Bias or reality? : negative perceptions of ambiguous social cues, social performance and physical arousal in socially anxious youth

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Chapter 3

Negative Self-evaluations and the Relation to Performance Level in Socially Anxious Children and Adolescents

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Abstract

The current study investigated whether negatively biased self-evaluations of nervousness and social skills are related to how well an individual actually performs, that is performance level. Sixty-eight high socially anxious and 68 control participants (age range 9-17 years) gave a 5 min speech in front of a pre-recorded audience of same age peers and a teacher. Participants' evaluations immediately after the task were measured on a number of performance dimensions. Three independent observers also evaluated recordings of the speech performances. Participants were further divided into good and bad performers based on their actual performance level as judged by the observers. Self-evaluations of the high socially anxious participants were negatively biased for nervous appearance regardless of how well they actually performed. In contrast, a negative bias for social skills only occurred in the high anxious participants with a good performance. The social skill evaluations of the poor performers appear warranted. Taking actual performance level into account may help clarify the exact nature of a negative bias in socially anxious youth and has clear implications for the choice of treatment approach.

Introduction

Cognitive models of social phobia make a number of assumptions about how an individual perceives, evaluates and processes a social situation (Clark & Wells, 1995; Rapee & Heimberg, 1997). It is assumed that individuals with social phobia negatively evaluate their performance in social situations and that these negative performance evaluations are biased. This could mean that socially anxious individuals' negative self-evaluations are completely unwarranted or that they are an exaggeration of real social skills deficits. That is, they do not interact with other people in a way that is both appropriate and effective (Baker & Edelmann, 2002; Spitzberg & Cupach, 1989). To date, studies in both adult (e.g., Norton & Hope, 2001) and youth (e.g., Inderbitzen-Nolan, Anderson, & Johnson, 2007) populations have reported inconsistent findings with regard to the role of poor social skills in socially anxious individuals' negative self-evaluations. Thus, the relation between negatively biased self-evaluations and social skills is unclear. The present study therefore aimed to investigate this relationship in a group of socially anxious and non-anxious children and adolescents[1].

Negative Self-evaluations and Negative Bias

A large number of studies conducted with adult and youth populations has investigated socially anxious individuals' self-evaluations in relation to a social-evaluative task, for example a conversation or speech. These studies have produced remarkably consistent findings. Compared to their low anxious counterparts, adults (e.g., Norton & Hope, 2001; Stopa & Clark, 1993) and youth (e.g., Alfano, Beidel, & Turner, 2006; Inderbitzen-Nolan et al., 2007) with social anxiety evaluate their performance as significantly poorer immediately after a social-evaluative task. Two studies with adult samples replicated this finding for self-evaluations measured one week following a social-evaluative task (Abbott & Rapee, 2004; Dannahy & Stopa, 2007).

[1] For brevity the term 'youth' will be used from this point on to refer to both children and adolescents. This also applies to the present study's sample of 9-17 year olds.

In attempting to explain why high socially anxious individuals are more negative about their performance than low anxious individuals, researchers have focused on two hypotheses: one states that negative self-evaluations are warranted because they are based on a social skills deficiency (e.g., Beidel et al., 2007; Spence, Donovan, & Brechman-Toussaint, 1999) and the other that negative self-evaluations are the result of a cognitive bias (e.g., Alden & Wallace, 1995; Cartwright-Hatton, Tschernitz, & Gomersall, 2005). In order to test these hypotheses, studies employ independent observers to judge the performances of both high and low socially anxious groups.

According to the cognitive bias hypothesis, a discrepancy should exist between self and observer evaluations on the same construct such that individuals underestimate how well they perform compared to the objective standard provided by observers. However, to conclude that a negative bias is present it is also necessary to compare high and low socially anxious groups on self-evaluations and observer evaluations separately (Rapee & Lim, 1992). If high socially anxious individuals evaluate themselves as poorer than their low anxious counterparts but observers do not perceive a difference between anxiety groups, it can be concluded that the high socially anxious group's evaluations are unwarranted and therefore biased.

Evidence for the social skills deficit hypothesis is mixed both in adult and youth populations (Inderbitzen-Nolan et al., 2007; Norton & Hope, 2001). In some studies, high socially anxious adults (e.g., Stopa & Clark, 1993) and youth (e.g., Alfano, Beidel, & Turner, 2008) were rated by observers as less socially skilled during social interaction and speech tasks than their low socially anxious counterparts. In other studies, no differences between high and low social anxiety groups were found in adult (e.g., Strahan & Conger, 1998) and youth (e.g., Cartwright-Hatton et al., 2005) samples. In two studies with adult samples skills deficits were either limited to one of two social-evaluative tasks (Voncken & Bögels, 2008), or to specific (e.g., maintained eye contact, clear voice) but not global (e.g., spoke well, kept audience interested) social skills (e.g., Rapee & Lim, 1992).

Studies testing the cognitive bias hypothesis tend to differentiate between two components of social performance during the experimental task, (a) the actual social skills, and (b) overt nervousness (e.g., Voncken & Bögels, 2008). Overt nervousness

refers to visible signs of anxiety and nervous behaviors, for example blushing, stuttering and general nervous appearance (Cartwright-Hatton, Hodges, & Porter, 2003). In the present article we also employ this distinction. When referring to both components we use the term "performance level".

With regard to nervousness the majority of studies show that although both high and low socially anxious individuals tend to overestimate their nervousness compared to observer evaluations, high socially anxious adults (e.g., Alden & Wallace, 1995; Norton & Hope, 2001) and youth (e.g., Cartwright-Hatton et al., 2005) do so to a greater extent than low socially anxious adults or youth. This is found for different types of social-evaluative tasks including a conversation with an unfamiliar person (e.g., Alden & Wallace; Cartwright-Hatton et al.) and an impromptu speech (e.g., Norton & Hope).

In relation to negative bias for social skills the evidence seems less consistent. Some studies with adult samples show that high socially anxious individuals underestimate their social skills to a greater extent than their low anxious peers (Norton & Hope, 2001; Segrin & Kinney, 1995), but this is not replicated in other studies with youth (Cartwright-Hatton et al., 2005; Inderbitzen-Nolan et al., 2007). Furthermore, evidence for a negative bias relating to social skills is inconsistent even within studies. For example, in the Rapee and Lim (1992) study the self-observer discrepancy was significantly larger in the socially phobic than in the control group for global social skill but not for specific social skill ratings. Additionally, in the Voncken and Bögels (2008) study the social anxiety disorder group underestimated their social skills to a significantly greater degree than controls during the impromptu speech but not the conversation task.

Taken together, these findings suggest that high socially anxious individuals have biased self-evaluations in relation to how nervous they appear during a social-evaluative task. However, the evidence for negatively biased self-evaluations of social skill appears less consistent. In the following section we present an alternative explanation for this inconsistency, namely that the occurrence of negative bias is related to performance level.

Negative Bias in Relation to Performance Level

Negative bias and performance level are, by definition, linked. Only if an individual's self-evaluation is negative compared to his or her performance level as judged by independent observers is it possible to speak of a negative bias. If an individual's performance level is poor, a negative bias is less likely: in that case the negative self-evaluation would be more or less correct. Yet, the question of whether a bias occurs only under the condition of an independently judged good performance level has never been raised. Indirect evidence for this link comes from studies using video feedback to correct socially anxious individuals' negative self-evaluations.

In one study, the effectiveness of video feedback on self-evaluations was shown to depend on how skilled a participant's performance was, with more skilled adolescents obtaining greater benefit than those less skilled (Morgan & Banerjee, 2006). In another study with an adult sample, video feedback effectiveness was found to depend on the discrepancy between self- and observer-evaluations, with larger discrepancies, and therefore greater underestimations of performance, being most amenable to treatment (Rodebaugh & Rapee, 2005). Possibly, the findings of these two studies can be explained by differences in the size of the bias between poor and good performers; a more skilled performer with low self-evaluations would have a substantial bias whereas the low self-evaluations of a less skilled performer would be more or less accurate. The hypothesis that the occurrence of a negative bias in high socially anxious individuals is related to performance level has not, as yet, been directly investigated.

The Present Study

The present study addressed three research questions in a nonclinical sample of youth aged between 9 and 17 years. First, and in line with previous research, we aimed to verify that the self-evaluations of high socially anxious youth are significantly more negative than the self-evaluations of low socially anxious youth. Second, we tested if the self-evaluations of high socially anxious youth are negatively biased by comparing their and low socially anxious youth's self-evaluations of nervous appearance and social skill with observer evaluations. Third, we aimed to answer the main question of this study, whether a negative bias occurs only when an individual's performance level is judged as

good by independent observers. That is, is the occurrence of a negative bias related to how well an individual actually performs?

We chose participants in the ages of 9-17 years because pre-adolescence and adolescence is a particularly relevant period in which to study self-evaluations and negative bias: (a) it is coupled with an increase in fear of negative evaluation, a key component of social anxiety (Weems & Costa, 2005; Westenberg, Gullone, Bokhorst, Heyne, & King, 2007), and (b) the onset of social phobia typically occurs in the early or mid-teens (Rapee & Spence, 2004).

Similar to a number of previous studies we employed a public speaking task, the Leiden Public Speaking Task (Leiden-PST; Westenberg et al., 2009), for the social-evaluative situation. Two key aspects differentiate the Leiden-PST from other speech tasks. First, participants are not required to perform the task impromptu; they are in fact informed of the nature of the task one week before it takes place and are encouraged to prepare for the speech. This approach was chosen to avoid emotions arising as a result of an unexpected task influencing participants' subjective and behavioral reactions. Second, the task uses a pre-recorded audience to control for unknown audience effects on participants' behavior (Capella, 1981). The audience used in the present study consisted of unfamiliar peers of the same age and one adult who acted as a teacher situated in a classroom setting. This makes the situation comparable to the requirements of a public speaking task at school and more naturalistic for youth than one that uses one or more unknown adults, as is the case in other studies.

Following previous studies in this field, participants evaluated their performance immediately after the PST (e.g., Morgan & Banerjee, 2006). We chose to include two questionnaires to measure performance evaluations. One questionnaire (Measure of Evaluated Performance; Spence et al., 1999) was used to answer the first research question and verify the presence of negative self-evaluations in high socially anxious youth. Following this verification we could test whether the negative self-evaluations were biased and related to performance level. To answer these questions we used the Performance Questionnaire (Cartwright-Hatton et al., 2005) because it can be completed by both participants and observers.

Method

Participants

Participants were 136 low and high socially anxious adolescents selected from a larger community sample (N = 327) who took part in the Social Anxiety and Normal Development (SAND) study (Westenberg et al., 2009). The larger sample represented a wide range of scores on the Social Anxiety Scale for Adolescents (SAS-A; La Greca & Lopez, 1998). The majority of participants in the SAND study were white, Dutch adolescents from middle class families. First, 68 adolescents (38 boys and 30 girls) were selected with a high level of social anxiety (> 1 *SD* above mean) using separate cut-off scores for boys and girls[2]. In order to create a comparison control group that excluded the extreme low end of social anxiety, we began selecting adolescents who had a SAS-A score in the second decile (> 10%). We continued to select adolescents until we had matched the number of boys and girls to the high anxious group. The cut-off score for high anxious boys and girls was above the recommended criterion of 50 for clinical levels of social anxiety, and the highest SAS-A score in the control group was below the recommended score of 37 (La Greca, 1998). The mean SAS-A score for the high anxious group was 58.84 (*SD* = 7.44) and for controls 29.56 (*SD* = 2.91), a significant difference $t(87.10) = 30.23$, $p < .001$. Mean age for the high anxious group was 12.88 (*SD* = 2.05) years and for the control group 12.49 (*SD* = 2.45) years, a non-significant difference. Both anxiety groups ranged in age from 9 to 17 years. Prior to participation informed parental and adolescent consent was obtained in writing. The SAND study was approved by the University Medical Centre's Medical Ethical Committee.

Materials

Social Anxiety Scale for Adolescents (SAS-A).

The Dutch translation of the SAS-A (La Greca & Lopez, 1998) was used as the measure of social anxiety. The SAS-A contains 18 descriptors (e.g., "I worry about what other kids think of me" and "I get nervous when I meet new kids") and four filler items.

[2] High levels of social anxiety were over-sampled in the larger sample.

Participants are asked to rate each item according to the degree to which the item "is true for you" (1 = *not at all*, 5 = *all the time*). This widely used instrument has good psychometric properties (La Greca & Lopez, 1998; Blöte, Kint, & Westenberg, 2007). In the present study's larger sample Cronbach's α was .94.

Measure of Evaluated Performance (Spence et al., 1999).

To measure participants' overall evaluation of their performance quality a Dutch translation of Spence et al.'s (1999) cognitive measure was used, referred to in this study as "EP". The original version includes five questions, for example "Compared to other kids your age, how good was your speech?" Two of these questions ask the participant how they expect to be judged by others. For the current study these were divided up to ask how same age peers and a teacher would judge the performance. For example, "After watching the video, how good do you think the other kids your age will think you are at giving a speech?" For the question asking about the teacher's judgment, "other kids your age" is replaced by "teacher". This adjustment increased the total number of items to seven. Items are rated using a 5-point scale (1 = lowest performance evaluation, 5 = highest performance evaluation). Internal consistency as measured in the larger sample was good (Cronbach's α: .79).

The Performance Questionnaire (PQ; Cartwright-Hatton et al., 2005).

The PQ was devised to measure three aspects of performance evaluation: micro-behaviors, looking nervous and global impression. To the revised version containing nine questions (Cartwright-Hatton et al., 2005) two new questions were added: "How much did you look at the audience?" and "Did you start to feel warm?" All items are answered on a 4-point scale indicating the extent to which the item applies to the participant (ranging from *very much* to *not very much*).

Principal components factor analysis with varimax rotation on the larger sample (N = 327) yielded two factors whereby the original nervousness subscale remained intact and items from micro-behaviors and global impression all loaded on one factor representing social skills. Factor loadings showed that the item "How much did you look at the camera?" loaded unexpectedly, but weakly, on nervousness. This item was

removed. Of the two new items, "Did you start to feel warm?" loaded onto the nervousness subscale and "How much did you look at the audience?" loaded onto social skills. Internal consistency of the resulting two subscales was adequate (Cronbach's α's: .63 for social skills and .70 for nervousness).

Observer rated Performance

An adapted version of the PQ was used as the measure of observer rated performance in which items from the PQ were altered so that they referred to "the speaker" (e.g., "How much did the speaker look at the audience?"). Three psychology students (one undergraduate and two Master's level) rated the participants' performance using this observer PQ version. One unobservable item from the PQ, "Did you start to feel warm?" was changed to "Did the speaker have blotches in his/her face or neck?" in the observer PQ version. Observers viewed recordings of the public speaking task on a life-size screen 1.5 m by 2 m, were blind to the study's hypotheses and worked independently. Inter-rater agreement was tested using an intraclass correlation. For both nervousness (.94) and social skills (.94) a high level of agreement was reached. The mean of the three observers' scores on each subscale was used in analyses.

Procedure

Participants took part in the Leiden-PST[3] which included two sessions at the university, one week apart. During the first session (pre-session) participants completed a battery of questionnaires presented on a pc and engaged in a few tasks (collected for the SAND study but not relevant to the present article). The SAS-A was one of these questionnaires. In addition, the purpose of this session was to familiarize participants with the nature of the public speaking task, the laboratory in which it took place and to meet the researchers who supervised the public speaking task. Participants were given some details about the public speaking task including its topic, how long they would

[3] A detailed description of the Leiden Public Speaking Task (Leiden-PST) can be found in Westenberg et al. (2009) and is available from the first author upon request.

have to talk for, and that they should prepare for it as they would for a school presentation. Each pre-session was supervised by a trained research assistant.

The second session involved participants giving a 5 min presentation on the type of films they like and/or dislike and explaining why, using an example of a film to illustrate their reasoning. Prior to the task participants were first given detailed instructions for 3 min and secondly, a 5 min preparation period, during which they were allowed to cognitively prepare their speech. During this whole period, participants stood in front of a life-size projection screen 1.5 m by 2 m. Before the speech began a recording of an audience was projected. This recording showed eight boys and girls, matched to the participant's age, and a female teacher walking into a classroom and then sitting down. Participants were instructed to begin their speech after all audience members were seated. Audience behavior was neutral. If a participant fell quiet for longer than 20 s during the task a standard prompt was given by the researcher. After 5 min participants were told that the task had finished (audience projection was turned off) and were asked to fill in a few questionnaires including the EP and PQ. This session was supervised by two trained PhD students.

Data Analyses

The first research question (verification of negative self-evaluations in high socially anxious youth) was analyzed using an ANOVA with social anxiety group as the independent variable and scores on the EP as the dependent variable. For the second research question (testing for presence of a negative bias), evaluations of nervousness and social skills were analyzed separately in two 2(social anxiety group) x 2(rater) ANOVAs with rater (self vs. observer evaluations) as a repeated-measure variable. To test the third research question (if negative bias is related to performance level) participants in the high anxious and control groups were further divided into two groups: poor performers and good performers. We operationalized performance level as the combination of equally weighted nervousness items (scored from high to low) and social skills items (scored from low to high) from PQ observer ratings. Thus, we created a total performance level score using observer evaluations of nervousness and social skills. Within each anxiety group the lowest 33% and highest 33% of participants were

selected for the 'poor performers' and 'good performers' groups, respectively. Next, participants' self-evaluations of nervousness and social skills were analyzed in two 2(anxiety group) x 2(performance group) ANOVAs. A significant interaction effect between anxiety and performance group would suggest that the occurrence of a negative bias is related to performance level.

Results

Analyses of the first two research questions were initially conducted with gender and age (three age groups: 9-11 years, 12-14 years and 15-17 years) included as independent variables. This revealed just one significant interaction effect with social anxiety group. The ANOVA on evaluations of social skills with rater as repeated-measure variable yielded a Social anxiety x Gender x Age interaction effect, $F(2, 121) = 3.71$, $p < .05$, partial $\eta^2 = .06$. The interaction was followed up with *t*-tests on social skill evaluations by gender for each anxiety and age group separately. These follow-up analyses indicated that the interaction was present in the control group only. Boys were evaluated more positively than girls at age 9-11 years ($t(27) = 3.39$, $p < .01$) and at 12-14 years girls were evaluated more positively than boys ($t(19) = -2.07$, $p = .05$). Excluding gender and age from these analyses did not alter the effect of social anxiety group on the dependent variables. Therefore, subsequent analyses are reported without gender and age.

Negative Self-evaluations

The first research question asked whether the self-evaluations of high socially anxious youth are more negative than the self-evaluations of low socially anxious youth. As expected a significant effect of social anxiety group was found on the EP, $F(1, 131) = 6.54$, $p < .02$, partial $\eta^2 = .05$. In line with previous research and as shown in Table 3.1, high socially anxious participants had a lower performance evaluation on the EP as compared to control participants.

Negative Bias in Self-evaluations

Collapsed across raters (self and observer), the high socially anxious group was also evaluated as looking significantly more nervous, $F(1, 131) = 8.13$, $p < .01$, partial $\eta^2 = .06$; and lower in social skills on the PQ than controls, $F(1, 131) = 7.00$, $p < .01$, partial $\eta^2 = .05$. Furthermore, significant rater effects for both anxiety groups combined were found for nervousness, $F(1, 131) = 154.00$, $p < .001$, partial $\eta^2 = .54$, and social skills, $F(1, 131) = 6.01$, $p < .02$, partial $\eta^2 = .04$. Observers evaluated adolescents as looking less nervous and giving a more skilled performance than adolescents themselves, with a particularly large difference between raters for evaluations of nervousness (see Table 3.1).

Table 3.1

Means (and SDs) for Self-evaluations Following the Public Speaking Task and Observer Evaluations of Nervousness and Social Skills

Questionnaire	Self-evaluation			Observer-evaluation		
	High Anxious	Control Group	All	High Anxious	Control Group	All
EP	2.75	2.99	2.87			
	(0.59)	(0.51)	(0.56)			
PQ-nervousness[a]	2.36	2.05	2.21	1.56	1.51	1.54
	(0.63)	(0.56)	(0.61)	(0.30)	(0.31)	(0.30)
PQ-social skills[b]	2.28	2.48	2.38	2.44	2.53	2.49
	(0.42)	(0.38)	(0.42)	(0.37)	(0.40)	(0.39)

Note. EP = Measure of Evaluated Performance. PQ = Performance Questionnaire.

[a]A higher score on PQ-nervousness represents looking more nervous during task.

[b]A higher score on PQ-social skills represents a better performance.

The most relevant effect to the second research question regarding a negative bias is the rater by social anxiety interaction effect. This effect was significant for nervousness, $F(1, 131) = 5.70$, $p < .02$, partial $\eta^2 = .04$, but not for social skills. This indicates that, as shown in Table 3.1, the difference between self- and observer-evaluations of nervousness is larger for the high socially anxious group than the control

group. The rater by social anxiety interaction was followed up with separate *t*-tests on self and observer nervousness scores. The high socially anxious group rated themselves as looking significantly more nervous, $t(131) = -2.95$, $p < .01$, Cohen's $d = 0.52$, than the control group. However, according to observers there was no significant difference in nervousness between the two groups. This means that the relatively high self-evaluations of nervousness in the high socially anxious group were not warranted but the result of a negative bias.

Negative Bias and Performance Level

Before running the main analysis to answer the third research question we checked that good performers were indeed significantly better than poor performers on each of the two performance dimensions: nervousness and social skills. Separate *t*-tests confirmed that observers rated poor performers as significantly more nervous (*M*s = 1.78 vs. 1.34) and less socially skilled (*M*s = 2.16 vs. 2.84) than good performers ($t(74.55) = 7.89$, $p < .001$, Cohen's $d = 1.65$ and $t(93) = -11.45$, $p < .001$, Cohen's $d = 2.38$, for nervousness and social skills respectively).

To answer the question whether negative bias is related to performance level we focused on the interaction effect between social anxiety and performance group on participants' self-evaluations. The interaction effect was significant for social skills, $F(1, 88) = 5.48$, $p < .05$, partial $\eta^2 = .06$, but not for nervousness. Figure 3.1 shows that in the control group good performers evaluated themselves as significantly higher in social skills than poor performers, $t(43) = -3.18$, $p < .01$, Cohen's $d = 0.92$. Therefore, within the control group both good and poor performers' self-evaluations corresponded with how well they were judged by observers.

In contrast, in the high socially anxious group there was no difference between poor and good performers in terms of self-evaluations of social skills, $t(45) = 0.34$, *ns*. Despite their independently judged higher performance level, high anxious good performers evaluated their social skills as negatively as their poor performing counterparts. Thus, within the socially anxious group the occurrence of negatively biased social skill evaluations was related to actual performance level. Only in good performing high anxious youth were the self-evaluations biased. The self-evaluations of

poor performing high anxious youth were more or less accurate relative to observer evaluated performance level.

With regards to nervousness the non-significant interaction between anxiety and performance group indicates that biased self-evaluations are unrelated to performance level. This indicates that all socially anxious youth overestimated their nervous appearance regardless of how well they were independently judged to perform.

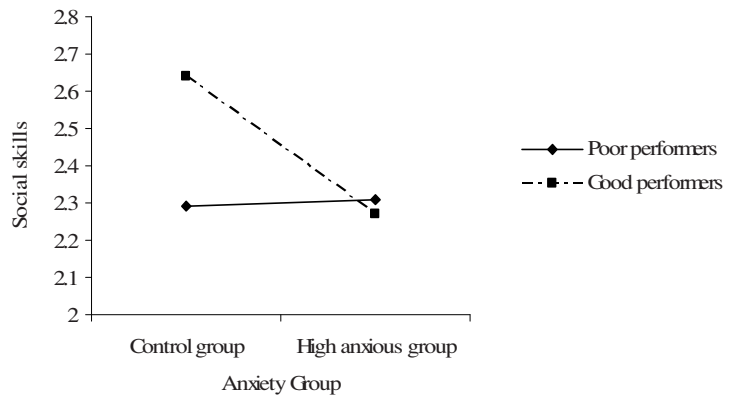

Figure 3. 1. Interaction between Anxiety and Performance Group for Self-evaluations of Social Skills.

Discussion

The present study found that: (1) high socially anxious youth evaluated their performance more negatively than youth with lower levels of social anxiety, (2) compared to nervousness ratings from independent observers, all high socially anxious youth were negatively biased in their perceptions of looking nervous; and (3) only those high socially anxious youth who were judged by observers as good performers showed a negative bias in terms of their social skills. That is, better performing high anxious youth evaluated their social skills as less proficient than as rated by the independent observers. Poor performing, high anxious youth correctly evaluated their own skills as poor. These key findings are discussed in the following sections.

In line with previous research in both adult and youth populations (e.g., Alfano et al., 2006; Inderbitzen-Nolan et al., 2007; Norton & Hope, 2001; Stopa & Clark, 1993) we successfully verified that high socially anxious youth evaluate their performance on a social-evaluative task as inferior compared to low anxious youth. A question that then arises is whether the evaluations of high anxious youth are negatively biased.

Consistent with existing adult and youth studies (Alden & Wallace, 1995; Cartwright-Hatton et al., 2005; Inderbitzen-Nolan et al., 2007; Norton & Hope, 2001), high socially anxious youth showed a negative bias for nervousness. High socially anxious youth, regardless of how well they performed, viewed themselves as looking more nervous than as estimated by observers. Overestimation may be explained by the occurrence of "unobservable manifestations of anxiety" (Inderbitzen-Nolan et al., p. 87). This suggests that high anxious individuals overestimate their nervousness to a greater degree than low anxious individuals because they experience greater physiological arousal. However, findings from recent studies counter this argument by showing no differences between high and low socially anxious individuals on objective physiological arousal (Anderson & Hope, 2009; Mauss, Wilhelm, & Gross, 2004). A second explanation, stating that overestimation of nervousness occurs as a result of increased self-focused attention in socially anxious individuals (Bögels & Mansell, 2004; Clark & Wells, 1995), may be more plausible. Self-focused attention heightens awareness of even slight somatic responses (e.g., increase in cheek temperature) during a social-evaluative task and may lead to the assumption that these responses are more visible to an observer than they really are (e.g., that one is blushing profusely).

In contrast to nervousness, initially our findings did not support the presence of a negative bias for evaluations of social skills. As such this finding adds to previous literature that did not find evidence for a negative bias regarding social skills (Cartwright-Hatton et al., 2005; Inderbitzen-Nolan et al., 2007), but contrasts with other studies that did (Norton & Hope, 2001; Segrin & Kinney, 1995; Voncken & Bögels, 2008). In order to better understand these inconsistencies between studies actual performance level was taken into account.

A negative bias for social skills occurred in those high socially anxious youth whose performance was good. Good performers significantly underestimated their

social skills relative to observers' judgments of their skill, whereas poor performers were more or less accurate in their self-evaluations. Why might a social skills negative bias be specific to good performing high anxious youth? The self-focused attention explanation discussed earlier may also be relevant here. If high socially anxious individuals are preoccupied by feelings of physiological arousal it is less likely that they will be simultaneously aware of how socially skilled their performance is. Social skill is not something that can be felt in the body in the same way as nervousness. Therefore, the good performers will not recognize that they are more socially skilled than poor performers, resulting in similar self-evaluations. It is also possible that social skill evaluations of high socially anxious individuals are just based on negative social thoughts (Clark & Wells, 1995), yielding low self-evaluations in good and poor performers alike. Future studies could investigate the relative contribution of different factors from cognitive models (Clark & Wells; Rapee & Heimberg, 1997), such as self-focused attention and negative performance expectations, to self-evaluations of social-evaluative tasks.

The present study's different findings for nervousness and social skills in relation to performance level highlight the efficacy of differentiating between these two components of social performance. Thus, even if high anxious individuals are reported to have a negative bias, it might not always be clear whether this effect can be attributed to nervousness or social skills (e.g., Segrin & Kinney, 1995; Stopa & Clark, 1993). The results of the current study suggest that in cases in which the distinction is not made, the bias is more likely to be a result of an overestimation of nervousness, rather than an underestimation of social skills. Nevertheless, this conclusion would be strengthened by replication in future studies, particularly because the internal consistency of the PQ was only moderate in the present study.

The aforementioned inconsistent findings, regarding negatively biased self-evaluations of social skills among high anxious individuals, may be a result of the fact that, in previous studies, the performance level was not taken into account. By not doing this it is assumed that socially anxious individuals' self-evaluations parallel independent observer performance evaluations, on a lower level. However, in contrast to low socially anxious individuals, good performing high socially anxious individuals do not seem to

adjust their self-evaluations to their actual performance level. As far as we are aware, the present study is the first that investigated negative bias in relation to performance level. Therefore, replication of this study's findings is needed in order to corroborate this conclusion.

Study Limitations

A few limitations of the present investigation should be addressed. First, because the high socially anxious group was selected from a community sample, the findings may not wholly reflect the cognitive processes characteristic of youth with a social anxiety disorder. Replication in a group of clinically diagnosed youth is thus crucial, particularly with regards to the finding that a social skills bias is related to performance level. It might be more difficult to find a good performing group in youth with a social anxiety disorder or social phobia. In this case, the social skill evaluations of youth with clinical levels of social anxiety might not be biased. Second, it is questionable whether adults are the best judges of children and adolescents' social performance. In adolescence, increasingly greater importance is placed on the opinions of same age peers (Steinberg & Monahan, 2007; Westenberg, Drewes, Goedhart, Siebelink, & Treffers, 2004) and recent work suggests that peers are highly perceptive to behavioral differences between high and low anxious youth (Blöte et al., 2007). Possibly, peers would be less positive than adults in their evaluation of good performing high socially anxious youth.

Clinical Implications and Conclusions

Based on the findings presented here implications for the suitability of different treatment approaches can be put forward. Two widely used methods, correcting cognitive distortions and improving social skills, may not be appropriate for all high socially anxious youth (Morgan & Banerjee, 2006; Rodebaugh & Rapee, 2005). In relation to nervousness, it appears that all high socially anxious youth would benefit from video feedback, with the aim to more accurately evaluate the visibility of their anxiety. In relation to social skills we tentatively propose a more tailored approach that first establishes the individual's performance level. With good performers one would wish to focus on cognitive distortions with the help of video feedback; but with poor

performing individuals a social skills training would be preferable. If still needed, the cognitive method could then be applied after improving a client's social skills.

In conclusion, the main message of the current investigation is that the occurrence of biased social skill evaluations in high socially anxious youth is related to actual performance level. That is, a social skills bias occurs only in the high anxious youth who are independently judged to be good performers. The occurrence of a nervousness bias is unrelated to performance level. In order to enrich our understanding of the nature of negative bias in high socially anxious youth future research should endeavor to take into account an individual's actual performance level.