## Table S1

| **Component** | **Term** | **Estimate** | **Std Error** | **t-value** | **p-value** |
| --- | --- | --- | --- | --- | --- |
| A. parametric coefficients | (Intercept) | -0.763 | 0.026 | -29.481 | \*\*\* |
| TypeEcology & Behavior | -1.710 | 0.053 | -32.538 | \*\*\* |
| TypeGeography | -1.241 | 0.088 | -14.077 | \*\*\* |
| TypePeople | -1.213 | 0.063 | -19.159 | \*\*\* |
| TypeModern & Past Culture | -3.623 | 0.148 | -24.440 | \*\*\* |
| TypeOthers | -2.227 | 0.091 | -24.527 | \*\*\* |
| **Component** | **Term** | **edf** | **Ref. df** | **F-value** | **p-value** |
| B. smooth terms | s(Year) | 1.003 | 1.003 | 9.390 | \*\* |
| s(Year):TypeMorphology | 5.503 | 6.546 | 12.240 | \*\*\* |
| s(Year):TypeEcology & Behavior | 5.081 | 6.136 | 4.012 | \*\*\* |
| s(Year):TypeGeography | 8.189 | 8.688 | 15.255 | \*\*\* |
| s(Year):TypePeople | 5.643 | 6.619 | 13.318 | \*\*\* |
| s(Year):TypeModern & Past Culture | 5.107 | 6.069 | 15.894 | \*\*\* |
| s(Year):TypeOthers | 5.525 | 6.540 | 6.883 | \*\*\* |
| Signif. codes: 0 <= '\*\*\*' < 0.001 < '\*\*' < 0.01 < '\*' < 0.05 < '.' < 0.1 < '' < 1 | | | | | |
|  | | | | | |
| Adjusted R-squared: 0.939, Deviance explained 0.929 | | | | | |
| GCV : 1.988, Scale est: 2.088, N: 1386 | | | | | |

## Table S2

| **Component** | **Term** | **Estimate** | **Std Error** | **t-value** | **p-value** |
| --- | --- | --- | --- | --- | --- |
| A. parametric coefficients | (Intercept) | -2.368 | 0.018 | -133.626 | \*\*\* |
| **Component** | **Term** | **edf** | **Ref. df** | **F-value** | **p-value** |
| B. smooth terms | s(Year):TypeMorphology | 8.999 | 9.000 | 504.202 | \*\*\* |
| s(Year):TypeEcology & Behavior | 5.757 | 6.860 | 36.641 | \*\*\* |
| s(Year):TypeGeography | 7.931 | 8.375 | 153.871 | \*\*\* |
| s(Year):TypePeople | 8.366 | 8.748 | 68.699 | \*\*\* |
| s(Year):TypeModern & Past Culture | 8.877 | 8.994 | 58.697 | \*\*\* |
| s(Year):TypeOthers | 8.749 | 8.975 | 16.312 | \*\*\* |
| s(Year):ContinentEurope | 0.000 | 0.001 | 0.064 |  |
| s(Year):ContinentAfrica | 1.000 | 1.001 | 0.159 |  |
| s(Year):ContinentAmericas | 1.000 | 1.000 | 0.127 |  |
| s(Year):ContinentAsia | 1.000 | 1.000 | 0.002 |  |
| s(Year):ContinentOceania | 1.000 | 1.000 | 0.093 |  |
| Signif. codes: 0 <= '\*\*\*' < 0.001 < '\*\*' < 0.01 < '\*' < 0.05 < '.' < 0.1 < '' < 1 | | | | | |
|  | | | | | |
| Adjusted R-squared: 0.715, Deviance explained 0.568 | | | | | |
| GCV : 3.323, Scale est: 2.294, N: 6372 | | | | | |

## Table S3

|  | Estimate | Standard Error | z value | Pr(>|z|) | Signif. |
| --- | --- | --- | --- | --- | --- |
| (Intercept) | -1.117 | 0.042 | -26.486 | 0.0000 | \*\*\* |
| ContinentAfrica | 0.534 | 0.046 | 11.645 | 0.0000 | \*\*\* |
| ContinentAmericas | 0.356 | 0.044 | 8.054 | 0.0000 | \*\*\* |
| ContinentAsia | 0.396 | 0.045 | 8.874 | 0.0000 | \*\*\* |
| ContinentOceania | 0.383 | 0.046 | 8.242 | 0.0000 | \*\*\* |
| *Signif. codes: 0 <= '\*\*\*' < 0.001 < '\*\*' < 0.01 < '\*' < 0.05 < '.' < 0.1 < '' < 1* | | | | | |
|  | | | | | |
| (Dispersion parameter for binomial family taken to be 1) | | | | | |
| Null deviance: 5.93e+04 on 44564 degrees of freedom | | | | | |
| Residual deviance: 5.914e+04 on 44560 degrees of freedom | | | | | |

## Table S4

|  | Estimate | Standard Error | z value | Pr(>|z|) | Signif. |
| --- | --- | --- | --- | --- | --- |
| (Intercept) | -2.507 | 0.079 | -31.608 | 0.0000 | \*\*\* |
| ContinentAfrica | -0.277 | 0.092 | -2.996 | 0.0027 | \*\* |
| ContinentAmericas | -0.275 | 0.086 | -3.199 | 0.0014 | \*\* |
| ContinentAsia | -0.600 | 0.090 | -6.671 | 0.0000 | \*\*\* |
| ContinentOceania | -0.216 | 0.092 | -2.335 | 0.0195 | \* |
| *Signif. codes: 0 <= '\*\*\*' < 0.001 < '\*\*' < 0.01 < '\*' < 0.05 < '.' < 0.1 < '' < 1* | | | | | |
|  | | | | | |
| (Dispersion parameter for binomial family taken to be 1) | | | | | |
| Null deviance: 1.942e+04 on 44564 degrees of freedom | | | | | |
| Residual deviance: 1.935e+04 on 44560 degrees of freedom | | | | | |

## Table S5

|  | Estimate | Standard Error | z value | Pr(>|z|) | Signif. |
| --- | --- | --- | --- | --- | --- |
| (Intercept) | -0.966 | 0.040 | -24.359 | 0.0000 | \*\*\* |
| ContinentAfrica | -0.338 | 0.046 | -7.316 | 0.0000 | \*\*\* |
| ContinentAmericas | -0.015 | 0.042 | -0.360 | 0.7188 |  |
| ContinentAsia | 0.099 | 0.043 | 2.331 | 0.0198 | \* |
| ContinentOceania | -0.140 | 0.046 | -3.076 | 0.0021 | \*\* |
| *Signif. codes: 0 <= '\*\*\*' < 0.001 < '\*\*' < 0.01 < '\*' < 0.05 < '.' < 0.1 < '' < 1* | | | | | |
|  | | | | | |
| (Dispersion parameter for binomial family taken to be 1) | | | | | |
| Null deviance: 5.474e+04 on 44564 degrees of freedom | | | | | |
| Residual deviance: 5.446e+04 on 44560 degrees of freedom | | | | | |

## Table S6

|  | Estimate | Standard Error | z value | Pr(>|z|) | Signif. |
| --- | --- | --- | --- | --- | --- |
| (Intercept) | -1.076 | 0.041 | -25.947 | 0.0000 | \*\*\* |
| ContinentAfrica | -0.244 | 0.048 | -5.103 | 0.0000 | \*\*\* |
| ContinentAmericas | -0.528 | 0.046 | -11.578 | 0.0000 | \*\*\* |
| ContinentAsia | -0.400 | 0.046 | -8.716 | 0.0000 | \*\*\* |
| ContinentOceania | -0.212 | 0.048 | -4.414 | 0.0000 | \*\*\* |
| *Signif. codes: 0 <= '\*\*\*' < 0.001 < '\*\*' < 0.01 < '\*' < 0.05 < '.' < 0.1 < '' < 1* | | | | | |
|  | | | | | |
| (Dispersion parameter for binomial family taken to be 1) | | | | | |
| Null deviance: 4.596e+04 on 44564 degrees of freedom | | | | | |
| Residual deviance: 4.575e+04 on 44560 degrees of freedom | | | | | |

## Table S7

|  | Estimate | Standard Error | z value | Pr(>|z|) | Signif. |
| --- | --- | --- | --- | --- | --- |
| (Intercept) | -3.215 | 0.112 | -28.752 | 0.0000 | \*\*\* |
| ContinentAfrica | -0.644 | 0.138 | -4.686 | 0.0000 | \*\*\* |
| ContinentAmericas | 0.158 | 0.118 | 1.341 | 0.1798 |  |
| ContinentAsia | -0.864 | 0.131 | -6.592 | 0.0000 | \*\*\* |
| ContinentOceania | -0.585 | 0.138 | -4.246 | 0.0000 | \*\*\* |
| *Signif. codes: 0 <= '\*\*\*' < 0.001 < '\*\*' < 0.01 < '\*' < 0.05 < '.' < 0.1 < '' < 1* | | | | | |
|  | | | | | |
| (Dispersion parameter for binomial family taken to be 1) | | | | | |
| Null deviance: 1.182e+04 on 44564 degrees of freedom | | | | | |
| Residual deviance: 1.157e+04 on 44560 degrees of freedom | | | | | |

## Table S8

|  | Estimate | Standard Error | z value | Pr(>|z|) | Signif. |
| --- | --- | --- | --- | --- | --- |
| (Intercept) | -3.141 | 0.108 | -29.125 | 0.0000 | \*\*\* |
| ContinentAfrica | 0.329 | 0.118 | 2.787 | 0.0053 | \*\* |
| ContinentAmericas | 0.694 | 0.111 | 6.231 | 0.0000 | \*\*\* |
| ContinentAsia | 0.018 | 0.116 | 0.159 | 0.8740 |  |
| ContinentOceania | 0.326 | 0.119 | 2.743 | 0.0061 | \*\* |
| *Signif. codes: 0 <= '\*\*\*' < 0.001 < '\*\*' < 0.01 < '\*' < 0.05 < '.' < 0.1 < '' < 1* | | | | | |
|  | | | | | |
| (Dispersion parameter for binomial family taken to be 1) | | | | | |
| Null deviance: 2.065e+04 on 44564 degrees of freedom | | | | | |
| Residual deviance: 2.044e+04 on 44560 degrees of freedom | | | | | |