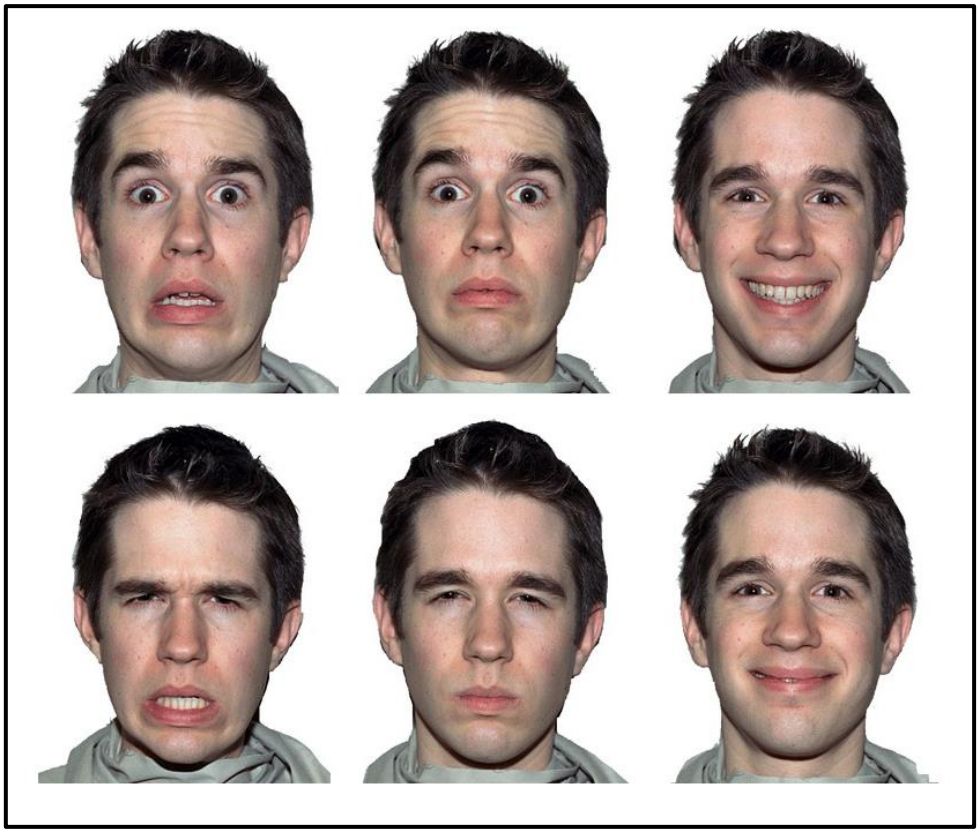
Supplementary materials.

Here we present for the reader the relevant information that we were not able to present in the main article.

Examples of the emotional face stimuli.

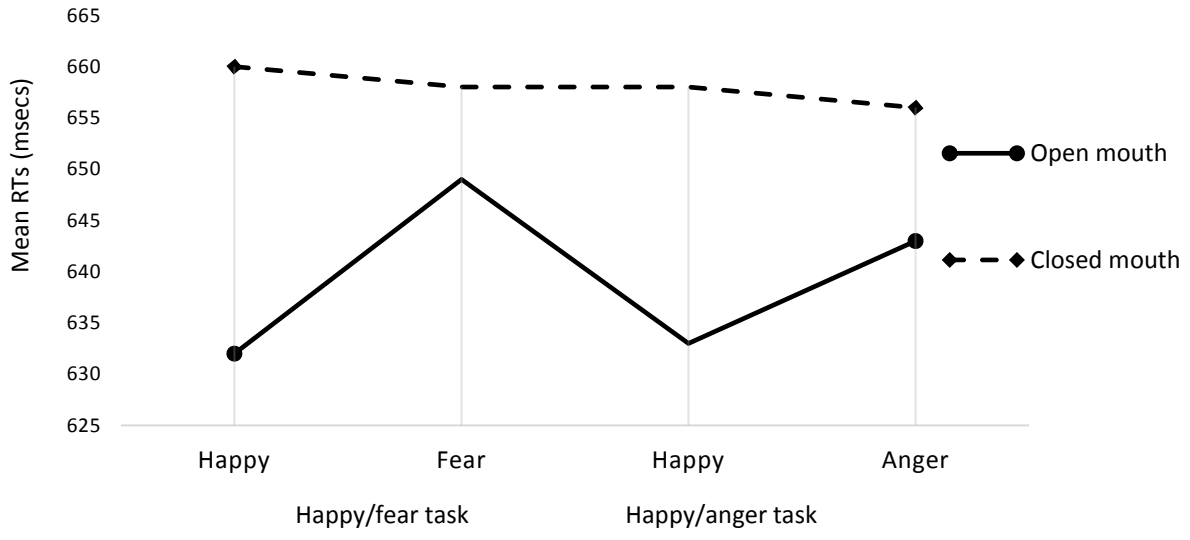


Example of one of the sets of emotional faces used. Clockwise from top left: fear open mouth; fear closed mouth; happy open mouth; happy closed mouth; anger closed mouth; anger open mouth. The model from the NimStim (Tottenham et al., 2009) that is shown here has given prior permission for their photographs to be published in academic journals.

Reaction time analysis: extra information

Mean RTs, 95% confidence intervals (95% CIs), and standard errors (SE) for each of the 8 stimulus types (listed by target emotion versus mouth versus discrimination task). All values are in msecs.

Happy/fear task				Happy/anger task			
Trial type	**Mean**	**95% CI**	**SE**	**Trial type**	**Mean**	**95% CI**	**SE**
Happy closed	660	638-681	11	**Happy closed**	658	636-679	11
Happy open	632	609-654	11	**Happy open**	633	612-654	11
Fear closed	658	637-680	11	**Anger closed**	656	634-678	11
Fear open	649	628-670	11	**Anger open**	643	621-666	11



Mean RTs for each of the emotional face stimuli separated by discrimination task and mouth type.

Calculating the general RT factor

Exploratory factor analyses clearly revealed a strong general RT factor across all conditions for both discrimination tasks. To estimate the general RT factor we used a maximum likelihood extraction of two factors using mean RTs from each participant for each of the 8 stimulus types. Factor 1 was clearly the general RT factor (all loadings > 0.91), which accounted for 86% of the variance). Factor 2 was small and accounted for 6% of the variance. The pattern of the loadings appeared to support the view that factor 2 was a discrimination task factor. In short, stimuli from the Happy/fear discrimination task all loaded positively on factor 2, whereas stimuli from the happy/anger discrimination task all loaded negatively on factor 2. We used the general RT factor in a series of exploratory partial correlations to determine if social anxiety shared any suppressed RT correlations with any specific emotional facial expression.

Gender differences

SIAS scores and SPS scores were slightly higher for females (mean = 22.9, SD = 12.4 and mean = 18.8, SD = 12.8, respectively) than for males (mean = 17.0, SD = 9.9 and mean = 13.8, SD = 7.6, respectively). STAI trait scale scores were also slightly higher for females (mean = 43.9, SD 9.3) than for males (mean = 39.6, SD = 7.5). Exploratory t-tests confirmed that there were no gender differences in RTs to averaged threat-related faces, averaged happy faces, or the RT difference between averaged threat-related faces and averaged happy faces (all *t*s < 1.1, all *p*s > 0.2). Relative to when the whole sample was analysed, the correlation between social anxiety and the RT difference between averaged threat-related faces and averaged happy faces, and the RT difference between averaged threat-related faces and averaged happy faces (in the closed mouth condition), were only slightly stronger when just the females were analysed (r= -0.36, p=0.005 and r= -0.41, p=0.001, respectively).

Confirming that there were no effects of social anxiety upon recognition accuracy.

Accuracy levels were very high for all trial types. Mean proportion correct ranged from 0.94 - 0.96. Our main focus was upon RTs, but we confirmed that social anxiety did not significantly interact with any main effects or interactions in the accuracy data (all Fs < 2.6, all ps > 0.10).

Looking at the effect of time on task upon reaction times.

Each of the two tasks (happy vs. fear faces; happy vs. angry faces) was quite long and so it might be that anxiety-related effects habituate across the task, thereby reducing the size of the effects reported which were based on the whole task. To analyse this we carried out a series of robust generalised linear model analyses using the general estimating equations (GEE) approach to regression (Liang & Zeger, 1986). This technique allows the RT on each trial for each subject to be used in the analysis without aggregation into an average RT per condition for each participant. It also allows us to code each trial in terms of the various predictors (emotion of face; mouth open vs. closed; trial number within block) as well as creating a new predictor reflecting time on task (trials block: 1st half vs 2nd half). Between-subjects predictors (such as the social anxiety score) are also included. These analyses were carried out in SPSS 23 using the same exclusion criteria for outliers as in the main paper. We ran the analyses separately for the 2 tasks (fear vs. happy and anger vs happy), as the tasks were distinct and had a short rest between them which was likely to have reset any time on task effect somewhat. The various options for executing these GEE analyses (such as the different types of working correlation matrix) all gave very similar results, as is common with this method (Liang & Zeger, 1986).

First, for both tasks, the findings in the main paper were all reproduced, with very strong face emotion by social anxiety effects (ps < 0.001). The mouth type by emotion type interaction was robustly significant for the fear vs happy task and was a borderline significant effect for the anger vs happy task. As for the main paper, analysis of the 3-way interaction for social anxiety by emotion type by mouth type was not significant for either task.

Second, there were significant (for anger vs happy tasks) or borderline significant (for the fear vs happy task) effects of trial block, such that the RTs in the second half of the task were quicker than those in the first half. In the fear vs happy task there was a significant effect of face emotion type and trial block ($p<0.01$), such that the RTs for fear faces sped up between the first half of the task and the second while the RTs for the happy face were fast throughout. For the anger vs happy task, there was a similar effect ($p<0.02$) with the angry face RTs speeding up from the 1st half to the second to a greater extent than occurred for the happy faces.

Third, and most importantly, the social anxiety by emotion type by trial block interactions were non-significant for both tasks ($p>0.1$ in all cases). Thus, although time on tasks had some effects on RTs, there was no evidence that time on the task moderated the effects of social anxiety.

References

Liang, K.-Y., & Zeger, S. L. (1986). Longitudinal Data Analysis Using Generalized Linear Models. *Biometrika*, *73*(1), 13–22.