



# SINO-TIBETO-AUSTRONESIAN:AN UPDATED AND IMPROVED ARGUMENT

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**SINO-TIBETO-AUSTRONESIAN:  
AN UPDATED AND IMPROVED ARGUMENT**

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**Sino-Austronesian, version I**

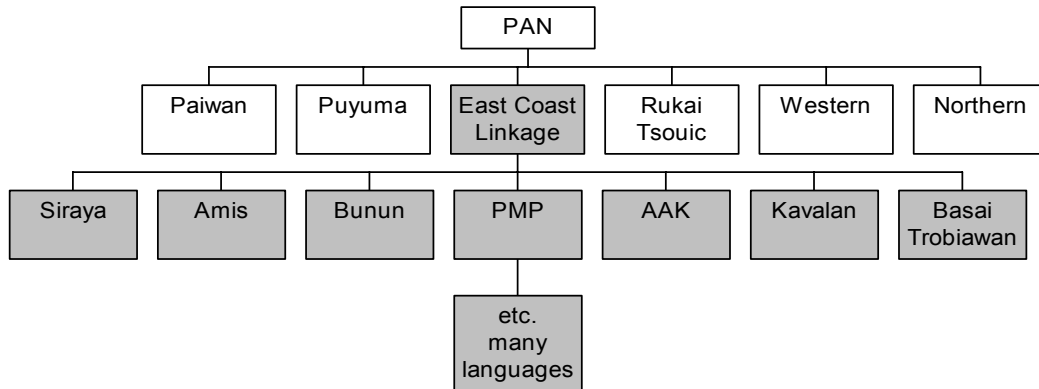
(Sagart 193, 1994)

1. Blust's higher AN subgrouping
2. Austronesian reconstructions by Dempwolff and Blust. MP material deemed essential.
3. only Chinese and Austronesian related
4. sound correspondences between final syllable of AN words and Chinese monosyllables.
5. some morphology
6. criticisms: too little basic vocabulary; Tibeto-Burman outside the relationship.

**Sino-Austronesian, version II**

1. East Coast Linkage (ECL) is one primary branch of PAN; Malayo-Poynesian forms one clade within ECL.
2. all Austronesian reconstructions either include Formosan material or are based on Formosan exclusively. MP material not essential.
3. Tibeto-Burman is reintegrated: relationship is between Sino-Tibetan and Austronesian.
4. some modifications in the sound correspondences; in addition, initial consonant of "lost" penultimate syllable of AN words governs Chinese syllable type.
5. more morphology
6. more basic vocabulary

**Higher AN subgrouping (adapted from Ho 1998)**



**Support for ECL: six innovations shared exclusively by PMP and Formosan East Coast languages**

- PAN \*C => \*t (Siraya, Bunun, Amis, Kavalan, Basay-Trobiawan, PMP: Ferrell 1969)
- PAN \*N => \*n (Kanakanabu, Bunun, Amis, Kavalan, Basay-Trobiawan, PMP: Ho 1998)
- 'bird' PAN \*ayam replaced by \*manuk (Basay-Trobiawan, PMP)
- 'banana' PAN \*belbel replaced by \*pu(n)ti (Basay-Trobiawan, PMP: Li 1992:277)
- 'to count' PAN \*super replaced by \*bilang (Kavalan, Basay-Trobiawan, PMP: Li 1992:277)
- *pang-V* instrumental construction (Amis, PMP: Starosta 2001)

**Some PAN and PECL reconstructions**

**body hair**

PAN gumuN 'body hair'. Puyuma (Cauquelin 1991) gumul 'body hair, feather'; Saisiat (Ogawa and Asai 1935:6) komol 'pubic hair'. The analogy of PAN \*kumis 'beard' may or may not have played a role in the reflexion of PAN \*g- as k- in the Saisiat form (the Saisiat reflex of PAN g- is uncertain).

**bone**

PAN kukut 'bone'. Dempwolff reconstructed UA \*kukut 'joint, articulation' based on corresponding forms in Javanese and Ngaju Dayak. Add Favorlang 'o'ot 'bone' (PAN \*k goes to zero in Favorlang).

**foot**

PAN kakay 'foot'. Atayal *kakai*, Sediq *qaqay*, Thao *kakai*, all 'foot' (Ferrell 1969).

**palm of hand**

PAN *dapa* 'palm of the hand', consisting of Blust's PWMP (1980 # 112) *Da(m)pa* 'palm of the hand, sole of the foot' plus Atayal (Egerod 1980) *rapaʔ* 'palm of the hand'.

**horn, antler**

PAN *(q)uRuŋ* 'horn/antler': Pazeh *ʔuxúŋ*; Sediq *uruŋ* (Ferrell 1969), *oloŋ* (Pecoraro 1977); Yami *ʔurúŋ*, all 'horn' (Pazeh, Sediq and Yami forms cited from Ferrell 1969: 136); add Kanakanabu *taʔuruŋu*, Saaroa *tauruŋu* 'pygmy deer' (Tsuchida ms), both with prefixed *ta-* and final echo vowel; Long Nawang *uheng*, Uma Juman *hueng* 'horn, antler'.

Note: Blust (1973) reconstructed PAN *\*(q)uReng* 'horn, antler', based on the Pazeh, Sediq and Yami forms above, plus reflexes in two WMP languages: Long Nawang *uheng*, Uma Juman *hueng* 'horn, antler'. I reconstruct /u/ in the final syllable because Formosan and Extra-Formosan languages belonging to three primary branches (Pazeh-Sediq; Kanakanabu-Saaroa; and Yami) agree on /u/. I assume the Long Nawang and Uma Juman forms exhibit a secondary (WMP) *u > ə* dissimilatory change; Blust's decision to reconstruct /e/ in the last syllable reflects the greater weight given Extra-Formosan languages in his practice.

Note: Dempwolff had reconstructed "Ur-Austronesisch" *\*suŋu* 'horn'. Tsuchida (1976:165) reconstructed another form in the same meaning: "Proto-South-Formosan" *\*seq<sub>1</sub>uŋ*, with reflexes in Saaroa, Saisiat and Paiwan. He regarded Dempwolff's *\*suŋu* as a metathesized form of his own *\*seq<sub>1</sub>uŋ*. Both *\*seq<sub>1</sub>uŋ/suŋu* and *\*(q)uRuŋ* appear to have been PAN words; their referents must have been different, perhaps as 'horn' (hollow, permanent, non-branching) vs. 'antler' (solid, shed annually, branching).

**chicken**

PAN *kuka* 'chicken, fowl': Paiwan *koka*, Rukai (Taramakau) *koka*, Siraya *kuka*.

Note: several Formosan languages have prefixed elements *ta-*, *tari-*, *taru-*, *toro-*: Siraya *takuka*, *tahuka*, Rukai (Maga) *torokuka*, Kanakanabu *tariku:ka*, Saaroa *torokooka*, etc.

Note: Li (1992: 271; 1993:305) reconstructed "Proto-Formosan" *\*teRakuk*, based on Bunun, Puyuma, Kavalan and Amis forms, and interpreting Tsou *troʔua*, Kan *tarikuka* and Saaroa *turukuuka* as containing a suffixed formative *-a* of no particular function. The forms reflecting *teRakuk*, without final *-a*, are found exclusively in languages of the East coast, a well-known diffusion zone. It is more natural to suppose that a word for 'chicken' something like *\*teRakuka* was reanalyzed as containing root *-kuk* 'sob, cackle', and was for that reason changed to Li's *\*teRakuk* in a language of the East coast; and that the word then spread to other East coast languages. The alternative is to suppose that a suffixed *-a* of unknown nature was added to *teRakuk* independently in proto-Tsouic, in Taramakau Rukai, in Siraya and in Paiwan.

**cave, hole**

PAN *b[e]luŋ* 'cave, hole'. Paiwan *beruŋ* 'hole', Tsou (Tung) *feóŋo* 'cave, hole', Pazeh *warúŋ* 'cave, hole'.

**cloud**

PAN (root) -qem 'cloud': Amis toʔəm 'clouds' (Fey 1986); Rukai (Budai) əmə:mə 'cloud' (Tsuchida ms); Bunun lohom (Ogawa and Asai 1935), luhum (Nihira 1983) 'cloud'; this root also includes a WMP word \*q-al-emqem reconstructed here on the basis of a cognate set first assembled by K. Wulff (1942, No 53): Sundanese halömhöm 'overcast', Ceb. ʔalumʔum 'for the sky to be overcast'.

**to carry**

PECL baba 'carry on back'. Dempwolff reconstructed baba 'to bring along' (incl. several items meaning 'to carry on back'). Add Amis *fafa* 'to carry on back' (child), Basai *baba* 'carry on back', Trobiawan *uvava* 'id.'.

**to cut off, short**

PAN [p]utul 'short'. Dempwolff reconstructed \*puTul 'break off, cut off'. Add Bunun ma-putul 'short' (ma- stative prefix), Seediq butul 'short' (Ferrell 1969:366; expect putul in Seediq).

**to drown, disappear**

PAN Nemes 'to drown, disappear'. Dempwolff reconstructed \*lemes 'to drown, immerse'. Add Puyuma (Cauquelin 1991) lemes 'disappear, destroy, to end'.

**to fall**

PAN (root) -luR 'to fall'. Dempwolff reconstructed quluR 'drop slowly' (Tg 'fall'). Add Atayal (Egerod) *tarui* < taluR 'to fall down', with prefixed *ta-* 'agentless action'.

**to follow**

PECL d[u]NuR 'to follow'. Blust (1980 #109) reconstructed (3) duluR 'accompany, go together with'. Add Siraya *dmyllough* 'to follow' (Adelaar 1999:321), equivalent to *d-m-ilux* (with short i) in Adelaar's restored notation.

**to put together**

PECL puluŋ 'to gather', consisting of Dempwolff's puluŋ 'to gather', plus Ami poloŋ 'all, all together' (Fey 1986; the examples include verbal uses as 'to gather, get together'.)

**to speak, say**

PAN kawaS<sub>1</sub>, kaw(a)kawaS<sub>1</sub> 'speak, say': Pazeh *ka:kawas* 'speak, say' (Ferrell 1969: 313), Basai *makaukawas* 'say', *kawakawase* 'story', Trobiawan *kawas* 'story'.

**to sleep**

PAN (root) -zem 'close the eyes, sleep'. Based on NW Formosan (ma)-qizem 'sleep' (Saisiat maʔerəm 'sleep', Pazeh ʔidəm, ma-idəm 'sleep': Ferrell 1968:90) plus WMP ke(zZ)em 'close the eyes' (Blust 1973) and WMP peZem 'close the eyes' (Blust 1973), dbl. of the preceding.

**to ruin**

PAN r[i]bas 'destroy, ruin'. Reconstructed as PWMP rebas 'to fall into ruin' by Blust (1983-1984 # 308). Add Puyuma ribas 'destroy in part' (Cauquelin 1991).

**broad**

PAN (root) -baŋ 'broad', consisting of 'candidate root' -baŋ 'broad' (Blust 1988:73), based on 3 WMP items (probably including Dempwolff's baŋbaŋ 'broad, wide' and Blust's PWMP lak(e)baŋ 'broad, wide'), plus Atayal (Egerod) labaŋ 'broad', Sediq (Li 1981) llaŋbaŋ 'wide'.

### hot

PECL qaiŋet 'hot'. Dempwolff reconstructed qaiŋet 'hot' (Dempwolff 1929); 'warm breath' (Dempwolff 1938). Add Siraya (Matthew Gospel) *aiŋit* 'fever' (Adelaar, p.c., 1999).

### old

PAN (root) -daŋ. Dempwolff reconstructed guDaŋ 'adult, grown-up'. add Puyuma *iDaŋ* 'old' (inferred from maranai*DaiDaŋ* 'oldest, Huang 2000a: 49); Rukai *marəDaŋ* 'old' (Ferrell 1969).

### thick

PAN (root) -tul 'thick'. Thao *ma-kuStur* 'thick' (Huang 2000c:157), Taroko *q'tol* 'fat, thick, obese' (Pecoraro). Kavalan *Rutur* 'thick' (Zhang Yongli 2000:195), Amis *kifetol* 'thick' (Wu Jinglan 2000:195).

### loincloth

PAN sabuk 'loincloth'. Dempwolff reconstructed sabuk 'loincloth'. Add Atayal (Egerod 1980) *habuk* 'loincloth'; Taroko (Pecoraro 1977) *xabuk* 'belt'. Cf also Paiwan *ibuk* 'man's upper garment', *m-ibuk* 'to wear' (Ferrell).

### to bury, tomb

PAN (root) -buN 'to bury, cover with earth'. Blust (1988) reconstructed a root -bun 'heap, pile, cover with earth; collect, assemble', based on MP evidence, including Dempwolff's ta(m)bun 'heap of earth'. Add Atayal (Egerod) ?bul 'to bury; tomb'; Mayrinax *g-um-bul* 'to bury'. This Atayal evidence indicates that the root was -buN at PAN level, changing regularly to -bun in MP.

## Sino-Tibeto-Austronesian lexical comparisons

In italics: words in Swadesh's 100-words list; in bold caps: words in Yakhontov's 33-words list.  
I! V! F! T! S! irregular Initial, Vowel, Final, Tone, Syllable type

basic vocabulary (personal pronouns and numerals will be discussed elsewhere)

|                         | <i>PAN or PECL</i>    | <i>Old Chinese</i>             | <i>Tibeto-Burman</i> |
|-------------------------|-----------------------|--------------------------------|----------------------|
| 1. body hair            | gumuN                 | 眉 <sup>b</sup> mu[r] (eyebrow) | mul (Moshang kemul)  |
| 2. <b>BONE</b>          | kukut                 | 骨 <sup>a</sup> kuʔ             |                      |
| 3. brain                | punuq                 | 腦 <sup>a</sup> nuʔ             | (s-)nuk              |
| 4. elbow                | siku(H <sub>2</sub> ) | 肘 <sup>b</sup> t-r-kuʔ         | Gyarong tkru         |
| 5. <i>female breast</i> | nunuH <sub>1</sub>    | 乳 <sup>b</sup> noʔ             | nuw                  |
| 6. <i>foot</i>          | kakay                 |                                | kriy                 |
| 7. <i>head</i>          | quluH <sub>1</sub>    | 首 <sup>b</sup> hluʔ            | Lushai lu            |
| 8. palm of hand         | dapa                  | 扶 <sup>b</sup> pa              | pa                   |
| 9. pus                  | nanaq                 |                                | Tib. rmag            |
| 10. mother              | ina(-q)               | 女 <sup>b</sup> nraʔ (woman)    | m-na                 |

|                               |                    |  |   |
|-------------------------------|--------------------|--|---|
| 11. <b>EGG</b>                | qiCeluR            | 卯 <sup>a</sup> Cə-lo[r]?   | twiy < t-l- ?                                     |
| 12. <b>HORN, ANTLER</b>       | (q)uRung           | 角 <sup>a</sup> k-rok   | rung=rwang  |
| 13. leech                     | Limatek            | 蛭 <sup>b</sup> tik   |   |
| 14. snake                     | SulaR              | 蛇 <sup>b</sup> m-la[r]   | P-Loloish lay <sub>1/2</sub> 'python'             |
| 15. worm                      | [ ]ulej            | 蚓 <sup>b</sup> lin? F?   |   |
| 16. cloud, cloudy             | -qem               | 陰 <sup>b</sup> ʔim   | Bur. um'  |
| 17. <i>earth</i>              | -taq               | 土 <sup>a</sup> tha?  | Tib. 'dag pa 'mud'                                |
| 18. <i>moon</i>               | qiNaS              |  | s-la  |
| 19. <b>SALT</b>               | siRaH <sub>1</sub> | 鹵 <sup>a</sup> ra? S!  | la I!   |
| 20. sunlight                  | siNaŋ              | 陽 <sup>b</sup> lang  | Bur. lang 'to be light'                           |
| 21. water                     | daNum              | 瀋 <sup>b</sup> t-hlim? (liquid, juice)                                 |   |
| 22. wind                      | bali               |  | g-liy   |
| 23. cave, hole                | b[e]lung           | 洞 <sup>a</sup> long S!   | Jingpo kin <sub>31</sub> luŋ <sub>33</sub>        |
| 24. <b>YEAR</b>               | kawaS              | 歲 <sup>b</sup> s-hwat-s S!   |   |
| 25. carry                     | baba               |  | ba  |
| 26. chew                      | paqpaq             | 哺 <sup>a</sup> m-pa?-s   | ? PS *waa F!                                      |
| 27. close, shut               | kupit              | 閉 <sup>a</sup> pit   |   |
| 28. cut off, short            | [p,b]utul          | 斷 <sup>a</sup> to[r,n]?, 斷 <sup>a</sup> to[r,n]                        | Lepcha tultul                                     |
| 29. dig                       | -kut               | 掘 <sup>b</sup> khut, 掘 <sup>b</sup> m-k(h)ut                           | Jingpo kot  |
| 30. drown, disappear          | Nemes              | 滅 <sup>b</sup> met   | mit 'extinguish' (fire)                           |
| 31. fall                      | -luR               | 墮 <sup>a</sup> lo[r]?  |   |
| 32. flow > water,<br>river    | qaluR 'to flow'    | 水 <sup>b</sup> hlu[r] (water, river)<br>水 <sup>b</sup> t-lu[r] (water) | twiy < t-l-, lwiy 'to flow'                       |
| 33. follow                    | duNuR              | 隨 <sup>b</sup> s-lo[r]   |   |
| 34. grasp, embrace            | -kep               | 夾 <sup>a</sup> m-kep, <sup>a</sup> s-kep, <sup>a</sup> k-r-ep          |   |
| 35. hold sth in<br>fist/mouth | gemgem (in fist)   | 含 <sup>a</sup> gim (in mouth)  | gam 'put into mouth'                              |
| 36. hunt                      | qaNup              | 獵 <sup>b</sup> Cə-lap  |   |
| 37. lick                      | dilaq              | 舐 <sup>b</sup> m-le?   | m-lyak  |
| 38. meet                      | Cebung             | 逢 <sup>b</sup> bung S!   | ? PS pung 'assemble'                              |
| 39. open                      | -kaq               | 啓 <sup>a</sup> khe?  | Jingpo kha? < -k 'parted,<br>open'                |
| 40. put together              | pulung             | 同 <sup>a</sup> long  |   |
| 41. ruin, damage              | r[i]bas            | 敝 <sup>b</sup> bet-s   |   |
| 42. scrape I                  | kuSkuS             | 括 <sup>a</sup> k-r-ot  | Tib. r-ko, Gyarong ka rkos<br>Kuki-Naga d-kew     |
| 43. scrape II                 | ku[Ct]ku[Ct]       | 括 <sup>a</sup> k-r-ot  | kut   |
| 44. sink                      | -neb               |  | nup   |
| 45. sleep                     | -zem               | 寢 <sup>b</sup> tshim?  | Tib. gzim, Dhimal dzim                            |
| 46. <i>speaking, say</i>      | kawaS              | 話 <sup>a</sup> m-kw-r-at-s; 曰 <sup>b</sup> wat<br>S!                   | Tib. s-go   |
| 47. think                     | nemnem             | 念 <sup>a</sup> nim-s   | Tib. s-nyam-pa 'to think'                         |
| 48. vomit, spit               | utaq               | 吐 <sup>a</sup> tha?  | (m-)tuk V!  |
| 49. wash                      | basuq              | 溲 <sup>b</sup> s(r)u?  | Lushai shuk, Luoba çuk                            |
| 50. wrap around (belt)        | -kes               | 繫 <sup>a</sup> ket   |   |
| 51. bent, crooked             | -kuk               | 局 <sup>b</sup> (N-)kh(r)ok   | kuk   |
| 52. broad                     | -bang              | 旁 <sup>a</sup> bang  |   |
| 53. curled, bent              | -kul               | 卷 <sup>b</sup> N-k(h)ro[r,n]   | kuar (PS)   |
| 54. dark                      | -lem               | 黑+甚 <sup>a</sup> lim?, <sup>a</sup> hlim?                              |   |
| 55. far                       | ma-dawiN           | 遠 <sup>b</sup> wa[r,n] V!  | BL wiy  |
| 56. high, tall                | -kaw               | 高 <sup>a</sup> kaw   | Bur. kaw: (heavy tone) 'rise<br>up, swell, bulge' |
| 57. <i>hot</i>                | qa(i)nget          | 熱 <sup>b</sup> nget  |   |
| 58. old,<br>adult, grownup    | -daŋ               | 長 <sup>b</sup> drang?  |   |
| 59. sharp                     | Cazem              | [660a] <sup>b</sup> tsim   |   |

|                            |                    |                                      |                                    |
|----------------------------|--------------------|--------------------------------------|------------------------------------|
| 60. thick                  | -tul               | 敦 <sup>a</sup> tu[r,n]               | tu:r (PS)                          |
| 61. <b>THIS</b>            | di                 | 時 <sup>b</sup> dī I?                 | Tib. 'di 'this'                    |
| <u>cultural vocabulary</u> |                    |                                      |                                    |
| 1. husked rice             | beRas              | 糲 <sup>b</sup> rat-s                 | Tib. 'bras 'rice'                  |
| 2. grain of cereal         | -may               | 米 <sup>a</sup> mij?                  | B-G may 'cooked rice; rice; paddy' |
|                            |                    |                                      | Gyarong sməj khri 'millet'         |
| 3. chicken                 | kuka               | 雞 <sup>a</sup> ke                    |                                    |
| 4. cage, enclosure         | kurung             | 籠 <sup>a</sup> kə-rong               | kru:ŋ                              |
| 5. broom                   | CapuH <sub>1</sub> | 帚 <sup>b</sup> t-pu?                 |                                    |
| 6. stopper, plug           | seŋseŋ             | 塞 <sup>a</sup> sik                   |                                    |
| 7. to bury, tomb           | -buN 'to bury'     | 墳 <sup>a</sup> bu[r] 'tomb, tumulus' |                                    |
| 8. loincloth, robe         | sabuk              | 服 <sup>b</sup> buk                   | Tib. 'bog 'k. o. garment'          |
| 9. to plait, braid         | -pid               | 編 <sup>a</sup> pin(?) F?             | byar~pyar                          |
| 10. to shoot               | panaq              | 弩 <sup>a</sup> na? (crossbow)        |                                    |

### sound correspondences

#### initial consonants (PAN final syllable initial : Chinese root initial : TB)

|                           |  |
|---------------------------|--|
| p- : p(h)- : p-           | palm of hand, chew, plait, close, broom  |
| t- : t(h)- : t-           | leech, earth, vomit, thick, short  |
| k- : k(h)- : k-           | elbow, bone, chicken, dog, high, curled, crooked, dig, grasp, wrap around, scrape I, scrape II, open |
| q- : ?- : 0-              | cloud(y)   |
| b- : b- : (p-)            | carry, broad, loincloth, meet, tomb, ruin  |
| d- : d- : d-              | old, this  |
| g- : g- : g-              | hold in fist or mouth  |
| m- : (h)m- : m-           | body hair, drown   |
| n- : n- : n-              | brain, breast, pus, mother, think, shoot, sink   |
| ŋ- : ŋ- : ŋ-              | hot,   |
| N- : (h)l- : l-           | hunt, water, follow, sunlight, moon  |
| l- : (h)l- : l-           | head, snake, head, flow, lick, put together, fall, wind, cave, worm                                  |
| R- : r- : r-              | horn, salt, husked rice  |
| w- : (h)w- : w- (Tib. g-) | year, far, say   |
| s- : s- : ?               | wash, stopper  |
| z- : ts- : ?              | sharp, sleep, wink   |

#### final consonants (PAN final consonant: Chinese root final consonant : TB)

|                               |   |
|-------------------------------|---|
| -0 : -0 : -0                  | palm of hand, chicken, carry, this                      |
| -k : -k : -k                  | leech, crooked, loincloth                               |
| -t : -t : -t                  | bone, hot, dig, close                                   |
| -p : -p : ?                   | hunt, grasp   |
| -ng : -ng : -ng               | put together, broad, cage, meet, sunlight, cave, old    |
| -ng : -k : -ng                | horn, stopper   |
| -m : -m : -m/-p               | water, think, hold in fist or mouth, dark, cloud        |
| -H <sub>1,2</sub> : -? : -0   | head, female breast, elbow, salt, broom                 |
| -q : -? : -k                  | brain, pus, earth, lick, vomit, chew, shoot, wash, open |
| -l : [-r] : -r                | curled, thick,  |
| -R : [-r] : -y                | dog, snake, egg, flame, flow, fall, follow              |
| -S : -t : -0                  | say, year, scrape I, moon                               |
| -s : -t : -s (/a_) ~-t (else) | husked rice, drown, wrap around, ruin                   |
| -N : [-r] : -y~-l             | body hair, far, tomb                                    |

#### vowels (PAN last vowel: Chinese root vowel)



| STAN                  | PAN : Chinese | examples  |
|-----------------------|---------------|---|
| u (before labials)    | -u- : -i-     | water   |
| u (elsewhere)         | -u- : -u-     | head, brain, elbow, bone, body hair, dog, flow, thick, dig, meet, tomb    |
| o (before labials)    | -u- : -a-     | hunt  |
| o (elsewhere)         | -u- : -o-     | breast, egg, horn, fall, put together, curl, crooked, cut off, cage, cave |
| a (before y)          | -a- : -i-     | grain   |
| a (elsewhere)         | -a- : -a-     | palm, mother, snake, year, salt, earth, vomit, shoot, speak, broad        |
| æ                     | -a- : -e-     | chicken, lick, ruin, open   |
| e (after grave cons.) | -e- : -e-     | grasp, wrap around, drown, hot  |
| e (elsewhere)         | -e- : -i-     | think, leech, worm, sleep   |
| i (open syll.)        | -i- : -i-     | this  |
| i (closed syll.)      | -i- : -i-     | plait, close  |
| ɔ                     | -e- : -i-     | dark, sink, hold in fist, stopper, sharp                                  |

### syllable types

This applies to comparisons with polysyllabic AN members (excluding reduplications)

| PAN penultimate syllable initial   | Chinese syllable type         | examples                                      |
|------------------------------------|-------------------------------|---|
| voiceless stop (except q), or zero | <sup>a</sup> (non-division 3) | bone, brain, horn, close, put together, spit  |
| other initials (including q)       | <sup>b</sup> (division 3)     | elbow, head, palm, leech, snake, water, drown |

tones (PAN word ending : Chinese word ending/tone : TB word ending)

| PSTAN   | AN                                | Chinese                 | TB                                    | examples  |
|---|-----------------------------------|-------------------------|---------------------------------------|---|
| -0  | -0                                | tone A                  | -0                                    | palm of hand, chicken, carry, this  |
| -m, -ng, -l, -N, -w, -R etc.  | id.                               | tone A                  | id.                                   | eyebrow, meet, put together, think, broad, curled, high, thick, needle, cage, follow, snake |
| -q  | -q                                | ? = tone B              | -k                                    | brain, pus, earth, lick, vomit, wash, open  |
| -h, -ʔ  | -H <sub>1</sub> , -H <sub>2</sub> | ? = tone B              | -0                                    | elbow, female breast, head, broom, salt   |
| -mh, -ŋh, -lh, -Nh, -wh, -jh, -rh, -Rh, -mʔ, ŋʔ, -lʔ, -Nʔ, -wʔ, -jʔ, -rʔ, -Rʔ | -h or -ʔ is lost                  | ? = tone B              | -h or -ʔ is lost (? > TB tonogenesis) | water, cut off, far, egg, flow  |
| voiced stops: -b, -d, -j, -g  | id.                               | nasals+ B               | nasals, -r                            | worm, plait   |
| -p, -t, -C, -k  | id.                               | tone D (-p, -t, -t, -k) | -p, -t, -t, -k                        | bone, leech, close, dig, bent, etc.   |
| -ç (?)  | -s                                | tone D (-t)             | -s (/a_) ~ -t                         | husked rice, drown, wrap around, ruin   |
| -s  | -S                                | tone D (-t)             | -0                                    | year, say, scrape I, moon   |

Chinese tone C (去聲) is secondary, from root+s suffix.

### morphology

Better preserved in TB than in Chinese.

|                           | AN | Chinese | TB |
|---------------------------|----|---------|----|
| sV-Verb valency increaser | +  | +       | +  |
| pV-Verb causative         | +  |         | +  |

|                                  |   |     |   |
|----------------------------------|---|-----|---|
| m- intransitive                  | + | +   | + |
| pV-Noun > Verb                   | + | (?) | + |
| Verb-en > 'thing Verb-ed'        | + |     | + |
| Sa-Verb > instrument of action   | + | +   | + |
| -ar- distributed action ~ object | + | +   | + |

Figure 1. shared morphological processes

**\*\*sV-Verb > valency increaser**

A prefix PAN Si- : OC s- : TB s- allows a verb stem to take into its argument structure a NP standing for a 'third' participant with situational roles such as causer, beneficiary, instrument, etc. The Austronesian Si-V construction is known as 'Instrument focus' but its semantics are considerably more complex. Huang (1991) characterizes the Si- construction in Atayal as 'circumstantial voice'. She notes (1991:45) that one characteristic of circumstantial voice is 'increased transitivity'. I cite here examples with a transitive/causative character, because the semantic difference between prefixed and non-prefixed forms can be apprehended directly through simple lexical glosses.

AN Si-Verb > 'transitive/causative'

|        |  |
|--------|--|
| Atayal | ɲunu? 'to be afraid' : s-ɲunu? 'to frighten'     |
| Paiwan | k/m/avuL 'beg' : si-kavuL 'cause someone to beg' |
| Bunun  | ma-bahliv 'to buy' : is-bahliv 'to sell'         |

Old Chinese s-Verb 'transitivizing'

順<sup>\*b</sup>m-lun-s > zywinH 'to be pliant, obedient' : 馴<sup>\*b</sup>s-lun > zwin 'to tame'  
 食<sup>\*b</sup>m-lik 'to eat' : 食<sup>b</sup>s-lik-s 'to feed'

TB s-Verb 'transitivizing'

|  |   |
|--|---|
| Tibetan  | 'bar 'to burn, catch fire, be ignited' : s-bar-pa 'to light, to kindle, to inflame' |
| Gyarong  | rong 'to see' : s-rong 'to show'  |
| Boro   | gi 'be afraid of, fear' : si-gi 'frighten'  |
| Proto-Loloish <sup>1</sup> (C)-no <sub>2</sub> | 'to awake' : sə-no <sub>2</sub> 'to awaken' (tr.)                                   |

**\*\*pV-Verb 'causative'**

A verbal prefix \*\*pV- making causatives out of noncausatives is widely attested in TB and in AN. It has not been observed in Chinese.

AN: pa-Verb 'causative'

|        |   |
|--------|---|
| Amis   | kaən 'eat' : pa-kaən 'feed'             |
| Puyuma | kan 'to eat' : pa-kan 'to feed'         |
| Atayal | biru 'to write' : p-biru 'to let write' |
| Thao   | kan 'eat' : pa-kan 'cause to eat, feed' |

TB: \*pV-Verb 'causative'

|         |  |
|---------|--|
| Jingpo: | ran 'be separated' : pə-ran 'to separate'      |
| Boro:   | goŋ 'to bend' (intr.) : bo-khoŋ 'to make bent' |

<sup>1</sup> Bradley 1979

Mikir: thi 'to die' : pe-thi 'to kill'  
 Angami Naga: vo 'to go' : pe-vo 'to cause to go'  
 Tib.: zu 'to dissolve' (intr.), b-zu 'cause to dissolve'  
 Yi-Wuding: dzi<sub>11</sub> 'to dissolve' : pe<sub>33</sub>-dzi<sub>11</sub> 'cause to dissolve'.  
 Gazhuo: kho<sub>53</sub> 'to become curved' : pɣ<sub>35</sub>-kho<sub>53</sub> 'to bend (trans.)'

**\*\*m- intransitive**

AN m-/-um- + transitive verb > intransitive verb

The Austronesian 'Actor Focus' (AF) marker is a nasal affix m- (prefix) or -um- (infix) depending on root shape; in Starosta's ergative interpretation of AN grammar (Starosta 1991, 1994), all verbs in Actor Focus are intransitive, and the function of m-/-um- is to derive intransitive verbs from transitive verbs. Constructions in which AF verbs (marked with m-/-um-) take both a patient and an agent are antipassive (pseudo-transitive): such sentences translate naturally into transitive sentences in accusative languages. For that reason, French or English translations fail to capture the intransitive character of verbs marked with m-/-um-. This intransitive character of AF verbs appears from the fact that their situational patient, if there is one, is encoded in an oblique case, genitive or locative.

TB m-Verb > intransitive

In Gyarong and Xide Yi, this prefix is a nasal which takes the place of articulation of the root initial. Examples (Lin Xiangrong 1993: 193 for Gyarong; Dai Qingxia 1998:86 for Xide Yi):

Gyarong ka-tʃop 'to set fire to' : kə-ndʒop 'to catch fire'<sup>2</sup>  
 kə-p'ək 'to split open' : kə-mbək 'to be rent'  
 kə-tɕ'op 'to break' : kə-ndʒop 'broken'  
 kə-klək 'to wipe off' : kə-ŋglək 'to fall'

Xide Yi ti<sub>55</sub> 'to suspend' (tr.) : ndi<sub>55</sub> 'to be suspended' (intr.)  
 tu<sub>55</sub> 'to burn' (tr.) : ndu<sub>55</sub> 'to burn' (intr.)  
 po<sub>31</sub> 'to roll' (tr.) : mbo<sub>31</sub> 'to roll' (intr.)  
 tɕhi<sub>55</sub> 'to pull off' (tr.) : ndzi<sub>55</sub> 'to fall off'  
 to<sub>33</sub> 'to give to drink' : ndo<sub>31</sub> 'to drink'

In these examples, the N- prefix has voiced a following voiceless stop. In many TB languages (such as Tibetan, Kiranti, Bahing, Vayu and Bodo-Garo), the nasal element has been lost and only voicing of the root initial remains. Preceding initials other than voiceless stops, however, the intransitive prefix maintains itself as m- (WT), ma- (Jingpo), mV- (Boro), and prefixed forms are easy to detect outside of minimal pairs. Examples (Wolfenden 1929:30 for WT and Jingpo, Bhattacharya 1977: 184, 328-330 for Boro):

WT m-gu-ba 'to rejoice, be glad'  
 m-nar-ba 'to suffer, be tormented'  
 m-nam-ba 'to smell (intr.), stink'  
 m-nal-ba 'to sleep'  
 m-nab-ba 'to dress oneself'

<sup>2</sup> Gyarong ka-, kə- and kə- are verb prefixes for controllable (ka-, kə-) and non-controllable (kə-) actions.

|        |  |
|--------|--|
| Kachin | ma-nam 'to smell' (intr.)<br>ma-den 'to grow, to expand'<br>ma-ni 'to laugh'   |
| Boro   | mō <sub>2</sub> -nam <sub>1</sub> 'to spread smell'<br>mō <sub>2</sub> -zom <sub>1</sub> 'close the fist'<br>mi <sub>2</sub> .ni <sub>2</sub> 'to laugh' |

The original form of the intransitive prefix was therefore m- or ma-, with a variant N- before voiceless stops.

Chinese N-transitive verb > intransitive verb

Like Tibetan and other TB languages, Middle Chinese (mid-first millennium CE) has some contrasting pairs of transitive verbs with voiceless stop initials and intransitive verbs with voiced stop initials:

|    |  |
|----|--|
| MC | khjowk 'to bend' (tr.) : gjowk < *Nkh- 'bent, curved; bend the body'<br>trjuwngH 'to hit, place in the middle' : drjuwngH < Ntr- 'to be in the middle' |
|----|--|

That the voiced embers of these pairs earlier had prenasalized initials is shown by Miao-Yao. Proto-Miao-Yao (Wang and Mao 1995) borrowed some of these forms from Late Old Chinese (before MC), with prenasalization and no voicing: \*ŋkhok 'curved', \*ŋtɕɛŋ<sub>A</sub> 'middle'. Evidently Chinese had the same intransitive prefix N- as Gyarong and Xide Yi.

**\*\*pV-Noun > Verb**

AN: pa-Noun > Verb

|         |  |
|---------|--|
| Atayal: | suzit 'a whistle' : p-suzit 'to whistle, blow an instrument' |
| Taroko: | bais 'husband, wife, mate' : p-bais 'to form a pair'         |
| Amis    | sual 'words, speech' : pa-sual 'to tell, explain'            |
| Paiwan  | tutu 'milk' : pa-tutu 'to feed milk'                         |
| Puyuma  | tigami 'letter' : pa-tigami 'write a letter'                 |
| Thao    | apuy 'fire' : p-apuy 'start a fire'                          |

TB: pV-Noun > Verb

|       |  |
|-------|--|
| Burm. | rum 'gathering place' : p-rum 'assemble, crowd together' |
| Tib.  | žo 'milk' : b-žo-ba 'to milk'                            |
| Mikir | chor 'pair' : pa-chor 'to marry' (trans.)                |

Chinese p-Noun > Verb

Perhaps, from Wuxiang 武鄉 a Jin dialect of Shanxi:

pə-suɣ 'to card, comb'

Where suɣ is etymology the same word as 梳 *shu*<sub>1</sub> MC srjo 'a comb'.

**\*\*Verb-en > 'thing Verb-ed/'thing to be Verb-ed'**

PAN Verb-en > 'thing Verb-ed/'thing to be Verb-ed'

|        |  |
|--------|--|
| Atayal | niq 'eat' : niq-un 'eaten thing'           |
| Paiwan | kan 'to at' : kan-en 'food'                |
| Amis   | aʃik 'to sweep' : aʃik-en 'place to sweep' |

TB Verb-n > 'thing Verb-ed'

Tib.            za-ba 'to eat' : zan 'food, fodder, pap, porridge'.  
                   skyi-ba 'to borrow' : skyin-pa 'a thing borrowed, a loan'  
                   rdzu-ba 'to misrepresent, to delude, to falsify' : rdzun-pa 'falsehood, fiction,  
                   lie'

**\*\*Sa-Verb > instrument of action**

PAn Sa-Verb > instrument of action

Rukai           toʔtoʔ 'to peck' : sa-toʔtoʔ 'beak'  
 Amis            *senat* 'to harrow' : *sa-senat* 'a harrow'  
 Pazeh           *m-bazu* 'wash clothes' : *sa-bazu* 'soap, soapberry'

TB sa-Verb > instrument of action

Gyarong<sup>3</sup>      *ka-top* 'to hit' (*ka-* verb prefix) : *sa-top* 'instrument for hitting'  
 Tib.            *'bud* 'to blow': *sbud-pa* 'bellows'  
 Kachin         *nan* 'to light, illumine, as with a torch' : *sha-nan* 'a torch'

Old Chinese s-Verb > instrument of action

Old Chinese  蒸 \*<sup>b</sup>tiŋ 'to steam' : 甗 \*<sup>b</sup>s-tiŋ-s 'earthen-ware pot for steaming rice'  
                   𠬪 \*<sup>b</sup>lat(-s) 'to pull' : 鞅 \*<sup>b</sup>s-hlat 'leading-string'  
                   齧 \*<sup>a</sup>ŋet 'bite, gnaw' : 楔 \*<sup>a</sup>s-ŋet 'wooden wedge between the teeth of a corpse'

**\*\* -ar- distributed action; distributed object.**

This infix was inserted between the root initial and first vowel of a stem. Attached to verbs of action it indicated that the action was distributed in time (occurring over several discrete occasions), or in space (involving several agents/patients/locations); attached to stative verbs it was simply intensive; attached to nouns it indicated a referent distributed in space, i.e. having double or multiple structure.

AN -ar- distributed action/object; intensive

Paiwan         k-ar-akim 'to search everywhere' (kim 'search')  
                   k-ar-apkap-an 'sole of foot'  
 Puyuma         D-ar-ukap 'palm of hand'  
 Bunun         d-al-apa 'sole of foot' (PAN \*dapa 'palm of hand')  
 Amis            p-ar-okpok 'to gallop'  
                   t-ar-odo 'fingers, toes'  
                   k-ar-ot 'harrow'  
 Pazeh         b-ar-anban 'urn'  
                   d-ar-uŋuduŋ 'gong, drum'  
 Rukai Budai   ma-D-ar-angDang 'hot' (weather)  
                   m-ar-eDang 'old' (compare Puyuma maidang 'old')  
 Tagalog         d-al-akdak 'sowing of rice seeds or seedlings for transplanting' (dakdak 'driving  
                   in of sharp end of stakes into soil')  
                   k-al-aykay 'rake'

<sup>3</sup> Gyarong has another prefix sə- expressing causative meaning in verbs (see above).

Malay            ketap 'to bite teeth' : k-er-etap 'to bite teeth repeatedly'

TB -r- distributed action/object

Burm.            *pok* 'a drop (of liquid)' : *prok* 'speckled, spotted'  
*phu*<sub>1</sub> 'to protuberate' : *pru*<sub>3</sub> 'to protuberate, as the eyes'  
*pwak* 'to boil up and break, as boiling liquid' : *prwak* 'id'  
*khwe*<sub>2</sub> 'curve, coil' : *khwrwe*<sub>2-</sub> 'surround, attend'

Kachin          *hpun* [p<sup>h</sup>un<sub>31</sub>] 'of pimples, to appear on the body' : *hprun* [p<sup>h</sup>ʒun<sub>31</sub>] 'pimples, on the body; to appear on the body, of pimples'

Chinese -r- distributed action/object; intensive.

Fuzhou          *nia*?<sub>13</sub> 'to blink' : *nia*?<sub>11</sub>-*lia*?<sub>13</sub> 'to blink repeatedly'  
*ts<sup>h</sup>ia*<sub>55</sub> 'to turn, rotate, as a machine' : *ts<sup>h</sup>ia*<sub>31</sub>-*lia*<sub>55</sub> 'to rotate in alternating directions, as an electric fan'  
*pau*<sub>213</sub> 'to protrude' : *pa*<sub>11</sub>-*lau*<sub>213</sub> 'to protrude much'  
*tsiŋ*<sub>55</sub> 'to stare' : *tsi*<sub>31</sub>-*liŋ*<sub>55</sub> 'to stare fixedly'  
*t<sup>h</sup>a*?<sub>55</sub> 'pile or stack of (paper)' : *t<sup>h</sup>a*<sub>11</sub>-*la*?<sub>353</sub> 'a pile of paper, irregularly stacked'

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