

Supplementary results

Binomial analysis of receivers' ability to discriminate male fear sweat from male neutral sweat on the sweat discrimination task (aggregated over the first two trials) revealed that women performed better than chance (25%), $Z = 5.88$, $p = .002$. For all remaining comparisons, $p > .05$ (Table 1). When comparing the overall performance of the sexes on the sweat discrimination task, women performed significantly above chance, $Z = 2.75$, $p = .008$, whereas men did not, $Z = .39$, $p = .769$. Hence, consistent with previous research (Brand & Millot, 2001; Chen & Haviland-Jones, 2000), women performed better than men in discriminating between sweat types on the basis of the emotion of the sender.

A further examination of sex differences in self-reported sweat ratings revealed that women judged male fear sweat to be more intense, $t(50) = 2.45$, $p = .018$, and less pleasant, $t(50) = 2.32$, $p = .025$, than did men. In contrast, men rated female fear sweat as more intense than male neutral sweat, $Z = 2.00$, $p = .045$. All other comparisons were not significant (see Table 2). Importantly, facial EMG parameters were not impacted by women's ratings of sweat hedonics and intensity, as comparisons of these values within the female participant group revealed only non-significant differences, $p > .05$. Concerning facial EMG activity, the set of outcomes that were not central to the conclusions reported in the main text are presented in Table 3 and Table 4.

Our secondary target was to conceptually replicate previous results regarding facial EMG activity emerging as a consequence of neutral and fear-inducing audiovisual and olfactory information (de Groot et al., in press). Note that the current contribution did not constitute a direct replication, given the presence of four sweat exposure conditions instead of two, the presentation of six video clips per condition rather than twelve, and the presence of male receivers in addition to female receivers (cf. de Groot et al., in press). Analysis of variance nevertheless revealed a main effect of audiovisual information on *medial frontalis*

activity, $F(1,50) = 8.07, p = .006$, and *corrugator supercilii* activity, $F(1,50) = 15.86, p < .001$, with fear-inducing scenes leading to elevated facial muscle activity indicative of fear (Table 5). However, similar effects were not observed for olfactory information, *medial frontalis*, $F(1,50) = 3.78, p = .058$; *corrugator supercilii*, $F(1,50) = 1.02, p = .32$ (Table 5). To verify its robustness, future research should identify the specific boundary conditions under which fear sweat exerts its fear-inducing effects over time regardless of co-presented audiovisual information.

Whereas no sex differences were encountered with regard to mean *medial frontalis* activity, $F < 1$, women showed larger *corrugator supercilii* responses compared to men, $F(1,50) = 20.34, p < .001$. Women particularly showed strong *corrugator supercilii* responses following the presentation of fear-inducing audiovisual information, $F(1,50) = 19.12, p < .001$, implying that women experienced greater negative affect than men in this condition. All other between-sex comparisons were not significant, $\alpha = .05$.

Table 1. *Number of correct and incorrect discriminations between male fear sweat (MF), male neutral sweat (MN), female fear sweat (FF), and female neutral sweat (FN) on each trial (T1-T4).*

	Male discriminator		Female discriminator	
	Correct	Incorrect	Correct	Incorrect
T1: MF – MN	14	12	20	6
T2: MF – MN	9	17	16	10
T3: FF – FN	14	12	17	9
T4: FF – MF	17	9	13	13

Table 2. *Median (range) pleasantness and intensity ratings of male and female judges per sweat type.*

	Male rater		Female rater	
	Pleasantness	Intensity	Pleasantness	Intensity
Male fear sweat	4 (2-6)	3 (1-7)	3 (1-6)	5 (1-6)
Male neutral sweat	4 (2-6)	3 (1-6)	3.5 (1-6)	3 (1-7)
Female fear sweat	4 (1-6)	4 (1-6)	3 (1-6)	4.5 (1-7)
Female neutral sweat	4 (2-6)	3 (1-7)	4 (2-5)	4 (1-6)

Table 3. *Additional results from four-way ANOVA on mean facial muscle activity (medial frontalis, corrugator supercilii) with receiver sex (male, female) as between subjects factor and sender sex (male, female), emotion (fear, neutral), and time (0-4 s) as within-subjects factors.*

Effects	<i>Medial frontalis</i>		<i>Corrugator supercilii</i>	
	<i>F</i> (df)	<i>p</i>	<i>F</i> (df)	<i>p</i>
Time	10.37 (4,200)	<.001	12.48 (4,200)	<.001
Emotion	5.58 (1,50)	.022	2.62 (1,50)	.112
Sender sex	3.01 (1,50)	.089	<1 (1,50)	.420
Sender sex x Emotion	6.72 (1,50)	.012	2.05 (1,50)	.158
Sender sex x Time	1.45 (4,200)	.219	<1 (4,200)	.744
Emotion x Time	2.53 (4,200)	.057*	1.07 (4,200)	.371
Sender sex x Emotion x Time	2.90 (4,200)	.023	1.34 (4,200)	.255
Sender sex x Emotion x Receiver sex	4.99 (1,50)	.030	1.97 (1,50)	.167
Sender sex x Emotion x Time x Receiver sex	2.89 (4,200)	.023	<1 (4,200)	.861

Note. *The Greenhouse-Geisser corrected result (Emotion x Time: $\epsilon = .75$; uncorrected, $p = .042$) was reported only when Mauchly's test indicated that the sphericity assumption had been violated and Greenhouse-Geisser correction of degrees of freedom would lead to a different interpretation of the result, given $\alpha = .05$.

Table 4. *Additional results from three-way ANOVA on mean facial muscle activity (medial frontalis, corrugator supercilii) with sender sex (male, female), emotion (fear, neutral), and time (0-4 s) as within-subjects factors.*

Effects	<i>Medial frontalis</i>		<i>Corrugator supercilii</i>	
	<i>F</i> (df)	<i>p</i>	<i>F</i> (df)	<i>p</i>
<i>Female</i>				
Sender sex x Emotion	7.54 (1,25)	.011	2.44 (1,25)	.131
Sender sex x Time	<1 (4,100)	.948	1.55 (4,100)	.192
Emotion x Time	5.15 (4,100)	<.001	2.61 (4,100)	.062*
Sender sex x Emotion x Time	3.06 (4,100)	.020	<1 (4,100)	.560
<i>Male</i>				
Sender sex x Emotion	<1 (1,25)	.710	<1 (1,25)	.973
Sender sex x Time	6.46 (4,100)	<.001	2.73 (4,100)	.052*
Emotion x Time	1.68 (4,100)	.160	7.58 (4,100)	<.001
Sender sex x Emotion x Time	2.45 (4,100)	.051	1.35 (4,100)	.257

Note. *The Greenhouse-Geisser corrected result (Emotion x Time: $\epsilon = .70$; uncorrected, $p = .040$; Sender sex x Time: $\epsilon = .72$; uncorrected, $p = .033$) was reported only when Mauchly's test indicated that the sphericity assumption had been violated and Greenhouse-Geisser correction of degrees of freedom would lead to a different interpretation of the result, given $\alpha = .05$.

Table 5. *Mean (standard deviation) facial muscle activity (microvolt) per participant group (female, male) as a function of four conditions, involving combinations of olfactory fear (OF), audiovisual fear (AVF), olfactory neutral (ON), and audiovisual neutral (AVN) information.*

<i>Medial frontalis</i>		<i>Corrugator Supercilii</i>	
Female	Male	Female	Male

OF, AVF	2.21 (0.77)	2.15 (0.99)	7.07 (3.94)	2.91 (1.73)
ON, AVF	2.19 (0.78)	2.31 (1.41)	6.81 (3.78)	2.90 (1.60)
OF, AVN	1.92 (0.65)	2.11 (0.91)	5.42 (3.49)	2.94 (2.01)
ON, AVN	2.13 (0.90)	2.22 (1.29)	6.10 (3.94)	2.98 (1.87)