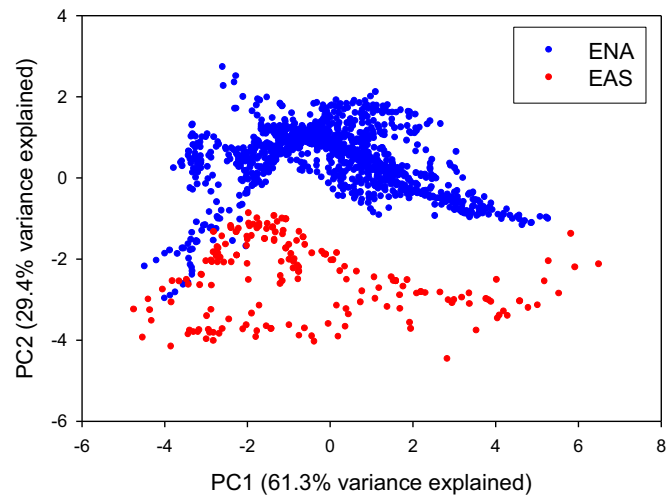
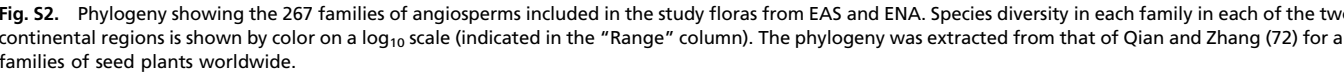


# Supporting Information

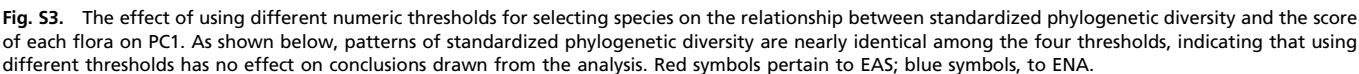
Qian et al. 10.1073/pnas.1703985114



**Fig. S1.** Positions of the 1,309 floras in EAS and ENA with respect to PC1 and PC2 of the six climate variables (Tables S1 and S2).



**Fig. S2.** Phylogeny showing the 267 families of angiosperms included in the study floras from EAS and ENA. Species diversity in each family in each of the two continental regions is shown by color on a log<sub>10</sub> scale (indicated in the “Range” column). The phylogeny was extracted from that of Qian and Zhang (72) for a families of seed plants worldwide.



**Table S1. The first two axes (PC1 and PC2) produced by PC analysis based on the correlation matrix between climate variables ( $n = 1,309$ )**

Variable	PC1	PC2
Eigenvalue	3.677	1.765
Percentage of variance	61.288	29.420
Cumulative % of variance	61.288	90.708
Eigenvectors		
$T_{\text{mean}}$	<b>-0.482</b>	-0.178
$P_{\text{mean}}$	<b>-0.461</b>	0.049
$T_{\text{min}}$	<b>-0.500</b>	-0.169
$P_{\text{min}}$	-0.265	<b>0.628</b>
$T_{\text{seas}}$	<b>0.480</b>	0.150
$P_{\text{seas}}$	0.074	<b>-0.722</b>

$T_{\text{mean}}$ , mean annual temperature;  $P_{\text{mean}}$ , mean annual precipitation;  $T_{\text{min}}$ , minimum temperature of the coldest month;  $P_{\text{min}}$ , precipitation of the driest month;  $T_{\text{seas}}$ , temperature seasonality;  $P_{\text{seas}}$ , precipitation seasonality.

Values in the lower part of the table are the loadings of each variable on the two PCs. Bold type indicates the strongest contributions to each PC axis, not statistical significance, which is indicated in Table S2.

**Table S2. Pearson's correlation coefficients between climate variables and derived PC variables PC1 and PC2**

Variable	$T_{\text{mean}}$	$P_{\text{mean}}$	$T_{\text{min}}$	$P_{\text{min}}$	$T_{\text{seas}}$	$P_{\text{seas}}$	PC1
$P_{\text{mean}}$	0.732						
$T_{\text{min}}$	0.968	0.770					
$P_{\text{min}}$	0.265	0.501	0.288				
$T_{\text{seas}}$	-0.843	-0.736	-0.926	-0.301			
$P_{\text{seas}}$	0.067	-0.129	0.050	-0.827	-0.047		
PC1	-0.924	-0.883	-0.959	-0.507	0.920	0.142	
PC2	-0.236	0.065	-0.224	0.834	0.199	-0.959	0.000

$P < 0.05$  in all cases except the three shown in italic type.

**Table S3. Regression coefficients ( $\beta$ ) and coefficients of determination ( $R^2$ ) for the regression of standardized phylogenetic diversity on PC1 of six climatic variables**

Sample	EAS			ENA		
	$\beta$	$R^2$	$P$	$\beta$	$R^2$	$P$
Regional scale						
All angiosperms	-0.008	0.872	<0.001	-0.002	0.232	<0.001
Herbs	-0.005	0.750	<0.001	<0.001	0.004	0.747
Shrubs	-0.010	0.757	<0.001	-0.013	0.400	<0.001
Trees	-0.019	0.897	<0.001	-0.023	0.797	<0.001
Local scale						
All angiosperms	-0.009	0.635	<0.001	0.001	0.009	0.002
Herbs	-0.005	0.239	<0.001	0.004	0.151	<0.001
Shrubs	-0.009	0.557	<0.001	-0.018	0.583	<0.001
Trees	-0.023	0.780	<0.001	-0.026	0.698	<0.001

For the purpose of comparison among four different groups of species, the same threshold for selecting species at random ( $n = 50$ ) was used to calculate standardized phylogenetic diversity for all four groups of species in this analysis.