

Automatic Thoughts and Cognitive Restructuring in Cognitive Behavioral Group Therapy for Social Anxiety Disorder

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Abstract The goal in (Heimberg, R. G. (1991). *A manual for conducting Cognitive Behavior Group Therapy for social phobia* (2nd ed), Unpublished manuscript) cognitive behavioral group therapy (CBGT) for social anxiety disorder (social phobia) is to challenge irrational automatic thoughts and create exposures to provide disconfirming evidence for these irrational thoughts as well as habituation to fearful stimuli. Yet little is known about the types of thoughts reported by socially anxious individuals in therapy or which thoughts therapists select for cognitive restructuring in CBGT sessions. The present study analyzed the semantic content of automatic thoughts reported in CBGT and found that the most common thoughts related to poor social performance, negative labels by others, and the anticipation of negative outcomes in feared situations. Principle components analyses indicated the automatic thoughts reflected three underlying themes: Experiencing Anxiety, Negative Self-Evaluation, and Fear of Negative Evaluation. The paper also describes exploratory analyses of which thoughts became the focus of cognitive restructuring exercises and their relationship to treatment outcome. Implications for cognitive therapy are also discussed.

Introduction

Although once termed “the neglected anxiety disorder” (Liebowitz, Gorman, Fyer & Klein, 1985) social anxiety disorder (social phobia) has received substantial attention from clinical researchers in recent years. Much of this research has involved the

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development of effective interventions, with substantial success with both pharmacological and psychosocial treatments (see Hofmann & DiBartolo, 2000 for recent review).

Heimberg's cognitive-behavioral group therapy (CBGT; Heimberg, 1991 (unpublished manuscript); Heimberg & Becker, 2002) has proven to be effective in reducing the social anxiety and avoidance behavior that characterizes social anxiety disorder. CBGT is based on Beck's cognitive theory that cited inaccurate and faulty associations in the development of the individual's information processing system (Beck, 1976; Beck & Emery, 1985). Studies have indicated that CBGT is more effective than wait-list control (e.g. Hope, Heimberg, & Bruch, 1995) and credible placebo control (Heimberg et al., 1998; Heimberg et al., 1990; Lucas & Telch, 1993), with gains maintained at 5-year follow-up (Heimberg, Salzman, Holt, & Blendell, 1993). CBGT was as effective as the monoamine oxidase inhibitor phenelzine at post-treatment assessment (Heimberg et al., 1998). Although phenelzine treated individuals improved more quickly than those receiving CBGT, they were more likely to relapse once medication was discontinued (Liebowitz et al., 1999).

The goal of cognitive therapy is to change dysfunctional cognitive structures (i.e. schemata) that result in biased information processing and increased symptomatology. This is done through cognitive restructuring, one of the major components of CBGT. Cognitive restructuring involves four steps: (1) identification of problematic cognitions known as "automatic thoughts" (ATs—dysfunctional or negative view of the self, world, or future), (2) identification of the cognitive distortions in the ATs, (3) rational disputation of ATs with Socratic dialogue, and (4) development of a rational rebuttal to the ATs. Cognitive restructuring is fully integrated with the other two components of CBGT (role-played exposure and homework). The role-played exposures are supervised by therapists and allow the socially anxious individual to engage in simulated feared situations that are available, controllable, and moldable to the needs of the individual and the treatment progress. Cognitive restructuring is used to identify, assess, and challenge thoughts that occur before, during, and after the exposure. In order to generalize the skills learned in CBGT, the group members are given homework assignments for in vivo exposure and self-paced cognitive restructuring.

Building on the theoretical orientation of Beck (1976), (Heimberg, 1991 (unpublished manuscript); Heimberg & Becker, 2002) emphasized the need to identify and change the underlying beliefs as they are expressed through ATs because of the central role they are thought to play in the maintenance of the disorder. Treatment success is hypothesized to depend upon changes in these schemata. Heimberg cautioned that not all ATs are created equal in that some thoughts are too central to the core cognitive schema to address directly early in treatment. The strength of the core cognitive schema would overpower the client's ability to rationally examine the AT. He recommended that the therapist select a thought near the periphery of the core schema in early treatment sessions. As these less central ATs are challenged successfully, the client will eventually begin to examine the core cognitions. A similar strategy is endorsed by many cognitive therapists (e.g., Persons, 1989; Zuercher-White, 1997). However, as noted by Zuercher-White (1997), there is little empirical research on when in therapy core thoughts should be addressed or whether they should be addressed at all.

Despite the centrality of ATs in CBGT, little is known about them. Two particular questions seem key. First, what types of ATs do socially anxious individuals report in treatment? Second, if all ATs are not created equal then how does one operationalize which thoughts should be addressed early in therapy and which should be addressed later, when the client is thought to be more able to examine core cognitive schema. These issues are of particular concern for the beginning therapist or for a therapist who

encounters socially anxiety clients infrequently. Further clarification of the ATs in CBGT should make the treatment more transportable.

Only one published study has examined ATs in social anxiety disorder. Stopa and Clark (1993) outlined six different categories of ATs that were self-reported by twelve individuals with social anxiety disorder. They used a thought checklist generated by the researchers and a “think aloud” activity. They measured the frequency of thoughts, as well as belief ratings for each of the thoughts. The thoughts were categorized as (1) self evaluative thoughts, (2) thoughts about the evaluation of others, (3) evaluative thoughts about the other person with whom they are interacting, (4) thoughts about coping strategies and behavioral plans, (5) thoughts of avoidance, and (6) any other thoughts that were not categorized. They found that the socially anxious participants had more negative self-evaluative thoughts than anxious or non-patient controls. Stopa and Clark suggested that persons with social anxiety disorder might react to social situations by running through a routine of negative thoughts without attending to the actual circumstances.

Although Stopa and Clark (1993) offered a preliminary view of the content of ATs, three points need elaboration. First, they assessed thoughts in a staged situation outside of the treatment setting. The nature of the thoughts may differ during treatment due to factors such as training in identification and verbalization of the thoughts, encouragement by the therapists, or the desire to disclose in an effort to overcome fears. Therefore, eliciting thoughts in the context of treatment is important to more fully understand the cognitive content as it is relevant to the treatment process. Second, Stopa and Clark’s categories were fairly broad. For example, Mathews and MacLeod (1985) found that socially anxious individuals in a state of anxiousness endorse thoughts relevant to past memories, a category not included by Stopa and Clark (1993). Third, Stopa and Clark reported data derived from a small sample ($N = 12$).

To address the two research questions on ATs in CBGT stated above, this study had two purposes: (1) to more fully describe the ATs generated by socially anxious individuals during actual CBGT sessions and (2) to examine how the type of ATs selected for restructuring changed at different points during treatment. A preliminary examination of the relationship between particular categories of thoughts and treatment outcome was also conducted. It was expected that many thoughts would fit into the larger category of thoughts concerning negative evaluations; however, these thoughts would be further broken down into sub-categories (i.e. physiological component vs. what others think of them). While ATs concerning negative evaluation are expected given the diagnostic criteria emphasizing fears of negative evaluations, this will be the first study to examine whether these are indeed the thoughts being reported in an actual treatment setting. In response to the second purpose, it was thought that, consistent with cognitive therapy recommendations, more superficial ATs will be addressed before ATs related to core schema. Finally, we anticipated that following these recommendations would lead to lower severity ratings at the end of treatment.

Method

Participants

Data for this study were derived from 55 participants in two larger psychopathology studies in which they received free treatment in exchange for research participation

(Hope, Herbert, & White, 1995; Weilage & Hope, 1999;). The two samples will be identified as the Philadelphia and Lincoln samples, respectively. Demographics for the sample are shown in Table 1¹. Given the similarity of the two samples, they were combined for all coding and analyses. Weilage and Hope (1999); Hope, Herbert, and White (1995); and Hope, Heimberg, and Bruch (1995) provide more detailed descriptions of these samples.

In response to newspaper advertisements targeted at people with anxiety in social situations, participants completed a telephone screen. Following the screen, participants completed either the Anxiety Disorders Interview Schedule-Revised (ADIS-R; DiNardo et al., 1985; Lincoln sample) or the Structured Clinical Interview for DSM III-R (SCID; Spitzer, Williams, Gibbon, & First, 1992) and the social phobia section of the ADIS-R to confirm the diagnosis of social phobia² (Philadelphia sample). Severity of social anxiety was assessed using the 0–8 Clinician Severity Rating (CSR) on the ADIS-R. Ratings of 4 or greater indicate clinical severity, and all participants met this criterion prior to treatment.

Treatment

Participants received Heimberg, 1991 (unpublished manuscript) CBGT which consists of twelve weekly 2 to 2 ½ h sessions with five to seven clients and two therapists. All therapists were trained by the first author who also served as a group therapist for some clients at both sites. CBGT revolves around role-played exposures to feared situations, with cognitive restructuring occurring before each exposure. During a session, typically three clients complete individual exposures.

Selecting automatic thoughts

Cognitive restructuring and exposure exercises are conducted for one client at a time. Prior to each exposure, ATs are recorded on an easel by one of the therapists. The ATs are generated by the client who will complete the exposure with help from the therapists and other group members. For the participants in the Lincoln sample, thoughts for the present study were taken from the easel pads that had been preserved with appropriate identifying information for this purpose. For the participants from the Philadelphia sample, a research assistant who had previously been a CBGT therapist transcribed the thoughts from session audiotapes. Any ATs relevant to the exposure were transcribed,

Table 1 Comparison of Lincoln and Philadelphia samples on demographic variables and clinical severity

	Sample		
	Lincoln <i>M</i> (SD)	Philadelphia <i>M</i> (SD)	
Gender (men/women)	14/18	11/12	$\chi^2(1) = .09$
Age	39.37 (8.90)	40.40 (11.13)	$t(52) = .38$
Clinician severity rating (CSR)	5.22 (1.00)	5.59 (0.96)	$t(52) = 1.36$

Note. All *p*'s > .05

¹ Ethnicity is not assessed on the ADIS-R. Unfortunately, ethnicity is not available for these clients

² Although portions of this study were conducted before the publication of DSM-IV (American Psychiatric Association, 1994), these participants would have met diagnostic criteria for social phobia under DSM-IV.

regardless of whether it was written on the easel. Thus, the number of thoughts per participant across all sessions is somewhat larger for the Philadelphia sample ($M = 27.35$, $SD = 12.69$) than for the Lincoln sample ($M = 17.06$, $SD = 8.71$), $t(53) = 3.57$, $p < .001$.

For the second part of the study, only data from the Lincoln sample were used because the required information was not recorded in the Philadelphia sample. According to the treatment protocol (Heimberg & Becker, 2002), one primary AT is selected by the therapist for further analysis, including identification of the thinking error and challenging via Socratic questioning. Therapists were trained to initially select a thought that is less central to the individual's self-schema and then to move to ATs related to strongly held core beliefs later in treatment. Situation-based thoughts that can be tested in an in-session exposure are given priority, especially in early sessions. Therapists routinely marked the primary thought on the easel pad to facilitate the discussion. On rare occasions, when there was doubt as to which thought was primary, session progress notes were consulted.

Thought coding

The semantic classification system for the thoughts was developed by the first author in collaboration with other individuals familiar with social anxiety and CBGT. Preliminary categories were operationally defined based on the experts' experience and theoretical accounts of common themes in the self-statements of socially anxious individuals. Categories were refined based on initial efforts with the coding until a final classification scheme consisting of 12 mutually exclusive categories was developed (see Table 2 for examples of the 12 categories). After all CBGT group session were completed, thoughts were transcribed onto index cards, with identifying information such as the session number and participant code on the reverse of the card so it would not be available to raters during coding. Three undergraduate research assistants, who were blind to the hypotheses, coded the thoughts. They coded each thought into the most appropriate category. No thought was listed in multiple categories. The research assistants were trained via repeated coding practice and feedback on a small subset of thoughts until they were reliable with the first author. Once raters were reliable, they coded the remainder of the thoughts in the sample independently. Discrepancies in coding were resolved by discussion among the raters in consultation with the first author. Reliability was good across rater pairs ($\kappa = 0.81$ – 0.85).

ATs from both samples were used for the identification of categories and the factor analysis. For analyses concerning which AT was selected for further cognitive restructuring, only data from the Lincoln sample are reported, as this information was not recorded from the available Philadelphia sample audiotapes. Given this limitation, outcome data described below are also reported only for the Lincoln sample.

Assessing outcome

Outcome was assessed with the ADIS-R Clinician Severity Rating (CSR) as in previous studies of CBGT Hope, Herbert, and White (1995); and Hope, Heimberg, and Bruch (1995). Audiotaped interviews were conducted by one of the therapists immediately after the last treatment session. Two CSR's were derived from the interviews. One CSR was made by the therapist immediately following the interview, and a second CSR was

Table 2 Category descriptions, examples, and distribution of automatic thoughts across categories

Category	Frequency (percent of total)
<i>Self-labeling</i> : Negative self-evaluation or label without reference to others. ("I'm boring." "I'll be incompetent.")	105 (8.86)
<i>Other-labeling</i> : Concerns that others will attach a negative label. ("He'll think I'm strange." "She will think I'm an idiot.")	174 (14.69)
<i>Visible signs</i> : Concern that the participant may experience visible signs of anxiety without mention of others seeing it. ("I will blush." "I will stutter.")	61 (5.15)
<i>Other-visible signs</i> : Concern that others may detect signs of anxiety that would possibly be visible. ("She will see me blush." "They will see me shaking.")	5 (0.42)
<i>Self-social norms</i> : Concern about violating social norms. ("I'll say/do something inappropriate." "It would be rude if I interrupted.")	53 (4.47)
<i>Other-social norms</i> : Explicit concern that others may see violations of social norms. ("She will think I'm too aggressive if I ask that." "He will be offended.")	15 (1.27)
<i>Symptoms</i> : Concern about experiencing anxiety symptoms that would not be visible to others or negative emotions. ("I'll be embarrassed." "My heart is racing.")	127 (10.73)
<i>Past-memories</i> : Negative thoughts about past anxiety-provoking experiences. ("I always fall apart in that situation." "I have never been able to do that.")	7 (0.59)
<i>Performance</i> : Concerns about failure to perform adequately. ("I won't know what to say." "I won't make a good impression.")	286 (24.15)
<i>Negative outcome</i> : Concern that something negative will happen without an attribution that the participant caused it to happen. ("He won't want to talk to me." "Not enough people will come to hear me speak.")	181 (15.28)
<i>Avoidance</i> : Any thoughts related to avoidance, escape or safety behaviors. ("I will want to get out of here." "It will be easier if I don't make eye contact.")	32 (2.70)
<i>Unclassifiable</i> : Any thought that does not fit clearly into a category, fits into multiple categories, or was a simple description of the situation. ("People will ask questions." "I need to do this to get over my anxiety.")	138 (11.66)
Total number of thoughts coded	1184

derived by the second author from the audiotapes. The second rating was made to confirm reliability. Inter-rater agreement between raters was acceptable ($\kappa = .87$).

Results

As shown in Table 2, 1180 thoughts were coded into the 12 semantic categories, ranging from 286 (24.15%) in the Performance category to 5 (0.42%) in Other-Visible Signs category. Three categories, Performance, Negative Outcome and Other-Labeling accounted for over half of the thoughts. Only 138 (11.66%) thoughts were not classifiable in the present coding scheme.

To determine whether the categories might be reduced to a smaller number of general themes, the data were subjected to a principal components factor analysis with varimax rotation. Given the sample size and low frequency of thoughts in several categories, only categories with at least 5% of the total thoughts were included in the factor analysis. The Unclassifiable thoughts were also excluded due to the heterogeneity of thoughts in this category. This left six categories for the analyses—Self-Labeling, Other-Labeling, Visible Signs, Symptoms, Performance, and Negative Outcome—accounting for 79% of the total thoughts.

As shown in Table 3, the 934 ATs among the 55 participants were composed of three factors with an eigenvalue greater than 1.00 that accounted for 69.5% of the variance. The factors were labeled Experiencing Anxiety, Negative Self-Evaluation, and Fear of Negative Evaluation. Using a .40 as the cutoff for inclusion in the interpretation of the factors, all of the categories loaded positively on one factor, with the exception of Negative Outcomes, which loaded negatively on the first two factors. Loadings of categories on factors, communalities, and percents of variance and covariance are shown in Table 3.

Categories were then collapsed based on the factor loadings with Visible Signs and Symptoms coded as Experiencing Anxiety Factor; Self-Labeling and Performance coded as Negative Self-Evaluation; and Other Labeling remaining separate as the third factor called Fear of Negative Evaluation. The Negative Outcome category was dropped, as it was multi-vocal, and the negative loading could not be represented in the new coding scheme.

As noted above, therapists selected one thought for further analyses and disputation. According to the treatment manual, the type of thought selected should vary as participants progress through treatment. Figure 1 shows the percent of participants by the type of primary thought selected for cognitive restructuring based on the factor categories. These data were available only for the Lincoln sample, and the small sample size ($n = 22$) precludes statistical analyses. However, a visual inspection of the graph suggests that Factor 2 thoughts (Negative Self-Evaluation) are most commonly selected by therapists, with decreasing frequency across treatment sessions.

Next, the mean post-treatment CSR was calculated for each subgroup of participants shown in Fig. 1. Figure 2 describes the treatment outcome for groups of participants for whom therapists selected a particular thought for cognitive restructuring across the first four exposures. Again, these data are preliminary and should be interpreted with caution. However, it appears that when therapists select thoughts related to the experience of anxiety after the first exposure, participants tend to end treatment in the clinical range of the CSR ($CSR > 4$). Poor outcome also appears to be associated with selection of Fear of Negative Evaluation thoughts for the first exposure. It is important to note that this portrayal of the data does not take into account whether the order of thoughts selected in therapy for a particular client impacts treatment outcome.

Table 3 Factor loadings, communalities, percents of variance and covariance for principal factors extraction and varimax rotation thought categories of automatic thoughts in social phobia

	Experiencing anxiety	Negative self-evaluation	Fear of negative evaluation	H ²
Self-labeling	.00	.67	.15	.47
Other-labeling	-.02	-.02	.93	.87
Visible signs	.83	-.07	.16	.72
Symptoms	.80	-.18	-.35	.80
Performance	-.20	.77	-.22	.69
Negative outcome	-.51	-.45	-.39	.62
Percent of variance	28.0	23.2	18.3	69.5
Percent of covariance	40.28	33.38	26.33	100.0

Note. h^2 = the percent of variance in the item that the reduction accounts for

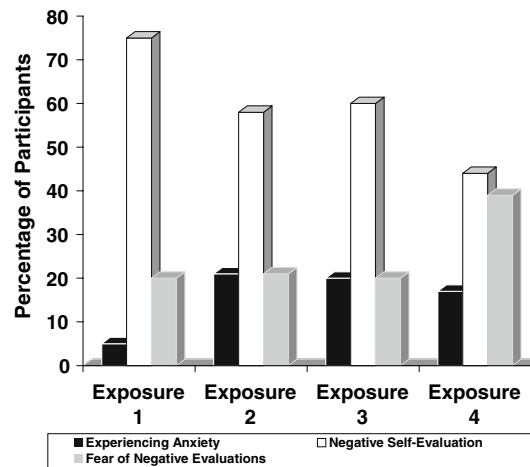


Fig. 1 Percentage of participants categorized by theme of AT selected for cognitive restructuring across four role-played exposures

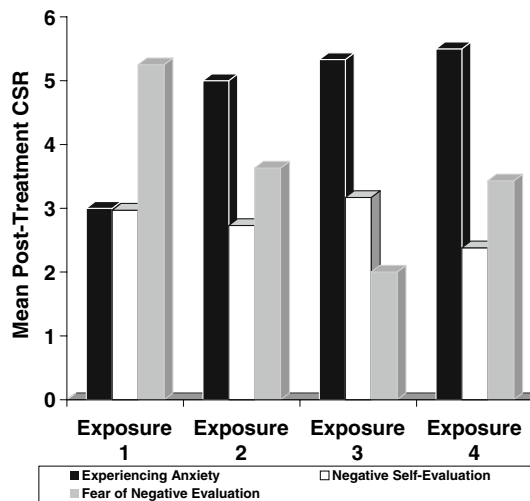


Fig. 2 Mean post-treatment clinician severity ratings (CSR) for participants categorized by theme of AT selected for cognitive restructuring across four role-played exposures

Discussion

This study is the first to develop a comprehensive description of the ATs reported by socially anxious individuals in CBGT. As expected, concerns about the opinions of others and the experience of anxiety, as well as anticipation of poor performance and negative outcomes, were prominent.

The results partially replicate Stopa and Clark's (1993) finding that negative self-evaluative self-statements dominate the cognitions of socially anxious individuals. In order to directly compare the two studies, one can sum across the categories related to

self-referent thoughts (Self-Labeling, Visible Signs, Self-Social Norms, Symptoms and Performance) and other-referent thoughts (Other-Labeling, Other-Visible Signs, and Other-Social Norms). This reveals that over three times as many ATs are self-referent (53.36%) as are other-referent (16.38%).

The data reduction revealed three underlying themes that accounted for the majority of the variance. The first factor, Experiencing Anxiety, demonstrated that concern about the symptoms of anxiety and negative emotion, whether or not they are visible to others, is a dominant theme. This is consistent with Stopa and Clark's (1993) data, as well as with DSM-IV criteria. The negative loading for the Negative Outcome category on the first factor suggests that clients who tend to worry about their anxiety symptoms are less likely to worry about negative outcomes that are not directly caused by them. The second factor, Negative Self-Evaluation, reflected negative beliefs about the self in two forms—negative traits (e.g., dumb or incompetent) and an inability to perform the required role. It is not clear how these self-statements might interact. Beliefs about possessing a negative attribute might lead to beliefs that one will perform poorly and perhaps to actual performance decrements. It is also possible that one might develop the negative self-attributes after repeated observation of real or imagined performance inadequacies. Socially anxious individuals tend to underestimate the quality of their performance Hope, Heimberg, and Bruch (1995), so the ATs about poor performance are unlikely to be accurate. As with the first factor, ATs about Negative Outcomes that are not the responsibility of the individual loaded negatively. The third factor, Fear of Negative Evaluation, consisted primarily of the 15% of total thoughts related to the negative attributes that others will attach to the individual.

Although the CBGT protocol and clinical writings on cognitive therapy recommend that ATs be addressed in a particular order across therapy sessions, there have been no empirical data to either operationalize or evaluate this strategy. Ideally, one would define certain ATs a priori as more closely related to core schema or as more superficial and then systematically select certain ATs over the course of treatment and relate that selection to outcome. In addition to the ethical problems with such an approach, it would be logistically difficult, given the individual variation in reported ATs from which a therapist can select for any specific exposure. In this study, we simply described what therapists appeared to do in more general terms. It appears that Negative Self-Evaluative ATs are most likely to be selected for cognitive restructuring, except for the fourth exposure (See Fig. 1). Further examination of the data revealed that therapists tended to follow Heimberg's recommendation and selected objective, situationally-based performance ATs for the first exposure. ATs such as "I won't know what to say" can be easily disputed by actual performance in the role-played exposure. This strategy is associated with a positive clinical outcome as revealed by the subclinical CSR in Fig. 2.

Another striking pattern in the data is the lack of therapist emphasis on ATs about anxiety symptoms. Experiencing Anxiety ATs were infrequently selected for cognitive restructuring and, when they were selected after the first exposure, they were associated with a poor clinical outcome. Unfortunately, it is difficult to determine from these data whether socially anxious individuals who are overly concerned about the experience of anxiety do not improve or whether therapists' selection of those ATs is not productive.

Finally, it appears that therapists shift to some extent from self-referent to other-referent ATs for the fourth exposure. This could indicate a shift in strategy from challenging whether a particular AT (e.g., "I'm boring.") is accurate to a common cognitive technique of focusing on the consequences of an AT (e.g., "So what if she

thinks you are boring?”). Helping socially anxious clients worry less about the opinions of others is a subtheme of CBGT that may be evidenced in these fourth session exposure data. On the other hand, if fear of negative evaluation is the core schema for most individuals with social anxiety disorder, then it appears that addressing these ATs early in treatment is associated with a poorer outcome compared with challenging them later in treatment, as would be expected by standard CBT practice (e.g., Persons et al., 1989).

Again, it is important to remember that this portrayal is correlational rather than causal. The current data do not allow a causal conclusion that selection of a certain thought caused a certain outcome. It is entirely possible that social phobics, who were poor treatment responders, for whatever reason, tended to endorse certain thoughts. It is also possible that therapists' selection of ATs for cognitive restructuring was influenced by an unidentified client characteristic that is related to treatment outcome.

The present study had a number of limitations. First, the first author served as a therapist for some treatment groups, trained all of the therapists, and was involved in the development of the AT categories. Thus, one might conclude that the categories reflect only what the author already knew about this sample of clients and therapists. However, numerous individuals provided input on the categories, many of whom had experience with only a few of the participants in this study. Furthermore, the low frequency of ATs in some of the categories would suggest that the categorization scheme was developed independently of these data. The research assistants who coded the data had no information about the clients or therapists or even which ATs came from the same client. A second limitation of the study is the small sample size for the analyses of which ATs therapists selected for cognitive restructuring. These results should be interpreted with caution and replicated with a larger sample. In addition, there could be a self-selection bias, as individuals contacted the clinics in response to newspaper advertisements. Although this may result in having a subset of individuals with social anxiety represented, it is a typical procedure used in treatment studies for social anxiety. Finally, these data could reflect an idiosyncratic administration of the CBGT protocol, as no protocol adherence measures were collected for either sample. However, the first author supervised most sessions, typically through live observation or audiotape. The remaining sessions were supervised by the fourth author, who was trained in the protocol by the first author. Also, treatment outcome data for the Philadelphia sample have been published Hope, Herbert, and White (1995); and Hope, Heimberg, and Bruch (1995), and the outcome is similar to other studies for which adherence was more systematically assessed. Thus, there is no reason to believe treatment was outside of the established protocol.

The primary strength of this study was the utilization of data from actual treatment with clinically severe social anxiety. Thus, these data have strong external validity and offer a novice CBGT therapist substantial information on the nature of the ATs reported by socially anxious individuals in treatment. There is also some guidance on which ATs experienced therapists select for cognitive restructuring, one of the most difficult aspects of CBGT to teach.

This study serves as a starting point for investigating the role of ATs during CBGT for social anxiety disorder. Currently we know that we give detailed instructions to cognitive therapists and that the treatments are efficacious. However, we do not know what is actually affecting the positive outcome in CBGT. To begin to uncover the mechanisms of change in CBGT, we propose four lines of future research addressing the cognitive aspects of treatment. Future research should address: (1) ATs relationship with other aspects of CBGT, such as the exposure component and the working alliance;

(2) the “success” of restructuring ATs, including how successful therapists are at restructuring different types of thoughts; (3) how elaborate cognitive restructuring needs to be to affect change; and (4) the timing and order in which specific ATs are addressed. Together, this body of research would allow for the guidance of experienced cognitive therapists to be tested empirically and would greatly inform training of new cognitive therapists. In addition, this research may help future treatment development.

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