

Pre-historical multiple movements of modern humans from Old World to Americas: Evidence based on comparing basic body part-name words with Austronesian

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Abstract: Basic body-part name vocabulary of representative Native American languages (NAmLs) and Eurasian languages was compared with ca. 1300 Austronesian (AN) basic words and with basic words of Eurasian languages. By applying closest similarity analysis of occurring frequencies of thus found AN cognates (of non-AN vocabulary) in subgroups of AN, NAmLs are concluded to have been derived from various branches of AN family, by human movements not only via Behring land-bridge but also via trans-Pacific sailing rout (as represented by Maipuran language in Amazonian area). Such independent human movements to Americas are concluded to be much more frequent than has been generally considered.

Keywords: basic Austronesian origins, body-part names, closest similarity analysis, trans-Pacific movement to America

1 INTRODUCTION

Origins of Native American languages (NAmLs) and peoples are generally considered to be yet unknown [1]. However, most of representative language families/groups in Eurasia have been strongly suggested by Ohnishi [2,3,4] to share many cognate basic words with Austronesian (AN) language (Lg) family, and therefore, seem to have been derived from AN Lgs. This paper aims to find multiple origins of NAmLs by basic word comparison, and present a new classification of modern human Lgs.

2 METHODS, RESULTS AND CONCLUSION

Basic body-part name words (BBP) (for 30 ~ 32 word items) in Swadesh' 200 basic words (SW200W) (See Ref. YH* in Table 1) or body part names (BP) of representative NAmLs were extensively compared with vocabulary of Eurasian and Pacific Lgs, especially with ca. 1,300 AN basic words listed in "Comparative Austronesian Dictionary (CAD*)" (See CAD* in Table 1). CAD* lists basic vocabulary for 80 AN Lgs consisted of 4 Formosan (FORM), 26 Western Malayo-Polynesian (W.MP), 6 Central MP (C.MP), 2 South Halmahera-West New Guinean (SHWNG), and 41 Oceanic (OC) Lgs, as is given in the uppermost lines in Table 3.

The 30~32 meanings of BBPs in Sw200W are as follows:

(i) [in Swadesh basic 100 words (Sw100W)] 25 ~ 26 word-meanings: belly (or bowels), blood, bone, breast(s), (egg), ear, eye, fat (or grease), feather, foot, hair, hand, head, heart, horn, knee, liver, meat (or flesh), mouth, neck, nose, saliva (or spit), skin, tail, tongue, tooth.

(ii) [in Sw200W other than Sw100W] 5~6 word-meanings: arm, back, (breath, to breathe), leg, lip, wing

When two or more different words have the same meaning of a Swadesh basic word, AN and Eurasian cognates of the two or more words were also searched and analyzed. Cognates having different meanings, whether ancestral meanings or derived/converted meanings, were also considered to be cognates of the (B)BBPs. Searching such cognates having converted meanings is very important in increasing sensitivity of finding distantly relationship between different language families.

Closest similarity analysis (CSA): Based on thus found AN cognates of vocabulary in NAmLs and Eurasian Lgs listed in Table 2, every basic word item of non-AN Lg(s) (or Lg groups) were analyzed by CSA described in Ohnishi [6]. CSA determines the AN subgroup (in the above five) to which the morphologically most similar AN cognate word belongs. Cognates having different meanings, whether ancestral meanings or derived meanings, were also considered to be cognates of (B)BBPs. Thus found cognates of BBPs or BPs, or of general (basic) words are listed in Table 2, as classified by most similar subgroup out of the five AN language groups. When two or more different basic words have the same meaning of a Swadesh basic words, cognates of the two or more words were also searched and analyzed. After such detailed analyses, occurring frequencies of most similar cognates of ca.30 BBPs in the 5 AN subgroups were counted and listed in Table 3, and statistically tested (by χ^2 -test, as described in [5]) for finding an AN subgroup which is most closely kin to the "query" language (e.g. Quechuan, Yahgan, Mongolic, etc.) ?". Results of χ^2 -test are indicated in Table 3 by #, +, ++, *, and **, for significant levels $P < 0.1$, < 0.05 , < 0.025 , < 0.01 , and < 0.005 , respectively.

Table 1: Abbreviations used in Table 2 and Table 3.

<p>§ General: A < B, B > A: "A has/had been derived from B"; A <> B: "A is genetically (phylogenetically) related to B" (= "A cognates with B"); A << B, B >> A: "A has/had been borrowed from B", pX = protoX (e.g., pJp = proto-Japanese); dial. = dialect, N.=North(ern), S.=South(ern), E.= East(ern), W.=West(ern), C.= Central, wr.=Written, mid./Mid.=Middle, mod=Modern, BP=body part names, BBP=basic BP</p> <p>§ Language names: AN = Austronesian, FORM= Formosan, MP=Malayo-Polynesian, W.MP= Western MP {PHIL= Philippines, SND= Sundic (Minang.= Minangkabau, IndoN= Indonesian), SLW=Sulawesi }, C.MP=Central MP, SHWNG= S.Halmahera and W.New Guinea), OC = Oceanic {ADM= Admiralties, W.OC = Western OC, S.E.Solom.= S.E.Solomons, ReOC= Remote OC {MicN= Micronesian, NCal= New Caledonian, Vanu.= Vanuatu, C.Pacif.= C.Pacific (Fiji.= Fijian), PolyN= Polynesian} } Eurasia: Jpn, Jp = Japanese {O.Jpn = Old Jpn., Ml.Jpn = Mainland Jpn, RYU=Ryukyuan (Hate.= Hateruma dial.)}; KOR= Korean, Chin.= Chinese, TNG= Tungus {Manchu.= (Literaly) Manchurian.}, MNG = Mongolic, Mong.= Mongolian, TbB= Tibeto-Burman {Tb= Tibetan}, DRAV = Dravidian, URA = Uralic { Finn.= Finnish, Hung.= Hungarian, FU= Finno-Ugric}, ChukKam= Chukchee- Kamchatkan}, IE = Indo-European {Skr. = Sanskrit}, Yns = Yeniseian Nat.AmL = Native American Languages: Esk = Eskimo, KoaAla. = Koasati-Alabaman, Comec.= Comecrudo, MxZq= Mixe-Zoquean (Mx= Mixean, Zq= Zoquean), Maip= Maipuran, Que. = Quechua(n)</p> <p>§ References: ADD*= Hattori, S. (1964) <i>Ainu Dialect Dictionary</i>, Iwanami Shoten, Tokyo. Bene*72 = Benedict, P.K. (1972) <i>Sino-Tibetan. A Conspectus</i>, Cambridge Univ. Press, Cambridge, U.K. Brick*= Bricker, V. et al. (1998) <i>A Dictionary of the Maya Language as spoken in Hocobá, Yucatan</i>. Univ. of Utah Press, Salt Lake City. Brinton*= Brinton, D.G (1892) <i>Proc. Amer. Philos. Soc.</i> 30: 83-90. CAD*= Tryon, D.T.(1995) <i>Comparative Austronesian Dictionary. Parts 1-4</i>, Mouton de Gruyter, Berlin/New York. CED*= Fortesque, M. et al. (1994) <i>Comparative Eskimo Dictionary</i>, Alaska Native Language Center, Fairbanks. DAlaL*= Sylestine, C. et al. (1993) <i>Dictionary of the Alabama Language</i>. Univ. Texas Press, Austin. DED*= Burrow, T. and Emeneau, M.B. (1984) <i>Dravidian Etymological Dictionary</i>, 2nd ed., Iarendon Press, Oxford. DMaol*= Williams, H.W. (1978) <i>Dictionary of the Maori Language, 7th ed.</i> (Reprinted, Wellington, 1992) DQE* = <i>Diccionario Quechua-Español-Quechua, Simi Taqe</i>. Qosqo, 1995. DTrkL*= Öztopçu, K. et al. (1996) <i>Dictionary of the Turkic Languages</i>, Routledge, London /New York. EDAL*= Starostin, S. et al. (2003) <i>Etymol. Dict. of the Altaic Languages</i>, Brill, Leiden-Boston. GrCoc*= Faust, M.(2008) <i>Gramatica Cocama, Tercera ed.</i>, Instituto Lingüístico de Verano, Lima. Hashi*76= Hashimoto, M. (1976) <i>The Wënc'ang dialect of the Hainan Language (In Japanese)</i>, <i>Journal of Asian and African Studies</i> 11:65-86. Hofl*= Hofling, C.A.(1997) <i>Itzaj Maya-Spanish-English Dictionary</i>, Univ. of Utah Press, Salt Lake City. IKJ*= Ohno, S. (1990) <i>Iwanami Kogo Jiten, Zoutei-ban</i>. Iwanami-Shoten, Tokyo. Kawachi* = Kawachi, Y. (1996) <i>Mansyu-go Bungo Bunten (In Jpn.)</i>, Kyoto Univ. Press, Kyoto. KoaD*= Kimball, G.D.(1994) <i>Koasati Dictionary</i>, Univ. of Nebraska Press, Lincoln & London. Kauf*= Kaufman, T.(2003) <i>Introduction to "A Preliminary Mayan Etymological Dictionary"</i>, FAMSI. (http://www.famsi.org/reports/01051/index.html) LAm*= Greenberg, J.H. (1987) <i>Languages in Americas</i>, Stanford Univ.Press, Stanford. MTFNT-App* = Appendix in Ogawa (1935) <i>The Myths and Traditions of the Native Tribes (Texts and Notes)</i> (In Japanese), Inst. of Linguistics, Taihoku Imperial University, Taipei. (2nd printing in 1996) OrL*= Ruhren, M. (1994) <i>Origin of Language</i>, Stanford Univ. Press, Stanford. Ozawa*94= Ozawa, S. (1994) <i>Gendai Mongoru-go Jiten, Daigaku-Shorin</i>, Revised and Enlarged ed., Tokyo. Payne*91= Payne, D.L. (1991) <i>A classification of Maipuran (Arawakan) languages Based on Sharedlexical retentions</i>. pp.355-499, In: Delbyshire, D.C. and Pullum, G.K. (eds.) <i>Handbook of Amazonian Languages, Vol. 3</i>, Mouton de Gruyter, Berlin/New York. RHJ*= Nakamatsu, T.(1987) <i>Ryukyuu Hogen Jiten (The Dictionary of the Ryukyu Language)</i>, Naha Shuppansha, Hayebaru-chou (Okinawa). Schu* = Schuessler, A.(2007): <i>ABC Etymol. Doict. of Old Chinese</i>. Univ. of Hawai'i Press, Honolulu. Swad*54 = Swadesh, M. (1954) <i>Word 10: 306-332</i>. SwadLfp* = Swadesh lists for the Tupi-Guarani languages, Tupinamba and Modern Guarani. (http://www.geocities.jp/ikoh12/honnronn5/00503/AppendixSwadesh-Wiktionary.htm) Swan*40=Swanton, J.R.(1940): <i>Linguistic Material from the Tribes of Southern Texas and Northeastern Mexico. Smithsonian Institution Bureau of American ethnology Bulltin 127</i>. Washington. Tam* = Tamura, S.(1996) <i>The Ainu-Japanese Dictionary. Saru dialect (English by I.R.L.McDonnell)</i> (In Japanese), Sofukan, Tokyo. UEW* = Redéi, K. (1991) <i>Uralisches etymologisches Wörterbuch I-III</i>, Harrassowitz, Wiesbaden. Wat*= Watkins, C. (2000) <i>The American Heritage Dictionary of Indo-European Roots</i>, 2nd ed., Houghton Mifflin Co., Boston/New York. Witch*= Witchmann (1995) <i>The Relationship among the Mixe-Zoquean Languages in Mexico</i>. Univ.of Utah Press, Salt Lake City. YH* = Yasumoto, B. and Honda, M. (1978) <i>Nihongo no Tan'jyou (The Birth of the Japanese Language)</i>, Taishukan Shoten, Tokyo.</p>

Conclusion: From Table 3, we conclude that: (1) Native American and Eurasian Lgs and language families listed here are have been derived directly or indirectly from various branches of AN Lg family. (2) Maipuran has derived from Maori, via ancient trans-Pacific sailing to South America (See "Hah-Vah-Ee-Kay" (=Hawaikii) story in [6] (Jpn. trnsl. ed. p.163, p.515) and [2], p.115.). (3) Comecrudo, Aymara, Yamanan, and Mixe-Zoquean are also (directly or indirectly) of OC-origin, some of which might have moved via trans-Pacific rout. (4) Koasati-Alabaman is Philippines-derived. (5) Multiple movements to Americas are evident. (6) Further details will be published elsewhere.

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Table 2. Most similar Austronesian cognates (in CAD*) of basic words in Native American and Eurasian languages.

§§ **Mayan-FORM** (Mayan data from: Swad*54, Kauf*, Hofl*, Brick*) || # BONE: pMaya *b'aaq (= bak) / Yuc. bak, /Hocabá b'áak /Itzaj b'aaq (< *βaq) || # FOOT/LEG: Yuc. ok "foot, leg" (< *ʔok(o) < *ʔoko "foot" < *koko "leg ~ foot" <> FORM: ʔoʔoʔ, koko "leg ~ foot") || # FORM: **Ami** (dialects: 馬蘭社, 奇密社) ʔoʔoʔ / (dialect: 荳蘭社) koko "leg ~ foot" (< proto-Ami *koko) (From MTFNT-App*, p.6) || W.MP: Gorontaro ʔoʔoato "foot" (< *ʔoʔo-ato < *ʔoʔo- "leg ~ foot") || # HAND: pMaya *q'ab' (= qab) /Yuc. k'ab' (< *qhabh- ~ *ghabh- < *qabh- ~ *qab-) || # FORM: **Atayal** qaβaʔ "arm" || OC: (S.E.Solomons) Lau ʔab "hand, arm", (C.Pacif.) Rotuman ʔu-hapa "hand" (< *hapa < *qaba) || URA: pFV *käppä /Finnish käppä /Estonian käpp "hand, paw"; Mordvin kepe, kăpä, "barfuss" || IE: pIE *gabh- "to give, to receive, to seize" (< MP: *qab-) || Quechuan: Que. ccapa "hand" (= k'apa < *qaba "hand")

§§ **Eskimo-FORM**: (CED*) || # EYE: pEsk *əðə "eye" (< *əði- < *edi <> AN: *edi "to find"), (AAy= Alutiiq Alaskan Yupik)(CAY= C. Siberian Y.) ii / (CAY) iya / (Sirenik) aca / (NAI= North Alaskan Inuit) izi / (WCI= W.Canadian Inu.) (ECI= E.CI) iyi / (GRI= Greenlandic Inu.) isi "eye" (< *iðə < *ida ?) ; pEsk *əðəkə- "to watch" (< *əðə-kə-). || # FORM: **Tsou** edi "to find" (< *idu) || # FAT/GREASE: pEsk *qalunəq ~ *qaluniq "grease floating on stew" (< *qalu-niq < *qalu- "grease, fat"), (ECI) qaluniq "melting grease floating on meat stew", (GRI) qaluniq "fat, lard" || # FORM: **Paiwan** qalum (= qalum) "grease, fat" || # NECK: Eskimo-Aleut: (Esk) pEsk *uya "non-anatomical neck" || Aleut *uyu-X "neck" (uyu- <> AN: uyun "backbone of neck"), uyar- "sprout, muzzle, neck of bottle" (< *uyuar- < *uyu-ar- "thing resembling neck" < *uyu- "neck" + pEsk *-ar- (postbase) "thing resembling something") || # FORM: **Paiwan** uyun "backbone of neck" (< *uyu-n <> Aleut uyu-X "neck" /Aleut uyar "neck of bottle" (< *uyu-ar))

§§ **Mongolic (MNG)**: (EDAL*, Ozawa*94, YH*) || # § MNG-FORM || # FOOT: wr. Mong. köl /mid. Mong. kul /Buryat xül /Dagur kul "foot" (< pMNG *kul-) || # FORM: **Paiwan** kuła "foot" || W.MP: (SND) **Madurese** cingkul (< *cing-kul) / (SLW) Konjo 'singkulu "elbow" (< *-kulu "arm"); Konjo kulantu? "knee" || # HAIR: pMNG *hüsü ~ *füsü /wr. Mong. üsü /mid. MNG xüsün /Mongor fuzə "hair" (< *fūsü) || # FORM: **Tsou** fʔisi (dialects: fuʔusu, fuʔusu) "hair" (< *fuʔu-si < *fulu-si "hair, feather" < *bulu-siw ~ *buu(n) < *bulu "hair, feather" ~ *buun, *buuk "hair (of head)" + *siwi "feather, bird") || OC: Dami siwi "feather" || Note: W.MP: (SND) Madurese, Balinese bulu "feather", (PHIL) Kalinga Limos buʔük /Aklanon buhuk /Kagayanan buuk /Bangingi Sama buʔun "hair (of head)" || # SKIN/ BARK: **Wr.Mong.** qalisu "bark, skin" (< *qali-su) || # FORM: **Paiwan** kalʔiç (= *qalʔiC) /Atayal katiʔ (< pAN *qaliC "bark, skin")

§§ **MNG-Sundic (SND)**: || # NECK: wr. Mong. küjüdgi /modern Mong. kuduu (< *kudu(d)-gi ~ *kudu-dgi) || AN: (SND) **Minangkabau** kudu "neck" || # § **Quechuan-W.MP (PHIL/ SND)**: (DQEQ*) || # BONE: Cuzco Que. tullu "bone, stem of plants" (< W.MP: *tulu-) || W.MP: (SND) **Aceh** tuluwəŋ /Sundanese tulan / (PHIL) Kalinga Limos tulʔaŋ (< *tulu-aŋ) || # MOUTH: Cuzco Que. simi "mouth, language, word" (< *simi ~ *sim-i "mouth ~ beak") || W.MP: (PHIL) **Isnag** simtu "beak" (< *sim-tu) || # NAIL: Cuzco Que. sillu || Aymara sillu || W.MP: (PHIL) **Kagayanan** sulu (< *sulu ?) || # EYE: Cuzco Que. ñawi "eye" (< *njə-w-i < *niəŋ "to see" + *u- ~ *u- "to see" + *-i (nominal suffix)) || W.MP: (SND) **Aceh** niəŋ "to see", u- "to see"

§§ **Na-Dene-W.MP (PHIL, SND)**: (OrL*) || # SKIN: Haida q'at "skin" || Ath.: Sarsi -kät "hide" || # FORM: **Paiwan** kalʔiç (= qalʔiC) "skin" || # GUTS: Haida qasan-ts'ang "brains" (= "head-guts") (ts'ang < *tsiaŋ ~ *tsian < *tian "stomach, guts") || Athabaskan.: Sarsi čá(n) "guts" / Inglik -čáni "guts" (< *čán-(i) < *tsʔ'an < *tiyan) || W.MP: (PHIL) Tagalog, Aklanon tian / (SND) **Sasak** tian "stomach" || # FEATHER: Haida taw "feather" || Athabaskan: Tlingit t'áw "feather, leaf" || W.MP: (SLW) **Wolio** tawa / Da'a tava "leaf" || # § **Yeniseian (Yns)-W.MP** (OrL*) # HEART: pYns *pu- /Ket hū /Yug fu /Pumpokol pfu || W.MP: (Borneo) **Malagasi Merina** fu "heart" || TbB: *pu-k "cave, belly", Kabui, Meithei puk /Lepcha tafuk (-fuk < *phu-k) "belly", Lushei pu-k "cave" || # MEAT: pYns *iči ~ *iči / Ket ts /Yug ts /**Kott** iči /Arin is "meat" || W.MP: (SND) **Bali** isi / (PHIL) **Bangingi Sama** isi /Yami ašiši "flesh" (< pAN *Sisi "meat") || # TAIL: Ket hū /Yug fū (< *pūt <> W.MP: Isnag iput ~ Konjo poti ?) || W.MP: (PHIL) **Isnag** iput /Palawan, Molbog iput (< *iput < *ii-put ?, where *ii- <> OC: Kwaio ʔiʔi-na "tail") ; (SLW) ?Konjo poti (< *puti ?) || # § **Koasati-Alabaman-PHIL**: (KoaD*, DALaL*) || # BLOOD: Koasati, Alabama lakhani (< *daga-ni < pAN *daRaq "blood") || W.MP: (PHIL) **Isnag** dāga /Molbog daha /**Bangingi Sama** lahaʔ / (Sundic) Aceh, Miinangkabau darah "blood" < pAN *dāRaq "blood" || JR: Ml.Jpn aka "redness" (< *raga < *daRaq) || # EYE: Koasati, Alabama ittili "eye" || W.MP: (PHIL) **Sarangani** Blaen m-iti "to see" || # to SAY: Koasati mán-kan "to tell someone something", Alabama man-ka "to say, to ask" (< *man- "to say") || W.MP: (PHIL) **Sarangani** Blaen man "to say", Yami manizəŋ "to speak, to talk" || # § **Tungus (TNG)-PHIL**: (EDAL*, YH*, Kawachi*) || # ARM: Literaly Manchu. mayan "arm" (< *may- "to take" + -an) || W.MP: (PHIL) **Palawan** maya /**Kagayanan** may "to have" (= existential marker, "there is/are") || # BREAST: Lit. Manchu. tungen "breast" (< *tun-gen) || W.MP: (PHIL) **Bangingi Sama** tunqay dudu? "nipple" || # to HEAR: pTNG *döldi- /Evenki döldi- /Orok dool-ji, dölzi "to hear" (< *dool-dī- < *doʔol- < (W.MP: PHIL) *doŋol "to hear") || W.MP: (PHIL) **Kagayanan** doŋol /Molbog, Murut doŋog "to hear" || OC: (W.OC) Manam loŋo /Tokia -loŋ / Buang ŋo, (MicN) Woleaian roŋoroŋo (< *roŋo < *loŋo < *doŋo) "to hear" || Ainu: nu "to hear" (< OC: *ŋo < *oŋo < *loŋo "to hear") || # § **Tupi**: (SwadLftP*, GrCoc*) || # § **Tupi-TbB**: || # BLOOD (sangre): Coc. (= Cocama) tsui /Guarani tugui, tuguy (= tuwi ?) /Tupinamba ugúy(-t) (< *tsuwi < *šui ~ *šui "blood") || TbB: (W.Himal.) **Bunan**, **Theodor** šui /Tinan sui /Manchad ši (< *šui) || Note: Possibly further cognates with; (TbB) wr. Burmese. swêi² /Spoken Burmese θwêi "blood". || # HEAD (cabeza): Coc. yaqui (= yakî), yaquicuara "head" || TbB: **Lepcha** (a-)yák "top" || # WATER (agua): Coc. uni "water" || **Arawakan**: Culimo unin "river" || TbB: **Lepcha** un (= uŋ) "water" || # § **Tupi-SND** || # to COME (venir): Coc. uri "to come" (< *uliz "to come back") || W.MP: (PHIL) **Molbog** uliʔ /Kalinga Limos ulin "to come

Table 2. (Continued.)

back" || C.MP: Buru *oli* "to come back" (< **uli?*) || # TREE (arbol): Coc. *ihuirā* (= *iwira*) "tree" (< **liwi-ra*) || W.MP: (SND) Sundanese *liwiy* "woods, forest" || § § **Tibeto-Burman (TbB)-SND:** (Bene*72) || # BONE: pTbB: **rus* /Written Tibetan (= Tb) *rus ba, ruiba* /Lushai *ru?* /Tiddim *gù?* (< pTbB: **Rus* ~ **grus*) || W.MP: (SND) Aceh *ruso?* /Batak Toba *rusuk* // (PHIL) Kagayanen *gusuk* "rib" (< pMP **Rusuk* "rib" = **grusuk*) || # LEG: pTbB: **kaŋ* "leg" || W.MP: (SND) Sasak (Teewi dial.) *pi-kaŋ, pu-kaŋ* "thigh" || # MEAT: (W.Him.) Rampa *sya* /Thebor *sa* // Tb *sa* (< **sya*), pTbB **sya-n* || W.MP: (SND) Aceh *sia* || § § **Aymara-OC:** (LAM*) || #TOOTH: Aym. *k'achi* "tooth" (< **gadi* "to bite") || OC: (W.OC) Kilivila *-gadi* "to bite", Cf. Takia *kasi-n* "gums" || Jpn: *kadi-ru* "to gnaw" || # NOSE: Aym. *nasa* "nose" (< **ŋasa* "good smelling") || OC: (MicN) Woleaian *ŋasa* "fragrant, good smelling" || # WATER: Aym. *uma* "water" || OC: (MicN) Woleaian *umak* "river" || § § **Yamanan-OC:** (LAM*, Swad*54, Brinton*) || # HEAD: Yamana *lamina* (< **lami-na* < **lami* "hair of head" + **-na* "nominal suffix") || OC: (Admiralties) Nyindrou *lami-n* "hair (of head)" || # ARM: Yamana *kamayn* (< **kamay-n*) || OC: (W.OC) Maringe *k^hame* "arm, hand" || # EYE: Yamana *tela* /Alakaluf *tel* /Ona *tel* /Mataco *te* "eye" (< **te(-la)* "eye" < **te* "to see") || OC: (W.OC) Manam *te* // (NCal) Xaracuu *tē* "to see" || C.MP: Ngada *tei* "to see" || § § **Comecrudo (Comec)-Oceanic (Remote Oceanic):** (Swan*) || # EYE: Comec. *u-i* (Swan*), *huy* (Swad*54) "eye" (< *(*h*)*u-i* < **hu-?i*) || OC: (PolyN) Rapanui *u?i* "to look, to look at" (< **ʔu?i* ~ **hu?i*) || # FAECES: Comec. *kalet* || OC: (NCal) Nengone *kalet* || # SALIVA: Comec. *xatetis, xatatis* "saliva" (< **kate-tis* ~ **kata-tis*) || OC: (C.Pacif.) West. Fijian *katahiβi* "to spit" (< **kata-hiβi*) || § § **Ainu-OC:** (ADD*) || # BELLY: Ainu: *hon* "belly" || OC: (NCal) Nemi *hōna* "intestines, guts" || # FAT (noun): Ainu Hokkaido *kirpu* / Sakhalin. *kirupu* "fat" (< **kir(u)-pu* < **kir(u)* - < **giru* -) || OC: (W.OC) Dami *gigiru* "grease, fat" (< **gi-giru* < **giru*) || Korean: mid. Korean *kirūm* "fat" (YH*) (< **kirū-m* < **giru* -) || # HEART: Ainu *sanpé* "heart" (< **san-pe* < *san* "to go out" + Ainu *pe* "thing". From Tam*); *san* "to go downstream, to flow, to go from the inside of a house towards hearth" (Tam*) (< **san* "to go out ?") || OC: (W.OC) Yabem *-sa* "to go out" || SHWNG: Irarutu *ŋe* "thing" (< **pe*) || § § **Proto-Indo-European (pIE)-OC:** (Wat*) || # to BREATHE: pIE **H₂enH₁-* (= **henH₁-*, or else, < **henH₁-*) "to breathe" (> pIE **H₂anH₁-*) (< > OC: **haŋ(u)* "to breathe") ; Middle Welsh *eneit* "soul" || OC: (S.Vanu.) Kwamera *-eiahaŋ* "to breathe" (< **-eia-haŋ*), (PolyN) Rapanui *haŋu-haŋu* "to breathe" (< **haŋu*) || # EYE: pIE **H₃ek^w-* /Sanskrit *áksi* "eye" (< pIE **H₃ak^wasi* < MP: **ʔagasi*), Old Norse *auga* /English eye /Armenian *akn* /Tocharian A *ak* "eye" (Pok*, pp.775-777) || OC: (S.E.Solomons) Kwaio *agasi* "eye" (< > pIE **H₃ak^wasi* "eye"), *agasi-a* "to see" || # HEAD: pIE **kaput* "head" (< **kapu-?*), (> Eng. *head*) || OC: (S.Vanu.) Kwamera *kap^wa* "head" (< **kapua* < **kapu-a*) || § § **Mixe-Zoquean (MxZq)- OC:** (Witch*) || # FOOT: Zq *ne?ŋ* "foot" (Sw*) (< **ŋe?ŋ* ~ **ne-?ŋ* < OC: **ne(?)* - "foot") || OC: (MicN) Marshallese *ne* "foot" (< **ŋe*) // (W.OC) Takia *ŋe-n* "foot" || JPN: Old Jpn **-ne* "foot" (in compound) (Found in; Old Jpn *sune* "fat of leg bone" (< **su-ne* < **su-* "fat" + **ne* "foot, leg". From IKJ*)) || # MOUTH: pMZ **ʔaw* "mouth" (< OC: **au* ~ **aw(a)* "mouth") || OC: (PolyN) Ponapean *āu* // (W.OC) Manam *aua* / Takia *awa-n* / Dami *awa* / Yabem *āwa* "mouth" || # BLOOD: pMZ **ni?pin* "blood" (< **ni:ʔ-pin* "blood (= water-of-person)" < **ni:ʔ* "water" + pZq **pin* "person, man", where **ni:ʔ* < **nui?* and **pin* < > Ainu *pin-ne* "a male".) || OC: (S.Vanu.) Kwamera *nui* "flesh water; spring, well" (< **nui* ~ **nu-i?*) || Ainu *pinne* "a male" (< **pin-ne* "to be male" < **pin-* "male, man" + **-ne* "to be"), *numa* "swamp" (< **nu-* "water ?" + Ainu *ma* "spring, lake", where **nu-* < > OC: Kwaio *nui* "flesh water".) || Note: Most plausibly, Jpn *numa* "swamp" is a loan word borrowed from Ainu *numa*. || § § **Japanese (Jp)-New Caledonian(NCal):** (IKJ*,RHJ*) || # BELLY/INSIDE: Modern Jp *naka* "inside, bowels, belly" (< **na-ka* < *na* "inside" + *-ka* "place"), Old Jp *na* "inside" || OC: (NCal) Cemuhi *nà* "stomach" ; (MicN) Ponapean *nan* "inside" (< **na-n*) || # FOOT: Old Jp *a* || OC: (NCal) Cemuhi *à-n* // (W.OC) Yabem *a* || # TOOTH: Old Jp *pa* // Ryukyuan (Hateruma dial.) *pan* || OC: (NCal) Xaracuu *pā* || § § **Turkic (TRKc)-OC:** (DTrkL*, EDAL*) || # ARM: TRKc: Uighur *biläk* "arm" (< **bilek* < MP: *bili-* "hand"); Chuvash *pilëk* "five" (< **bilëk-*), Tk *biş* /Old Turkic *biş* "five" (< **bīş* < **bīš* < **biliš* ~ **bilik* < **bilë-* ?) || OC: (W.OC) Kaulong *bili-n* "hand" || # HEAD: Kazakh *bas* /Tatar, Uighur *bash* /Turkish *baş* "head" (< **ba-ş* < **ba* ~ **b^wa*), ?Chuvash *puş* "head" || OC: (NCal) Nemi *b^wa-n* /Xaracuu *b^wa* "head" (*b^wa* - < **b^wat* < **b^watu* < **batu* "head") ; (Admiralties) Nyindrou *batu-n* // (W.OC) Roviana *batu* // Raga *b^watu-* || Note: Cf. (W.MP) Wolio *baa* "head". || # SKIN: TRKc: Tatar *tire* "skin" (< **dire* "fur") || OC: (NCal) Nengone *dire-* "fur" || Note: Probably, (TRKc) Kaz. Kyrgm Uzbek *teri* / Uighur *terä* / Azerb *dəri* /Turkmen *deri* "skin" (< **deri* < TRKc **dire* "skin"). || § § **Maipuran (Maip)-Maori:** (Payne*91, DMAoL*) || # ANIMAL: pMaip **pira* /Pir. *pira* /Apu. *pira* /Ign. *-pera* /Pal. *pir* "animal" "animal (domesticate)" (**pira* < **pura* "bird") || OC: (PolyN) Cook Island-Maori *pura* "bird" || # BONE: Yuc. *-ip^hi* (< **ivi* ~ **ibi*) || OC: (PolyN) Samoan, Tahitian, Rapanui *ivi* /Maori *iwi* (< **ivi* ~ **ibi*) || # FEATHER: Amu. *pe?* || OC: (MicN) Ponapean *pē* "feather" ; (PolyN) Cook Island-Maori *pē-^{au}* "wing" || # SKIN: Pal. *-māgi* "skin" || OC: (PolyN) Maori *mai* "clothing, garment" (DMAoL*) (< **ma?i* < **magi* "skin ~ cloth(es)" ?) || § § **Chinese(Chin.)-Rotuman-Fijian:** (Hashi*76) || # HAND: Wen.(= Wēn'cheng (= Bun-sio) dial. in Hainan language) *siu³* /Taiwan *ts'iu³* /Peking *ʂəu³* // {Schu*: pMin **t^hiu^B* /Old Chin. *sjəu^B* (手) / Literaly Han *śu^B* } "hand" (< pChin. **s'iu* ~ **śiu* < MP: **si?u* "arm" < **siku* "elbow") || OC: Rotuman *si?u* "hand, arm" (< **siku* "elbow") || W.MP: (SND) Sundanese *siku* /Uma *hiku* "elbow" || # HEAD: Wen. *hau²* /Taiwan *t'au²* /Cantonese *t'au²* / [Mei-hsien *t'eu²-na²* /Peking *t'əu²* (頭)] || OC: (C.Pacif.) E.Fijian *d'au-ni-ulu* "hair (of head)" (= "leaf-of-head") (< *d'au* "leaf" + *ni* "CONNECTIVE" + *ulu* "head"), Samoan *lau-ulu* "head" (< **dau-ulu* "hair of head" (= "leaf-head") < **dau* + *ulu* "head"), Mele-Fila *rauru* /Tahitian *rouru* "head" (< *rau-uru* < **lau-ulu* < **dau-ulu*) || # NECK: Wen.

Table 2. (Continued.)

Dau¹-kian¹ (-頰) /Min-hsien *-kian³-kin¹* (< pChin. **kian* (頰) “neck”) ||| OC: (C.Pacif.) Rotuman, Tongan *kia* “neck” ■ § §
Dravidian (DRAV)-W. Oceanic (W.OC): (DED*) ■ # CHEST: Kui *daki* “chest” (D#2976) (<**dagi*) ||| OC: (W.OC) Yabem
bo-dagi “chest” (<**dagi*) || W.MP: (PHIL) Bangingi Sama *dākan* /Kagayanen *dagʔaʔan* “chest” ■ # NOSTRIL: Tamil *nāsi*
“nostril” (<**nas-i* <**nas-* <*nasu* “bad smelling”) ||| OC: (W.OC) Yabem *nasu* “striking, bad smelling” (CAD*, #15.260) (<
**nas-u*); (MicN) Woleaian *nasu* /Marshallese *nas* “fragrant, good smelling” ||| Note: OC: Nemi *na* “mucus”, Maringe *nalu* “to
sniff”. ■ # TOOTH: Tamil *pal* “tooth” (< OC: *pəl-a-ŋie-* “tooth” <**pal-* “skin”) ||| OC: (W.OC) Tolai *pəl* “skin”, *pəl-a-ŋie-*
“tooth” (<*pəl-* “skin” + *-a-* “CONNECTIVE” + **ŋie*) ||| Note: Ohno (1981, p.264) wrongly compared Tamil *pal* with Old Jpn
pha (<**pa*) “tooth”. ■ § § **Uralic (URA)-W. OC**: ■ # HEAD: pURA **päje* /Finnish *pää* /Hungarian *fej* ||| OC: (W.OC)
Manam *pejana, pajana* “head” (<**peja--*peja-* “head”); (Cf. Kilivila *pʷaneta-* “skull”) ||| Ainu: *pen* “upper, above,
source, upriver” (<**pej* “head?”) ■ # BONE: pURA **tuwe* (K.O.*) ~**luwe* (UEW*, p.254) /Finnish *luu* “bone, leg”, Estonian
luu “bone” (<**luw(e)*), Vogul *luw* /Ostyak (dialects) *löy, tüw, läw* “bone” (pURA **luwe* /**tuwe* < *tuwä-* < **duwi-a-* < **duwi-*
“bone” < **dui* < **duri* < pAN **DuRiH* “bone”) ||| OC: (W.OC) **Kaulong** *luu-n* “thigh” (<**luw-n* < **luw(i)-* “bone” + *-n*),
Nyindrou *nʹduwi-n* (<**duwi-*) /**Dami** *tuwa* /Motu *turia -na* (<**turi-a-(na)*) / Kwaio *suri(-na)* /Cemuhi *dū-n* /Nengone *dun* /
Rotuman, E.Fijian *sui* “bone” (<**duwi(a)-* < pAN **DuRiH* “bone”) ■ # HAIR: Finnish *hius* “hair” (<**hiu-s* < OC: **hiu-*
“hair”) ||| OC: (W.OC) Motu *hiu-na* “hair” (<**hilu-*); (N.C.Vanu.) Paamese *hiluk* “hair (of head)”

Table 3. Occurring frequencies of Austronesian cognates of Native American and Eurasian languages: Closest similarity analysis
(χ²-test: #, P<0.1; +, P<0.05; ++, P<0.025; *, P<0.01; ** P<0.001)

	FORM	W.MP (PHIL/BOR/SND/SLW)	C.MP	SHWNG	OC (ADM/W.OC/SE.Sol/ReOC)	Non-AN languages	Number of word items whose closest cognates are found in AN	
Number of languages in CAD*	4	26 (11/2/9/5)	6	2	41 (1/15/2/23)			
§ 1. Formosan (FORM)-like								
Mayan (BBP)	**7	2(0/0/1/1)	0	0	3(0/2/0/1)	Mongolic 1?	12	
§ 2. FORM-W.MP-like								
Eskimo (BBP)	**4.5	7.5 (#5/0/2.5/0)	2	1	4.3(0/1.5/0.3/0.5)	Itelmen 0.3/Mong. 0.3	18.3	
Mongolic (BBP)	**3.5	++8.5 (1/0/**5/0)	0	0	2 (0/1.5/0/0.5)	Esk. 1.5, TRKc 2	14	
§ 3. Western Malayo-Polynesian (W.MP)-like								
Quechuan (BBP)	2	**10 (5.5/1.5/3.0/0)	1.5	0	1.5 (0/1.5/0/0)		15	
Na-Dene BP	1	++2 (3/0/4/2)	3	1	1	Yeniseian 3~4	15	
Yeniseian BBP	0	+3.7(1.3/1/1.3//0)	0	0	1.3 (0/1.3/0/0)	Na-Dene 3~4, TbB 3	5	
§ 3.1. Philippines(PHIL)-like								
Koasati-Alabaman	5.5	*14.5 (**14.5/0/0/0)	2	0	3 (0/0/0/3)		23	
Tungus (BBP)	0	**11 (**9.5/0.5/1/0)	1	0	3		15	
§ 3.2. Sundic (& Tibeto-Burman (TbB))-like								
Tupi (Sw100)	0	#6.3(1/0/**4.3/1)	0.3	1	2.8	TbB 9.5	10.5	
TbB (BP)	0	**17(4/1.5/**7.7/#3.8)	2	1	4		24	
§ 4. Oceanic-like								
Aymara (B100W)	0	0	0	0	++6.8 (0/3.8/0/3)	Ainu 0.5, Tipula 0.3, Tamil 0.3	6.8	
Yamanan	0.25	1.25	0	0	#7.5 (1/3.75/0/3)		9	
Ainu (BBP)	1	2.5	2	0	+15.5(1/#7/0/8.5)	Macro-Ge 2, Comecrudo 1	21	
§ 4.1. Remote Oceanic-like)								
Comecrudo (BP)	0	0	1	0	++2 (0/2/1/+6)	Itelmen 1, Ainu 1	10	
IE (English) (BBP)	0	1	0	0	**14(0/3/1/**10 (S.Vanu.:Kwamera.4))		15	
§ 4.1.1. Micronesia (MicN)-like								
Mixe-Zoquean(BBP)	1	2 (0/0/0/2)	0.5	0.5	#12.3 (0/4.5/0/#7.8 (MicN **5))	Ainu 1.3, Jpn 1, Hopi 0.3	16.3	
§ 4.1.2. New Caledonian-like								
Japanese (BBP)	1	0	0	0.5	**27.5 (0/4/1/**22.5 (NCal **15, MicN 4))		29	
Turkic (BBP)	1	2 (1.5/0/0/0.5)	0	0	8 (0/2.5/0/5.5 (NCal **4))	Jpn 1, [wr. Mong. 1]	11	
Turkic(Non-BP B100W)	0	2 (0/0/0/2)	1	0	+11 (0/3/0/*8)	[wr. Mong. 1]	14	
§ 4.1.3. Central Pacific(C.Pac.)-like [= Sino-Central Pacific Cluster ?]								
Maipuran (Arawakan)	0	0	0	1	**32 (0/6.5/0/**25.5 (C.Pac. **16.5))	Ainu 1	33	
Chinese	1	3(0/0/3/0)	0	0	ReOC **25.5 = (NCal 4, MicN 4, Rotuman-Fijian 2, PolyN **14.5 (Maori **7~9))	Bantu 1	15	
C.Pac. **7 = (Rotuman-W.Fijian 4, E.Fijian 2.5, Tongic 0.5, PolyN 0)								
§ 4.2. Western Oceanic (W.OC)-North New Guinea Cluster(NNG)-like								
Dravidian (BP):	0	1	2	0	**18 (0/**11 (NNG **7, Pap. Tip 4)/1/6)		21	
Finnish (BBP)	1	1(0/0/0/1)	0	0	+8.8 (0/**7.8 (NNG **6.8, Pap. Tip 1)/0/1)			
							Jpn 1, pIE 0.5, DRAV 0.3, TRKc 0.3	10.8