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Judgmental Biases of Individuals with a Fear of Blushing: The Role of Relatively Strict Social Norms

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Blushing-fearful individuals often expect that others will judge them negatively. In two studies, we tested if this could be explained by having relatively strict beliefs about what is appropriate social behaviour. Study 1 used a student sample ($n = 74$), whereas study 2 compared a clinical treatment-seeking sample of blushing-fearful individuals ($n = 33$) with a non-anxious control group ($n = 31$). In both studies, participants were asked to read descriptions of common behaviours that could be considered as breaching the prevailing social norms but not necessarily so. Participants indicated (i) to what extent they considered these behaviours as violating the prevailing norm and (ii) their expectation of observers' judgments. Study 1 showed that strict norms were indeed related to fear of blushing and that the tendency of fearful participants to expect negative judgments could at least partly explain this relationship. Study 2 showed that high-fearful and low-fearful individuals do indeed differ in the strictness of their norms and that especially the norms that individuals apply to themselves might be relevant. These findings may provide fresh clues for improving available treatment options. Copyright © 2015 John Wiley & Sons, Ltd.

Key Practitioner Messages:

- Blushing-fearful individuals attribute relatively strict social norms to other people about which behaviours are appropriate and which are not and have stricter personal norms as well.
- Blushing-fearful individuals' tendency to expect overly negative judgments in ambivalent social situations can partly be explained by their relatively strict social norms.
- Having relatively strict social norms may (also) explain why blushing-fearful individuals report to blush often and intensely.
- It may be worthwhile to address strict social norms in therapy for fear of blushing.

Keywords: Social Anxiety, Fear of Blushing, Strict Norms, Judgmental Bias

Individuals with a fear of blushing often expect that others will judge them negatively. In other words, they believe that interacting with people will have social costs. They do so in situations in which they believe they will blush, but they also seem to expect negative social outcomes more generally, irrespective of their blushing (de Jong & Peters, 2005; Dijk & de Jong, 2012). This judgmental bias is not without consequences and will logically contribute to blushing-fearful individuals' fear of negative evaluation and their tendency to avoid social situations (Bögels, 2006). Fear of blushing is considered to be a social fear (Crozier, 2006). It is often described as a marker of

social anxiety disorder, and fear of blushing is the main complaint of about one-third of the people who seek clinical help for their social fears (e.g., Bögels & Reith, 1999; Essau, Conradt, & Petermann, 1999; Fahlén, 1997; Pollentier, 1992). In accordance with findings in blushing-fearful samples, several studies have demonstrated that individuals with social anxiety overestimate the social costs of several types of situations (e.g., Foa, Franklin, Perry, & Herbert, 1996; Voncken, Bögels, & de Vries, 2003). For example, a recent study has shown that socially anxious individuals expect social blunders to be more embarrassing and have more costs than people without social anxiety (Moscovitch, Rodebaugh, & Hesch, 2012).

The question of why people with fear of blushing expect a more negative evaluation of others remains. It has been argued that perhaps these individuals believe that others have

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relatively strict ideas about what type of behaviour is socially correct (Dijk & de Jong, 2013). If indeed individuals with a fear of blushing have relatively strict views about the prevailing social norms, this may lower the threshold for considering their own behaviour as violating pertinent social rules. Thus, if, e.g., a blushing-fearful person misunderstood the dress code and arrived with the 'wrong' outfit at a social event, he or she might overestimate the extent to which this represents a violation of the social norm and might therefore overestimate the negative social consequences of this 'blunder' (Moscovitch *et al.*, 2012).

Holding high standards for social correctness might be especially relevant for understanding fear of blushing. Blushing has been conceptualized as a submissive nonverbal apology that may mitigate a negative social impression and help to restore the actors' social identity (Keltner & Buswell, 1997; Leary, Britt, Cutlip, & Templeton, 1992). Accordingly, people typically blush when breaching a social rule (e.g., Castelfranchi & Poggi, 1990; de Jong, Peters, De Cremer, & Vranken, 2002). Evidence is building that blushing-fearful individuals not only overestimate their propensity to blush (Drummond, 1997; Gerlach, Wilhelm, Gruber, & Roth, 2001; Mauss, Wilhelm, & Gross, 2004; Mulkens, de Jong, & Bögels, 1997; Mulkens, de Jong, Dobbelaar, & Bögels, 1999) but also do indeed blush more easily and/or more intensely, especially in social situations in which people typically do not tend to blush (e.g., Bögels, Rijsemus, & de Jong, 2002; Dijk, Voncken & de Jong, 2009; Drummond, 2001; Gerlach *et al.*, 2001; Hofmann, Moscovitch, & Kim, 2006; Voncken & Bögels, 2009). People with a fear of blushing often believe that this happens because they are the victim of a hyper-responsive physiological 'blush' system (Pelissolo, Moukheiber, Lobjoie, Valla, & Lambrey, 2012). However, strict beliefs about what is socially correct and what is not could cause individuals with a fear of blushing to expect more often that they (accidentally) transgressed a social norm, which in turn would cause them to blush more often than individuals without this fear (c.f. Stein & Bouwer, 1997).

Two studies were designed to investigate the beliefs about the prevailing social norms of individuals with a fear of blushing. The first study tested a student sample. The second study was set out to test in a clinical sample if highly blushing-fearful individuals do indeed have more strict beliefs about the social norms. Also, this study extended the first study by not only focusing on the presumed group norms but also on the participants' own social norms. In both studies, participants were presented with descriptions of relatively common behaviours that may be considered as breaching social norms but not necessarily so and were asked to rate to what extent they considered this behaviour as breaching the prevailing social norm.

STUDY 1

The aim of the first study was to test the following predictions: (i) expecting a relatively negative social judgment is related to fear of blushing; (ii) having strict beliefs about the prevailing social norms is related to fear of blushing; (iii) having the tendency to expect a relatively negative judgment (partly) explains the relation between having strict beliefs about social norms and fear of blushing. Additionally, we examined if strictness with regard to participants' social norms was indeed related to their (self-rated) blushing propensity.

METHOD

Participants

Participants were 74 female undergraduates from Maastricht University. Mean age was 19 years (range 17–31 years). They were selected from a larger sample ($n = 321$) on the basis of their scores (during a mass screening) on the Social Phobia Subscale of the Fear Questionnaire (FQ-SP; Marks & Mathews, 1979, Section on Personality Characteristics) in a way that maximized the coverage of the scale. The FQ is known to correlate with fear of blushing, ensuring that the sample consists of a wide range of blushing fear (e.g., Dijk *et al.*, 2009). The scores on the Blushing Subscale of the Blushing Trembling and Sweating Questionnaire (BTSQ; Bögels & Reith, 1999; Section on Personality Characteristics) that were obtained during the experiment confirmed that indeed a wide range of the BTSQ was covered with scores ranging from 0 to 86 ($M = 32.0$, standard deviation [SD] = 21.3).

Procedure and Measures

All participants gave informed consent before starting the study.

Restricted Norms and Anticipated Judgment

We used a paper-and-pencil task, which consisted of a series of nine descriptions of relatively common behaviours that may be considered as breaching social norms but not necessarily so. The situations reflected different themes that seem to play a major role in social fears: displaying anxiety, assertive behaviour and social failure (Table 1). Participants were asked to rate on a 100-mm visual analogue scale (VAS) ranging from *not at all* (0) to *very much* (100) to what extent they considered this behaviour as breaching the group norm ('Norms'). In addition, they were asked to indicate how they anticipated that they would be evaluated by other people in this specific situation on a VAS ranging from *very negative* (0) to *very positive* (100) ('Judgment'). The internal consistency of both

Table 1. Description of the vignettes of study 1

1.	Your hands tremble visibly when eating soup during a formal dinner.
2.	You blush while speaking at a meeting.
3.	Despite the fact that all other people refrained from ordering a desert, you still decide to order your favourite desert.
4.	During a training, you critically comment on a fellow student.
5.	During a party, you cannot think of anything to say to keep the conversation going with the person who is sitting next to you.
6.	You ask a silly question during a lecture.
7.	You appear in leisurewear at an event where everybody is dressed formally.
8.	You were randomly selected to give a speech for the departing chairman of your club. During the speech, you cannot find any words.
9.	During a meeting of your student corporation, someone gives you a sharp remark that makes everybody laugh. From your answer, it is clear that you did not understand the remark.

variables was good ($\alpha_{\text{Norms}} = 0.80$; $\alpha_{\text{Judgment}} = 0.76$). Therefore, mean scores of all descriptions were used in the remaining analyses.

Personality Characteristics

For a comprehensive description of the sample, the participants completed several questionnaires: the first five items of the Blushing Subscale of the BTSQ, which assess fear of blushing symptoms (Bögels & Reith, 1999)¹; the FQ-SP, a four-item self-rating of avoidance of social situations (Marks & Mathews, 1979); and the 19-item version of the Blushing Propensity Scale (BPS), which measures participants' beliefs about their tendency to blush (Bögels, Alberts & de Jong, 1996; originally developed by Leary & Meadows, 1991). Thus, higher scores indicate stronger self-reported blushing propensity.

RESULTS AND DISCUSSION

Description of the Sample, Simple and Partial Relations

A summary of means, standard deviations and correlations is displayed in Table 2. Also, to examine if these relationships existed independently of social anxiety, Table 2 displays the partial correlations, controlled for FQ, as well. As can be seen in this table, fear of blushing (BTSQ) was clearly related to the expectation to be judged more negatively. As expected, having more strict beliefs about other people's social norms was also associated with the tendency to anticipate a more negative judgment. Also,

¹The Fear of Blushing Subscale originally consists of six VASs. However, the correlations of the last item with the other five are often very low. Therefore, in the current studies, only the first five items are used (c.f. Glashouwer, de Jong, Dijk & Buwalda, 2011).

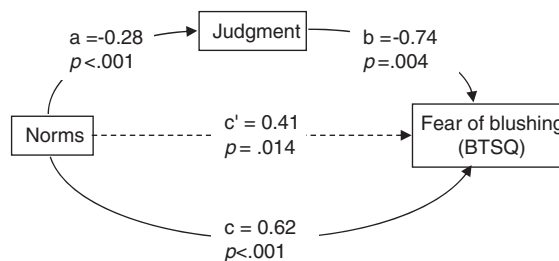


Figure 1. The effects of norms on judgment (a) and of norms on fear of blushing (b), as well as the effect of judgment on fear of blushing controlling for norms (c) and of norms on fear of blushing controlling for judgment (c')

the more the participants feared blushing, the stricter their beliefs about social norms. Furthermore, in correspondence with the notion that strict norms might explain blushing-fearful individuals' propensity to blush, having strict beliefs about other's norms was correlated with the BPS. Although smaller, these relations remained significant after controlling for social anxiety.

Strict Social Norms and Anticipated Evaluation

The SPSS macro of Preacher and Hayes (2004) was used to examine if strict norms can explain why individuals fear blushing and to examine if the relationship between strict norms and fear of blushing is mediated by the anticipated judgment. Besides providing unstandardized regression coefficients with their corresponding significance tests (Figure 1), this macro provides a Sobel test that directly tests the indirect effect (Figure 1c, c'). The analyses showed that norms and judgment are both related to fear of blushing. Furthermore, Figure 1c' showed that strict norms remained a significant predictor after controlling for the anticipated judgment. However, Sobel's test of indirect effects was significant as well, $c-c' = 0.21$, $Z = 2.38$, $p = 0.017$, showing that the relationship between norms and fear of blushing can be partly explained by the anticipated negative judgment.

STUDY 2

The major aim of the second study was to examine if a selected sample of blushing-fearful individuals would indeed have stricter social norms than individuals without fear of blushing. Furthermore, an individual may have specific beliefs about what others find appropriate or not (the group norms), but this could differ from what he or she finds appropriate for himself or herself (one's own norm). For example, someone might suspect that others do not really mind if his or her mobile phone rings during dinner, but he or she does find that inappropriate himself or herself. Several studies showed that socially anxious

Table 2. Means (and standard deviations) of the descriptives and their correlations with both norms and the expected judgment

	M (SD)	2		3		4		5
		<i>r_{ab}</i>	<i>r_{ab.c}</i>	<i>r_{ab}</i>	<i>r_{ab.c}</i>	<i>r_{ab}</i>	<i>r_{ab.c}</i>	<i>r_{ab}</i>
1. BTSQ	31.96 (21.34)	0.43**	0.28*	-0.46**	-0.28*	0.66**	0.46**	0.57**
2. Norms	41.46 (14.93)	—	—	-0.44**	-0.32**	0.44**	0.28*	0.38**
3. Judgment	47.02 (9.69)	—	—	—	—	-0.45**	-0.24*	-0.45**
4. BPS	35.22 (13.45)	—	—	—	—	—	—	0.65**
5. FQ	13.86 (7.57)	—	—	—	—	—	—	—

Note. *r_{ab}* are the bivariate correlations, *r_{ab.c}* are partial correlation, controlled for the Fear Questionnaire. BTSQ = Blushing Subscale of the Blushing, Trembling and Sweating Questionnaire; Norms = social norms; Judgment = anticipated judgment; FQ-SP = the Social Phobia Subscale of the Fear Questionnaire; BPS = the Blushing Propensity Scale.

***p* < 0.01; **p* < 0.05.

individuals can be rather hard on themselves (c.f. Dijk, de Jong, Müller & Boersma 2010; Stopa & Clark, 1993; Wallace & Alden, 1995). Therefore, as a second aim, we tested whether blushing-fearful individuals not only attribute relatively strict norms to others but also perhaps are even stricter with regard to their own social norms.

METHOD

Participants

There were 33 individuals with social anxiety with a fear of blushing (mean age = 34 years, SD = 11; ♀ = 27 and ♂ = 6) and 31 non-fearful controls (mean age = 36 years, SD = 9; ♀ = 26 and ♂ = 5). There were no differences between groups concerning gender and age (both *ps* > 0.50). Fearful participants applied for treatment after reading in the media about a group treatment for fear of blushing (Dijk, Buwalda & de Jong, 2012). The Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Patient Edition (SCID-I/P) (Spitzer *et al.*, 1992) was used as a diagnostic interview to examine the presence of psychopathology. Blushing-fearful individuals were included when they met the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision (DSM-IV-TR) criteria of social phobia, with a fear of blushing as the main complaint (4th ed., text rev.; DSM-IV-TR; American Psychiatric Association, 2000). An exclusion criterion was the presence of other DSM-IV-TR axis I disorders more prominent than fear of blushing. This high-fear group was mixed concerning gender and age. Therefore, the group of non-fearful controls was recruited from the far social network (acquaintances of acquaintances) of students that worked with the authors based on these characteristics, to ensure that the groups would be similar with respect to these demographics. An exclusion criterion for the controls was a score above 50 on the Blushing Subscale of the BTSQ (Bögels & Reith, 1999) to guarantee that the control group did not contain

blushing-fearful individuals. The non-fearful controls were not interviewed with the SCID-I/P. Participants of both groups were unaware of the aims of the study.

Procedure and Measures

All participants gave informed consent before starting the study.

Restricted Norms and Anticipated Judgment

The vignettes resembled those from Study 1 but were adjusted to address the viewpoint of the current sample, which was more mixed concerning age. Furthermore, as in Study 1, there were vignettes about displaying uncertainty, assertive behaviour and social failure, but we added vignettes about social blunders. In total, there were 12 vignettes (Table 3). Participants were asked to rate on a 100-mm VAS ranging from *not at all* (0) to *very much* (100) to what extent they considered this behaviour as breaching the group norm ('Group Norm') and to what extent the behaviour breached their own norm ('Own Norm'). In addition, they were asked to indicate how they expected they would be evaluated by other people in this situation on a VAS ranging from *very positive* (0) to *very negative*² (100) (Judgment). Like in Study 1, the mean score of all types of situations was calculated for the three dependent variables. Internal consistency of all three variables was high (*as* > 0.80).

Sample Characteristics

For a more comprehensive description of the sample, the participants completed the same questionnaires as in Study 1.

²Note that the scale of the VAS that measured the Judgments in Study 2 is in the other direction of the VAS measuring Judgments in Study 1.

Table 3. Description of the vignettes of study 2

1.	Your voice trembles when you say something during a meeting.
2.	During dinner with colleagues, your phone rings.
3.	Despite the fact that all other people refrained from ordering a desert, you still decide to order your favourite desert.
4.	After a lecture, you ask a critical question from the audience.
5.	During a party, you cannot think of anything to say to keep the conversation going with the person who is sitting next to you.
6.	You start sweating visibly while talking with a group of people during a reception.
7.	You appear in leisurewear at an event where everybody is dressed formally.
8.	You were randomly selected to give a speech for the departing chairman of your club. During the speech, you cannot find any words.
9.	During a meeting of a drama club, someone gives you a sharp remark that makes everybody laugh. From your answer, it is clear that you did not understand the remark.
10.	Your hands tremble visibly while eating soup at a formal dinner.
11.	You ask a silly question during a meeting.
12.	During a training, you critically comment on a team member.

RESULTS AND DISCUSSION

Sample Characteristics

As can be seen in Table 4, the groups differed significantly with regard to fear of blushing, blushing propensity and social anxiety. In line with the results of Study 1, the stricter one's norms (own norms as well as group norm), the more negative the anticipated judgment. Again, as in Study 1, blushing propensity was clearly related to having strict beliefs about others' norms. A similar relationship was evident between BPS and strictness of one's own norms (the difference between the two correlations was not significant, $t(61) = 1.66, p = 0.10$).

Table 4. Means (and standard deviations) of the descriptives and their correlations with both types of norms and the expected judgment

	Group descriptives		Correlations		
	High fear	Low fear	4	5	6
1. BTSQ	79.53 (11.80)	14.08 (10.85)	0.45	0.55	0.52
2. FQ-SP	22.06 (6.98)	8.97 (6.20)	0.46	0.48	0.45
3. BPS	53.61 (11.78)	24.32 (12.28)	0.53	0.62	0.52
4. Group norm	56.45 (13.76)	45.63 (12.31)	—	0.82	0.70
5. Own norm	66.16 (12.62)	50.66 (12.08)	—	—	0.73
6. Judgment	61.90 (11.41)	51.39 (8.93)	—	—	—

Note. For all variables, the groups differed at the $p < 0.01$ level, and all correlations were significant at the $p < 0.01$ level. BTSQ = Blushing Subscale of the Blushing, Trembling and Sweating Questionnaire; FQ-SP = the Social Phobia Subscale of the Fear Questionnaire; BPS = the Blushing Propensity Scale; group norm = restricted group norm; own norm = restricted own norms; judgment = anticipated judgment.

Restricted Norms and Anticipated Judgment

As can be seen in Table 4, the high-fear group expected a less positive judgment from others in these types of situations, $t(62) = -4.09, p < 0.01$. To examine the difference between group norm and own norm for these two groups, we conducted a 2 (between, group) by 2 (within, type of norm) repeated-measures analysis of variance. This analysis revealed a main effect of type of norm, $F(1, 62) = 49.88, p < 0.01, \eta_p^2 = 0.45$; a main effect of group, $F(1, 62) = 19.23, p < 0.01, \eta_p^2 = 0.24$; and an interaction between type of norm and group, $F(1, 62) = 5.016, p = 0.03, \eta_p^2 = 0.08$. As can be seen in Table 4, the difference between own and other norm is larger for the high-fearful group. Thus, individuals who fear blushing might be especially strict in the norms they apply for themselves. However, dependent t -test per group showed that both groups were stricter in their own norms than in the norms they believed that others had (both $p < 0.01$). Also, independent t -test per type of norm showed that high-fearful individuals had stricter beliefs about both types of norms (both $ps < 0.01$).

GENERAL DISCUSSION

In two studies, we examined if blushing-fearful individuals are characterized by relatively strict views about the prevailing social norms, and we examined to what extent these strict norms may help explain their heightened expectancies of negative social outcomes in common social situations that could be interpreted as breaching a social norm but not necessarily so. Replicating previous findings (e.g., de Jong & Peters, 2005), the present studies showed that socially anxious individuals with a fear of blushing anticipated a more negative judgment than did non-fearful individuals, when displaying these particular ambivalent behaviours. Study 1 showed that the relation between a tendency to attribute relatively strict social norms to other people and fear of blushing could at least partly be explained by an anticipated negative judgment. The second study further showed that the strictness of participant's own norms with regard to these social behaviours might even be more important for blushing-fearful individuals.

Although previous research failed to find a difference between high and low socially anxious individuals with regard to their standards for social performance (i.e., others' expectations about their social skills; Bieling & Alden, 1997; Wallace & Alden, 1995), the present study did find a difference between their standards with regard to social norms. This may seem a subtle difference, but it may nevertheless be a critical one. It suggests that socially anxious individuals do display excessive standards with regard to what is and what is not appropriate behaviour

in a particular social context. Of course, the current study tested this for fear of blushing specifically and did not include a socially anxious control group. The partial correlations in Study 1 did show that the relations remained after controlling for social anxiety; thus, it seems that the relationship between fear of blushing and the strictness of social norms is at least partly specific for blushing fear. It would be interesting for future research to compare groups of socially anxious individuals with and without fear of blushing to test whether social norms are especially strict in fear of blushing or whether strict norms are a more general feature of social anxiety disorder.

Furthermore, the current results might give a first hint as to why people with a fear of blushing typically report that they do blush more easily and intensely than other people in both retrospective and event-contingent recording studies (aan het Rot *et al.*, 2015; Bögels *et al.*, 1996; Dijk & de Jong, 2013). The tendency of having relatively strict beliefs about what is appropriate social behaviour will logically lower the threshold for considering one's behaviour as violating the prevailing norms. Since social transgressions are important elicitors of the blush, people are generally inclined to blush when violating the observers' social norms (e.g., Castelfranchi & Poggi, 1990; de Jong *et al.*, 2002). Thus, a tendency to have strict social norms will promote a (dysfunctional) triggering of a blush response (c.f. Stein & Bouwer, 1997). Sustaining this line of reasoning, the present study indeed showed a significant correlation between self-reported blushing propensity and the tendency to attribute strict norms to other people. It should be acknowledged, however, that on the basis of this correlational finding, it cannot be ruled out that the direction of the relationship between the tendency of attributing strict norms and blushing propensity is the other way around, with high blushing propensity resulting in attributing stricter norms to other people. Future studies using an experimental approach are necessary to arrive at more final conclusions in this respect.

A limitation of this study is that it relies entirely on self-report. Previous studies showed that correlations between self-report and physiological measures of blushing are often low, which might indicate that people are not always good at estimating how intense or often they blush (Dijk *et al.*, 2009; Mulkens *et al.*, 1997). Therefore, in future research, it is important to test the relationship between strict norms and blushing using physiological measures as well. Another clear limitation of the current research is that both studies used a correlational approach. Future research manipulating the perceived strictness of other people's social norms is necessary to further test its causal role in generating the expectancy of receiving a negative judgment of others, as well as to test its alleged role in lowering the threshold for eliciting a blush. Also, more longitudinal studies could be helpful to shed light on the importance of strict social norms in the development of social fears.

To conclude, the present study clearly showed that blushing-fearful individuals attribute relatively strict social norms to other people and have stricter personal norms as well. Both types of strict norms may help explain why blushing-fearful individuals anticipate a negative judgment of others. This finding is in agreement with the idea that a biased judgment about the need for social appeasement is involved in fear of blushing and provides some entrances that can be addressed in therapy. That is, since a central characteristic of individuals with a fear of blushing is that they anticipate a negative judgment of others, therapists might be inclined to mainly challenge these catastrophic consequences (e.g., 'what would be the catastrophe if indeed your colleague would think that you dressed inappropriately') (e.g., Bögels, 2006). However, the current results indicate that it would be equally worthwhile to address socially anxious individuals' conception of the prevailing social norms (e.g., 'to what extent did you indeed dress inappropriately').

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