fear of blushing is a problem of hyper-awareness, not of facial temperature

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"At bottom every man knows well enough that he is a unique being, only once on this earth; and by no extraordinary chance will such a marvelously picturesque piece of diversity in unity as he is, ever be put together a second time." Frederich Nietzsche

"Courage is not simply one of the virtues but the form of every virtue at the testing point" C. S. Lewis

It's over ten years since research began to show that fear of blushing is more a problem of hyperawareness than of facial temperature. One of the early papers was by Mulkens & colleagues - *"Fear of blushing: fearful preoccupation irrespective of facial coloration"* - where the authors reported *"Women, with high (n = 29) and low (n = 28) fear of blushing, were exposed to a mild social stressor (watching a television test card in the presence of two male confederates) and to an intense social stressor (watching their own prerecorded 'sing' video, in the presence of two male confederates). Facial coloration and facial temperature were measured and participants rated their own blush intensity. No differences in actual blushing emerged between both groups. Meanwhile, high fearful individuals' self-reported blush intensity was significantly higher than that of low fearful individuals. Thus, fear of blushing seems to reflect a fearful preoccupation, irrespective of differential facial coloration."*

Subsequent work has shown similar results. So Gerlach et al, in *"Blushing and physiological arousability in social phobia"*, wrote *"Blushing is the most prominent symptom of social phobia, and fear perception of visible anxiety symptoms is an important component of cognitive behavioral models of social phobia. However, it is not clear how physiological and psychological aspects of blushing and other somatic symptoms are linked in this disorder. The authors tested whether social situations trigger different facial blood volume changes (blushing) between social phobic persons with and without primary complaint of blushing and control participants. Thirty social phobic persons. 15 of whom were especially concerned about blushing, and 14 control participants were assessed while watching an embarrassing videotape, holding a conversation, and giving a talk. Only when watching the video did the social phobic persons blush more than controls blushed. Social phobic persons who complained of blushing did not blush more intensely than did social phobic persons without blushing complaints ..."*

And socially anxious people are inaccurate as well when estimating other physical symptoms besides blushing. So, in their paper *"Self-reported and actual physiological responses in social phobia"*, Edelmann & Baker noted *"The aim of the current study was to compare physiological reactions and self-reports of bodily sensations for social phobics, clinically anxious and non-anxious controls across four tasks ... Two were designed to be demanding, either physically (riding an exercise bicycle) or mentally (mental arithmetic task), while two, a mental imagery task (personally relevant situation) and a social conversation, were designed specifically to be anxiety provoking ... Of the 54 participants, 18 were generalized social phobics, 18 were clinically anxious but not socially phobic (8 with panic disorder, 6 with generalized anxiety disorder and 4 simple phobics), and 18 were non-anxious. Heart rate, skin conductance, and facial and neck temperatures were recorded continuously during four different tasks and rest periods with corresponding self-report ratings of bodily sensations taken to reflect 13 sampling points. Results: There were no group differences on any of the physiological measures during any of the four tasks. However, there were a number of between-group differences with regard to ratings of bodily* ***[Cont.]***

sensations. Both clinical groups had higher ratings of racing heart than the non-anxious control group during the imagery task. In addition, social phobics had significantly higher ratings of racing heart during the social conversation in relation to both comparison groups. With regard to ratings of body heat, the anxious group had greater ratings than the non-anxious controls during the imagery task. Finally with regard to ratings of sweaty hands, both clinical groups had higher ratings than the non-anxious controls during the social conversation. All three groups were generally inaccurate in their ratings of bodily sensations. Conclusions: Social phobics do not experience a unique physiological reaction during social threat but report their heart rate as being greater than is the case for non-social phobics during such situations. It is noteworthy how inaccurate perceptions of body state were for all groups in this study. What appears important in social phobia, then, is not actual body changes in social situations but the perceptions sufferers have."

Subsequent research has continued to show a similar picture. People with fear of blushing show some relatively minor differences in triggers, colouration and duration of increased facial blood flow, but the really big differences are in hyperawareness and also in negative beliefs – that blushing will mean they will judged to be inadequate in some way. I'll write a further post soon highlighting that people who blush are, in many situations, actually judged as more trustworthy and generous than people who don't, however blushing phobics don't realise this.

This work has obvious treatment implications. If you're frightened of blushing (or other anxiety related symptoms), you can correctly remind yourself that a.) humans are very inaccurate at estimating the real degree of physiological changes like increase in facial redness (you're probably not blushing as much as you think you are). b.) there is little difference between how much you get red and how much someone not phobic of blushing gets red in challenging situations (many people flush a bit in some social situations, but a high proportion don't rate it as a problem). c.) the problem really is one of hyperawareness much more than of actually going red or not. So what does someone, who occasionally flushes a bit but who isn't particularly concerned about it, pay attention to if they are not hyperaware of facial temperature & colour as a social phobic might be? The difference is that they're likely to be "task-focused" rather than "self-focused".

Excessive, self-evaluative self-focus is a bit of a poison pill for the socially anxious - it makes us worse. Although fascinatingly, a more "mindful", concrete attending to sensory experience rather than analytically evaluating it seems not to feed self-judgement in the same way – see *"Adaptive and maladaptive self-focus: A pilot extension study with individuals high and low in fear of negative evaluation"*. There are a number of research studies that show how self-focused evaluation is toxic though – for example, Zhou et al in their paper *"The effect of attentional focus on social anxiety"*, wrote *"Subjects were ... asked to engage in a 5min conversation with the first author, and were instructed to either self-focus (SFA condition) or task-focus (TFA condition). Levels of social anxiety and self-awareness were measured using visual analogue scales. Results suggest that the there was a significant condition by group interaction, with high blushing individuals showing considerably higher levels of social anxiety in the SFA condition compared to the TFA condition ...".* So can people train themselves to become more task-focused? Certainly! Sometimes it can be done in an instant. I personally was troubled a lot by blushing as a teenager. I remember on one occasion "hiding" in the kitchen when my older brother and sister had invited a lot of friends round for a party. My mother, who was typically very loving and supportive, found me and gave me a bit of a pull-your-socks-up message, saying something like *"These people are your guests too. Some of them feel shy and awkward here. It's your job as host to get out there, talk with them, and help them relax, feel welcomed and at home here."* Surprised and a little tail-between-my-legs I went out into the party. Sure enough there were people dotted here and there who did look uncomfortable and isolated. I went up to one or two and started to chat to try to be a better host. After a few minutes I noticed, rather too my amazement, that I wasn't feeling shy at all anymore. Good task focus! ***[Cont.]***

And this approach has been developed into a good treatment for social phobia. Bogels and colleagues reported on this in their paper *"Fear of blushing: effects of task concentration training versus exposure in vivo on fear and physiology".* They wrote *"Patients with fear of blushing as the predominant complaint (N = 31) were randomly assigned to (1) exposure in vivo (EXP), or (2) task concentration training (TCT), in order to test the effect of redirecting attention above exposure only ... Both treatments appeared to be effective in reducing fear of blushing and realizing cognitive change. Yet, at posttest, TCT tended to produce better results with respect to fear of blushing. At 6-weeks follow-up, TCT produced significantly more cognitive change." And the method was extended to include other social anxiety symptoms in the paper "Task concentration training versus applied relaxation, in combination with cognitive therapy, for social phobia patients with fear of blushing, trembling, and sweating" where Bogels found "Social phobia patients with fear of blushing, trembling, sweating and/or freezing as main complaint (N = 65) were randomly assigned to either task concentration training (TCT) or applied relaxation (AR) both followed by cognitive therapy (CT). Measurements took place before and after wait-list, after TCT or AR (within-test), after CT (post-test), at 3-months and at 1-year follow-up. Effects were assessed on fear of showing bodily symptoms (the central outcome variable), social phobia, other psychopathology, social skills, self-consciousness, self-focused attention, and dysfunctional beliefs. No changes occurred during wait-list. Both treatments were highly effective. TCT was superior to AR in reducing fear of bodily symptoms and dysfunctional beliefs at within-test. This difference disappeared after CT, at post-test and at 3-months follow-up. However, at 1-year follow-up the combination TCT-CT was superior to AR-CT in reducing fear of bodily symptoms, and effect sizes for TCT-CT reached 3. Furthermore, at all assessment moments TCT or the combination TCT-CT was superior to AR-CT in reducing self-consciousness and self-focused attention. The superior long-term effect of TCT on fear of showing bodily symptoms is explained by lasting changes in attentional focus."*

Pretty convincing stuff! It reminds me of the linked handout *"The bus driver metaphor"* and the task-focused challenge of driving *"the bus of our life"* without being distracted by the unruly passengers of unhelpful thoughts & feelings. The process can be made even more effective by incorporating implementation intentions as shown by Webb et al in their recent paper *"Using implementation intentions to overcome the effects of social anxiety on attention and appraisals of performance."* For more on this see the posts *"Implementation intentions & reaching our goals more effectively"* and related companion handouts. Next week I'll write about the fascinating recent finding that people who blush are, in many situations, actually judged by others as more trustworthy and generous than people who don't.