

Supplementary Materials

Cultural attenuation of a universal aesthetic preference: Symmetry and beauty in ikebana

Table S1.

Demographic characteristics by country.

Country	N	Male	Female	Age M	Age SD	Ikebana Exp M	Ikebana Exp SD	Education M	Education SD
Japan (JP)	251	132	119	45.38	10.33	2.00	.71	15.27	2.44
Germany (DE)	248	188	60	33.27	11.89	1.82	.61	15.43	2.96
United Kingdom (UK)	240	127	113	46.03	14.05	1.73	.60	15.48	2.64
United States (US)	237	127	110	44.77	14.77	2.15	.90	15.54	2.94
Total	976	574	402	—	—	—	—	—	—

Note. Ikebana experience is the mean of five 5-point items (item-level means in Table S12); education in years.

Table S2.

The preregistered minimum-based mixed-emotion index: composition, descriptives, and model results.

(a) Which rating is the minimum (% of trials)

Country	Negative = min	Positive = min	Tie
JP	56.4	23.1	20.5
DE	67.2	16.0	16.8
UK	67.5	16.3	16.3
US	70.5	12.9	16.6

(b) Participant-level descriptives

Country	MIN M	MIN SD	Griffin M	Griffin SD
JP	1.47	.36	.69	.49
DE	1.41	.36	.52	.49
UK	1.17	.25	.25	.43
US	1.20	.34	.25	.55

(c) Within-country correlations

Country	r(Griffin, MIN)	r(Griffin, negative)	r(Griffin, positive)
JP	.88	.33	-.27
DE	.87	.54	-.40
UK	.76	.31	-.54
US	.78	.47	-.50

(d) MIN-based mixed-emotion model: significant terms

Predictor	β	p
Country: DE	-.058	< .001
Country: UK	-.259	< .001
Country: US	-.285	< .001
Perceived symmetry	.035	< .001
Perceived symmetry ²	-.013	< .001
QIP_PC3	-.017	.002
VAST-R	-.051	< .001
DFAS	-.042	< .001
Ikebana experience	.044	< .001
DA	.017	< .001
AB	.024	< .001
NC	.009	.039
Age	-.045	< .001
Country: DE $\times$ Perceived symmetry	-.032	.002
Country: UK $\times$ Perceived symmetry	-.030	.003
Country: US $\times$ Perceived symmetry	-.031	.002
Perceived symmetry $\times$ DA	.012	< .001
Perceived symmetry $\times$ AB	-.013	< .001

Note. The MIN index is $\min(\text{positive}, \text{negative})$ per trial (Larsen et al., 2001); the Griffin index is $(\text{positive} + \text{negative}) / 2 - |\text{positive} - \text{negative}|$ (Thompson et al., 1995).

Table S3.

Principal component analysis of the 29 non-symmetry quantitative image properties.

(a) Component importance

Statistic	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9
Eigenvalue	5.719	4.831	3.289	2.686	2.024	1.519	1.303	1.240	1.079
Proportion of variance	.197	.167	.113	.093	.070	.052	.045	.043	.037
Cumulative proportion	.197	.364	.477	.570	.640	.692	.737	.780	.817

(b) Loadings

QIP	PC1	PC2	PC3	PC4	PC5	PC6	PC7	PC8	PC9
aspect_ratio	-.096	.005	-.011	.193	-.289	.275	-.226	.005	.350
L_mean	.017	.248	.409	-.009	-.058	-.139	.042	.014	-.119
a_mean	.071	-.140	-.099	.116	-.329	-.315	.015	.476	-.168
b_mean	-.145	-.096	.124	.458	-.029	-.009	.111	-.249	-.008

L_std	-.282	.229	-.173	-.033	-.231	-.014	.170	.098	-.024
a_std	-.265	-.009	.197	.077	.131	-.221	-.216	.248	.037
b_std	-.285	.041	.251	-.041	.271	-.076	-.186	-.127	-.021
RMS_contrast	-.282	.229	-.173	-.033	-.231	-.014	.170	.098	-.024
H_mean	-.048	-.003	-.091	-.505	.092	.048	-.154	.184	.071
S_mean	-.342	.018	.012	-.134	.227	-.072	-.025	.064	-.043
V_mean	-.007	.254	.396	-.069	-.042	-.159	.030	.063	-.138
H_std	.053	-.185	-.032	.353	-.259	-.335	-.059	.044	.072
S_std	-.350	-.001	.117	.147	.150	-.090	-.087	-.020	.121
V_std	-.275	.223	-.188	-.123	-.189	.051	.193	.087	-.043
lightness_entropy	-.200	-.256	-.209	-.138	.039	-.064	.099	-.067	-.077
color_entropy	-.241	-.212	-.005	-.043	.028	-.284	-.024	-.174	.058
complexity	-.097	-.210	.067	-.091	-.051	-.144	-.077	.275	.306
edge_density	-.308	.017	.123	.044	-.191	.246	.033	.075	-.010
edge_density_simple	-.206	-.161	.195	-.145	-.342	.006	.095	-.156	-.069
fractal_dim_2D	.160	-.254	.090	-.159	-.054	-.206	.072	.064	-.289
fractal_dim_3D	-.024	-.164	.195	-.204	-.305	-.059	.044	-.445	-.075
fourier_slope	.045	-.150	.253	-.231	-.256	.121	-.194	.029	-.197
fourier_sigma	.039	.018	.061	-.039	-.231	.211	-.621	.074	.094
self_similarity_PHOG	.048	.365	-.029	.111	-.108	.088	-.124	-.084	-.322
self_similarity_CNN	-.151	-.236	-.041	.169	.054	.343	-.012	-.044	-.319
sparseness	.136	.344	.180	.087	-.007	-.178	.034	.026	.138
variability	-.124	-.028	-.196	.221	.098	-.081	-.340	.053	-.414
EOE_1st	.018	-.191	.288	.097	.030	.258	.324	.227	.247
EOE_2nd	-.014	-.120	.240	.093	.145	.307	.168	.388	-.286

Note. Components extracted with prcomp on z-standardized properties; PC1–PC9 (82% cumulative variance) entered the models as covariates.

Table S4.

Model specification.

Component	Specification
Dependent variables	beauty, liking, arousal, positive emotion, negative emotion, mixed emotion (Griffin)
Estimation	Linear mixed-effects model (lme4 / lmerTest), REML
Fixed effects — main	country; orientation; perceived_symmetry_z; perceived_symmetry_z ² ; mirror_symmetry_z; CNN_symmetry_z; balance_z; DCM_x_z; DCM_y_z; QIP_PC1–PC9; VAST_z; DFAS_z; Ikebana_ex_z; DA_z; AB_z; NC_z; age_z; gender_binary; education_z
Fixed effects — interactions	country × sym; Ikebana_ex_z × sym; DA_z × sym; AB_z × sym; NC_z × sym
Random effects	(1 participant_id)+(1 picture_id)+(1 set); random slopes preregistered but omitted (non- convergence)
Reference categories	country=Japan; orientation=original; gender=male
Standardization	all continuous predictors z-standardized
Multiple comparisons	Holm across six DVs
Multicollinearity	main-effect VIFs ≤ 2.55; perceived symmetry (five interaction terms) 4.11

Table S5.

Internal consistency of the individual-difference measures by country.

Scale	JP	DE	UK	US	Note
VAST-R (KR-20)	.64	.57	.61	.65	Forced-choice, proportion correct
DFAS (α)	.91	.90	.88	.88	DE = 37-item DFAS-G
DA (α)	.80	.84	.81	.84	MAAS subscale
AB (α)	.76	.79	.86	.90	MAAS subscale
NC (α)	.88	.78	.85	.87	MAAS subscale

Note. KR-20 for the VAST-R (dichotomous items); Cronbach's alpha otherwise. DE completed the 37-item DFAS-G.

Table S6.*Fixed-effect estimates from the linear mixed-effects models for all six dependent variables.*

Predictor	Beauty		Liking		Arousal		Positive emotion		Negative emotion		Mixed emotion	
	β [95% CI]	p Holm	β [95% CI]	p Holm	β [95% CI]	p Holm	β [95% CI]	p Holm	β [95% CI]	p Holm	β [95% CI]	p Holm
Intercept	3.414 [3.294, 3.533]	< .001	3.107 [3.004, 3.210]	< .001	2.763 [2.683, 2.843]	< .001	2.652 [2.543, 2.761]	< .001	1.795 [1.713, 1.878]	< .001	.726 [.655, .796]	< .001
Country: DE	-.049 [-.088, -.009]	.017	.145 [.101, .188]	< .001	-.075 [-.120, -.031]	.002	.186 [.140, .232]	< .001	-.132 [-.168, -.097]	< .001	-.143 [-.183, -.102]	< .001
Country: UK	.009 [-.026, .045]	.615	.373 [.334, .412]	< .001	-.175 [-.214, -.135]	< .001	.081 [.040, .122]	< .001	-.378 [-.410, -.346]	< .001	-.371 [-.407, -.336]	< .001
Country: US	.057 [.021, .093]	.002	.356 [.317, .395]	< .001	-.110 [-.150, -.070]	< .001	.087 [.045, .128]	< .001	-.441 [-.473, -.408]	< .001	-.392 [-.428, -.356]	< .001
Orientation: mirrored	-.104 [-.141, -.068]	< .001	-.106 [-.146, -.066]	< .001	-.062 [-.103, -.022]	.008	-.112 [-.154, -.070]	< .001	.043 [.010, .076]	.011	.054 [.017, .091]	.008
Perceived symmetry	.025 [-.001, .052]	.157	.045 [.016, .074]	.009	.084 [.054, .113]	< .001	.083 [.052, .114]	< .001	.011 [-.013, .035]	.354	.027 [-.000, .053]	.157
perceived_symmetry_z2	.026 [.014, .038]	< .001	.025 [.012, .038]	< .001	.053 [.039, .066]	< .001	.077 [.063, .091]	< .001	.025 [.014, .036]	< .001	-.078 [-.090, -.066]	< .001
Mirror symmetry	.035 [-.056, .127]	1.000	.029 [-.065, .123]	1.000	.038 [-.035, .111]	1.000	.051 [-.047, .149]	1.000	.003 [-.066, .072]	1.000	-.053 [-.107, -.000]	.297
CNN symmetry	.020 [-.075, .115]	1.000	.015 [-.083, .113]	1.000	-.011 [-.088, .065]	1.000	-.004 [-.106, .098]	1.000	-.013 [-.085, .059]	1.000	.028 [-.028, .084]	1.000
Balance	-.058 [-.142, .026]	1.000	-.059 [-.145, .027]	1.000	-.014 [-.081, .053]	1.000	-.049 [-.139, .042]	1.000	.008 [-.056, .071]	1.000	.022 [-.028, .071]	1.000
DCM (horizontal)	-.010 [-.028, .009]	1.000	-.010 [-.030, .010]	1.000	.019 [-.001, .040]	.341	.006 [-.016, .027]	1.000	-.018 [-.035, -.002]	.188	-.008 [-.027, .010]	1.000
DCM (vertical)	-.003 [-.103, .098]	1.000	.010 [-.094, .113]	1.000	.062 [-.018, .143]	.771	.001 [-.107, .110]	1.000	.038 [-.038, .115]	1.000	-.021 [-.080, .038]	1.000
QIP_PC1	-.035 [-.069, -.002]	.081	-.041 [-.075, -.006]	.066	-.026 [-.053, .001]	.081	-.056 [-.092, -.020]	.018	.031 [.006, .057]	.066	.027 [.007, .046]	.043
QIP_PC2	-.022 [-.059, .016]	.880	-.009 [-.047, .030]	1.000	-.032 [-.062, -.002]	.220	-.025 [-.065, .015]	.880	.009 [-.019, .037]	1.000	.019 [-.003, .041]	.474
QIP_PC3	.041 [-.005,	.194	.044 [-.003,	.194	.028 [-.009,	.194	.068 [.019, .117]	.039	-.043 [-.078,	.063	-.047 [-.074,	.006

QIP_PC4	.087] .025 [-.021, .071]	1.000	.091] .022 [-.026, .069]	1.000	.065] .018 [-.020, .055]	1.000	.023 [-.026, .073]	1.000	-.008] -.002 [-.037, .033]	1.000	-.020] -.002 [-.029, .026]	1.000
QIP_PC5	.054 [.002, .105]	.246	.050 [-.003, .103]	.288	.001 [-.041, .103]	.973	.054 [-.002, .109]	.288	-.035 [-.074, .005]	.288	-.027 [-.058, .003]	.288
QIP_PC6	-.030 [-.087, .027]	.564	-.032 [-.091, .027]	.564	-.043 [-.089, .027]	.339	-.058 [-.120, .004]	.339	.035 [-.009, .079]	.339	.033 [-.001, .067]	.339
QIP_PC7	.014 [-.043, .071]	1.000	.014 [-.045, .074]	1.000	-.017 [-.064, .030]	1.000	.005 [-.057, .067]	1.000	.004 [-.040, .047]	1.000	.007 [-.028, .041]	1.000
QIP_PC8	.045 [-.017, .107]	.494	.030 [-.034, .094]	.698	.061 [.012, .111]	.100	.054 [-.013, .121]	.494	.007 [-.040, .054]	.774	-.031 [-.067, .006]	.494
QIP_PC9	.002 [-.056, .060]	1.000	.003 [-.058, .063]	1.000	-.014 [-.064, .035]	1.000	.017 [-.046, .081]	1.000	-.010 [-.055, .036]	1.000	-.003 [-.040, .034]	1.000
VAST-R	.014 [.001, .028]	.057	.027 [.012, .042]	.002	.026 [.011, .041]	.003	-.018 [-.034, -.002]	.057	-.073 [-.085, -.061]	< .001	-.056 [-.070, -.043]	< .001
DFAS	.078 [.062, .094]	< .001	.074 [.057, .092]	< .001	.030 [.012, .048]	< .001	.115 [.096, .133]	< .001	-.087 [-.101, -.073]	< .001	-.097 [-.113, -.081]	< .001
Ikebana experience	.073 [.058, .089]	< .001	.097 [.080, .114]	< .001	.029 [.011, .046]	.004	.152 [.134, .171]	< .001	.022 [.008, .036]	.005	.002 [-.014, .017]	.852
DA	-.009 [-.023, .005]	.264	-.017 [-.032, -.002]	.110	.015 [-.001, .031]	.179	-.013 [-.029, .004]	.264	.046 [.034, .059]	< .001	.018 [.004, .032]	.058
AB	-.028 [-.042, -.014]	< .001	-.044 [-.059, -.029]	< .001	.059 [.043, .074]	< .001	-.016 [-.033, -.000]	.050	.058 [.045, .071]	< .001	.026 [.011, .040]	< .001
NC	.032 [.016, .048]	< .001	.044 [.026, .061]	< .001	.007 [-.010, .025]	.853	.010 [-.008, .029]	.811	.004 [-.010, .018]	.853	.011 [-.005, .027]	.691
Age	-.032 [-.047, -.017]	< .001	-.011 [-.027, .005]	.196	-.020 [-.037, -.003]	.035	-.030 [-.047, -.013]	.002	-.040 [-.054, -.027]	< .001	-.055 [-.070, -.040]	< .001
Gender: female	.041 [.012, .070]	.021	.020 [-.011, .051]	.208	.065 [.033, .097]	< .001	.073 [.040, .107]	< .001	.022 [-.004, .048]	.200	-.033 [-.062, -.004]	.076
Education	-.011 [-.024, .003]	.450	-.027 [-.041, -.012]	.002	.082 [.067, .097]	< .001	.011 [-.004, .027]	.480	.007 [-.006, .019]	.584	-.002 [-.016, .011]	.739
Country: DE × Perceived symmetry	.226 [.190, .262]	< .001	.229 [.190, .268]	< .001	-.224 [-.264, -.184]	< .001	.096 [.054, .137]	< .001	-.117 [-.149, -.084]	< .001	-.054 [-.090, -.017]	.004
Country: UK × Perceived symmetry	.233 [.197, .269]	< .001	.200 [.161, .240]	< .001	-.009 [-.049, .031]	.669	.167 [.125, .208]	< .001	-.113 [-.146, -.081]	< .001	-.088 [-.124, -.052]	< .001
Country: US × Perceived symmetry	.266 [.230, .301]	< .001	.251 [.212, .289]	< .001	-.008 [-.048,	.687	.186 [.145, .227]	< .001	-.122 [-.154,	< .001	-.096 [-.132,	< .001

Perceived symmetry × Ikebana experience	-.017 [-.030, -.004]	.035	-.013 [-.027, .001]	.199	.031] .047 [.033, .061]	< .001	-.005 [-.020, .010]	.636	-.091] .017 [.005, .028]	.020	-.061] .007 [-.006, .019]	.636
Perceived symmetry × DA	.010 [-.002, .022]	.371	.012 [-.000, .025]	.282	.011 [-.002, .024]	.371	.003 [-.011, .016]	1.000	.002 [-.009, .012]	1.000	.021 [.009, .033]	.002
Perceived symmetry × AB	.027 [.015, .039]	< .001	.039 [.026, .052]	< .001	.046 [.033, .060]	< .001	.031 [.017, .046]	< .001	-.038 [-.049, -.027]	< .001	-.023 [-.035, -.011]	< .001
Perceived symmetry × NC	.010 [-.002, .023]	.680	.007 [-.006, .021]	.887	.010 [-.004, .025]	.733	.001 [-.014, .016]	.899	.008 [-.004, .019]	.733	.005 [-.008, .018]	.887

Note. Standardized coefficients with Wald 95% confidence intervals; p values Holm-corrected across the six dependent variables. Reference categories:

country = Japan, orientation = original, gender = male.

Table S7.

Simple slopes of perceived symmetry by country for all six dependent variables.

DV	Country	Slope [95% CI]	SE
Beauty	JP	.025 [−.001, .052]	.014
Beauty	DE	.252 [.226, .277]	.013
Beauty	UK	.259 [.233, .284]	.013
Beauty	US	.291 [.266, .316]	.013
Liking	JP	.045 [.016, .074]	.015
Liking	DE	.274 [.247, .302]	.014
Liking	UK	.245 [.218, .273]	.014
Liking	US	.296 [.268, .323]	.014
Arousal	JP	.084 [.054, .113]	.015
Arousal	DE	−.140 [−.169, −.112]	.014
Arousal	UK	.075 [.047, .103]	.014
Arousal	US	.076 [.047, .104]	.014
Positive emotion	JP	.083 [.052, .114]	.016
Positive emotion	DE	.179 [.149, .208]	.015
Positive emotion	UK	.250 [.220, .279]	.015
Positive emotion	US	.269 [.239, .298]	.015
Negative emotion	JP	.011 [−.013, .035]	.012
Negative emotion	DE	−.105 [−.128, −.083]	.012
Negative emotion	UK	−.102 [−.125, −.079]	.012
Negative emotion	US	−.111 [−.134, −.088]	.012
Mixed emotion	JP	.027 [−.000, .053]	.014
Mixed emotion	DE	−.027 [−.053, −.002]	.013
Mixed emotion	UK	−.061 [−.087, −.036]	.013
Mixed emotion	US	−.070 [−.095, −.044]	.013

Note. Estimated marginal trends of the z-standardized perceived-symmetry term (emtrends), holding covariates at their means.

Table S8.

Mediation of objective symmetry (CNN, left–right) on beauty via perceived symmetry.

(a) Path coefficients

Country	c (total)	a	b	c' (direct)	c' p	Conclusion
JP	.055	.513	−.135	.124	ns	None
DE	.308	.457	.426	.113	ns	Complete
UK	.419	.515	.264	.283	< .01	Partial
US	.357	.474	.422	.157	ns	Complete

(b) Indirect effects

Country	ACME	CI low	CI high	p	Prop. mediated	Type
JP	−.069	−.170	.018	ns	—	None
DE	.195	.112	.294	< .001	63.4%	Complete

UK	.136	.039	.240	< .05	32.5%	Partial
US	.200	.105	.315	< .001	56.1%	Complete
Overall	.145	.061	.238	< .001	44.8%	Partial

Note. Image level (N = 150), controlling for QIP PC1–PC9; nonparametric bootstrap with 5,000 resamples. Overall direct effect (ADE) = 0.180, $p = .043$; bootstrap seed 20261015.

Table S9.

Summary of preregistered hypothesis tests.

Group	Hypothesis (prediction)	Result	Note
a	JP gives the highest aesthetic ratings	×	Opposite for liking and positive emotion; no beauty advantage; JP highest negative, mixed, and arousal
a	JP higher mixed emotion, lower arousal	△	Mixed ✓; arousal × (JP highest)
b	Perceived symmetry predicts evaluation	△	Positive for liking and positive emotion; for beauty only outside Japan
b	Objective symmetry predicts evaluation	×	All indices ns with perceived symmetry in model
b	Inverted-U of symmetry	×	U-shape for most DVs; inverted-U only for mixed
b	Independent contribution: subjective vs objective	△	Only subjective independent; objective mediated
c	Higher DFAS → higher ratings	✓	
c	Higher VAST → higher ratings	△	+ beauty/liking/arousal, – positive emotion
c	Culture × symmetry: stronger in DE than JP	✓	All Western > JP
c	Experience × symmetry: stronger with less experience	✓	
c	DA × symmetry	△	Significant only for mixed emotion
c	AB × symmetry: stronger with higher absolutism	✓	Significant for all 6 DVs
c	NC × symmetry	×	Non-significant for all DVs

Note. ✓ supported; ✗ not supported; △ partially supported. Groups (a)–(c) are the hypothesis groups defined in the Introduction of the main text: (a) cross-national differences, (b) effects of subjective and objective symmetry, (c) individual differences and moderation of the symmetry effect.

Table S10.

Preregistration deviations.

#	Details	Original wording	Deviation description	Extent of deviation	Judgement of impact
1	Type: Analyses Reason: Plan not possible Timing: After data access	"Mixed Emotion: Calculated as the minimum of the Positive and Negative emotion scores (MIN rule; Larsen et al., 2001)."	The Griffin ambivalence index ($[\text{positive} + \text{negative}] / 2 - \text{positive} - \text{negative} $; Thompson et al., 1995) was used as the primary mixed-emotion measure. Under the predominantly positively valenced stimuli, the preregistered minimum-based index showed a severe floor effect and was largely redundant with negative emotion (Figure S1). The preregistered index is reported in Table S2.	Major	The two indices correlated .76–.88 within country, and the country ordering (Japan highest) was identical for both. Results specific to the Griffin index (the inverted-U relation with perceived symmetry and the Griffin–beauty slope) should be read as index-dependent.
2	Type: Analyses Reason: Plan not possible Timing: After data access	"Random slopes for subjective symmetry will be included where model convergence permits."	Random slopes for perceived symmetry were omitted because the models did not converge with them; random intercepts for participants, images, and stimulus sets were retained.	Minor	Standard errors of the symmetry effects may be slightly anticonservative. The central Country $\times$ symmetry interaction is large relative to its standard error (all Japan-vs-Western contrasts $p < .001$), so the conclusions are unlikely to depend on this choice.
3	Type: Analyses Reason: Other (toolbox output) Timing: After data access	"The four symmetry metrics (Mirror Symmetry, CNN-based Symmetry, Balance Score,	Five objective indices were entered: pixel-level mirror symmetry, CNN-based symmetry (LRUD), balance, and the horizontal and	Minor	None of the objective indices was significant once perceived symmetry was in the model, so the conclusions do

		Distance from Center of Mass) will be initially entered separately."	vertical deviations of the center of mass (DCM_x, DCM_y), because the Aesthetics Toolbox returns the center-of-mass deviation as two components. The mediation analysis used the CNN left-right index, the only objective index correlated with perceived symmetry. Participants who did not report a gender ("no answer", n = 25) were additionally excluded, because gender entered the models as a binary covariate.		not depend on this specification.
4	Type: Methods Reason: Other (covariate coding) Timing: After data access	Preregistered exclusions: failed attention check; completion time < 10 or > 90 min; > 20% missing key ratings; duplicate or suspicious responses.		Minor	The exclusion removed 2.5% of participants. Its effect on the estimates was not tested; given its size, a material change in the results is unlikely.
5	Type: Methods Reason: Other (not implemented) Timing: After data access	"Duplicate or suspicious responses (e.g., identical IP addresses, inconsistent country information, or bot-like response patterns) will also be removed."	No separate screening step for duplicate or bot-like responses was implemented beyond the attention check, the completion-time bounds, and the missing-data criterion.	Minor	Both recruitment platforms admit one submission per registered account. Inattentive or automated responding was screened by the attention check and completion-time bounds; residual undetected cases cannot be ruled out and would add noise rather than bias.
6	Type: Methods Reason: Typo/Error Timing: Before data collection	"Within each culture, participants will be evenly assigned to one of five stimulus lists, and to one of two counterbalanced list versions."	The 150 stimuli were divided into six sets of 25 images (75 arrangements $\times$ 2 orientations / 25), each presented in two counterbalanced response-scale orders. "Five" in the preregistration was a typographical error.	Minor	None.
7	Type: Methods Reason: Other (preregistered exclusions) Timing: Before data access	"We plan to recruit 1,000 participants in total, including 250 participants each from Japan, Germany, the United States, and	After the preregistered exclusions, the analyzed sample comprised 976 participants (JP 251, DE 248, UK 240, US 237).	Minor	The simulated power ($\geq .90$ for all primary effects at N = 1,000) is essentially unchanged at N = 976.

the United
Kingdom."

Note. Format follows the Psychological Science preregistration deviations table (Version 1.2; adapted from Willroth & Atherton, 2024); Type, Reason, Timing, and Extent use the template's categories.

Preregistration: <https://osf.io/hfgw8>. Analyses not preregistered (image-level mediation and its by-country breakdown, the Griffin–beauty slope by country, and the model controlling for positive and negative emotion intensity) are labelled as exploratory in the main text.

Table S11.

Participant-level descriptive statistics of the dependent variables and perceived symmetry by country.

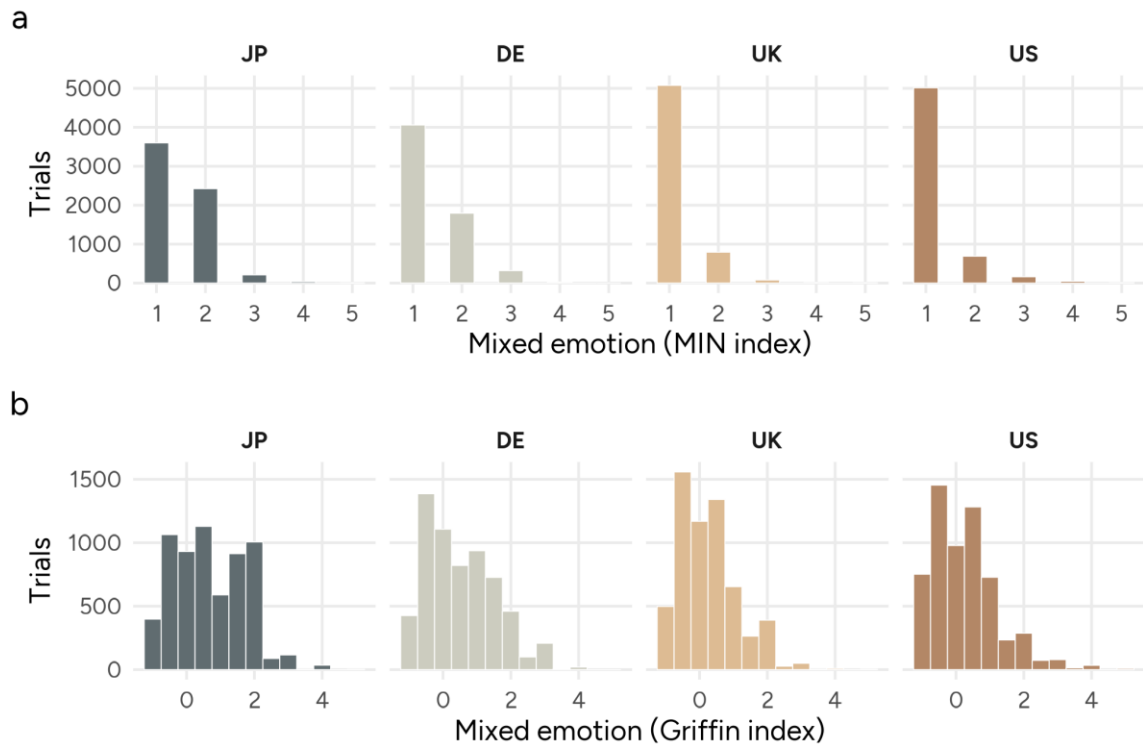
Variable	Country	n	M	SD	95% CI
Beauty	JP	251	3.34	0.45	[3.29, 3.40]
	DE	248	3.41	0.45	[3.35, 3.46]
	UK	240	3.37	0.52	[3.31, 3.44]
	US	237	3.54	0.59	[3.46, 3.61]
Liking	JP	251	3.02	0.47	[2.96, 3.08]
	DE	248	3.29	0.48	[3.23, 3.35]
	UK	240	3.43	0.53	[3.36, 3.49]
	US	237	3.53	0.59	[3.45, 3.60]
Arousal	JP	251	2.79	0.42	[2.74, 2.84]
	DE	248	2.72	0.59	[2.65, 2.79]
	UK	240	2.63	0.61	[2.55, 2.71]
	US	237	2.78	0.64	[2.70, 2.86]
Positive emotion	JP	251	2.63	0.52	[2.56, 2.69]
	DE	248	2.91	0.63	[2.84, 2.99]
	UK	240	2.73	0.72	[2.64, 2.82]
	US	237	2.90	0.83	[2.80, 3.01]
Negative emotion	JP	251	1.89	0.49	[1.82, 1.95]
	DE	248	1.67	0.53	[1.60, 1.74]
	UK	240	1.44	0.45	[1.39, 1.50]
	US	237	1.41	0.46	[1.35, 1.47]
Mixed emotion (Griffin)	JP	251	0.69	0.49	[0.63, 0.75]
	DE	248	0.52	0.49	[0.46, 0.58]
	UK	240	0.25	0.43	[0.20, 0.31]
	US	237	0.25	0.55	[0.18, 0.32]
Perceived symmetry	JP	251	2.39	0.54	[2.33, 2.46]
	DE	248	2.66	0.42	[2.61, 2.72]
	UK	240	2.50	0.60	[2.42, 2.58]
	US	237	2.74	0.67	[2.65, 2.83]

Note. Participant means were computed over each participant's 25 trials; M, SD, and the 95% confidence interval (t-based) describe the distribution of these means within each country. Ratings are on 5-point scales; the Griffin index is $(\text{positive} + \text{negative}) / 2 - |\text{positive} - \text{negative}|$.

Table S12.*Ikebana experience items by country.*

Item	JP	DE	UK	US
Creating ikebana	1.29 (0.80)	1.17 (0.48)	1.13 (0.57)	1.43 (0.89)
Interest in ikebana	2.09 (0.84)	2.71 (0.86)	2.80 (0.96)	3.16 (1.13)
Observing ikebana	3.13 (1.29)	2.41 (1.35)	1.75 (1.16)	2.22 (1.38)
Historical knowledge	1.75 (0.84)	1.43 (0.80)	1.47 (0.75)	1.95 (1.16)
Structural knowledge	1.71 (0.84)	1.40 (0.69)	1.51 (0.80)	2.02 (1.20)
Composite (mean of five items)	2.00 (0.71)	1.82 (0.61)	1.73 (0.60)	2.15 (0.90)

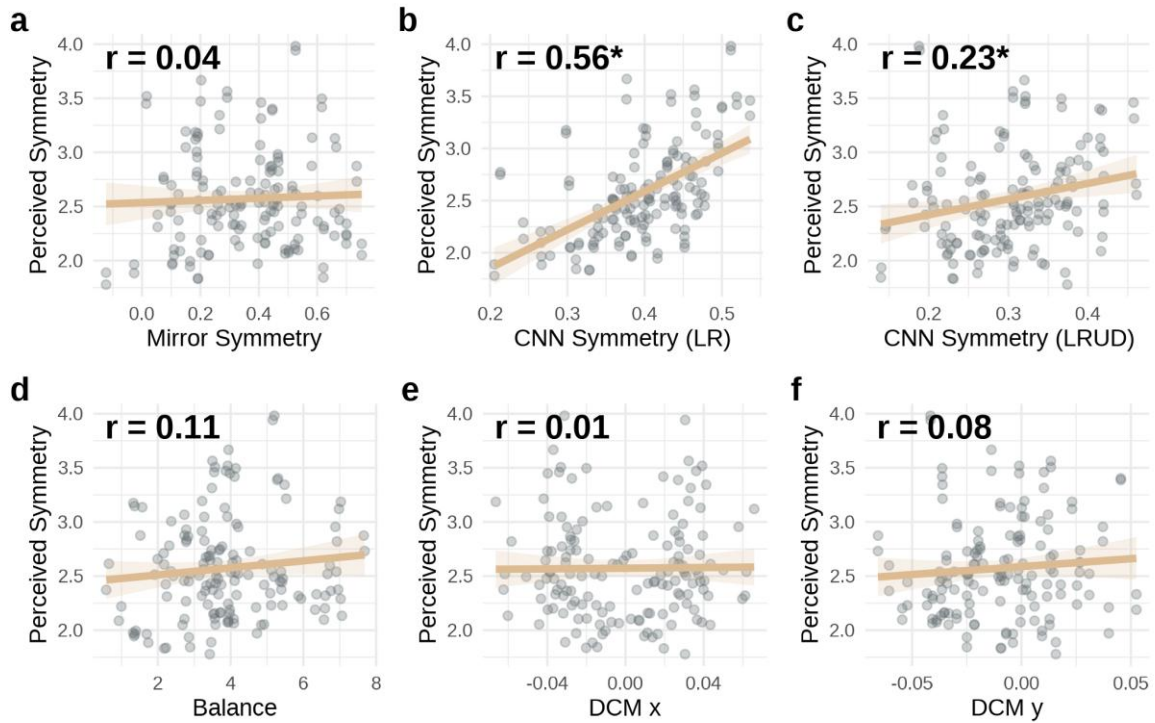
Note. Values are M (SD) on 5-point scales (1 = not at all / never, 5 = very much / very often). Japanese participants reported the most frequent exposure to ikebana but the least interest; knowledge and practice were low in all samples. Unipark answer codes for the two knowledge items differed between questionnaire versions (6–10 in JP and DE, 1–5 in UK and US) and were recoded to 1–5 before scoring.

Figure S1.*Trial-level distributions of the two mixed-emotion indices by country.*

Note. (a) Preregistered minimum-based index (MIN rule; Larsen et al., 2001). (b) Griffin ambivalence index (Thompson et al., 1995). The minimum-based index shows a pronounced floor effect across countries, whereas the Griffin index differentiates the country distributions.

Figure S2.

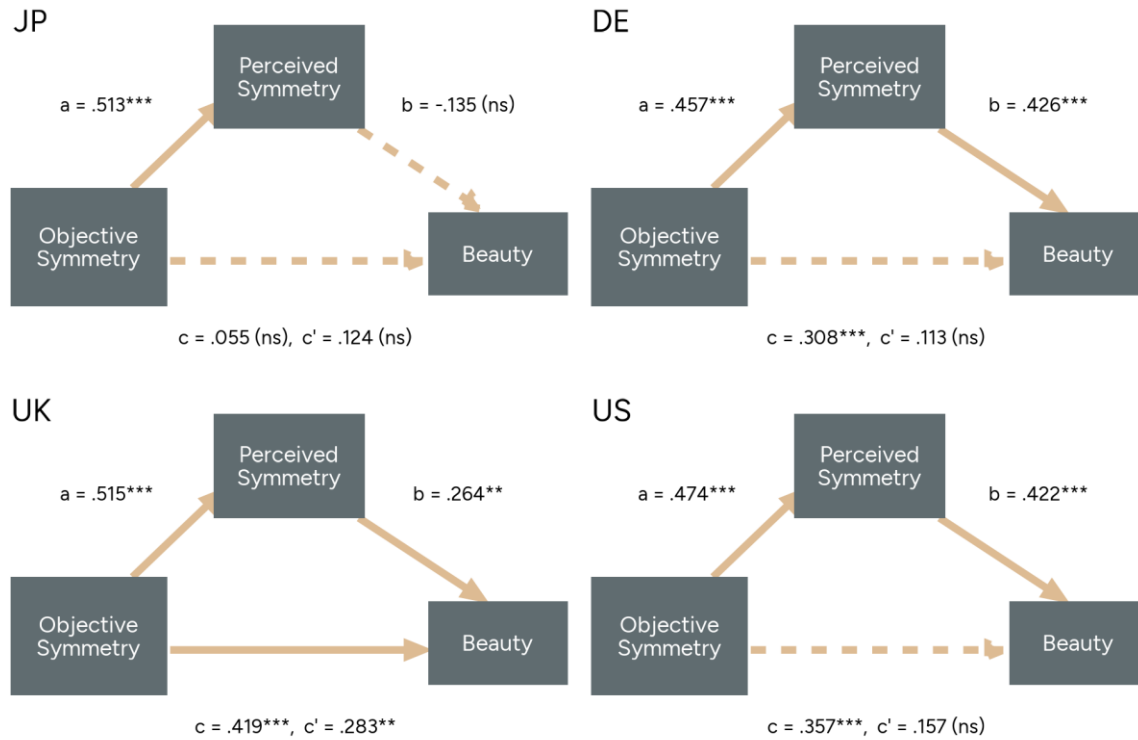
Item-level associations between perceived symmetry and each objective symmetry index (N = 150): (a) mirror symmetry, (b) CNN symmetry (LR), (c) CNN symmetry (LRUD), (d) balance, (e) horizontal deviation of the center of mass (DCM_x), and (f) vertical deviation of the center of mass (DCM_y).



Note. Each point is one stimulus; lines show linear fits with 95% confidence bands.

Figure S3.

By-country mediation of objective symmetry (CNN, left–right) on beauty via perceived symmetry (image level, N = 150 per country).



Note. Standardized coefficients controlling for QIP PC1–PC9. Dashed arrows indicate nonsignificant paths ($p \geq .05$). The a path (objective to perceived symmetry) is significant in every country, whereas the b path (perceived symmetry to beauty) is significant only outside Japan. $*p < .05$. $**p < .01$. $***p < .001$.