

Clade sorting has a greater effect than local adaptation
on ecometric patterns in Carnivora

APPENDIX

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Appendix 1: Gear ratios in living North American carnivores.

Species	Family	Gear Ratio	N
<i>Canis latrans</i>	Canidae	1.26	301
<i>Canis lupus</i>	Canidae	1.25	22
<i>Canis rufus</i>	Canidae	1.26	2
<i>Speothos venaticus</i>	Canidae	1.17	6
<i>Urocyon cinereoargenteus</i>	Canidae	1.25	285
<i>Urocyon littoralis</i>	Canidae	1.22	2
<i>Vulpes lagopus</i>	Canidae	1.32	16
<i>Vulpes macrotis</i>	Canidae	1.29	4
<i>Vulpes velox</i>	Canidae	1.23	6
<i>Vulpes vulpes</i>	Canidae	1.27	37
<i>Herpailurus yaguarondi</i>	Felidae	1.33	11
<i>Leopardus pardalis</i>	Felidae	1.39	16
<i>Leopardus tigrinus</i>	Felidae	1.34	2
<i>Leopardus wiedii</i>	Felidae	1.33	2
<i>Lynx canadensis</i>	Felidae	1.36	3
<i>Lynx rufus</i>	Felidae	1.37	222
<i>Panthera onca</i>	Felidae	1.28	14
<i>Puma concolor</i>	Felidae	1.36	14
<i>Conepatus leuconotus</i>	Mephitidae	1.18	7
<i>Conepatus semistriatus</i>	Mephitidae	1.16	10
<i>Mephitis macroura</i>	Mephitidae	1.28	2
<i>Mephitis mephitis</i>	Mephitidae	1.22	5
<i>Spilogale gracilis</i>	Mephitidae	1.23	5
<i>Spilogale putorius</i>	Mephitidae	1.22	5
<i>Eira barbara</i>	Mustelidae	1.22	12
<i>Galictis vittata</i>	Mustelidae	1.17	7
<i>Gulo gulo</i>	Mustelidae	1.21	4
<i>Lontra canadensis</i>	Mustelidae	1.25	3
<i>Lontra longicaudis</i>	Mustelidae	1.22	2
<i>Martes americana</i>	Mustelidae	1.25	3
<i>Martes pennanti</i>	Mustelidae	1.24	3
<i>Mustela erminea</i>	Mustelidae	1.15	3
<i>Mustela frenata</i>	Mustelidae	1.21	238
<i>Mustela nigripes</i>	Mustelidae	1.15	2
<i>Mustela nivalis</i>	Mustelidae	1.22	2
<i>Neovison vison</i>	Mustelidae	1.17	23
<i>Taxidea taxus</i>	Mustelidae	1.23	8
<i>Bassaricyon gabbii</i>	Procyonidae	1.25	10
<i>Bassariscus astutus</i>	Procyonidae	1.22	13
<i>Bassariscus sumichrasti</i>	Procyonidae	1.33	2
<i>Nasua narica</i>	Procyonidae	1.23	5
<i>Potos flavus</i>	Procyonidae	1.18	4
<i>Procyon cancrivorus</i>	Procyonidae	1.21	4
<i>Procyon lotor</i>	Procyonidae	1.21	503
<i>Ursus americanus</i>	Ursidae	1.14	5
<i>Ursus arctos</i>	Ursidae	1.08	4

Appendix 2: Gear ratios in fossil carnivores.

Species	Family	Gear Ratio
January Cave, Alberta		
Lat: 50.19, Lon: -114.52, Max age: 35,000, Min age: 23,100		
<i>Vulpes vulpes</i>	Canidae	1.27
<i>Martes americana</i>	Mustelidae	1.25
<i>Mustela erminea</i>	Mustelidae	1.15
<i>Mustela frenata</i>	Mustelidae	1.21
<i>Mustela nivalis</i>	Mustelidae	1.22
	Mean:	1.22
	StdDev:	0.046

Friesenhahn Cave, Texas

Lat: 29.62, Lon: -98.37, Max age: 20,000, Min age: 10,000

<i>Canis dirus</i>	Canidae	1.26
<i>Canis latrans</i>	Canidae	1.26
<i>Urocyon cinereoargenteus</i>	Canidae	1.25
<i>Homotherium serum</i>	Felidae	1.21
<i>Lynx rufus</i>	Felidae	1.37
<i>Smilodon fatalis</i>	Felidae	1.21
<i>Mephitis mephitis</i>	Mephitidae	1.22
<i>Procyon lotor</i>	Procyonidae	1.21
<i>Arctodus simus</i>	Ursidae	1.08
<i>Ursus americanus</i>	Ursidae	1.14
	Mean:	1.22
	StdDev:	0.077

McKittrick, California

Lat: 35.32, Lon: -119.62, Max age: 40,000, Minage: 10,000

<i>Canis dirus</i>	Canidae	1.26
<i>Canis latrans</i>	Canidae	1.26
<i>Canis lupus</i>	Canidae	1.25
<i>Vulpes macrotis</i>	Canidae	1.29
<i>Lynx rufus</i>	Felidae	1.37
<i>Panthera atrox</i>	Felidae	1.33
<i>Puma concolor</i>	Felidae	1.36
<i>Smilodon fatalis</i>	Felidae	1.21
<i>Mephitis mephitis</i>	Mephitidae	1.22
<i>Spilogale putorius</i>	Mephitidae	1.22
<i>Mustela frenata</i>	Mustelidae	1.21
<i>Taxidea taxus</i>	Mustelidae	1.23
<i>Arctodus simus</i>	Ursidae	1.08
<i>Ursus americanus</i>	Ursidae	1.14
	Mean:	1.25
	StdDev:	0.079

Anderson Pit, Indiana

Lat: 39.0, Lon: -86.5, Max age: 40,000, Min age: 10,000

<i>Urocyon cinereoargenteus</i>	Canidae	1.25
<i>Neovison vison</i>	Mustelidae	1.17
<i>Procyon lotor</i>	Procyonidae	1.21
<i>Ursus americanus</i>	Ursidae	1.14
	Mean:	1.19
	StdDev:	0.048

Little Box Elder Cave, Wyoming

Lat: 42.62, Lon: -105.62, Max age: 24,000, Min age: 10,000

<i>Canis latrans</i>	Canidae	1.26
<i>Canis lupus</i>	Canidae	1.25
<i>Vulpes vulpes</i>	Canidae	1.27
<i>Lynx rufus</i>	Felidae	1.37
<i>Panthera atrox</i>	Felidae	1.33
<i>Puma concolor</i>	Felidae	1.36
<i>Mephitis mephitis</i>	Mephitidae	1.22
<i>Spilogale putorius</i>	Mephitidae	1.22
<i>Gulo gulo</i>	Mustelidae	1.21
<i>Mustela frenata</i>	Mustelidae	1.21
<i>Mustela nigripes</i>	Mustelidae	1.15
<i>Taxidea taxus</i>	Mustelidae	1.23
<i>Arctodus simus</i>	Ursidae	1.08
<i>Ursus arctos</i>	Ursidae	1.08
		Mean: 1.23
		StdDev: 0.088

Brynjulfson Cave 1, Missouri

Lat: 38.85, Lon: -92.28, Max age: 34,600, Min age: 9,400

<i>Canis dirus</i>	Canidae	1.26
<i>Canis latrans</i>	Canidae	1.26
<i>Urocyon cinereoargenteus</i>	Canidae	1.25
<i>Vulpes vulpes</i>	Canidae	1.27
<i>Mephitis mephitis</i>	Mephitidae	1.22
<i>Spilogale putorius</i>	Mephitidae	1.22
<i>Lontra canadensis</i>	Mustelidae	1.25
<i>Martes pennanti</i>	Mustelidae	1.24
<i>Mustela frenata</i>	Mustelidae	1.21
<i>Neovison vison</i>	Mustelidae	1.17
<i>Procyon lotor</i>	Procyonidae	1.21
<i>Ursus americanus</i>	Ursidae	1.14
		Mean: 1.23
		StdDev: 0.039

New Trout Cave, West Virginia

Lat: 38.60, Lon: -79.37, Max age: 31,100, Min age: 16,840

<i>Canis dirus</i>	Canidae	1.26
<i>Canis latrans</i>	Canidae	1.26
<i>Vulpes vulpes</i>	Canidae	1.27
<i>Martes americana</i>	Mustelidae	1.25
<i>Martes pennanti</i>	Mustelidae	1.24
<i>Mustela erminea</i>	Mustelidae	1.15
<i>Mustela frenata</i>	Mustelidae	1.21
<i>Mustela nivalis</i>	Mustelidae	1.22
<i>Neovison vison</i>	Mustelidae	1.17
<i>Taxidea taxus</i>	Mustelidae	1.23
<i>Procyon lotor</i>	Procyonidae	1.21
<i>Ursus americanus</i>	Ursidae	1.14
		Mean: 1.22
		StdDev: 0.044