



Supplementary Information for

Language extinction triggers the loss of unique medicinal knowledge

Rodrigo Cámara-Leret and Jordi Bascompte

Rodrigo Cámara-Leret.

E-mail: rodrigo.camaraleret@ieu.uzh.ch

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Tables S1 to S3

Table S1. Phylogenetic clustering (measured using Pagel's λ) of unique knowledge along the language and plant phylogenies of North America, Northwest Amazonia, and New Guinea. Statistically significant results: *, P-value < 0.001.**

Region	Languages	Plants
North America	0.31	0.21***
Northwest Amazonia	6.61e-05	6.61e-05
New Guinea	6.61e-05	0.02

Table S2. Names and Glottolog codes of the studied languages of North America, northwest Amazonia, and New Guinea.

Language name	Glottolog code
NORTH AMERICA	
Alabama	alab1237
Aleut	aleu1260
Algonquin	algo1255
Arapaho	arap1274
Arikara	arik1262
Atikamekw	atik1240
Atsugewi	atsu1245
Bella Coola	bell1243
Cahuilla	cahu1264
Central Carrier	carr1249
Catawba	cata1286
Central Alaskan Yupik	cent2127
Cherokee	cher1273
Cheyenne	chey1247
Chickasaw	chic1270
Chippewa	chip1241
Choctaw	choc1276
Clallam	clal1241
Cocopa	coco1261
Comanche	coma1245
Cowlitz	cowl1242
Creek	cree1270
Crow	crow1244
Dakota	dako1258
Ditidaht	diti1235
Eastern Keres	east1472
Eastern Canadian Inuktitut	east2534
Eastern Abenaki	east2544
Eastern Pomo	east2545
Gitksan	gitx1241
Gros Ventre	gros1243
Haisla	hais1244
Halkomelem	halk1245
Havasupai-Walapai-Yavapai	hava1248
Hawaiian	hawa1245
Heiltsuk-Oowekyala	heil1246
Ho-Chunk	hoch1243
Hopi	hopi1249
Iowa-Oto	iowa1245
Towa	jeme1245
Kalispel-Pend d'Oreille	kali1308
Karok	karo1304
Kashaya	kash1280

Table S2. (continued)

Language name	Glottolog code
NORTH AMERICA	
Kawaiisu	kawa1283
Kiowa	kiow1266
Klamath-Modoc	klam1254
Koasati	koas1236
Koyukon	koyu1237
Tipai	kumi1248
Kutenai	kute1249
Kwak'wala	kwak1269
Lakota	lako1247
Luiseno-Juaneño	luis1253
Northern Lushootseed	lush1252
Makah	maka1318
Malecite-Passamaquoddy	male1292
Mandan	mand1446
Maricopa	mari1440
Menominee	meno1252
Mescalero-Chiricahua Apache	mesc1238
Meskwaki	mesk1242
Mi'kmaq	mikm1235
Montagnais	mont1268
Munsee	muns1251
Nanticoke	nant1249
Natchez	natc1249
Navajo	nava1243
Nez Perce	nezp1238
Nisenan	nise1244
North Alaskan Inupiatun	nort2943
Northwest Maidu	nort2951
Northern Paiute	nort2954
Northern Pomo	nort2966
Northeastern Russian River Pomo	nort2967
Northern Ohlone	nort2969
Southern-Coastal Tsimshian	nucl1649
Nuu-chah-nulth	nuuc1236
Obispeño	obis1242
Okanagan	okan1243
Omaha-Ponca	omah1247
Pawnee	pawn1254
Pima Bajo	pima1248
Potawatomi	pota1247
Powhatan	powh1243
Quechan	quec1382
Quileute	quil1240
Quinault	quin1251
Seri	seri1257

Table S2. (continued)

Language name	Glottolog code
NORTH AMERICA	
Shasta	shas1239
Shoshoni	shos1248
Shuswap	shus1248
Siksika	siks1238
Southern Tiwa	sout2961
Southern Puget Sound Salish	sout2965
Southern Sierra Miwok	sout2985
Northern Straits Salish	stra1244
Tanaina	tana1289
Rio Grande Tewa	tewa1260
Thompson	thom1243
Tlingit	tlin1245
Tohono O'odham	toho1245
Tolowa-Chetco	tolo1259
Tubatulabal	tuba1278
Twana	twan1247
Umatilla	umat1237
Unami	unam1242
Upper Tanana	uppe1437
Upper Chehalis	uppe1439
Ute-Southern Paiute	utes1238
Washo	wash1253
Western Apache	west2615
Western Keres	west2632
Woods Cree	wood1236
Huron-Wyandot	wyan1247
Yana	yana1271
Northern Yokuts	yoku1256
Yuki	yuki1243
Yurok	yuro1248
Zuni	zuni1245

Table S2. (continued)

Language name	Glottolog code
NORTHWEST AMAZONIA	
Achuar-Shiwiar	achu1248
Andoque	ando1256
Asháninka	asha1243
Barasana-Eduria	bara1380
Bora	bora1263
Cabiyari	cabi1241
Kakua	cacu1241
Camsá	cams1241
Candoshi-Shapra	cand1248
Carapana	cara1272
Carijona	cari1279
Cocama-Cocamilla	coca1259
Cofán	cofa1242
Cubeo	cube1242
Curripaco	curr1243
Deni	deni1241
Desano	desa1247
Kotiria	guan1269
Huambisa	huam1247
Inga	inga1252
Kulina Pano	kuli1255
Macuna	macu1260
Murui Huitoto	mur1274
Puinave	puin1248
San Martín Quechua	sanm1289
Secoya	seco1241
Sharanahua	shar1245
Shipibo-Conibo	ship1254
Shuar	shua1257
Siona-Tetete	sion1247
Tanimuca-Retuarã	tani1257
Tena Lowland Quichua	tena1240
Ticuna	ticu1245
Tucano	tuca1252
Waorani	waor1240
Yanomámi	yano1262
Yucuna	yucu1253

Table S2. (continued)

Language name	Glottolog code
NEW GUINEA	
Amanab	aman1265
Ambai	amba1265
Ambulas	ambu1247
Angguruk Yali	angg1239
Dombano	aran1237
Barapasi	bara1375
Benabena	bena1264
Biak	biak1248
Binandere	bina1277
Buruwai	buru1308
Casuarina Coast Asmat	casu1237
Damal	dama1272
Eipomek	eipo1242
Ekari	ekar1243
Enga	enga1252
Faiwol	faiw1243
Fore	fore1270
Fuyug	fuyu1242
Gimi (Eastern Highlands)	gimi1243
Grass Koiari	gras1249
Hamtai	hamt1247
Hatam	hata1243
Huli	huli1244
Iatmul	iatm1242
Iha	ihaa1241
Imbongu	imbo1238
Irarutu	irar1238
Kais	kais1235
Kalam	kala1397
Kamoro	kamo1255
Kaulong	kaul1240
Ketengban	kete1254
Kilivila	kili1267
Kosarek Yale	kosa1249
Kuanua	kuan1248
Kuman	kuma1280
Kwoma	kwom1262

Table S2. (continued)

Language name	Glottolog code
NEW GUINEA	
Lower Grand Valley Dani	lowe1415
Maia	maia1254
Maybrat-Karon	maib1239
Mangga Buang	mang1404
Sougb	mani1235
Mekeo	meke1243
Melpa	melp1238
Mengen	meng1267
Meyah	meya1236
Mian	mian1256
Moi (Indonesia)	moii1235
Molima	moli1248
Moni	moni1261
Marori	moro1289
Motu	motu1246
Nakanai	naka1262
Ngkontar Ngkolmpu	ngka1235
Nobonob	nobo1238
North Tairora	nort2920
Yawa	nucl1454
Kwerba	nucl1595
Marind	nucl1622
Oksapmin	oksa1245
Ormu	ormu1248
Pare	pare1271
Pinai-Hagahai	pina1252
Serui-Laut	seru1244
Sinaugoro	sina1266
Sinasina	sina1271
Suabo	suab1238
Suau	suau1242
Tabla	tabl1243
Tauade	taua1242
Telefol	tele1256
Tifal	tifa1245
Waima	waim1251
Wandamen	wand1267
Wano	wano1243
Waritai	wari1264
Western Dani	west2594
Yei	yeii1239
Yopno	yopn1238
Zimakani	zima1244

Table S3. The percentage of unique knowledge associated to threatened and non-threatened languages and plants in North America ($n = 7,565$ medicinal services); Northwest Amazonia ($n = 773$ medicinal services); and New Guinea ($n = 873$ medicinal services). Language threat follows the classification in Glottolog. Plant threat follows the IUCN Red List of Threatened species.

	North America languages		Northwest Amazonia languages		New Guinea languages	
	Not threatened	Threatened	Not threatened	Threatened	Not threatened	Threatened
Threatened Plants	0	<1	0	<1	1	1
Not threatened plants	2	21	0	30	21	13
Unknown threat plants	12	64	0	69	47	17