

Kusunda: An Indo-Pacific language in Nepal

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The Kusunda people of central Nepal have long been regarded as a relic tribe of South Asia. They are, or were until recently, seminomadic hunter-gatherers, living in jungles and forests, with a language that shows no similarities to surrounding languages. They are often described as shorter and darker than neighboring tribes. Our research indicates that the Kusunda language is a member of the Indo-Pacific family. This is a surprising finding inasmuch as the Indo-Pacific family is located on New Guinea and surrounding islands. The possibility that Kusunda is a remnant of the migration that led to the initial peopling of New Guinea and Australia warrants additional investigation from both a linguistic and genetic perspective.

The Kusunda people of central Nepal are one of the few “relic” tribes found on the Indian subcontinent (the Nahali of India and the Veddas of Sri Lanka are two others). They first appeared in the ethnographic literature in 1848, when they were described by Hodgson as follows: “Amid the dense forests of the central region of Népal, to the westward of the great valley, dwell, in scanty numbers and nearly in a state of nature, two broken tribes having no apparent affinity with the civilized races of that country, and seeming like the fragments of an earlier population” (1). The Kusunda were one of these “broken tribes”; the Chepang were the other. Hodgson went on to show, however, that the Chepang were, on linguistic grounds, closely related to the Lhopa of Bhutan and must be presumed to have split off from this group and moved west at some time in the past. Hodgson had been unable to obtain any data on the Kusunda language, so nothing could be said of their possible affinity with other groups. Nine years later Hodgson published an article that contained the first linguistic data on the Kusunda language (2) as well as data on other Nepalese languages, but he offered no specific discussion of Kusunda even though his data showed quite clearly that the Kusunda language bore virtually no resemblance to any of the other languages he examined. No additional information on Kusunda appeared for more than a century until Reinhard and Toba (3) offered a brief description of the language, which provided some additional data. The final source on Kusunda appeared in an article by Reinhard in 1976 (4), but there is very little additional information that is not already found in the article by Reinhard and Toba (3).

Although Hodgson had predicted in 1848 the demise of the Kusunda in a few generations, a few Kusunda have managed to survive to the present day. Until recently they were seminomadic hunter-gatherers living in jungles and forests, and indeed their name for themselves is “people of the forest.” They are often described as short in stature and having a darker skin color than surrounding tribes. Today the few remaining Kusunda have intermarried with neighboring tribes and drifted apart, and the language has been moribund for decades, although a few elderly speakers with some knowledge of the language still survive.

The Kusunda language is a linguistic isolate, with no clear genetic connections to any other language or language family (4, 5). Curiously, however, it has often been misclassified as a Tibeto-Burman language for purely accidental reasons. Hodgson’s original description of the Kusunda language (2) also included vocabularies of various Indic and Tibeto-Burman languages. In 1909, Grierson classified Kusunda as a Tibeto-Burman language (6), like that of their immediate neighbors, the

Chepang, who also were forest dwellers and spoke a Tibeto-Burman language. Later scholars often assumed, without looking at the data collected by Hodgson, that Kusunda was a Tibeto-Burman language. Kusunda was classified essentially on the basis of its neighbor’s language, not its own, and this error perpetuated itself similar to a scribal error in a medieval manuscript (7–9).

We have discovered evidence that the Kusunda language is in fact a member of the Indo-Pacific family of languages (10). The Indo-Pacific family historically occupied a vast area from the Andaman Islands in the Indian Ocean to the Solomon Islands in the Pacific. Today most Indo-Pacific languages are found on New Guinea, where there are >700 surviving languages. Most of the western languages have disappeared as a consequence of the Austronesian expansion, but several ancient branches have survived on the Andaman Islands, the North Moluccas (North Halmahera and its smaller neighbors), and the lesser Sundas (Timor, Alor, and Pantar). East of New Guinea, Indo-Pacific languages survive on New Britain, New Ireland, the Solomon Islands, Rossel Island, and the Santa Cruz Islands. They also were spoken in Tasmania until 1876. The distribution of Kusunda and the Indo-Pacific family is shown in Fig. 1. Although it is not possible with present evidence to demonstrate conclusively the direction of the migration that separated Kusunda from the other Indo-Pacific languages, it would seem at least plausible that Kusunda is a remnant of the original migration to New Guinea and Australia rather than a backtracking to Nepal from the region in which other Indo-Pacific languages are spoken currently.

Recently, two molecular genetic studies (11, 12) have found that the Andamanese belong to mtDNA haplogroup M, which is found also in East Asia and South Asia and has been interpreted as “a genetic indicator of the migration of modern *Homo sapiens* from eastern Africa toward Southeast Asia, Australia, and Oceania” (11). In addition, the Andamanese belong to the Asia-specific Y chromosome haplogroup D. Thangaraj *et al.* (11) conclude that “the presence of a hitherto unidentified subset of the mtDNA Asian haplogroup M, and the Asian-specific Y chromosome D, is consistent with the view that the Andamanese are the descendants of Paleolithic peoples who might have been widely dispersed in Asia in the past.” If molecular genetic evidence can be obtained from the few remaining Kusunda, it will be interesting to determine whether it supports the conclusions we have arrived at on the basis of their language.

Grammatical Evidence

Linguistic evidence on Kusunda is sparse, limited to just three sources (2–4), and there are some discrepancies between Hodgson’s 19th-century data and the late 20th-century recordings of Reinhard and Toba (3, 4). For example, Hodgson, using a simple English orthography, represents the Kusunda affricates as *ch* and *j*, indicating that he heard them as palatal: [č] and [j]. Reinhard and Toba, however, represent the affricates as [ts] and [dz] and state explicitly that they are alveolar, not palatal. In this article,

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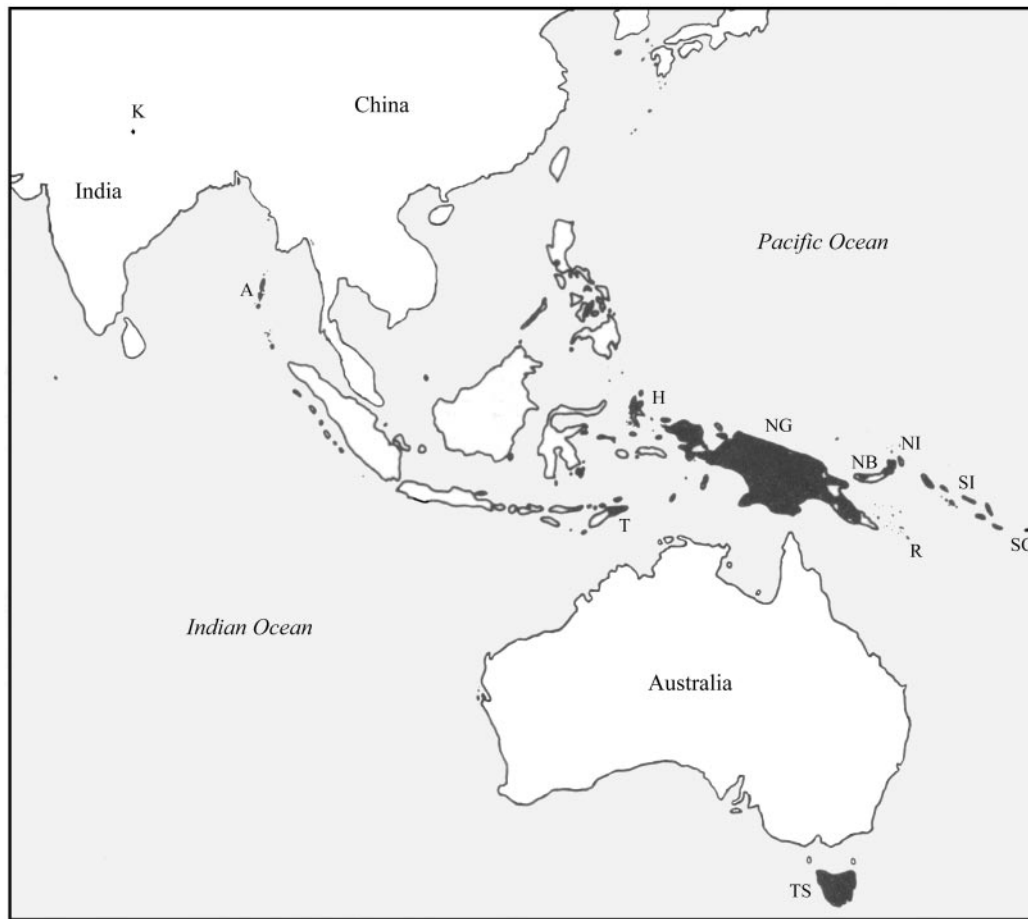


Fig. 1. Location of Indo-Pacific languages. K, Kusunda; A, Andaman Islands; H, Halmahera; T, Timor-Alor-Pantar; NG, New Guinea; NB, New Britain; NI, New Ireland; SI, Solomon Islands; SC, Santa Cruz Islands; R, Rossel Island; TS, Tasmania.

the source of each Kusunda form is identified as follows. Words from Reinhard and Toba (3) are taken as the default; words from Hodgson (2) are followed by (H); and words from Reinhard (4) are followed by (R). Sources for the other Indo-Pacific languages mentioned in this article are given in *Supporting Appendix 1*, which is published as supporting information on the PNAS web site.

Within this relatively small and imperfect corpus there is grammatical and lexical evidence pointing toward an Indo-Pacific affinity. The strongest piece of evidence is a pronominal pattern found in the independent pronouns (involving five different parameters) that is widespread in Indo-Pacific and also found in Kusunda in precisely the same form. These five defining features are: (i) a first-person pronoun based on *t*; (ii) a second-person pronoun based on *n* or *ŋ*; (iii) a third-person pronoun based on *g* or *k*; (iv) a vowel alternation in the first- and second-person pronouns in which *u* occurs in subject forms and *i* in possessive (or oblique) forms; and (v) a possessive suffix *-yi* found on all three personal pronouns. It is significant that four of these five defining features have to do with the first- and second-person singular pronouns, which are known to be among the most stable elements of language over time (13). Indeed, it is such pronouns that have often been the first evidence for very ancient families such as Eurasiatic and Amerind.

In his original article defining the Indo-Pacific family, Greenberg (10) posited two basic pronominal patterns, *n/k* “I/you” and *t/ŋ ~ n* “I/you,” and he suggested that the second set originally had a possessive function. However, subsequent re-

search has cast doubt on the antiquity of second-person *k*, the distribution of which is largely confined to New Guinea itself. In any event, it is the second pattern that Kusunda shares with Indo-Pacific. One finds both *ŋi* and *ni* as the second-person pronoun; Greenberg surmised that *ŋi* had been the original form and had changed to *ni* in some languages as a simple sound change and in others to *ni* by analogy with the very widespread *na* “I” of the first pronominal pattern. Greenberg did not notice, however, in his pioneering article either the vowel alternation or the possessive suffix *-yi*. Table 1 shows the first-, second-, and third-person pronouns for Kusunda and selected Indo-Pacific languages.

In Kusunda the vowel alternation has only been preserved in the second person, having been eliminated through analogy in the first-person form. Furthermore, first-person **t-* has been palatalized to *ch-* (H), *ts-*, or *tsh-* (R) under the influence of the following *-i*. Such a sound change is extremely common in the world’s languages, and in the present case we can be sure that the original consonant was *t-*, because *t-* has been preserved in both the object form *ton* “me” and in first-person plural *to-ŋi* “we” (*-ŋi* is a plural suffix). In addition to the independent pronouns, the consonantal base also indicates the verbal subject: Kusunda *t-* “I,” *n-* “you,” *g-* “he,” Bea *d-* “I,” *ŋ-* “you,” Onge *ŋ-* “you,” *g-* “he,” West Makien *tV-* “I,” *nV-* “you,” and Brat *t-* “I,” *n-* “you.”

The other Indo-Pacific languages in Table 1 have preserved different portions of the original system. It is best preserved in the Andaman Islands (Juwoi, Bo) and North Halmahera (Galela), whereas in Western New Guinea (Seget, Karon Dori),

Table 1. An Indo-Pacific pronominal pattern

	Kusunda	Juwoi	Bo	Galela	Seget	Karon Dori	Kuot	Savosavo	Bunak
I	chi (H) tsi tshi (R)	tui	tu-la	to	tet	tuo	-tuo		ne-
my	chi-yi (H)	tii-ye	ti-e	ʃi "me"					n-ie
you	nu (H) nu nu (R)	ɲui	ɲu-la	no	nen	nuo	-nuo	no	e-
your	ní-yí (H)	ɲii-ye		ni "thee"					Ø-ie
he/she	gida (H) git	kite	kite		gao			go	gi
his/hers	gida-yí (H) gidi								g-ie

New Britain (Kuot), and the Solomon Islands (Savosavo), only the consonants are preserved, in some cases only partially. The final language in Table 1, Bunak, is spoken on Timor and obviously does not preserve either the first-person *t* or second-person *ɲ/n*; it does, however, preserve third-person *gi*, and the possessive suffix is attached to all three pronouns, just as in Kusunda.

Certainly this unique pronominal pattern shared by Kusunda and Indo-Pacific languages cannot be a case of accidental convergence, because the probability that Kusunda could have invented this intricate pattern independently is vanishingly small. Borrowing is equally unlikely, because there is no evidence that Kusunda has ever been in contact with any Indo-Pacific language.

Two other grammatical formatives shared by Kusunda and Indo-Pacific are demonstrative pronouns based on *t* and *n*.

This. Kusunda *ta* (H) "this," *yit* "that" = Indo-Pacific: Puchikwar *ite*, Juwoi *ete*, Abui *i(t)-do*, Konda *ete*, Itik *ide*, Biaka *te?* "this, he," Kwomtari *itə* "he," Timbe *idā* "this, that," Selepet *eda*, Marind *iti-*, Minanibai *eti* "he," Humene *ida*.

That. Kusunda *na* "this" = Indo-Pacific: West Makian *ne* "this," Abun *ne* "that (specific), the, he," (*mo-*)*ne* "there," Brat *no*, Tabla *na* "this," Sentani *nie*, Urama *na*, Tate *ne*, Dimir *ne-t* "this."

Lexical Evidence

Complementing the grammatical evidence are a number of lexical similarities that also point to an Indo-Pacific affinity. Some of the most convincing are given below. We do not give here all the supporting etymologies or all the supporting forms for each etymology. Rather, we have chosen for each etymology a sample of the forms from different regions of the Indo-Pacific family. The meaning of each form is the same as the head meaning unless specified otherwise.

Breast. Kusunda *ambu* = Indo-Pacific: Sawuy *a:m*, Korowai *am*, Wambon *om*, Ivori *aamugo?*, Gogodala *omo*, Gaima *omo* "milk," Waia *amo*, Gibaio *a:mo:*, Wabuda *amo*, Tebera *ami*, Ekagi *ama*, Chimbu *amu-na*, Wahgi *am*, Purari *ame*, Yekora *ami*, Yoda *amu*, Koita *amu*, Neme *yama*, Morawa *ama*, Arawum *ammu*, Usu *amu-*, Kamba *auma*, Biyom *ami*, Katiatia *ama*, Musak *amū*, Tani *ame*, Wanembre *emi*.

Daylight. Kusunda *jina ikya* (H) "light" = Indo-Pacific: Onge *eke* "sun," *ekue* "day, today," Momuna *iki ~ ikī* "sun," Tabla *yakau* "morning," Tofamna *yaku* "sun," Fas *yəkəvə* "sun," Bisorio *yagi* "sun," Enga *yaŋama* "morning," Tunjuamu *yagu* "day," Gidra *yuge-bibese* (*-bibese* "day").

Dog. Kusunda *agai* (H), *agəi* = Indo-Pacific: Woisika *wangu*, Sentani *yoku*, Grand Valley Dani *yekke ~ yege*, South Ngalik *yenge*, Aghu *yangi*, Kaeti *anga*, Yelmek *agoa*, Noraia *aga*, Gidra *yauga*, Siroi *age*.

Earth/Ground. Kusunda *doma* (H) "earth," *tumái* (H) "below" = Indo-Pacific: Tobelo *timi* "underneath," Kwesten *tum*, Mombum *tumor*, Dibiri *toma*, Grand Valley Dani *tom ~ dom*, Ngalik *dom*, Fasú *tomo* "underneath," Sene *dome* "underneath," Gende *teme* "underneath," Yeletnye *tyamī*.

Egg. Kusunda *gwá ~ gôá* (H), *goa* = Indo-Pacific: Onge *gwagane* "turtle egg," Tanglupui *kwa* "fruit," Bunak *otel go* "fruit" (*otel* "tree"), Kampong Baru *uku*, Inanwatan *goʔu*, Solowat *gu ~ go*, Eritai *oko*, Waritai *ko*, Asmat *oka*, Demta *kuku*, Sangke *kwe-kwe*, Sko *ku*, Ngala *gwi*, Moni *ugwa ~ ua* "fruit," Oksapmin *gwe* "egg, seed," Menya *qwi*, Amele *wagbo*, Atemptle *aku*.

Eye. Kusunda *chining* (H), *ta-inin*, *iniŋ* (R) = Indo-Pacific: Warapu *ini*, Oirata *ina*, Woisika *-eŋ*, Kui *-en*, Abui *-eŋ*, Yahadian *ni*, Mor *na(-)na*, West Kewa *ini*, Koiari *ni* "eye, face," Magi *ini*, Morara *niʔi*, Yabura *niʔaba*, Yareba *niapa*.

Father₁. Kusunda *məm* "older brother," *məm* (R) "older brother, father's sister's older son, mother's sister's older son" = Indo-Pacific: Abui *mama*, Moi *-mam-*, Arandai *mame*, Eipo *mam* "mother's brother," Demta *mami*, Manambu *mam* "older brother," Angoram *mam*, Korowai *mom* "mother's brother," Huli *mama* "grandfather," Kobon *mam* "brother," Kate *mamaʔ-*, Kwale *mama*, Pulabu *mama*, Saep *mam*, Jilim *momo*, Bongu *mem*, Kare *momo-*, Sihan *meme-*, Samosa *mame-*, Wamas *mama-*, Garuh *mam*, Mugil *-mam*, Kuot *mamo*, Baining *mam*, Taulil *mama*, Baniata *mama*.

Father₂. Kusunda *yei* = Indo-Pacific: Isam *eya*, Bauzi *ai*, Gresi *aya*, Nimbora *aya*, Taikat *aya*, Yuri *ayə*, Dera *aya*, Kwomtari *ayəʔ*, Busa *aiya* (?), Amto *aiya*, Urat *yai*, Yis *aya*, Seti *aya*, Wiaki *yaye*, Hewa *aiya*, Amal *aya*, Siagha *aye*, Dibolug *iaia*, Ekagi *aiya* "great grandfather," Sausi *ai-* "older sibling (same sex)," Danaru *aya* "older sibling (same sex)," Utu *aya*, Baniata *ai*.

Fire. Kusunda *já* (H), *dza*, *dza?* (R) = Indo-Pacific: Pawaian *sia*, Tebera *si*, Bisorio *tseyá* "tree, fire," Gahuku *dza* "tree," Kamano *zafa* "tree," Gadsup *yaa(-ni)* "tree," Kate *dza-* "(it) burns," Mape *dza-* "(it) burns," Burum *dze-* "(it) burns," Nabak *dzi-* "(it) burns," Selepet *si-* "(it) burns," Aeka (*d)zi*, Orokaiva *dzii*.

Give. Kusunda *ái* (H), *ya-gan*, *ya-wu* "give! (imperative)" = Indo-Pacific: Juwoi *a-*, Jarawa *a:ya*, Bale *oa-*, Brat *-e*, Hatam *-yai* "take, give," Sentani *ye*, Manem *ya*, Elepi *yau*, Kamasau *nieg*

“give it to me,” Wambon *yo-*, Riantana *yə*, Maklew *-ai-*, Gidra *ai(o)*, Northeast Kiwai *ai*.

Knee. Kusunda *tugutu* = Indo-Pacific: Onge *i-tokwage* “elbow,” Bale *togo* “wrist,” Puchikwar *togur* “ankle,” Juwoi *togar* “ankle,” Sahu *dodoŋa* “joint,” Karas *tanŋum* “elbow,” Iha *-tuŋun* “elbow, knee,” Baham *-tuŋgon* “elbow, knee,” Kampong Baru *-tuguno* “elbow,” Arandai *-tuge-do* “elbow,” Bo *na-toku* “elbow” (*na-* “arm”), South Ngalik *-(e)dokodu*, Biami *toku* “elbow,” Kapri-man *se^huk^hwa* “elbow,” Keladdar *tuy* “elbow,” Kimaghama *tuyk^hε* “elbow,” Karima *si-tuku* “elbow” (*si-* “arm”), Kebenagara *dunwat* “elbow,” Tonda *doŋodi* “elbow,” Kesawai *toko* “elbow, knee,” Pulabu *tunŋai* “elbow,” Musar *tukumanŋ* “elbow.”

Liver. Kusunda *kammu, qamu* (R) = Indo-Pacific: Kauwerawet *okum*, Agob *kam(o)* “belly, stomach, guts,” Gidra *komu* “belly, guts,” Karima *kamo*, Binandare *gomo*, Sausi *kamo*, Siroi *gamu*, Kwato *kamamu*, Panim *gem-*, Silopi *kemu-*, Utu *gemu-*, Saruga *gam-*, Musak *kumu* “liver, belly,” Mugil *-gem* “belly,” Dimir *kamemaŋ* “lung,” Korak *-gom*, Ulingan *kema*, Musar *gema* “lung.”

Morning. Kusunda *gorak* (H) “tomorrow,” *goraq* “tomorrow,” *gora^hɔzi* “this morning” = Indo-Pacific: Onge *gegariko-*, Kosarek *kwelek-nak*, Bine *koroke*, Kunini *korokerage*, Meriam *geragə*, Enga *koraka* “day,” Moere *kuru-kia*, Sulka *kolkha*.

Mountain. Kusunda *dibi^hoŋ* “hill” = Indo-Pacific: Sahu *tubu* “summit,” Iha *təber*, Kosarek *dub* “mountain peak,” Suki *dipra* “hill,” Foe *tuma* ~ *duma*, Yaben *tabə:nu*, Bilua *sopu*.

River. Kusunda *wideə* “flow (noun)” = Indo-Pacific: Baham *we^hja*, Iha *wadar*, Puragi *owedo*, Aikwakai *wetai*, Siagha *wedi*, Pisa *wadi*, Aghu *widi*, Kombai *wodei*, South Kati *ok-wiri* (*ok-* “water”), Awin *waiduo* “Fly River.”

Root. Kusunda *itak* “root, tuber” = Indo-Pacific: Bojigiab *cok*, Juwoi *cok-*, Bale *cag-*, Moni *taki*, Bogaya *tako*, Binumarien *tuka*, Wiru *teke*, Kire *^hok*.

Run. Kusunda *gorgo-woto* (H) = Indo-Pacific: Gogodala *gigira*, Pulabu *guru-*, Usino *gururw*, Danaru *nguruguru-*, Jilim *guru-*, Rerau *gur-*, Duduela *guri-*, Male *gur-*, Bemal *gurgure-*, Sihan *ku^hure-*, Isebe *guguli-*, Panim *gugul-*, Bau *gu^hur-*, Baimak *kura-*, Gal *gur-*, Sulka *guruŋ*, Buin *kuro-*.

Sand. Kusunda *gəli* = Indo-Pacific: Sougb *geria*, Tao-Sumato *giri*, Podopa *kekere* ~ *gegera*, Keuru *kekelea*, Orokoloko *kekele*, Elema

kekere, Opao *kekere*, Kosarek *kirik-aner*, Yafi *gəlak* ~ *gərək*, Dera *gəlak*.

Short. Kusunda *potoə* = Indo-Pacific: Fayu *bosa* “small,” Sehudate *buse* “small,” Monumbo *put*, Bahinemo *bə^ha*, Northeast Tasmanian *pute* ~ *pote* “small,” Southeast Tasmanian *pute* “small,” Middle Eastern Tasmanian *pote* “small.”

Shoulder. Kusunda *pənaq* “shoulder strap for net bag” = Indo-Pacific: Kede *ben*, Puchikwar *ben* “shoulder blade,” Bojigiab *ben*, Iha *mbeŋ* ~ *nbeŋ*, Kwerba *pan* ~ *ban* “upper arm,” Manambu *ban* “back,” Yelogu *bwənyəgiri* “back,” Murik *pinagep* ~ *p^hi-nagemb*, Pogaya *peni*, Tirio *pauna*, Yei *mbing*, Waia *bena*, North East Kiwai *bena*, Ipikoi *beno*, Fuyuge *bano* “spine.”

Today. Kusunda *ibe* “today,” *ibə* “now” = Indo-Pacific: Inanwatan *abo* “morning,” Momuna *abee*, Taikat *yabui* “morning,” Kwoma *a^hə*, Washkuk *apa*, Yei *abete*, Bugi *yabada* “day, sun,” Ekagi *abata* “morning,” Pole *ambi* “today,” *ambi-ati* “now,” Awa *apiə* ~ *ahbiyah* “tomorrow,” Lemio *yampir* “dawn,” Usu *ibəte* “tomorrow,” Bongu *yamba* “tomorrow,” Garuh *abera* “morning,” Atemple *ambire* “tomorrow, yesterday,” Yaben *balima* “tomorrow,” Siwai *imba* “now.”

Tree. Kusunda *i* (H), *yi, ii* (R) = Indo-Pacific: Sentani *i* “fire,” Biaka *yeyi?* “fire,” Kwomtari *i?* “fire,” Rocky Peak *yeyu* “fire,” Siagha *yi*, Kombai *e*, Girara *ei*, Gogodala *iz*, Kairi *i* “tree, fire,” Tumu *ii*, Kibiri *i*, Mena *ʔi*, Pawaian *i(n)*, Kasua *i*, Pa *i*, Angaataha *i-pati* [-*pati* (class prefix)], Fuyuge *i(-ye)* “tree, wood,” Zia *i*, Notu *yi*, Yeletnye *yi*.

Unripe. Kusunda *kətuk* (H) “bitter,” *qatu* “bitter” = Indo-Pacific: Kede *kat* “bad,” Chariar *kedeŋ* “bad,” Juwoi *kadak* “bad (character),” Moi *kasi*, Biaka *kwataka* “green,” Grand Valley Dani *katekka* “green,” Foe *k^hasigi*, Siagha *kada^hyai*, Kaeti *ketet*, Orokoloko *kairuka* “green,” Doromu *kati*, Northeast Tasmanian *kati* “bad,” Southeast Tasmanian *kati* “bad.”

Woman. Kusunda *puan* “co-wife” = Indo-Pacific: Bunak *pana* ~ *fana* “woman, wife,” Oirata *panar* “female (of animal),” Moni *pane* “girl,” Brat *vaniya*, Yava *wanya*, Pole *wena*, West Kewa *wena*, Forei *wənyⁱ* “wife,” Yekora *bana*, Dumpu *fan*, Kolom *pəno*, Tauya *fena^ha*.

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