Supplementary Materials for Gold et al., "The Perception of a Familiar Face is No More Than the Sum of Its Parts"

Stimuli

We report here the dimensions and locations of the 2-dimensional Gaussian windows that were applied to the faces to isolate the individual features, as described in the main article. Table S1 lists these values for each feature within each set of faces.

Data and Analyses

We include here additional figures (Figures S1 and S2) that show the sensitivities and indices that produced the data shown in Figure 1. We also include the results of the individual t-tests carried out on the integration indexes, as described in the main article (Table S2).

One observer (observer S10, from Group 2) was removed from all analyses due to an inability to obtain reliable sensitivity estimates in three of the four isolated feature conditions (nose, mouth and left eye). We were also unable to obtain reliable sensitivity estimates for some observers in some individual isolated features conditions. For these cases, we assigned a sensitivity of zero when computing the observer's integration index. We chose to do this because assigning a sensitivity of zero will yield an upper bound on an observer's integration index. That is, it will produce the most liberal estimate of an observer's integration index.

Figure S1 plots the sensitivities for individual observers (filled circles) as well as the mean across observers (open symbols) for each feature and the combination of features. The data for each Group, Face Set and Session combination are shown in individual plots. Note that sensitivities were generally higher for familiar than unfamiliar faces, showing that familiarity did serve to improve the overall absolute level of performance, even though it had no effect on integration efficiency.

Figure S2 plots the corresponding integration indices for individual observers as well as the mean across observers for each Group, Face Set and Session combination. Figure S2 also plots the predictions of a 'best feature' model – a model where the sensitivity for the combined stimulus is determined by the individual feature to which the observer is most sensitive. Specifically, the best feature model's integration index is computed as follows:

$$\Phi_{\text{best feature}} = \frac{S^2_{combined}}{\max[S^2_{\text{left eye}}, S^2_{\text{right eye}}, S^2_{\text{mouth}}, S^2_{\text{nose}}]} \quad \text{(S1)}$$

Set	*Feature*	*Horizontal σ (pixels; degrees)*	*Vertical Size σ (pixels; degrees)*	*Horizontal Offset from Center (pixels; degrees)*	*Vertical Offset from Center (pixels; degrees)*
1	*Left eye*	13; 0.21	12; 0.20	-32; -0.52	-36; -0.59
	Right Eye	13; 0.21	12; 0.20	32; -0.52	-36; -0.59
	Nose	12; 0.2	8; 0.13	0; 0.00	8; 0.13
	Mouth	15; 0.25	8; 0.13	0; 0.00	47; 0.77
2	*Left eye*	13; 0.21	12; 0.20	-34; -0.56	-26; -0.43
	Right Eye	13; 0.21	12; 0.20	34; 0.56	26; 0.43
	Nose	10; 0.16	9; 0.15	0; 0.00	15; 0.25
	Mouth	15; 0.25	8; 0.13	0; 0.00	54; 0.89

Table S1: Dimensions of the 2D Gaussian windows applied to each feature within each set of faces, expressed in pixels and degrees of visual angle. The horizontal and vertical offset are measured relative to the center of the image (location 129, 129 in the image matrix). Negative offsets correspond to a leftward offset.

	Session 1	*Session 2*	*Session 3*
Group 1, Set 1	M=0.93, SD = 0.35 t(6) = -0.51 *p* = 0.62 Cohen's *d* = 0.20	M=0.71, SD = 0.17 t(6) = -4.31, *p* = 0.005 Cohen's *d* = 1.61	**M=0.67, SD = 0.17** **t(6) = -5.15, *p* = 0.002*** **Cohen's *d* = 1.94**
Group 2, Set 2	M=0.81, SD = 0.39 t(5) = -1.20, *p* = 0.28 Cohen's *d* = 0.49	M=0.81, SD = 0.15 t(5) = -3.18, *p* = 0.025 Cohen's *d* = 1.26	M=0.79, SD = 0.35 t(5) = -1.51, *p* = 0.19 Cohen's *d* = 1.51
Group 1, Set 2	M=0.89, SD = 0.93 t(6) = -0.31, *p* = 0.77 Cohen's *d* = 0.12	M=0.65, SD = 0.29 t(6) = -3.21, *p* = 0.018 Cohen's *d* = 1.22	M=0.72, SD = 0.24 t(6) = -3.12, *p* = 0.021 Cohen's *d* = 1.18
Group 2, Set 1	M=0.98, SD = 0.51 t(5) = -0.08, *p* = 0.94 Cohen's *d* = 0.04	M=0.95, SD = 0.32 t(5) = -0.42, *p* = 0.69 Cohen's *d* = 0.17	M=0.78, SD = 0.27 t(5) = -1.94, *p* = 0.11 Cohen's *d* = 0.79

Table S2. Results of a one-sample t-test (two-tailed) applied to each set of data, testing the probability that the mean of each sample significantly differs from an index of 1. Each cell shows the mean (M), standard deviation (SD), t-score (t), significance value (p), and effect size (Cohen's *d*) for the t-test. (**bold ***) denotes a significant test, taking into account a Bonferroni correction for multiple comparisons (p<.0042).

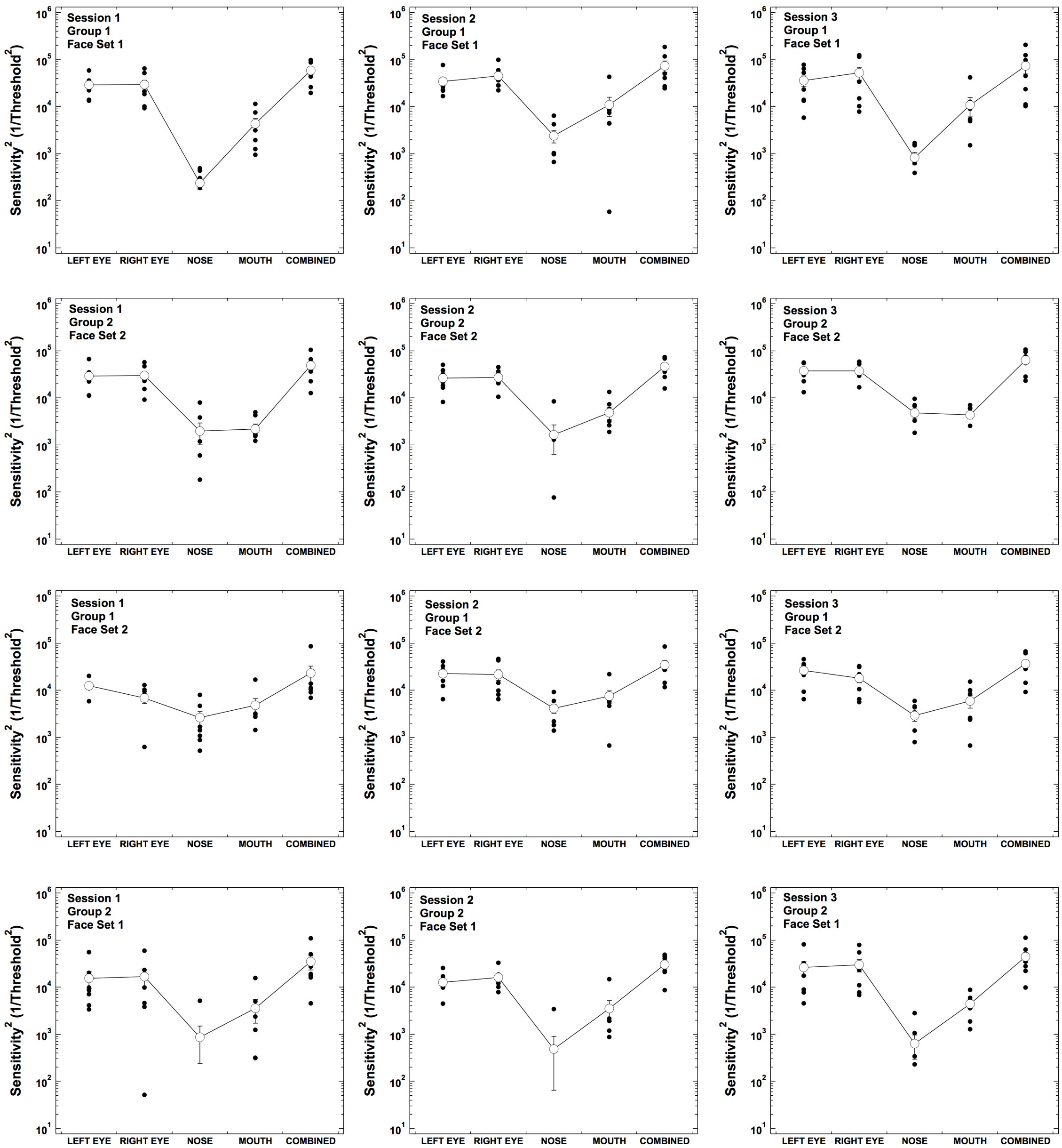

Figure S1. Sensitivities for individual observers (filled circles) and the mean across observers (open symbols) across conditions for each combination of observer group, face set and session. Error bars on each mean sensitivity correspond to +/- 1 S.E.M.

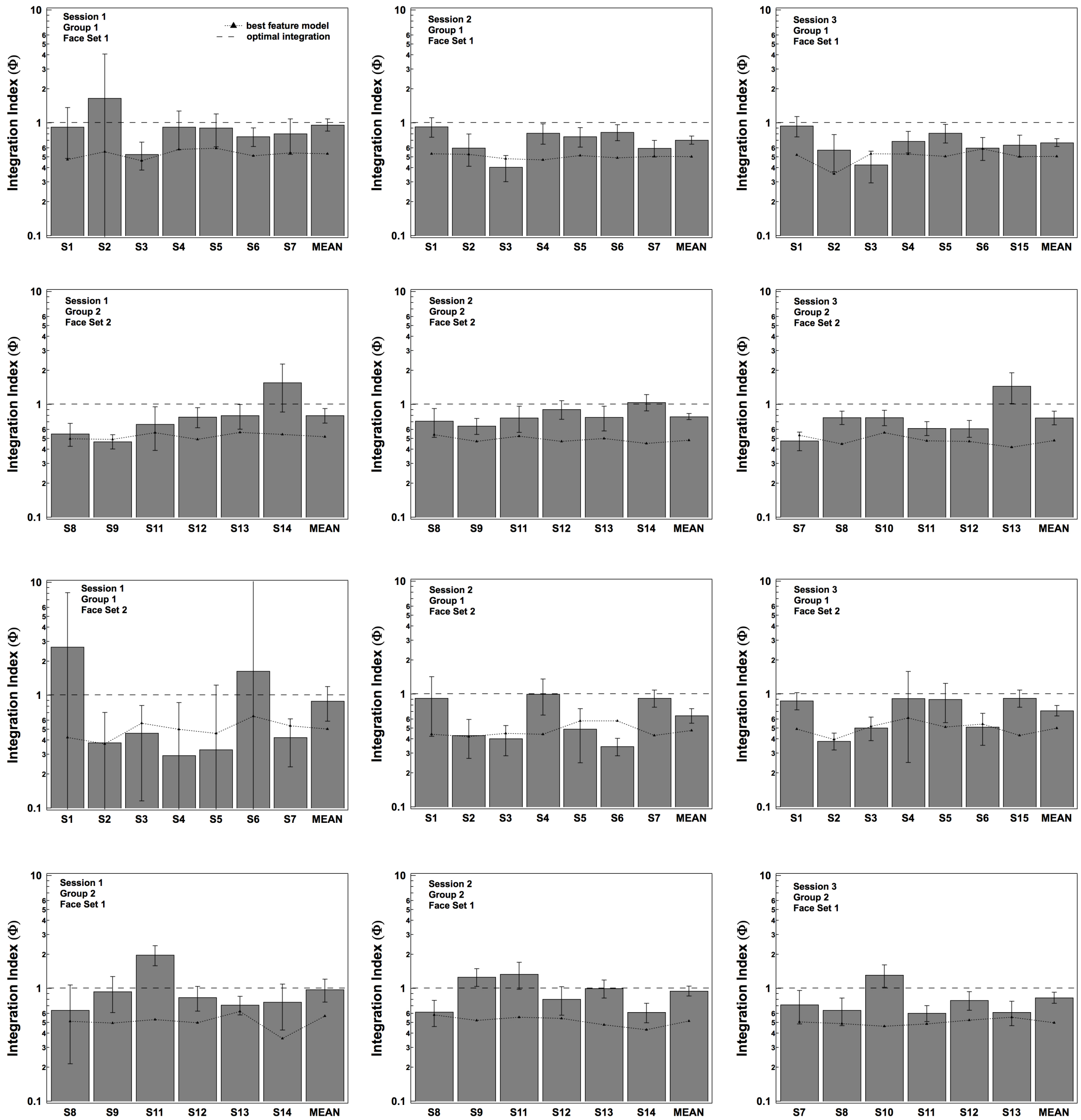

Figure S2. Integration indices for individual observers and the mean across observers for each combination of observer group, face set and session. Triangles show the predictions of a ‘best feature’ model (see Equation S1). Error bars correspond to +/- 1 S.E.M.