

## SOCIAL ANXIETY IN ADOLESCENTS AND APPRAISAL OF NEGATIVE EVENTS: SPECIFICITY OR GENERALITY OF BIAS?

Idunn Magnúsdóttir and Jakob Smári

*Faculty of Social Science, University of Iceland*

**Abstract.** The role of appraisal of negative events in social anxiety of adolescents was studied. One-hundred and sixty-eight Icelandic pupils between the ages of 13 and 15 years completed the Social Phobia and Anxiety Inventory for Children (SPAI-C), Children's Depression Inventory (CDI), and measures of situational appraisal. Social anxiety was found to be specifically related to the appraisal as threatening of negative social events happening to the self. These relationships remained when depression was partialized out, whereas the reverse was not true. On the whole, the results support the notion of judgmental specificity in relation to social anxiety in adolescents.

*Keywords:* Social anxiety, depression, threat appraisal.

### Introduction

Social phobia and social anxiety have recently come to the fore in research. As a consequence, it has become evident that this is a relatively common if a much neglected problem (Kessler et al., 1994). Even more recently, social anxiety and social phobia in children and adolescents have become a focus of attention in clinical psychology (Albano, DiBartolo, Heimberg, & Barlow, 1995). Social anxiety may be particularly pernicious in adolescence as it is an important period in the establishment of friendships and in testing alternative self-models (Johnson & Glass, 1989).

The role of appraisal in emotion is a cornerstone of cognitive theories of emotion and affect. Such theories propose that cognitive factors are both causally prominent in emotion and necessary characteristics to distinguish between different emotions and emotional disorders (Power & Dalgleish, 1997). Appraisal dimensions that have been proposed as pivotal in anxiety are estimates of "likelihood" and "cost" of aversive events. Some authors have proposed a more general danger appraisal dimension, relevant to anxiety, defined as a multiplicative function of likelihood and cost appraisals (Poulton & Andrews, 1994, 1996).

The specificity of appraisal in anxiety and depression has been investigated by several authors. With regard to the appraisal of likelihood and cost of negative events, Butler and Mathews (1983) compared anxious, depressive and normal subjects. The first two

groups estimated likelihood and cost of such events higher than normals, but did not differ amongst themselves.

Appraisal and perceptual bias in connection with social anxiety/phobia has recently received attention in research (Clark & Wells, 1995; Elting & Hope, 1995; Winton, Clark, & Edelman, 1995). A negative interpretation bias has been found in social phobics (Amir, Foa, & Coles, 1998). This interpretative bias was specific to self-related appraisal. There are also indications that cost and likelihood appraisals of negative social events are related to social phobia/social anxiety (Foa, Franklin, Perry, & Herbert, 1996; Lucock & Salkovskis, 1988).

In this study the investigation of the role of appraisal in social anxiety was extended to adolescents. Information processing in relation to anxiety in young people has been increasingly investigated in recent years. In many studies, biases similar to those found for adults have been observed in children (Daleiden & Vasey, 1997). Dalglish et al. (1997) compared depressed and anxious children's likelihood ratings of physically and socially threatening events, for oneself and others. The only differences found were that depressed children expected negative events to be equally likely for themselves and others, whereas anxious children expected such events to be more likely for others than themselves. Social anxiety has, however, been relatively neglected in this regard.

In studying the specificity of appraisal biases in relation to social anxiety several considerations are in order. First, the relation of social anxiety to the appraisal of negative social events should be compared to its relationship with the appraisal of other negative events. If there is to be support for the view that appraisal is a core component of emotion(al disorder), then appraisal of social threat should be more strongly related to social anxiety than appraisal of non-social threat. Second, the relation between social anxiety and appraisal of negative social events with regard to the self should be compared with the relation between social anxiety and appraisal of negative social events with regard to other people. If appraisal of social events as threatening is determined by self-schemas or models of the self as socially vulnerable, rather than by generalized priming of negative social information by mood, then social anxiety should be more strongly related to the appraisal of negative social events with regard to the self than with regard to people in general. Third, the relationship between social anxiety and appraisal of negative social events should be compared with the relationship between other negative affective dimensions and appraisal. This is necessary in order to test the specificity with regard to different aspects of negative affect. Here it seems particularly relevant to compare social anxiety with depression, as depression as well as social anxiety has been found to be related to interpersonal problems and negative social expectations in adolescents (Cole, Martin, Powers, & Truglio, 1996; Hecht, Inderbitzen, & Bukowski, 1998; La Greca & Lopez, 1998).

Finally, it has been argued that a characteristic of appraisal of negative social events in relation to social phobia/anxiety is that estimated cost of such events is more central than estimated likelihood (Foa et al., 1996). This question will be addressed in relation to adolescents.

### *Hypotheses*

The purpose of the present study was to investigate the specificity of appraisal biases in social anxiety. First, it was predicted that social anxiety is more strongly related to

the appraisal of negative social events than to other negative events. This can be referred to as content specificity. Second, it was predicted that social anxiety is more strongly related to the appraisal of negative social events with regard to the self than with regard to others. This can be referred to as agent specificity. Third, it was predicted that social anxiety is more strongly related to appraisal of negative events than depression. This can be referred to as affect specificity. Finally, on the basis of the conjecture of Foa et al. (1996) social anxiety was expected to be more strongly related to cost than likelihood appraisal of negative social events.

## Method

### *Subjects*

One-hundred and seventy pupils in the 7th and 8th grades of schools in the Reykjavík area were the subjects. Two subjects were eliminated from analysis because of missing data. The average age of the subjects was 14 years ( $SD = 0.72$ ). Ninety-one were female and 75 were male. Two did not report their sex and one did not report his age.

### *Measures*

*Social Phobia and Anxiety Inventory for Children (SPAI-C)* (Beidel, Turner, & Fink, 1996; Beidel, Turner, & Morris, 1995). This is a 26-item self-report inventory. The items cover avoidance behaviours as well as cognitive and physical symptoms of social phobia. They refer to a range of anxiety producing situations. The items are rated on a 3-point scale (0 = never or hardly ever, 1 = sometimes, 2 = most of the time or always). Nine of the items are separately rated with regard to the characteristics of the interpersonal partner (“boys and girls I know”, “boys and girls I don’t know”, “adults”). In this study an Icelandic version of the SPAI-C was used. This had been translated into Icelandic and then backtranslated to ensure accuracy (Guðmundsdóttir & Marteinsdóttir, 1997). The coefficient alpha of the SPAI-C was .91.

*Children Depression Inventory (CDI)* (Kovacs, 1992). This is a 27-item inventory. For each item the respondent chooses one of three alternatives that are presented in an ascending or a descending order with regard to depression (I am always bad, I am often bad, I am sometimes bad). One of the items refers to suicidal ideation, but this was dropped in the study for ethical reasons. Psychometric properties of the Icelandic version used in the study are presented in Jonasdóttir and Einarsdóttir (1994). The coefficient alpha of the inventory was .84.

*Appraisal Inventory.* Fourteen potentially aversive events were described. Seven of these events were social and seven non-social. Events feared by children and adolescents are described, for example, in Campbell and Rapee (1994). The descriptions of social events used here were the following: “You tell a joke to your schoolmates during a pause and nobody laughs”; “You discover that a friend is criticizing you behind your back”; “A group of your schoolmates approach you in the schoolyard and accuse you of telling a secret you do not know”; “The person sitting next to you in class and whom you like (consider your friend) goes to the teacher and asks to be removed”;

“When you come to school one day, you are ignored by your schoolmates”; “You confide in your teacher that an embarrassing event at home prevented you from doing your homework. Somewhat later the teacher tells your class why you didn’t have to hand in your homework this time”; and “You are to read aloud from an assignment in class. When you go to the blackboard you are shouted at and the kids laugh”. An example of the non-social general events is “You break a mirror at home and cut your hand”. Further, there were two lists with these events. First, a list where the events were rated with regard to the self, and a second list where the events were rated with regard to a hypothetical person of the same age as the respondent. Each event was rated on two different scales: (1) A likelihood scale where the event was rated on a 7-point scale with regard to how likely it was to happen to the person (1 = very unlikely and 7 = very likely) and (2) A cost scale where the event was rated with regard to how bad it would be if it happened to the person (1 = not at all bad and 7 = very bad). Items were summed to form eight different scales: A Social Likelihood Scale-Self (SLSS), a Social Cost Scale-Self (SCSS), a General Likelihood Scale-Self (GLSS), a General Cost Scale-Self (GCSS), Social Likelihood Scale-Other (SLSO), a Social Cost Scale-Other (SCSO), a General Likelihood Scale-Other (GLSO), and a General Cost Scale-Other (GCSO). The coefficient alpha for these scales were as follows: SLSS = .70, SCSS = .78, GLSS = .64, GCSS = .65, SLSO = .82, SCSO = .87, GLSO = .83, GCSO = .82.

Further, threat scales were derived by multiplying the cost score by the likelihood score for each event and then totalling the results, for example, for the self-related social items to give a Social Threat to Self score. Similarly, a General Threat to Self scale was obtained by totalling the multiplied scores from the general events for self. Scales for Social Threat to Others and General Threat to Others were derived following the same procedure. For these scales, cost and likelihood scores were multiplied at each event level, whereas Poulton and Andrews (1994, 1996) had first totalled all the likelihood scores and all the cost scores before multiplying the one by the other. The coefficient alpha for these scales were .65 for General Threat to Self (GTS), .77 for Social Threat to Self (STS), .80 for General Threat to Others (GTO), and .84 for Social Threat to Others (STO).

### *Procedure*

A letter was written to the parents of the pupils asking them to send a letter to the school if they were opposed to their children’s participation. Parents of two pupils refused. The pupils completed the questionnaires, arranged in booklets, in class. Half the pupils received the CDI first and the other half the SPAI-C first. The pupils then filled in the appraisal inventory and handed in their booklets in a sealed envelope.

## **Results**

Means and standard deviations were calculated and *t* tests performed on the main variables with sex as the independent variable. The results are shown in Table 1.

The mean of the SPAI-C is very similar to previously obtained means ( $M = 9.8$ ,  $SD = 6.2$ ) for normal Icelandic adolescents of the same age (Gudmundsdóttir & Mar-teinsdóttir, 1997). On the other hand, the mean of the CDI was slightly higher than

**Table 1.** Means and standard deviations of main variables for boys, girls and overall

	Boys		Girls		Overall	
	Mean	SD	Mean	SD	Mean	SD
CDI	10.2	6.3	9.3	6.0	9.8	6.2
SPAI-C	8.3	6.7	9.7	8.1	8.9	7.5
GTS	127.8	49.2	137.0	42.9	132.1	46.2
STS	101.1	40.8	120.4	44.0*	111.2	43.8
STO	118.0	48.5	146.5	49.1*	133.6	52.1
GTO	123.9	49.8	150.0	34.2*	138.3	49.6

CDI = Children's Depression Inventory; SPAI-C = Social Phobia and Anxiety Inventory for Children; GTS = General Threat to Self; STS = Social Threat to Self; STO = Social Threat to Others; GTO = General Threat to Others.

\* $p < .01$  (two-tailed).

that obtained for normal Icelandic adolescents of the same age group, but was similar to Kovacs' American (1992) norms. The correlation between SPAI-C and CDI scores was then calculated, as well as correlations between SPAI-C and CDI scores on the one hand, and threat scales on the other (see Table 2).

In order to test the hypothesis that the appraisal of negative social events was more strongly related to social anxiety than appraisal of other negative events, the correlations of SPAI-C scores with the two relevant appraisal dimensions (Social Threat to Self and General Threat to Self) were examined using tests that compared elements of the same correlation matrix (Steiger, 1980). The difference between these correlations was significant ( $t(165) = 2.94$ ,  $p < .01$ , one-tailed). In order to test the hypothesis that the appraisal of Social Threat to Self was more strongly related to social anxiety than the appraisal of Social Threat to Others, the correlations between social anxiety and the two relevant appraisal dimensions (Social Threat to Self and Social Threat to Others) were compared. The difference between these correlations approached significance ( $t(165) = 1.63$ ,  $p < .10$ , one-tailed). In order to investigate this further, a partial correlation was performed between SPAI-C scores and Social Threat to Self with Social Threat to Others partialized out. The partial correlation remained significant ( $r = .28$ ,

**Table 2.** Correlations between CDI, SPAI-C and the Threat Scales

	SPAI-C	GTS	STS	STO	GTO
CDI	.45***	.06	.21**	.15*	.05
SPAI-C		.17*	.38***	.27***	.15
GTS			.51***	.44***	.47***
STS				.61***	.44***
STO					.71***
GTO					

CDI = Children's Depression Inventory; SPAI-C = Social Phobia and Anxiety Inventory for Children; GTS = General Threat to Self; STS = Social Threat to Self; STO = Social Threat to Others; GTO = General Threat to Others.

\* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

$p < .05$ ). On the other hand, the partial correlation between SPAI-C and Social Threat to Others with Social Threat to Self partialized out was not significant ( $r = .06, p > .10$ ). Thus the relation between social anxiety and appraisal of Social Threat to Others seems to be mediated by the relations of both variables to appraisal of Social Threat to Self. In order to test the hypothesis that social anxiety is more strongly related to the appraisal of negative social events than depression, the correlations between SPAI-C scores and Social Threat to Self and between CDI scores and Social Threat to Self were compared. The difference between the correlations was significant ( $t(165) = 2.15, p < .05$ ). Further, partial correlations were calculated between SPAI-C scores and Social Threat to Self with CDI scores partialized out and between CDI scores and Social Threat to Self with SPAI-C scores partialized out. The former partial correlation remained significant ( $r = .33, p < .05$ ), whereas the latter did not ( $r = .05, p > .10$ ).

Finally, in order to test the hypothesis that social anxiety is more strongly related to cost than likelihood appraisal, the correlations between SPAI-C scores and the Social Likelihood Scale-Self and between SPAI-C scores and the Social Cost Scale-Self were compared. This difference was not significant ( $t(165) = .96, p > .10$ ) and the difference between the sample correlations was in the unexpected direction ( $r = .33, p < .001$  with likelihood and  $r = .23, p < .01$  with cost). Depression was related to the Social Likelihood Scale-Self but unrelated to the Social Cost Scale-Self ( $r = .27, p < .001$  and  $r = -.01, ns$ ).

### Discussion

The main finding of the study was that socially anxious adolescents predict more threatening outcomes to negative social situations than less socially anxious adolescents. This bias is, moreover, specific to social situations relevant to the self, and is not explained by individual differences in levels of depression. On the other hand, it is not excluded that these effects are mediated by general anxiety as no measures of this construct were included, and this should be addressed in future research. It seems unlikely, however, that the relationship between social anxiety and outcome appraisal is explained by criterion contamination. Such a contamination could arise, for example, if the social anxiety measure strongly reflected cognitive aspects of anxiety. The SPAI-C is, however, mainly based on items referring to somatic symptoms of anxiety, avoidance behaviour, and only two of the SPAI-C items refer to cognitive symptoms of anxiety. The correlation between the SPAI-C with and without these two items is .99, and the correlations of the SPAI-C with and without these two items with other variables are virtually identical.

There is no evidence that appraisal of cost of negative social events is more relevant to social anxiety than the appraisal of the likelihood of such events. This seems to run counter to the results for social phobics in Foa et al. (1996). Perhaps the greater relevance of cost than likelihood appraisal is more characteristic of social phobics than of people with high social anxiety. It should be noted, however, that in Foa et al. (1996) the role of cost versus likelihood was compared with regard to intra-individual changes in social anxiety subsequent to therapy, whereas in this study comparisons were made with regard to inter-individual differences in social anxiety.

Several limitations of the study should be mentioned. Most importantly, the subjects are normal adolescents differing in social anxiety and are not clinical social phobics. The extent to which the conclusions regarding socially anxious adolescents apply to socially phobic adolescents is thus uncertain. It should, however, be mentioned that some leading authorities adopt a continuity position with regard to social anxiety/social phobia (Rapee & Heimberg, 1997). Further, it may be doubtful to refer to bias in relation to the relationship between social anxiety and appraisal. Socially anxious adolescents may demonstrate deficient social skills, and consequently negative social outcomes may, in fact, be both more likely and more harmful to them. This possibility should be addressed in further studies.

### References

- ALBANO, A. M., DiBARTOLO, P. M., HEIMBERG, R. G., & BARLOW, D. H. (1995). Children and adolescents: Assessment and treatment. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment and treatment* (pp. 387–425). New York: Guilford Press.
- AMIR, N., FOA, E. B., & COLES, M. E. (1998). Negative interpretation bias in social phobia. *Behaviour Research and Therapy*, *36*, 945–957.
- BEIDEL, D. C., TURNER, S. M., & FINK, C. M. (1996). Assessment of childhood social phobia: Construct, convergent and discriminative validity of the Social Phobia and Anxiety Inventory for Children (SPAI-C). *Psychological Assessment*, *8*, 235–240.
- BEIDEL, D. C., TURNER, S. M., & MORRIS, T. L. (1995). A new inventory to assess childhood social anxiety and phobia: The social phobia and anxiety inventory for children. *Psychological Assessment*, *7*, 73–79.
- BUTLER, G., & MATHEWS, A. (1983). Cognitive processes in anxiety. *Advances in Behaviour Research and Therapy*, *5*, 51–62.
- CAMPBELL, M. A., & RAPEE, R. M. (1994). The nature of feared outcome representations in children. *Journal of Abnormal Child Psychology*, *22*, 99–111.
- CLARK, D. M., & WELLS, A. (1995). A cognitive model of social phobia. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment and treatment* (pp. 69–93). New York: Guilford Press.
- COLE, D. A., MARTIN, J. M., POWERS, B., & TRUGLIO, R. (1996). Modeling causal relations between academic and social competence and depression: A multitrait–multimethod longitudinal assessment of children. *Journal of Abnormal Psychology*, *105*, 258–270.
- DALEIDEN, E. L., & VASEY, M. W. (1997). An information processing perspective on childhood anxiety. *Clinical Psychology Review*, *17*, 407–429.
- DALGLEISH, T., TAGHAVI, R., NESHAT-DOOST, H., MORADI, A., YULE, W., & CANTERBURY, R. (1997). Information processing in clinically depressed and anxious children and adolescents. *Journal of Child Psychology and Psychiatry*, *38*, 535–541.
- ELTING, D. T., & HOPE, D. A. (1995). Cognitive assessment. In R. G. Heimberg, M. R. Liebowitz, D. A. Hope, & F. R. Schneier (Eds.), *Social phobia: Diagnosis, assessment and treatment* (pp. 232–258). New York: Guilford Press.
- FOA, E. B., FRANKLIN, M. E., PERRY, K. J., HERBERT, J. D. (1996). Cognitive biases in generalized social phobia. *Journal of Abnormal Psychology*, *105*, 433–439.
- GUÐMUNDSDÓTTIR, B., & MARTEINSDÓTTIR, H. (1997). *Psychometric properties of the SPAI-C (Proffræðilegir eiginleikar SPAI-C mælitækisins)*. Unpublished B.A. thesis. Faculty of Social Science, University of Iceland.

- HECHT, D. B., INDERBITZEN, H. M., & BUKOWSKI, A. L. (1998). The relationship between peer status and depressive symptoms in children and adolescents. *Journal of Abnormal Child Psychology*, 26, 153–160.
- JOHNSON, R. L., & GLASS, C. R. (1989). Heterosexual anxiety and direction of attention in high school boys. *Cognitive Therapy and Research*, 13, 509–526.
- JONASDÓTTIR, E., & EINARSDÓTTIR, H. (1994). *Standardization of Kovacs self-report scale to assess depression in children and adolescents* “Children’s Depression Inventory”. (Stöðlun sjálfsmatskvarða Kovacs til að meta geðlæggð barna og unglinga “Children Depression Inventory”). Unpublished B.A. thesis. Faculty of Social Science. University of Iceland.
- KESSLER, R. C., MCGONAGLE, D. K., ZHAO, S., NELSON, C. B., HUGHES, M., ESCLEMAN, S., WITCHEN, H. V., & KENDLER, H. S. (1994). Lifetime and 12-month prevalence of DMS-III-R psychiatric disorders in the United States: Results from the National Comorbidity Survey. *Archives of General Psychiatry*, 42, 729–736.
- KOVACS, M. (1992). *Children’s Depression Inventory: Manual*. New York–Toronto: Multi-Health Systems.
- LA GRECA, A. M., & LOPEZ, N. (1998). Social anxiety among adolescents: Linkages with peer relations and friendships. *Journal of Abnormal Child Psychology*, 26, 83–94.
- LUCOCK, M. P., & SALKOVSKIS, P. M. (1988). Cognitive factors in social anxiety and its treatment. *Behaviour Research and Therapy*, 26, 297–302.
- POULTON, R. G., & ANDREWS, G. (1994). Appraisal of danger and proximity in social phobics. *Behaviour Research and Therapy*, 32, 639–642.
- POULTON, R. G., & ANDREWS, G. (1996). Change in danger cognitions in agoraphobia and social phobia during treatment. *Behaviour Research and Therapy*, 34, 413–421.
- POWER, M., & DALGLEISH, T. (1997). *Cognition and emotion: From order to disorder*. Hove: Psychology Press.
- RAPEE, R. M., & HEIMBERG, R. G. (1997). A cognitive-behavioural model of anxiety in social phobia. *Behavioural Research and Therapy*, 35, 741–756.
- STEIGER, J. H. (1980). Tests for comparing elements of a correlation matrix. *Psychological Bulletin*, 87, 245–251.
- WINTON, E. C., CLARK, D. M., & EDELMANN, R. J. (1995). Social anxiety, fear of negative evaluation and the detection of negative emotion in others. *Behaviour Research and Therapy*, 33, 193–196.