

Testing for selective relaxation



Sites





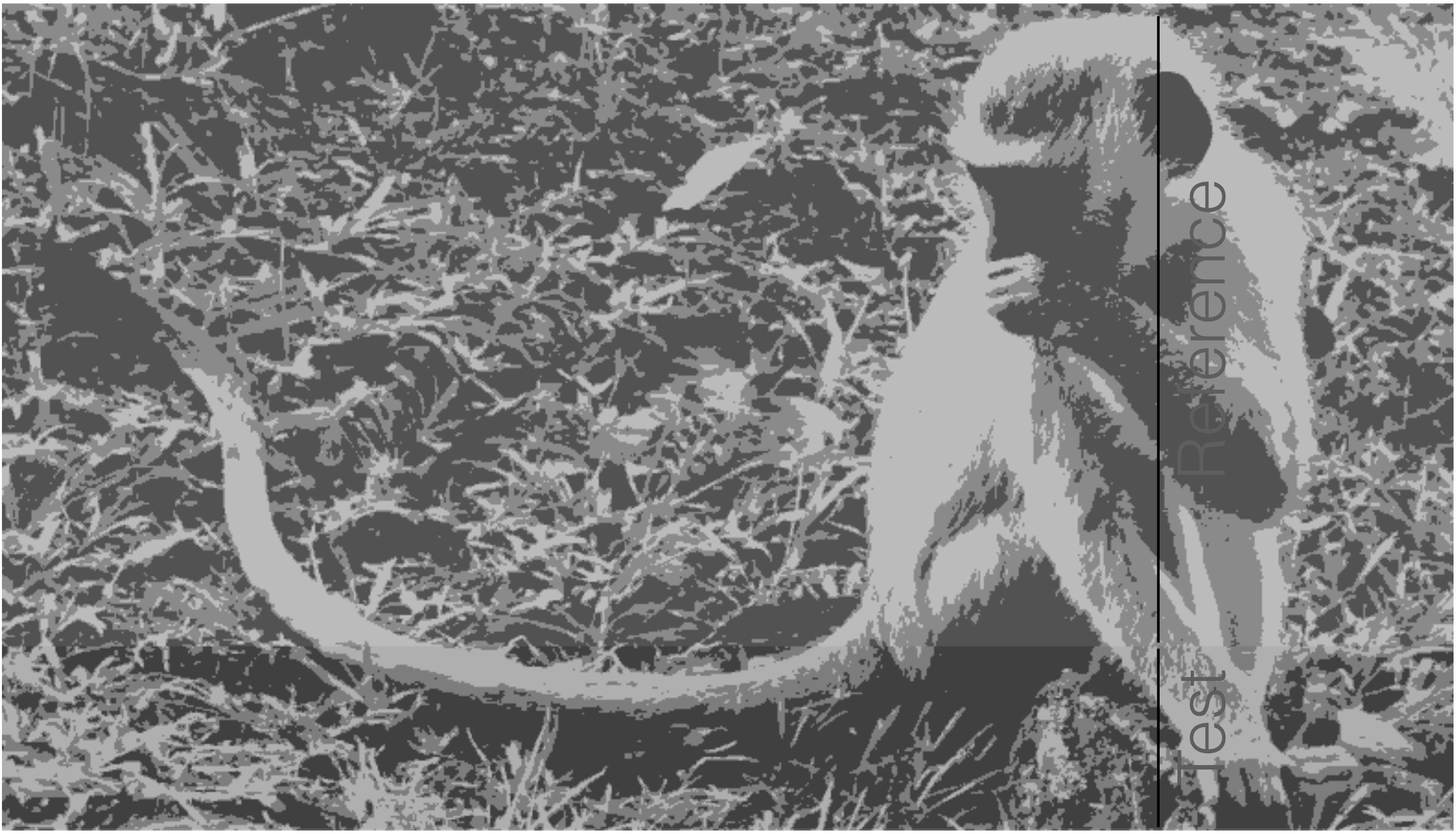


Partition the image into horizontal bands (a priori); compare whether or not there is visual benefit to using separate 3-color palettes in two sets of bands instead of a single 3-color palette



[RELAX]: Compare whether or not the set of branches of interest (test set) has a significantly different dN/dS distribution than the rest of the tree (background), fitted jointly to the entire alignment. For relaxation testing, the two dN/dS distributions are related via a power transformation.





Test

Reference

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Reference Branches

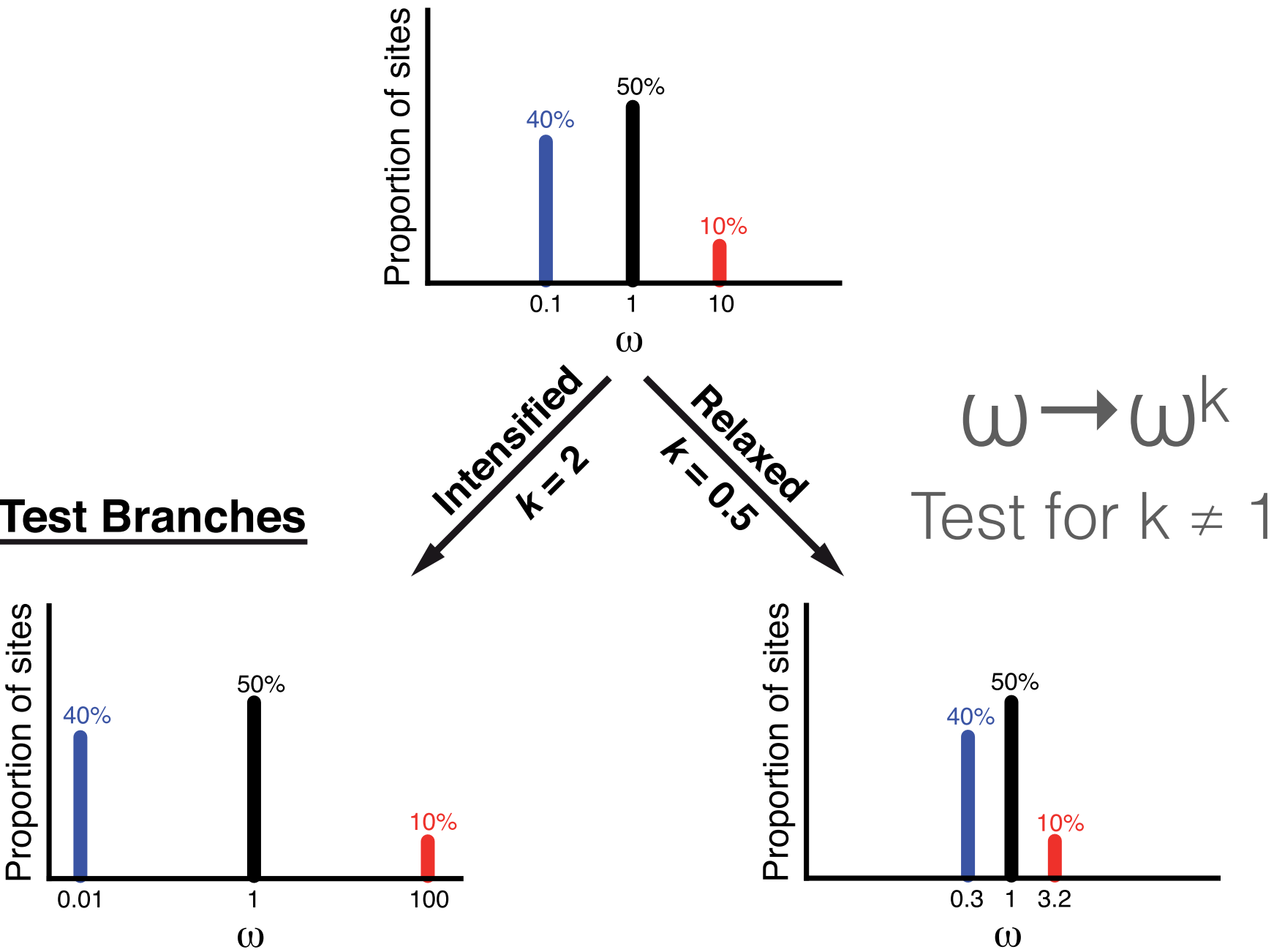


Table 1. Test for Relaxed Selection Using RELAX in Various Taxonomic Groups.

Taxa	Gene/Genes	Test Branches	Reference Branches	k^a	P-Value
γ -proteobacteria	Single-copy orthologs	Primary/secondary endosymbionts	Free-living γ -proteobacteria	0.30	< 0.0001
		Primary endosymbionts	Free-living γ -proteobacteria	0.28	< 0.0001
		Secondary endosymbionts	Free-living γ -proteobacteria	0.61	< 0.0001
Bats	SWS1	Primary endosymbionts	Secondary endosymbionts	0.56	< 0.0001
		HDC echolocating and cave roosting (pseudogenes)	LDC echolocating and tree roosting (functional genes)	0.16	< 0.0001
		LDC echolocating	Tree roosting	1.07	0.577
	M/LWS1	HDC echolocating and cave roosting	LDC echolocating and tree roosting	0.70	0.495
		Echolocating species	Tree- and cave-roosting species	0.21	0.0005
		HDC echolocating	LDC echolocating	0.84	0.427
Bornavirus	Nucleoprotein	Endogenous viral elements	Exogenous virus	0.02	< 0.0001
<i>Daphnia pulex</i>	Mitochondrial protein-coding genes	Asexual	Sexual	0.63	< 0.0001

^aEstimated selection intensity.