Supplementary Materials

Table S1

Scale Similarity × Culture of Perceiver × Culture of Expresser Mixed-Design Analysis of Variance for the Non-intended Ratings of the Static Expressions in Studies 1 and 2 (raw scores)

Effects	Study 1 (Static Task)				Study 2 (Static Task)				Studies 1&2 (Static Task)				*Hs*
	df	*F*	*p*	η_p^2	df	*F*	*p*	η_p^2	df	*F*	*p*	η_p^2	
S	(1, 207)	565.08	< .001	.732	(1, 197)	775.82	< .001	.797	(1, 408)	1110.44	< .001	.731	*H1*
P	(1, 207)	88.77	< .001	.300	(1, 197)	22.71	< .001	.103	(1, 408)	93.91	< .001	.187	*H2*
E	(1, 207)	0.11	.747	.001	(1, 197)	0.10	.758	< .001	(1, 408)	0.02	.897	< .001	
S × P	(1, 207)	60.96	< .001	.227	(1, 197)	1.77	.185	.009	(1, 408)	34.48	< .001	.078	*Explorative*
S × E	(1, 207)	2.50	.115	.012	(1, 197)	1.71	.192	.009	(1, 408)	4.11	.043	.010	
P × E	(1, 207)	14.66	< .001	.066	(1, 197)	3.27	.072	.016	(1, 408)	1.89	.170	.005	
S × P × E	(1, 207)	4.82	.029	.023	(1, 197)	4.23	.041	.021	(1, 408)	0.01	.939	< .001	

Note. S = Scale Similarity, P = Culture of Perceiver, E = Culture of Expresser. In the static task of Study 2, the two-way interaction between Scale Similarity and Culture of Perceiver was not significant. However, the three-way interaction between Scale Similarity, Culture of Perceiver, and Culture of Expresser was significant. Follow-up analyses provided partial support for H3, with the difference between Chinese and Dutch perceivers being greater for judgments on morphologically similar scales than for judgments on morphologically dissimilar scales for Chinese stimuli, but not for Dutch stimuli.

Table S2

Scale Similarity× Context Similarity × Culture of Perceiver × Culture of Expresser Mixed-Design Analysis of Variance for the Non-intended Ratings of the Dynamic Expressions in Studies 1 and 2 (raw scores)

Effects	Study 1 (Dynamic Task)				Study 2 (Dynamic Task)				Studies 1&2 (Dynamic Task)				*Hs*
	df	*F*	*p*	η_p^2	df	F	p	η_p^2	df	*F*	*p*	η_p^2	
S	(1, 207)	600.34	< .001	.744	(1, 197)	544.32	< .001	.734	(1, 408)	1019.12	< .001	.714	*H1*
C	(1, 207)	3.58	.060	.017	(1, 197)	51.03	< .001	.206	(1, 408)	34.52	< .001	.078	
P	(1, 207)	56.11	< .001	.213	(1, 197)	9.59	.002	.046	(1, 408)	52.47	< .001	.114	*H2*
E	(1, 207)	0.61	.437	.003	(1, 197)	1.18	.279	.006	(1, 408)	1.41	.235	.003	
S × P	(1, 207)	81.00	< .001	.281	(1, 197)	9.84	.002	.048	(1, 408)	63.20	< .001	.134	*Explorative*
S × E	(1, 207)	2.12	.147	.010	(1, 197)	0.07	.791	< .001	(1, 408)	0.71	.399	.002	
C × P	(1, 207)	0.04	.839	< .001	(1, 197)	6.45	.012	.032	(1, 408)	2.77	.097	.007	
C × E	(1, 207)	2.52	.114	.012	(1, 197)	3.35	.069	.017	(1, 408)	5.19	.023	.013	
S × C	(1, 207)	3.17	.076	.015	(1, 197)	3.15	.078	.016	(1, 408)	6.30	.012	.015	
P × E	(1, 207)	8.61	.004	.040	(1, 197)	3.91	.049	.019	(1, 408)	0.40	.530	.001	
S × P × E	(1, 207)	4.15	.043	.020	(1, 197)	3.97	.048	.020	(1, 408)	0.01	.935	< .001	
C × P × E	(1, 207)	0.47	.493	.002	(1, 197)	0.05	.820	< .001	(1, 408)	0.19	.667	< .001	
S × C × P	(1, 207)	2.98	.086	.014	(1, 197)	6.53	.011	.032	(1, 408)	9.45	.002	.023	*Explorative*
S × C × E	(1, 207)	3.28	.071	.016	(1, 197)	0.15	.702	.001	(1, 408)	0.81	.368	.002	
S × C × P × E	(1, 207)	0.79	.375	.004	(1, 197)	1.19	.276	.006	(1, 408)	2.06	.152	.005	

Note. S = Scale Similarity, C= Context Similarity, P = Culture of Perceiver, E = Culture of Expresser.

Table S3

Scale Similarity × Culture of Perceiver × Culture of Expresser Mixed-Design Analysis of Variance for the Non-intended Ratings of the Static Expressions in Studies 1 and 2 (standardized scores)

Effects	Study 1 (Static Task)				Study 2 (Static Task)				Studies 1&2 (Static Task)				*Hs*
	df	*F*	*p*	η_p^2	df	*F*	*p*	η_p^2	df	*F*	*p*	η_p^2	
S	(1, 207)	586.84	< .001	.739	(1, 197)	820.80	< .001	.806	(1, 408)	1210.09	< .001	.748	*H1*
P	(1, 207)	10.31	.002	.047	(1, 197)	8.77	.003	.043	(1, 408)	18.88	< .001	0.044	*H2*
E	(1, 207)	0.39	.533	.002	(1, 197)	0.19	.663	.001	(1, 408)	< .001	0.986	< .001	
S × P	(1, 207)	90.89	< .001	.305	(1, 197)	10.91	.001	.009	(1, 408)	75.04	< .001	0.155	*Explorative*
S × E	(1, 207)	1.99	.160	.010	(1, 197)	2.20	.139	.011	(1, 408)	4.23	0.04	0.01	
P × E	(1, 207)	15.59	< .001	.070	(1, 197)	3.42	.066	.017	(1, 408)	2.44	0.119	0.006	
S × P × E	(1, 207)	4.27	.040	.020	(1, 197)	4.84	.029	.024	(1, 408)	< .001	0.965	< .001	

Note. S = Scale Similarity, P = Culture of Perceiver, E = Culture of Expresser.

Table S4

Scale Similarity × Context Similarity × Culture of Perceiver × Culture of Expresser Mixed-Design Analysis of Variance for the Non-intended Ratings of the Dynamic Expressions in Studies 1 and 2 (standardized scores)

Effects	Study 1 (Dynamic Task)				Study 2 (Dynamic Task)				Studies 1&2 (Dynamic Task)				*Hs*
	df	*F*	*p*	η_p^2	df	*F*	*p*	η_p^2	df	*F*	*p*	η_p^2	
S	(1, 207)	634.43	< .001	.754	(1, 197)	577.52	< .001	.746	(1, 408)	1106.88	< .001	.731	*H1*
C	(1, 207)	3.46	.064	.016	(1, 197)	51.84	< .001	.208	(1, 408)	31.98	< .001	.073	
P	(1, 207)	4.01	.046	.019	(1, 197)	1.88	.172	.009	(1, 408)	5.76	.017	.014	*H2*
E	(1, 207)	1.06	.304	.005	(1, 197)	0.95	.332	.005	(1, 408)	1.71	.192	.004	
S × P	(1, 207)	117.46	< .001	.362	(1, 197)	23.21	< .001	.105	(1, 408)	112.09	< .001	.216	*Explorative*
S × E	(1, 207)	1.71	.193	.008	(1, 197)	0.02	.895	< .001	(1, 408)	0.79	.376	.002	
C × P	(1, 207)	0.04	.953	< .001	(1, 197)	4.50	.035	.022	(1, 408)	1.47	.226	.004	
C × E	(1, 207)	2.64	.106	.013	(1, 197)	3.52	.062	.018	(1, 408)	5.40	.021	.013	
S × C	(1, 207)	3.08	.081	.015	(1, 197)	2.92	.089	.015	(1, 408)	6.00	.015	.014	
P × E	(1, 207)	9.56	.002	.044	(1, 197)	3.78	.053	.019	(1, 408)	0.78	.378	.002	
S × P × E	(1, 207)	3.72	.055	.018	(1, 197)	4.06	.045	.020	(1, 408)	0.01	.935	< .001	
C × P × E	(1, 207)	0.64	.426	.003	(1, 197)	0.01	.915	< .001	(1, 408)	0.37	.544	.001	
S × C × P	(1, 207)	2.86	.093	.014	(1, 197)	6.74	.010	.033	(1, 408)	9.33	.002	.022	*Explorative*
S × C × E	(1, 207)	3.43	.065	.016	(1, 197)	0.24	.626	.001	(1, 408)	0.83	.362	.002	
S × C × P × E	(1, 207)	0.64	.425	.003	(1, 197)	1.42	.235	.007	(1, 408)	2.08	.150	.005	

Note. S = Scale Similarity, C= Context Similarity, P = Culture of Perceiver, E = Culture of Expresser.

Table S5

The frequency of each facial action unit shown in four emotional expressions of 12 models (6 Chinese and 6 Dutch)

AUs	Chinese expressers				Dutch expressers			
	Anger	Disgust	Fear	Surprise	Anger	Disgust	Fear	Surprise
AU1	2	1	4	4	0	0	6	6
AU2	0	0	3	5	0	0	3	5
AU4	5	4	3	1	6	5	2	0
AU5	1	0	6	6	0	0	6	4
AU6	0	3	0	1	0	2	0	0
AU7	6	6	1	1	6	6	0	0
AU9	0	1	0	0	0	5	0	0
AU10	0	2	0	0	0	6	1	0
AU14	1	1	0	0	1	0	0	0
AU15	2	2	0	0	1	1	0	0
AU17	3	4	0	0	5	0	2	0
AU20	2	2	4	0	1	4	5	0
AU23	4	0	0	0	4	0	0	0
AU24	2	0	0	0	2	0	0	0
AU25	0	2	6	6	0	6	6	6
AU26	0	2	1	6	0	0	1	6
AU summaries	4+7+23	4+7+17	1+5+20+25	1+2+5+25+26	4+7+17+23	4+7+9+10+20+25	1+5+20+25	1+2+5+25+26
Shared AUs		4, 7		1, 5, 25		4, 7		1, 5, 25

Note. The AU summaries include all AUs that were shared by more than half of the models in each culture (>3 models), and the shared AUs indicated common AUs in two adjacent emotional expressions. It can be seen from the table that the facial expressions of anger and disgust share key component features (eyebrows lowering [AU4] and lids tightening [AU7]), while fear and surprise are similar in that both expressions involve the upper lid raising (AU5) and the eyebrows raising (AU1). These patterns are consistent with the prototypes defined in the Investigator's Guide for the Facial Action Coding System (Ekman, 1993; Ekman, Friesen, & Hager, 2002).

Table S6

Pixel differences between pairs of facial expressions of emotion

Model	Pixel Differences in Study 1 ($\times 10^4$)			Pixel Differences in Study 2 ($\times 10^4$)		
	Anger-Disgust	Anger-Fear	Disgust-Fear	Anger-Fear	Anger-Surprise	Fear-Surprise
f08(Dutch)	216.0	238.4	240.8	238.4	278.6	199.1
f22(Dutch)	229.3	343.7	259.2	343.7	382.0	240.4
f27(Dutch)	245.2	328.9	259.9	328.9	296.9	210.5
m07(Dutch)	253.3	274.9	267.3	274.9	322.4	208.7
m28(Dutch)	247.0	248.8	243.6	248.8	310.6	224.0
m71(Dutch)	153.3	241.7	231.6	241.7	294.1	228.2
f06(Chinese)	175.2	200.5	195.9	200.5	170.3	137.8
f15(Chinese)	74.5	147.4	172.9	147.4	171.6	139.9
f24(Chinese)	133.6	147.0	142.9	147.0	123.9	228.7
m07(Chinese)	190.5	270.3	240.7	270.3	206.1	110.3
m17(Chinese)	114.5	164.2	200.5	164.2	182.5	143.9
m20(Chinese)	141.9	190.8	180.3	190.8	190.3	150.4
Totals	2174.2	2796.7	2635.7	2796.7	2929.5	2221.9

Note. We converted the images to grayscale, cropped them in an oval to remove the hair, and standardized them to the same size, with the eyes being aligned horizontally and the nose being aligned vertically. A Matlab script was used to calculate the pixel differences between pairs of facial expressions of emotion. The absolute values of the difference scores for all pixel comparisons between two pictures were added together, resulting in three total difference scores for three emotion combinations in each study. Lower numbers indicate more similar images. The Matlab script is available from the first author upon request.

Table S7

Intensity and valence ratings for the Dutch stimuli used in the present research

Dutch model	Intensity			Valence		
	Anger	Disgust	Fear	Anger	Disgust	Fear
f08	3.56	4.36	4.28	2.04	1.84	2.20
f22	3.76	3.82	4.58	1.92	1.82	1.88
f27	3.35	4.13	4.13	2.04	1.87	1.87
m07	3.75	3.96	4.21	2.00	1.88	2.13
m28	3.38	3.85	4.08	1.92	2.00	2.04
m71	3.95	3.85	4.35	1.80	2.00	2.05

Note. The intensity and valence ratings (range from 1 [“*weak*”/”*negative*”] to 5 [“*strong*”/”*positive*”]) were from the research group that produced the Radboud faces database (Langner et al., 2010). Two one-way ANOVAs were conducted to compare judgments of intensity and valence between expressions from the different emotion categories. For intensity, angry faces (M = 3.35, SD = .24) were perceived to be lower in intensity than expressions of disgust (M = 4.36, SD = .21), p = .025, and fear (M = 4.58, SD = .18), p < .001, but disgust and fear did not differ from each other, p = .114. For valence, no differences were found (anger: M = 1.95, SD = .09; disgust: M = 1.90, SD = .08; fear: M = 2.03, SD = .13; $F(2,15) = 2.26$, p = .139).

Figure S1. Examples of the emotional stimuli used in the present research. Six Chinese actors posing facial expressions of anger, disgust, fear, and surprise were selected from the Taiwan Corpora of Chinese Emotions (Shyi, Huang, & Yeh, 2013). Six Dutch actors (three male) expressing the same emotions were selected from the Radboud Faces Database (Langner et al., 2010).