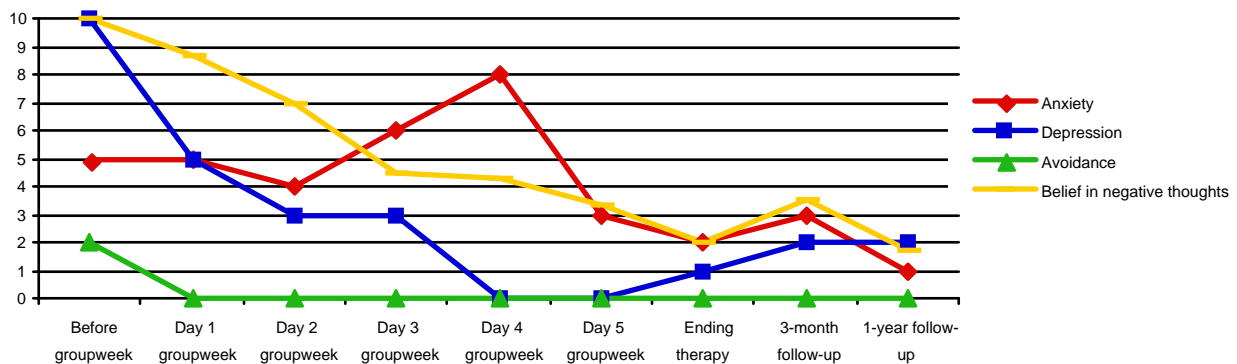


Figure 2. Results of the individualized measure of SP – belief in negative thoughts



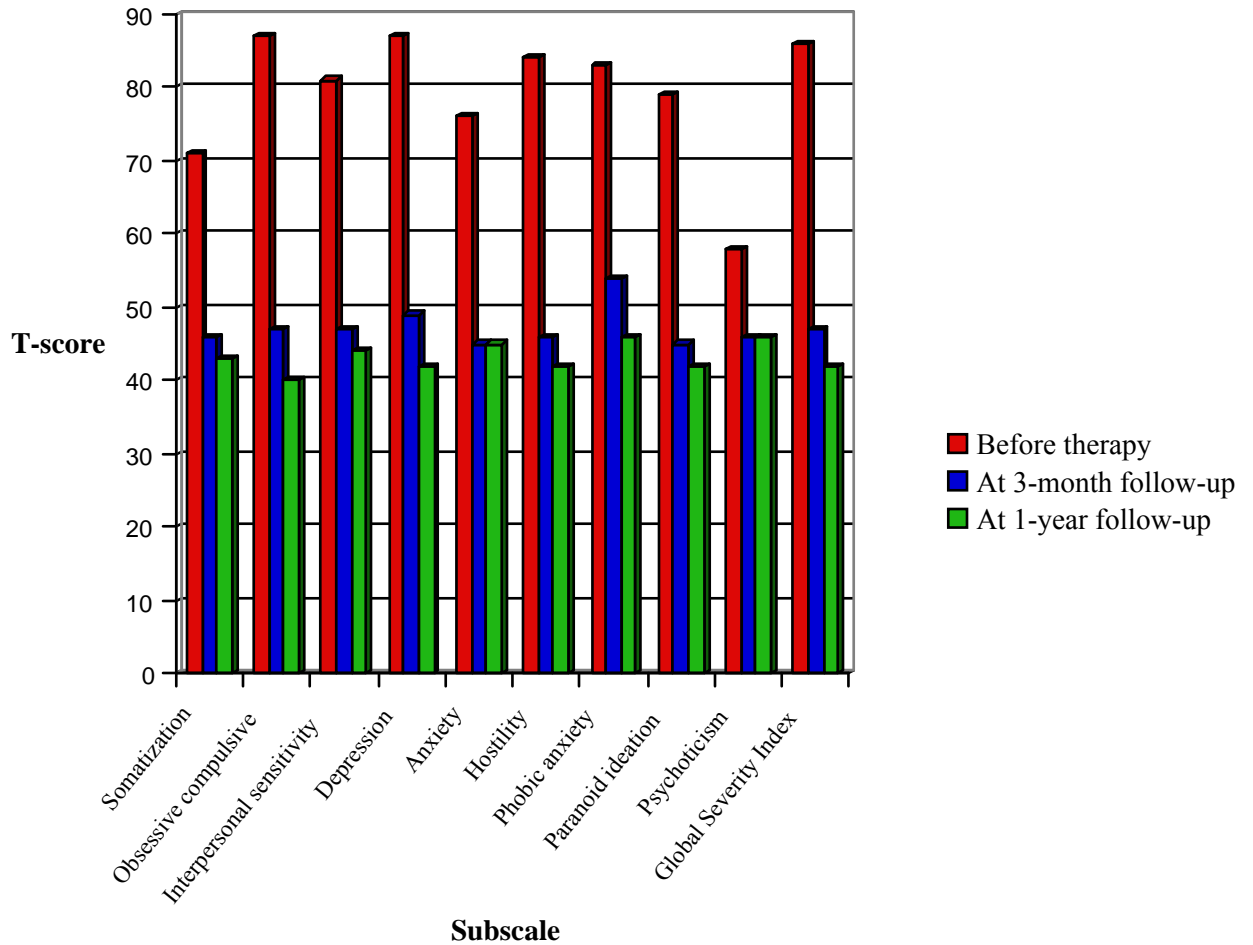
Note: At 3-month follow-up, Sara did not rate "I wish, I do not blush" because she had forgotten how to understand the rating of this thought.

Figure 3. Total results of the individualized measure of SP



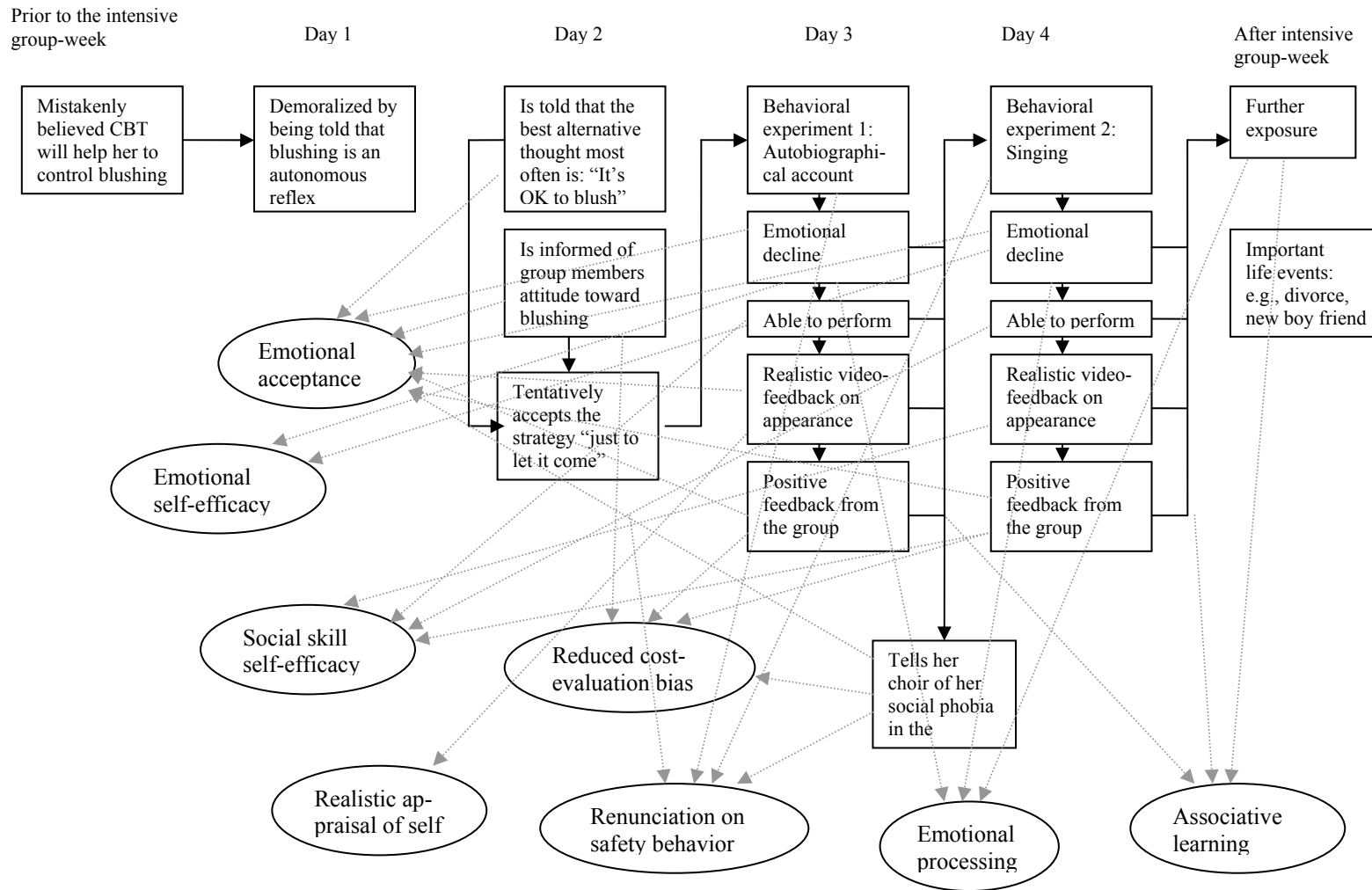
Note: "Belief in negative thoughts" is calculated as a mean of the belief in each of the negative thoughts shown in Figure 2. Note that at 3-month follow-up, Sara did not rate "I wish, I do not blush," because she could not remember how to understand the thought, so the 3-month follow-up score is the mean of the two remaining thoughts.

Figure 4 Results of SCL-90-R (T-scores)



Note: T-scores are based on Danish norms, see Appendix C.

Figure 5: Chain Diagram of Change Events in the Intensive Group-Week



Notes: Squares: important events; Ellipses: probable implied change mechanisms; Full-drawn arrows: probable causal relationships between events; Dotted arrows: plausible relationships between events and change mechanisms.

Appendix A. Schedule of the Intensive Group Treatment Program at The Anxiety Clinic

Part of the treatment program	Primary content of treatment
<p><i>Individual treatment with student therapist prior to the intensive week program</i> 2-4 sessions</p>	<p>Anamnestic history Problem list and objectives of treatment Case-formulation</p>
<p><i>Intensive group treatment (five consecutive days 9:00am to 2:00pm, over one week)</i> Day 1: Anxiety model and self-focused attention Day 2: Cognitive restructuring and behavioral experiment Day 3: Exposure, safety behaviors, and paradoxical strategies Day 4: Exposure, continued Day 5: Dysfunctional attitudes or rules of life, Personal resources</p>	<p>Psychoeducation (anxiety, diagnoses, cognitive-behavioural therapy) Clark & Wells' (1995) model for social phobia filled out for all clients Exercises of focusing in- and outwards in pairs of clients Cognitive restructuring of negative thoughts in a situation with social anxiety Behavioral experiments with a small exposure exercise, e.g., reading or telling something in front of a small group (4 or 5 clients and 4 student-therapists) Behavioral experiments in the large group (9 clients, 8 student-therapists, and 2 psychologists) with video-feedback Same as day 3 Dysfunctional attitudes The clients report on their own resources writing on the white board (4 or 5 clients, 4 student-therapists)</p>

Appendix B: Evaluation of Social Phobia (daily version or weekly version)

Name: Sara

Date: _____

For all questions: In the intensive group-week: Evaluate for the latest day [latest week] (fill out in the evening or early next morning). In the individual sessions: Evaluate for the latest week.
Use the scale from 0-10 for graduating your answer

0	1	2	3	4	5	6	7	8	9	10
<i>Not at all</i>			<i>A little bit</i>			<i>Moderately</i>		<i>Much</i>		<i>Very Much</i>

1. How much have you been worried or **anxious**? (0-10): _____

2. How much have you been in a bad mood or **depressed**? (0-10): _____

3. To what extent have you **avoided your most feared situations**? Mention your most feared situations from your problem list and judge how much you have tried to avoid the situation on the scale 0-10, where 10 corresponds to 100%, i.e. you have totally avoided the situation:

Nr. 1 Meetings, where I risk having to say something Avoidance (0-10): _____

Nr. 2 Individual singing lessons Avoidance (0-10): _____

Nr. 3 Revealing personal/private things about myself, where I might blush Avoidance (0-10): _____

4. To what extent have you used your most preferred forms of **safety behavior**, when you were in a feared situation? Mention your most preferred forms of safety behavior and judge how much you have used them on the scale from 0-10, where 10 corresponds to all the time, and 5 to about half of the time in the feared situations:

Nr. 1 _____ Extent of use (0-10): _____

Nr. 2 _____ Extent of use (0-10): _____

Nr. 3 _____ Extent of use (0-10): _____

5. How much have you believed in your most common **negative, anxiety provoking thoughts** about what might happen in the feared situations? Mention what your thoughts are and judge your degree of belief in the thought on the scale from 0-10, where 10 corresponds to a 100% belief in the thought, i.e., you are absolutely sure that the thought is correct.

Nr. 1 I wish, I do not blush Belief in the thought (0-10): _____

Nr. 2 If they see me blush, they will think I am weird Belief in the thought (0-10): _____

Nr. 3 I am ignorant about things, other people know a lot about. They will think I am weird, because I do not know these things Belief in the thought (0-10): _____

Appendix C: Measuring Change

The statistical significant or reliable change index (RCI), according to Jacobson & Truax (1991), is calculated in the following way:

$$SE \text{ (standard error of measurement)} = SD \times (1-r_{xx})^{1/2}$$

where SD is the standard deviation of the non-clinical group and r_{xx} is Cronbach's alpha

$$SE_{diff} \text{ (standard error of differences)} = (2 \times SE^2)^{1/2}$$

$$RCI = 1.96 \times SE_{diff}$$

The clinical significant cut-off point ($CS_{cut-off}$), according to Jacobson & Truax (1991), is calculated as:

$$CS_{cut-off} = \frac{(M_{clin} \times SD_{norm}) + (M_{norm} \times SD_{clin})}{SD_{norm} + SD_{clin}}$$

Where M_{clin} and M_{norm} are the mean scores of the “dysfunctional” and the “functional population”, respectively, and SD_{norm} and SD_{clin} are the standard deviations in these two groups

The values for, and the results from the calculations with different measures are given below:

Beck Anxiety Inventory (BAI)

Clients with social phobia (n = 44): \underline{M} (\underline{SD}) = 17.7 (11.6) (Beck & Steer, 1993a)

Non-clinical community sample (n = 242): \underline{M} (\underline{SD}) = 6.6 (8.1) (Gillis, Haaga & Ford, 1995)

Cronbach's alpha, non-clinical samples (meta-analysis of 23 studies) = .89 (De Ayala, Vonderharr-Carlson & Kim, D, 2005).

RCI = 7.5; $CS_{cut-off}$ = 11.2

Beck Depression Inventory, second version (BDI-II)

Mixed clinical sample of outpatients (n = 500): \underline{M} (\underline{SD}) = 22.5 (12.8) (Beck, Steer & Brown, 1996)

Non-clinical samples (college students, n = 120): \underline{M} (\underline{SD}) = 12.6 (9.9) (Beck et al., 1996).

Cronbach's alpha, non-clinical samples (college students, n = 120) = .92 (Beck et al., 1996).

RCI = 7.3; $CS_{cut-off}$ = 16.9.

Social Phobia Scale (SPS)

Clients with social phobia (n = 243): \underline{M} (\underline{SD}) = 40.0 (16.0) (Mattick & Clark, 1998)

Non-clinical community sample (n = 315): \underline{M} (\underline{SD}) = 14.4 (11.2) (Mattick & Clark, 1998)

Cronbach's alpha, mixed sample = .94 (Mattick & Clark, 1998)

RCI = 7.6; $CS_{cut-off}$ = 24.9

Social Interaction Anxiety Scale (SIAS)

Clients with social phobia (n = 243): \underline{M} (\underline{SD}) = 34.6 (16.4)

Non-clinical community sample (n = 315): \underline{M} (\underline{SD}) = 18.8 (11.8)

Cronbach's alpha, mixed sample = .94 (Mattick & Clark, 1998)

RCI = 8.0; $CS_{cut-off}$ = 25.4

Symptom Checklist, 90-item version revised (SCL-90-R)

Psychiatric outpatients (n = 1002): \underline{M} (\underline{SD}) = 1.26 (.68) (Derogatis, 1977)

Danish non-clinical community sample (n= 1153): \underline{M} (\underline{SD}) = .45 (.43) (Olsen, Mortensen & Bech, 2004)

Cronbach's alpha, Danish non-clinical community sample = .97 (personal communication from Erik Lykke Mortensen, value not given in Olsen et al., 2004)

RCI = .21; $CS_{cut-off}$ = .76

Appendix D: Sara's Written Comments on Her Change

“In the spring of 2008, I was in treatment for my SP at the Institute of Psychology. Here, I will try to explain what I experienced as the most effective factors in the treatment.

- To be told that blushing is an autonomic symptom, that you cannot control, was at first very demoralizing. But it was the reason, that I finally accepted to try to let go of the control.
- To accept my blushing and let go of the control of it.
- The exposures, where I let the control go, and let everybody see how I look, when I am blushing.
- To think “Just let it come forth” and realise, that it actually did not come.
- The fact that the exposures were videotaped, so I could see, that my blushing was not nearly as bad as I had imagined.
- To restructure my negative thoughts from “I wish I do not blush” to “If I blush, it is not the end of the world”.
- To hear the other group members' opinions on blushing. That not everybody thinks of blushing as ridiculous, embarrassing and revealing, as I do myself, but that they on the contrary think, that it can be a personal characteristic and charming.

After the treatment at the Institute of Psychology, I have delivered speeches as an educator at the psychiatric hospital. Before the treatment, I was always sitting down and reading my manuscript aloud, while I tried to look up on the audience. The criterion of success was that I did not blush.

Now, after the treatment, I stand in front of the audience and speak freely without my manuscript. At the first time, I could feel the thoughts about my blushing lurking in the back of my head, but then I told myself, that the blushing could just come forth. The third time, I was teaching, I experienced something completely odd: Only after the speech, I noticed that I was actually blushing. To me, it is a very big thing to be able to blush without feeling inhibited and disturbed by it. So today, my criteria for success is not to avoid to blush, but to be able to ignore a potential blushing.

So thank you very much, Vicki and Esben, for a completely successful treatment!”

Appendix E: Patient Evaluation Form, Part 1

Please answer the following questions by circling the number according to the following scale:

- 1, Not at all
- 2, A little
- 3, Somewhat
- 4, Much
- 5, Very much

1. Did you receive the treatment you needed?
Was this form of treatment suitable for your problems?..... 1 2 3 4 (5)
2. Was the treatment satisfactorily implemented? 1 2 3 4 (5)
3. If a friend of yours has problems similar to yours, would you
recommend the treatment you received?..... 1 2 3 4 (5)
4. How much did the treatment help you with your anxiety? 1 2 3 4 (5)
5. How much did it help you in your work/your studies and your
relationships with other people?..... 1 2 3 (4) 5
6. Has the treatment helped you so much that you are now able to
live a satisfactory life ?..... 1 2 3 4 (5)
7. Overall, how satisfied are you with the treatment you received? 1 2 3 4 (5)

Appendix E: Patient Evaluation Form, Part 2

Evaluation of the Components of Treatment

Instruction

We should like to hear your opinion about what you have experienced as helpful in your treatment at the Anxiety Clinic.

Please answer the following questions by circling the number according to the following scale:

- Not at all: 1
- A little: 2
- Somewhat: 3
- Much: 4
- Very much: 5

1. Having read about anxiety and its treatment in the book ”Cognitive Treatment for Panic Disorder and Social Phobia”	1	2	3	4	5
2. The individual sessions prior to the intensive group-week.....	1	2	3	4	5
3. The intensive group-week.....	1	2	3	4	5
4. The individual sessions after the intensive group-week	1	2	3	4	5
5. To learn that other people have problems similar to mine.....	1	2	3	4	5
6. To learn to accept that I am anxious and have problems.....	1	2	3	4	5
7. To learn to change negative thoughts in the situations I fear.....	1	2	3	4	5
8. To learn to focus outwards	1	2	3	4	5
9. To learn not to use ”safety behavior”	1	2	3	4	5
10. Exposure exercises in the group therapy.....	1	2	3	4	5
11. Exposure in my daily life outside therapy	1	2	3	4	5
12. Being aware of my problematic ”rules of life”	1	2	3	4	5