Social phobia and interpretation of social events

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Abstract

It has been suggested that social phobia may be characterized by two interpretation biases. First, a tendency to interpret ambiguous social events in a negative fashion. Second, a tendency to interpret unambiguous but mildly negative social events in a catastrophic fashion. To assess this possibility, patients with generalized social phobia, equally anxious patients with another anxiety disorder, and non-patient controls were presented with ambiguous scenarios depicting social and non-social events, and with unambiguous scenarios depicting mildly negative social events. Interpretations were assessed by participants' answers to open-ended questions and by their rankings and belief ratings for experimenter-provided, alternative explanations. Compared to both control groups, patients with generalized social phobia were more likely to interpret ambiguous social events in a negative fashion and to catastrophize in response to unambiguous, mildly negative social events. © 2000 Elsevier Science Ltd. All rights reserved.

Keywords: Social phobia; Anxiety; Phobia; Interpretation

1. Introduction

Cognitive theorists argue that anxiety disorders result from excessively negative appraisals of the dangerousness of certain situations and/or sensations, and that each anxiety disorder is characterized by a specific type of negative appraisal (see Clark & Beck, 1988). Such appraisals could result from a variety of sources including biases in memory, attention, judgement and

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interpretation (see Williams, Watts, MacLeod & Mathews, 1997). The present study focuses on social phobia and investigates interpretative biases.

It has been suggested (Beck, Emery & Greenberg, 1985; Clark & Beck, 1988) that at least two interpretation biases play a role in the maintenance of social phobia. First, patients with social phobia may have a tendency to interpret ambiguous social events in a negative fashion. Second, they may interpret unambiguous but mildly negative social events (e.g. mild criticism from an acquaintance) in a catastrophic fashion.

Amir, Foa, and Coles (1998) recently reported a study which investigated interpretation of ambiguous social events. A modified version of a questionnaire originally developed by Butler & Mathews (1983) was used to compare patients with generalized social phobia, patients with obsessive-compulsive disorder, and non-patient controls. Participants were presented with ambiguous social events (e.g., “someone you are dating says “hello” to you”) and ambiguous non-social events (e.g., “you receive a phone call from a clerk at your bank regarding your loan application”). After each event, three possible interpretations were presented and participants were asked to rank-order the interpretations with respect to the likelihood of coming either to their own mind or to a “typical person’s” mind in a similar situation. The results indicated that social phobia patients were more likely to make a negative interpretation of an ambiguous social event than either patients with obsessive-compulsive disorder or non-patient controls, and this effect only occurred in the self-relevant condition. In addition, the three groups did not differ in their interpretation of ambiguous non-social events.

The data of Amir et al. (1998) support the hypothesis that social phobics show a specific bias in interpretation of ambiguous social events. The present study, which was conducted at a similar time, provides a further test of this hypothesis and also tests the hypothesis that social phobics interpret mildly negative social events in a catastrophic fashion.

In the present study, interpretation of ambiguous events was also assessed with a modified version of the questionnaire of Butler & Mathews (1983). As in Amir et al. (1998), social and non-social scenarios were compared. However, the items were different and there were two changes to the response format. First, before seeing and ranking the three experimenter-produced alternative interpretations, participants were asked to write out their own interpretation of the event. Subsequent coding of the interpretations then allowed us to determine whether the thoughts that actually come into participants’ minds are similar to those represented in the experimenter-provided options. Second, after ranking the experimenter-provided interpretations, participants were asked to rate how much they would believe the interpretation if they were in a similar situation. This extension is important because, within some cognitive theories, the extent to which a patient believes interpretations can be as important as how quickly they come to mind.

Catastrophization in response to mildly negative social events was assessed with a newly developed questionnaire in which participants were presented with a range of negative social events. Response formats included both answers to open-ended questions and likelihood rankings and belief ratings for experimenter-provided interpretations. Catastrophization was defined as interpreting a specific, mildly negative event as having global and negative implications for one’s view of the self and/or one’s future.
2. Method

2.1. Participants

Three groups of participants took part. The social phobia group consisted of 20 outpatients (12 female, 8 male) who met DSM-III-R (APA, 1987) criteria for generalized social phobia. The anxiety disorder control group consisted of 20 outpatients (16 female, 4 male) who met DSM-III-R criteria for any anxiety disorder other than social phobia (9 panic disorder with agoraphobia, 4 simple phobia, 3 panic disorder without agoraphobia, 3 agoraphobia without history of panic disorder, and 1 post traumatic stress disorder). All patients were on the waiting list for treatment or in the early stages of therapy. The non-patient control group consisted of 20 volunteers (13 female, 7 male) with no current psychiatric disorder who were recruited from the community.

All participants completed the Fear of Negative Evaluation Scale (FNE; Watson & Friend, 1969), the Social Avoidance and Distress Scale (SAD; Watson & Friend, 1969) and the Trait subscale of the State and Trait Anxiety Inventory (STAI-T; Spielberger, Gorsuch, & Lushene, 1970). Mean scores are given in Table 1. One way analyses of variance (ANOVAs) followed by Tukey tests between pairs of means indicated that both clinical groups scored higher than the non-patient controls on the FNE, SAD, and STAI-T. In addition, the social phobia group scored higher than the anxiety disorder control group on the FNE and SAD but not on the STAI-T. The three groups did not differ in age or sex.

2.2. Materials

The Ambiguous Social Situation Interpretation Questionnaire (ASSIQ) was a 24 item questionnaire developed from formats used by Butler & Mathews (1983) and Clark et al. (1997) to measure negative interpretation in generalized anxiety disorder and panic disorder, respectively. Two classes of ambiguous events were included: social situations (n = 14) and control situations (n = 10). Examples of social situations are: “you have visitors round for a meal and they leave sooner than you expected”, “you are talking to an acquaintance who briefly looks out of the window”. Examples of control situations are: “A letter marked ‘urgent’ arrives” and “You have a sudden pain in your stomach”. Each situation was followed

<table>
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<th>non-patients</th>
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<td>14.2 (8.2)</td>
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<tr>
<td>STAI-T</td>
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<td>58.1 (10.4)</td>
<td>53.7 (8.0)</td>
<td>36.3 (10.6)</td>
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by the question “Why?” and participants were asked to write down the first explanation that came to mind. After writing their response, participants turned the page and rank-ordered three alternative, experimenter-provided, explanations in terms of the extent to which “they would be most likely to come to your mind if you found yourself in a similar situation”. One alternative was always negative, the remaining two were either both neutral or one was neutral and one was positive. For example, for the social situation, “You have visitors round for a meal and they leave sooner than you expected”, the three alternatives were: “they did not wish to outstay their welcome” (neutral), “they had another pressing engagement to go to” (neutral) and “they were bored and did not enjoy the visit” (negative).

Once participants had completed the open-ended responses and rankings for all items, they opened an additional instruction sheet which told them to go back to the beginning of the questionnaire and rate the extent to which they would believe each of the three alternative explanations for each situation if they were in that situation. Belief was rated on a 0–8 scale.

The Social Event Catastrophization Questionnaire (SECQ) was a questionnaire designed to measure catastrophic interpretations of mildly negative social events. There were nine descriptions of mildly negative social events. For example, “You’ve been talking to someone for a while and it becomes clear that they’re not really interested in what you’re saying”. Each description was followed by two questions: “What would this mean to you?” and “What, if anything, would this tell you about yourself?”. Participants were asked to write the first answers that came to mind. After writing their answers, participants turned the page and rank-ordered three alternative thoughts in terms of the extent to which “they would be most likely to come to your mind if you found yourself in a similar situation”. One alternative always involved an extreme negative judgement about oneself and/or one’s future (catastrophization), the remaining two were either both neutral or one was neutral and one involved a negative judgement of someone else. For example, for the description above the three alternatives were: “I’m a boring person” (negative self-judgement), “their mind was probably on something else” (neutral), and “it doesn’t matter, I can’t be interesting to everyone in the world” (neutral).

Once participants had written their answers and completed the rankings for all of the descriptions, they opened an additional instruction sheet which told them to go back to the beginning of the questionnaire and rate the extent to which they would believe each of the three alternative thoughts for each description if they were in that situation. Belief was rated on a 0–8 scale.

2.3. Scoring

Open-ended responses were written on file cards and each response was classified according to a predetermined set of categories. Different sets of categories were used for the two questionnaires.

In the Ambiguous Social Situation Interpretation Questionnaire (ASSIQ) explanations provided by participants were classified as negative interpretation, anxiety-related, neutral interpretation, or unclassifiable. The definition of negative interpretation varied with item type. For social situations, only responses indicating negative evaluations of the self, either by the self or by others (e.g., “I was talking rubbish”, “they didn’t like me”), were classed as negative interpretations. For control situations, responses were classified as negative interpretations if
they suggested serious physical or mental harm to the self, e.g. death, disease, major illness (ulcers, not flu, for example), loss of consciousness, insanity, or a response suggesting some sort of serious threat to the self, property or others. The anxiety-related category was used for any response mentioning anxiety as an explanation. For example, "because I am anxious or frightened". The neutral category was used for any non-negative explanation. The unclassifiable category was used when there was no way of deciding which category the explanation fell into, either because of insufficient information or because the participant responded "don't know". The mean number of unclassifiable responses was low (5%), indicating that most responses fitted into the three categories (negative, anxiety-related, neutral). To check category reliability, a second rater independently classified data from 7 (35%) participants in each group. Mean inter-rater agreement was satisfactory (0.93 for negative interpretations, 0.81 for anxiety-related, 0.96 for neutral).

In the Social Events Catastrophization Questionnaire (SECO) answers provided by participants were classified as catastrophic, non-catastrophic, or unclassifiable. The catastrophic category was used for responses in which the participant attributes the situation to an enduring negative characteristic of the self (e.g. "I was stupid, boring, incompetent") and/or indicated that the situation would have disastrous consequences for the self in the future (e.g. "I will lose all my friends, be rejected, lose my job"). The non-catastrophic category was used for responses indicating neutral or positive attributions about oneself and/or about one's future (e.g., "no-one is infallible and it's normal for mistakes to occur"). The unclassifiable category was used for responses that could not be categorized along this dimension. The mean number of unclassifiable responses was 18%, indicating that the catastrophization dimension did not apply to a proportion of responses. However, similar unclassifiable rates were observed in each of the three groups (19% for social phobics, 19% for anxiety disorder controls, 17% non-patient controls). To check category reliability, a second rater independently classified data from 8 (40%) participants in each group. Mean inter-rater agreement was satisfactory (0.79 for catastrophic, 0.90 for non-catastrophic, 0.68 for unclassifiable).

For both questionnaires, scores for the ranking data were based on the rank order of the negative explanation/answer. A score of 3, 2, or 1 was given depending on whether the negative explanation/answer was ranked first, second, or third. Mean ranking scores were then calculated for each class of item.

2.4. Procedure

Participants were told that the questionnaires "examine the ways in which different people look at various social situations". They were sent a pack containing the questionnaires and asked to complete them in the following order: ASSIQ, SECQ, STAI-T, SAD, FNE.

2.5. Analysis

Comparisons between groups were based on one-way analyses of variance (ANOVA). Some measures failed Levine's test for equality of variance. For these measures, Brown-Forsyth's one-way ANOVA, which does not require equal variances (Dixon, Brown, Engelman, Frane, Hill & Jennrich, 1988), was used.
3. Results

3.1. Ambiguous social situation interpretation questionnaire

3.1.1. Response to open-ended questions

Table 2 shows the mean number of negative interpretations and anxiety-related interpretations for each type of ambiguous event. A one-way ANOVA revealed a significant group effect for negative interpretations of ambiguous social situations, $F_{(2,37)} = 7.1, p < 0.005$. Tukey tests indicated that patients with social phobia made more negative interpretations of ambiguous social situations than either patients with other anxiety disorders or non-patient controls. There were no differences between the groups in negative interpretation of ambiguous control situations.

The three groups did not differ in their interpretation of anxiety as a cause for the ambiguous social situations. However, there was a significant group effect for anxiety as an interpretation of ambiguous control situations, $F_{(2,37)} = 4.1, p < 0.05$. Tukey tests indicated that patients with social phobia did not differ from either control group. However, patients with

<table>
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<th>Other anxiety disorder</th>
<th>Non-patients</th>
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<td>0.8 (1.1)</td>
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<td>1.7b (0.5)</td>
<td>1.4b (0.4)</td>
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<tr>
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<td>1.6a (0.5)</td>
<td>1.2b (0.3)</td>
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<td><strong>Belief ratings for negative explanation (0–8)</strong></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>Social situations</td>
<td>3.6a (1.9)</td>
<td>3.7a (1.6)</td>
<td>2.4b (1.2)</td>
<td></td>
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<tr>
<td>Control situations</td>
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<td>1.4b (0.8)</td>
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<tr>
<td>Social situations</td>
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<td>4.5a-b (1.3)</td>
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<td>Control situations</td>
<td>4.7 (1.1)</td>
<td>4.7 (1.2)</td>
<td>5.3 (0.7)</td>
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</table>
other anxiety disorders were more likely to interpret the ambiguous control situations in terms of anxiety than non-patient controls.

3.1.2. Ranking of negative interpretations

Table 2 shows the rankings data. A one-way ANOVA revealed a significant group effect for the social situations, $F_{(2,53)} = 10.0, p < 0.001$. Tukey tests indicated that the patients with social phobia ranked the negative interpretation of ambiguous social events as more likely to come to mind than either of the control groups.

There was also a significant group effect for the ambiguous control situations, $F_{(2,49)} = 5.7, p < 0.01$. Patients with social phobia did not differ from patients with other anxiety disorders. However, both groups ranked the negative interpretation as more likely to come to mind than the non-patient controls.

3.1.3. Belief in negative and neutral interpretations

Table 2 shows the belief data. Belief ratings for the negative and neutral interpretations were analyzed by separate one-way ANOVAs. For negative interpretations of ambiguous social events, there was a significant group effect, $F_{(2,53)} = 4.1, p < 0.05$. Tukey tests indicated that patients with social phobia did not differ from patients with other anxiety disorders and both believed the negative interpretations more than non-patient controls.

There was a significant group effect for negative interpretation of the ambiguous control situations, $F_{(2,39)} = 5.9, p < 0.01$. Tukey tests indicated that patients with social phobia did not differ from either control group. Patients with other anxiety disorders were more likely to believe negative interpretations than the non-patient control group.

There was also a significant group effect for belief in neutral interpretations of social situations, $F_{(2,44)} = 3.9, p < 0.05$. Patients with social phobia believed the neutral interpretations less than non-patients, but did not differ from patients with other anxiety disorders. There were no differences between the three groups in belief ratings for neutral explanations of ambiguous control situations, $F_{(2,53)} = 2.3, p > .1$.

Table 3
Means and standard deviations (in parentheses) for Negative Social Events Interpretation Questionnaire (NSEIQ). Means with different superscripts differ significantly ($p < 0.05$ or less). For the rankings data, a higher score indicates that the negative interpretation is more likely to come to mind quickly. For open-ended responses and rankings, $n = 20$ per group. For belief ratings, $n = 18$ per group

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<td>Catastrophization</td>
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<td>mean rankings of catastrophic</td>
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<tr>
<td>response</td>
<td></td>
</tr>
<tr>
<td>Belief in catastrophic response</td>
<td>2.9$^a$ (2.0)</td>
</tr>
<tr>
<td>Belief in neutral response</td>
<td>4.4$^a$ (1.3)</td>
</tr>
</tbody>
</table>
3.2. Social events catastrophization questionnaire (SECQ)

3.2.1. Response to open-ended questions

Table 3 shows the mean number of catastrophization responses for unambiguous mildly negative social events. A one-way ANOVA revealed a significant group effect, $F(2,30) = 13.6$, $p < 0.001$. Tukey tests indicated that patients with social phobia made more catastrophization responses than either control group.

3.2.2. Ranking of catastrophization responses

Table 3 shows the rankings data. A one-way ANOVA revealed a significant group effect for catastrophization responses, $F(2,32) = 15.5$, $p < 0.001$. Tukey tests indicated that patients with social phobia ranked catastrophization responses to mildly negative social events as more likely to come to mind than either of the control groups. Patients with other anxiety disorders ranked catastrophization responses as more likely to come to mind than non-patient controls.

3.2.3. Belief in catastrophization and neutral responses

Table 3 shows the belief data. A one-way ANOVA revealed a significant group effect for belief in catastrophization responses, $F(2,47) = 9.4$, $p < 0.001$. Tukey tests indicated that patients with social phobia did not differ from patients with other anxiety disorders. However, both of the patient groups were more likely to believe in the catastrophization response than non-patient controls.

There was a significant group effect for belief in neutral responses, $F(2,47) = 4.5$, $p < 0.05$. Tukey tests indicated that non-patient controls gave higher belief ratings than patients with social phobia. Patients with other anxiety disorders did not differ from either group.

4. Discussion

The results will be discussed in relation to the two questions raised in the introduction. First, do patients with social phobia interpret ambiguous social events in a negative fashion? Second, do patients with social phobia interpret unambiguous, mildly negative social events in a catastrophic fashion?

With respect to the first question, the results of the ASSIQ provide clear evidence that social phobia is associated with a specific bias in the interpretation of ambiguous social events. Analyses of participants' answers to the open-ended question and the rankings data were consistent and indicate that patients with social phobia are more likely to interpret ambiguous social situations in a negative fashion than both non-patients and equally anxious patients with other anxiety disorders.

The answers to the open-ended questions are particularly informative as they represent participants' own thoughts in response to the ambiguous social situations. The fact that patients with social phobia produced more negative interpretations under these conditions counters any criticism that the results of the rankings data are suspect because they rely on experimenter-produced interpretation.

The ASSIQ belief ratings for ambiguous social situations showed a slightly different pattern
of results to that obtained with the open-ended questions and ranking task. Patients with social phobia gave higher belief ratings for negative interpretations and lower belief ratings for neutral interpretations than non-patient controls, but did not differ from the other anxiety disorder controls. In this instance, therefore, it appears that the key difference between different anxiety disorders concerns how likely an interpretation is to come to mind, rather than how much it is believed. However, this dissociation is not always observed. For example, in a recent study of interpretation in panic disorder, Clark et al. (1997) found that, compared to equally anxious patients with other anxiety disorders, patients with panic disorder were more likely to interpret ambiguous autonomic sensations in a negative fashion and more likely to believe these interpretations. The elevated belief ratings for negative social interpretations shown by the other anxiety disorder group in the present study may reflect the fact that some degree of social concern seems to be present in most anxiety disorders.

Analysis of the ambiguous control situations in the ASSIOQ indicated that patients with social phobia did not differ from the other two groups. However, patients with other anxiety disorders were more likely to interpret ambiguous control situations in a negative fashion than non-patient controls. This finding is not surprising as many of the control situations related to events (body sensations, financial and health threats) that were likely to be specific concerns of some of the other anxiety disorder patients. Analyses of the answers to the open-ended questions suggested that many of the other anxiety disorder patients' negative interpretations involved feeling anxiety as a cause of the control events.

The ambiguous situation interpretation data in the present study are highly consistent with those reported by Amir et al. (1998). Differences in design mean the two studies have different strengths, which nicely complement each other. The specific strengths of the present study are: inclusion of open-ended question responses and interpretation belief ratings, and a demonstration that the other anxiety disorder control group scored as high as the social phobia group on trait anxiety. Specific strengths of the Amir et al. (1998) study are: inclusion of a self-relevant versus typical person contrast and an assessment of the emotional impact of the interpretations.

With respect to the second question, the results for the SECQ indicate that patients with social phobia have a specific tendency to interpret unambiguous but mildly negative social events in a catastrophic fashion. Answers to the open-ended question and the rankings data both indicated that, compared to non-patients and equally anxious patients with other anxiety disorders, patients with social phobia were more likely to attribute mildly negative social events to an enduring negative characteristic of themselves (e.g. "I was stupid, boring, incompetent") and/or assume that the event would have disastrous long-term consequences for themselves (e.g. "I will lose all my friends, be rejected, lose my job" etc). As with the ASSIOQ, belief ratings distinguished patients with social phobia from non-patient controls but not from patients with other anxiety disorders.

What are the likely consequences of the two specific interpretive biases? First, the negative interpretations are likely to have a direct anxiety-inducing effect by increasing the perceived danger in social situations. Second, because of this increased perceived danger, patients with social phobia are likely to engage in safety-seeking behaviors which could adversely affect other people's response to them (Curtis & Miller, 1985; Clark & Wells, 1995; Rapee & Heimberg, 1997). For example, clinical observation suggests that social phobics who are concerned that
other people think they are being boring often try to remember what they have just said during a conversation and compare it with what they are about to say. This mental operation makes the patient appear distant and bored with the conversation and, as a consequence, elicits less warm/friendly responses from other people.

Third, negative interpretations of social events are likely to undermine patients' perceived self-efficacy and increase the subjective probability of adverse outcomes in future social interactions. The most obvious consequence of these changes will be an increased likelihood of avoiding social situations in the future. An interesting question for future research concerns the extent to which interpretations are "on-line" or are constructed after the event. The recent model of Clark & Wells (1995) proposes that patients with social phobia show reduced attention to what is actually happening in a social situation and generate distorted, negative self-images in which they see themselves as if observed from outside (Wells, Clark & Ahmad, 1998; Hackman, Surawy & Clark, 1998). If patients with social phobia are paying a great deal of attention to internally generated, inaccurate information, they may be basing part of their view about what happened in a social situation on this information rather than on negative interpretations of other people's behavior at the time. This means that some of the negative interpretations may be constructed after the event and based on recollected self-perceptions that occurred in the situation.

A limitation of the present study is its exclusive reliance on self-report. A variety of cognitive psychology techniques that could provide a less transparent assessment of interpretive biases are outlined by Williams et al. (1997, pp. 228–230). To date no studies have used these techniques to compare patients with social phobia with equally anxious patients with another anxiety disorder.

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References


