SINO-TIBETO-AUSTRONESIAN: AN UPDATED AND IMPROVED ARGUMENT
Laurent Sagart

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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 gmun ‘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) rapa? 'palm of the hand'.

horn, antler
PAN (q)uRuŋ 'horn/antler': Pazeh ?uxúŋ; Sediq uruŋ (Ferrell 1969), oloŋ (Pecoraro 1977); Yami ?urūŋ, all 'horn' (Pazeh, Sediq and Yami forms cited from Ferrell 1969: 136); add Kanakanabu ta?urūŋu, Saaroa taurūŋu '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 > ū 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" *suNu 'horn'. Tsuchida (1976:165) reconstructed another form in the same meaning: "Proto-South-Formosan" *sequŋ, with reflexes in Saaroa, Saisiat and Paiwan. He regarded Dempwolff's *suNu as a metathesized form of his own *sequŋ. Both *sequŋ/suNu 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, Kanakanavu 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 tro?ua, 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 *teRakuk 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) feño 'cave, hole', Pazeh waruŋ 'cave, hole'.
cloud
PAN (root) -qem 'cloud': Amis toʔ-em 'clouds' (Fey 1986); Rukai (Budai) ʔemà:ma '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. ?alum?um '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

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 kawaS₁, kaw(a)kawaS₁ '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-ʔidəm '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

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

hot
PECL qaiŋet 'hot'. Dempwolff reconstructed qaNet 'hot' (Dempwolff 1929); 'warm breath' (Dempwolff 1938). Add Siraya (Matthew Gospel) aingit '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 maraDaŋ 'old' (Ferrell 1969).

thick

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 Dempwolf'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

<table>
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<tr>
<th>basic vocabulary</th>
<th>(personal pronouns and numerals will be discussed elsewhere)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. body hair</td>
<td>PAN or PECL</td>
</tr>
<tr>
<td>2. BONE</td>
<td></td>
</tr>
<tr>
<td>3. brain</td>
<td></td>
</tr>
<tr>
<td>4. elbow</td>
<td></td>
</tr>
<tr>
<td>5. female breast</td>
<td></td>
</tr>
<tr>
<td>6. foot</td>
<td></td>
</tr>
<tr>
<td>7. head</td>
<td></td>
</tr>
<tr>
<td>8. palm of hand</td>
<td></td>
</tr>
<tr>
<td>9. pus</td>
<td></td>
</tr>
<tr>
<td>10. mother</td>
<td></td>
</tr>
</tbody>
</table>

5
11. **EGG** qCelR
12. **HORN, ANTLER** (q)Rung
13. leech Limatek
14. snake SulaR
15. worm [ ]ulej
16. cloud, cloudy -qem
17. earth -taq
18. moon qiNaS
19. **SALT** siRaH
20. sunlight siNa
21. water daNum
22. wind bali
23. cave, hole b[e]lunj
24. **YEAR** kawaS
25. carry baba
26. chew paqpaq
27. close, shut kupit
28. cut off, short [p.b]utul
29. dig -kut
30. drown, disappear Nemes
31. fall -luR
32. flow > water, river qaluR 'to flow'
33. follow duNuR
34. grasp, embrace -kept
35. hold sth in fist/mouth ggem (in fist)
36. hunt qaNup
37. lick dilaq
38. meet Cebung
39. open -kaq
40. put together pulung
41. ruin, damage r[i]bas
42. scrape I kuSkuS
43. scrape II ku[C]ku[C]
44. sink -neh
45. sleep -zem
46. **speak, say** kawaS
47. think nemem
48. vomit, spit utaq
49. wash basuq
50. wrap around (belt) -kes
51. bent, crooked -kuk
52. broad -bang
53. curled, bent -kul
54. dark -lem
55. far ma-dawiN
56. high, tall -kaw
57. **hot** qa(i)nget
58. old, adult, grown up -danj
59. sharp Cazem

**Examples:**
- **twin < t-l-?**
- **run=rwang**
- **P-Loloish lay12 'python'**
- **Bur. um'**
- **Bur. lang 'to be light'**
- **g-liy**
- **ba**
- **? PS *waa F!**
- **twiy < t-l-, lwiy 'to flow'**
- **gam 'put into mouth'**
- **Tib. r-ko, Gyarong ka rkos**
- **Kuki-Naga d-kew**
- **Tib. s-nyam-pa 'to think'**
- **(m-)tuk V!**
- **Lushai shuk, Luoba cuk**
- **Bur. kaw: (heavy tone) 'rise up, swell, bulge'**
ICAL9, Canberra, January 8-11, 2002

60. thick -tu[r,n] tu:r (PS)
61. THIS di -di I? Tib. 'di 'this'

cultural vocabulary
1. husked rice beRas 4 rat-s Tib. 'brās 'rice'
2. grain of cereal -may 4 mij? B-G may 'cooked rice; rice; paddy'
    Gyarong smaj khri 'millet'
3. chicken kuka -ke Tib. 'ke
4. cage, enclosure kurung -kø-rong kru:n
5. broom CapuH -t-pu?
6. stopper, plug -sik
7. to bury, tomb -buN 'to bury' -bu[r] 'tomb, tumulus'
8. loincloth, robe sabuk -buk Tib. 'bog 'k. o. garment'
9. to plait, braid -pid byar~pyar
10. to shoot panaq -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- hunt, water, follow, sunlight, moon
l- : (h)-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
-H1,2 : -? : -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. _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
--- | ---
\(\text{u (before labials)}\) | \(-\text{u} : -\text{i}-\) water
\(\text{u (elsewhere)}\) | \(-\text{u} : -\text{u}-\) head, brain, elbow, bone, body hair, dog, flow, thick, dig, meet, tomb
\(\text{o (before labials)}\) | \(-\text{o} : -\text{a}-\) hunt
\(\text{o (elsewhere)}\) | \(-\text{o} : -\text{o}-\) breast, egg, horn, fall, put together, curl, crooked, cut off, cage, cave
\(\text{a (before y)}\) | \(-\text{a} : -\text{i}-\) grain
\(\text{a (elsewhere)}\) | \(-\text{a} : -\text{a}-\) palm, mother, snake, year, salt, earth, vomit, shoot, speak, broad
\(\text{æ (after grave cons.)}\) | \(-\text{æ} : -\text{e}-\) chicken, lick, ruin, open
\(\text{e (elsewhere)}\) | \(-\text{e} : -\text{e}-\) grasp, wrap around, drown, hot
\(\text{i (open syll.)}\) | \(-\text{i} : -\text{i}-\) this
\(\text{i (closed syll.)}\) | \(-\text{i} : -\text{i}-\) plait, close
\(\text{ə}\) | \(-\text{æ} : -\text{e}-\) dark, sink, hold in fist, stopper, sharp

syllable types

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

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

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

<table>
<thead>
<tr>
<th>PSTAN</th>
<th>AN</th>
<th>Chinese</th>
<th>TB</th>
<th>examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>-0</td>
<td>-0</td>
<td>tone A</td>
<td>-0</td>
<td>palm of hand, chicken, carry, this</td>
</tr>
<tr>
<td>-m, -ng, -l, -N, -w, -R etc.</td>
<td>id.</td>
<td>tone A</td>
<td>id.</td>
<td>eyebrow, meet, put together, think, broad, curled, high, thick, needle, cage, follow, snake</td>
</tr>
<tr>
<td>-q</td>
<td>-q</td>
<td>? = tone B</td>
<td>-k</td>
<td>brain, pus, earth, lick, vomit, wash, open</td>
</tr>
<tr>
<td>-h, -ʔ</td>
<td>-H₁, -H₂</td>
<td>? = tone B</td>
<td>-0</td>
<td>elbow, female breast, head, broom, salt</td>
</tr>
<tr>
<td>-mh, -nh, -lh, -Nh, -wh, -jḥ, -rh, -Rh, -miʔ, -gjʔ, -ʔiʔ, -Nʔ, -wʔ, -jʔ, -rʔ, -Rʔ</td>
<td>-h or -ʔ is lost</td>
<td>? = tone B</td>
<td>-h or -ʔ is lost (?) &gt; TB tonogenesis</td>
<td>water, cut off, far, egg, flow</td>
</tr>
<tr>
<td>voiced stops: -b, -d, -j, -g</td>
<td>id.</td>
<td>nasals+ B</td>
<td>nasals, -r</td>
<td>worm, plait</td>
</tr>
<tr>
<td>-p, -t, -C, -k</td>
<td>id.</td>
<td>tone D ((-p, -t, -t, -k))</td>
<td>-p, -t, -t, -k</td>
<td>bone, leech, close, dig, bent, etc.</td>
</tr>
<tr>
<td>-ç (?)</td>
<td>-s</td>
<td>tone D ((-t))</td>
<td>-s (\text{⟨a⟩} - t)</td>
<td>husked rice, drown, wrap around, ruin</td>
</tr>
<tr>
<td>-s</td>
<td>-S</td>
<td>tone D ((-t))</td>
<td>-0</td>
<td>year, say, scrape I, moon</td>
</tr>
</tbody>
</table>

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

**morphology**

Better preserved in TB than in Chinese.

<table>
<thead>
<tr>
<th></th>
<th>AN</th>
<th>Chinese</th>
<th>TB</th>
</tr>
</thead>
<tbody>
<tr>
<td>sV-Verb valency increaser</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
<tr>
<td>pV-Verb causative</td>
<td>+</td>
<td>+</td>
<td>+</td>
</tr>
</tbody>
</table>
**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/causeative'

Atayal ɲuµu? 'to be afraid' : s-ɲuµu? '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'

m-lun-s > zywinH 'to be pliant, obedient' : s-lun > zwin 'to tame'

TB s-Verb 'transitivizing'

Jingpo ran 'be separated' : p-ran 'to separate'
Boro goN 'to bend' (intr.) : bo-khoŋ 'to make bent'

**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 kaæn 'eat' : pa-kaæn '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'

Bradley 1979
Mikir:  
thi 'to die': pe-thi 'to kill'
Angami Naga: vo 'to go': pe-vo 'to cause to go'
Tib.:  
žu 'to dissolve' (intr.), b-žu 'cause to dissolve'
Yi-Wuding:  
dژi11 'to dissolve': peژ33-dژi11 'cause to dissolve'.
Gazhuo:  
 kho53 'to become curved': pyژ35-kho53 '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):

<table>
<thead>
<tr>
<th>Gyarong</th>
<th>Xide Yi</th>
</tr>
</thead>
<tbody>
<tr>
<td>ka-tsop 'to set fire to': kɔ-ndʒop 'to catch fire'</td>
<td>ti55 'to suspend' (tr.) : ndi55 'to be suspended' (intr.)</td>
</tr>
<tr>
<td>kɛ-p’ɛk 'to split open': kɔ-mbɛk 'to be rent'</td>
<td>tu55 'to burn' (tr.) : ndu55 'to burn' (intr.)</td>
</tr>
<tr>
<td>kɛ-tɛ’ɔp 'to break': kɔ-ndzɔp 'broken'</td>
<td>po31 'to roll' (tr.) : mbo31 'to roll' (intr.)</td>
</tr>
<tr>
<td>kɛ-klɛk 'to wipe off': kɔ-ŋɡleɡ 'to fall'</td>
<td>tɛhi55 'to pull off' (tr.) : ndzi55 'to fall off'</td>
</tr>
<tr>
<td></td>
<td>to33 'to give to drink' : ndo31 'to drink'</td>
</tr>
</tbody>
</table>

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):

<table>
<thead>
<tr>
<th>WT</th>
</tr>
</thead>
<tbody>
<tr>
<td>m-gu-ba 'to rejoice, be glad'</td>
</tr>
<tr>
<td>m-nar-ba 'to suffer, be tormented'</td>
</tr>
<tr>
<td>m-nam-ba 'to smell (intr.), stink'</td>
</tr>
<tr>
<td>m-nal-ba 'to sleep'</td>
</tr>
<tr>
<td>m-nab-ba 'to dress oneself'</td>
</tr>
</tbody>
</table>

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2 Gyarong ka-, kɛ- and kɔ- are verb prefixes for controllable (ka-, kɛ-) and non-controllable (kɔ-) actions.
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’
- 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: *Nkhok ‘curved’, *ŋŋnŋ ‘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.: zo ‘milk’ : b-ţo-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:

pa-sur ‘to card, comb’

Where sur is etymology the same word as 梳 shu, 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: ańık ‘to sweep’ : ańık-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 to?to? 'to peck': sa-to?to? '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 ka-top 'to hit' (ka- verb prefix): sa-top 'instrument for hitting'
Tib. 'bud' to blow': sbud-pa 'bells'
Kachin nan 'to light, illumine, as with a torch': sha-nan 'a torch'

Old Chinese s-Verb > instrument of action

Old Chinese 水 *tiŋ 'to steam': 水 *s-tiŋ-s 'earthen-ware pot for steaming rice'
次 *lat(-s) 'to pull': 靴 *s-hlat 'leading-string'
㡧 *njet 'bite, gnaw': 楇 *njet '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-anhan 'urnn'
d-ar-unjuDun 'gong, drum'
Rukai Budai ma-D-ar-argDang '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'

3 Gyarong has another prefix sa- 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 ‘to protuberate’ : pru ‘to protuberate, as the eyes’
pwak ‘to boil up and break, as boiling liquid’ : prwak ‘id’
khwe ‘curve, coil’ : khrwe-‘surround, attend’

Kachin  hpun [p^b(un_31)] ‘of pimples, to appear on the body’ : hprun [p^b_pun_31] ‘pimples, on the body; to appear on the body, of pimples’

Chinese -r- distributed action/object; intensive.

Fuzhou  nia?[i_3] ‘to blink’ : nia?[i_1]-lia?[i_3] ‘to blink repeatedly’
ts^[;ia_55] ‘to turn, rotate, as a machine’ : ts^[;ia_31]-lia_55 ‘to rotate in alternating directions, as an electric fan’
pau^[;2_3] ‘to protrude’ : pa^[;1_1]-lau^[;3_3] ‘to protrude much’
ts^[;in_55] ‘to stare’ : tsi^[;3_3]-li^[;5_5] ‘to stare fixedly’
t^[;a_55] ‘pile or stack of (paper)’ : t^[;a^[;1_1]-la^[;3_3_3] ‘a pile of paper, irregularly stacked’

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