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Peer Reviewed

Title:

Handbook of Proto-Tibeto-Burman: System and Philosophy of Sino-Tibetan Reconstruction

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Publication Date:

10-01-2003

Series:

[UC Publications in Linguistics](#)

Publication Info:

UC Publications in Linguistics

Permalink:

<http://escholarship.org/uc/item/19d79619>

Keywords:

Language and Linguistics, Tibet, Southeast Asia, China

Abstract:

This 800-page volume is a clear and readable presentation of the current state of research on the history of the Tibeto-Burman (TB) language family, a typologically diverse group of over 250 languages spoken in Southern China, the Himalayas, NE India, and peninsular Southeast Asia. The TB languages are the only proven relatives of Chinese, with which they form the great Sino-Tibetan family.

The exposition is systematic, treating the reconstruction of all the elements of the TB proto-syllable in turn, including initial consonants (Ch. III), prefixes (Ch. IV), monophthongal and diphthongal rhymes (Ch. V), final nasals (Ch. VII), final stops (Ch. VIII), final liquids (Ch. IX), root-final *-s (Ch. X), suffixes (Ch. XI). Particular attention is paid to variational phenomena at all historical levels (e.g. Ch. XII "Allofamic variation in rhymes").

This Handbook builds on the best previous scholarship, and adds up-to-date material that has accumulated over the past 30 years. It contains reconstructions of over a thousand Tibeto-Burman roots, as well as suggested comparisons with several hundred Chinese etyma. It is liberally indexed and cross-referenced for maximum accessibility and internal consistency.

Emphasis is placed on the special theoretical issues involved in historical reconstruction in the East/Southeast Asian linguistic area.

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Handbook of Proto-Tibeto-Burman

James A. Matisoff

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System and Philosophy of Sino-Tibetan Reconstruction

by
James A. Matisoff

UNIVERSITY OF CALIFORNIA PRESS
Berkeley • Los Angeles • London

UNIVERSITY OF CALIFORNIA PUBLICATIONS IN LINGUISTICS

Editorial Board: Leanne Hinton, Larry Hyman, Pamela Munro,
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Volume 135

UNIVERSITY OF CALIFORNIA PRESS
BERKELEY AND LOS ANGELES, CALIFORNIA

UNIVERSITY OF CALIFORNIA PRESS, LTD.
LONDON, ENGLAND

@2003 BY THE REGENTS OF THE UNIVERSITY OF CALIFORNIA
PRINTED IN THE UNITED STATES OF AMERICA

Library of Congress Cataloging-in-Publication Data available upon request

ISBN 0-520-09843-9

The paper used in this publication meets the minimum requirements of ANSI/NISO Z39.48-1992
(R 1997) (*Permanence of Paper*).{∞}

To the memory of

Paul K. Benedict (1912-1997)

Grant Support

Research on the *Sino-Tibetan Etymological Dictionary and Thesaurus* (STEDT) Project has been supported in part by grants from:

- *The National Science Foundation (NSF), Division of Behavioral & Cognitive Sciences, Linguistics, Grant Nos. BNS-86-17726, BNS-90-11918, DBS-92-09481, FD-95-11034, SBR-9808952 and BCS-9904950.*
 - *The National Endowment for the Humanities (NEH), Preservation and Access, Grant Nos. RT-20789-87, RT-21203-90, RT-21420-92, PA-22843-96, PA-23353-99, and PA-24168-02.*
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Acknowledgments

I am deeply grateful to the National Science Foundation and the National Endowment for the Humanities for their unswerving support of the *Sino-Tibetan Etymological Dictionary and Thesaurus* (STEDT) Project since 1987, even through times of budgetary stringency.¹ I would especially like to thank Dr. Paul G. Chapin, of the Language, Cognition, and Social Behavior division of NSF; and Dr. Guinevere Greist, Dr. Helen Agüera and Dr. Martha Bohachevsky-Chomiak of the Research Tools Division of NEH. I can only hope that the fruits of this project will repay their confidence and patience. I would also like to thank Anthony Meadow, founder of the Bear River Associates software development firm, now in Oakland, who generously gave many hours of his time during 1986-87 in *pro bono* consultations about how to formulate the computer needs of the project in our original grant proposals to NSF and NEH.

Several Organized Research Units and academic departments of the Berkeley campus have given their moral or practical support to the STEDT project, including the Center for Southeast Asia Studies, the Center for Chinese Studies, the Department of Linguistics, the Department of South and Southeast Asian Studies, the Department of East Asian Languages and Cultures, and especially the Institute of International and Area Studies, to whose administrative staff I am deeply obliged: Karin Beros, Management Services Officer and all-around trouble-shooter, who was instrumental in solving the practical problems of getting the project started back in 1987; Jerilyn C. Foushée, who has handled our budget and helped with our grant proposals and reports since 1987; and Nell Haskell (1987-95) and Kerttu K. McCray (1995-2002), who have kept track of personnel matters.

1. See *Grant Support* in the front matter.

Acknowledgments

The STEDT project has been greatly enriched by the specialized expertise, unpublished data, and intellectual stimulation provided by a succession of visiting scholars, who have spent anywhere from a few weeks to more than two years at the project headquarters: Martine Mazaudon and Boyd M. Michailovsky (1987-89, 1990-91) Centre National de la Recherche Scientifique (Paris), *Himalayan languages*; DAI Qingxia and XU Xijian (Oct.-Nov. 1989) Nationalities University (Beijing), *TB languages of China*; ZHANG Jichuan (Nov. 1990) Chinese Academy of Social Sciences (Beijing), *Tibetan dialects*; the late Rev. George Kraft (1990-99), *Khams Tibetan*; Nicolas Tournadre (Feb. 1991) University of Paris III, *Tibetan*; SUN Hongkai and LIU Guangkun (April-May, 1991) Chinese Academy of Social Sciences (Beijing), *TB languages of China*; YABU Shiro (April-Aug. 1994) Osaka Foreign Languages University, *Burmish languages and Xixia*; William H. Baxter III (May, 1995) University of Michigan, *Old Chinese*; Balthasar Bickel (Sept.-Oct. 1996; Feb.-Mar. 1997) University of Zürich and Johann Gutenberg University (Mainz), *Kiranti languages*; LIN Ying-chin (1997-98) Academia Sinica, Taipei (Xixia, Muya); David B. Solnit (1998-) STEDT, *Karenic*; WU Sheng-hsiung (spring, 2002) Taiwan Normal University, *Chinese phonology*; IKEDA Takumi (2002-03) Kyoto University, *Qiangic languages*.

Most of all, I am indebted to the phalanges of talented students, past and present, who have been working at STEDT anywhere from five to 20 or 30 hours per week, performing a host of vital tasks such as the inputting and proofreading of hundreds of thousands of lexical records, the development of special fonts and relational database software, computer maintenance and troubleshooting, formatting articles for our journal *Linguistics of the Tibeto-Burman Area*, and editing the publications in the STEDT Monograph Series. At least 50 researchers have been employed at STEDT since 1987, mostly graduate students in the Berkeley Linguistics and East Asian Languages and Cultures Departments, but also including several undergraduate volunteers and non-enrolled or former students. Here they are, in an alphabetical honor roll:² Madeleine Adkins, Jocelyn Ahlers, Shelley Axmaker, Stephen P. Baron, *Leela Bilmes (Goldstein), Michael Brodhead, Jeff Chan, Patrick Chew, Melissa Chin, Richard S. Cook, Jeff Dale, Amy Dolcourt, Julia Elliott, *Jonathan P. Evans, Cynthia Gould, Daniel Granville, *Joshua Guenter, *Kira Hall, *Zev J. Handel, Annie Jaisser, *Matthew Juge, Nina Keefer, Jean Kim, *Aimée Lahaussais (Bartosik), *Randy J. LaPolla, *Jennifer Leehey, Anita Liang, Liberty Lidz, *John B. Lowe, Jean McAneny, *Pamela Morgan, David Mortensen, Karin Myrhe, Ju Namkung, *Toshio Ohori, *Weera Ostapirat, *Jeong-Woon Park, Jason Patent, Chris Redfearn, S.

2. Names with asteriks belong to students who have received their doctorates since their STEDT stint.

Ruffin, Keith Sanders, Marina Shawver, Elizabeth Shriberg, Helen Singmaster, Tanya Smith, Gabriella Solomon, Silvia Sotomayor, *Jackson Tianshin Sun, Laurel Sutton, *Prashanta Tripura, Nancy Urban, Kenneth VanBik, Blong Xiong, *Liansheng Zhang.

It is a pleasure to single out several “Stedtniki” whose contributions to this project and the present volume have been particularly outstanding, and all of whose computational expertise infinitely outstrips my own:

- John B. (“J.B.”) Lowe, the only researcher who has been continuously working at STEDT since its inception in 1987, designed our initial computer environment and has been fine-tuning it ever since, creating original database software adapted to the highly specialized needs of the project and breaking new conceptual ground in the use of the computer for etymological research.³

- Randy J. LaPolla, now teaching at the City University of Hongkong, has also been affiliated with STEDT since the beginning. Until receiving his doctorate in 1990, he played a vital part in our activities, including the preparation of STEDT Monographs and the processing of fieldworkers’ questionnaires. His superb knowledge of Chinese has been a prime asset to the project.

- Zev J. Handel (“Z as in *zebra*, V as in *violin*”, as he explains over the telephone), is a specialist in Chinese historical phonology, now teaching at the University of Washington. He was active at STEDT in the 1990’s, and had a major role in the formatting of our prototype “fascicle” on the *Reproductive System* for our projected *Bodyparts* volume, adding bells and whistles like the program to insert notes at various points in the etymologies, and transforming my hand-scrawled semantic diagrams into elegant computer graphics. I am especially grateful to him for producing the concise comparison of three of the most influential systems for reconstructing Old Chinese that appears as an Appendix to this *Handbook*.

When I went off on sabbatical to Taiwan during 1995-96, I left the day-to-day running of STEDT in the capable hands of J.B. and Zev. One day I e-mailed them from Taipei, referring to them as the “duumvirate”. Back came an aggrieved message from J.B., protesting that they really would rather be called the “smart-virate”. No argument there.

3. J.B.’s work at STEDT has already spun off into several other etymological projects on which he has consulted here and abroad: M. Mazaudon and Boyd Michailovsky’s *Reconstruction Engine* (Paris) for testing putative cognate sets in Himalayan languages; L. M. Hyman’s *Comparative Bantu On-line Dictionary* (CBOLD, Berkeley); Sjors van Driem and K. B. Kepping’s *Tangut Dictionary Project* (Leiden), and Sharon Inkelas’s *Turkish Electronic Living Lexicon* (TELL, Berkeley).

Acknowledgments

- Kenneth VanBik is a native speaker of Lai Chin and a graduate of Rangoon University. Possessing an intimate knowledge of languages from two branches of Tibeto-Burman, he was able to identify a number of new Burmese/Chin cognates that are thus reconstructible at the PTB level. His etymologies are included in this volume, marked “KVB”.

- Richard S. Cook, currently producing a mammoth dissertation on the Eastern Han “Grammaticon” 說文解字 *Shuō Wén Jiě Zì*, has been the chief architect of the formatting of this *Handbook* during 2002-3. It was his idea to transfer the whole MS from Microsoft Word 5.1a to Adobe FrameMaker™, an arduous process that has paid off in the end, as the attractive appearance of the book testifies. Richard wrote *Appendix B* (in consultation with Zev Handel), and extracted the etymologies from the electronic *Dictionary of Lahu* files to supplement the *Index of Proto-Forms*. He wrote the computer programs to format the *Index of Proto-Forms* and to generate and format the indexes of *Proto-Glosses*, *Proto-Root-Syllables*, *Proper Names*, and *Chinese Characters*. He produced the kerned version of the STEDT PostScript font family, as well as the font for the rare Chinese characters found in this book.

- David Mortensen, a linguistics graduate student specializing in Hmong-Mien, has contributed equally to the production of this *Handbook*. An accomplished computorial troubleshooter, he did much formatting work, and has carried out such vital tasks as assuring the integrity of the *Handbook*’s innumerable internal cross-references.

Both Richard and David have spent endless gruelling hours with me in the compilation of the various Indexes which greatly increase the utility and accessibility of this book.

* * *

We usually have a pretty good time at STEDT, sometimes wearing our project T-shirts, and communicating in a strange polysyllabic jargon composed of items like *semcat*, *pan-allofamic formulas*, *extra-fascicular etyma*, *supporting forms*, *add-sourcing*. There is a certain *esprit de corps* and air of intellectual excitement, which has seen us through stressful experiences like the break-ins and thefts of our computer equipment (April 1989). To all Stedtniki, past and present, my love and appreciation.

Finally, my sincere thanks to the Editors of the *University of California Publications in Linguistics* series, first to Rose Anne White, former UCPL Series Editor, with whom I had a happy working relationship since 1972; to the current UCPL Editor, Katherine Warne; to Michelle Echenique, Electronic Publishing Manager; to John Lynch, Production Editor; and to the Director of U.C. Press, Lynne Withey. Their support and encouragement in the final stages of the editorial process has made it a thoroughly pleasant experience.

Last but not least in love, I thank my wife Susan for sustaining me in this effort from start to finish, as she has in all things for over 40 years.

JAM
Berkeley, March 2003

Preface

My involvement in Tibeto-Burman (TB) and Sino-Tibetan (ST) comparative reconstruction dates from my first fieldwork on Jingpho, Burmese, and Lahu in the 1960's, and especially from my intense contact with Paul K. Benedict when I was teaching at Columbia University (1966-69). The manuscript version of Benedict's *Sino-Tibetan: a Conspectus* (STC) had been lying around unpublished since its composition around 1940; it was exciting for me to contribute to its eventual publication in 1972. With its nearly 700 TB cognate sets, and over 300 TB/Chinese comparisons, the *Conspectus* ushered in the current renaissance of TB and ST comparative linguistics. Its rigor and precision, as well as the breadth of its vision, have made it the indispensable point of departure for subsequent work in the field.

While there is certainly room for tinkering with a few details of Benedict's reconstructive scheme for Proto-Tibeto-Burman (PTB), the major features of the system itself remain basically unassailable. The real progress that has been made in the past 30 years lies elsewhere. An avalanche of new data from recent fieldwork has strengthened the support for previously reconstructed etyma and has permitted the reconstruction of hundreds of new roots at all taxonomic levels of TB, though many more undoubtedly remain to be discovered. The harnessing of the computer for etymological research has speeded up the identification of new cognates and provided a powerful tool for testing the validity of proposed reconstructions. A better understanding of the variational processes at work in TB and ST word-families has enabled us to decide more accurately whether sets of forms that bear partial phonosemantic resemblances to each other are really variants of the same etymon or etymologically independent. On the Chinese side, the successors to Karlgren have made profound changes in the reconstructive scheme for Old Chinese, and it is no exaggeration to say that the field of historical Sinology is now going through a

period of ferment. Still, almost all of *STC*'s suggested Chinese comparanda for PTB etyma have gone unchallenged.¹

Despite its brilliance, the *Conspectus* is notoriously difficult to use, largely due to its complex apparatus of footnotes, which often (especially in the Chinese section) occupy more of the page than the text itself. These notes include Benedict's original ones from the 1940's, as well as those he and I added before publication in 1972. Some 200 valid etymologies are squirreled away in these convoluted notes, but they also contain a number of errors, unsubstantiated speculations, and over-complications.

Benedict himself realized the limitations of the data he had to work with, and never intended *STC* to be more than an overview or "conspectus" of its vast subject. Neither did he structure it as a practical handbook which systematically tabulated the sound correspondences among the major languages of the family at all canonical points of the syllable. (Such information is certainly extractable from the terse but labyrinthine pages of *STC*, but at the cost of considerable labor.) Towards the end of his life Benedict does seem to have felt the need to embark on such a systematic project, although it never actually got off the ground.

The present work may be viewed largely as an updating, clarification, and expansion of *STC*. It aims to build on the valid etymologies already proposed, but also to present new ones that conform to established sound correspondences. When necessary, previously proposed etymologies are modified in order to accommodate new data.

In this *Handbook*, I have organized the discussion according to the inventory of proto-entities at the various points of the syllable: initial consonants; medial glides; prefixes; simple and diphthongal vocalic nuclei; closed syllable rhymes (with final nasals, stops, liquids, and -s); and suffixes.² Wherever possible, the regular reflexes in major languages of these syllabic elements are displayed in tabular form. The best etymologies illustrating each sound-correspondence are presented, and exceptional or problematic cases are discussed, with alternative analyses suggested.

That is the "systematic" part. The "philosophical" aspects of this book are more elusive, but implicit throughout. First of all, I have striven for clarity and simplicity of

1. The over 300 TB/OC comparisons made in *STC* are conveniently indexed in the excellent review by Chou Fa-kao (1972).

2. Similarly organized examples of the Handbook genre in Southeast Asia include Li Fang-Kuei's *A Handbook of Comparative Tai* (1977) and Wang Fushi's *Mǎoyǔ fāngyán shēngyùnmǔ bǐjiào* (Comparison of the Initials and Rhymes of the Miao Dialects; 1979).

presentation, for “user-friendliness”. Being understandable rather than obscurantist poses certain risks, in that one’s opinions are clear and therefore falsifiable in the light of new data, but it has the advantage of encouraging feedback from others.³ Secondly, I operate under a theoretical framework according to which the proto-lexicon is not conceived of in terms of monolithic, phonosemantically invariant etyma, but rather as a collection of word families that may each exhibit some internal variation on both the phonological and semantic planes, but according to certain reasonable principles. Distinguishing between such valid variational phenomena and wild speculative leaps is not always easy.

* * *

After the publication of the *Conspectus*, further progress in intra-TB and TB/Chinese comparison seemed to depend on multiplying the number of reliably reconstructed etyma, as well as systematizing and refining the methodological underpinnings of the reconstructions. In the mid-1970’s, when I was attempting to apply the principles of glottochronology in order to subgroup the TB family, the very first item of “basic vocabulary” that I looked at happened to be ‘belly / stomach’. Much to my initial dismay, I quickly found that it was futile to use a simple wordlist to try to subgroup a family as complex and ramified as TB. In fact it was impossible even to deal in isolation with a single point in semantic space; etyma with the meaning ‘belly’ or ‘stomach’ spilled over into concepts like ‘cave / hole’, ‘swelling’, ‘calf of leg’, ‘liver’, ‘guts’, *etc.* I became preoccupied with notions of semantic variability, semantic fields, and the field of bodypart nomenclature in particular. At the same time I could not help noticing the morphophonemic variations displayed by almost every etymon previously or newly reconstructed. Instead of guiltily sweeping these variational phenomena under the rug, I began to revel in them. In *Variational Semantics in Tibeto-Burman* (1978) I set out to establish an explicit methodology for handling phonosemantic variation in word families, introducing the notion of allofams and a notation for diagramming patterns of semantic association (“metastatic flowcharts”).

In those pre-computer days, I naturally had to assemble my data by hand, copying out bodypart words from dictionaries and sorting them into synonym sets on filecards, then grouping them into putative cognate sets. The older sources used by Shafer and Benedict were supplemented by an ever-increasing volume of new material in the 1970’s and 1980’s, much of it from post-Cultural Revolution China, but also from India, Nepal, and

3. The difficulty of *STC* can be used as an excuse for not studying it thoroughly. It would be tragic if its fundamental insights were to be forgotten.

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Thailand. It eventually became apparent that the job of digesting these massive amounts of new and old data would be vastly facilitated by the use of computers.

The hitch was my own ignorance of computer technology beyond the level of simple word-processing. Fortunately I somehow got the idea of applying to federal granting agencies for a longterm project to create a computerized etymological dictionary of Tibeto-Burman / Sino-Tibetan based on semantic principles, *i.e.* an etymological thesaurus.⁴ In 1987, the *Sino-Tibetan Etymological Dictionary and Thesaurus Project* (STEDT) got under way, funded jointly by the National Science Foundation and the National Endowment for the Humanities.

Thanks to the efforts of a succession of computer-savvy graduate students (see the Acknowledgments), a massive lexical database of forms from over 250 TB languages and dialects has been created, mostly of bodypart terminology at first, but rapidly extending to other areas of the lexicon. It has been a race between the vertiginous progress of computer technology (when we started in the Pleistocene, 1987, we were using Mac Pluses!) and our ever-expanding needs for disk capacity, memory, and operating speed. The hardwon experience gained at the STEDT project has inspired similar lexical database projects in the U.S. and abroad.

It was originally planned to publish the Sino-Tibetan Etymological Dictionary and Thesaurus as a series of printed volumes, each containing full details on all the etymologies in a given semantic area, starting with bodyparts and then proceeding to animal names, natural objects, verbs of motion, and all the rest of the lexicon. The sheer amount of the etymologizable data soon made it clear that this was unrealistic, and that each projected volume of STEDT would have to be split up into smaller units or “fascicles”, *e.g.* in the case of bodyparts into ten subdivisions including HEAD, LIMBS, INTERNAL ORGANS, DIFFUSE ORGANS, REPRODUCTIVE SYSTEM, *etc.*, each to be published separately. I decided to start with the reproductive system, not only because of its prurient interest but also because it seemed like the point of departure for all things. Accordingly a printed manuscript of some 480 pages was produced in 1997-98, called *Sino-Tibetan Etymological Dictionary and Thesaurus, Volume I: Bodyparts, Fascicle 1: The Reproductive System*, containing 286 pages of forms assembled into 174 cognate sets, divided into nine chapters: (1) Egg, (2) Birth, (3) Navel, (4) Breast, (5) Vagina, (6) Womb,

4. The shining example of an etymological thesaurus in the field of Indo-European is Carl Darling Buck's *A Dictionary of Selected Synonyms in the Principal Indo-European Languages* (1949).

(7) Penis, (8) Copulate, (9) Body Fluids. As part of the front matter, I put together a 60 page essay on the initial consonants and consonant clusters of Proto-Tibeto-Burman.

As it turned out, perhaps fortunately, that introductory essay soon took on a teratoid life of its own, and became an example of what one might call in Proto-Tibeto-Burman

*k ^w əy	lətak	rəmay	gəya:p	way
dog	ACC	tail	wag	COP/NOM

or “the tail wagging the dog”.⁵ Was I not responsible for dealing with the whole proto-syllable, not just the initial consonants? I delayed publication of the “Reproductive Fascicle” until I could get the whole job done. The “introductory essay”, then entitled *System and Philosophy of Tibeto-Burman Reconstruction*, eventually grew to its present length of some 600 pages. It gradually dawned on me that it would be preferable to publish it as a stand-alone book, indeed a *Handbook*.

This decision has much to recommend it. In its present form, the phonological approach of this *Handbook* is complementary to the main thrust of the STEDT project, which is semantically organized. Both prongs of attack are certainly necessary. Henceforth each set of etymologies in the various semantic areas of the lexicon can be put up on the worldwide web as soon as they are deemed ready to go, rather than waiting until they can appear in print form. Many trees will be spared as reams of paper are saved. As each series of etymologies is released, it will be possible to solicit comments and criticisms from colleagues all over the world, and it will be simplicity itself to incorporate any addenda or corrigenda. It is extremely wasteful of space to print out computer records from a database -- who wants to see the gloss ‘egg’ printed out hundreds of times? Since STEDT has had a policy of “following copy”, the same form from a given language (especially well documented ones like Written Burmese or Written Tibetan) is likely to appear several times in slightly different transcriptions used in the various sources. Instead of trying to “normalize” these, or indeed to delete totally identical records from different sources, we can just include them all, thereby saving much drudgery, since space will not be an issue.

Perhaps the greatest advantage of having this *Handbook* appear before the semantically organized etymologies are promulgated is that it can serve as a standard or “template” against which each newly proposed etymon can be tested. Let us say, *e.g.*, that a hypothetical new PTB root *b-zer-s has been reconstructed with the meaning ‘tonsil’.

5. The presence of the accusative particle *lətak* is motivated by the semantic anomalousness of this phrase, which has also caused the fronting of the object *k^wəy ‘dog’ to initial position.

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The supporting forms for this etymology can then be compared for consistency with other data that motivate the reconstructions of the same proto-elements, *i.e.* other etyma with prefixal *b- (§4.4.3), with initial *z- (§3.3), with the liquid-final rhyme *-er (§9.2.3), and with suffixal *-s (§11.4). Before long the *Handbook* itself can be put up on the web, so that these new etymologies may be plugged directly into it.

Much obviously remains to be done. The data are still uneven in the various branches of the family, ranging from the overwhelmingly copious to the tantalizingly sparse. Most strikingly perhaps, this *Handbook* makes no attempt to reconstruct tones at the PTB level, although this can already be done at the level of certain individual subgroups (*e.g.* Lolo-Burmese, Tamangic, Karenic).

Some reconstructions are given at the subgroup level, when they are available, and a number of roots are marked as being confined to certain subgroups (*e.g.* Himalayan, Kiranti, Kamarupan, Lolo-Burmese, Karenic). It is precisely these roots of limited distribution, or “cognate isoglosses”, that will prove to be important for a finer subgrouping of the TB family. However, new data frequently forces us to revise our judgments of etyma distribution: many roots considered to be confined to a single subgroup in *STC* must now be set up for TB as a whole. These are usually noted in the text.

As emphasized in the Conclusion (Ch. XIII), the approach of this *Handbook* is definitely conservative, in that speculative etymologies are almost always avoided, or at any rate suitably hedged. Variational phenomena are handled with care; phonosemantically non-identical roots are not claimed to be co-allofams unless the morphophonemic relationship between them is paralleled in other word families. Semantic leaps are kept to a minimum, and detailed justification is provided when the meanings of putative cognates diverge significantly. Many solid Chinese comparanda to TB etyma are offered, but no attempt is made to choose among the often contradictory reconstructive schemes for Old Chinese;⁶ for now I just use the classic reconstructions of Karlgren (with some modifications⁷), a policy which *STC* also followed.⁸ I usually have not tried to set up PST forms, as *STC* sporadically tries to do. I just give the best

6. See “A Concise Introduction to Old Chinese Phonology” by Zev Handel (below, *Appendix A*), which treats the major differences in the reconstructive systems of Karlgren, Li Fang-Kuei, and W.H. Baxter.

7. One minor change is that we write the velar nasal as “ŋ” instead of “ng”.

8. Despite of the fact that Karlgren’s system has been superseded and simplified in some respects by subsequent scholars, *GSR* remains the best-known, most copious, and most convenient reference for OC. I conventionally do not precede OC reconstructions with an asterisk. Asterisks do, however, appear before the OC forms cited in *Appendix A*.

comparanda. That is why this is basically a Tibeto-Burman handbook, even though its system and methodology apply to all of Sino-Tibetan (hence the subtitle).

The primary organization of this *Handbook* is by rhyme, since this is the most stable part of the syllable.⁹ In sharp contrast to Indo-European, the manner of initial consonants (voicing and aspiration) in TB/ST is highly variable, due to the pervasive phenomenon of prefixation (see Ch. IV). Chinese comparanda (I usually avoid the term “cognate”) are given mostly under the proto-rhyme of their TB counterparts. Most correspondence charts of reflexes also appear under the rhymes. Still there is a certain unavoidable repetitiveness, in that the same root might be discussed in different contexts, *e.g.* with respect to its initial, its rhyme, and/or its variational pattern. The Indexes will facilitate finding all references to a given etymon.

A few words about nomenclatural and transcriptional matters:¹⁰

- Names for TB languages have undergone frequent changes, as exonyms are replaced by autonyms, and as names felt to be pejorative become politically incorrect.¹¹ However, certain older language names have been retained, just because they are more widely used in the literature: thus I use “Lushai” instead of the now-preferred self-designation “Mizo”.
- Subgroup names can be particularly confusing. Occasionally I use equivalent names for the same subgroup, *e.g.* “Himalayish” or “Himalayan”, “Bodo-Garo” or “Barish”, “Kuki-Naga” or “Kuki-Chin-Naga”. My use of “Kamarupan” as a geographical cover term for the subgroups of Northeast India (including Abor-Miri-Dafla, Bodo-Garo, and Kuki-Chin-Naga) remains controversial, although it is certainly useful.¹²
- Tones are not marked for every language that has them, especially not for those where no good tonological description is available. Tones are consistently marked for Lolo-Burmese languages and for Jingpho, as well as for the tonal languages cited in Sun *et al.*, 1991 (*ZMYYC*) and Dai *et al.*, 1992 (*TBL*); but they are only sporadically provided for such languages as Lushai and Lai Chin.

9. Hence the great utility of rhyming dictionaries for TB languages; Benedict put several such to good use during the compilation of the *Conspectus*.

10. For more details about the transcriptional systems used for key languages, see *Citational and Transcriptional Conventions*, below.

11. For a discussion of the issues surrounding the proliferation of language names in TB, see JAM 1986a.

12. See JAM 1999c (“In defense of ‘Kamarupan’”).

Preface

Great care has been taken to ascribe etymologies to their original source. Any TB etymology or part thereof not specifically ascribed to a prior source is original with me, as far as I know. In any case, the responsibility for the TB reconstructions is mine alone.

It is hoped that this *Handbook* will prove useful to specialists and general linguists alike, and that it will help to demystify the most important understudied language family in the world.

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Symbols and Abbreviations

I. General

I	Form I of a Chin verb
II	Form II of a Chin verb
*A	A is a reconstructed or hypothetical form
**A	A is a speculative form, or one that is claimed never to have existed
A > B	An older form (A) became a later form (B).
A < B	A is derived from an older form B
A ≍ B	A and B are members of the same word family; A and B are co-allofams of a single etymon. Indicates major or minor <i>interlingual</i> variation, or major <i>intralingual</i> variation. Cp. “~”.
A ?≍? B	Are A and B allofamically related?; Do A and B belong to the same word-family?
A ✱ B	A and B are not co-allofams.
A ~ B	Indicates minor intralingual variation between A and B.
CLF	classifier
dial.	dialect
esp.	especially
<i>id.</i>	<i>idem</i> ; same as preceding.
lit.	literally
n. or N.	noun
p.c.	personal communication
pr.	pronoun
prob.	probably

Symbols and Abbreviations

prt.	particle
smn.	someone
sthg	something
syll.	syllable
ult.	ultimately
v. <i>or</i> V.	verb
v.i.	intransitive verb
v.t.	transitive verb

II. Languages and Proto-languages

Ak.	Akha
BG	Bodo-Garo (= Barish)
Bs.	Burmese
Dim.	Dimasa
G.	Garo
Gk.	Greek
IA	Indo-Aryan
Insc. Bs.	Inscriptional Burmese
Jg.	Jingpho (=Kachin)
Jse.	Japanese
Kan.	Kanauri
KC	Kuki-Chin
KCN	Kuki-Chin-Naga
Kmrp	Kamarupan
KN	Kuki-Naga
LB	Lolo-Burmese (= Burmese-Lolo = Yi-Burmese = Burmese-Yipho)
Lh.	Lahu
Lp.	Lepcha
Lu.	Lushai (=Mizo)
Mand.	Mandarin
MC	Middle Chinese (= Karlgren's "Ancient Chinese")
Me.	Meithei (= Manipuri)
Mk. <i>or</i> Mik.	Mikir
MK	Mon-Khmer
Mod. Bs.	Modern Burmese

OC	Old Chinese (= Karlgren's "Archaic Chinese")
PAN	Proto-Austronesian
PAT	Proto-Austro-Tai
PIE	Proto-Indo-European
PK	Proto-Karen
PLB	Proto-Lolo-Burmese
PNN	Proto-Northern-Naga
PST	Proto-Sino-Tibetan
PTB	Proto-Tibeto-Burman
rGyal.	rGyalrong
Sk. or SK	Sangkong
Skt.	Sanskrit
ST	Sino-Tibetan
Tav.	Tavoyan (dialect of Bs.)
TB	Tibeto-Burman
TN	Tangkhul Naga; also JAM 1972b
WB	Written Burmese
WT	Written Tibetan

III. Journals, Publishers, Conferences

AA	<i>American Anthropologist</i> , (Menasha, WI)
ALH	<i>Acta Linguistica Hafniensia</i> (Copenhagen)
AO	<i>Acta Orientalia</i> (Copenhagen)
AOH	<i>Acta Orientalia Academiae Scientiarum Hungaricae</i> (Budapest)
ARA	<i>Annual Review of Anthropology</i>
AS/BIHP	<i>Academia Sinica / Bulletin of the Institute of History and Philology</i> (Peking/Beijing; Taipei)
BEFEO	<i>Bulletin de l'Ecole Française d'Extrême-Orient</i>
BMFEA	<i>Bulletin of the Museum of Far Eastern Antiquities</i> (Stockholm)
BSLP	<i>Bulletin de la Société de Linguistique de Paris</i>
BSO(A)S	<i>Bulletin of the School of Oriental (and African) Studies</i> (London)
CIIL	Central Institute of Indian Languages (Mysore)
CLAO	Cahiers de Linguistique Asie Orientale (Paris)
EFEO	Ecole Française d'Extrême-Orient
EHES	Ecole des Hautes Etudes en Sciences Sociales (Paris)

Symbols and Abbreviations

FICCAL	First International Conference on Comparative Austronesian Linguistics (Honolulu, 1974)
GK	<i>Gengo Kenkyū</i> (Tokyo)
HJAS	<i>Harvard Journal of Asiatic Studies</i> (Cambridge, MA)
HRAF	<i>Human Relations Area Files</i> (New Haven)
ICSTLL	International Conference on Sino-Tibetan Languages and Linguistics
IJ	<i>Indo-Iranian Journal</i> (The Hague)
IJAL	<i>International Journal of American Linguistics</i>
ILCAA	Institute for the Study of Languages and Cultures of Asia and Africa (Tokyo)
JA	<i>Journal Asiatique</i> (Paris)
JAAS	<i>Journal of Asian and African Studies</i> (Tokyo)
JAOS	<i>Journal of the American Oriental Society</i> (New Haven)
JBRs	<i>Journal of the Burma Research Society</i> (Rangoon)
JCL	<i>Journal of Chinese Linguistics</i> (Berkeley)
JICSCUH	<i>Journal of the Institute of Chinese Studies of the Chinese University of Hongkong</i>
JRAS	<i>Journal of the Royal Asiatic Society</i> (London)
JRASB	<i>Journal of the Royal Asiatic Society of Bengal</i> (Calcutta)
LTBA	<i>Linguistics of the Tibeto-Burman Area</i> (Berkeley)
MKS	<i>Mon-Khmer Studies</i> (Bangkok)
MS	<i>Monumenta Serica</i> (St. Augustin, Germany)
MZYW	<i>Minzu Yuwen</i> (Beijing)
NEFA	North-East Frontier Agency (Arunachal Pradesh)
OPWSTBL	<i>Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics</i> (Bloomington, IN; Champaign-Urbana, IL).
POLA	Project on Linguistic Analysis (Berkeley)
SEALS	Southeast Asian Linguistic Society
SELAf	Société d'Etudes Linguistiques et Anthropologiques de France (Paris)
SIAS	Scandinavian Institute of Asian Studies (Copenhagen)
SiL	<i>Studies in Linguistics</i> (Berkeley)
SIL	Summer Institute of Linguistics (Dallas, TX)
SOAS	School of Oriental and African Studies (London)
SP	<i>Studia Phonologica/Onsei Kagaku Kenkyū</i> (Kyoto)
SS	<i>Studia Serica</i> (Chengdu)

STEDT	The Sino-Tibetan Etymological Dictionary and Thesaurus Project (University of California, Berkeley)
TAK	<i>Tōnan Ajia Kenkyū</i> (Kyoto)
TP	<i>T'oung Pao</i> (Leiden)
YYYY	<i>Yuyan Yanjiu</i> (Wuhan)

*IV. Works and Individuals Cited*¹

AD	Karlgren 1923: <i>Analytic Dictionary of Chinese and Sino-Japanese</i> .
AW	Alfons Weidert.
CISTL	Kitamura, Nishida & Nagano, eds. 1994: <i>Current Issues in Sino-Tibetan Linguistics</i> .
CSTS	McCoy & Light, eds. 1986: <i>Contributions to Sino-Tibetan studies</i> .
CTT	Hyman, ed. 1973. <i>Consonant Types and Tone</i> .
DL	Matisoff 1988b: <i>The Dictionary of Lahu</i> .
DRM	David R. Mortensen.
GCC	Shibatani, ed. 1976: <i>The Grammar of Causative Constructions</i> .
GD	Matisoff 1970: "Glottal dissimilation and the Lahu high-rising tone: a tonogenetic case-study".
GEM	Geoffery E. Marrison.
GL	Matisoff 1973b/82: <i>The Grammar of Lahu</i> .
GRDT	Hashimoto, Mantaro J., ed. 1976: <i>Genetic Relationship, Diffusion and Typological Similarities of East end Southeast Asian Languages</i> .
GSR	Karlgren 1957: <i>Grammatica Serica Recensa</i> .
GSTC	Matisoff 1985a: "God and the Sino-Tibetan copula".
HCT	Li 1977: <i>A Handbook of Comparative Tai</i> .
ILH	Inga-Lill Hansson.
IPLS	Milner & Henderson, eds. 1965: <i>Indo-Pacific Linguistic Studies</i> .
JAM	James A. Matisoff.
KVB	Kenneth VanBik.
LSI	Grierson & Konow, eds. 1903-28. <i>Linguistic Survey of India</i> .
LSTA	Thurgood, Matisoff & Bradley, eds. 1985: <i>Linguistics of the Sino-Tibetan Area: the state of the art</i> .
LTNS	Barrau <i>et al.</i> , eds. 1972: <i>Langues et Techniques, Nature et Société</i> .

1. For full citations see the References.

Symbols and Abbreviations

NHTBM	Nishi, Matisoff & Nagano, eds. 1995: <i>New Horizons in Tibeto-Burman Morphosyntax</i> .
OPWSTBL 1	Becker, ed. 1969: <i>Occasional Papers of the Wolfenden Society on Tibeto-Burman Linguistics</i> .
OPWSTBL 2	Lehman, ed. 1971: <i>Papers on Tibeto-Burman Historical and Comparative Linguistics from the 2nd Annual Meeting on Sino-Tibetan Reconstruction</i> .
Pal. suff.	Matisoff 1995a: “Sino-Tibetan palatal suffixes revisited”.
PKB	Paul K. Benedict.
PSLTB	Matisoff 1997a: “Primary and secondary laryngeals in Tibeto-Burman”.
QV	Matisoff 1979: “Problems and progress in Lolo-Burmese: <i>Quo Vadimus?</i> ”
RSC	Richard S. Cook.
SB	Susanna Björverud.
STAL	Benedict 1976a: “Sino-Tibetan: another look”.
STC	Benedict 1972a: <i>Sino-Tibetan: a Conspectus</i> .
TBL	Dai, Huang <i>et al.</i> , eds. 1992: <i>Zàng-Miǎn yǔzú yǔyán cíhuì</i> [Tibeto-Burman Lexicon].
TN	Matisoff 1972b: “Tangkhul Naga and comparative Tibeto-Burman”.
TSR	Matisoff 1972a: <i>The Loloish Tonal Split Revisited</i> .
WBRD	Benedict 1976b: <i>Written Burmese Rhyming Dictionary</i> .
WHB	William H. Baxter.
ZMYYC	Sun <i>et al.</i> , eds. 1991: <i>Zàng-Miǎn-yǔ yǔyīn hé cíhuì</i> [Tibeto-Burman Phonology and Lexicon].

Citational and Transcriptional Conventions

Citations of published works

Citations of Benedict 1972 (*STC*) are of three types, referring either to a numbered etymological set, a page, or a footnote. Etymological set numbers are preceded by a cross-hatch, *e.g.* *STC* #262. Page references are indicated by a colon, *e.g.* *STC*:125. Footnotes are cited with a lower-case n., *e.g.* *STC*:n.340.

The cross-hatch or pound-symbol is also used when citing numbered etymological sets from other sources: *e.g.* *TSR* #85, *GSTC* #37, *ZMYYC* #426, *TBL* #1443. Numbers following colons are to be interpreted as page references, *e.g.* French 1983:189, *VSTB*:217-19, Hanson 1906/1954:145.

Proto-Tibeto-Burman

The symbols used to transcribe the phonemes of PTB are self-explanatory for the most part. One major difference from *STC* is the transcription of the *palatal series. While *STC* vacillates between a cluster-notation */ sy- zy- tsy- dzy- ny- / and a “unit-phoneme” notation using acute accents */ ś- ź- tś- dź- ŋ- /, this *Handbook* consistently opts for the former: */ sy- zy- tsy- dzy- ny- /, largely because this makes it easier to symbolize by parentheses the many cases where there is variation between a dental and a palatal consonant, *e.g.* *ts(y)-, *dz(y)-.¹

1. See the discussion of this issue below, 3.3.1. When alternative transcriptions of a particular etymon are at issue, forms from *STC* are occasionally cited with the unit-phoneme notation.

Citational and Transcriptional Conventions

PTB long vowels are transcribed with a colon, *e.g.* *ga:p, *ri:l. The numerous cases where there is variation between long and short vowels are symbolized by parentheses, *e.g.* *ga(:)p, *ri(:)l.

The variation that many etyma show between initial labial stop and semivowel is symbolized by an “extrusional” superscript / ^w / written after the stop, i.e. / *p^w-b^w-/.² An initial sequence of *h*-plus-*w* is also treated sometimes as if it were a unitary labiolaryngeal phoneme / h^w-/.³

Old and Middle Chinese

The symbols used by Karlgren in his OC and MC reconstructions are succinctly outlined by Richard S. Cook and Zev J. Handel in the tables and notes in *Appendix B* (beginning on page 575 below).

Written Tibetan

Several transcriptions of WT are in common use. The system adopted here observes the following conventions:

I follow tradition by writing the WT final stops with the voiced symbols / -b -d -g /, as they are in Tibetan orthography, even though there is no voicing contrast in syllable-final position.⁴

Aspirated stops are symbolized by / h / rather than by apostrophes:

/ ph- th- kh- /.

The palatal series of initials is transcribed with acute accents:

/ ś- ź- tś- tśh- dž- ŋ- /.

The controversial symbol called *a-chung* (see below 4.2.2) is transcribed as / ɰ /, with a subscript dot, *e.g.* ɰog ‘below’, ɰbu ‘insect’, ɰdzags ‘drop/drip’, ɰtshag ‘strain/filter’.⁵

2. See below 3.4.2(3), 3.6.1, 4.5.1, *etc.*

3. See below 3.5.

4. This convention is sometimes also followed with other Himalayan languages under Tibetan orthographic influence, *e.g.* Kanauri. For all other TB languages, final stops are written with the voiceless symbols /-p -t -k/.

5. Another common way of transliterating *a-chung* is by an apostrophe: 'og, 'bu, 'dzags, 'tshag. Forms cited from Beyer 1992 (see esp. 11.2.1 below) follow his transcription of *a-chung* with a small capital *ŋ*-.

Proto-Lolo-Burmese

The PLB *palatal series is transcribed with wedges (hačeks) :

**/ š- ž- tš- dž- /* .

A series of *labiovelar unit phonemes is set up at the PLB level, written with superscript /^w/:⁶

**/ k^w- g^w- ŋ^w- /* .

The PLB *glottal prefix is separated from the following root-initial by a hyphen, *e.g.* *ʔ-ba², *ʔ-du¹, *ʔ-pak^H, *ʔ-gap^L. While there is tonal evidence for a voicing contrast after the glottal prefix in PLB syllables with *final stops (*e.g.* *ʔ-pak^H vs. *ʔ-gap^L), no such contrast can be demonstrated for PLB *open syllables with the glottal prefix. I conventionally write such syllables with voiced symbols (*e.g.* *ʔ-ba², *ʔ-du¹).⁷

The PLB *nasal prefix may be conceived of either as having been homorganic to the following root-initial consonant (*[mb- nd- ñdž- ŋg-]) or as having been separated from the root-initial by a schwa.⁸ Instead of indicating this prefix by an abstract symbol for an underspecified nasal (*e.g.* “*N-”), I prefer to transcribe it (equally abstractly but less obtrusively) as “*m-”.

There are more PLB vocalic contrasts before final velars than before consonants at the other points of articulation. Although the differential reflexes of some of these rhymes in the various daughter languages are still not entirely clear, I tentatively set up such contrasts as *-oŋ / *-uŋ and *-ok / *-uk / *-ök.⁹

Tones are indicated for all reconstructed PLB forms. The proto-tones set up for non-stopped syllables are conventionally numbered from one to three, corresponding to Burmese clear, breathy, and creaky tones, respectively, *e.g.*:

PLB *twa¹ ‘handspan’ / *m-kum² ‘pillow’ / *ʔu³ ‘egg’ .

A two-way high vs. low tonal contrast is reconstructed for PLB stopped syllables, symbolized by superscript /^H/ and /^L/, respectively, *e.g.*:

PLB *s-myak^H ‘eye’ / *wak^L ‘pig’ .

6. See below 3.2(4).

7. See below 4.2.2(3a).

8. See below 4.3.2.

9. See below 7.2(5), 7.3(3), 8.4(1), 8.6(1), 8.1.2.

Written Burmese

WB aspirated obstruents are transcribed with postposed **h-** (/ph- th- ch- kh-/), but aspirated (= voiceless) sonorants are written with the **h-** preposed:

/hm- hn- hñ- hŋ- hr- hl- hw- hy-/

There is no contrast in WB between dental and palatal fricatives or affricates. Since the voiceless palatal affricate also occurs in syllable-final position (see below 8.3(1)), the affricates are transcribed with the palatal symbols / **c ch j** / rather than with the dental symbols / **ts tsh dz** /, *e.g.* **câ** ‘eat’, **chac** ‘joint’, **jut** ‘stubborn’.¹⁰ The palatal nasal / **ñ** / may also occur in syllable-final position (below 7.4), and is clearly a unit phoneme, *e.g.* **ñap** ‘be squeezed’, **khrañ** ‘thread’, **ʔəsâñ** ‘liver’.

Several WB rhymes are transcribed in more than one way by different scholars. This Handbook adopts the same system as *STC* with respect to the following points:

The open vowel written in the orthography with superscript “**i**” and subscript “**u**” is transcribed as /-**ui** /. The corresponding nasal- and stop-finalled rhymes are rendered as /-**uiŋ**/ and /-**uik**/.

The rhymes now pronounced monophthongally in spoken Burmese as /-**ɛ**/ and /-**ɔ**/ are transcribed as the diphthongs /-**ai**/ and /-**au**/ for the WB stage.

The nasal- and stop-finalled rhymes corresponding to the latter are transcribed as /-**auŋ**/ and /-**auk**/ (rather than as /-**oŋ**/ and /-**ok**/).

The three tones of WB are here symbolized by zero for Tone 1 (level with clear phonation, corresponding to PLB Tone *1); by a circumflex over the vowel for Tone 2 (high and/or falling with breathy phonation, corresponding to PLB Tone *2); and by a hook after the vowel for Tone 3 (high falling with creaky phonation, corresponding to PLB Tone *3), *e.g.*:

WB **phru** ‘silver’ (< PLB ***plu**¹)

WB **khâ** ‘bitter’ (< PLB ***ka**²)

WB **la** ‘moon’ (< PLB ***la**³)

WB has no tonal contrast in stopped syllables.

10. Note that I write the palatals differently in PTB, WT, PLB, and WB. This is not primarily due to pedantry, but rather partly to tradition, and partly to a desire to keep the various transcriptions distinct.

Other languages

- Jingpho

All Jingpho forms are cited with their tones, according to the dictionaries of Maran (1979) and/or Dai *et al.* (1983). High tone is shown by an acute accent (*e.g.* *khá* ‘bitter’, *mətsát* ‘eight’), mid-tone by a macron (*e.g.* *məsūm* ‘three’), low-tone by a grave accent (*e.g.* *gùm-rà* ‘horse’, *šàt* ‘food’), and falling tone by a circumflex (*e.g.* *ń-tâ* ‘house’).

Unstressed Jg. syllables are vocalized with schwa (*e.g.* *mətsát* ‘eight’, *lənâi* ‘one’), instead of with a-breve (“ă”) as in the dictionaries of Hanson (1906/1954) and Dai *et al.* (1983).

Hanson’s classic dictionary treated the low back monophthongal vowel [ɔ] as a diphthong, written with the two letters “aw”. The transcription of this vowel in forms cited from Hanson has been normalized to /o/.

A Jingpho series of preglottalized sonorants was first discovered by Maran, a native speaker, in the 1960’s, but has not been recognized in other sources. The occasional forms cited with such initials are transcribed according to Maran’s system, *e.g.* *ʔwàn* ‘fire’.

- Lahu

Forms are cited in the transcription of JAM (1973/82, 1988), except that the voiced velar fricative is here written as “ɣ”, instead of with JAM’s unlauded symbol “g̃”.

- Lalo

Forms are cited in the transcription of Björverud 1998, with final glottal stop transcribed as “-q”. As in SB’s transcription, we write the low-stopped tone with a grave accent (*e.g.* *lìq* ‘hand’) but the high-stopped is herein written with an acute accent (*e.g.* *ʔmíq* ‘eye’), instead of with SB’s zero marking (“ʔmiq”).

- Chin languages

Tones are only sporadically indicated for Chin languages, my principal sources being a copy of Lorrain’s dictionary of Lushai/Mizo (1940) into which a native speaker, Siamkima Hkawlhiring, had entered the tones by hand; and personal communications on Lai Chin tones from Kenneth VanBik.

Long vowels in Chin forms are written by doubling the vowel rather than by postposing a colon, *e.g.* Lai *zaal* ‘shoulderbag’, Lushai *kóor* ‘peel/husk’.

- Tonemarks in cited forms

Citational and Transcriptional Conventions

Forms from languages other than those mentioned above are cited with their tones whenever the source provides them, the most copious of these sources being *ZMYYC* and *TBL*, both of which use the Chao system of numerical tonemarks.

The great Sino-Tibetan language family, comprising Chinese on the one hand and Tibeto-Burman (TB) on the other,¹ is comparable in time-depth and internal diversity to Indo-European, and equally important in the context of world civilization. The overwhelming cultural and numerical predominance of Chinese is counterbalanced by the sheer number of languages (some 250-300) in the TB branch.

After the existence of this vast and ramified family of languages was posited in the mid-19th century, British scholars and colonial administrators in India and Burma began to study some of the dozens of little-known “tribal” languages of the region that seemed to be genetically related to the two major literary languages, Tibetan and Burmese. This early work was collected in the monumental *Linguistic Survey of India* (Grierson and Konow 1903-28), three sections of which (Vol. III, Parts 1,2,3) are devoted to wordlists and brief texts from TB languages.

Further significant progress in TB studies had to wait until the late 1930’s, when the eccentric amateur comparativist Robert Shafer headed a Depression-era project called “Sino-Tibetan Linguistics”, sponsored by the eminent anthropologist A.L. Kroeber of U.C. Berkeley.² With admirable thoroughness, the project staff assembled all the lexical material then available on TB languages, enabling Shafer to venture a detailed subgrouping of the family at different taxonomic levels, called (from higher to lower) *divisions, sections, branches, units, languages, and dialects*. This work was finally

1. Many scholars, especially in China, interpret “Sino-Tibetan” to include the Tai and Hmong-Mien families as well, though a consensus is developing that these latter two families, while possibly related to each other, have only an ancient contact relationship with Chinese (Benedict 1975a; JAM 1991a:486-90).

2. For a readable and humorous account of this project, see Benedict 1975b (LTBA 2.1:81-92).

CHAPTER 1: Introduction

published piecemeal in a two-volume, five-part opus called *Introduction to Sino-Tibetan* (1966-67; 1974).

Shafer's junior collaborator Paul K. Benedict based his own work on the same body of material as Shafer, but achieved much more usable results. In an unpublished manuscript entitled *Sino-Tibetan: a Conspectus* (ca. 1942-43; henceforth *STC*), Benedict adopted a more modest approach to supergrouping and subgrouping than Shafer, stressing that many TB languages had so far resisted precise classification. While Shafer had included Tai in Sino-Tibetan, Benedict (1942) banished it from the family altogether, relating Tai instead to Austronesian.³ Shafer's pioneering work, valuable as it was, suffered from his mistrust of phonemics, with a consequent proliferation of pseudo-precise and arcane phonetic symbols. Benedict's structural insight — his flair for isolating that which is crucial from masses of data — enabled him to formulate sound correspondences with greater precision, and to distinguish between regular and exceptional phonological developments.

The publication of a revised and heavily annotated version of *STC* in 1972, with J. Matisoff as contributing editor, laid the foundations for modern Sino-Tibetan historical/comparative linguistics. In this recension, nearly 700 Proto-Tibeto-Burman (PTB) roots were reconstructed (491 of them in numbered cognate sets, with about 200 more scattered throughout the text and footnotes), as well as some 325 comparisons of PTB roots with Old Chinese etyma, largely as reconstructed by Karlgren (1957). While Benedict focussed principally on five key, phonologically conservative TB languages (Tibetan, Burmese, Lushai [=Mizo], Kachin [=Jingpho], Garo), he also used data from more than 100 others, judiciously making allowances for inadequacies of transcription where necessary.⁴

The moment of writing (September, 1997) marks the 30th anniversary of the publication of *STC* in 1972. The recent tragic death of Benedict in a car accident (July 21, 1997) makes this a particularly appropriate time to take stock. How well has *STC* stood the test of time? The short answer is: remarkably well. The work has been reviewed about 15 times, almost always in a highly favorable tone,⁵ and has been translated into Chinese.⁶

3. To this putative megalolinguistic grouping, later to include Hmong-Mien and Japanese as well as Tai-Kadai and Austronesian, Benedict gave the name "Austro-T(h)ai" (see Benedict 1975a, 1990).

4. In a recently published work, Peiros and Starostin (1996) follow Benedict's example in their choice of key TB languages, basing their Sino-Tibetan reconstructions on Written Tibetan, Written Burmese, Lushai, Jingpho, and Chinese, all of which are treated as if they belonged on the same taxonomic level. See the discussion in Handel (1998, Ch. 3).

5. A notable exception is the intemperate review by Miller (1974), which bitterly criticizes the fact that the notes added in 1972 sometimes modify points made in the original text (ca. 1942). See the defense of *STC* against Miller's attack by JAM (1975a).

6. See Le Saiyue and Luo Meizhen 1984.

In fact nearly all 700 of the TB cognate sets in *STC* have been shown to be perfectly valid, though many of the reconstructions have had to be changed slightly in the light of new data, and in a couple of cases etyma which had been reconstructed separately have been shown to be variant forms (“allofams”) of the same word-family.⁷

1.1 *Scope and subgrouping of the TB family*

The exact number of TB languages is impossible to determine, not only because of the elusiveness of the distinction between “languages” and “dialects”, and the fact that a number of languages remain to be discovered and/or described, but especially because of the profusion and confusion of different names for the same language.⁸ At the present state of our knowledge we can estimate that the Tibeto-Burman family contains approximately 250 languages, which may be broken down into population categories as indicated in Table 1:

<i>Number of Speakers</i>	<i>Number of Languages</i>
more than 1,000,000	9
500,000 - 999,000	12
250,000 - 499,000	11
100,000 - 249,000	16
50,000 - 99,000	16
25,000 - 49,000	27
10,000 - 24,000	44
fewer than 10,000	123

Table 1: TB languages by number of speakers^a

a. These figures are based on Grimes, ed. 1996; see also JAM 1991a:480.

There are 9 TB languages with over a million speakers (Burmese, Tibetan, Bai, Yi (=Lolo), Karen, Meithei, Tujia, Hani, Jingpho), and altogether about 50 with more than 100,000 speakers; at the other end of the scale are some 125 languages with less than 10,000 speakers, many of which are now endangered (JAM 1991b). Though much of the geographical area covered by TB languages has been chronically inaccessible to fieldwork

7. E.g. *dyam ⌘ *tyam [*STC* #226] ‘full; fill’ and *dyam [*STC* #227] ‘straight’; see JAM 1988a.

8. See JAM 1986a, and STEDT Monograph II (JAM 1996a).

1.1: Scope and subgrouping of the TB family

by scholars from outside,⁹ there has been a recent explosion of new data, especially from China¹⁰ and Nepal.

As far as subgrouping this unruly conglomerate of languages goes, Benedict wisely refrained from constructing a family tree of the conventional type, presenting instead a schematic chart where Kachin (=Jingpho) was conceived as the center of geographical and linguistic diversity in the family. See Figure 1:

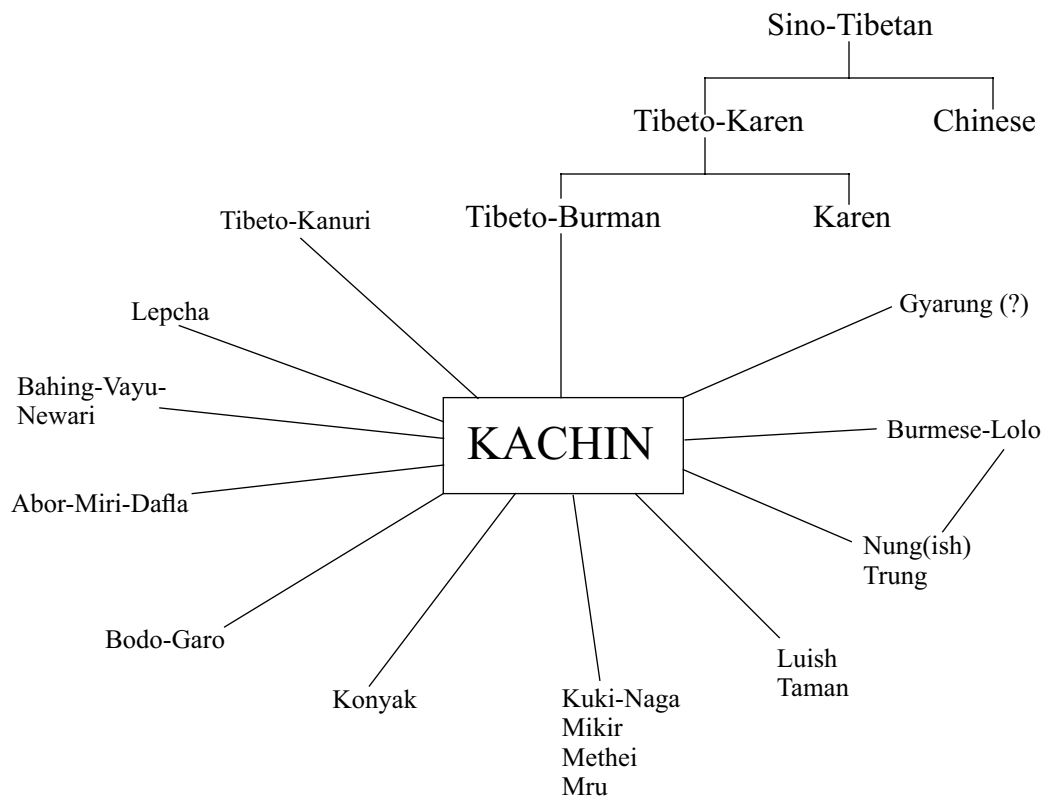


FIGURE 1. Schematic Stammbaum of Sino-Tibetan Languages [STC, p. 6]

9. Very approximately, the distribution of TB languages by country is as follows: India 107, Burma 75, Nepal 69, China 50, Thailand 16, Bangladesh 16, Bhutan 9, Laos 8, Vietnam 8, Pakistan 1.

10. Among the most valuable of these new sources are Sun Hongkai, Xu Jufang *et al.* (ZMYYC; 1991), containing 1004 synonym sets in 52 languages and dialects; and Dai Qingxia and Huang Bufan (TBL; 1992), with 1822 synonym sets in 50 languages and dialects.

The genetic schema now being used heuristically at the STEDT project differs from this in several respects.¹¹ See Figure 2:

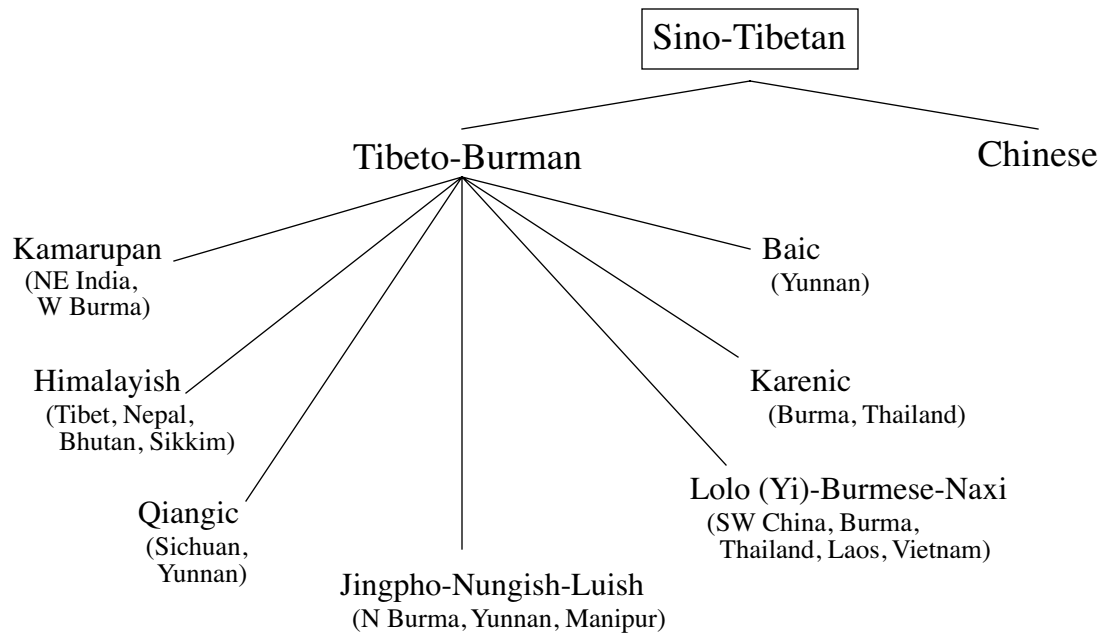


FIGURE 2. Provisional STEDT Family Tree

- Karenic is no longer regarded as having a special status, but is now considered to be a subgroup of TB proper.
- Baic, hardly mentioned (under the name “Minchia”) in *STC*, but later hypothesized by Benedict to belong with Chinese in the “Sinitic” branch of Sino-Tibetan, is now also treated as just another subgroup of TB, though one under particularly heavy Chinese contact influence. Both Karenic and Baic have SVO word order, unlike the rest of the TB family.

11. The STEDT project’s working hypotheses regarding the subgrouping of individual languages may be found in the indices to STEDT Monograph III (J. Namkung, ed. 1996:455-7).

1.2: Typological diversity of TB: Indosphere and Sinosphere

- The highly ramified Kuki-Chin-Naga group has provisionally been amalgamated with Bodo-Garo (=Barish) and Abor-Miri-Dafla (=Mirish) into a supergroup called by the purely geographical name of *Kamarupan*, from the old Sanskrit name for Assam.¹²
- The important Qiangic languages (deemed to include rGyalrong [=Gyarung=Jiarong] and the extinct Xixia [=Tangut]) were hardly known to non-Western scholars at the time *STC* was written (ca. 1942-3) or published (1972). It seems doubtful that a special relationship exists between Qiangic and Jingpho, or between Qiangic and Lolo-Burmese, as many Chinese scholars maintain.
- The Nungish and Luish languages are grouped with Jingpho (=Kachin).¹³ Jingpho is also recognized to have a special contact relationship with the Northern Naga (=Kon-yak) group.
- The somewhat idiosyncratic Mikir, Meithei (=Manipuri), and Mru languages are included under *Kamarupan*.
- The Himalayish (=Himalayan) group is considered to include Bodic (*i.e.* Tibetanoid) languages, as well as Kanauri-Manchad, Kiranti (=Rai), Lepcha, and Newar.^{14/15}

1.2 Typological diversity of TB: Indosphere and Sinosphere

The TB family, which extends over a huge geographic range, is characterized by great typological diversity, comprising languages that range from the highly tonal, monosyllabic, analytic type with practically no affixational morphology (*e.g.* Loloish), to marginally tonal or atonal languages with complex systems of verbal agreement morphology (*e.g.* the Kiranti group of E. Nepal). While most TB languages are verb-final, the Karenic and Baic branches are SVO, like Chinese.

This diversity is partly to be explained in terms of areal influence from Chinese on the one hand, and Indo-Aryan languages on the other. It is convenient to refer to the Chinese and Indian spheres of cultural influence as the “Sinosphere” and the “Indosphere”.¹⁶ Some languages and cultures are firmly in one or the other: *e.g.* the Munda and Khasi branches

12. Issue has been taken with this term by Burling (1999), but see the reply by JAM (1999c).

13. The obscure Luish group, also known as Kadu-Andro-Sengmai, includes a few languages spoken by groups that were once exiled to a remote corner of NE India by the Rajah of Manipur. See Grierson 1921.

14. As part of a recent trend to purge TB language names of Indo-Aryan suffixes, specialists in Himalayish languages are no longer using the name “Newari” for this language, but rather “Nepal Bhasha” or simply “Newar”. Similarly, the language known formally as Magari is now preferably referred to as “Magar.”

15. Various other subgroupings have been proposed, *e.g.* “Rungic” (Thurgood 1984) and “Sino-Bodic” (van Driem 1997). See a critique of the latter by JAM (2000b).

16. See JAM 1990a (“On megalocomparison.”)

of Austroasiatic, the TB languages of Nepal, and much of the Kamarupan branch of TB (notably Meithei = Manipuri) are Indospheric; while the Hmong-Mien family, the Kam-Sui branch of Kadai, the Loloish branch of TB, and Vietnamese (Mon-Khmer) are Sinospheric. Others (*e.g.* Thai and Tibetan) have been influenced by both Chinese and Indian culture at different historical periods. Still other linguistic communities are so remote geographically that they have escaped significant influence from either cultural tradition (*e.g.* the Aslian branch of Mon-Khmer in Malaya, or the Nicobarese branch of Mon-Khmer in the Nicobar Islands of the Indian Ocean).

Elements of Indian culture, especially ideas of kingship, religions (Hinduism/Brahminism, Buddhism), and *devanāgarī* writing systems, began to penetrate both insular and peninsular Southeast Asia about 2000 years ago. Indic writing systems were adopted first by Austronesians (Javanese and Cham) and Austroasiatics (Khmer and Mon), then by Tai (Siamese and Lao) and Tibeto-Burmans (Pyu, Burmese, and Karen). The learned components of the vocabularies of Khmer, Mon, Burmese, and Thai/Lao consist of words of Pali/Sanskrit origin. Indian influence also spread north to the Himalayan region. Tibetan has used *devanāgarī* writing since A.D. 600, but has preferred to calque new religious and technical vocabulary from native morphemes rather than borrowing Indic ones.

What is now China south of the Yangtze did not have a considerable Han Chinese population until the beginning of the current era (Ramsey 1987, Norman 1988). In early times the scattered Chinese communities of the region must have been on a numerical and cultural par with the coterritorial non-Chinese populations, with borrowing of material culture and vocabulary proceeding in all directions (Benedict 1975; Mei and Norman 1976; Sagart 1990). As late as the end of the first millennium A.D., non-Chinese states flourished on the periphery of the Middle Kingdom (Nanchao and Bai in Yunnan, Xixia in the Gansu/Qinghai/Tibet border regions, Lolo (Yi) chieftaincies in Sichuan. The Mongol Yuan dynasty finally consolidated Chinese power south of the Yangtze in the 13th century. Tibet also fell under Mongol influence then, but did not come under complete Chinese control until the 18th century.

Whatever their genetic affiliations, the languages of the East and SE Asian area have undergone massive convergence in all areas of their structure — phonological, grammatical, and semantic.¹⁷ Hundreds of words have crossed over genetic boundaries in

17. An excellent recent study of such phenomena is Thomason and Kaufman 1988.

1.3: Teleo- and meso-reconstructions

the course of millennia of intense language contact, so that it is often exceedingly difficult to distinguish ancient loans from genuine cognates.

1.3 *Teleo- and meso-reconstructions*

The current state of comparative/historical TB research is quite uneven. While some branches of the family are relatively well studied, to the point where “mesolanguages” have been reconstructed at the subgroup level,¹⁸ large gaps remain — we have nothing approaching well-worked out reconstructions for such key subgroups as Qiangic, Baic, Luish, and Nungish. Still unclear is the exact genetic position of many transitional languages like Chepang, Kham, Lepcha, Newar (all lumped currently with “Himalayish”), or Meithei, Mikir, Mru (close to the Kuki-Chin-Naga branch), or Naxi/Moso and Jinuo (close to Lolo-Burmese), or the mysterious Tujia of Hunan/Hubei. The position of the crucially important Jingpho language is undergoing reevaluation, with current opinion returning to the notion of a special relationship with the Bodo-Garo-Konyak group (Burling 1971, Weidert 1987).¹⁹ It remains to be seen whether the large “Kamarupan” (NE India) and “Himalayish” groups are anything more than purely geographic divisions of the family, and if so what the internal relationships among their many parts might be.

Although it remains true that “supergroups within TB cannot safely be set up at the present level of investigation” (*STC*, p. 11), the same can be said of Indo-European (IE) after nearly 200 years of scholarly investigation. Thus while it is obvious that the closely related Baltic and Slavic languages constitute a valid IE supergroup, “Balto-Slavic” (just as, *e.g.* the Loloish and Burmish languages clearly group together as “Lolo-Burmese”), higher order IE lumpings (*e.g.* “Italo-Celtic”, “Italo-Germanic”, “Italo-Greek”) remain highly controversial, since patterns of shared innovations, or overlapping features of special resemblance, may be found between virtually any two major subgroups of the family.²⁰

Meso-level reconstruction *per se* is not one of the goals of the STEDT project; nor does the project’s reconstruction of PTB depend strictly on the direct comparison of

18. See, *e.g.* Proto-Karen (Haudricourt 1942-5, 1975; Jones 1961; Burling 1969; Solnit, in prep.); Proto-Bodo (Burling 1959); Proto-Lolo-Burmese (Burling 1968, JAM 1969, 1972a; Bradley 1978); Proto-Tamang-Gurung-Thakali (Mazaudon 1978); Proto-Kiranti (Michailovsky 1991); Proto-N.-Naga (W. French 1983); Proto-Tani [Mirish] (J.T. Sun 1993).

19. *Cf.* the volume of Grierson and Konow (1903-28) called “Bodo-Naga-Kachin.” Elsewhere (JAM 1974, 1991c) I have discussed the pros and cons of lumping Jingpho and Lolo-Burmese together into a supergroup facetiously called “Jiburish” (Jingpho-BURmish-LoloISH).

20. See the discussion in JAM (*VSTB*) 1978a:3-12.

meso-level reconstructions. However, such reconstructions are used when available in reconstructing roots at the Proto-Tibeto-Burman level. We therefore treat meso-level proto-forms as lexical data records, just like attested forms in individual languages.

I follow Benedict in caring little for a chimerical methodological purity in this respect, and generally endorse his philosophy of “teleoreconstruction”, by which salient characteristics of the proto-language may be deduced by inspection of attested forms in well-chosen languages from different subgroups, thereby “leap-frogging” the need for step-wise reconstruction.²¹ This in fact has been the only practical methodology for reconstructing TB given the uneven state of our present knowledge. It goes without saying that one’s teleo-hypotheses are subject to constant revision in the light of new data at the level of individual languages or subgroups. As in all scientific inquiry, the process of formulating falsifiable hypotheses lies at the heart of the reconstructive enterprise. I feel that it is perfectly justifiable to “take a peek” outside a given subgroup in order to help one choose between alternative reconstructions that might be equally plausible on the basis of intra-group evidence alone.²² It is for this reason that TB evidence will prove to be so crucial in evaluating the multitude of competing reconstructions of Old Chinese.

21. This method must of course be applied with due caution, and I feel that Benedict applied it too loosely with respect to the vexed question of the existence of a reconstructible tonal system at the PTB level. See *e.g.* Benedict 1973 (“Tibeto-Burman tones, with a note on teleo-reconstruction”).

22. Many of the features of W. French’s excellent reconstruction of Proto-N.-Naga (1983) were motivated by extra-Naga evidence.

The PTB syllable canon

I conceive of the PTB syllable as consisting of the following structural elements: an onset comprising a root initial consonant (C_i), precedable by up to two consonantal prefixes (P_2, P_1),¹ and optionally followed by a liquid or semivowel glide (G); and a vocalic nucleus consisting minimally of a simple vowel, followed optionally by a restricted set of possible final consonants (C_f) and/or a suffix (s). See *Figure 3*.

- In ST linguistics the syllable is traditionally divided into “initial” (Chinese *shēngmǔ* 聲母) and “rhyme” (Chinese *yùnmǔ* 韻母), with the glides (especially the semivowels -w- and -y-) occupying an ambiguous position, sometimes behaving as if they belonged to the initial consonant complex but sometimes patterning as if they were part of the rhyme.
- The semivowels could also occur postvocally, forming falling diphthongs in -w and -y; in this position the semivowels are considered to belong to the inventory of C_f ’s (see below 5.5, 5.6). Vowel length is contrastive, but only in syllables closed with a final stop, nasal, liquid, or semivowel. This contrast is rather marginal at the PTB level, with many irregularities and much variation (see below 5.9, 6.3).
- There is no contrast between zero-initial * \emptyset - and glottal-initial *ʔ-.² Reconstructing *ʔ- simplifies the canon somewhat, since C_i is then an obligatory element.

1. These prefixes, especially those that were stops, and especially when preceding a stop C_i , were undoubtedly vocalized by an epenthetic schwa for ease of pronunciation. Strictly speaking such forms are “sesquisyllabic” (*i.e.* “a syllable and a half” long) rather than simply monosyllabic. When a sequence of two prefixes occurs before the same root, the one closer to the root (*i.e.* “P1”) is deemed to be older historically.

2. See JAM 1997a and 3.5 below.

CHAPTER 2: The PTB syllable canon

- A number of non-syllabic suffixes are reconstructible for PTB, most of them dental (*-s, *-t, *-n). When the suffix was -s, it could result in postvocalic sequences of stop or nasal plus -s (*e.g.* -ps, -ms), or (quite rarely) final liquid plus -s (-ls, -rs), which do not occur within a morpheme. Otherwise a single final consonant identifiable as a suffix on morphophonemic grounds, as in *r-ya-t ‘laugh’ (*cf.* WT gža-ba ‘to joke’ ≠ gžad-pa ‘laugh, smile’) was phonetically identical to similar syllables where the C_f was part of the root (*e.g.* *g/b-sat ‘kill’). See below 8.2(2), 11.3.
- The status of contrastive tone at the PTB stage is still very much in doubt, with Benedict (1972b) claiming that a two-tone system may be reconstructed for PTB.³ I prefer to consider tone as having developed independently (though according to similar tonogenetic principles) at many different times and places throughout the history of TB (see JAM 1973a, 1974, 1991c).⁴ To reflect this uncertainty, the symbol “T” is enclosed in brackets in Figure 3.

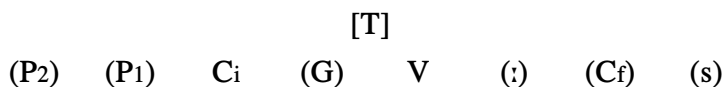


FIGURE 3. The PTB syllable canon

In the following chapters we will discuss each of the component parts of the syllable in turn. Yet in a sense it is rather artificial to break up the topic this way, since the parts of the ST/TB monosyllable have always been in such intimate interconnection. See *Figure 4* for an attempt to illustrate the nature of this mutual influence by a system of arrows.

3. According to Benedict, a third tone later arose due to sandhi phenomena. A similar position is adopted in Weidert 1987, though his three-way proto-contrast is conceived of primarily in terms of phonation types (clear, creaky, and breathy voice) rather than as tone *per se*.

4. But see recent work by Ostapirat (1998) and Joseph & Burling (2001) which present data suggesting that certain contrasts in Chin and Bodo-Garo tone systems correspond fairly regularly with the phonation types of Chepang, and even with aspects of the tone system of Lolo-Burmese.

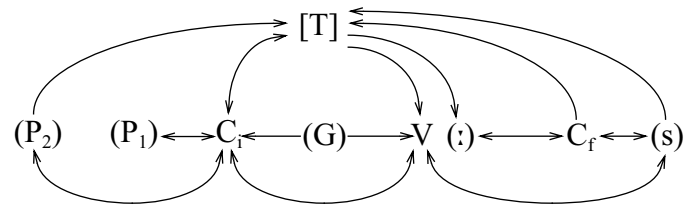


FIGURE 4. Patterns of interinfluence in the TB syllable

Let us take as our point of departure the array of simple initial consonants presented in *STC*. See *Figure 5*.

p	t	ts	tś	k	
b	d	dz	dź	g	
		s	ś		h
		z	ź		
m	n		(ń)	ŋ	
w	l	r	y		

FIGURE 5. The inventory of simple consonants presented in *STC*.

3.1 *Manners of articulation: voicing, aspiration, and prefixal influence*

I follow Benedict in reconstructing a simple two-way contrast in manner of articulation (*voiced and *voiceless) for PTB obstruents, though many daughter languages have three or even four manners of articulation. Many factors have been involved in the proliferation of manner contrasts in the daughter languages. One is clearly areal contact. Thus many Himalayish languages of Nepal (*e.g.* including Chamling, Chepang, Dumi, Khaling, Kulung, Limbu, Newar, Thulung) have developed a series of voiced aspirates due to Indospheric influence, first confined to borrowings from Indo-Aryan, but now occurring in native TB vocabulary items as well.¹

More crucial for the complication of TB manner developments are the intricate patterns of interaction between prefix and root initial.² A *voiceless C_i could easily assimilate in voicing to a voiced prefix (*e.g.* *m-), while a voiceless prefix (*e.g.* *s-) could

3.1: Manners of articulation: voicing, aspiration, and prefixal influence

devoice or aspirate an originally *voiced C_i . The prefix might then drop, leaving only the change in voicing of the C_i as a trace of its former presence. Nothing in fact is more unstable in diachronic TB phonology than the voicing or aspiration of initial obstruents; there are innumerable TB word families with both voiced and voiceless allofams³. The voicing or voicelessness of the prevocalic consonant complex is of key importance in the process of tonogenesis.

This kind of variation is acknowledged in the chart of *TB Initial Consonants* presented in *STC* (pp. 17-18), which contains items like “PTB *k > Kachin k(h) ~ g; PTB *g > Kachin g ~ k(h)”. These apparent “irregularities” are often misunderstood by rigid neo-grammarians (see Miller 1972) who mistake patterns of allofamic variation (conditioned by factors which are not always recoverable) for lack of rigor. A distinction must be drawn between *ad hoc* explanations which attempt to establish cognacy where none exists, and pervasive variational patterns which prevent the establishment of artificially strict correspondence sets.

Of particular importance as prefix-induced types of secondary articulation are *prenasalization* and *preglottalization*. The nasal prefix (which we can write as *m-, or more abstractly as *N-) frequently dropped after voicing the following C_i , as in Lahu and probably in Burmese (*e.g.* PLB *m-krəw² ‘dove’ > Lahu gû). Often, however, the nasal prefix has remained as such (as *e.g.* in Luquan Lolo or Mpi), with an extreme case furnished by Rengma (Eastern Naga group), which has a full set of prenasalized initials with three contrasting manners of articulation:⁴

mp	mpf	nt		ñc	ŋk
mph		nth			ŋkh
mb		nd	ndr	ñj	ŋgw

Preglottalized initials have arisen through the influence of one of the “glottogenic” prefixes *s- or *ʔə- (the latter written as *a- in *STC*). In certain subgroups there is much evidence for a contrast between voiced and voiceless preglottalized initials.⁵ Thus

1. Another, more obscure areal phenomenon that must have affected TB manner developments was the massive devoicing of *voiced series that occurred throughout East Asia around the period of the Mongol invasions (12th-13th cc.), affecting many language families including Tai, Karenic, Hmong-Mien, Khmer and Vietnamese, as well as a number of TB languages like Burmese and Lahu.

2. For more details see below 4.1.2.

3. These alternations in voicing are often exploited for grammatical purposes. See below 4.1.1.

4. See Namkung, ed., 1996:338-9.

Proto-Karen, as first reconstructed by Haudricourt (1942-45, 1953), had an array of initials very similar to those of Proto-Tai, with the voiced glottalized series probably to be conceived of as phonetically imploded⁶:

p	t	c	k
ph	th	ch	kh
b	d	j	g
ʔb	ʔd		

But this system does not account for about 14 good roots where Pa-o Karen⁷ plain voiceless stops correspond to aspirates elsewhere. R. B. Jones (1961) had formulated complex *ad hoc* rules to account for these, but Benedict 1979 (“Four forays” #2) prefers to explain them by setting up a Proto-Karen series of voiceless glottalized stops deriving from the **(ʔ)a-* prefix:

ʔp	ʔt	ʔc	ʔk
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As an illustration of the intricacy of prefix-induced manner developments, see the Loloish correspondence chart in *Table 2*:

<i>PLB</i>		<i>Luquan</i>	<i>Lisu</i>	<i>Lahu</i>	<i>Akha</i>	<i>Bisu</i>	<i>Sangkong</i>
*p	ph	ph	ph	ph	p/ph	ph	ph
*ʔ-b/ʔ-p	ph	p	p	p	p	ph(?)	ph
*b	p	b	b	p	b	p	p
*m-b/*m-p	p ~ b	mph	b	b	b	p	p
*m	m	m	m	m	m	b	mb
*ʔ-m/*hm	hm	m	m	m	m	m	m

TABLE 2. Manner developments in Lolo-Burmese obstruents.

5. This was demonstrated on tonal grounds for Proto-Loloish stopped syllables in JAM 1972a (*TSR*), though there is still no convincing evidence for a voicing contrast in Loloish preglottalized non-stopped syllables.

6. The Karen implosives undoubtedly arose through Mon and Tai influence.

7. Formerly known by the Burmese pejorative name of “Taungthu”, literally “mountain people”.

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From top to bottom, these reflexes range from more stop-like down to more nasal-like. This arrangement is satisfying because identical reflexes of different *manners are contiguous in any vertical column (*i.e.* for any given language).⁸

In the SE Asian linguistic area there is also a profound interrelationship between the manner of initial consonants and the development of *tone*, usually manifested by the influence of the former on the latter. Typically a voiced initial is correlated with a lower tone than a voiceless one, although this phenomenon is usually only allophonic in a language with a robust voicing contrast. However, if a language undergoes a consonantal merger due to devoicing of an older *voiced series, as has happened repeatedly in this linguistic area (see note 1, above), this previously allophonic tonal difference can become contrastive,⁹ schematically. See *Figure 6*:

<i>Stage I</i>		<i>Stage II</i>	
<i>voicing contrast maintained</i>	<i>allophonic tonal difference</i>	<i>voicing contrast lost</i>	<i>phonemic tonal difference</i>
/pam/	[pám]	/pám/	
/bam/	[bàm]	/pàm/	

FIGURE 6. Tonogenesis due to loss of initial voicing contrast

Much rarer is the converse situation, where it is the tone of a syllable that affects the manner of the initial consonant. Such a case has been documented in Sani (C. Loloish),¹⁰ where etyma which reconstruct with Proto-Lolo-Burmese (PLB) *voiced initials have Sani reflexes with *voiceless unaspirates* (and mid tone) if they were under PLB Tone *1, but retain their *voiced* initials (with low tone) if they were under PLB Tone *2.

8. For a similar arrangement of the Tai consonantal series with respect to tonal developments, see Gedney 1970/1989.

9. This is one of the chief mechanisms of *tonogenesis*, a topic that has inspired a vast literature in the past half century. See, *e.g.*, Haudricourt 1954b; JAM 1970, 1972a, 1973a, 1979; Weidert 1987.

10. See JAM 1979:27. Sani data from Ma Xueliang 1951.

Tone *1 etyma with *voiced initials

	PLB	Sani		PLB	Sani
‘wing’	*duŋ ¹	t̪y̌	‘bridge’	*dzam ¹	ts̪y̌
‘fly (v.)’	*byam ¹	t̪ɪ̌	‘liquor’	*m-dzəy ₁	ts̪y̌
‘body’	*guŋ ¹ or *goŋ ¹	kū̌	‘rice’	*dza ¹	tsā̌

Tone *2 etyma with *voiced initials

	PLB	Sani		PLB	Sani
‘bee’	*bya ²	dlà̌	‘insect’	*bəw ²	b̪y̌
‘copper’	*grəy ²	dz̪y̌	‘raw’ ^a	*d̪zim ²	dz̪y̌
‘eat’	*d̪za ²	dzà̌	‘speech’	*daŋ ²	dò̌
‘give’	*bəy ²	b̪y̌	‘thin’	*ba ²	bà̌
‘hear’	*gla ²	gà̌			

TABLE 3. Sani manner developments conditioned by tone

a. Cf. Lh. ò-c̪ɪ̌, Lalo dz̪ǐ. See also Nung əzim ‘raw’ < PTB *dz(y)im ‘raw / green’.

This curious development is best understood in terms of the different phonation types associated with the PLB tones. While Tone *1 syllables are thought to have modal or neutral phonation, Tone *2 seems to have been characterized by *breathiness*, which favored the retention of the voiced quality of the initial consonant.¹¹

In sum, we might well say that the simple two-way TB manner contrast has always been “bursting at the seams”.¹²

3.2 Primary and secondary positions of articulation of stops

As indicated above, the PTB obstruents reconstructed in *STC* include stops at three positions of articulation (labial, dental, velar), as well as two series of affricates (dental

11. See Mazaudon 1974; JAM 2000c.

12. An initial voicing contrast sometimes makes itself felt most saliently by a phonational feature on the following vowel. In the phonetic transcription of Dai *et al.* (1983), Jingpho voiced initial obstruents are written voiceless followed by a clear vowel, while voiceless unaspirates are also written voiceless, but followed by a tense or creaky vowel, indicated by a subscript macron: /ba/ [pa] vs. /pa/ [pā̌].

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and palatal).¹³ At least three other positional types of obstruents occur in one or another daughter language, but can be easily shown to be secondary (postvelars, retroflexes, labiodentals). A fourth type (labiovelars) requires more indirect comparative evidence to discern, but may apparently be reconstructed at the PTB level.

(1) *Postvelars*

A number of TB languages have a postvelar (uvular) series of initials. Postvelars are especially characteristic of the Qiangic languages (occurring in Guiqiong, Muya, Namuyi, Pumi, Qiang, Shixing, and Zhaba [=Queyu]), and the Loloish branch (Lahu, Mo-ang, Nyi, Sangkong), though they also occur sporadically in Kamarupan (Sema Naga), Himalayish (Balti Tibetan) and Baic (Bijiang). In Loloish there are usually only two members of the series, /q qh/; in Qiangic postvelars achieve greater elaboration, often including fricatives and/or voiced and/or prenasalized stops. Muya (=Minyak) has no fewer than 7 postvelar phonemes:¹⁴

/q qh qh G nG χ ɣ/

Postvelars are generally secondary developments of the TB *velar series, as in Black Lahu, where they regularly descend from simple *velars that are not followed by a glide (see below 3.6). The presence or absence of a postvelar series has no significance for subgrouping TB. In fact many languages have postvelars in some dialects but not in others: they occur in Black Lahu, Jinghua and Dayang Pumi, Balti Tibetan, and Bijiang Bai — but not, *e.g.* in Yellow Lahu, Taoba Pumi, Khams Tibetan, or Jianchuan Bai.

Postvelars are something of an areal feature in the Sinosphere, occurring also in Hmong-Mien and Kam-Sui.

In Mikir, PTB *k- has become deobstruentized to h-, rather like the development of proto-Germanic *χ from PIE *k- by Grimm's Law, *e.g.*:

	<i>PTB</i>	<i>Mikir</i>	<i>STC#</i>
'bitter'	*ka	ho	8
'dog'	*kwəy	hi	159

13. We shall return to the question of the phonemic status of the *palatal series, below 3.3.1.

14. For the full phonemic systems of these languages and dialects, see Namkung, ed. 1996 (*Phonological Inventories*).

	<i>PTB</i>	<i>Mikir</i>	<i>STC#</i>
‘excrement’	*kləy	hī	125
‘house’	*kyim	hem	53
‘mouth’	*m-ka	iŋ-ho	468

(2) *Retroflexes*

Quite a few modern TB languages have a retroflex series of affricates, fricatives, and/or stops, but they do not occur in Written Tibetan or Written Burmese, and are not attested for Xixia/Tangut (either in Nishida’s (1964, 1966), Sofronov’s (1978), or Gong’s (1985, 1994, 1999) reconstructions). They seem to be secondarily derived from proto-clusters with medial liquids.^{15/16}

Retroflex fricatives and affricates are especially characteristic of Northern Loloish and Qiangic, and (to a somewhat lesser degree) of Himalayish, and also occur sporadically in Abor-Miri-Dafla, Nungish, and Baic.

- (a) Lolo-Burmese languages with a retroflex series invariably have dental and palatal series as well, so that there is at least a three-way contrast. This generalization is true of Achang, Ahi, Gasu, Lalo, Li, Lolopho, Luquan, Lüsü, Nasu, Naxi, Nesu, Noesu, Nosu, Nusu, Nyi, and Yi (Mile, Nanhua, Nanjian, Xide dialects). Besides these three series of affricates, Nyi has voiced and voiceless laterally released affricates / tɬ dl / as well. A few Loloish languages also have a set of retroflex stops (*e.g.* Luquan, Nasu, Noesu, and Yi Mile).
- (b) In Qiangic also, the presence of a retroflex series entails the coexistence of dental and palatal series. This holds for Ergong (=Daofu), Ersu, Guiqiong, Muya, Namuyi, rGyalrong (Zhuokeji), Pumi Jinghua, Pumi Taoba, Qiang, Shixing, and Zhaba (=Queyu). Several languages of this group actually have more complex systems, with a further contrast between apicopalatal (=prepalatal) and laminopalatal (=postpalatal) series (Ersu, Guiqiong, rGyalrong (Zhuokeji), Pumi Jinghua, Qiang, and Shixing).

15. See “Liquid clusters”, below 3.6.4.

16. This is similar to the case of Chinese, where it is now generally accepted that the MC retroflex series of initials, which occur only in words placed in “Division II” of the rhyme tables, derive from OC clusters with medial *-r-. See Appendix A by Handel.

3.2: Primary and secondary positions of articulation of stops

- (c) Several Modern Tibetan dialects show either the three-way dental/retroflex/palatal (Amdo Bla-brang, Batang, Khams sDe-dGe) or four-way dental/retroflex/prepalatal/postpalatal contrast (Amdo Zeku, Lhasa Weizang, Baima).

Languages with *retroflex stops* are somewhat fewer in number. Their stronghold is in Himalayish, with a fair scattering of Loloish and other attestations. (a) In Loloish, retroflex stops stand either in a three-way contrast with dental and palatal affricates (Luquan, Yi Dafang), or a four-way contrast with dental, palatal, and retroflex affricates (Nasu, Noesu, Yi Mile). (b) Retroflex stops are widespread in the various branches of Himalayish. They occur in West Himalayish, with a three-way contrast in Bunan and Kanauri, and a four-way contrast in Lahuli and Pattani (=Manchad); in Bodic languages, including Dzongkha and several Tibetan dialects (Jirel, Ladakhi, Sherpa, Spiti); and in languages of Nepal (Gurung, Manang,¹⁷ Newar Dolakha, Sunwar, Tamang (Taglung and Sahugaon dialects), Thakali (Marpha and Syang dialects), and Thulung. In several other Himalayish and Mirish languages, retroflex stops are confined almost exclusively to loanwords, either from Chinese or Tibetan (Darang Deng, Geman Deng, Cangluo Motuo, Idu) or from Nepali (Dumi, Limbu, Magar). (c) Bai Bijiang and Nung have three series of affricates in addition to retroflex stops. Bawm (Central Chin) has both retroflex stops and lateral affricates / tɭ tɰ /.

Retroflex stops are not especially characteristic of Qiangic, with the exception of Pumi Dayang, which (besides three series of affricates) has a full series of retroflex stops, which do not occur in other known Pumi dialects, even the closely related Jinghua:

/ t tɰ tɰ tɰw ɖ ɖw /

Most of these retroflex stops derive from TB clusters of **velar-plus-liquid*:¹⁸

	<i>PTB</i>	<i>Dayang</i>	<i>Jinghua</i>	<i>Taoba</i>	<i>Lahu</i> ^a
‘daughter-in-law’	*krwəy	tɰĩ	tɰhə ¹³	tsũ ⁵⁵ tɰhə ⁵³	ə-khî-ma
‘foot’	*krəy	tɰí	tɰhə ⁵⁵	tɰhə ⁵³	khɪ
‘gall’	*m-kris	tɰí	tɰə ⁵⁵	tɰə ⁵⁵	kĩ
‘garden’	*kram	tɰǎ			kho

17. In Manang the contrast is phonetically between alveolar vs. dental stops, with the latter transcribed with subscript dots. A similar phonetic opposition is found in Lushai and Lai (Central Chin).

‘eagle / vulture / falcon / bird of prey’	*glaŋ	tḥ	tɕɒ ¹³	tɕɛ ³⁵	(Jg. gəlaŋ)
‘horn’	*krəw	tḥú	tɕhy ⁵⁵	tɕhũ ⁵³	khə
‘six’	*d-kruk	tḥũ	tɕhu ¹³	tɕhu ³⁵	khəʔ
‘star’	*ʔ-grəy ¹ b	ɕĩ	dɕə ¹³	dɕə ³⁵	məʔ-kə
‘thread’	*kriŋ	ɕũ	dɕy ⁵⁵	dɕũ ⁵³	khɛ

a. As we shall see, below 3.6.4.1(1), Lahu velars descend regularly from *velar-plus-r clusters.

b. This is a Proto-Lolo-Burmese form.

(3) Labiodentals

Labiodental stops and nasals are occasionally found in TB languages, but are always demonstrably of secondary origin.¹⁹

In Black Lahu (Central Loloish), the labiodentals [pf pʰ bv m] are merely allophones of labials before the vowel /u/, which is in turn unrounded to [u] in this environment:²⁰

/pu/ → [pfu]; /phu/ → [pfhu]; /bu/ → [bvɰ]; /mu/ → [mɰu] or [m]

Angami Naga (Kohima dialect) also has a full series of labiodentals /f, pf, phf, mv/, but their synchronic and diachronic status is more complicated.²¹ They are now phonemic, but they have several different historical origins:

(a) From primary medial *-w-	PTB	Angami
‘bee’	*m-kwa:y	mèpfĩ
‘dog’ a	*d-k ^w əy	tèfə
‘goat’	*d-ŋwa	tèmvə

18. This is not the whole story, however. These retroflexes (especially the voiced member ɕ) also seem to have other sources, e.g. *pw- and *ly-: PTB *pwaay ‘chaff’ > Dayang ɕwḥ; PTB *m-lyak ‘lick’ > Dayang ɕḥ. Dayang tḥ ‘dig’ is interesting. It looks as if it is related to the widespread TB root *du (STC #258); but PTB *-u usually goes to Dayang -u, and Dayang retroflexes do not derive from plain *dental stops. Perhaps a better comparison here is PTB *klaw ‘dig out, weed’ (STC #269).

19. For a discussion of labiodental fricatives /f v/, see below 3.2(3).

20. See JAM 1973/1982 (GL), pp. 3-4.

21. Much ink has been spilled on this question, which was first discussed in a preliminary way in JAM 1980 (“Stars, moon, and spirits...”). My analysis was attacked in Weidert 1981, and this was replied to in JAM 1982a (“Proto-Sprachgefühl”).

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<i>(a) From primary medial *-w-</i>	<i>PTB</i>	<i>Angami</i>
‘monkey’	*d/g-woy	tèpfí
‘nine’	*s-kwa	thèpfó
‘star / moon’	*s-ŋwa-t	thèmvǎ

a. This etymon is now reconstructed with a unitary *labiovelar initial. See §4.

<i>(b) From primary vocalic *-u</i>		
‘male / (grand) father’	*pu	pfu
‘all / twenty’	*m-kul	mèpfǒ

<i>(c) From secondary vocalic -u (< PTB *-a)</i>		
<i>(i) After velar initials</i>		
‘bitter’	*b-ka	pfhə
‘chin’	*m-ka	⁵ u ² me ¹ pfhə
‘span / divaricate’	*ka	¹ pfə
<i>(ii) After labial initials</i>		
‘carry on back’	*ba	¹ pfə
‘search/seek’	*pa ^a	⁵ pfhə
‘thin’	*ba	² rə ⁵ pfə

a. Cf. Tangkhul Naga pha, Ntenyi pha, Mao pho, Chokri phu, Rongmei phu. This root is apparently confined to Naga languages.

(4) Labiovelars

The diachronic status of labiovelar initials is rather different from that of the labiodentals. There is persuasive evidence for setting up a series of unitary *labiovelar phonemes at the Proto-Loloish and Proto-Lolo-Burmese levels, with at least six examples uncovered to date; but whether it will prove necessary to reconstruct a unitary *labiovelar series for PTB or PST is still unclear. At any rate these 6 Lolo-Burmese etyma all have good cognates elsewhere in ST (notably in Karenic and in Chinese).

The key Loloish language for establishing PLB *labiovelars is Lahu, which has labial initials in several roots corresponding to velars or velar-plus-w clusters elsewhere.²² The most important of these etyma is ‘dog’²³, reconstructed as PTB *kwəy, where the Lahu

reflex is *phî*; but this development is exactly paralleled in ‘nest’, a homophonous root under a different LB tone (JAM 1978b:6-7):

	<i>PLB</i>	<i>WB</i>	<i>Mpi</i>	<i>Lahu</i>
(1) ‘dog’ ^a	* <i>k^wəy</i> ²	<i>khwê</i>	<i>khur</i> ²	<i>phî</i>
(2) ‘nest’ ^b	* <i>k^wəy</i> ¹	--	<i>ʔa-khur</i> ⁶	<i>phî</i>

a. The interesting lateral reflex in Thulung Rai *khlea* ‘dog’ (Lahaussos 2002), points up the phonetic similarity between a “dark l” and w.

b. The Lahu development is paralleled in Pa-o (Karenic) *phwi* ‘nest’ (< Proto-Karen *s-(kh)wi^h; cf. Pwo and Sgaw *θwi* < *s-wi, with preemption by the prefix). Abor a-ki preserves the velar component of the consonant group. See Benedict 1983c:17.

Both ‘dog’ and ‘nest’ point to PLB voiceless **k^w*. This development contrasts with the fate of a sequence of **velar stop* plus a -w- that functioned as part of the vocalic nucleus, *i.e.* a -w- that was the onset of a rising diphthong like -*ua*- :

(3) ‘wear clothes’ ^a	PLB * <i>gwa</i> ²	Lisu <i>gwa</i> ⁵	Mpi <i>ko</i> ¹	Lahu <i>qâ</i>
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a. See *STC* #160. See below 3.6.1 for a general discussion of the ambiguous status of -w- in TB/ST phonology.

Also distinct are reflexes of labial stop plus medial -w- :

	<i>PLB</i>	<i>WB</i>	<i>Mpi</i>	<i>Lahu</i>
(4) ‘chaff’	* <i>pway</i> ²	<i>phwâi</i>	<i>koʔ-phur</i> ²	<i>vàʔ-phî</i>

A third **labiovelar* root is ‘comb’²⁴ reflecting a preglottalized voiced counterpart **ʔ-g^w*-. Many Loloish languages have labial reflexes of ‘comb’:

(5) ‘comb’	Proto-Loloish * <i>ʔ-g^wəy</i> ² > Lahu <i>pî</i> ‘to comb’, Lisu <i>o</i> ⁵⁵ <i>pu</i> ⁵⁵ ‘a comb’, Naxi <i>pv</i> ³¹ <i>mi</i> ¹³ , Yi Nanhua <i>u</i> ⁵⁵ <i>pi</i> ⁵⁵ , Yi Nanjian <i>u</i> ²¹ <i>pu</i> ²¹ <i>tçi</i> ³³ , Jinuo <i>phi</i> ³³ <i>çi</i> ⁴² , Gazhuo <i>o</i> ³¹ <i>pie</i> ⁵⁵
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Other Yi dialects have velar rather than labial reflexes, pointing up the diachronic instability of this complex initial:

22. This is a natural enough phonetic development. The Proto-Indo-European labiovelars became labials in Greek before -o-, as in PIE **ek^wo-* ‘horse’ > Gk. *hippos*; PIE **g^wei-* ‘live’ > Gk. *bios* ‘life’.

23. See *STC* #159; the aberrant initial reflexes in Lahu, Karen, and Lushai are discussed in note 83 (p.26) and n. 365 (p. 113).

24. Reconstructed in my note 16 (p. 27) to Benedict 1979, and in JAM 1988b:869.

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Yi Xide ɔ³³ ku⁵⁵, Yi Dafang o³³ ku⁵⁵.

A Burmish variant *pri of this phonologically unstable root is reflected by WB phî ~ phrî ‘to comb, brush’, Maru pje³⁵, Zaiwa pje²¹, Achang Lianghe phje³¹, N. Hpun phyè-xò. Outside of LB, the reflexes are sometimes overtly labiovelar, *e.g.* Darang Deng [Mirish] tshe⁵⁵ku⁵⁵, Digaro se-kwi, Lushai khui?; Proto-Karen *khwi-s > Pwo khwì, Sgaw khwí, Palaychi khwèq, Bwe wi ~ khwi.²⁵ At least as often, however, the reflexes have labial initials: (Qiangic) Shixing phi⁵⁵, Namuyi pə³⁵; Sulong biek³³ (with unexplained final stop), Bai su⁵⁵phī²¹ (with unexplained nasal vowel).²⁶

Two more labiovelar roots are to be reconstructed at the PLB level with prenasalized initials, reflected by the voiced Lahu initial b-:

(6) ‘trumpet’	PLB *m-g ^w ya ^{1/2} Lahu bê ‘trumpet’ ≈ bɛ̃-hɛ-ma ‘large trumpet’
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No other LB cognates have been found so far, but there seems to be an excellent fit with a Karen form cited by Haudricourt (“Restitution du karen commun” (1946), reprinted in 1972:136): gwê ‘clairon’ (*i.e.* clarion, trumpet). (See JAM 1988b:946, 948.) A homophonous Lahu reflex occurs in ‘chew’, where other LB languages have velars, labiovelars, or prenasalized labiovelars:

(7) ‘chew’ ^a	PLB *m-g ^w ya ² Lahu bɛ̃ ‘chew’, Lisu gua ³¹ , Hani g’a ³¹ , Yi Xide ŋgw ³³ , Naxi ŋgw ³³ -ŋgw ³³
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a. For extended discussion of this etymology, see JAM 1986b, where a complex word-family with double glide is set up at the PTB level: PTB *s-/N-g-w-y-a-t. See below 3.6.5.

(8)	Finally, an etymon meaning ‘star’ in TB but ‘moon’ in Chinese is reconstructed with a labiovelar nasal *ŋ ^w - in JAM 1980 (“Stars, moon, and spirits”), as PTB *s-ŋ ^w a-t on the basis of forms like Lahu mə̃-kə ‘star’, Angami Naga thèmvă ‘star’, and Old Chinese 月 ŋgiwăt ‘moon’ [GSR #306a-f].
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25. Cf. also PNN *C-gyuaŋ > Chang ku-sei etc. See French 1983:470.

26. See STC #480, and Benedict 1979:13; also ZMYC #'s 459, 654.

3.3 Fricatives and affricates ²⁷

3.3.1 Dental and palatal fricatives

No labiodental fricatives are reconstructed for PTB, though many daughter languages have /v/ (usually < *w) and/or /f/ (deriving *e.g.* in Lahu from earlier *hw and *ʔ-w.²⁸ Both dental and palatal fricatives */s z š ž/ are reconstructible (though *ž was quite rare). Lahu has merged palatal and dental fricatives and affricates in favor of the palatals, and lacks the phonemes /s z ts tsh dz/; these do occur phonetically, however, as allophones of the palatals before /i/ :²⁹

$$\text{Lahu: } \left\{ \begin{array}{c} /c/ \\ /ch/ \\ /j/ \\ /š/ \\ /y/ \end{array} \right\} \rightarrow \left\{ \begin{array}{c} [ts] \\ [tsh] \\ [dz] \\ [s] \\ [z] \end{array} \right\} / _____ i$$

Examples:

	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>	
‘die’	*səy ¹	se	/šɪ/	[sɪ] ³³
‘joint’	*ʔ-dzik ^L	chac	/cɪ/	[tsɪ] ³⁵
‘sleep’	*yip ^L	ʔip	/yɪ/	[zɪ] ³¹
‘urine’	*m-(d)z(y)əy ²	sê	/jî/	[dzɪ] ⁵³
‘weigh’ ^a	*kyin ¹	khyin	/chɪ/	[tsʰɪ] ³³

a. *Cf.* also Lalo tshí.

27. A convenient cover term for these sounds taken collectively is *fricatives*.

28. Lepcha has f- < *sw- , as in ‘tooth’ *s-wa > Lp. fo (*STC*, n. 111). Chin languages often have f- < *z- or *dz-, *e.g.* *(d)za ‘child’ > Lushai fa; *zim ‘collect / gather’ > WB sim, Lai fim, Cho θim.

29. See JAM 1973/1982 (GL):6-7.

3.3.1: Dental and palatal fricates

The voiced fricative *z- has interesting reflexes in Lolo-Burmese, including WB s-, Lahu y-, Lisu r-, Sangkong z-, Mpi and Ugong l-:

<i>PLB</i>	<i>WB</i>	<i>Lahu</i>	<i>Lisu</i>	<i>Mpi</i> ^a	<i>Ugong</i>
*s	s	š	s [s] / __ ɪ	s	l
*š	s	š	š / xw ^b [s] / __ ɪ	s	th
*z	s	y [z] / __ ɪ	r	l	l

TABLE 4. Reflexes of fricatives in Lolo-Burmese.

- a. See JAM 1978b.
b. Lisu has complex reflexes conditioned by the following vowel: *š > Lisu š before front vowels, but > Lisu h/x before non-front vowels. See JAM 1979 (“QV”), p. 34.

	<i>PLB</i>	<i>WB</i>	<i>Mpi</i>	<i>Lahu</i>
‘child’	*za ²	sâ	ʔa ² -lo ²	ð-yâ
‘daughter’	*za ² -mi ^{2/3}	səmî	lo ² -mi ²	yâ-mî
‘descend’	*zak ^L	sak	la ¹	yàʔ
‘strong’	*zan ¹	san	---	yè
‘he/she’	*zaŋ ²	sâŋ	---	yô
‘use’	*zum ²	sûm	---	yê
‘leopard’	*zik ^L	sac	---	mòʔ-yîʔ ^a

- a. Lit. “monkey leopard”, referring to the species “cloudy leopard” [*Felis nebulosa*].

Some TB languages (notably in the Qiangic group) have developed a profusion of sibilant fricatives and affricates, vastly more complex than what can be set up for PTB. A striking example is the Dayang dialect of Pumi (=Prinmi) [see JAM 1998]:

s	sy	sw	ɣ	ɣw	ʃ	ʃw	sʃ	sʃw		ɕ	ɕʃ	ɕʃw
z	zy		ʒ	ʒw			ʒʒ					
ts	tsy	tsw	tɕ	tɕw	tʃ		tʃʃ	tʃʃw	tʃʃy	tɕ		
tsh	tshy	tshw	tɕh	tɕhw	tʃh	tʃhw	tʃʃh	tʃʃw	tʃʃhy	tɕh		tɕhw
dz	dzy	dzw	dʒ		dʒ	dʒw	ʒdʒ	ʒdʒw				

The fricativality of the Pumi is demonstrated by the following nearly perfect minimal triplet: syú ‘paddy’ / sʃũ ‘carry on back’ / ɕʃũ ‘hide’. The complex developments that can lead to this sibilant hypertrophy may be illustrated by the disparate TB roots whose reflexes in Dayang Pumi are ʒʒ:³⁰

	<i>Pumi Dayang</i>	<i>PTB</i>
‘nail / claw’	ʒʒǎn	*m-tsyen
‘right side’	ʒʒí	*g-ya
‘sheep’	ʒʒóun	*yaŋ
‘trousers’	ʒʒǐ	*s-la

All phonemic analyses of complex phones must deal with the problem of *unit phonemes* vs. *clusters*, a distinction which Y. R. Chao (1934) characterized as “one-piece sound” vs. “two-piece sound”. This distinction is highly unstable diachronically, and often it does not make much difference one way or the other. In the original manuscript version of *STC* (ca. 1942-3), palatal initials were treated as clusters: */sy zy tsy dzy/.³¹ In the published version these are reconsidered to be unit phonemes */ś ź tś dź/ (notes 121 and 122, p. 37), which has the slight advantage of permitting the reconstruction of *śr- (instead of the clumsy *syr- or *sry-) in several key roots (‘alive’ *śriŋ, ‘louse’ *śrik, ‘ashamed’ *śrak; n. 304, p. 108). On the other hand, an argument in favor of the cluster analysis of the palatals may be made on the grounds of phonotactic symmetry: since the labial, dental, and velar stops all cluster with *-y-, and since the dental affricates */ts dz/ must definitely be considered unit phonemes, it would be nicely parallel to consider the

30. Since the Dayang dialect has no simple voiced palatal fricative phone [ʒ], one could treat [ʒʒ] as being phonemically /ʒ/.

31. This is the policy generally followed in this *Handbook*.

3.3.1: Dental and palatal fricates

palatal affricates to be clusters of */ ts dz / + -y-. In any case, I have decided to avoid the unitary symbols “č” and “j” for the palatal affricates, since there are many cases of proto-variation between simple fricatives and affricates,³² or between dental stops and dental affricates,³³ which can conveniently be captured by notations with parentheses if we use digraphic symbols, *e.g.* *(t)s, *(t)ś; *t(s), *d(z).³⁴

The contrast between dental and palatal sibilants and affricates is shaky or non-existent in many TB languages (including Burmese and Lahu³⁵), though it is maintained in WT, and indeed must be reconstructed even for Proto-Lolo-Burmese.³⁶ In Mpi (S. Loloish) the two series have neatly distinct reflexes, with the *dental affricates developing into *dental stops* (*e.g.* ‘ten’ PLB *tsay¹ > Mpi to² thɿ⁶, ‘wash’ PLB *tsəy² > Mpi thi¹; ‘hawk’ PLB *dzwan¹ > Mpi te⁶ mo⁴, ‘drop’ *dzik^L > Mpi tuɿ²), while the *palatal affricates remained as such, merging with older *velar-plus-y clusters (*e.g.* ‘sunlight’ PLB *məw²-ts(y)a¹ > Mpi ɲ⁴tcho⁶, Lahu mû-cha; ‘suck / kiss’ PLB *tšuk^H > Mpi tchu¹; ‘tooth / tusk’ PLB *džway¹ > Mpi tɕuɿ⁶; ‘eat’ PLB *dža² > Mpi tɕo¹).³⁷ In the root for ‘thorn; prick, sting’, Mpi has a doublet tho¹ ≠ tcho¹, which points to earlier *ts- ≠ *tš- variation.³⁸ In Bola (Burmish group), as in Mpi, the *dental affricates have developed into dental stops, but so have the *palatal affricates, so that Bola is powerless to distinguish between the two series:³⁹

	<i>Bola</i>	<i>PLB</i>	
‘eat’	ta ²¹	*dža ²	<i>Cf.</i> Lahu câ
‘play’	tai ⁴⁵	*džay ²	<i>Cf.</i> STC #289
‘rice’	ta ⁵⁵ (cooked)	*dža ¹	<i>Cf.</i> Lahu cà (uncooked)

32. Many examples are given in JAM 1978a:54-56 (*VSTB*), including ‘eat’, ‘urine’, ‘hair of head’, and ‘child’. See also JAM 1974:156-7. *Cf.* the discussion of ‘liver’, below.

33. See the discussion of ‘mortar’, below.

34. Conventionally, we use acute accents for palatals at the PTB level */ ś ź ts dz /, but wedges for PLB palatals */ š ž tš dž /.

35. As mentioned above, Lahu has both types phonetically, but the dentals [s z ts tsh dz] only occur before /ɿ/, so that Lahu (like Hawaiian) is one of the few languages in the world to lack an /s/ phoneme.

36. This was first demonstrated in JAM 1969 “Lahu and PLB”, and cited in *STC*, n. 178 (p. 53).

37. The key etymon ‘eat’ had been reconstructed with a dental affricate in *STC* #66 (*dza), in spite of forms with palatal initials cited from Bahing, Magari, Jingpho, and Garo. The Mpi data provides further evidence that the correct PTB reconstruction is a *palatal affricate. See JAM 1978b:10-13.

38. This etymon is set up simply as PTB *tsow in *STC* #276, despite reflexes with palatals like Lepcha and Jingpho džu.

	<i>Bola</i>	<i>PLB</i>	
‘tooth’	tui ³⁵	*dʒway ¹	<i>Cf. Lahu cì</i>
‘ten’	thai ⁵⁵	*tsay ¹	<i>Cf. Lahu chi</i>
‘salt’	tha ⁴⁵	*tsa ²	<i>Cf. STC #214</i>

Several roots must be set up with fricative \approx affricate variation at the PTB level, including ‘child’ *za \approx *tsa (*STC* #59 and p. 27) and ‘urine’ *zəy \approx *ts(y)i (*STC* #77 and pp. 30, 90).

In the etymon for ‘liver’, reconstructed *m-sin in *STC* #234, Mpi has a dental stop (ʔa-thu²), demonstrating that *ts- \approx *s- variation must be set up for this root at the PLB level (*tsin¹ \approx *sin¹, or *(t)sin¹), paralleled elsewhere in TB (*cf.* WT mtšhin vs. Kanauri šin, *etc.*). Such proto-variation between affricates and fricatives is all the more plausible in view of diachronic developments that can be traced within particular languages or subgroups. Thus in many Kamarupan languages (especially in Kuki-Chin and Bodo-Garo), PTB *ts- regularly becomes s- (*e.g.* ‘mortar’ PTB *tsum > Lushai sum, Garo sum; ‘hair of head’ PTB *tsam > Lushai sam, Garo mik-sam ‘eyebrow’; ‘joint’ PTB *tsik > Mikir sek).⁴⁰ Something very similar has happened in the history of Burmese: WB had only a single series of affricates, representing the neutralization of the dentals */ts dz/ and the palatals */tʃ dʒ/; these have become the fricatives /s sh/ (plain vs. aspirated s) in Modern Burmese.

Another sort of relationship, this time between *dental stop and *dental affricate, is exemplified by the root for ‘mortar’ just mentioned, with most reflexes pointing unambiguously to PTB *tsum (*e.g.* WB chum, Lahu che, Lushai sum), while Jingpho thùm reflects *tum, implying PTB *t(s)um.⁴¹

Finally, many Kamarupan languages have developed dental stops from PTB *s-, *e.g.* ‘kill’ PTB *g/b-sat > Lushai that, Mikir that, Dimasa thai; ‘fruit’ PTB *sey > Lushai thei,

39. See JAM 1991c:93.

40. The voiced affricates *dz- and *dʒ- have sometimes become f- in Lushai and other Chin languages like Lai, *e.g.* ‘suck’ PTB *dzo:p > Lushai fo:p; PTB *m-dz(y)u(:)k ‘plant, be erect’ > Lushai fuk; ‘hang down / sag’ *dʒwal > Lushai fual. In other cases Lushai and Lai show a different reflex, ts- : *dzəy ‘seed’ > WB ce’ / Lushai and Lai tsii (below, 5.3.2(2a)); *dzoŋ ‘wait’ > WB coŋ’ / Lushai and Lai tsoŋ (below, 7.3(3)); *dzyi:p ‘close together’ > WB cip ‘be set or placed closely; near (in time or place)’ / Lu. and Lai tsiip ‘be shut; to close’ (below, 8.3(3a)); *dzik \approx *dziŋ ‘split, mince’ > WB câñ / Lushai, Lai tsik (below, 12.1(2c)); *dziŋ ‘relatives / ancestors’ > WB cañ ‘place in a row’, bhûi-cañ ‘ancestry’ / Lai tsiŋ-la ‘line of ancestors, relatives’ (below, 12.6.1(2)).

41. *STC* #75 indulges in a bit of “proto-inventory stuffing” by positing the improbable PTB cluster *tsr- for this root. Japanese is a good example of a language showing synchronic subphonemic interplay between [t] and [ts]: the Japanese phoneme /t/ is realized as [ts] before /u/, the same vowel as in TB ‘mortar’.

3.3.1: Dental and palatal fricates

Garo *the*, Mikir *thei*, Tangkhul *thei*, Dimasa *thai*; ‘die’ PTB **səy* > Lushai, Mikir, Dimasa *thi*; ‘three’ PTB **g-sum* > Lushai *thum*, Tangkhul *kəthum*, *etc.*⁴² Again a similar development has occurred in the history of Burmese, where WB *s-* has become an interdental fricative /θ/ or affricate [tθ], *e.g.* ‘three’ WB *sûm* > Mod. Bs. *tθûN*. Note that for languages like Lushai, Mikir, and Burmese, we must posit drag-chains whereby **s-* first underwent the change to a stop, after which **ts-* was free to develop into *s-* :

- | | |
|-----|---|
| (1) | PTB <i>*s</i> > Lushai and Mikir <i>th</i> |
| (2) | PTB <i>*ts</i> > Lushai and Mikir <i>s</i> |
| (1) | WB <i>s</i> > Mod. Bs. <i>tθ</i> |
| (2) | WB <i>ts</i> (or <i>c</i>) > Mod. Bs. <i>s</i>
WB <i>tsh</i> (or <i>ch</i>) > Mod. Bs. <i>sh</i> |

	<i>PTB</i>	<i>Lushai</i>	<i>Mikir</i>	<i>WB</i>	<i>Mod. Bs.</i>
‘tree’	<i>*siŋ</i> > <i>*sik</i>	<i>thiŋ</i>	<i>theŋ</i>	<i>sac</i>	<i>θíʔ</i>
‘joint’	<i>*tsik</i>	---	<i>sek</i>	<i>chac</i>	<i>shíʔ</i>
‘hair (head)’	<i>*tsam</i>	<i>sam</i>	---	<i>cham</i>	<i>shan</i>

In the case of Burmese, a third link in the chain ensued, when WB clusters of **velars* plus the glides **/-y- -r- -l- /* developed into new palatal affricates in Modern Burmese:

- | | |
|-----|---|
| (3) | WB <i>gy, gr, gl</i> > Mod. Bs. <i>c</i>
WB <i>ky, kr, kl</i> > Mod. Bs. <i>ch</i> |
|-----|---|

A similar drag chain occurred in Meithei, where **s-* > *h-*, after which **ts-* > *s-* (*e.g.* **tsam* ‘hair’ > Me. *sám*, **tsa* ‘hot’ > Me. *sa*, **tsum* ‘mortar’ > Me. *sum-bal*).

42. In Meithei, PTB **s-* has often developed into *h-*, in a development reminiscent of the fate of Proto-Indo-European **s-* in Greek (*e.g.* ‘three’ > Meithei *húm*, ‘fruit’ > Meithei *mahéi*, ‘kill’ > Meithei *hát*, ‘fat / oil’ PTB **sa:w* > Meithei *məhau*), but PTB **s-* remains Meithei *s-* before front vowels, a palatal falling diphthong, or *y*, *e.g.* **sya* ‘animal / flesh / body’ > Me. *sá*, **siŋ* ‘tree / wood’ > Me. *sín* ‘firewood’, **səy* ‘die’ > Me. *si*; **sit* ‘blow / sweep’ > Me. *sít*. See *STC*:28, Chelliah 1997:19, and JAM 2001e:246.

The decay of initial *s- is carried even further in Abor-Miri (Padam-Mising), where it often disappears entirely:⁴³

	<i>PTB</i>	<i>Abor</i>	<i>Miri</i>
‘three’	*g-sum	a-um	a-um
‘fruit’	*sey	a-ye	a-ye
‘liver’	*m-sin	a-in	a-šin ^a
‘son’ ^b	*za	a-o	a-o

a. A following -i- sometimes prevented the *s- from dropping by palatalizing it to š-. See also ‘tree / wood’: PTB *siŋ > Abor and Miri e-šiŋ.

b. As this example shows, a similar fate befell *z- in these languages.

We have thus observed all kinds of synchronic and diachronic interrelationships involving fricatives and affricates: proto-variation discoverable comparatively, synchronic variation within a single language, and diachronic developments within given languages or subgroups. In phonological terms these relationships include:

- (a) Variation between palatal and dental affricates, *e.g.* *ts- ≠ *tš- (equivalent to the notation *ts(y)-).
- (b) Proto-variation between affricates and dental stops, *e.g.* *ts- ≠ t- (*cf.* ‘mortar’), or diachronic development of affricates into dental stops *ts- > t- (Mpi, Bola).
- (c) Interplay between dental affricates and fricatives, *e.g.* ts / s or dz / z, either indicating proto-variation *ts ≠ *s (*cf.* ‘liver’), or diachronic evolution *ts > s, as in Lushai or Burmese; diachronic development of dental stops from sibilants, *e.g.* *s > th, as in the history of Lushai.

The reflexes of the PTB fricatives in some of the major languages discussed in this section are summarized in the following chart:⁴⁴

<i>PTB</i>	<i>WT</i> ^a	<i>WB</i>	<i>Lahu</i>	<i>Mpi</i>	<i>Lushai</i>	<i>Mikir</i>	<i>Meithei</i>
*s	s ~ š / __ i ^b	s	š ~ s / __ ɿ	l	th	th	h
*ś	ś	s	š ~ s / __ ɿ	s	s ~ ś	s ^c	s
*z ^d	z	s	y	l	f	s ^e	??

43. See JAM 1978a(VSTB):277-8.

3.3.1: Dental and palatal fricates

<i>PTB</i>	<i>WT^a</i>	<i>WB</i>	<i>Lahu</i>	<i>Mpi</i>	<i>Lushai</i>	<i>Mikir</i>	<i>Meithei</i>
*ts	ts(h)	ch (=tsh)	ch ~ tsh/___ɿ	th	s	s	s
*tś	tś(h)	ch (=tsh)	ch ~ tsh/___ɿ	tçh	s ~ ś	t(?) ^f	s ^g
*dz	dz ~ z ^h	c (=ts)	c ~ ts/___ɿ	t	f / ts	??	tś ⁱ
*dź	dź ~ ź	c (=ts)	c ~ ts/___ɿ	tç	f / ts	tś ^j	c/ch/ts

- a. The WT reflexes are complicated by the interaction of these initials with prefixes, *e.g.* *m-sin ‘liver’ > WT mtśhin (via *mśin). WT aspirated and non-aspirated affricates (like WT obstruents generally) are in complementary distribution with respect to the prefixes, with the aspirates occurring only after m- and h-, and the non-aspirates after all other prefixes. See below 4.1.2.
- b. WT regularly palatalizes dentals before -i, *e.g.* śi ‘die’ < *səy, śin ‘wood / tree’ < *sin (STC:55).
- c. The Mikir and Meithei reflexes are established by ‘grandchild’: PTB *śu(w) > Mk. and Me. su (STC:158).
- d. *z- is preserved as such in a number of TB languages, including many in the Qiangic and Loloish groups, *e.g.*: *zum ‘use’ > (Qiangic) Namuyi zy⁴⁵, Ersu zi⁴⁵; (Loloish) Yi Xide zi³³, Yi Nanhua zu²¹, Yi Mile zi²¹, Yi Mojiang zu³³, Lisu zi²¹, Hani zo³¹ (but Lahu yē, WB sūm). See ZMYC #679.
- e. Cf. ‘child’: PTB *za > Mk. so. Meithei macha seems to derive from the affricated variant *tsa.
- f. Cf. Proto-Kuki-Naga *m-tsyi ‘salt’ > Mikir in-ti, Tangkhul mət̚si, Lushai tśi, Ao Naga mət̚sə, Sema Naga əmti (STC n. 332), also Daai Chin msi (Hartmann 2001a). I would now like to include in this etymon Jg. mət̚si ‘yeast / leaven’ and Lahu dī ‘id.’ (cited in my note 123 in STC), implying PTB *m-t(s)i ‘salt / yeast’.
- g. Cf. PTB *tsyow ‘cook / boil / bake’ > Meithei əsau ‘heat’, (STC #275).
- h. WT has dropped the occlusive part of the PTB *affricate in several roots: *dz(y)a ‘eat’ > WT za, *dz(y)im ‘sweet / delicious’ > WT źim-pa; *džon ‘ride (an animal)’ > WT źon-pa.
- i. Cf. PTB *dzar ‘younger sister’ > Meithei i-tśal ~ i-tśan (STC #68).
- j. Cf. PTB *dz(y)a ‘eat’ > Mikir kət̚sō (Weidert 1987). The Meithei cognate is recorded in several different ways in the various sources: ca, cha, tsà. Abor-Miri (Padam-Mising) do is possibly to be assigned to this etymon, implying a development as in Mpi.

Laterally released affricates are occasionally found in TB languages, though they are obviously of secondary origin, as in the C. Loloish languages Sani (=Nyi) and Ahi (=Axi), where they derive from clusters of *labial-plus-y, *e.g.* ‘bee’ PLB *bya² > Sani dla-ma; ‘fly’ (v.) PLB *byam¹ > Sani thl.⁴⁵ In Central Chin languages sequences of dental stops plus -l- seem to function rather as clusters than as unitary phonemes, deriving typically from *velar-plus-l clusters, *e.g.* PTB *kla-k ‘fall’ > Lai Chin tlaa, tlaak; *g-la ‘moon’ > Lushai thla.

Initial or prefixal *s-, like initial *ʔ-, can exert a decisive conditioning effect on the *tone* of its syllable, a phenomenon which is especially clear in LB.⁴⁶ Thus the *s- prefix before a nasal C_i in a Proto-Loloish stopped syllable induces the **HIGH**-stopped tone, *e.g.*

44. Jingpho has been omitted from the chart owing to the extreme variability of its reflexes, *e.g.* *z > Jg. z- or ś-; *ts- > Jg. ts- or dz-; *dz- > dz- ~ ts- ~ ś-. See the chart in STC:18.

45. Note that PLB *voiced obstruents are devoiced in Sani words from Tone *1, but remain voiced under Tone *2 etyma. See JAM 1979.

46. See JAM 1972a (TSR): *passim*, and below 4.1.1 and 4.2.1.

*s-myak^H ‘eye’ > Lahu mêʔ (HIGH) vs. *mak^L ‘soldier’ > Lh. màʔ-yâ (LOW). A syllable with root-initial *s- sometimes shows an irregular tonal correspondence, *e.g.* WB sân ‘louse’ (< PLB Tone *2) vs. Lahu še (< PLB Tone *1). Benedict (*STC*:197) explains a set of tonally irregular TB/Chinese comparanda by invoking the special tonogenetic effect of sibilant initials, which he claims caused PST etyma under Tone *B to acquire Chinese Tone *A (*píngshēng*), with at least one case where this correspondence is reversed.⁴⁷

3.3.2 Sources of Sangkong ʒ-

At the PTB level, the voiced palatal fricative (whether written *ʒ, *zy, or *ʒ) was extremely rare, with the *STC* (p. 54) only giving one tentative example, *zya:w ‘rot / decay / digest’. Some modern languages have developed it secondarily; in the case of Sangkong (S. Loloish) it represents the merger of several older resonantal initials.⁴⁸

- (i) SK ʒ < PLB *y-

	<i>Sangkong</i>	<i>PLB</i>
‘house’	ʒim ⁵⁵	*yim ¹
‘take’	ʒu ⁵⁵	*yu ¹
‘sleep’	ʒu ³¹	*yup ^L
‘seed’	aŋ ³³ ʒø ³¹	*yəw ² a
‘potato’	ʒaŋ ³¹ ʒi ³⁵	< Chinese ^b

a. Cf. Lahu yô.

b. Cf. Mandarin 洋芋 *yángyù* (lit. “Western taro”) and Lahu *yâʔ-yí-ši*.

- (ii) SK ʒ < PLB *r-

	<i>Sangkong</i>	<i>Lahu</i>	<i>PLB</i>
‘bone’	aŋ ³³ ʒø ³¹	yô	*rəw ²
‘stand’	ʒap ³¹	hú	*ʔ-rap ^L
‘copula’ ^a	ʒe ⁵⁵	ve	*ray (≠ *way)

a. The SK form is a ‘non-1st person agreement particle’; for Lahu *ve* see JAM 1985a (*GSTC*) and 1972c.

47. See JAM 1999a:24-5 and below 11.4.5.

48. Cf. the discussion of Loloish resonantal reflexes in JAM 1969:171-9. The Lahu reflexes of PLB *y, *r, *w, C-š, and *z/ž are / y ɣ v š y /, respectively.

3.4: Sonorants: nasals and resonants

- (iii) SK z < PLB $*\text{w-}$

	<i>Sangkong</i>	<i>Lahu</i>	<i>PLB</i>
‘bloom / flower’	$\text{z}\emptyset^{33}$	$\text{vê}^?$	$*\text{s-wat}^{\text{H}}$
‘elder sibling’ a	$\text{a}^{31}\text{zu}^{31}$	$\text{a-ví} \sim \text{ò-ví}$	$*\text{ʔ-wyik}^{\text{L}}$

a. This morpheme is often coupled with the root for ‘younger sibling’ (PTB $*\text{nyey}$) in elaborate expressions meaning ‘siblings in general’, e.g. SK $\text{a}^{31}\text{zu}^{31}\text{a}^{31}\text{ni}^{55}$, Lahu a-ví-a-ni , ò-ví-ò-ni . See *GSTC* #146 and *DL*:59.

- (iv) SK z < PLB $*\text{C-š}$

	<i>Sangkong</i>	<i>Lahu</i>	<i>PLB</i>
‘easy / cheap’	za^{55}	ša	$*\text{C-ša}^1$

- (v) SK z < PLB $*\text{z}$ or $*\text{ž}$

	<i>Sangkong</i>	<i>Lahu</i>	<i>PLB</i>	<i>WT</i>	<i>PTB</i>
‘excrement / rust / blight’	zaŋ^{31}	yô	$*\text{z}/\text{ž}aŋ^2$	gśaŋ, bśaŋ	$*\text{g/b-syaŋ}$

3.4 Sonorants: nasals and resonants

3.4.1 Nasals

(1) Positions of articulation

Nasals are reconstructed for PTB at four points of articulation, $*/\text{m n ŋ} /$. Neither the original text nor the new footnotes of *STC* specifically mention the status of the $*\text{palatal nasal}$, and the reconstructions of words with this initial are uniformly written with the digraph “ny”. In the chart of initial consonant clusters (p. 38), “ny” is treated just like $*/\text{my}/$ and $*/\text{ny}/$, and in etyma with the vowel $*\text{-i-}$ the semivowel is parenthesized, implying a lack of distinctiveness in this environment: $*\text{n(y)ik}$ [*STC* #235] ‘filth / excrement’, $*\text{n(y)it}$ [*STC* #236] ‘nod / sleep’. It is clear, however, (e.g. from the Index, pp. 204-5) that Benedict later came to treat the palatal nasal as a unit phoneme like the rest of the palatal series.⁴⁹

49. Yet the palatal nasal is not mentioned in note 122 (p. 37), where this new palatal series is proposed.

(2) *Plain vs. complex nasals*

Many TB languages, including Burmese, Pumi, and the Chin group, have a series of voiceless or aspirated nasals, which can easily be shown to derive from earlier combinations of *s- or *ʔ- with a nasal root-initial, e.g. ‘snot’ PTB *s-nap > WT snabs, WB hnap, Lushai hnap, Pumi (Jinghua) ṇa¹³; ‘medicine’ PTB *s-man > WT sman, Pumi Dayang mǐ. Voiceless nasals are widely distributed in TB, being found in *Himalayish* (Chepang, Dhimal, and Khams Tibetan [Batang, sDe-gDe (Dege)]); *Qiangic* (Zhaba [=Queyu], Pumi [Jinghua]); *Lolo-Burmese* (WB and Modern Burmese, Achang; Nusu [Bijiang]⁵⁰, Bisu, Jinuo [Youle]); *Nungish* (Anong)⁵¹ and *Kamarupan* [Naga] (Angami, Chokri, Khezha), [Kuki-Chin] (Kom Rem, Lai, Laizo, Lakher [Maraa], Lushai), [Mirish] (Damu, Darang). Voiceless nasals are absent in Jingpho, Karenic, and Baic.

Three manner series of nasals must be reconstructed for PLB, e.g. *m, *hm, *ʔ-m, on the basis of conclusive tonal evidence from Loloish *stopped syllables, with PLB *hm deriving from PTB *s-m, and PLB *ʔ-m < PTB *ʔ(ə)-m.⁵² Lahu has a threefold tonal distinction here, with *plain nasals acquiring the low-stopped tone / ˘ʔ / (e.g. PLB *myok^L ‘monkey’ > Lh. mǝʔ; PLB *mwat^L ‘hungry’ > Lh. mǝʔ), *s- prefixed nasals determining the high-stopped tone / ˆʔ / (e.g. PLB *s-mut^H ‘blow’ > Lh. mǎʔ, PLB *s-mak^H ‘dream’ > Lh. mǎʔ), and the *preglottalized nasals triggering “glottal dissimilation” (see JAM 1970) to produce the Lahu high-rising tone / ˊ / (e.g. Proto-Loloish *ʔ-mak^L ‘son-in-law’ > Lh. má, Proto-Loloish *ʔ-nak^L ‘deep’ > Lh. ná). As the superscripts in the PLB forms indicate, the *plain and *glottalized nasals determined the LOW-stopped tone for Loloish in general, while the *s-prefixed nasals induced Loloish HIGH-stopped tone. In non-stopped LB syllables there is tonal evidence for only two nasal series, *plain vs. *complex (aspirated-or-glottalized). Thus in roots under PLB Tone *1, Lahu has low-falling tone / ˋ / from *plain nasals (e.g. PLB *naŋ¹ ‘you’ > WB naŋ, Lh. nǝ, PLB *mraŋ¹ ‘see’ > WB mraŋ, Lh. mǝ), but midtone (unmarked) from *complex nasals (e.g. PLB *s/ʔ-nay¹ ‘bamboo strip’ > Lh. ne, PLB *s/ʔ-mi¹ ‘catch, overtake’ > WB hmi, Lh. mi, Lalo mɛ). In

50. Nusu also has a series of glottalized nasals / ʔm ʔn ʔŋ ʔŋ / as well as / ʔl /. The most frequent sources of both glottalized and voiceless nasals are proto-nasals prefixed by *s- or *ʔ-.

51. Anong also has syllabic nasals (see below 4.3.3), which are “normally realized as having a preceding glottal stop”, e.g. [ʔm], [ʔŋ] (Namkung ed., 1996:306). See the discussion of Tibetan *a-chung*, below 4.2.2.

52. See JAM 1972a (TSR):24, 57-63. The laryngeal prefix is written as “H” in TSR. See below 4.2.2. Three similar series of nasals are set up for Proto-Kam-Sui (see Li Fang-Kuei 1965 “The Tai and the Kam-Sui languages”). The newly described Loloish language Mo-ang has an elaborate synchronic series of preglottalized nasals / ʔm ʔmj ʔn ʔnj ʔŋ ʔŋj ʔŋ / (Wu 1993, Namkung ed. 1996:262). Burmish languages with a glottalized series of nasals include Atsi (Zaiwa) and Maru (Langsu), which also have a series of glottalized stops. This glottal feature, prefixal in origin (see n. 50), manifests itself synchronically mostly as creaky phonation on the following vowel. See Burling 1967.

3.4.1: Nasals

Tone *2 etyma, *plain nasals give Lahu high-falling tone / ˥ / (e.g. PLB *ma² ‘not’ > Lh. mâ, PLB *nwa² ‘cattle’ > Lh. nû, PLB *ŋa² ‘fish’ > Lh. ŋâ), while *complex nasals give Lahu very-low tone / ˩ /, e.g. *s/ʔ-ma² ‘teach’ > Lh. mā, PLB *s/ʔ-nam² ‘sesame’ > Lh. nū, PLB *s/ʔ-ŋa² ‘borrow, lend’ > Lh. ŋā). As always when dealing with complex initials, however, we find a number of roots showing variation between *simple and *complex nasals, e.g. ‘mushroom’ (Lh. mù points to *məw¹, but WB hmui reflects *ʔ-məw¹), ‘listen’ (Lh. na points to *ʔ-na¹, but WB na reflects plain *na¹), ‘deep’ (Lh. ná comes from *ʔ-nak^L [see above], but WB nak reflects plain *nak^L).

Languages with voiceless nasals frequently have voiceless resonants (liquids and/or semivowels) as well, e.g. Burmese, Dhimal. Manang (Tamangic group of Himalayish) has voiceless liquids / hl hr /, but no voiceless nasals. Lotha Naga (Acharya 1975) is said to have a series of voiced aspirated nasals and liquids, written “ m^h n^h ŋ^h r^h l^h ”. Mao Naga (Namkung, ed. 1996:243) apparently has only two voiceless sonorants, “ngh” and “rh”.

(3) Some interesting nasal phenomena in Loloish

Several Loloish languages show interesting reflexes of nasal initials:

- In Bisu (S. Loloish), PLB *plain nasals have become the homorganic voiced stops:⁵³

	PLB	Other LB	Bisu
‘female / girl’	*mi ^{2/3}	Lahu yâ-mî	bì
‘spirit / demon’	*nat ^L ≠ *nan ²	WB nat, Lahu nê	dât
‘I / me’	*ŋa ¹	Lahu ŋà	gā
‘soft’	*now ²	Lahu nû	dò
‘hungry’	*mwat ^L	Lahu mətʔ	bè
‘noun suffix’	*-ma ³	Lahu ni-ma ^a	nuŋ-ba

a. The Lahu and Bisu forms mean ‘heart’.

53. See JAM 1979 (QV), p. 33. This is reminiscent of the similar development found in the Min dialects of Chinese, where the resulting voiced stops are often still slightly prenasalized (p.c. Jerry Norman).

PLB *complex nasals generally remain Bisu nasals:

	<i>PLB</i>	<i>Other LB</i>	<i>Bisu</i>
‘bean’	*s-nuk ^H	Lahu nô?	nū
‘heart’	*s-ni-ŋ/k	WB hnac, Lahu <i>ni</i> -ma	<i>nuŋ</i> -ba
‘eye’	*s-myak ^H	Lahu mê?	mè-hnu

Again, however, many such roots show Loloish variation between *plain and *complex nasals:

	<i>PLB</i>	<i>Other LB</i>	<i>Bisu</i>
‘fire’	*mey ²	WB mî	bì
	*s/?-mey ²	Lahu à- <i>mî</i>	
‘black’	*nak ^L	WB nak	dā?
	*s-nak ^H	Lahu nâ?	---
‘monkey’	*myuk ^L	WB myauk, Lahu mò?	---
	*s-myuk ^H	---	mjò

- In Luquan (N. Loloish), a variety of PLB sonorant initials, including prefixed liquids and complex nasals or nasal clusters, have developed into the retroflex nasal ɲ:⁵⁴

	<i>PLB</i>	<i>Luquan</i>		<i>PLB</i>	<i>Luquan</i>
‘brain’	*s-nuk ^H	ɲa ¹¹	‘neck’	*m-liŋ ¹	ɲə ¹¹
‘many’	*mra ²	ɲu ³³	‘ripe’	*s/?-min ¹	ɲə ³³
‘monkey’	*myuk ^L	ɲū ⁵⁵	‘soul / spirit’	*s/?-la ³	ɲu ¹¹
‘moon’	*s/?-la ³	ɲū ²²	‘wind’	*s/?-ləy ¹	ɲu ¹¹

54. See Wheatley 1973, quoted in JAM 1979 (QV):33. For the Luquan tonal reflexes, see QV:36.

3.4.1: Nasals

- In Naxi (outlier Loloish), PLB **glottalized nasals* become voiceless spirants:⁵⁵

	<i>PLB</i>	<i>Naxi</i>
‘body hair’	<i>*ʔ-məw¹</i>	² ffũ
‘deep’	<i>*ʔ-nak^L</i>	³ ho
‘ear’	<i>*ʔ-na²</i>	² hă
‘red’	<i>*ʔ-ni¹</i>	¹ hō
‘rib’	<i>*ʔ-nam¹</i>	¹ ho

(4) *Prenasalized obstruents and syllabic nasals*

Many TB languages (*e.g.* WT, Baima, Zhaba (=Queyu), Luquan Lolo, Mpi) have a series of prenasalized initial obstruents, where the nasal component does not constitute a syllable by itself.

A number of other languages do have preinitial nasal elements that constitute separate syllables. In Lotha Naga and Mzieme, this nasal preinitial is obviously syllabic, since it may occur before nasal root-initials (*e.g.* Lotha *nli* ~ *nni* ‘tongue’). Jingpho (which is particularly interesting in this regard) has several fully syllabic nasal prefixes that can bear a tone, most importantly the high-toned morpheme /*ń*/ ‘negative’. Lalo (W. Loloish; SB 1998) has developed secondary syllabic nasals from syllables with nasal root initial and vowel **-a*, *e.g.* PLB **ʔ-ŋa²* ‘borrow/lend’ > Lalo à-*ŋ*, PLB **ŋa²* ‘fish’ > à-*ŋ*, PLB **nwa²* ‘cattle’ > Lalo à-*ŋ*.

Prenasalized obstruents and syllabic nasals are best discussed in the context of the PTB nasal prefix **m-* (below 4.3).

(5) *Nasalized vowels*

Nasalized vowels occur in many TB languages, either due to rhinoglottophilia after laryngeal initials (below 3.5); or through the spreading of the feature from a nasal root-initial (as in Mpi; below 4.3.4); or, most commonly, through the decay of a syllable-final nasal. Nasalized vowels will be discussed (below Ch. 7) in the context of syllable-final consonants.

55. See Okrand 1973, quoted in QV:34. Since **s-* prefixed nasals seem to have developed into simple nasals in Naxi stopped syllables (*e.g.* **s-nuk* ‘bean’ > Naxi ¹*nuŋ*; **s-myak* ‘eye’ > Naxi ¹*miu* ~ ¹*niu*), this is further evidence that the **s-* and **ʔ-* prefixes were still distinct before nasals at the PLB stage, at least in stopped syllables. See below 4.2.

3.4.2 Resonants

Four resonants are set up for PTB, the liquids **r-* and **l-*, and the semivowels **w-* and **y-*.⁵⁶ In the present context we consider these phonemes in their role as root-initial consonants.⁵⁷

(1) **r-*

A great variety of articulatory gestures are subsumed under the category of rhotic liquids, including apical trills, flaps, retroflex continuants, and postvelar trills; often these are pronounced with extra features like audible friction or labiodental contact. Given this phonetic latitude (*i.e.* widely divergent sounds are still accepted as “kinds of r”), it is not surprising that the reflexes of PTB **r-* are so various, even within a single branch of the family. Within Lolo-Burmese, reflexes include other resonants (*y-* or *w/v-*), and voiced fricatives ranging from dental, palatal, and retroflex to velar. Some languages (*e.g.* Lahu) have consistent reflexes; others (*e.g.* Akha, Lisu, Xide, Mile, Mojiang) have complex conditioned reflexes depending on the following vowel.

• **r-* > *y-*

The palatalization of **r* > *y* occurred in Burmese, both in initial and medial position (WB **r-* > Mod. Bs. *y-*; WB **-r* > Mod. Bs. *-y-*), and is paralleled in several other Lolo-Burmese languages, including Leqi (Lashi), Sani, Hani (*e.g.* Mojiang and Shuikui dialects), Jinuo, and Gazhuo:

	<i>PLB</i>	<i>Mod. Bs.</i>	<i>Leqi</i>	<i>Sani</i>	<i>Hani</i>	<i>Jinuo</i>	<i>Gazhuo</i>
‘get’	<i>*ra</i> ³	<i>ya</i> ’	---	---	jɔ ³³	jɔ ^{44/33}	---
‘laugh’	<i>*ray</i> ¹	<i>ye</i>	ji: ³¹	jæ ³³	---	---	---
‘reap’	<i>*ri:t</i> ^L	yeiʔ	---	---	---	---	ji ⁵⁵
‘weave’	<i>*rak</i> ^L	yeʔ	jɔ:ʔ ³¹	---	ja ³¹	ja ⁴⁴	---

With added friction, this palatalizing tendency led to voiced fricatives in the dental/palatal/retroflex area, *e.g.*:

56. See the concise discussion in *STC*:33-36.

57. In their even more important role as glides, they are discussed below (3.6). These four resonants, like the nasals, are “weak” root-initials, particularly susceptible of being “preempted” by a prefix (see below 4.5.3).

3.4.2: Resonants

- *r- > ʐ-

	<i>PLB</i>	<i>Xide</i>	<i>Dafang</i>	<i>Nanhua</i>	<i>Mile</i>	<i>Nanjian</i>
‘water’	*rəy ¹	ʐɿ ³³	ʐi ²¹	ʐi ³³	ʐi ³³	---
‘laugh’	*ray ¹	ʐɿ ²² ʐɿ ³³	---	ʐe ³³	---	ʐe ⁵⁵
‘reap’	*rit ^L	ʐɿ ⁵⁵	---	---	---	---

- *r- > ʐ-

	<i>PLB</i>	<i>Achang</i>	<i>Naxi Yongning</i>
‘bone’	*rəw ²	a ³¹ zau ³¹	---
‘laugh’	*ray ¹	ʐə ⁵⁵	ʐa ³³
‘get’	*ra ³	ʐua ³⁵	---
‘weave’	*rak ^L	ʐuaɿ ⁵⁵	---
‘reap’	*rit ^L	ʐit ⁵⁵	---

- *r- > z-

	<i>PLB</i>	<i>Akha</i>	<i>Naxi Lijiang</i>
‘laugh’	*ray ¹	---	za ³¹ , zæ ²¹
‘get’	*ra ³	za	---
‘weave’	*rak ^L	zàq ^a	---

a. Before other rhymes, Akha has different reflexes, e.g. ‘laugh’ *ray¹ > Ak. í, ‘bone’ *rəw² > Ak. shà yǒ.

- *r- > w- or v-

Sometimes we find labial reflexes, bespeaking a conflation of *r- and *w- (what I have called the “widdle wabbit” or “Elmer Fudd syndwome”⁵⁸):

	<i>PLB</i>	<i>Zaiwa</i>	<i>Xide</i>	<i>Lisu</i>
‘bone’	*rəw ²	ʃǒ ²¹ vui ²¹	vu ²¹ du ³³	---
‘laugh’	*ray ¹	vui ⁵¹	---	---
‘get’	*ra ³	vo ⁵⁵ ju ⁵¹	---	wɑ ⁴⁴
‘weave’	*rak ^L	voɿ ²¹	---	---

58. Elmer Fudd is a cartoon character incapable of pronouncing [r], known primarily for his hostility to Bugs Bunny, to whom he refers as “that wascally wabbit”.

A further development of *r- > w- > Ø before *-a also occurs, *e.g.* in Hani/Akha:

‘laugh’ *ray¹ Hani Lüchun w⁵⁵, Hani Mojiang u³³ ɿ⁵⁵, Akha í

There is considerable evidence to indicate that at least one type of PTB *r- must have had a “uvular” articulation (like that, *e.g.* of Parisian French). In several subgroups of TB (Lolo-Burmese, Karenic, Naga) the reflexes of initial *r- include the voiced velar fricative /ɣ/:

- *r- > ɣ-

Lolo-Burmese

	<i>PLB</i>	<i>Loloish</i>
‘water’	*rəy ¹	Yi Nanjian ɣw ⁵⁵ , Lahu ɣì, Mile ɣa ³³ , Mojiang ɣɛ ²¹
‘bone’	*rəw ²	Lahu ɣô, Langsu (Maru) ʃô ³³ ɣuk ⁵⁵ , Nanhua ɣw ²¹ ɣa ²¹ , Wuding xw ¹¹ ɣw ³³ , Sani ɣw ¹¹ ɣy ³³
‘laugh’ ^a	*ray ¹	Lahu ɣì, Dafang ɣə ²² , Langsu ɣə ³¹ , Bola ɣəi ⁵⁵ , Wuding ɣɔ ¹¹ , Jinuo ɣw ⁴²
‘get’	*ra ³	Lahu ɣa ³ , Xide ɣw ²¹ , Weishan ɣa ³³ , Nanhua ɣo ³³ , Wuding ɣu ² , Sani ɣo ³³ , Hani Lüchun ɣa ³³ , Hani Dazhai ɣa ³³ , Dafang ɣu ²¹ , Nanjian ɣa ³³ , Mile ɣo ³³ , Mojiang ɣo ²¹
‘weave’	*rak ^L	Lahu ɣàʔ, Dafang ɣa ¹³ , Langsu ɣoʔ ³¹ , Bola ɣaʔ ³¹ , Hani Lüchun ɣa ³¹ , Gazhuo ɣa ³⁴ , Langsu ɣoʔ ³¹
‘reap’	*ri:t	Lahu ɣèʔ

a. See also Lisu xw⁴¹, with voiceless velar fricative.

Karenic

	<i>PTB</i>	<i>PLB</i>	<i>Karenic</i>
‘Clf. for humans’	---	*ra ²	Pwo ɣa, ɣá; Palaychi ɣá; Sgaw ɣa (<i>cf.</i> Lahu ɣâ)
‘snake’	*s-b-rul	*m-rəy ¹	Pa-o rû; Pwo ɣú, ɣúʔ; Palaychi rù; Sgaw ɣy; Bwe Rù
‘cane / rattan’	*ri(:)m	---	Pa-o rê; Pwo ɣé, ɣéʔ; Palaychi ɣì; Sgaw ɣè
‘count’	*r-tsyəy	*rəy ^{1/3}	Palaychi ɣì-nóq; Sgaw ɣì (<i>cf.</i> WB re, Lahu ɣō)

Although the data is still limited, a couple of Naga languages (Mao, Sema) also seem to have developed voiced velar spirants (written “gh” in Marrison 1967), *e.g.* ‘snake’ Mao

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in°*gho*, Sema apo°*ghū*. Most interestingly, a number of Chin languages (Tiddim, Chinbok, Thado) have gone so far as to “harden” initial **r*- to the velar stop *g*- (although in Lushai it remains *r*-).⁵⁹ Siyin and Ngawn have evolved even further, ending up with the velar nasal ŋ-:

	<i>PTB</i>	<i>Lushai</i>	<i>Tiddim</i>	<i>Siyin</i>
‘bone’	* <i>rus</i>	ruʔ	gùʔ	a-ŋu
‘rain’	* <i>rwa</i>	ruàʔ	gùa	ŋua
‘bamboo’	* <i>r-wa</i>	ruá	gūa	ŋua
‘enemy’	* <i>g-ra:l</i>	ráal	gāal	ŋal
‘six’	* <i>d-k-ruk</i>	rùk	gùk	---
‘snake’	* <i>s-b-ru:l</i>	rúul	gūul	---
‘abdomen / guts’	* <i>ri:l</i>	ríil	gīl	ŋil

In the word for ‘seven’ (PTB **s-nis*), Lushai and the other Chin languages have reflexes that unmistakably point to **s-r*-:

Lushai pa-sarih, Gangte sagih, Hmar pa-sari, Kom Rem sari, Kuki sagi, Lakher sari, Paite sagih, Puiron sari, Thado sagi, Tiddim səgiʔ, Vaiphei sagi .

Elsewhere in Kamarupan we find Meithei taret, Meluri terü, Ntenyi tūghü, Pochury türü, *etc.* However, *STC* refuses to recognize the cognacy of these forms with **s-nis*,⁶⁰ probably because *r* ≠ *n* is not an established variational pattern for TB. Yet in this case a plausible explanation is to hand: no doubt these rhotic forms arose through contamination with the next lower numeral **d-ruk*, where the -*r*- appears by right (*cf. e.g.* Lushai paruk, Meithei taruk, Mikir throk, *etc.*).⁶¹

It appears therefore that there were many competing phonetic variants of **r*- in the TB area, just as there are in modern dialects of, *e.g.* French or Hebrew.

59. See Solnit 1979. Final **r* similarly > -*k* in Tiddim, merging with the reflex of **k*-. See below Ch. 9 (“Final liquids”).

60. *STC* p. 94, lines 1-2. The only form cited there is incorrect (“Lushai səri”), without the final orthographic -*h* (phonemically -ʔ), which is the regular reflex of PTB **s*- (*cf.* also the Gangte, Paite, and Tiddim reflexes). The -*h* appears in Lorrain’s dictionary (p. 405).

61. See JAM 1995b (“Numerals”), §4.2212.

(2) *y-

Evidently, this TB phoneme was frequently pronounced with considerable local friction. In some Kamarupan languages (*e.g.* Garo, Dimasa, Mikir) it became a palatal affricate, while in Lushai it became *z-*.⁶²

	<i>PTB</i>	<i>Lushai</i>	<i>Mikir</i>	<i>Garo</i>	<i>Dimasa</i>
‘fan’	*ya:p	za:p	hi-dʒap	tso	dʒau
‘rat’	*b-yəw	sa-zu	phi-dʒu	---	---
‘liquor’	*yəw	zu	---	tso	dʒu

In Lahu, the /y/ phoneme is strongly fricated before the front vowels /i e/, and in fact functions as the voiced homologue of /š/ in terms of its allophonic realization as [z] before /ɨ/:

$$\text{Lahu: } \left\{ \begin{array}{c} /c/ \\ /ch/ \\ /j/ \\ /š/ \\ /y/ \end{array} \right\} \rightarrow \left\{ \begin{array}{c} [ts] \\ [tsh] \\ [dz] \\ [s] \\ [z] \end{array} \right\} / _____ \mathfrak{t}$$

In other words, Lahu has merged *z and *y in favor of /y/, just as it has merged *s and *š in favor of /š/, with [z] and [s] appearing only as allophones before /ɨ/.

Variation between *r and *y is most common when they appear after a root-initial consonant, *e.g.* *kr- ≈ *ky-, *mr- ≈ *my (see below 3.6.3-3.6.4), but occasionally, if they are preceded by a prefix, they vary even when they are the root-initial consonants, *e.g.* *g-y ≈ *g-r. These are really indistinguishable situations phonetically, regardless of

62. See *STC*, sets #92-94.

3.4.2: Resonants

whether the sequence is etymologically $*C_i + G-$ or $*P + C_i-$. Examples where the resonants are deemed to be the root-initial include:

‘ashamed’	PTB $*g-yak$ (> <i>e.g.</i> Tangkhul Naga <i>kəkhəyak</i> , Jg. <i>kəyàʔ</i> , Lahu <i>yàʔ-tə</i>) [STC #452] \approx $*s-rak$ (> <i>e.g.</i> Bunan <i>šrag</i> , WB <i>hrak</i> , Maru <i>yoʔ</i>) [STC #431]. Although <i>STC</i> treats these as two separately numbered roots, they are cited (p. 34) as an example of “interchange of initials”. Later, when Benedict had altered the reconstruction of #431 to $*śrak$ (<i>STC</i> , n. 304), he asserted (n. 110) that this “minimized the possibility of some relationship with $*g-yak$.” ^a
‘righthand’	PTB $*g-ya$ (> <i>e.g.</i> WT <i>lag-gyas</i> , WB <i>lak-ya</i>) \approx $*g-ra$ (> <i>e.g.</i> Jg. <i>ləkhrá</i> , Garo <i>džak-ra</i> , Dimasa <i>yau-gada</i> (note deltacization)) [STC #98]

a. The two roots are considered allofamic in *TSR* #182. For Chinese comparanda bearing on this problem, see below 8.2(e).

(3) $*w-$

The usual reflex of PTB $*w-$ is *w* or *v*, though a large number of roots show interaction between /*w*/ and the labial stops /*p b*/, especially when the nuclear vowel was $*-a$. These etyma are susceptible of several interpretations, and have been conceived of as true clusters within a single morpheme (*e.g.* $*pwa$) or as sequences of labial stop prefix + root-initial *w-* (*e.g.* $*p-wa$). See below 3.6.1 and 3.6.2.⁶³

There is evidence of a certain amount of variation between /*w*/ and /*r*/, both at the proto-level and within individual daughter languages. Thus, $*w > \gamma$ in many Loloish languages, overlapping with the reflexes of $*r$:

‘snow / frost’ PLB $*wa^2$ > Lahu <i>vâ</i> , but Yi (Nanhua, Mile, Mojjiang) <i>yo</i> ²¹ .
--

Since Lahu does not tolerate the syllables /*vo*/ or /*vu*/, $*w-$ becomes γ in words which develop high back vowels, merging there with the reflex of $*r$:

‘stomach’ ^a PLB $*p-wam^2$ > WB <i>wâm</i> , but Lahu <i>γô-pè</i>

63. Benedict changed his mind several times about the way to reconstruct the initials of these roots, eventually coming down in favor of the cluster analysis (*STC*, n. 78). A full-scale study (JAM 2000a) has just been devoted to this problem, for which an “extrusional” solution was offered.

- a. Extra-LB cognates include: Mk *vam* ‘waist / loin’; Lu. *von-aʃor* ‘have diarrhea’; Lakher *a-vy*, *pa-vy* ‘stomach’; Tamlu *hwum* ‘belly’; Jg. *pù-phām* ‘stomach’; Tangkhul Naga *ā-phur-ā-phām* ‘belly’ < PTB **pʷam*.

In a number of words, Lahu has synchronic *ɣ*-/v- doublets, pointing to an older **r*- \bowtie **w*- hesitation (‘pick up; hold in the hand’ *ɣ̃ʔ* ~ *ṽʔ*; ‘a ring’ *ð-ɣ̃ʔ* ~ *ð-ṽʔ*). Loanwords from Burmese with *w*- are regularly borrowed into Lahu not with *v*-, but with *ɣ*-: ‘doctor’ Bs. *hsəyawùn* > Lh. *šālāyūn*; ‘meeting’ Bs. *sîwêi* > Lh. *šíɣwé*.⁶⁴

In Karenic, **w*- becomes a velar fricative in Pwo, thus merging with reflexes of **r*- (above §1). In Pa-o and Palaychi, on the other hand, **w*- is reflected by *h*-, while Sgaw dialects show variation between *ɣ*- and *h*- :

	<i>PTB</i>	<i>PLB</i>	<i>Karenic</i>
‘stomach’	<i>*pʷik</i>	<i>*ɣ-wik^L</i> ^a	Pa-o <i>hóʔ</i> ; Pwo <i>ɣ̃auʔ</i> , <i>ɣ̃ʔ</i> ; Palaychi <i>hùq</i> ; Sgaw <i>ɣyʔ</i> , <i>hyʔ</i>

a. *TSR* #176.

One very important etymon shows **w*- \bowtie **r*- variation at the PTB level:

‘copula’ PTB **way* \bowtie **ray* ^a

a. This etymology is discussed at length in JAM 1985a (*GSTC*). See below 5.5.7.

(4) *The lateral initial *l-*

(a) **l- and *r-*

**l*- and **r*- are generally kept quite distinct in TB, though Garo has merged them in an interesting way. While final **r* > Garo *-l* (see below Ch. 9), initial **l*- > Garo *r*-:

	<i>PTB</i>	<i>Lushai</i>	<i>Jingpho</i>	<i>Garo</i>	<i>WB</i>
‘road’	<i>*lam</i>	<i>lam</i>	<i>lām</i>	<i>ram</i>	<i>lām</i>
‘stone’	<i>*r-luŋ</i>	<i>luŋ</i>	<i>ñ-lùŋ</i>	<i>roŋ</i>	---
‘penis’	<i>*m-leɣ</i>	---	<i>mənè</i>	<i>ri-gaŋ</i>	<i>lî</i>

64. See JAM 1973/1982:9 (GL).

3.4.2: Resonants

The situation in Meithei is much less clear. *STC* (p. 33) notes “*r- ~ l-* fluctuation in Meithei” without giving any examples, but a more detailed look is instructive. In general, initial *l-* seems to predominate in Meithei, with PTB **l-* usually well maintained as such:

	<i>PTB</i>	<i>Meithei</i>		<i>PTB</i>	<i>Meithei</i>
‘bow’	<i>*d-ləy</i>	<i>li-rung</i>	‘leaf / tea’ ^a	<i>*s-la</i>	<i>la</i>
‘earth’	<i>*m-ləy</i>	<i>lei</i>	‘lick / tongue’	<i>*m-lyak</i>	<i>lek</i>
‘fathom’	<i>*la:m</i>	<i>ləm</i>	‘road’	<i>*lam</i>	<i>lam-bi</i>
‘field’	<i>*low</i>	<i>lou</i>	‘tongue’	<i>*s-lay</i>	<i>ləy</i>

- a. Cf. Magar *hla*; Dhimal *hla-ba*; Mikir *lo*. LB forms meaning ‘tea’ seem also to descend from this etymon, e.g. Lalo *là-phiq*, WB *lə-phak* < PLB **la¹*. The second element in the Lalo and WB forms reflect an independant etymon for ‘leaf’ **r-pak*, below 8.2(1).

There are also several examples of PTB **r- > Meithei l-*:

	<i>PTB</i>	<i>Meithei</i>
‘cane / rattan’	<i>*rey</i>	<i>li</i>
‘enemy’	<i>*g-ra:l</i>	<i>lal</i>
‘god’ ^a	<i>*g-ray</i>	<i>lai</i>
‘stand’	<i>*g-r(y)ap</i>	<i>lep</i>

- a. Cf. JAM 1985a (*GSTC*):61-62.

But it would be an oversimplification to say that Meithei has merged **l-* and **r-* in favor of *l-* (*i.e.* to claim that Meithei is the mirror-image of Garo in this respect), since there are also a few examples of PTB **l- > Meithei r-*, and of PTB **r-* remaining as Meithei *r-*:

	<i>PTB</i>	<i>Meithei</i>
‘four’	<i>*b-ləy</i>	<i>mari</i>
‘flea’	<i>*s-ləy</i>	<i>hui-ri^a</i>
‘bone’	<i>*k/s-rus</i>	<i>saru</i>
‘gums’	<i>*r-ni-l</i>	<i>ya-ri^b</i>

- a. The first syllable means ‘dog’; cf. Lushai *ui-hli*.
b. The first syllable means ‘tooth’. This example illustrates the survival of the originally prefixal *r-* by “preemption” of the nasal root-initial. See below 4.5.3.

In fact, the r-/l- distinction is quite unstable in Meithei, with many words showing variation (either in a single data-source or from one source to another):

‘speak / language’	lon	~	ron
‘Meithei language’	meithei- <i>lon</i>	~	meithei- <i>ron</i>
‘hungry’	cak <i>lam-bə</i> , <i>lem-ba</i>	~	a° <i>ram-ba</i>
‘cane / rattan’	li ‘cane, rattan’ ^a	~	thou- <i>ri</i> ‘rope’
‘book’	lai- <i>lik</i>	~	lai- <i>rik</i>
‘saw (n.)’ ^b	ho- <i>lay</i>	~	ho- <i>ray</i>

a. See above.

b. Both ‘book’ and ‘saw’ are loanwords < Indo-Aryan. Cf. Pali *lekha* ‘book’ > Old Mon *lekh*, Shan *lik*, Lahu *lî*, etc., and the IA root *lōhī-* ‘iron object’, *lōhōpaskara-* ‘iron tools’ (Turner 1966:650).

At the level of comparative TB, there are a few roots that show *l- ≠ *r- variation that cannot be explained away, including ‘heavy’ (PTB *s-*ləy-t* ≠ *s-*rəy-t* [STC #95]); ‘neck’ (PTB *liŋ ≠ *riŋ [STC #96], and ‘buy / barter’ (PTB *lay [STC #283] ≠ *b-*rey* [STC #293] ≠ *r-*ley* [STC p.64]⁶⁵).

(b) *l- and *n-

There are occasional instances of l-/n- interchange in TB. In the most transparent cases, we can find an explanation in terms of phenomena external to TB. Thus the two Lahu pronunciations of the loanword *lá-hô?* ~ *ná-hô?* ‘conical bamboo hat; coolie hat’ undoubtedly reflect a similar alternation in the presumable source language, SW Mandarin.⁶⁶

More interestingly, at least two prime TB etyma (‘penis’; ‘stone’) show evidence of a secondary n- arising from l-, probably through the influence of a prefix:

‘penis’ PTB *m-*ley* > WT *mdže*^a, WB *lî*, but Jingpho *mənè*, Meithei *mənu*, Lahu *nī*.

a. For Tibetan affricates developing from lateral initials before front vowels see §c, below.

65. The second and third of these variants are both claimed (STC, n. 207) to be “separate but related loans” from Austro-Tai *mbaŋi, which somehow both got conflated with the native PTB root *lay.

66. The Chinese source of this loan has not yet been identified.

3.4.2: Resonants

The nasal prefix apparently caused the root-initial l- to nasalize (Jingpho, Meithei), after which the original prefix dropped altogether (Lahu). This amounts to saying that the prefix “preempted” the root-initial in Lahu. (See below 4.5.3).

‘stone’ PTB *r-luŋ > Mikir arlong, Jg. ñ-lùŋ, but Meithei nung, Lotha olung ~ onung, Ntenyi alung ~ anong

Jingpho often has, as here, a syllabic n- as the reflex of prefixal *r- in noun-roots (see below 4.4.1). We might suspect that something similar happened to this root in Meithei, after which the initial lateral was preempted by the new prefix, *i.e.* *r-luŋ > *n-luŋ > nung). The synchronic variation in Lotha and Ntenyi (Naga group) might have a similar explanation: perhaps the lateral had not been completely driven out before it was “protected” by a new vocalic prefix.

In final position, both liquids *r and *l were replaced in some languages by final -n (see below Ch. 9).

(c) *l and *d(ž)/-*t(š)-

Much more important than l-/n- interchange is the relationship among *l-, palatal fricates, and dental stops. WT regularly develops fricates from PTB *l- in syllables which reconstruct with medial -y- or the rhyme *-əy:

	<i>PTB</i>	<i>WT</i>		<i>PTB</i>	<i>WT</i>
‘bow’ ^a	*d/s-ləy	g’zu	‘heavy’	*s-ləy	Itsí-ba, ldži-ba
‘flea’	*s-ləy	ldži-ba, ḥdži-ba	‘tongue’	*s-lyə	ltše
‘four’ ^b	*b-ləy	b’zi	‘wind’	*g-ləy	rdzi

a. The interesting vowel reflexes in this set of words are discussed below 5.3.2.

b. Many Naga languages have developed dental stops in this root, including Angami da, die; Chokri da, Kezhama pedi, Liangmai and Maram madai, Mao padei, Mzieme m(a)dai, Nruanghmei padei, Sema bidhi, Tangkhul mati, and Zeme medai.

At the comparative TB level there are a large number of roots that show interplay between l- and dental stops:⁶⁷

‘arrow’ PTB *b/m-la (> *e.g.* Bahing bla, Tangkhul məla) [STC #449] ≠
PTB *m-da (> *e.g.* WT mda, Jingpho (Hkauri dialect) niŋda)^a

‘straight / flat / full’	PTB *dyam \approx *tyam [<i>STC</i> #226 and #227] ^b (> <i>e.g.</i> Batang dyam ‘be full; be straight’; WT ldem-pa ‘straight’, ltam-pa ‘full’, tham-pa ~ them-pa ‘full’; Nung ədam ‘flat; a plain’) \approx PTB *lyap ‘flat’ [<i>STC</i> #212] (> <i>e.g.</i> WT leb-mo ‘flat’, gleb-pa ‘flatten’, WB lyap ‘very thin’) ^c
‘good’	PTB *l(y)ak \approx *l(y)aŋ ^d (> <i>e.g.</i> WT legs-pa ~ lags-pa ‘good; elegant; beautiful’ and yag-po ~ ɣdʒag-po ‘good’ \approx PTB *m-d(y)ak (> <i>e.g.</i> WB tak-tak ~ tyak-tyak ‘very’; Lahu dàʔ ‘good, beautiful’ ~ qha-dèʔ ‘well, properly’; Lalo diŋ; Tiddim Chin tak ‘right, correct’)
‘hand’	The widespread PTB root *l(y)ak (> <i>e.g.</i> WT lag-pa, WB lak) is reflected by an allofam *dyak in Proto-Bodo-Garo (> <i>e.g.</i> Garo dʒak, Dimasa yau), and by forms with d-, y-, or ts- in Northern Naga (Konyak) languages (<i>e.g.</i> Tablung yak, Banpara tsak, Namsang dak, Moshang yok). Other related forms attest to palatalization in this word-family, <i>e.g.</i> PLB *ʔ-gyak ^H ‘cubit’ [JAM 1972a (<i>TSR</i>) #100], Lushai zak (< *yak) ‘armpit’, WB gyak-kəli ‘armpit’. ^e

a. *m-da is reluctantly treated as a distinct etymon from *b-la in *STC*, n. 313.

b. See JAM 1988a (“Universal semantics and allofamic identification”) for the reasoning behind combining these two distinct sets in *STC* into a single etymology. See also n. 95 below.

c. I am positing alternation between final homorganic stop and nasal in this root. See below 12.5.

d. This root was first set up in JAM 1990b, § 3.21, where several solid Chinese cognates are also adduced. See 8.2(1e).

e. *STC* (n. 109) unnecessarily splits these forms off from the others by setting up a separate root *g-yak.

The puzzling Jingpho cognate lətáʔ ‘hand’ can be explained as the result of a development like *lak > *lyak > *dyak, after which a new prefix lə- was added, by analogy with, *e.g.* ləgō ‘foot’ (many other Jingpho nouns and verbs referring to the limbs or actions with the limbs have the lə- prefix, undoubtedly a reduction of the original morpheme *lak).⁶⁸

‘lick / tongue’ A “pan-allofamic formula”^a of roughly the following structure may be set up for this complex TB word-family, for which *STC* sets up at least four variants (*m-lay ~ *s-lay \approx *m-lyak ~ *s-lyak \approx *s-lyam \approx *s-lyaw):

a. See JAM 1978a (*VSTB*), passim.

67. The whole question of l-/d- interchange in TB, as well as parallel phenomena in Indo-European, have been discussed in JAM 1990b (“The linguist’s dilemma”), still unpublished.

3.4.2: Resonants

				-y
s-				-w
m-	l	(y)	a	-t
(g-)				-k
				-m

Reflexes with dental stops include Jingpho *mətáʔ* ‘lick’ (< *m-d(y)ak < *m-lyak) and WT *ldag* ‘lick’ (both ignored in *STC*). The latter is a co-allofam within WT of *lće* ‘tongue’ (< *s-lay) and *ldžags* ‘tongue (respectful)’ < *s-lyak.

Interestingly enough, an etymon with this meaning displays *l* \approx *d* variation in Indo-European: PIE **dn̥ghū-* ‘tongue’ > Proto-Germanic **tungōn*, but > Latin *lingua*.⁶⁹

‘moon’ This etymon was originally reconstructed **s-la* [*STC* #144] (*cf.* WT *zla-ba*, Nung *səla*, WB *la*), with the remark that the dental stops in Jingpho *šəta* and Kadu *səda* “cannot be explained”; Lushai *thla* and Meithei *tha* were assigned to another allofam **g-la*.^a Later (n. 137), *STC* revised this reconstruction to **s-gla* (by reconceiving the alternate prefixes as cooccurring in linear order), claiming that this better explained the Jingpho form. However, the development **sgl* > **skl* > *št* does not seem particularly natural, and one could just as well imagine a delatization of the lateral initial, perhaps via the palatalizing influence of the **s-* prefix^b: **s-la* > **s-lya* > **s-dya* > *šəta* (with regression of the palatal element to the prefix, since Jingpho lacks a *dy-* or *ty-* cluster). This etymon is one of those where the Manö dialect of Karenni (= Red Karen = Kayah) has developed a dental stop from a **lateral* (Manö *ta* ‘moon’). Other examples include Manö *ta* ‘leaf’ < **s-la*, *ti* ‘four’ < **b-ləy*, and *pti* ‘tongue’ < PKaren **ple* (*STC*, p. 137).

‘navel’ *STC* sets up two separate roots for ‘navel / center’, **laɾy* [*STC* #287] (> *e.g.* Lushai *laai* ‘middle, center; navel’, Tiddim *laai* ‘middle’) and **s-tay* [*STC* #299] (> *e.g.* WT *lte-ba*, Jg. *šədāi* ‘navel’, Garo *ste* ‘abdomen’). In light of all that has been said, these two roots should certainly be considered co-allofams of one and the same etymon.^c

a. Lushai regularly developed *thl-* or *tl-* from **velar-plus-l* clusters. See below 3.6.4.1(2). *Cf.* also Nocte *ʔda*.

b. *Cf.* the development of secondary yod in Lepcha through the influence of prefixal **s-*, pointed out long ago in Benedict 1943. See below 4.2.1.

68. A different explanation for this Jingpho form is offered in *STC*, notes 109 and 137.

- c. The name of the Central Chin language known as “Lai” /laay/, spoken in such towns as Hakha and Falaam, means ‘central; middle’, and is evidently cognate to the name of the Southern Chin language called “Daai” (see Hartmann 2001a, 2001b). Coincidentally, the Kadai language of Hainan known in Chinese as 黎語 *Lí-yǔ* is called *Hlai* by its native speakers, a name evidently cognate to the ethnonym *T(h)ai*.

Many of the above etyma have excellent Chinese cognates, though the exact nature of TB/OC liquid correspondences is still highly controversial. *STC* maintains that both PST **r-* and **l-* merged to Old Chinese *l-*, with an alternative development to OC (d)ᵢ- “under conditions of palatalization (not fully worked out)” (n. 458, p. 171). For Sinologists like Pulleyblank, Schüssler, Starostin, and Baxter, both liquids must be reconstructed for OC:

<i>PST/PTB</i>	<i>OC (GSR; STC)</i>	<i>OC (Baxter)</i>	<i>MC (Baxter)</i>
<i>*(C-)r</i>	<i>*l</i>	<i>*C-r</i>	<i>l</i>
		<i>*r</i>	<i>j</i>
<i>*l</i>	<i>*l</i>	<i>*l</i>	<i>d</i>
<i>*ly</i>	<i>*(d)ᵢ</i>	<i>*(l)j</i>	<i>j</i>
<i>*d</i>	<i>*dʰ</i>	<i>*d</i>	<i>d</i>

In fact, however, the last word has yet to be said on this subject, and I have identified several etyma where PTB **(C-)l-* seems to correspond to Baxter’s **(C-)r-*, including ‘fall’, ‘good’, ‘neck’, ‘salty’, ‘strength / arm’, and ‘young man / husband’.⁷⁰

(5) *Secondary complex resonants*

As with the voiceless nasals, voiceless resonants (*hl*, *hr*, *hw*, *hy*) in TB languages generally derive from **resonants* preceded by the **s-* or **ʔ-* prefix. At the level of PLB, we must reconstruct three resonantal series (**plain*, **preglottalized*, and **prefixed by a voiceless velar*), e.g. **l*, **ʔ-l*, **k-l*,⁷¹ mostly on the basis of tonal behavior in originally stopped syllables: stopped syllables with **plain resonantal initials* yield syllables in the Loloish **LOW**-stopped tone (e.g. PLB **lak* ‘hand’ > Lahu *làʔ*); **preglottalized* syllables of this type (deriving from **s-* or **ʔ-*) provoke the Lahu high-rising tone and initial *h-* or *f-*⁷² (e.g. PLB **ʔ-lak^L* ‘youth / youngster’ > Lahu *há*); while **velar-prefixed resonants* lead to the **HIGH** tone class (e.g. PLB **k-rak* ‘chicken’ > Lahu *ȳâʔ*).

69. Other well-known IE examples include PIE **dakru-* ‘tears’ > PGmc **taxru-*, but > Latin *lacrima*. Whereas in Indo-European the direction of sporadic change seems to be **d- > l-*, in TB it is the opposite tendency **l(y)- > d-* that seems to be dominant. See JAM 1990b:1-3.

70. See JAM 1995a (“Palatal suffixes”):50-53.

71. Cf. *TSR*, chart on p. 24, and pp. 25-6, 64-70. See below 4.4.

72. Lahu *h-* descends from a variety of complex resonants, including **/ hr, hy, hl, ʔr, ʔy, ʔl /*, while **hw* and **ʔ-w* > Lahu *f-*. See JAM 1969 “Lahu and PLB”; 1970:27 (GD); 1979 (QV).

3.5: Laryngeals

3.5 *Laryngeals* ⁷³

Two laryngeal initials may be set up for PTB, *h- and *ʔ-/Ø-. It is not possible to distinguish between *zero-initial and prevocalic *glottal stop at the PTB stage.⁷⁴ While their Indo-European counterparts might be more famous, laryngeals are no less interesting in TB, where they participate in a wide variety of prosodic phenomena within and across syllables, including *tonogenesis*, *glottal dissimilation*, *rhinoglottophilia*, and *laryngeokinesis*.⁷⁵ By their very nature laryngeals are much more active and unstable than buccal consonants. They can arise apparently *ex nihilo* and disappear just as easily. They can exert their influence on immediately adjacent segments or on relatively distant ones. They seem to be relatable synchronically and diachronically to all other classes of non-obstruents: semivowels, liquids, nasals, and spirants. Thus, h- may be involved in vowel nasalization (rhinoglottophilia); it is often related historically to voiceless fricatives like s, f, and ɸ; and it can be the reflex of plain, voiceless, or glottalized liquids or semivowels. See *Figure 7*.

73. For a more detailed study of laryngeal initials in TB, see JAM 1997a. Conventionally, we reconstruct PTB *ʔ- rather than *Ø-.

74. Many TB languages (*e.g.* Lai Chin) have an automatic glottal-stop onset in syllables with no other prevocalic consonant (as in German), but many (*e.g.* Lahu) do not, and are subject to fusions of vowel-initial morphemes with a previous open or unchecked syllable.

75. For discussions of these phenomena, see JAM 1970 (glottal dissimilation), 1973a (tonogenesis), 1975b (rhinoglottophilia), 1978b (laryngeokinesis).

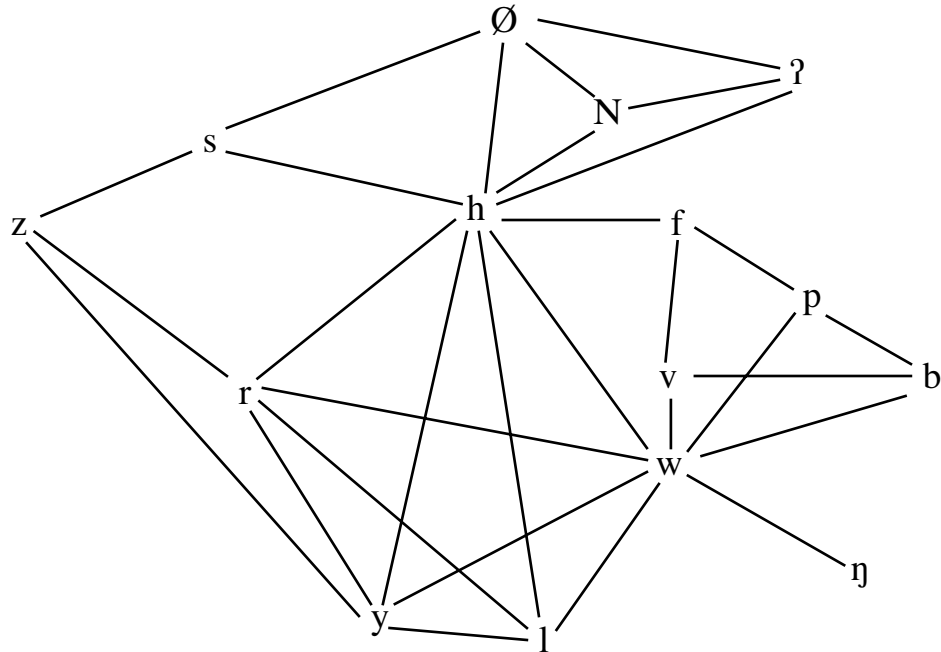


FIGURE 7. Interrelationships among laryngeals, sonorants, and spirants

Roots reconstructed with the initial sequence **hw-* are susceptible of several essentially equivalent interpretations. The most neutral of these is to regard the sequence as root-initial **h-* plus bilabial glide *-w-*. Occasionally there is some point in considering it to be a unitary labio-laryngeal proto-phoneme **h^w-* (cf. **b^war* ≠ **h^war* ‘throw / throw away / divorce’). In at least one case it is not clear whether to reconstruct PTB **hw-* or a presumably earlier sequence of prefixal **s-* plus bilabial root-initial (**hwam* or **s-wam* ‘dare’).

3.5: Laryngeals

(1) Secondary and variable laryngeals

Many occurrences of **h-** or **ʔ-/Ø-** in TB languages can be shown to be secondary:

(a) *s- > **h-** / **ʔ-** / **Ø-**

In a number of Kamarupan languages, **h-** or **zero-initial** is a regular reflex of PTB *s- :

	<i>PTB</i>	<i>Meithei</i>	<i>Gallong</i>	<i>Mising (Miri)</i>	<i>Padam (Abor)</i>
‘awaken’	*m-sow	həw	---	---	---
‘fat / grease’	*sa:w	məhau	au	u	---
‘liver’	*m-sin	---	---	---	a-in
‘three’	*g-sum	a-hum	---	a-um	---

(b) *ʔ- / **h-** + *R / L / Y* > **h-**

In many Loloish languages (*e.g.* Lahu), Proto-Loloish or PLB complex resonants (*i.e.* prefixed, aspirated, or glottalized liquids and semivowels) evolve into **h-** (or occasionally zero):

	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>
‘eight’	*ʔ-rit ^L	hrac	hí
‘four’	*ʔ-ləy ²	lê	ô
‘put to sleep’	*s-yip > PL ʔyip ^L	sip	í
‘spirit’	*hla ³	hla’	ha
‘stand’	*ʔ-rap ^L	rap	hú
‘swidden’ ^a	*hya ¹	ya	hε

a. *I.e.* ‘non-irrigated upland rice field’ (as opposed to ‘irrigated lowland paddy field’, for which no word is attested in PLB/PTB).

Cf. also ‘trousers’ (so far attested only in Loloish): PL *ʔ-la² > Sani hla⁵⁵, Hani hlò, Lahu hā.

(c) $*\emptyset > h- / f-$

Occasionally an *h-* (or *f-*) arises out of nothing, especially before the vowel *-u*, as in certain reflexes of the Lolo-Burmese root for ‘egg’:

<i>PLB</i> :	$*(\text{ʔ})u^3$
<i>LAHU</i> :	u^{33}
<i>LISU (CENTRAL)</i> :	hu^3
<i>LISU (NUJIANG)</i> :	$e^{55}fu^{44}$

(d) $*h- / \text{ʔ-} \approx *stop$

A large (and growing) number of TB etyma have been discovered which show allofamic variation between laryngeal and buccal initials:

- $h \approx$ velar stop

‘earth’ $*ha \approx *r-ka$; ‘gag / choke’ $*hak \approx *kak$; ‘hide’ $*hway \approx *kwa(:)y$; ‘roll’ $*hi:l \approx *ki:l$; ‘steal’ $*hu \approx *r-kəw$

- $\text{ʔ-} / \emptyset- \approx$ velar stop ⁷⁶

‘bend / return / back’ $*ʔuk \approx *kuk$; ‘hatch / cover’ $*ʔup \approx *gup$; ‘mute / stupid’ $*ʔa \approx *ʔ-ga^2$ (PLB); ‘needle’ $*ʔap \approx *ga:p$; ‘pillow / block’ $*ʔum \approx *kum$; ‘shoot’ $*ʔap \approx *ga:p$; ‘spin / spider’ $*waŋ \approx *kaŋ$ ⁷⁷

- $\text{ʔ-} / \emptyset- \approx$ labial or dental stop

‘lay eggs / incubate’ $*p^wum$ (but Chepang $ʔum$, via ϕum)⁷⁸; ‘sharp / sharpen’ WT *bdar* ‘whet’, Tagin *ar* ‘sharp’

(2) *Laryngeals and sound symbolism*

Laryngeals are minimal sounds in terms of occlusion. There is something about them (including the fact that they can be articulated by many animals other than humans) that makes them especially appropriate for imitating animal cries, other sounds in nature, or inarticulate, strangled vocalizations by humans. There are convincing cognate sets in TB with $*laryngeal$ onsets for etyma with the following meanings: ‘bark (v.)’; ‘belch’;

76. These examples are slightly different from the case of $*k-yim \approx *k-yum$ ‘house’, where the velar element is best regarded as prefixal. Cf. 7.2(1b) below.

77. For the velar-initialed allofam of ‘spider’, see below 7.1(3).

78. This etymon actually illustrates a widespread variational pattern in TB, between initial labial stops and *w-*, which affects at least a dozen other excellent etyma. See n. 63 and below 3.6.1(2).

3.5: Laryngeals

‘crow (n.)’; ‘dumb’; ‘gag’; ‘hawk’ (n.); ‘hiccup’; ‘howl’; ‘murmur’; ‘sneeze’; ‘snore’; ‘owl’; ‘whistle’; ‘yawn’, *etc.* However, sound symbolism is involved in only a small fraction of the laryngeal-initial roots that can be set up for PTB.

(3) *Primary laryngeals*

Etyma with primary laryngeal initials (especially *h-) have been considered *rarae aves* in TB: “TB initial *h- is rare, and can be reconstructed for only a few roots of restricted range, with only *hap ‘bite, snap’ (#89) represented in more than two main divisions...” (*STC*, p. 33)

Using the powerful STEDT database, it has not been unduly difficult to uncover 50 new roots with laryngeal initials (many of them attested in several subgroups of TB), including 24 with *h-, 8 with *hw-, 9 with *hy-, 3 with *(ʔ)a-, 2 with *(ʔ)o-, and 4 with *(ʔ)u-.⁷⁹ One particularly good example, with a plausible Chinese cognate, will be presented here:

PTB *hu ‘rear / raise / nourish’ ^a	
<i>Loloish</i>	Lahu hu; Luquan ʔhy ¹¹ , Lisu hḥ ³³ , Xide hu ⁵⁵ (< PLB *hu ³)
<i>Abor-Miri-Dafla</i>	Abor-Miri u
<i>Qiangic</i>	Qiang (Mawo) χu

a. Cf. also Chinese 愛 ‘good, like, love’ OC *xūʔ. This OC reconstruction is by WHB, suggested as cognate during his stay at STEDT in the spring of 1995. The root is reconstructed as OC χḡg in *GSR* #1044a-e. See JAM 1997a:38.

Totally unexpected was the discovery that an unusually large number of etyma with *laryngeal initials also have liquid finals. Given the relative rarity of TB etyma in *-r and *-l, it was astounding to notice that about 30 such roots may be reconstructed with laryngeal initials (*e.g.* ‘fowl / chicken / quail’ *ʔar; ‘distribute’ *hor; ‘fall’ *hol; ‘hand’ *ʔul; ‘heat up / burn’ *hul ⌘ *hwal; ‘run / go by vehicle’ *hyar; ‘skin’ *ʔul; ‘sweet’ *hul ⌘ *hil; ‘throat’ *ʔol ⌘ *ʔor, *etc.*).⁸⁰

79. See JAM 1997a. These may now be added to the 32 roots with such initials already reconstructed in *STC*, including 7 with *h-, 5 with *hw-, 1 with *hy-, 5 with *a-, 2 with *e-, 4 with *i-, 3 with *o- and 5 with *u-.

80. See JAM 1997a:47-8, and below Ch. 9.

3.6 Clusters of initial consonant plus glide

The canonical slot “G” comprises the four resonants (semivowels and liquids): *-w-, *-y-, *-r-, and *-l-. The following table lists all clusters of initial consonant plus glide which appear in *STC*:

pw	tw	tsw		kw	
py	ty	tsy [=tś]		ky	
pr	<tr>		<tśr>	kr	
pl				kl	
bw	dw	dzw	<dźw>	gw	
by	dy	dzy [=dź]		gy	
br	<dr>			gr	
bl				gl	
		sw			hw
		sy [=ś]			hy
		<sr>	<śr>		
		(zw)			
		zy [=ź]			
		<(zr)>			
		<zł>	<źr>		
mw	nw			ɳw	
my	ny			ɳy	
mr				ɳr	
ml					
	lw	rw	yw		
	ly	ry			

TABLE 5. PTB resonantal clusters

In general, the published version of *STC* recognizes many more clusters than the original manuscript version. In the original the following clusters are explicitly rejected for PTB:

**/ dr- dl- tr- tl- sr- sl- zl- / .⁸¹

Of these seven, four are explicitly added to the inventory in the published version: *dr-, *tr-, *sr-, *zl-. The cluster *sl- is deemed to have “probably occurred in the ancestral TB

3.6.1: The structural place of glides in the ST/TB syllable

speech, especially in view of *zl-, but [this] has not yet been demonstrated” (n. 135). The remaining two **/ tɫ dɫ / remain as foreign to PTB as to English. We will return to these problematic consonant sequences in the section on liquid clusters, below 3.6.4.

3.6.1 *The structural place of glides in the ST/TB syllable*⁸²

The glides pose particularly intricate problems of analysis:

(1) *One phoneme or two? C_i or C_i + G?*

Should complex proto-phones like *affricates be considered underlyingly as unitary proto-phonemes or as clusters of stop-plus-glide?

(a) As indicated above (3.3), Benedict changed his mind about the status of his original clusters of *dentals-plus-y, */ sy zy tsy tshy dzy / , reinterpreting them as unitary palatal proto-phonemes */ ś ź ts̥ tsh̥ d̥ / , thus introducing simplifications in some respects, but asymmetries and complications in others (see below 3.6.3).

(b) We have considered arguments for setting up a unitary series of *labiovelars, at least at certain proto-subgroup levels (above 3.2(4)), as opposed to clusters of *velars-plus-w (see below 3.6.2).

(2) *Intrinsic clusters or prefix plus root-initial ? C_i + G or P + C_i?*

It is a truism of phonotactics that certain complex consonant combinations can never occur within a morpheme, but only across morpheme boundary, and that languages differ greatly with respect to their permissible intramorphemic sequences. Careful English speakers can produce a monstrous final cluster like the -ksθs in *sixths*, but only because it is underlyingly broken up in their minds into -ks-θ-s, with two suffixal morphemes after the final cluster of the root. While Russian speakers have no problem with intramorphemic /šč/, as in /šči/ ‘cabbage soup’ or /boršč/ ‘beet soup’, English speakers can only manage this sequence across morpheme boundary, as in *fish chowder* .

81. *STC*, p. 42. At that time Benedict considered these consonant sequences not as intrinsic clusters (*i.e.* occurring within a morpheme), but as combinations of prefix plus initial consonant. See below 3.6.4.

82. See below 4.5.

Under favorable circumstances it is possible in TB to distinguish neatly between a cluster of initial consonant plus glide and a sequence of prefix plus resonantal root-initial:

	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>	<i>Lisu</i>
‘weave’	*rak ^L	rak	gãʔ	yɛ ³¹ ‘loom’
‘crossbow’	*krak ^H	—	khâʔ	tʃhɛ ³⁵
‘chicken’	*k-rak ^H	krak	gãʔ	ɑ ⁵⁵ ɣɑ ⁵⁵

The word for ‘weave’ [TSR #192] has the simple resonantal initial *r-, which regularly becomes Lahu ɣ- (written “g̃” in my transcription), and the syllable is naturally in the Loloish **LOW**-stopped class (realized in Lahu by the low-stopped tone / ʔ /) because of the **voiced* initial. The root for ‘crossbow’ [TSR #9] begins with a true cluster of **velar-plus-r*, regularly yielding the Lahu front-velar kh-⁸³ and a Lisu palatal affricate, and belongs to the Loloish **HIGH**-stopped class (realized in Lahu by the high-stopped tone / ^ʔ /) because of the **voicelessness* of the velar. The etymon for ‘chicken’ [TSR #184] is distinct from the other two. Here the k- in the WB form is clearly prefixal,⁸⁴ and the Lahu initial g̃- still reflects the true root-initial *r-. However, the tone of this word is **HIGH**-stopped, because of the former presence of the voiceless prefix.⁸⁵

At least a dozen excellent etyma show variation between labial stop initials and initial w-.⁸⁶ Here too Benedict vacillated in his interpretation. While decisively rejecting the possibility of setting up a special series of initial consonants (e.g. ***p^w*) to account for this, he first considered the variation to be due to “prefixed elements, present or discarded [which] have exerted an influence on the initial”, e.g. **p-w-* (STC, p. 23). Later, however, he changed his mind (largely on the basis of Chinese evidence), and reinterpreted these etyma as containing intrinsic clusters of the form **pw-* (STC, notes 78, 463, 487). In any event, nothing could be shakier than a putative contrast between **p-w-* and **pw-* at the Proto-Sino-Tibetan level. Whatever the “original” situation, the possibility of *metanalysis*

83. As opposed to PLB simple *velars, which give Lahu postvelars / q qh /; see 3.6.4.1 below.

84. It is the famous “velar animal-prefix”, about which more below 4.4.4.

85. See TSR: 68-70.

86. These include ‘axe’ *r-p^wa, ‘bamboo / cane’ *p^wa, ‘belly’ *p^wam, ‘flower’ *b^wat, ‘hide (v.)’ *s-p^wak, ‘hoof’ *k/s-p^wa, ‘leech’ *k-r-p^wat, ‘lefthand’ *b^way, ‘palm / sole’ *r-p^wak, ‘pig’ *p^wak, ‘sow / winnow’ *b^war, ‘spindle’ *p^wan, ‘patch / sew’ *p^wa, etc. The superscript / ^w / is meant to indicate that the labial semivowel is a secondary outgrowth of the stop, a development which was especially frequent before the vowel *a. An analogous phenomenon is the Japanese treatment of loans from English with /kæ-/ , which regularly develop an extrusional palatal glide -y- before the vowel (e.g. *kyābetsu* < *cabbage*, *kyāppu* < *cap*, *kyātasutorofui* < *catastrophe*).

3.6.1: The structural place of glides in the ST/TB syllable

is always present in situations of this kind, so that a prefix can easily be reinterpreted as a root initial, and vice versa.⁸⁷

Even such a widespread and basic root as ***kwəy** ‘dog’ (*STC* #159) has undergone reanalysis in various branches of the family. There is no doubt that the PTB root began with a velar stop followed by a labial element (*cf.* WB **khwê**, Jg. **gwì**, WT **khyi** ⁸⁸). In fact, as we have seen [above 3.2(4)] so closely was the velar bound to the semivowel that some languages treated the sequence like a unitary labiovelar phoneme ***kʷ**- (> Lahu **phî**). Contrariwise, other languages treated the velar element as a prefix,⁸⁹ and separated it off from the rest of the word. The Chin languages generally dropped the velar entirely (*e.g.* Lushai **ui**, Tiddim **ʔwi**, Lai **ʔuy-tsəw**), while forms like **thwi** in Karenic represent a “reprefixation” after the loss of the original velar.⁹⁰

For more on various prefixal evolutionary scenarios, see below 4.5.

(3) *Part of the initial or part of the rhyme?*

The semivowels **-w-** and **-y-** (and to a lesser extent the liquids **-r-** and **-l-**) because of their dual vocalic/consonantal nature, are capable of intimate phonetic interaction both with the syllable’s initial consonant and its nuclear vowel. They are intrinsically “Janus-headed”, looking backwards and forwards at the same time,⁹¹ as a few examples from Lolo-Burmese will quickly illustrate:

	<i>PTB</i>	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>
‘bamboo’	* g-p^wa	* wa²	wâ	vâ
‘pig’	* p^wak	* wak^L	wak	vàʔ
‘hide (v.t.)’	* s-wak	* ʔ-wak^L	hwak	fá
‘emerge’	* s-twak	* ʔ-twak^H	thwak	tôʔ
‘dog’	* kwəy	* k^wəy²	khwê	phî

87. In JAM 2000a, an explanation is offered in terms of “extrusion”, *i.e.* the perseveration of a phonetic feature to the point where it oversteps the bounds of a single segment, so that it creates a second segment to which it imparts a portion of its phonetic substance.

88. PTB ***kw-** > WT **khy-** is a regular development. WT lacks initial **kw-** or **khw-**.

89. No doubt identifying it with the “velar animal prefix”, below 4.4.4.

90. This is clearly explained in *STC*, p. 133: “Karen **thwi** ... in the face of (other) TB ***kwi**y is puzzling, but can be explained as follows: ***kwi**y > ***k-wi**y [kəwiy], with the initial interpreted as a prefix, whence ***t-wi**y > **thwi** through the typically Karen process of alternating prefixes, *e.g.* Sgaw **kəθi** ~ **təθi** ‘tobacco’.”

91. For a (rather polemic) discussion of this point, see JAM 1982a (Sprachgefühl), pp. 19 ff and n. 70 (pp. 50-1).

	<i>PTB</i>	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>
‘bee’	*bya	*bya ²	pyâ	pê
‘eye’	*s-myak	*s-myak ^H	myak	mêʔ
‘boil / cook (v.t.)’	*s-glak	*ʔ-glak ^L	khyak	cá

In ‘bamboo’, ‘pig’, and ‘hide’, the *w*- functions as the PLB initial consonant, and the regular vocalic developments of *-a > Lahu -a and *-ak > Lahu -aʔ are unaffected; but in ‘emerge’, the *-w*- functions as part of the rhyme, and the Lahu vowel is backed to -ɔ. In ‘bee’ and ‘eye’, the *-y*- is also functioning as part of the rhyme, fronting the Lahu vowel to -ɛ. In ‘boil / cook’, the *-l- was evidently treated as part of the initial consonant cluster, and the Lahu vowel remains -a. The lack of -ʔ in the Lahu reflexes of ‘hide’ and ‘boil’, as well as the high-rising tone / ˈ / of these syllables, are due to “glottal dissimilation”. See below 4.2.2.

3.6.2 Consonant combinations with *-w*-

The PTB *w*-clusters set up in *STC* are tabulated below:

p w	t w	t sw		k w
b w	d w	(d zw)	< d ʒw>	g w
		s w		h w
		(z w)		
m w	n w			(ŋ w)
	l w	r w	(y w)	

TABLE 6. PTB *w*-clusters

The cluster ***ŋw** is parenthesized in the *STC* chart (pp. 38-9), though it appears in two etyma, including the important ***ŋwa** ‘cattle’ (#215). Cluster ***zw** is parenthesized in the chart, and in fact no roots are reconstructed with this initial. One root with ***dzw** is reconstructed for PLB, and “by inference” for PTB (***dzwan** ‘hawk’ [n. 162]). The cluster ***yw** appears in a couple of roots (***ywar** ‘sell’; perhaps a loan from Austro-Tai) and ***ywi** ‘follow’, which I have shown to have a good Sino-Tibetan etymology.⁹² **d**ʒw (formerly **dzyw**) is set up for ‘hang down / sag’ (#242).

92. See JAM 1992 (“Following the marrow”), where this etymon is reconstructed as PST ***s-yuy**.

3.6.2: Consonant combinations with -w-

Some TB languages have restrictions on medial -w- in terms of the following vowel. Thus in Written Burmese and Mzieme (Angamoid Branch of Naga)⁹³, although -w- occurs freely after initials at all points of articulation, it occurs only before -a and -e, so that -wa and -we are best regarded as unitary rhymes. On the other hand, the Dayang dialect of Pumi has relatively few restrictions on the occurrence of -w-, either in terms of the initial or the following vowel: -w- occurs freely after all of this dialect's many consonantal positions except labials, and before all vowels except back rounded / u o ou /.⁹⁴ See

tw	stw	t̥w	tsw	t̥ɕw		ɕtɕw	kw	qw	χqw
[thw]	sthw	t̥hw	tshw	t̥ɕhw	tʃhw	ɕtɕhw	khw	qhw	χqhw
[dw?]	zdw	d̥w	dzw	d̥ɕw	dʒw	ɕd̥ɕw	gw	[Gw]	[ɣGw]
sw	sɸw			ɕw	ʃw	ɕɸw	xw		
				ɕw			ɣw		
lw				rw					
ɬw									

TABLE 7. Labial clusters in Pumi Dayang

Table 7.

In some Dayang words with high front vowel, the glide [w] is realized as a non-syllabic rounded glide [ɰ], similar to that in French *nuit* [nɰi]:

	<i>Dayang</i>	<i>PTB</i>
‘liver’	tswín [tsɰin]	*m-sin
‘handspan’	tɕhwí [tɕhɰi]	*m-twa
‘pull / drag’	tswín [tsɰin]	
‘shoe’	tswí [tsɰi]	

93. See Namkung, ed. 1996:309-10.

94. However, the Dayang vowel /-o/ is automatically pronounced with labialization of the preceding consonant, e.g. /ro/ ‘chicken’ [rʷo]. This is in fact the chief auditory clue for distinguishing the rhymes /-o/ and /-ou/, since labialization of the initial does *not* take place before /-ou/. There are also a number of words where w- occurs as the initial before the vowel /-o/, e.g. wǒ ‘tiger’, wò-mí ‘guest’, wó ‘mouse’. These words could be analyzed as having zero-initial, but there seems little point to this, since it complicates the syllable canon, and initial w- occurs freely before other vowels as well, including /-ou/. See JAM 1998.

3.6.3 Consonant combinations with -y-

The PTB y- clusters set up in *STC* are tabulated here:

py	(ty)	tsy	[=tś]	ky	
by	(dy)	(dzy)	[=dź]	gy	
		sy	[=ś]		(hy)
		(zy)	[=ź]		
my	ny			ɲy	
	ly	ry			

TABLE 8. PTB palatal clusters

(1) ty- and dy-

These palatalized dentals are parenthesized in the *STC* chart (p. 37), though there are several roots reconstructed with each, including *tyak (pp. 20, 52, 122) ‘very; real’, *tyaŋ (#225) ‘black; dark’, *dyał ~ *tyal (p. 52) ‘village’, *dyam ‘straight’ (#227) and *dyam ~ *tyam (#226) ‘full’.⁹⁵ To account for the unusual Bodo-Garo correspondence between Garo dź- and Dimasa y-, initial *dy- is set up at the Proto-Barish level, in turn deriving from PTB *gl- or *g-l-; e.g. ‘hand / arm’ Garo dźak, Dimasa yau < PBarish *dyak < PTB *g-lak (*STC*, p. 52).

(2) hy-

hy is also parenthesized in the chart, and is only reconstructed in the single root (*hyak ‘scratch’ #230). Nine additional roots with this initial are reconstructed in JAM 1997a: *hyak ‘back’; *h(y)an ‘curry / vegetable dish’; *hyak ‘flesh’; *hyen ‘hear / listen; look / see’; *hyop ≈ *hyom ‘jump’; *hyam ‘mat’; *hyar ‘run / ride / go by vehicle’; *hyal ‘take / keep’; *hyu ≈ *huy ‘whistle’.

(3) Palatalized fricatives

As noted above (3.3), the initials */ tsy dzy sy zy / in the original MS version of *STC* have been reinterpreted as unit phonemes in the published version: */ tś dź ś ź / . Both zy- and dzy- are parenthesized in the chart (p. 37); but four roots were finally reconstructed

95. These last two items (*STC* #227 and #226) have been shown to be one and the same etymon (JAM 1988a “Straight, flat, full”) See above, 3.4.2(4c).

3.6.3: Consonant combinations with -y-

with **ž*-/zy-⁹⁶ and no fewer than five for **dž*-/dzy-: **dža:l* ‘far’, **džim* ‘sweet’, **džon* ‘ride’, **džuk* ‘vulva’, and **džwal* ‘hang down / sag’.

This rephonemicization has the effect of removing several etyma from the “double glide” category (see below 3.6.5). Thus instead of reconstructions with double glide *-yw-, e.g. **tsywap* ‘lung’ (#239), **tsywar* ‘cut / chop’ (#240), **sywar* ‘flow / pour’ (#241), **dzywal* ‘hang down / sag’ (#242), we have **tšwap*, **tšwar*, **šwar*, **džwal*. On the other hand, Benedict let stand several cases of *-yw- reconstructions after other types of initials (e.g. **sywəy* ‘rub / scrape / shave’ #180; **kywəy* ‘yam’ #238), and in fact introduced a number of new ones: **skywar* (formerly **s-kyur*) ‘sour’ #42; **pywak* ‘sweep’ #174 (formerly **pyak*); **s-hywəy* (formerly **s-hwi*y) ‘blood’ #222.⁹⁷

Arguments against this reanalysis are certainly possible. Since the labial, dental and velar stops all cluster with -y-, why shouldn’t the indubitably unitary dental affricates and fricatives /s z ts dz/ also cluster with -y- ? Furthermore these dental fricatives⁹⁸ all cluster with -w-, so why shouldn’t they also cluster with -y- ? Another objection would be that Benedict never considers the possibility of treating *dental consonant-plus-r* combinations as unit phonemes, i.e. */sr- zr- tr- dr- / are not treated as unitary retroflexes like */*ʂ ʐ tʂ dʐ* / .⁹⁹

(4) *my- and n(y-)

A number of languages have interesting reflexes of *labial nasal-plus-y clusters. In many Loloish languages, as well as in some Tibetan dialects, Nungish, and several Qiangic languages, there is a strong tendency for *my- clusters to develop into dental nasals (ny- or simply n-):

‘eye’ PTB *s-myak ≈ *s-mik (> e.g. WT mig, Jg. myiʔ, WB myak, Lahu mêt?)
--

96. These include **žəy* ‘small / minute’; **žraŋ* ‘uncle’; **žum* ‘use’; and **zya:w* ≈ **zyu(w)* ‘rot / digest’ (the latter inadvertently left as **zy-* in the published version, pp. 54, 209).

97. In addition, the revised version of *STC* sets up three new proto-clusters of palatals-plus-r: **śr-*, **žr-*, **tśr-*. These are also tantamount to double glides in terms of the old system, viz. */*syr zyr tsyr* / or */*sry zry tsry* / . In any case the evidence for these new clusters is scanty, and other analyses are equally plausible. See 3.6.4.2 and 3.6.5, below.

98. For the term “fricatives” see above, n. 27.

99. See above 3.2(2).

But compare the following:¹⁰⁰

<i>Tibetan</i>	Dege (sDe-dGe) $\eta i^{?53}$, Xiahe $h\eta\acute{o}k$, Zeku $\gamma\eta\acute{o}k$
<i>Qiangic</i> ^a	Pumi (Taoba) $\eta\epsilon^{53}$, rGyalrong (Suomo) $t\acute{o}m\eta ak$, Zhaba (ZMYYC's 扎巴, of Daofo County) $\eta\epsilon^{55}$, Guiqiong $\eta\alpha^{35}$, Shixing $\eta\epsilon^{33}ji^{55}$
<i>Loloish</i> ^b	Xide $\eta\alpha^{33}dz\eta^{21}$, Dafang $na^{33}du^{33}$, Mile (Axi) $ne^{33}sa^{21}$, Mojiang $ne^{33}se^{33}$, Naxi (Yongning) $\eta\alpha^{3\eta}l\eta^{33}$, Sani ne^{44}
<i>Nungish</i>	Nungish shows variation between <i>m-</i> and <i>n-</i> in this and other roots: Nung $m\epsilon \sim n\epsilon$ 'eye', $mit \sim nit$ 'mind' (< PTB * <i>m-yit</i>).

a. Other Qiangic languages retain the labial nasal, e.g. Pumi (Jinghua) $mi\alpha^{55}$, Pumi (Dayang) $my\acute{a}n$, Ergong mau , Muya mi^{53} , Ersu $mi\alpha^{55}$.

b. Most Loloish languages retain the labial nasal, e.g. Nanjian $mi^{33}ce^{21}$, Nanhua $me^{33}du^{21}$, Lisu $mie^{44}su^{31}$, Lahu $m\acute{e}^{2-}\acute{s}i$, Naxi (Lijiang) $mi\alpha^{3\eta}l\eta^{33}$, Hani (Biyue) $m\acute{a}^{33}ts\eta^{33}$, Hani (Dazhai) mja^{33} .

'monkey' PTB **myok* ^a > PLB **myok*^L (TSR #133)

- a. This etymon is reconstructed as **mruc* or **m-ruc* in *STC*, n. 314, despite the fact that all of the reflexes but one (Bahing *moro*) have -y- instead of -r-: WB *myauk* (but Intha dialect *mrok* ~ *mlok*), Bhramu *p\auk*, Chepang *yuk*, Digaro *t\myu*, Gurung *timyu* (the latter two with reprefixation).

The proto-labiality of the nasal in this root is well-established, but palatal or dental nasals appear in at least one Qiangic language (Guiqiong $\eta\alpha^{35}$; as opposed to Ersu mi^{33}), and in a number of Lolo-Burmese languages:

<i>Loloish</i> ^a	Xide $a^{33}\eta u^{55}$, Dafang $\eta\alpha^{13}$, Mile (Axi) $A^{33}nu^{55}$, Mojiang $A^{55}nu^{21}$ /vs. e.g. Nanjian $a^{55}mo^{21}$, Nanhua $A^{55}mi\alpha^{21}$, Lisu $t\eta\epsilon^{35}mi^{41}$, Naxi (Yongning) $zi^{31}mu^{55}$, Hani Biyue $a^{55}m\eta^{31}$, Hani Dazhai $a^{55}mju^{31}$, Nusu (Bijiang) ηmiu^{55}
<i>Burmish</i> ^b	Achang $\eta u^{?55}$ (vs. Zaiwa [Atsi] $mju^{?21}$, Langsu [Maru] $mjauk$)

a. These forms are from *ZMYYC* p. 498. *TSR* (JAM 1972a) cites a Nasu (Gao Huanian 1958) doublet $mo^{34} \sim nu^{44}$, and Luquan (Ma Xueliang 1949) $ju^{?55}$.

b. A velar nasal has developed in this root in a Nungish language: Anong $\eta i^{31}sa^{31}$.

Evidently the distinction between *my-* and *ny-* has been hard to maintain in many TB languages, with much variation even among dialects of a single language.

100. The following data (except for the Pumi Dayang, Lahu, and Sani forms) are from *ZMYYC* p. 608. See also *STC*, n. 93.

3.6.3: Consonant combinations with -y-

(5) **by and d- / dl- / ɖ-*

A number of Loloish languages have undergone backing of **palatalized labial stops* to dental or retroflex stops, or to affricates (dental, retroflexed, or even lateral).

‘bee’ PTB **bya* [STC #177] (> *e.g.* WT *bya* ‘bird, fowl’) ≠ **bra* (> *e.g.* Angami *pera*) > PLB **bya*² (> *e.g.* WB *pyâ* ‘bee’, Lahu *pê*, Lolopho *byo*, Lisu *byæ*, Nanjian *ba*²¹, Hani (Dazhai) *bja*³¹si⁵⁵, Jinuo *pjɔ*³³)

But compare:

Sani *dlá-mà* (Ma Xueliang 1951; cited in *TSR* p. 41), Dafang *ɖu*³³, Mile (Axi) *ɖo*²¹, Mojiang *do*³³.

According to *ZMYYC* (p.523), both Nanhua and Lisu show dialectal variation in this root between a palatalized labial and a dental or retroflex initial: Nanhua *bio*²¹ ɕA²¹ ~ *do*²¹ ɕA²¹; Lisu *biɛ*³¹ ~ *dʒɛ*²¹.

‘fly (v.)’ PTB **byam*^a > PLB **byam*¹ (> *e.g.* WB *pyam*, Lahu *pò*, Nanjian *by*⁵⁵, Mojiang *be*²¹ (but compare Mojiang *do*³³ ‘bee’, above), Naxi (Lijiang) *mbi*³¹, Hani (Biyue) *pe*⁵⁵, Hani (Dazhai) *bjɔ*⁵⁵, Haoni (Hani Shuikui) *pu*⁵⁵)

But compare:

Sani (Ma Xueliang 1951) *tɰ*^b, Dafang *ɖɰ*²¹, Mile (Axi) *tɰ*³³, Naxi (Yongning) *dze*¹³

a. This etymon is misreconstructed as **pyam* in *STC* p. 206.

b. The voicing discrepancy between Sani *dlá-mà* ‘bee’ and *tɰ* ‘fly’ is perfectly regular. The Sani reflexes of the PLB **voiced* series are different according to the proto-tone: PLB Tone *1 words with **voiced* initials (like ‘fly’) > Sani voiceless unaspirates, while Tone *2 words with **voiced* initials (like ‘bee’) retain their voicing in Sani. See above 3.1 and JAM 1979 (QV), p. 27.

Again, according to *ZMYYC* (p. 1153), both Nanhua and Lisu show dialectal variation in this root between a palatalized labial and a dental or retroflex initial: Nanhua *biu*³³ ~ *ɖu*³³; Lisu *bi*³³ ~ *dʒɛ*³³. Also showing shift from the labial position are Achang *tɕam* and Anong *dɛm*⁵⁵.

3.6.4 Liquid clusters

STC sets up the following liquid clusters for PTB (items added in the notes to the revised version are in angle brackets):

pr	<tr>	<tśr>	kr
pl			kl
br	<dr>		gr
bl			gl
		<sr>	<śr>
		<(zr)>	
		<zl>	<źr>
mr			nr
ml			

TABLE 9. PTB liquid clusters.

In modern TB languages, medial *-r- or *-l- is frequently fricativized to -ʁ-, as in Achang (Burmish group), *e.g.* ‘pus’ PLB *m-blen¹ > Achang pʁəŋ⁵⁵; dialects of Jingpho spoken in China have a similar fricative -r- (written with “-ʒ-” in Dai Qingxia *et al.*, 1983), *e.g.* ‘daughter-in-law’ PTB *krwəy > Jg. khʒi³³; while Pumi Dayang has developed two series of labial affricates from *labial-plus-liquid clusters, /pʁ, pʁh, bʁ/¹⁰¹ and /pʃ, pʃh, bʃ/ (see below 3.6.4.1(3)). Many similar examples may be found in Written Tibetan, where liquid consonant groups typically develop into fricatives or affricates, *e.g.* ‘four’ *b-ləy > WT bʒi; ‘flea’ *s-ləy > WT ldʒi. Other TB languages, *e.g.* Pwo and Sgaw Karen, have developed velar fricatives from *-r-: ‘grind’ *kri:t > Pa-o khrýt, Pwo ɣaiʔ ~ ɣèʔ, Sgaw ɣìʔ; ‘otter’ *sram > Palaychi shróq, Sgaw shɣó.

101. One example of a newly reconstructed PTB root with such a Dayang reflex: ‘ring (for finger)’ PTB > Lahu làʔ-pē, Pumi Dayang ʁə bʁéŋ (the first syllables of both forms mean ‘hand’).

3.6.4.1: Reflexes of consonant-plus-liquid in particular subgroups

The phonetic interrelationships among these sounds may be schematized as in Figure 8:

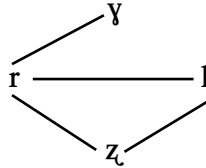


FIGURE 8. Liquid relationships.

3.6.4.1 Reflexes of consonant-plus-liquid in particular subgroups

(1) Lolo-Burmese

Written Burmese is by no means the most useful language for establishing the distinction among medial *-r-, *-l-, and *-y-. Even though -l- does appear in a number of words in Inscriptional (or “Old”) Burmese (ca. 1100-1500), it corresponds sometimes to PTB *-r- as well as *-l-, so that “the Burmese evidence is not of critical value in making this distinction” (STC p.41, n.134):

(a) PTB *-l- > OB -l(y)- > WB -y-

	<i>PTB</i>	<i>Inscriptional Burmese</i>	<i>Written Burmese</i>
‘stone’	*r-luŋ	klauk	kyauk
‘free’	*g-lwat	klwat	kywat
‘tiger’ ^a	*k-la	klyâ	kyâ
‘fall’	*kla	khlya’	khya’
‘cooked’ (v.i.)	*glak	klyak	kyak
‘cook / boil’ (v.t.)	*klak	khlyak	khyak

a. Undoubtedly an old loan from Mon Khmer; see above 4.4.4 (3).

(b) *PTB *-l- > OB -l- > WB -r-*

	<i>PTB</i>	<i>Inscriptional Burmese</i>	<i>Written Burmese</i>
‘white’	*plu	phlu	phru
‘grandchild’	*b-ləy	mlîy	mrê
‘earth’	*mləy	mle (Tavoyan dialect)	mre

(c) *PTB *-r- > OB -l- > WB -r-*

	<i>PTB</i>	<i>Inscriptional Burmese</i>	<i>Written Burmese</i>
‘six’ ^a	*d-kruk	khlauk	krauk
‘foot’	*krəy	khley	khre

a. This etymon, as well as ‘sew’ and ‘tight / tense; long / distended’ has WB velar + r where WT has dental + r. See below 4.4.5, 4.4.6, 4.5.1, 4.5.2, 7.1(3), 8.4(4).

As far as developments from OB to WB are concerned, although there is a general tendency for OB *-l- to become WB -y- after velars, as in (a) above, and for OB *-l- to become WB -r- after labials, as in (b), there are numerous exceptions, as in (c), with many words showing vacillation in different inscriptions between alternate spellings with -l-, -ly-, and -r-.^{102/103}

Relatively solid evidence for medial *-l- is available from Southern Loloish languages like Bisu and Mpi. Bisu actually preserves medial *-l- as -l- in some cases,¹⁰⁴ while Mpi

102. See Nishi Yoshio 1976 (“Medials in Burmese”).

103. One interesting exception, where WB velar + r comes from PLB/PTB *velar + l, is ‘between / have a space between’: PLB *ʔ-gla² > WB krâ ‘have a space between, be apart’ ≠ khrâ ‘be between; divide, be different’, Lahu kâ ‘space between’ (e.g. mēʔ-te-kâ ‘space between the eyes’); but cf. Jinuo *khlo*⁴⁴lo⁴⁴ ‘between’, Tavoyan (dial. of Burmese) klà, which establish the PLB medial as *-l-. There is a phonosemantically similar root *ka:l ‘space between’ in Kamarupan, where the l is postvocalic (> Tiddim ka:l, Lushai ka:r-a, Sangtam kala); this is an excellent match with Chinese 間 ‘crevice, interstice; interval, space between’, OC kân (GSR #191a-c). See below 9.3.4.

104. E.g. Bisu mûŋ-blâp ‘lightning’ (cf. Jingpho myiŋ-hprâp). See JAM 1979 (QV), note 39.

3.6.4.1: Reflexes of consonant-plus-liquid in particular subgroups

has different reflexes for *-r- and *-l- after velar initials, and probably after labials as well.¹⁰⁵ See Table 10.

<i>PLB</i>	<i>*P</i>	<i>*PR</i>	<i>*PL</i>	<i>*PY</i>	<i>*T</i>	<i>*TS</i>	<i>*C</i>	<i>*KY</i>	<i>*KL</i>	<i>*KR</i>	<i>*K</i>	<i>*KW</i>
<i>LAHU</i>	p	p	p	p	t	c	c	c	k	k	q	p
<i>MPi</i>	p	p	py	py	t	t	c	c	ky	k	k	k
<i>WB</i>	p	pr	pr	py	t	c = ts	c = ts	ky	kr/ky	kr	k	k ^w

TABLE 10. Lolo-Burmese consonantal developments

***KY** was preserved as such in WB, but became palatal affricates in both Lahu and Mpi. In Lahu, ***KL** and ***KR** merged to yield K, either liquid medial serving to protect the velar initial from backing to Q. In WB, ***KR** and ***KL** were confused at an early date, yielding KR and/or KY. In Mpi, however, the two liquid glides have quite distinct reflexes: *-r- dropped without trace, but *-l- became Mpi -y- (written with “-j-” in Srinuan 1976):

	<i>PLB</i>	<i>WB</i>	<i>Mpi</i>	<i>Lahu</i>
‘waist’	*gyuk ^L	kyauk	ʔoʔ ² -tʃoʔ ²	cɔʔ
‘horn’	*krəw ¹	khruɪ	ŋ ² khur ⁶	khɔ
‘hear’	*gla ²	krâ	kjo ¹	kâ
‘cold’	*ʔ-klak ^H ≠ *m-klak ^H	krak	kja ³	kâʔ

The root for ‘cold’ shows glide variation at the PTB level (*cf.* WT *khyags-pa* ‘frozen; ice; frost, cold’), as well as alternation of homorganic final stop and nasal. Reflecting the nasal-finalised allofam are WT *granj-ba* ‘cold’, Trung *glanj* ‘cold’, Mikir *paŋ-kleŋ* ‘freeze, congeal’, Lahu *gɔ̀* ‘cold’ (the voiced Lahu initial reflects a prenasalized PLB allofam

105. Bisu has actually merged *-r- and *-l- to -l-; this is the opposite development from, *e.g.* Jingpho, where *-r- and *-l- have largely merged to -r-. For a case where Jingpho has apparently developed -y- from *-l-, see ‘kidney’, below.

***m-glaŋ**¹), as well as Chinese 涼 **gliang** / **liang** [*GSR* #755-l].¹⁰⁶ Thus the “pan-allofamic formula” for this word-family at the PTB/PST level is :

<i>P</i>	<i>C_i</i>	<i>G</i>	<i>V</i>	<i>C_f</i>
ʔ-	k			k
		l		
		r	a	
		y		ŋ
N-	g			

‘kidney’ A form of particular interest is Mpi **ŋ⁴kjo⁵** ‘kidney’, which is not to be related to WAIST (above, despite the WB form **kyauk-kap** ‘kidney’), but rather to Jingpho **ñ-khyūn**, now reconstructible as PTB ***m-glun**. An excellent Chinese comparandum to this etymon is 腎 OC **ḍiēn** [*GSR* #368h]. Cf. also 賁 OC **ḍiən** ‘small of the back, reins’ [*GSR* #540h-i]. See below 7.5(8).

Analogous to the development of ***KR** > Mpi **K-**, clusters of the type ***PR** become simple labials in Mpi:

	<i>PLB</i>	<i>WB</i>	<i>Mpi</i>	<i>Lahu</i>
‘untie’ a	* prəy ¹	phre	phu⁵	phɿ
‘spleen’ b	* ʔ-pray ¹	---	ʔoʔ ² phe⁶	ḍ-pe

a. Cf. also Lalo **phá**.

b. Cf. Angami Naga **u-pri**. This root was reconstructed (perhaps mistakenly) as PTB ***p(l)ay** in JAM 1978a (*VSTB*):217, on the basis of forms like Mikir **pli-ha**. Again there is an excellent Chinese comparandum 脾 OC **b’iæg** [*GSR* #874h]. See below 5.5.7.

106. See *TSR* #99 and *STC*: n. 124 and #120.

3.6.4.1: Reflexes of consonant-plus-liquid in particular subgroups

On the other hand, both *PY and *PL become Mpi palatalized labials pj-/phj-:

	<i>PLB</i>	<i>WB</i>	<i>Mpi</i>	<i>Lahu</i>
‘fly (v.)’	*byam ¹	pyam	pjɿŋ ⁵	pò
‘white / silver’ ^a	*plu ¹	phru	phju ⁶	phu
‘full / plenty’ ^b	*ʔ-bliŋ ¹	prañ/phrañ	ʔo ² -pju ³	pɛ
‘pus’ ^c	*m-blen ¹	prañ	pju ⁶ ~ pju ⁶	bè
‘porcupine’	*ʔ-blu ¹	phru	ha ⁴ phju ⁶	fâʔ-pu

a. Cf. *STC* pp. 60-1, note 194.

b. Cf. *STC* #142. The Lh. cognate means ‘abundant/plenty’; Lh. bî ‘full’ is apparently not related.

c. This root is reconstructed as *pren ~ *bren in *STC* p. 143. The Tavoy Burmese form plè lends further support to the reconstruction with -l-.

The preglottalized PLB initial in the root for ‘porcupine’ is recoverable on the basis of the correspondence of the WB aspirate to the Lahu plain stop, as well as by the Lahu mid-tone.¹⁰⁷ Many more Lolo-Burmese forms are cited in *TBL* #318; several of these have constricted vowels that also reflect the *glottal prefix: (*Burmish*) Zaiwa (Atsi) pju⁵¹, Langsu (Maru) pju³¹, Bola pju⁵⁵; (*Loloish*) Nanhua pu³⁵, Lisu hẽ³⁵ pu³⁵. Other LB forms include Achang phzo⁵⁵ (note the fricative quality of the glide), Xide pu³³ nɔ³³, Hani xu³³ phju⁵⁵, Jinuo xo⁴² phu³¹, Naxi py²¹ ly³³. This root, which does not appear in *STC*, can in fact be set up for TB as a whole (PTB *s-blu), since it is also attested in Meithei (sa-bu), as well as in Qiangic (*TBL, ibid.*): Pumi (Lanping) pɣə⁵⁵, Pumi Jiulong pɣɿ³⁵, Shixing pɛ⁵³, Namuyi pu³¹, Lusu ɣæ³⁵ phzu⁵³. The first syllables of the Meithei and Lusu forms mean “animal” (< PTB *sya or *śa); this is undoubtedly the source of the preglottalization in LB.¹⁰⁸

(2) Chin

The reflexes of liquid clusters in Tiddim and Lushai, two key languages of the Chin group, were studied in detail in Solnit (1979). Tiddim Chin has lost all trace of medial *-r-

107. For the basic rules of correspondence for Lolo-Burmese initials and tones see Burling 1967/68 and JAM 1969 (“Lahu and PLB”). Since in non-stopped syllables it is not possible to demonstrate a voicing contrast in stops after the PLB glottal prefix (cf. the neutralization of voicing in English stops after initial s-), this root could equally well be reconstructed *ʔ-plu at the PLB level. In stopped syllables, however, a voicing contrast after the glottal prefix can be recovered on tonal grounds, as explained in JAM 1972a (*TSR*).

108. For more about this “animal prefix” see below 4.4.4. Another animal name reconstructible with a PLB *preglottalized initial is ‘frog’: PLB *ʔ-pa² or *ʔ-ba² (WB phâ, Lahu pā), with direct evidence of the original animal prefix provided by forms like WT sbal (PTB *s-bal).

and *-l- after both velar and labial initials, but keeps the original point of articulation of the stop intact. In Lushai, medial *-l- is preserved as such, but both *velar and *labial stops are dentalized in this environment, resulting in lateral affricates /tʃ tʃh/; similarly, the *velar/*labial contrast is neutralized before medial *-r-, resulting in clusters of dental-plus-r /tr thr/ (sometimes transcribed as retroflex stops /ʈ ʈh/):

<i>Proto-Kuki-Naga</i>	<i>Tiddim</i>	<i>Lushai</i>	<i>Example</i>	<i>Tiddim</i> ^a	<i>Lushai</i>
*g	k	k	‘shoot’	kaap	kaap
*k	x	kh	‘bitter’	xaa	khaa
*gl	k	tl	‘fall’ (v.i.)	kiat ^b	tlaak
*kl	x	thl	‘moon’	xaa	thlaa
*bl ^c	p	tl	‘fall’ (v.i.)	puuk	tluuk
*pl	ph	thl	‘fell’ (v.t.)	phuuk	thluuk
*gr	k	tr / ʈ	‘weep’	kap	trap ^d
*kr	x	thr / ʈh	‘grow’	xaŋ	thraŋ
[*br	p	tr / ʈ	(examples lacking)] ^e		
*pr	ph	thr / ʈh	‘good’	phaa	thraa
*sr / *śr	h	hr	‘brave’	haaŋ	hraŋ

- a. It is interesting to note that the Tiddim reflexes of *g- and *k- parallel Germanic developments according to Grimm’s Law: *i.e.* the *voiced stop devoices, while the *voiceless stop becomes a fricative.
- b. This form is from Henderson 1965:151.
- c. Another good example of PKN *bl- is ‘run’, below 5.3.2(2).
- d. Lai Chin has identical reflexes to Lushai, *e.g.* PTB *gru:l ‘rope’ > WB krûi, Lai truul; ‘pass over / overtake / be overbearing’ PTB *grol > WB krâw, Lai trol; ‘fall (of fruit or leaf) / cause to fall’ PTB *gril & *kril > WB krwe & khrwe, Lai tril & thril; ‘chest (of body)’ PTB *g-raŋ > WB raŋ, Lai traŋ; ‘dwarf / stunted’ PTB *s-grum > WB kyum, Lai trum, Lahu chɔ-kɛ-ne. Thanks to KVB for these examples. See below 7.2(1), 9.3.2(1,5), 9.3.3(3).
- e. But see below 4.5.1 for a discussion of *b-raŋ & *g-raŋ ‘chest / breast’.

(3) *Qiangic*

As noted above in 3.2(2), the Dayang dialect of Pumi (JAM 1998a) has a full series of retroflex stops, which do not occur in other known Pumi dialects, even the closely related Jinghua and Taoba, and which usually derive from TB clusters of *velars-plus-liquid, *e.g.*:

	<i>PTB</i>	<i>Dayang</i>	<i>Jinghua</i>	<i>Taoba</i>	<i>Lahu</i>
‘horn’	*krəw	ʈhú	tʂhy ⁵⁵	tʂhū ⁵³	khɔ
‘hawk / eagle’	*glaŋ	ʈɔ̃	tʂp ¹³	tʂɛ ³⁵	

3.6.4.2: Rare or dubious liquid clusters

Although the details are still far from clear, **labial-plus-liquid* clusters have developed into two series of Dayang labial affricates, one retroflex and one palatal. The palatal series is often pronounced with an epenthetic stop between the labial and fricative elements, a bit of redundancy for which the recording linguist is grateful. The offglides in the aspirated and voiced members of the retroflex series /pɕh bɕ/ are ɕ and ɕ̥ respectively; in the plain member of this series, the offglide varies between [ɕ̥] and a fricative *r*-sound similar to Czech /ř/:

pɕ [př]	pɕ [ptɕ]
pɕh	pɕh [ptɕh] ^a
bɕ	bɕ [bdɕ]

a. There is at least one excellent example of TB **pw-* > Dayang p(t)ɕh- : PTB **p^wak* > Dayang ptɕhɔ̃ ‘pig’.

These true clusters are to be distinguished from secondary sequences of consonant-plus-*r* that result from the optional elision of schwa from the minor syllable of a sesquisyllabic Dayang word:

[pr]	‘foodstuff’	prǎ ~ pǎrǎ
[br]	‘snake’	brǎ ~ bǎrǎ
[bl]	‘lip’	xyùN-bló ~ xyùN-bǎló
[vr]	‘scar’	vrǎ-tɕhǔ ~ vǎrǎ-tɕhǔ

In these cases the schwa returns in careful speech.

3.6.4.2 *Rare or dubious liquid clusters*

(1) **tr-* and **dr-*

Altering his initial view that dental stops before -*r*- were prefixal, Benedict ended up reconstructing ‘weave’ (#17) as **trak* (to accommodate, *e.g.* both WT *hthag* and WB *rak*) and ‘fireplace’ (#18) as **trap* (as the prototype of *e.g.* both WT *thab* and Jg. *rap*). Feeling a residual uneasiness about these reconstructions, he characterized both of these etyma as “loans from Austro-Tai” (notes 68, 69).¹⁰⁹

109. See *STC*: n. 135, p.42. I personally consider both of these to be good PTB roots: for ‘weave’ *cf.* *e.g.* Lahu *gǎ?* (*TSR* #192); for ‘fireplace / wall’ *cf.* Lahu *gǎ?* (*JAM* 1988b:1132). ‘Weave’ actually has several additional well-attested allofams, including **wak* and **k-rak*, as well as a solid Chinese cognate 織 (*GSR* #920f). See below 8.2(1e).

(2) **sr-, *zr-, and *zl-*

Similarly, the sibilant onsets in these combinations were originally treated as prefixal, but later as the first element in morpheme-internal clusters, the best example being ‘otter’, originally reconstructed as **s-ram* (#438), but subsequently revised to **sram*, on the basis of forms like Lushai *sa-hram*.¹¹⁰

Three of these etyma in **sr-* have good-looking Chinese cognates, including two kinship terms:¹¹¹

		<i>OC</i>	<i>GSR</i>	<i>PTB</i>
‘aunt / elder sister / elder relative’	婁	<i>sriju</i> ‘older sister’	133e	<i>*sru(w)</i> ‘aunt’
‘clan / family name’	姓	<i>sriəŋg</i> ‘clan, family, family name’	812q-r	<i>*sriŋ</i> ‘sister’ (<i>i.e.</i> carrier of matriclan name)
‘squirrel / weasel’	狴 鼯	<i>sriəŋg</i>	812t 812u	<i>*sreŋ</i>

However, Chinese is of no help in deciding the prefixal vs. cluster analysis of these TB etyma, since OC **sr-* also corresponds to TB roots where the **s-* is clearly prefixal:

		<i>OC</i>	<i>GSR</i>	<i>PTB</i>
‘pass the night’	宿	<i>*sriôk</i>	1029a-b	<i>*s-r(y)ak</i>
‘sharp’	銛	<i>*sriam</i>	621a	<i>*s-ryam</i>

110. See *STC*, notes 302, 304. The labial initial in the WB cognate *phyam* has never been satisfactorily explained. For an attempt to do so in terms of contact from Mon-Khmer, see JAM (1989d, “The otter and the jackal”).

111. See below 5.3.3(1), 7.5(6), 7.5(10), 8.2(e), and 7.5(1). For discussion of the putative Chinese cognates to PTB sibilant clusters see *STC* n. 457, pp. 170-1. Benedict, as always, sticks closely to Karlgren’s *GSR* reconstructions, occasionally modifying them slightly to suit his purposes.

3.6.4.2: Rare or dubious liquid clusters

The voiced clusters **zr-* and **zl-* are each reconstructed for a single root, the former with a putative Chinese cognate:

‘worm’	PTB <i>*zril</i> (WT <i>sril</i> ~ <i>srin</i> , Thado <i>til</i> , WB <i>ti</i> ; see <i>STC</i> , n. 121); cf. 蟪 OC <i>*d̪iən</i> [<i>GSR</i> #450j] ‘earthworm’ ⌘ 蟪 <i>d̪iən</i> [<i>GSR</i> #148p] ‘ <i>id.</i> ’ ⌘ 蛄 [<i>GSR</i> #371c] <i>d̪iən</i> ‘ <i>id.</i> ’ (see below 9.3.4)
‘round’	Formerly reconstructed <i>*s-lum</i> (#143), later changed to <i>*zlum</i> on the basis of WT <i>zlum-pa</i> . ^a

- a. This new reconstruction forces Benedict to distinguish between “primary” WT *zl-* < PTB **zl-* on the one hand, and “secondary” WT *zl-* on the other (as in *zla-ba* ‘moon’ < **s-gla* (originally reconstructed as **s-la* ~ **g-la*). See *STC*, n. 136.

The validity of the **zl-* reconstruction is especially questionable in view of the absence of any certain examples of PTB **sl-* (as opposed to **s-l-*).¹¹²

(3) **śr-*, **źr-*, and **tśr-*

Several roots previously reconstructed with sibilant prefix plus root-initial **r-* were later reanalyzed as true clusters of unitary palatal fricates plus rhotic glide.¹¹³ Several of these revised PTB roots have attractive Chinese cognates:¹¹⁴

- **śr-*

	<i>PTB-1</i>	<i>PTB-2</i>		<i>OC (PKB)</i>	<i>GSR</i>
‘louse’ ^a	<i>*s-rik</i>	<i>*śrik</i>	虱	<i>*śr̥iɛt</i>	506a
‘live / bear / be born’	<i>*s-riŋ</i>	<i>*śriŋ</i>	生	<i>*śr̥əŋg</i>	812a-d
‘ashamed / shy’	<i>*s-rak</i>	<i>*śrak</i>	色	<i>*śr̥iək</i> ^b	927a
‘potato / yam’	<i>*s-ra</i>	<i>*śra</i> ^c	薯	<i>*d̪io</i>	[not in <i>GSR</i> #45]
‘place’ ^d	(<i>*s-ra</i>)	<i>*sra</i>	所	<i>*śr̥io</i>	91a-c

- a. Yet the Kanauri reflex of this etymon is *rik*, surely evidence that the sibilant element was treated as prefixal (**s-* is one of the most common “animal prefixes” in TB; see below 4.2.1), forcing Benedict to invoke “metanalysis” (n. 304) and demonstrating that it is not always possible to put too fine a point on these matters! A phonologically similar etymon **s-rik* ⌘ **s-ryak* ‘pheasant’ (#403) has been allowed to stand with a prefixal reconstruction.

112. “**sl-* probably occurred in the ancestral TB speech, especially in view of **zl-*, but has not yet been demonstrated” (*STC*, n. 135).

113. This is tantamount to reconstructing double glides **-yr-* or **-ry-* in these words; see below 3.6.5.

114. See *STC* n. 457, pp. 170-1. See below 8.3(e), 7.5(6), 8.2(1e), and 5.2.4(1).

- b. The Chinese word means ‘color (of face); looks; (womanly) beauty’, the connection with TB presumably via blushing, *i.e.* showing the color of the face when shy.
- c. This root was mistakenly left as *s-ra in the Index of *STC*, p. 207.
- d. This comparison was first suggested by JAM. Cf. Jg. rà ~ šərà ‘place’. See *STC* n. 457, p. 171.

• *žr-

This cluster is reconstructed in a single root *žraŋ (*STC* #205 and n. 156) ‘uncle’ (> *e.g.* WT žaŋ-po ‘uncle’, WB ʔəhraŋ ‘master, lord’, Laizo raŋ ‘father’s sister’s husband’).¹¹⁵ This etymon, formerly reconstructed *ryaŋ, thus supposedly contrasts with ‘worm’ *zril (§b above).

• *tsr-

In three roots where Jingpho or Nung has dental stops alongside affricates in other languages, Benedict changed original reconstructions with *ts- to the more complex initial *tsr-:

	<i>STC</i> ¹	<i>STC</i> ²	<i>TB</i>
‘mortar’ (#75)	*tsum	*tsrum	WB chum, Jg. thùm ^a
‘count / number’ (#76)	*r-tsiy	*r-tsŕəy	WT rtsi-ba, Jg. thí
‘spittle’ (#231)	*m-ts(y)il	*m-tsŕil	WT mtšhil-ma, Nung thil

- a. This Jingpho development is quite different, *e.g.* from the cases of Mpi or Bola, where *dental affricates regularly became dental stops (see above 3.3).

While Benedict suspects ‘mortar’ of being a loan into TB from Austro-Tai (n. 95), the latter two roots have likely Chinese cognates (n. 457):

<i>GSR</i>		
‘count’ 數	reconstructed as OC *sl̥iʷ in <i>GSR</i> #123r, revised by Benedict to *s̥riʷ	
‘spittle’ 痰	‘dragon’s spittle; frothy saliva (as of a rabid dog)’ not included in <i>GSR</i> #979, but reconstructed by Benedict as OC *d̥z̥riər	

It seems to me preferable to invoke proto-variation in ‘mortar’, reconstructing it as PTB *t(s)um, regardless of the unprovable assumption that it was a loan into PTB from Austro-Tai. ‘Count’ seems certainly to be a valid PST etymon, and even the rather esoteric

¹¹⁵A Chinese comparandum is also offered (n. 457) for this etymon, 尚 OC *d̥jaŋ (*GSR* #725a-c) ‘upwards; high, admirable, superior’. The putative Tibetan cognate was usable in a similar honorific sense (*STC*, n. 155). See below 7.5(3).

3.6.4.2: Rare or dubious liquid clusters

Chinese word for ‘dragon’s spittle’ may indeed be related to the TB root for ‘spittle’, but here too it seems unnecessary to reconstruct such a complex initial cluster when allofamic reconstructions would do as well: ‘count’ *r-t(s)yəy; ‘spittle’ *m-t(s)il.

(4) *Clusters of nasal plus liquid*

Some sequences of nasal plus liquid occur across morpheme boundary, *i.e.* are to be analyzed etymologically as nasal prefix plus liquid root-initial, *e.g.* ‘lick’ *m-lyak (simplex) \approx *s-lyak (causative) [STC #211]; ‘high / long’ *m-raŋ (STC, p. 43); ‘horse’ *k-m-raŋ (\approx *s-raŋ) (STC #145); ‘steal’ *m-ru:k (STC, p. 144).

In several roots WB has secondary mr- clusters where the nasal element derives from either the *m- or the *b- prefix:

	<i>PTB</i>	<i>WB</i>
‘grandchild’	*b/m-ləy	mrê (Inscriptional Bs. mliy ^a)
‘arrow’	*b/m-la	hmrâ
‘snake’	*s-b-ru:l	mrwe

a. In a number of roots the Burmese inscriptions have ml- or mly-, where later Written Burmese has mr- and my-, respectively. See STC p. 42, and below 3.6.4.1.

However, at least three true nasal-plus-liquid clusters (*mr-, *ŋr-, *ml-) may be set up for PTB.¹¹⁶

• *mr-:

The best attested of these true nasal-liquid clusters is *mr- (*cf.* ‘see’ *mraŋ [STC #146]), but even here most of the cognate sets show variation in the first or second element, especially variation between mr- and br-,¹¹⁷ and/or between mr- and my-: *e.g.* ‘monkey’, set up as *mruk (STC p. 112) on the basis of forms like Bahing moro, though reflexes pointing to *myuk are much more common (*e.g.* WB myauk; see TSR #133); ‘much / many’ (STC #148), set up as *mra (STC #148), though WT has bra-ba and WB has myâ; ‘cut / tear’ (STC #147) reconstructed *mrak, though Trung pra and Dimasa dźəbrau point rather to *brak); ‘grass’ (STC #149), set up as *mrak, though WT ḥdźag reflects *lyak.

116. No examples of **nr, **nl, or **ŋl have been found.

117. The English word *Burma*, which derives from Burmese mranma, illustrates this hesitation between br- and mr-.

Distinct from these are *STC* etyma where the nasal and the liquid occurred in the reverse order, *i.e.* which are set up with the **r-* prefix and root-initial *m-*, *e.g.* ‘wound’ **r-ma* (#446); ‘wen / mole’ **r-men* (#104); ‘name’ **r-min* (#83); ‘man’ **r-mi(y)* (pp. 107,119,158); ‘bud / blossom’ **r-moy* (#305); ‘foggy / dark’ **r-mu:k* (#357); ‘sky / clouds’ **r-məw* (#488). A special problem is posed by the root for ‘tail’, set up as **r-may* (#282) on the basis of forms like Aimol *rəmai* and Mikir *arme*, even though reflexes like Bahing *me-ri* and Burmese *ʔəmri* have the nasal preceding the liquid. Here Benedict confesses he is “tempted to interpret the Bahing and Burmese forms in terms of metathesis, but there is no analogy whatsoever for this shift in either language” (n. 204, p. 64).

• **ŋr-*:

This rare cluster is reconstructed only for two roots of limited distribution: ‘meet’ **ŋra* (#154) and ‘contradict / deny’ **ŋraŋ* (#155), with the latter etymon showing variation with a velar stop onset (Lushai *ʔaŋ* or *traŋ* ‘deny’ < **graŋ*).¹¹⁸

• **ml-*:

This cluster also occurs in only two PTB etyma: ‘earth / country’ **m-ləy* (#152) and ‘swallow (v.)’ **mlyəw-k* (#153), both of which have dialectal or inscriptional Burmese evidence to back up the reconstructions (Tavoyan Burmese *mle* ‘earth’; Inscriptional Burmese *mlyui* ‘swallow (v.)’).

It is interesting to note that the Sinologists Axel Schüssler and William H. Baxter have both recently proposed the reconstruction of an Old Chinese cluster **ml-* for certain words with the Middle Chinese voiced palatal fricative **ǰ-* (*ǰy-* in Schüssler’s notation).¹¹⁹ Among the candidates for this OC initial are ‘snake’ 蛇 (perhaps OC **mljaŋ* or **mlyar* > Mand. *shé*) to be compared with PTB **s-b/m-rul*; ‘eat’ 食 (perhaps OC **mlyak* > Mand. *shí*), to be compared with PTB **m-lyak* ‘lick / eat’;¹²⁰ and ‘rope’ 繩 (perhaps OC **mljəŋ* > Mand. *shéng*), to be compared with WB *ʔəhmyāŋ* ‘string, thread, fiber, nerve’. An additional bit of evidence for this hypothesis is provided by Naxi (a language close to the

118. For this Lushai development of **velar-plus-r* clusters, see above 3.6.4.1(2).

119. See Schüssler 1987, 1995 and Baxter 1995 (the latter two still unpublished), quoted in Handel 1997. See also Handel’s *Appendix*, “Introduction to Old Chinese phonology”, below.

120. We have noted that in TB terms the **m-* in this etymon is prefixal (*cf.* unprefixed forms like WB *lyak*, Lushai *liak*, Lepcha *lyak*).

3.6.5: Double glides

Lolo-Burmese group), where PTB sequences of ***nasal plus liquid** have also become fricatives (similar to the putative OC ***ml-** > MC ***ž-** > Mand. **sh-** development):

	<i>PLB</i>	<i>Naxi</i>
‘horse’	*mraŋ ²	² zhwua
‘high’	*ʔ-mraŋ ³	¹ shwua ^a

a. This Naxi development was first pointed out in an unpublished paper by Okrand (1973), quoted in JAM 1979 (“QV”).

3.6.5 Double glides

The PTB syllable canon presented above Ch. 2 must be revised slightly to account for proto-syllables with double glides, *i.e.* syllables containing both a liquid and a semivowel medial **/*-rw- -ry- -lw- -ly-/** or both semivowels in sequence **/*-yw-/**:

***(P₂) (P₁) Ci (G¹) (G²) V (Cf) (s) .¹²¹**

Double glides are often demonstrably of secondary origin: sometimes they arise through fusion of two separate syllables in a compound (‘lung’, ‘elder sibling’; §4 on ***-yw-** below); they may also derive from a reinterpretation of ***prefix plus resonantal initial plus single glide** (***P - Ci - G**) as a ***root initial plus double glide** (***Ci - G - G**), *e.g.* ***g-lwat** > **glwat** (see ‘free /loose’; ‘salt’, below).

(1) ***-RW-**

This combination of medials occurs in a number of roots, especially after velar initials. A couple of these roots are of fairly limited distribution, *e.g.* ‘rustle’ ***krwap** (*STC* #243); ‘sew’ ***krwi(y)** (*STC*, p. 41), but several others are widely attested, including ‘daughter-in-law’ ***krwəy** (*STC* #244)¹²² and ‘sweat’. This latter etymon is erroneously claimed to be restricted to Lolo-Burmese in *STC* (pp. 90, 202, 220), and indeed it is solidly reconstructible as PLB ***ʔ-grwəy**², but it is also found in several other branches of TB, including Kuki-Chin-Naga (*e.g.* Lakher **mathlai**, Angami **rūkhru**), Qiangic (*e.g.* Qiang Mawo **xtṣə**, Qiang Taoping **χtṣuə**⁵⁵, rGyalrong **tə-ŋtṣe**, *etc.*),¹²³ and Himalayish (*e.g.* WT

121. Clusters of two liquids **/*-rl-/** or **/*lr-/** do not occur. In medial clusters of liquid and semivowel, we conventionally write the semivowel second, *i.e.* ***-rw-** (not ***-wr-**), *etc.* When there are two semivowels we write the *y* first: ***-yw-** (not **-wy-**). An apparent exception is my PLB reconstruction ***m-g^wya²** ‘chew’ (*JAM* 1986b), but here the **-w-** is deemed to be part of a labiovelar root-initial; see above 3.2(4).

122. This is a root where Dayang Pumi has a retroflex stop reflex; see above 3.2(2).

123. Several other Qiangic forms are to be found in *ZMYC* #277:647.

ŋul). ‘Sweat’ should thus be added as a fourth example of the development of PTB *-ul > WB -we, along with ‘hair’, ‘silver’, ‘snake’ (see *STC*, pp. 15-16, and below 9.3.2(4), “Liquid final consonants”), though the double glide found in LB is to be considered secondary with respect to TB as a whole:

	<i>PTB</i>	<i>WT</i>	<i>Lushai</i>	<i>WB</i>
‘hair (body)’	*s-mul	---	hmul	mwê
‘silver’	*d-ŋul	dŋul	---	ŋwe
‘snake’	*s-bru:l	sbrul	---	mrwe
‘sweat’	*s-krul ≈ *s-ŋrul	rŋul	---	khrwê

Two important etyma for animal names, ‘snake’ (*s-bru:l) and ‘leech’ (*k-r-wat), are both reconstructible with sequences of three consonants. Etymologically it appears that the first consonant was a genuine prefix, while the second was the root-initial, and the third was a glide: *P-Ci-G. In some languages, however, the second consonant was also treated as a prefix and dropped, so that the original glide became the root-initial:

‘snake’	PTB *s-bru:l ≈ *s-mrul > PLB *m-r-wəy ¹ > Lahu vɨ (< *we ¹).
‘leech’	PTB *r-p ^w at (<i>STC</i> #45) > PLB *k-r-wat ^L (<i>TSR</i> #167) ^a > WB krwat, but Lahu vèʔ (< *wat ^L).

a. This *k- is still another example of the “velar animal prefix”; see below 4.4.4(3).

(2) *-RY-

The reanalysis of dental fricates plus -y-, *i.e.* */tsy tshy dzy sy zy/, as unit proto-phonemes */tś tśh dź ś ź/ ¹²⁴ removes several etyma with medial -r- after palatal initials from the double glide category. Roots with newly reconstructed clusters like */tśr śr źr/ are thus reinterpreted as having the structure *C_i - G, instead of *C_i - G¹ - G². These include ‘spittle’ (*STC* #231), formerly reconstructed as *m-ts(y)il, but later, with an *-r- added, as *m-tśril (in the older system this would be a change to *m-tsyril or *m-tsryil); and ‘count’ (*STC* #76), formerly reconstructed as *r-tsiy, later as *r-tśrəy (in the older system this would be a change to *r-tsryəy or *r-tsyrəy).¹²⁵

¹²⁴See above 3.3.1.

¹²⁵This new phonemicization of palatal affricates also changes some sequences of P + Ci into simple Ci, *e.g.* *s-rak ‘ashamed’ > *śrak; *s-rik ‘pheasant’ > *śrik; *s-rin ‘alive’ > *śrin > See above, *ibid*.

3.6.5: Double glides

On the other hand, the revised *STC* scheme introduces a new double *-ry- glide in ‘salt’ (#245), formerly reconstructed *g-ryum, later as *gryum, *i.e.* a change from *P - Ci - G to *Ci + G¹ + G². (For a similar case in WB see ‘free / loose’, below). This is deemed to contrast with ‘stand’ (*STC* #246), where the prefixal reconstruction *g-ryap is retained.

(3) *-LW- and *-LY-

Sequences of double medials including *-l- are quite rare. The widely distributed root *g-lwat ≈ *s-lwat ‘free / loose’ (*STC* #209) has four allofamic reflexes in WB: alongside the simplex/causative pair lwat ‘be free (v.i.)’ / hlwat ‘to release (v.t.)’ are a synonymous pair with velar initials, kywat (v.i.) / khywat (v.t.), bespeaking a pre-Burmese metanalysis of the prefix as a root-initial, *i.e.* a change from *P - Ci - G to *Ci + G¹ + G².

The root for ‘swallow (v.)’ *mlyəw-k (*STC* #153; *TSR* #137) is reflected by Inscriptional Burmese mlyui (> WB myui), with double glide -ly-. However, as is usually the case with complex consonant sequences of this type, many languages have treated the initial nasal as a prefix, changing the perceived structure of the etymon from *Ci + G¹ + G² to *P + Ci + G: *e.g.* Jingpho məyùʔ, Angami Naga me-zu, Sgaw Karen yu (vs. Pa-o Karen (Taungthu) myɔ, with the initial retained).

(4) *-YW-

This is the most frequently encountered of the double glides, though like all the others it is unstable diachronically. One *-yw- root where the original *STC* reconstruction has remained unchanged is ‘yam’ *kywəy (#238).¹²⁶ Several other etyma originally reconstructed with *-yw- have lost their *-y- due to the reinterpretation of the palatals as unit phonemes:

	<i>STC</i> ¹	<i>STC</i> ²
‘cut / chop’ (#240)	*tsywar	*tśwar
‘flow / pour’ (#241)	*sywar	*śwar
‘hang down / sag’ (#242)	*dzywal	*dźwal

¹²⁶ Even here, however, Benedict changed his mind, having originally considered this root to be a loan from Austro-Tai, but later coming to the view that it is a native TB item. See *STC*, n. 185.

On the other hand, in several other roots a single glide (-w- or -y-) in the original reconstruction has been augmented by a second proto-glide in the revised version of *STC*:

		<i>STC</i> ¹	<i>STC</i> ²
‘blood’	#222	*s-hwiy	*s-hywəy
‘sour’	#42	*s-kyur	*s-kywar
‘sweep’	#174	*pyak ^a	*pywak
‘rub / scrape / shave’	#180	*s(y)wiy ^b	*sywəy

- a. No explanation for this changed reconstruction is offered, though Jingpho has a doublet form *we* (called a Hkauri dialect variant in Hanson 1906/1954:708), alongside the more standard *ye* (in both of these variants the labial stop is apparently treated as a prefix). However, in the Jingpho-Chinese dictionary of Dai Qingxia *et al.* (1983), where tones are indicated, the Hkauri form does not appear, and the latter form is transcribed *ye*⁵⁵, without final -ʔ, so its cognacy is doubtful.
- b. In this root the parentheses were removed from the *-(y-) in the revised version.

In a number of other roots, a sequence of labial-plus-palatal elements is to be regarded as a combination of a *labiovelar initial plus palatal glide (in a manner analogous to the new sequences of unitary *palatal initials plus labial glide, above):

‘chew’	PLB	*m-g ^w ya ^{2 a}
‘moon’	PTB	*s-ŋ ^w (y)at ^b

- a. See JAM 1986b, “Labiovelar unit phonemes in LB?”
- b. See JAM 1980, “Stars, moon, and spirits.” This word for ‘moon’ (which means ‘star’ in some TB cognates), has an excellent Chinese comparandum 月 (OC *ŋjwāt) [*GSR* #306a-f]. See below 8.2(2c).

3.6.5: Double glides

Finally, the most interesting cases of apparent double glides have arisen secondarily through the fusion of two originally separate constituents of compounds:

-
- | | |
|-----------------|--|
| ‘lung’ | An etymon <i>*tsywap</i> (later revised to <i>*tśwap</i>) is set up in <i>STC</i> #239 on the basis of Lushai <i>ts'uap</i> and Garo <i>kasop</i> . I have shown at length ^a how this is really a fusion of the two syllables of an original compound <i>*tsi-wap</i> , where the second element means ‘soft; spongy’ (<i>cf.</i> Jingpho <i>wóp</i> ‘spongy’, <i>sìn-wóp</i> ‘lungs’), and the first element occurs independently in such forms as Lahu <i>chî</i> . |
| <hr/> | |
| ‘elder sibling’ | Similarly, a root for ‘elder sibling’ that I had set up as PLB <i>*ʔ-wyik</i> (<i>TSR</i> #172) was reanalyzed by Benedict as deriving from <i>*ʔu-(y)ik</i> , where the first element is a root meaning ‘head; elder relative’ (< PTB <i>*d-bu</i>). ^b |
-

a. JAM 1978a (*VSTB*):113-23.

b. *Cf.* WB *ʔû-rî* “mother’s elder brother”, *ʔû-man* “mother’s younger brother”, as well as common Kuki-Naga **u* ‘elder sibling’.

4.1 *Introduction: semantic and morphophonemic unpredictability*

Prefixes are of primary importance for ST/TB reconstruction. The most ancient stratum of prefixes that we can recover is well preserved in some branches of TB, including the West Himalayish and Bodish nuclei of Himalayan [Tibeto-Kanauri], Qiangic (esp. rGyalrongic), Jingpho-Nung, Kuki-Chin-Naga, and Mikir. Elsewhere the original prefixes seem to have undergone widespread replacement by secondary prefixes, as in Lepcha, Karenic, Abor-Miri-Dafla, and Bodo-Garo. In still other languages, the proto-prefixes have disappeared entirely, or have only left indirect traces. This latter category includes Bahing-Vayu/Kiranti, Konyak¹ (= Northern Naga), and Burmish, as well as the Sinospheric branches of the family: Chinese itself,² Baic, and Loloish. Loloish is particularly interesting in this respect, since many prefixes may be recovered thanks to the tonal and consonantal effects they left behind in the syllables where they occurred.³

The first systematic treatment of the forms and functions of TB prefixes was Wolfenden 1929.⁴ The *Conspectus*⁵ takes up where Wolfenden left off, positing an array of seven PTB prefixes, of which three are highly important, with relatively well-defined

1. In this feature Konyak differs markedly from Jingpho, with which it otherwise shares lexical similarities. See above 1.1.

2. Sinologists are increasingly becoming aware of the possibility that a system of pre-Old Chinese prefixes might account for initial consonant alternations within word families. A pioneer in this line of thinking was Fr. Paul Fu-mien Yang (e.g. 1973/1985), who convincingly argued for the existence of OC velar clusters where the stop element *k- was later treated as a prefix in certain Chinese dialects. In the new notes to *STC*, Benedict (1972a) attempted to demonstrate traces of correspondences to PTB prefixes (especially *s-) in many Chinese etyma. See also Benedict 1975c.

3. Prefixation in Lolo-Burmese and elsewhere has been discussed in numerous articles and monographs, especially JAM 1970 (*GD*), 1972a (*TSR*), 1972b (“TN and comparative TB”), 1973a, 1974a (“Tones of Jg. and LB”), 1979 (*QV*), 1995b/1997 (“Numerals”).

4.1.1: Prefixal semantics and the grammatical exploitation of prefixes

semantic content (*s-, *m-, and “*a-”⁶), and four are less so (*b-, *g-, *d-, *r-). We will discuss them individually below (4.2-4.4).

4.1.1 *Prefixal semantics and the grammatical exploitation of prefixes*

A terminological problem presents itself at the outset. Some scholars have objected to the term “prefix” in cases where the pre-initial element does not have a clearcut meaning. While we might be tempted to call some of these semantically vague entities “prefixal formatives”, or simply “formatives”, there seems little point in making a sharp distinction between “meaningful” and “meaningless” pre-initial elements. Even the most ancient prefixes with the clearest meanings often occur in words where it is hard to see what semantic increment they provide. On the other hand, those prefixes which have the most transparent meanings in a given daughter language are likely to be of relatively recent origin. The point is that TB prefixes are constantly subject to replacement or change. What is semantically murky today might once have been relatively clear. Contrariwise, prefixational patterns that were vague, sporadic, or unsystematic in the past have frequently been regularized by analogy to the point where they are now highly productive and grammaticalized.⁷

On the semantically transparent end of the spectrum, we sometimes find a lexically specific prefix that obviously descends from a fully syllabic morpheme of known meaning, e.g. the sibilant prefix *s(ə)- (< PTB *sya ‘animal’) that occurs in some animal names in certain languages (see below 4.2.1), and perhaps the nasal prefix *m(ə)- (? < PTB *mi(y) ‘person’) that appears here and there in words for body-parts (below 4.3). In these cases the meaning of the prefixal element may be clear even if it is not very productive.⁸

4. The scope of this brilliant work may be divined by its full title: *Outlines of Tibeto-Burman Linguistic Morphology, with special reference to the Prefixes, Infixes and Suffixes of Classical Tibetan and the Languages of the Kachin, Bodo, Nâgâ, Kuki-Chin and Burma Groups*. Wolfenden’s positing of “infixes” has misled certain later scholars (see below 4.5.2(3)). In recognition of Wolfenden’s importance in the history of TB studies, an informal “Wolfenden Society” was established in the late 1960’s, and the monograph series *OPWSTBL (Occasional Publications of the Wolfenden Society on Tibeto-Burman Linguistics)* produced six volumes between 1969 and 1978.

5. Benedict 1972a:103-123; 131-3.

6. We reinterpret this vocalic prefix as a consonantal glottal stop, *ʔ(ə)-. See below 4.2.2.

7. At any rate Tibeto-Burmanists are better off in this respect than specialists in Mon-Khmer, who have had little success in assigning any semantic content whatsoever to the minor syllables of their innumerable “sesquisyllabic” words.

8. This is true of a much more ancient “animal prefix”, *k-, that occurs sporadically (especially in Lolo-Burmese), and which is apparently of Mon-Khmer origin. See below 4.4.4(3).

At a higher level of grammaticalization, many TB languages have developed productive, semantically transparent “prefixal paradigms”:

- A defining grammatical characteristic of the Qiangic languages is their elaborate systems of “directional prefixes”,⁹ preposed to verbs to indicate the real or figurative direction of the verbal event. The Qiangic languages tabulated in Huang Bufan (1991:298-9) feature a total of 13 such directional categories, with any given language actually having anywhere from 3 (Namuyi) to 10 (Ersu, Muya) of them. A typical array to be found in the Northern Qiang dialect of Mao County, Sichuan (Yadu township, Ekou village):

tə-	‘upward’	ɑ-	‘downward’
kə-	‘inward’	hɑ-	‘outward’
ŋə-	‘upstream’	sə-	‘downstream’
dzə-	‘toward the center; centripetal’	tha-	‘away from the center; centrifugal’
da-	‘uncertain direction’		

Other directional categories actualized in Qiangic languages are ‘toward the mountains’ (e.g. Ersu *khua*³³-), ‘towards the water’ (e.g. Ersu *ŋua*³³-), ‘backwards’ (e.g. Ersu *ŋu*⁵⁵-), and ‘in a circle’ (e.g. Muya *rə*-).

- Many Chin languages have developed neat systems of subject/object personal prefixes on verbs (usually reduced forms of the independent personal pronouns) that do double duty as possessive prefixes on nouns, as e.g. in Lai Chin:¹⁰

ka-kal	‘I go’	ka-rool	‘my food’
na-kal	‘you go’	na-rool	‘your food’
ʔa-kal	‘he/she goes’	ʔa-rool	‘his/her food’

- The most interesting morphological alternation involving prefixes is also arguably the most ancient: the opposition between inner-directed or stative verbs on the one hand, signalled by the nasal prefix *m-; and transitive or outer-directed or causative verbs on the other, marked by the sibilant prefix *s-.¹¹ Despite the relative semantic clarity of

9. Called 方向前綴 *fāngxiàng qiánzhù* by Chinese scholars. See Wen Yu 1943, Sun Hongkai 1983, Huang Bufan 1991, Huang Chenglong 1997, and Evans 1999.

10. Two special issues of LTBA (20.2 Fall 1997 and 21.1 Spring 1998), dedicated to Paul K. Benedict, have recently been devoted to articles on this language.

11. This was already clearly recognized in Wolfenden 1929. We shall return to these prefixes (below 4.2.1, 4.3) in a more general context.

4.1.1: Prefixal semantics and the grammatical exploitation of prefixes

this opposition, the morphophonemic traces of these prefixes in the daughter languages range from the obvious to the indirect.¹² On the obvious side we find pairs like WT **mnam** ‘have a smell, be odorous’ (v.i.) / **snam** ‘sniff something’ (v.t.). Often, however, the only traces left by the proto-prefixes are oppositions in the manner of the initial consonants in the verb-pairs:

- Burmese has well over 50 verb-pairs where the intransitive member has a plain initial and the causative/transitive has an aspirate (e.g. WB **prat** ‘be cut in two’ / **phrat** ‘cut sthg in two’, **nûi** ‘be awake’ / **hnûi** ‘awaken someone’, **lwat** ‘be free, loose’ / **hlwat** ‘set free’), where the aspiration is a clear reflex of the *s- prefix.¹³
- Hayu (=Vayu), a dying TB language spoken in a few villages four days’ trek south-east of Kathmandu, displays several patterns of manner alternations in these pairs, with the conditioning not clear (Michailovsky 1988:106-110):
 - (a) *voiced vs. voiceless unaspirated* (19 exs., including **dam** ‘be filled’ / **tam** ‘fill sthg’, **duk** ‘fall’ / **tuk** ‘drop sthg’);
 - (b) *voiced vs. voiceless aspirated* (19 exs., including **bek** ‘enter’ / **phék** ‘cause to enter’, **bok** ‘be born’ / **phok** ‘give birth to’);
 - (c) *voiceless unaspirated vs. aspirated* (a rare category with only 4 exs., including **tun** ‘drink’ / **thun** ‘give to drink’).¹⁴
- Lahu preserves over a dozen such pairs, which may be divided into four categories in terms of the manner traces left by the two prefixes:¹⁵

12. For a general treatment of TB causative formations, see JAM 1976.

13. See Okell 1969:I, 205-8.) A very similar development has occurred in several Chin languages. Cf. pairs like Lai Chin **kaan** ‘be burning’ / **khaan** ‘burn sthg’.

14. Two additional patterns occur with non-obstruent initials: (d) *vowel initial vs. h-* (7 exs., e.g. **wo** ‘white’ / **ho** ‘wash clothes’); (e) *liquid vs. spirant* (5 exs., e.g. **ram** ‘be afraid’ / **xwam** ‘startle someone’).

15. See JAM 1973/82 (pp. 32-34, 676) and JAM 1975c.

(1) *voiced obstruent simplex vs. voiceless unaspirated causative*

dò	‘drink’	tɔ	‘give to drink’
jò	‘study’	cɔ	‘train someone’
dɛ̃	‘come to rest’	tɛ	‘set sthg down’
dũ	‘dig’	tũ	‘bury someone’

As indicated above (3.1), the Lahu voiced series of obstruents descends unambiguously from PLB **prenasalized initials*. This simplicia in this category thus clearly reflect the PTB stative prefix **m-*.

(2) *voiceless unaspirated simplex and voiceless unaspirated causative*

câ	‘eat’	cā	‘feed’
tòʔ	‘burn’ (v.i.)	tú	‘set on fire’

Here the initial of the simplex was voiceable (d and j occur in the language), but evidently the nasal prefix was never applied to these roots. (Prefixes are unpredictable entities after all!)

(3) *voiced fricative simplex vs. voiceless fricative causative*

vãʔ	‘hide oneself’	fã	‘hide sthg’
vəʔ	‘wear’	fí	‘dress someone’

The simplicia descend from PLB **w-*, and the causatives from PLB **ʔw-*.

4.1.2: Constraints and interaction between prefixes and initial consonants

(4) *sonorant initials*

m̀	‘see’	m̩	‘show’
n̩	‘be awake’	n̩	‘awaken someone’
l̩?	‘lick’	l̩	‘feed an animal’ ^a
y̩?	‘sleep’	í	‘put to sleep’ ^b

a. The nasal prefix did survive in this root in several other Loloish languages, *e.g.* Akha myeu, Hani Dazhai mjɿ³¹, Jinuo m’a⁵⁵ < PLB *m-lyak. The *s-/*ʔ- causative prefix is directly reflected in Sani lha²² (< *ʔ-lyak < *s-lyak). See JAM 1972a, #179.

b. Note the zero initial and different vowel in the causative form, where one would have expected initial h-, as the normal reflex of PLB *ʔ-y-. See above 3.4.2(5). WB here has a rare survival of the original *s- prefix: ʔip ‘sleep’ / sip ‘put to sleep’.

Here the initials of the simplicia are necessarily voiced, so any effect of a nasal prefix would be impossible to trace. (The *nasal prefix left no tonal effects in Lahu.)

On the other hand, the initials and/or tones of the causative forms in all four categories unambiguously reflect the Proto-Loloish prefix *ʔ- (ultimately < PLB/PTB *s-). This glottal prefix led to voiceless unaspirated initials in all cases where Lahu tolerates them (Lahu, unlike Burmese, lacks voiceless nasals or liquids, explaining the non-alternation in category 4),¹⁶ and to special tonal developments: all the causative forms are either under the mid-tone (unmarked, < PLB Tone *1), the very-low tone (marked by a macron, < PLB *2), or the high-rising tone (marked by an acute, < PLB *LOW-stopped syllables).¹⁷

4.1.2 Constraints and interaction between prefixes and initial consonants¹⁸

Even languages that preserve prefixes well have synchronic phonotactic constraints on the manner and position of articulation of the root-initials that may occur after particular prefixes. In WT, for example, all the prefixes may occur before voiced root-initials; before voiceless initials, however, there is complementary distribution between the two prefixes m- and ɸ- (*a-chung*) on the one hand,¹⁹ which only occur before aspirated stops, and all the others (b- d- g- r- l- s-), which only occur before non-aspirates. As far as position of

16. Lahu l̩ ‘feed an animal’ is somewhat anomalous, since PLB *ʔ-l- normally gives Lahu h-; see above 3.4.2(•). Perhaps the lateral articulation was protected by the original *m- prefix.

17. See Burling 1968, JAM 1969, etc.

18. See above 3.1 “Manners of articulation: voicing, aspiration, and prefixal influence”.

19. For some discussion of this controversial prefix, see below 4.2.2.

articulation goes, the voiced stop prefixes / b- d- g- / do not occur before homorganic root-initials, *i.e.* there is no b- before labials, no g- before velars, no d- before dentals or palatals. Furthermore, d- and g- are in complementary distribution, with d- occurring only before velars and labials, and g- only before palatals and dentals (both stops and affricates), fricatives, and sonorants. The b- prefix occupies an intermediate position, occurring (like g- but unlike d-) before palatals and dentals, but also before velars (like d- but unlike g-).

From a diachronic point of view, an original prefix might interact morphophonemically with the following root-initial in a bewildering variety of ways: “Besides affecting the voicing or aspiration of the root-initial, the prefixes could metathesize with it, palatalize it, drive it out entirely (‘prefix-preemption’), fuse with it into a single segment, drop altogether, be substituted for by another prefix—and any or all of these activities could be accompanied by an effect on the *tone* of the syllable.”²⁰ We can imagine a large number of fates in one language or another for a hypothetical etymon *g-ya:²¹

(1) *prefix preservation*

The presumably original prefix remains roughly the same, perhaps buffered from the Ci by a schwa (> gəya, kəya). [Cf. WT lag g-yas ‘right hand’].²²

(2) *prefix loss or prefix absence*

The daughter language reflects the simple root-initial; either it never used a prefix with this particular word in the first place, or else it has lost it without trace (> ya). [Cf. Garo džak-ra, WB lak-ya ‘right hand’.] Even dialects of the same language may differ in their prefixal preservative propensities. The Tavoyan dialect of Burmese is much more

20. JAM 1975a:165-6. See also JAM 1979:20, 24-5. As Benedict put it, “these elements are peculiarly subject to replacement or loss [...] Prefix variation of this kind [...] is characteristic of TB roots as a whole. This fact suggests that TB prefixes remained separable and largely functional well into the PTB period, and that the rigid schematicizations found in modern TB languages have been developed secondarily” (STC:103).

21. The morphophonemic possibilities are especially rich when the root-initial was “weak” (*i.e.* a non-obstruent), as in this partly hypothetical case, which is quite similar to an actual etymon: PTB *g-ya ≠ g-ra ‘right (side)’ (STC #98).

22. The graphic shape of the WT word shows that here g- is the prefix and y is the root initial (*i.e.*, this is *not* a cluster where g- is the initial and -y- is a glide).

4.1.2: Constraints and interaction between prefixes and initial consonants

thoroughly monosyllabic than standard Burmese, which abounds in sesquisyllables and compounds (Okell 1995:107):

‘paddy’	WB <i>cəpâ</i> (Modern Standard Bs. <i>səpâ</i>), Tav. <i>bà</i>
‘cooked rice’	WB <i>thəmâŋ</i> (Mod. Stand. <i>thəmîn</i>), Tav. <i>hmàn</i>
‘banana’	WB <i>hŋak-pyô-sî</i> (> Mod. Stand. <i>hŋəpyôđî</i>), Tav. <i>byð-θî</i>

(3) *prefix substitution or prefix alternation*

Many TB languages have a “favorite prefix” which they have freely introduced into roots in place of earlier ones.²³ Our etymon **g-ya* might easily become *pəya*, *təya*, *məya*, *etc.*, in one or another daughter language. Among these favorite prefixes we may mention Old Chinese **s-* (see Benedict 1975c); WB *ʔə-*; Lahu *ð-* (< PLB **ʔaŋ-*; *cf.* Bisu *ʔaŋ*, Phunoi *ʔă-*); Mikir *iŋ-*; Chokri *tə-* and *thə-*; Tangkhul *khə-* before verb roots, *etc.* Prefixal substitutions are especially characteristic of TB numerals:²⁴ Jingpho has created a “prefix run” in the numerals ‘3’, ‘4’, and ‘5’, by substituting its *mə-* prefix for the presumably original prefixes still to be found in WT:

	<i>WT</i>	<i>Jingpho</i>
‘three’	<i>gsum</i>	<i>məsūm</i>
‘four’	<i>b̥zi</i>	<i>məlī</i>
‘five’	<i>l̥ja</i>	<i>məŋā</i>

Two words for lower animals nicely illustrate this prefixal variability:

‘leech’	PTB * <i>r-p̥wat</i> (<i>STC</i> #45 and p. 103) > Magari <i>ləwat</i> , Angami <i>reva</i> ; but also Nung <i>dəpat</i> ~ <i>phəphat</i> , Miri <i>təpat</i> , Digaro <i>kəpe</i> , Mikir <i>iŋphat</i> , WB <i>krwat</i> , Lakher <i>t̥səva</i> , Lai <i>t̥saan-wat</i> ; many languages have unprefixal forms like Jg. <i>wot</i> , Lepcha <i>fot</i> , Chang Naga <i>wat</i> , Lahu <i>vèʔ</i> .
‘ant’	PTB * <i>-rwak</i> (<i>STC</i> #199). A velar prefix appears in WT <i>grog-ma</i> , rGyalrong <i>k̥r̥ök</i> , Lohorong/Lambichong <i>khörök</i> ; a dental prefix in Mirish (Miri <i>tərūk</i> , Dafla <i>torub</i>); a sibilant prefix in Nung <i>səro</i> (<i>cf.</i> the * <i>s-</i> ‘animal prefix’, below 4.2.1); and a labial prefix (derived from the full noun * <i>bəw</i> ‘insect’) in WB <i>pərwak</i> (<i>cf.</i> Lahu <i>pú-ğ̊ŋ</i>). ^a

23. Or in addition to previous ones. See §6 below.

24. See *STC* pp. 94-5 and JAM 1995b/1997:passim, especially §5.

- a. As I sardonically observed in JAM 1982a, a “proto-form stuffer” like Weidert (1981, 1987) might prefer to reconstruct a monstrous proto-form like **kpstrwak* rather than recognize prefixal variability.

Prefixal alternations are by no means confined to TB, but are to be found in all language families of SEA that have sesquisyllables, or compounds that have prefixizable first elements (see below 4.5.3). Thus a *Wanderwort* like ‘rabbit’ appears as sesquisyllabic *krətàaj* in Siamese, but as a dissyllabic compound in Tai Nuea (*paŋ⁴taay¹*); a form similar to the latter was borrowed into Lahu as *pa(n)tây*, and into Jingpho as *prāŋtái* (see JAM 1988b:804).

(4) *prefix fusion*

Especially when the root initial is non-obstruent, as in our **g-ya* example, it frequently happens that the prefix unites with the *C_i* to form a single consonantal segment that incorporates phonetic features of both, typically a fricative or affricate, e.g. > *dʒa*, *ɕa*, *ʒa*.

(5) *prefix preemption*

A similar phenomenon that occurs especially before “weak” root-initials is what I have called *prefix preemption*, whereby the prefix drives out the original root-initial entirely, and itself becomes the only consonantal onset of the syllable,²⁵ e.g. **g-ya* > *ga*.

(6) *reprefixation*

At any point in the history of an etymon, a given language is always free to add a new prefix in front of an older one.²⁶ Sometimes the older prefix is maintained intact, as in Tangkhul Naga *khəmələk* ‘lick’, where the productive verb-prefix *k(h)ə-* has been superadded to the older nasal prefix (PTB **m-lyak*) so that the word now has two minor syllables. Similarly for Tangkhul *kəkhəyak* ‘shame, veneration’ < PTB **g-yak* ‘ashamed’ (STC #452; cf. Jg. *kəyàʔ*).

Often, however, the older prefix has been completely or partially disguised. The second syllable of Miri *si-tum* ‘bear’ already shows preemption of the original root-initial **w-* by an ancient dental prefix (PTB **d-wam*: STC #461; cf. also WT *dom*); to this the younger sibilant animal prefix (demonstrably from PTB **sya* ‘animal’; below 4.2.1) has

25. See JAM 1972b (TN), 1979 (QV), etc. Several important etyma where this has occurred will be presented below in the context of “Prefixes and syllable structure” (4.5.3).

26. See “Diachronic layers of prefixes”, below 4.5.2.

4.1.2: Constraints and interaction between prefixes and initial consonants

been superadded: *sya-d-wam > *sV-dom > si-tum. (Returning to our hypothetical case, we could easily imagine a development like *g-ya > dža [fusion] > m-dža [reprefixation].)

(7) *metanalysis of an original cluster with loss of *initial consonant*

It occasionally happens that a true consonant cluster consisting of root-initial consonant plus glide gets metanalyzed as a prefix plus root-initial glide, with subsequent loss of the “prefixal” element. Thus PLB *myuk ‘monkey’ (TSR #133) > Nakhi ‘yü (vs. WB myauk, Lahu mòʔ, etc.). Perhaps the most important root in which this has occurred is PTB *kwəy ‘dog’ (STC #159; cf. WT khyi, WB khwê), where many Kuki-Chin languages have lost the velar element entirely (e.g. Lushai ui, Lai uy). Karen has undergone a similar development here, but went further; after detaching the original velar as if it were a prefix, Karenic proceeded to reprefix the root with a new dental element, e.g. Pwo, Sgaw thwì ‘dog’. An analogous process seems to have led to Proto-Karen *thoʔ ‘pig’: PTB *pʷak > pre-Karen *p-wak [prefixization] > *wak [loss of initial consonant] > *t-wak [reprefixation].²⁷

(8) *metanalysis of compound > prefixization*

Finally, it can sometimes be demonstrated that the end of the first syllable of an original compound has been incorporated into the onset of the second syllable, so that the first syllable has essentially been “prefixized”, or treated as a prefix.²⁸

‘righthand’	PTB *lak-(g-)ya > WB lak-ya, but Jg. ləkhrá
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Many other Jingpho words having to do with the hands and feet now begin with the secondary prefix lə- < *lak ‘hand’ (see below 4.4.2).

‘pick up’	PLB *lak ^L -ruk ^H > *k-ruk ^H (TSR #187)
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Forms like WB kauk and Lisu gaw³ show preemption of the initial *r- by the secondary velar prefix < *lak ‘hand’. In other Loloish languages (e.g. Lahu ġôʔ), the initial reflects PLB *r-, but the HIGH tone-class of the syllable points unmistakably to the voiceless velar prefix (i.e. the secondary prefix disappeared after causing the tone-class to become high). See below 4.4.4(3).

27. See STC p. 133 and n. 365.

‘elder sibling’ PLB $*\text{ʔ-wyik}^L < \text{ʔu-(y)ik}^L$ (TSR #172 and p. 72)

The unique PLB initial cluster in $*\text{ʔ-wyik}^L$ is to be derived from a dissyllabic prototype $*\text{ʔu}^2\text{-(y)ik}^L$, where the first syllable reflects the etymon $*\text{d-bu}$ ‘head’, an honorific morpheme frequently occurring in TB words for senior kinsmen (*cf.* WB ʔû-rî ‘mother’s elder brother’, ʔû-mân ‘mother’s younger brother’, as well as common Kuki-Naga $*\text{u}$ ‘elder sibling’. See above 3.6.5(4).

4.1.3 *Vocalization and tonalization of prefixes*

Prefixes and initials obviously differ greatly in the ease with which they can be pronounced sequentially. A prefix like *s-* is readily combinable with consonants of all types, with no help required from an intervening vowel.²⁹ A stop prefix, on the other hand, is hard to articulate before a stop initial.

We cannot be sure from the WT orthography how the Tibetan combinations of prefixes and initials were pronounced in ancient times; but judging by their excellent state of preservation in WT, we may surmise that they were pronounced with a following unstressed schwa-type vowel, which served to protect them from too close contact with the root-initial. That is, most words with prefixes must have been pronounced sesquisyllabically.³⁰

It is true that the minor syllables of some sesquisyllabic TB languages have vowels with a quality somewhat different from ordinary mid-central schwa.³¹ In Chokri Naga (closely related to Angami), a language with complicated and sporadic intersyllabic vowel morphophonemics, including vowel harmony,³² the unstressed vowel of the minor syllable is sometimes reduced to schwa but sometimes not, *e.g.* in animal names with the prefix **tə-/thə-**, which descends from the full morpheme **thi**²¹ ‘animal, flesh, meat’ (< PTB ***syə**):³³ **thə** **ɣə**⁴⁴ ‘frog’, **thi**³ **zɛ**⁴⁴ ~ **tə** **zɛ**⁴⁴ ‘barking deer’, **tə** **ɣə**⁴⁴ ‘bear’, **tə** **ci**⁴⁴ ~ **ti**³ **ci**⁴⁴

28. See “The compounding/prefixation cycle” (below 4.5.4).

29. Hence the fact that *s-* is far and away the most frequent initial consonant in English. Benedict (e.g. 1975c) insisted on the viability of the contrast between reconstructed OC cluster vs. prefixal syllable onsets with *s-*, citing English contrasts like *scum* vs. *succumb*.

30. To use older terminology, the prefixal “half-syllable” must have been *anacrusic* to the stressed full syllable (*anacrusis* < Gk. *ana-* ‘up’ *krouein* ‘strike’). An iambic foot, in Greek verse, consisted of an anacrusis plus an *arsis* (*aeirein* ‘raise’):

31. This is apparent even from the transcriptions to be found in older sources, *e.g.* rGyalrong *kōrōk* and Dafla *torub* ‘ant’, cited in *STC* #199.

32. See R.S.Cook (1999:4) "Echo vocalism in Chokri Naga topicalization/suspensive constructions".

33. See below 4.2.1. The conditioning for the aspiration of the Chokri prefix is not clear.

4.1.3: Vocalization and tonalization of prefixes

‘dog’, tə ki⁴⁴ ‘monkey’, thə vɔ²¹ ‘pig’. Note that the minor syllables are considered toneless when the vowel is schwa, but are conventionally written with a short mid-tone /³/ when the quality of the vowel is not reduced.

Jingpho may be taken as a model sesquisyllabizing language with schwa vocalism in all its minor syllables. The typical Jingpho word is sesquisyllabic.³⁴ No fewer than 20 consonants (including ʔ-, sometimes regarded as zero-initial) may begin the minor syllable, though only 5 of them are common, and 12 are marginal or dialectal. A rough count of the entries beginning with each prefix in Hanson (1906/1954) gives some idea of their relative frequency (approximate number of pages in parentheses):

<i>VERY FREQUENT:</i>	mə- (41.5); ʔə- (37); kə- (35.5); lə- (27.5); ʃə- (24.3)
<i>FAIRLY FREQUENT:</i>	gə- (9.3); ʎə- 6.8); sə- (6.7)
<i>RARE:</i>	tʃə- (4.5); pə- (4); khə- (3); də- (3); phə- (1.5); tsə- (1)
<i>LESS THAN ONE PAGE:</i>	tə-, thə-, bə-
<i>ONLY IN THE HKAURI DIALECT:</i>	nə-, rə-, ŋə-

Even though the vowels in all these minor syllables are the same, and unstressed to boot, it has been claimed (*e.g.* by Maran 1971, a native speaker) that they bear a two-way tonal contrast.³⁵ Dai’s dictionary (1983) goes so far as to distinguish three tones in minor syllables, though the low tone /31/ is by far the most frequent,³⁶ and /33/ is very rare. A detailed study would be required to see whether these tonal differences are truly distinctive, or merely low-level phonetic variants reflecting the influence of the tone in the following major syllable. In any case, any such differences could not be of great antiquity in terms of TB as a whole.

While the prefixal half-syllables themselves do not exhibit significant tonal differences, the prefixes could certainly exert decisive influence over the tone of the following major syllable. See, *e.g.*, 4.4.4(3) below.

34. *E.g.*, all the numerals from ‘one’ to ‘ten’ are sesquisyllables, except for krúʔ ‘six’ and ʃī ‘ten’. In Hanson’s 739-page dictionary (1906/1954), about 233 pages are sesquisyllabic words. This calculation is readily made because Hanson alphabetizes prefixed syllables separately at the end of each letter. Hanson transcribes the schwa with the a-breve symbol, “ă”.

35. I confess I had never perceived any such contrast in Maran’s speech (he was my consultant for several months in the summer of 1963).

36. I similarly treat the unstressed highly productive unstressed prefix ð- in Lahu (< PLB ʔaŋ) as being under the low-falling tone, though strictly speaking it should perhaps be considered toneless. See JAM 1988b (DL):134-220.

4.2 *The laryngealizing prefixes *s- and *ʔ-*

These two elements, among the most important and semantically transparent of all TB prefixes, are conveniently grouped together because of their “laryngealizing” propensities, *i.e.* their tendency to induce aspiration or glottalization of the root initial, or creakiness on the vowel of the syllables in which they occur.³⁷

Both prefixes occur equally well before obstruents and sonorants. Although their effect on the root initial may be identical in many languages (they have both led, *e.g.* to aspiration of the initial in Burmese), it is sometimes possible to distinguish their reflexes even if they are highly indirect. In Loloish stopped syllables there is a clear tonal contrast among **plain*, **aspirated*, and **preglottalized nasals*,³⁸ with the latter two descending from **s-N* and **ʔ-N*, respectively:

	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>	<i>Lahu Tone</i>
‘soldier / war’	<i>*mak^L</i>	mak	màʔ	low-stopped
‘blow’	<i>*s-mut^H</i>	hmut	mêʔ	high-stopped
‘snot’	<i>*ʔ-nap^L</i>	hnap	nú	high-rising ^a

a. The high-rising tone here is a consequence of “glottal dissimilation” (see JAM 1970).

Sometimes Burmish and Loloish show different prefixal behavior before nasals:

	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>	<i>Lahu Tone</i>
‘eye’	<i>*s-myak^H</i>	myak	mêʔ	high-stopped

In this important root, WB reflects a **plain nasal*, while the tone in Lahu and all other Loloish languages unmistakably points to the **s-* prefix (*TSR* #145); hence the parentheses in the PLB reconstruction.

37. Both of these laryngealizing prefixes can have decisive effects on the *tone* and/or *phonation type* of their syllables. See, *e.g.*, the discussion of the tones of the **ʔ-* prefixed Lahu causatives (above 4.1.1), as well as the origin of the Burmese “creaky tone” in the **s-* prefix. See Thurgood 1981, and below 4.2.2(3a).

38. See JAM 1972a:24-5, 57-63. As mentioned above 3.4.1(2), a similar three-way nasal contrast is set up for Proto-Kam-Sui by Li Fang-kuei (1965). In Loloish non-stopped syllables, the tonal effects of these prefixes have so far proven to be indistinguishable.

4.2.1: Prefixal *s-

Naxi has strikingly different initial reflexes for the two kinds of complex nasals, in both stopped and unstopped syllables. Nasals with the *s- prefix developed into simple nasals in Naxi, while *preglottalized nasals became h- or f- :³⁹

	<i>PLoloish</i>	<i>Lahu</i>	<i>Naxi</i>
‘bean’	*s-nuk ^H	nôʔ	¹ nũ
‘eye’	*s-myak ^H	mêʔ	¹ miu ~ ¹ niu
‘deep’	*ʔ-nak ^L	ná	³ ho
‘ear’	*ʔ-na ²	nā	² hä
‘red’	*ʔ-ni ¹	ni	¹ hö
‘side / rib’	*ʔ-nam ¹	--	¹ ho
‘body hair’	*ʔ-məw ¹	mu	² ffü

Interestingly, WB shows plain nasals in all of the above words: WB *nauk* ‘bean’, *myak* ‘eye’, *nak* ‘deep’, *nā* ‘ear’, *ni* ‘red’, *nam* ‘rib’, *mwê* ‘body hair’.

4.2.1 Prefixal *s-

(1) Before verbs

Following Wolfenden,⁴⁰ *STC* (pp. 105-6) characterizes the PTB *s- prefix before verb roots as “directive, causative, or intensive”.

Tibetan

Prefixal s- appears overtly in the causative member of many WT verb-pairs:

<i>mnam-pa</i>	‘have an odor’	<i>snam-pa</i>	‘sniff sthg’
<i>ḥkor-ba</i>	‘turn round’	<i>skor-ba</i>	‘surround’
<i>ḥbar-ba</i>	‘catch fire’	<i>sbar-ba</i>	‘light, kindle’
<i>ḥphro-ba</i>	‘proceed, emanate from’	<i>spro-ba</i>	‘make go out, disperse’
<i>riṅ-ba</i>	‘be long’	<i>sriṅ-ba</i>	‘lengthen’

39. These forms are from Rock 1963, as cited in Okrand 1973 and JAM 1979:34. In He and Jiang’s more modern transcription (1985), “h-” is written /x/, and “ff-” is simply /f/. See above 3.4.1(3).

40. See Wolfenden 1929:46-53 (Tibetan); 85-6 (Kachin=Jingpho); 200-1 (Burmese). See also JAM 1976a:415-419.

This prefix is also used in WT in an inchoative sense, to signal “general direction into the condition or state named by the verb root”: *smin*-pa ‘ripen’, *sŋo*-ba ‘become green’, *sbo*-ba ‘become swollen’, *sbrid*-pa ‘become numb, torpid’.

Jingpho

The sibilant prefix is highly productive as a causative marker in Jingpho, though it has been palatalized to šə- (varying with džə- before an aspirated or sibilant root-initial:⁴¹

lòt	‘be loose, free; escape’	šəlòt	‘set free’
dám	‘go astray’	sədám	‘lead astray’
prùt	‘come to a boil’	šəprùt	‘bring to a boil’
phrīŋ	‘be full’	džəphrīŋ	‘fill sthg’
sù	‘be awake’	džəsù	‘awaken smn’

Lepcha

As demonstrated long ago (Benedict 1943), Lepcha has developed a “secondary palatal infix” which appears after the root-initial as the reflex of the old sibilant causative prefix:

nak	‘be straight’	nyak	‘straighten’
thor	‘escape, get free’	thyor	‘let go, set free’
rop	‘stick, adhere’	ryop	‘affix, attach sthg’

This is really an example of *metathesis* rather than of infixation:⁴²

$$*s + C_i > + C_i + y$$

As mentioned above (4.1.1), many TB languages (Burmese, Lahu and other Loloish languages, Lai and other Chin languages, Hayu and other Himalayish languages) preserve more indirect traces of the sibilant causative prefix, in terms of the manner of the initial consonant and/or the tone of the syllable. Occasionally the original *s- prefix peeps

41. The closely related Nung language has a similar palatal sibilant causative prefix: ənem ‘be low’ / šənem ‘lower sthg’.

42. A somewhat analogous metathetic development was posited by Bodman (1969), who derived some instances of OC dental affricates from PST sequences of prefixal *s- before a dental root-initial, *i.e.* *s + t > ts-.

4.2.1: Prefixal *s-

through even in Burmese, when the root-initial was weak enough to permit “preemption”: WB *ʔip* ‘sleep’ / *sip* ‘put to sleep’; *waŋ* ‘enter’ / *swaŋ* ‘put into, insert’; WB *swâ* ‘go’ looks like a frozen prefixed form even though its meaning is not causative (*cf.* Jg. *wà* ‘go’, without the prefix).

(2) *Before nouns*

The clearest semantic contribution of *s- to noun roots is in words for animals and parts of the body, where it definitely represents a reduction of the syllable **sya* ‘animal / flesh / body’ (*STC* #181, and pp. 106-8).⁴³ This element appears as fully syllabic *sa-* in Lushai animal names: *sa-khi* ‘barking deer’, *sa-vom* ‘bear’, *sa-va* ‘bird’, *sa-hŋa* ‘fish’, *sa-kor* ‘horse’, *sa-hram* ‘otter’, *sa-kuʔ* ‘porcupine’, *sa-zu* ‘rat; rabbit’, *sa-zuk* ‘sambar deer’, *sa-kei* ‘tiger’, *sa-nghar* ‘wildcat’, *sa-thar* ‘wild goat’, *etc.* In Jingpho-Nung the element has become unstressed to a sesquisyllable, and sometimes palatalized: Jg. *səgû* ‘sheep’, *sənaŋ* ‘wild boar’, *səwōi* ‘pangolin’, *šəkrép* ‘bedbug’, *šərū* ‘bamboo rat; mole’, *šəro(ŋ)* ‘tiger’; Nung *səwi* ‘bear’, *səro* ‘ant’, *səri* ‘barking deer’. In Miri the prefix is vocalized with -i-: *si-tum* ‘bear’, *si-be* ‘monkey’. In Chokri Naga it appears as a sesquisyllabic dental stop, sometimes aspirated (*tə-/thə-*) < *thi* ‘animal’ < **sya* (see above 4.1.3).⁴⁴ In WT orthography the sibilant element is written right before the root initial, *e.g.* *sbrul* ‘snake’, *sbal-pa* ‘frog’, *sdiŋ-pa* ‘scorpion’, *sreg-pa* ‘pheasant’, *srin-bu* ‘insect’, *stag* ‘tiger’, *spre* ‘monkey’, though it was probably pronounced with an epenthetic schwa before certain stop root-initials.

In a couple of animal names *STC* (pp. 107-8) ultimately deems the sibilant element to be part of the root-initial, and not a prefix, though much hesitation is displayed on this point (see above 3.6.1): ‘otter’ “**s-ram* = **sram*”; ‘louse’ “**s-rik* = **śrik*”. Occasionally the sibilant prefix is only one of those reconstructed for the root: ‘horse’ **s-raŋ* ≠ **m-raŋ*.

A large number of roots for parts of the body have a sibilant prefix (sometimes alternating with a different prefix in some languages): ‘back’ **s-nuŋ*; ‘blood’ **s-hywəy*; ‘bone’ **s-rus* ≠ **m-rus* ≠ **g-rus*; ‘hair’ **s-kra*; ‘heart / brains’ **s-niŋ*; ‘navel / belly’ **s-tay*; ‘nose’ **s-na*; ‘snot’ **s-nap*; ‘sweat’ **s-krul* ≠ **s-ŋrul*; ‘tongue’ **s-lay* ≠ **m-lay*, *etc.*

43. Other TB animal prefixes recognized in *STC* are Bodo-Garo *mV-*, with variable vocalism (n. 301), and the PLB velar prefix **k-* that survives in several roots with sonorant initials. For the latter see below 4.4.4(3).

44. G.H. Luce (1986:88-96) records a similar animal prefix *tă-* in the idiosyncratic Mru language of Arakan, *e.g.* *tăpri*¹ ‘tiger’, *tătm*⁴ ‘bear’, *tămin*² ‘cat’, *tăkui*¹ ‘dog’.

(3) *Morphophonemic complications*

(a) *Obstruentization of nasals after prefixal *s- in Kanauri and Chinese*

Perhaps the most frequent response of a fairly conservative daughter language to the combination of prefixal *s- + nasal Ci is to develop voiceless nasals (see above 3.4.1). Kanauri (West Himalayish) adopted a different strategy. Although Kanauri preserves the *s- prefix well before most initials (its inventory includes the initial combinations /sp- sb- st- sɽ- sk- sg- skl-/), combinations of s-plus-nasal are not to be found. This is because they have regularly developed into nasal-plus-stop:⁴⁵

	<i>PTB</i>	<i>Kanauri</i>
‘gums’	*s-nil	stil
‘heart’	*s-niŋ	stiŋ
‘nose’	*s-na	sta-kuc
‘seven’	*s-nis	stis, tis
‘smell’	*s-nam	stam

There is also some evidence that the *s- prefix occasionally led to the obstruentization of root-initial n to an affricate in Old Chinese:

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>
‘seven’	*s-nis	七	ts’ ^h jet	400a-d
‘nose’	*s-na	自	dz’ ^h æg	1237m-p ‘self’ ^a

a. OC not reconstructed in *GSR*. The graph is said to be a drawing of a nose, and occurs in this sense as radical in 鼻 b^hiəd 521c.

Boodberg (1937) cites the 說文 *Shuo Wen* analysis of the character 年 OC **nien** ‘year’ (PTB *s-niŋ) as including 千 OC ts’ien ‘thousand’ as phonetic. See *STC* n. 471, p. 177; Duàn Yùcái 段玉裁 1815:326.

45. See JAM 2001b (“Zhangzhung”). So far no certain examples have been found of Kanauri sp- < *s-m, or of Kan. sk- < *sɽ-.

4.2.2: The glottal prefix: *ʔa- Ꝁ*(ʔ)ə- Ꝁ*ʔə- Ꝁ*ʔaŋ- Ꝁ*ʔak-

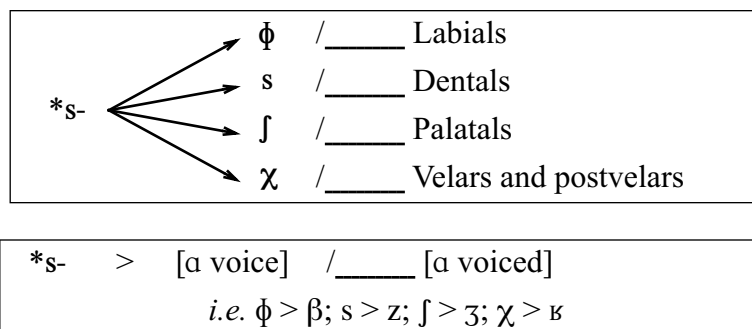
(b) Preemption of nasals after prefixal *s- in Bodo-Garo

In several Bodo-Garo (Barish) languages, *e.g.* Bodo and Dimasa, root-initial **n-** has been dropped after prefixal *s-, which itself here becomes laryngealized to **h-**, *i.e.* *s-n- > h-:⁴⁶

	<i>PTB</i>	<i>Garó</i>	<i>Bodo</i>	<i>Dimasa</i>
‘daughter-in-law’	*s-nam	nam	ham	ham
‘enter’	*s-nap	nap	hap	hap
‘good’	*s-nam	nam	ham	ham

(c) Assimilation of the sibilant prefix to the root-initial

We have seen the many ways in which the *s- prefix could influence the root-initial, but the influence has sometimes operated in the opposite direction: *i.e.* the sibilant prefix itself could undergo assimilatory changes under the influence of the root-initial.⁴⁷ In Dayang Pumi there are no fewer than eight surface realizations of the prefix, to allow it to agree in voicing and position of articulation with the following root-initial:



4.2.2 The glottal prefix: *ʔa- Ꝁ*(ʔ)ə- Ꝁ*ʔə- Ꝁ*ʔaŋ- Ꝁ*ʔak-

Perhaps the most interesting TB prefix, both from the morphophonemic and semantic point of view, is the one presented in *STC* (pp. 121-3) as “*a-”. Benedict correctly considers all the many semantic functions of this prefix to be outgrowths of one and the same proto-element.⁴⁸ However, the morphophonemics of this prefix are more complicated than he had supposed. While *STC*:123 recognizes both stressed and unstressed variants,⁴⁹ two refinements are necessary:

46. See *STC*:84.

47. Such assimilatory alternations are much more common with the nasal prefix, however (below 4.3).

- (a) an essential component of the prefix was its initial glottal stop, especially when its vowel was stressed;
- (b) besides the simple semisyllabic version of the prefix, there is a well-attested fully syllabic variant with final velar nasal (*ʔaŋ-), and occasionally even a secondary allomorph with final velar stop (*ʔak-).

It is a moot point whether the open or nasal-finalled variant of this prefix is “more basic”. We will return below (§2) to the question of competing historical scenarios for these alloforms, after a discussion of the various semantic functions of the prefix.

(1) *Semantic functions*⁵⁰

(a) *Kinship*

The prefix appears throughout TB with kinship terms, both in their vocative and referential usage, with the details of use varying from language to language, *e.g.* Garo **a-pa** ‘father’, **a-ma** ‘mother’; Lahu **a-pa** ‘father!’ (voc.), **a-ví-a-ni** ‘older and younger siblings!’ (voc.), **a-pi** ‘grandmother’ (voc. or ref.), **a-e** ‘mother!’ (voc.).⁵¹ In Jingpho, this prefix turns up in the form of glottalization of the root-initial if the latter is a sonorant, *e.g.* ʔmōi ‘mother-in-law!’ (vocative by wife to husband’s mother), ʔwâ ‘father!’ (voc.), ʔwōi ‘grandma!’ (voc.) [see below §3c].

(b) *3rd person possessive*

In this function (widespread *e.g.* in Himalayish and Chin languages), the prefix appears affixed to the thing possessed, whether the possessor is a pronoun (otherwise unexpressed) or a common noun:⁵²

48. Wolfenden (1929:177ff.) had attempted to distinguish genetically between the “pronominal” and “non-pronominal” prefixes of this shape. In any case, even if only a single element was involved at the PTB stage, it is always possible that at a still earlier stage more than one distinct entity were involved. This would be somewhat analogous to the English initial element *a-* that appears in dozens of words with no very clear overall meaning, since it descends from several different morphemes, including ‘on’, ‘at’, and ‘all’ (*cf.* locatives like *aboard*, *abaft*, *away*, *around*, *asea*, *abed*; statives like *afire*, *aflame*, *a-glimmer*, *a-glow*; and miscellaneous words like *atone* (< *at one*) and *alone* (< *all one*), etc.

49. *STC* transcribes the prefix variously in forms cited from daughter languages as *a-*, *ə-*, or *ă-*.

50. Both the kinship and pronominal possessive functions of this TB prefix seem quite analogous to the Chinese prefix conventionally written with the character 阿 (Mand. *ā*), which appears in personal names and kinship terms, often to form vocatives or first-person possessives. See Mathews 1960:1.

51. Compare the corresponding Lahu referential forms with the *ə-* prefix (< *ʔaŋ-): *ə-pa*, *ə-ví-ə-ni*, *ə-pi*, *ə-e* (below §2).

52. This is opposite from English, where it is the possessor that receives the marking: *John’s book* < *John his book*.

4.2.2: The glottal prefix: *ʔa- ≠ *(ʔ)ə- ≠ *ʔə- ≠ *ʔaŋ- ≠ *ʔak-

(i) *Pronominal possessor*

Lai Chin ʔa-rool ‘his/her food’ (see above 4.1.1)

(ii) *In genitive constructions with common nouns, prefixed to the thing possessed*

- (Himalayish) Bahing biŋ ə-tami ‘calf’ (“cow its-child”), byar ə-pwaku ‘sugar-cane’ (“cane its-juice”); Lepcha vi ‘blood’, so ‘vessel’ > vi a-so ‘blood vessel’ (“blood its-vessel”)
- (Chin) Aimol rəmai ‘tail’ < *r-may (STC #282), rul ə-rmai “the snake’s tail” (“snake its-tail”).
- (Lolo-Burmese) Burmese wak-sâ ‘pork’, wak ʔəsâ ‘the meat/flesh of a pig’; Lahu vâʔ-šā ‘pork’, vâʔ ð-šā ‘the meat/flesh of a pig’.
- (Kamarupan) Mikir o-so a-hem ‘placenta’ (“child its-house”), mék a-so ‘pupil’ (“eye its-child”), mék a-rèng ‘eyelid’ (rèng ‘skin’), bùm a-rèng ‘foreskin’, bùm a-lāng ‘semen’ (bùm ‘penis’, lāng ‘water’), òk a-nò ‘fin’ (“fish its-ear”), ri a-sék ‘elbow’ (“arm its-joint”), kèng a-sék ‘ankle’ (kèng ‘foot’), nò a-bō ‘earwax’.

(c) *Verb prefix showing agreement with a 3rd person subject*

This usage corresponds closely to the possessive function of the prefix before noun roots, and a given language will typically use the prefix in both ways, e.g. Lai Chin ʔa-kal ‘he/she goes’, parallel to ʔa-rool ‘his/her food’ (see above 4.1.1).

(d) *Nominalizer of verbs*

It is easy to see the connection between 3rd person possession and verb nominalization: ‘its Verb-ing; (its) Verb-ness’. A few examples: (Jingpho) súŋ ‘to use’, ʔəsúŋ ‘a use’; wák ‘to notch’, ʔəwak ‘a notch’; (Lepcha) ŋan ‘sit’, āŋan ‘dwelling’; (Burmese) lup ‘to work’, ʔəlup ‘labor’; thûm ‘tie in knot’, ʔəthûm ‘a knot’; (Lahu) qòʔ ‘be bent’, ð-qòʔ ‘bent object, corner’; cā ‘to sprout’, ð-cā ‘a sprout’; phôʔ ‘pile up’, ð-phôʔ ‘a heap’; lá ‘be left over’ (< Shan), ð-lá ‘excess, superfluity’.

Often a verb will coöccur with its derived prefixed noun in “cognate” N/V constructions, e.g. Lahu ð-u u ve ‘lay an egg’, ð-cā cā ve ‘to sprout a sprout’, ð-thîʔ thîʔ ve ‘wrap a package’, ð-mɛ mɛ ve ‘name with a name; give a name to’.⁵³ In Lahu some verbs also have homophonous unprefixated classifiers, so that the same morpheme may occur

53. See Hansson 1996 and JAM 1996b.

three times in quantified NP's, with the prefix appearing only before the head-noun: ð-thî? nî thî? thî? ve (“wrap two wrap of wrapping”).

(e) “Aspectual” verb prefix

In this usage, the glottal prefix sometimes functions very similarly to prefixal *m- (below 4.3),⁵⁴ to indicate stativity or intransitivity: *e.g.* Mikir *ăthik* ‘just’; Jingpho *ʔəkhá* ‘bitter’, *ʔəthàt* ‘thick’, *ʔəsìt* ‘tasteless’. (In formations like these the unprefixed root is already stative, so the prefix merely provides “phonological bulk”; see §f below.) Sometimes, however, the prefix occurs with the opposite effect, lending a transitive or causative feature to the verbal meaning, as in Jingpho: *wām* ‘dare’, *ʔəwām* ‘respect, treat with deference’; *thín* ‘be closely woven’, *ʔəthín* ‘press closer together’; *rái* ‘to be’, *ʔərái* ‘arrange, make preparations’.

In sum, as far as aspectual function goes, *m- is consistently stativizing/intransitive, *s- is consistently causativizing/transitivizing, while *ʔ- behaves sometimes one way, sometimes the other.⁵⁵

(f) With nouns, as bulk-providers

Very frequently this prefix is added to roots that are already nouns, merely to give them a bit more phonological bulk, providing them with the salience to serve as constituents in larger constructions.⁵⁶ Sometimes the prefixed version has some increment or change of meaning, but often the two forms are semantically identical.

Lepcha In most words, the addition of the prefix makes no difference to the meaning, *e.g.* (a-)mik ‘eye’, (a-)vi ‘blood’, (a-)so ‘vessel for body-fluid’, (a-)li ‘tongue’, (a-)šil ‘penis’, (a-)fo ‘tooth’, (a-)byet ‘liver’, (a-)gon ‘fin’, (a-)bu ‘lung’, (a-)t'yak ‘head’. In some cases, however, there is semantic specialization: Lepcha *uŋ* ‘water’, *a-uŋ* ‘meat broth’; *vi* ‘blood’, *a-vi* ‘menses’; *rip* ‘flower’, *a-rip* ‘cloth flower’.

54. For a discussion of the dual nasal/glottal nature of the often stativizing WT prefix ɸ- (a-chung), and of the relationship between WT ɸ- and m-, see below §4.

55. As we have seen (above 4.1.1), the causative prefix was *ʔ- at the Proto-Loloish stage, though it ultimately descends from PTB *s-.

56. This is termed “lapse of function” in *STC*:121.

4.2.2: The glottal prefix: *ʔa- ≠ *(ʔ)ə- ≠ *ʔã- ≠ *ʔaŋ- ≠ *ʔak-

- Lahu* Usually the prefix ʔ- (< *ʔaŋ-) makes no difference to the meaning, as in (ʔ-)jô-mô ‘master’, (ʔ-)má-pā ‘son-in-law’, (ʔ-)šī ‘blood’; but there are also pairs like šā ‘animal, game’ vs. ʔ-šā ‘meat’; khô ‘language, speech’ vs. ʔ-khô ‘noise, sound’; mēʔ ‘eye’, ʔ-mēʔ ‘dot, speck, knot in wood’.
- Burmese* (ʔə-)ʔok ‘underpart, below’; (ʔə-)khwaŋ ‘permission’; but swâ ‘tooth’ vs. ʔəswâ ‘cutting edge of tool’; ʔim ‘house’ vs. ʔəʔim ‘sheath’; myak ‘eye’ vs. ʔəmyak ‘knot in timber’.

(2) Morphophonemic variations

As indicated above, I interpret the basic form of this prefix as *ʔa-, usually semisyllabized as *ʔə-. This unstressed variant is the form found, *e.g.*, in Burmese, where over 11.5% of the total lexicon bears the prefix.⁵⁷ In addition, we must recognize a variant with final nasal, *ʔaŋ-, as well as one with the homorganic final stop, *ʔak-. We may envision more than one morphophonemic scenario relating these prefixes.

- Either* (a) the prefixes with velar finals reflect a completely different etymon from the open form *ʔa- ≠ ʔə-;
- or* (b) all the prefixes are related, and the nasal-finalled variant is to be explained in terms of rhinoglottophilia induced by the initial glottal stop, becoming first *ʔã- or *ʔã-, then in some languages undergoing “nasal reinforcement” to forms like ʔaŋ-;
- or* (c) the basic form of the prefix was *ʔaŋ-, which later got unstressed to *ʔəŋ-, then sometimes lost the nasal occlusion to yield *ʔã- or simply ʔə-.^a

a. This latter hypothesis would be paralleled rather closely by the occasional fate of PIE syllabic *ṃ-, which became a- in Greek and Sanskrit.

In any case, all three prefixes are attested in Lahu.⁵⁸ We have seen (above §1a) the stressed mid-tone element a- (< *ʔa-) that occurs (usually with vocative force) in kinship terms. In addition, Lahu has a prefix á- under the high-rising tone (< *ʔak-) that occurs in about 70 words (*e.g.*, á-lêʔ ‘salt’, á-chèʔ ‘goat’, á-thâ “jew’s-harp”).⁵⁹ However, by far the most common prefix in Lahu is ʔ- (< *ʔaŋ-), which occurs before hundreds of roots, including many integrated loanwords from Shan and Burmese. It serves to convert both

57. Fully 124 of the 1061 pages of Judson’s dictionary (1966 reprinting) contain words with this prefix.

58. See my note 335 in *STC*:121.

59. These words fill 13 out of 1414 pages in *The Dictionary of Lahu*, or less than 1% of the lexicon. The variant with final stop is the rarest of the three in TB as a whole, and seems clearly to be a secondary development from the form with final velar nasal.

nominal and verbal roots into autonomous nouns, which may then be compounded with preceding, “specifying” nouns; but it is often used just to give more phonological weight or semantic specialization to roots which are already autonomous nouns in their own right.⁶⁰

The nasal-finalled variant *ʔaŋ- may be reconstructed with certitude for Proto-Loloish on the testimony of Southern Loloish languages like Bisu, Phunoi, and Sangkong:

Bisu

The prefix ʔaŋ- occurs before both nominal and stative verbal (adjectival) roots: (*with adjectival roots*) ʔaŋ-tè ‘alive’, ʔaŋ-hmaŋ ‘beautiful’, ʔaŋ-khà ‘bitter’, ʔaŋ-plàŋ ‘black’, ʔaŋ-chò ‘cold’, ʔaŋ-kòj ‘crooked’, ʔaŋ-hnà ‘deep’, ʔaŋ-kw ‘dry’, ʔaŋ-phlən ‘flat; even’, ʔaŋ-pluŋ ‘full’, ʔaŋ-kən ‘stiff’, ʔaŋ-han ‘heavy’, ʔaŋ-bjà ‘many’, ʔaŋ-hné ‘red’, ʔaŋ-dá ‘sick’, ʔaŋ-nám ‘bad-smelling’, ʔaŋ-cháw ‘sweet’;⁶¹ (*with noun roots*) ʔaŋ-gàw ‘bone’, ʔaŋ-sà ‘breath’, ʔaŋ-dà ‘dawn’, ʔaŋ-ʔu ‘egg’, ʔaŋ-tù ‘head’, ʔaŋ-khjáw ‘horn’, ʔaŋ-bà ‘insect’, ʔaŋ-hmaw ‘liver’, ʔaŋ-fà ‘meat’, ʔaŋ-hnu ‘seed’.

Phunoi

The prefix ʔã⁵⁵- appears with a few verbal roots (ʔã⁵⁵-tat¹¹ ‘alive’, ʔã⁵⁵-piŋ³³ ‘full’), but is mostly used with nouns: ʔã⁵⁵-hmo³³ ‘body hair’, ʔã⁵⁵-jau¹¹ ‘bone’, ʔã⁵⁵-do¹¹ ‘brain’, ʔã⁵⁵-jã⁵⁵ ‘chest’, ʔã⁵⁵-hna¹¹ ‘ear’, ʔã⁵⁵-bia³³ ‘eye’, ʔã⁵⁵-shi⁵⁵ ‘fat’, ʔã⁵⁵-tu³³ ‘head’, ʔã⁵⁵-chau⁵⁵ ‘horn’, ʔã⁵⁵-ʔu⁵⁵ ‘intestines’, ʔã⁵⁵-sin¹¹ ‘liver’, ʔã⁵⁵-hmaŋ³³ ‘lung’, ʔã⁵⁵-hlu¹¹ ‘skin’, ʔã⁵⁵-liŋ³³ ‘throat’, ʔã⁵⁵-hlá ‘tongue’, ʔã⁵⁵-co ‘waist’, ʔã⁵⁵-tõ ‘wing’.

*Sangkong*⁶²

The prefix aŋ³³- is apparently only used with nominal roots: aŋ³³-mbaŋ⁵⁵ ‘body’, aŋ³³-tu³¹ ‘head’, aŋ³³-tsham⁵⁵ ‘hair of head’, aŋ³³-ndo³¹ ‘brain’, aŋ³³-na³¹ ‘ear’, aŋ³³-so³¹ ‘tooth’, aŋ³³-khoŋ³¹ ‘throat’, aŋ³³-la³¹ ‘hand’, aŋ³³-tco³¹ ‘waist’, aŋ³³-zø³¹ ‘bone’, aŋ³³-u⁵⁵ ‘intestines’, aŋ³³-phje³¹ ‘liver’, aŋ³³-phap ‘lung’, aŋ³³-ndøt⁵⁵ ‘phlegm’.

Nung

Nung also has a nominalizing prefix əŋ-, e.g. əŋ-sü ‘stopper’ < sü ‘close up, cork’, əŋ-wam ‘a cover’ < wam ‘to cover’, əŋ-məthip ‘a fold’ < məthip ‘to fold’ (STC, n. 330).

60. Fully 86 out of the 1414 pages of *The Dictionary of Lahu* (about 6% of the lexicon) contain words with this prefix. For a more detailed discussion of this prefix see JAM 1973/1982:66-74.

61. This prefix is productive enough to be added to adjectives borrowed from Tai, e.g. ʔaŋ-wàj ‘fast’, ʔaŋ-hóm ‘fragrant’, ʔaŋ-khjaw ‘green’.

62. Data from Li Yongsui 1991.

4.2.2: The glottal prefix: *ʔa- ≠ *(ʔ)ə- ≠ *ʔə̃- ≠ *ʔaŋ- ≠ *ʔak-

Tangkhul Naga

Tangkhul has a prefix *a-*, which occurs especially with body parts (*e.g.* *a-sho* ‘claw’, *a-sa* ‘flesh’, *a-mathin* ‘liver’, *a-phar* ‘lungs’, *a-hui* ‘skin’, *a-khamei* ‘tail’), but also a curious dissyllabic element *aŋa-* which seems to be a sequence of the two related prefixes *aŋ-* + *a-* (*e.g.* *aŋ-a-tak* ‘among’, *aŋ-a-tok* ‘brain’, *aŋ-a-chi* ‘horn’, *aŋ-a-yuŋ* ‘root’, *aŋ-a-chaŋ* ‘wing’).

Mikir

Mikir⁶³ has three important vowel initial prefixes, *a-*, *ang-*, *ing-*, two of which end in the velar nasal:

- Prefixal *a-* usually functions as a genitive element in compounds, as in *mék a-rèng* ‘eyelid’ (see §1bii, above), but also occasionally appears as a bulk-provider before noun roots (*a-chu* ‘hair of head’; so ~ *a-so* ‘child’⁶⁴).
- *ang-* may also serve as a genitive element in compounds (*mék ang-sùm* ‘eyelash’), but also occurs before a large number of noun roots used independently: *ang-kok* ‘hole’, *ang-ni* ‘tusk’, *ang-jin* ‘shoulder’, *ang-ham* ‘palate’, *ang-hap* ‘uvula’, *ang-mi* ‘body hair’, *ang-ru* ‘rust’, *ang-kur* ‘root’, *etc.*
- Even more frequent is the prefix *ing-*, which occurs before verb roots (*ing-jùp* ‘suck’, *ing-thak* ‘be itchy’) as well as before many nouns: *ing-thin* ‘liver; heart’, *ing-phor* ‘lung’, *ing-phat* ‘leech’, *ing-kroy* ‘saliva’, *ing-mî* ‘body hair’, *ing-sî* ‘heart’. However, this prefix is better derived from the nasal prefix **m-* (see below 4.3.2).

There is considerable overlap in function among these three Mikir prefixes, with some roots capable of taking more than one alternant with little apparent difference in meaning, *e.g.* *ang-mi* (Walker) ~ *ing-mî* (Grüssner) ‘body hair’.⁶⁵

63. Mikir forms cited with tone-marks are from Grüssner 1978; the others are from Walker 1925.

64. This particular word can also take *o-*: *o-so* ≠ *a-so*. No other Mikir words in the STEDT database have this *o-* prefix.

65. *STC*:122 cites both *ĩŋnim* ‘smell’ (written with a breve) and *aŋnim* ‘odor’.

Lotha Naga

Lotha prefers mid-vowel coloration for its most common vocalic prefixes, with o- (perhaps < *ʔaŋ-) and e- (perhaps < *ʔiŋ-) seemingly of about equal frequency:

o-	o-khe ‘hand’, o-ka ‘daughter’, o-so ‘meat’, o-pok ‘belly’, o-fhu ‘skin’, o-ho ‘tooth’, o-hro ‘bean’, o-lo ‘bow (for arrows)’, o-ki ‘house’, o-zu ‘rope’, o-ma ‘salt’
e-	e-ŋu ‘neck’, e-ŋü ‘wife’, e-khu ‘fat’, e-cho ‘wing’, e-won ‘arm’, e-chen ‘blood’, e-mhi ‘tail’, e-thi ‘fruit’, e-lok ‘cloud’, e-yo ‘cheek’, e-no ‘ear’

Prefixal e- may occasionally be used before Lotha verb-roots (e-khu ‘cough’, e-nak ‘scratch’, e-sap ‘blow’), and there is also an example in the STEDT database of eng- before a velar-initialled verb-root (eng-kak ‘bite’).

Mao Naga

Mao also favors the o- prefix with noun roots: o-ba ‘arm’, o-pu ‘belly’, o-zhi ‘blood’, o-re ‘bone’, o-phi ‘foot’, o-le ‘heart’, o-ho ‘tooth’, o-khe ‘dish’, o-chü ‘house’, o-ri ‘rope’, o-si ‘dog’, o-mi ‘fire’, o-khe ‘tiger’.⁶⁶ There is also at least one example of the e- prefix: e-ve ‘leech’ (*cf.* Mikir *ing-phat*).

(3) *Glottalized initials and glottal prosodies*

The glottal prefix has led to the development of a glottalized manner series of obstruents in some branches of TB.⁶⁷ Yet glottalic features are notoriously hard to localize in particular segments of a syllable,⁶⁸ and the proto-laryngeal prefix is often manifested mostly on the vowel, which may acquire “creaky” or “glottalized” phonation,⁶⁹ or even a special tone.⁷⁰ The way glottal constriction is transcribed for a given language by different authors — *i.e.* whether it is treated as a feature of the initial or of the vowel — is often merely a matter of individual preference.

66. Contrast Lushai *sa-kei* ‘tiger’, with a specific animal prefix (above 4.2.1).

67. This is analogous to the *nasal prefix giving rise to a prenasalized series of obstruents. See below 4.3.

68. See the discussion of Mpi “laryngeokinesis”, in JAM 1978b.

69. Creakiness can also arise through the decay of a former syllable-final stop to -ʔ. See below Ch. 8.

70. For a discussion of the tonal effects of “glottal dissimilation”, see JAM 1970, 1972a, and 1973b. For the prefixal origin of Burmese creaky tone see Thurgood 1981.

4.2.2: The glottal prefix: *ʔa- ≠ *(ʔ)ə- ≠ *ʔə- ≠ *ʔaŋ- ≠ *ʔak-

(a) Lolo-Burmese

Burling's important discovery (1968) of glottal constriction in some words in the Burmish languages Maru (Langsu) and Atsi (Zaiwa), led him to reconstruct a *glottalized series of obstruents for Proto-Lolo-Burmese. These *glottalized initials merged with the PLB *voiceless series in Burmese, becoming WB aspirates; in Loloish they generally became plain voiceless unaspirates, with special tonal developments:

PLB	WB	Atsi / Maru	Lahu	Lisu	Akha
*ʔ-p, *ʔ-b	ph	pʔ	p	p	p

Burling recorded the following glottalized initials for Maru and Atsi:

pʔ	pʔy	tʔ	tsʔ	cʔ	kʔ	kʔy
mʔ	mʔy	nʔ	nʔy		ŋʔ	
		lʔ				

Björverud recently (1998) recorded four preglottalized sonorants, ʔm, ʔn, ʔl and ʔv, in Lalo (Western Loloish).⁷¹ Lalo forms with these initials generally correspond quite well to etyma reconstructed with the PLB *ʔ- prefix:

	PLB	Lalo		PLB	Lalo
‘brood / incubate’	*ʔ-mu ²	ʔmù	‘rib’	*ʔ-nam ¹	ʔnú-zà
‘deep’	*ʔ-nak ^L	ʔnìq	‘snot’	*ʔ-nap ^L	ʔnỳq
‘dry in sun’	*ʔ-lap ^L	ʔlỳq	‘soot / acrid’	*ʔ-mu ²	ʔmù-fìq
‘ear’	*ʔ-na ²	ʔnà	‘trousers’	*ʔ-la ²	ʔlà
‘fry’	*ʔ-lu ³	ʔlŵ	‘wait’	*ʔ-laŋ ¹	ʔlw
‘press’	*ʔ-nip ^L	ʔnìq			

However, Asian linguists prefer by and large to mark constriction on the vowel rather than to set up glottalized initial consonants. Such are the treatments of glottal constriction in Zaiwa (Xu Xijian 1984; Yabu 1982), Jingpho (Dai *et al.* 1983), Bola (Dai *et al.* 1991), *etc.*

71. See Namkung *ed.* 1996:204. Other Loloish languages with preglottalized initials include Nusu (ʔm, ʔn, ʔŋ, ʔl, ʔv) and Mo-ang (ʔm, ʔmj, ʔn, ʔnj, ʔŋ, ʔl, ʔv, ʔw, ʔj, ʔj). *Op. cit.* p. 309, 262; and 3.4.1 (n. 50) above.

There seems to have been only a marginal contrast at the Proto-Loloish level between **voiced* vs. **voiceless glottalized obstruents*. In open syllables there is no tonal evidence for such a contrast, and I conventionally use the voiced symbols in reconstructions, *e.g.*:

	<i>WT</i>	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>	<i>Bola</i>
‘frog’	sbal	*ʔ-ba ²	phâ	pā	---
‘porcupine’	---	*ʔ-blu ¹	phru	fâʔ-pu	pju ⁵⁵
‘put / place’	sta	*ʔ-da ²	thâ	tā	---
‘teach’	---	*ʔ-ma ^{1/2}	hma	mā	mā ³⁵

On the other hand, a voicing contrast seems necessary to posit in PL stopped syllables, where a **voiceless glottalized initial* leads to the Lahu high-stopped tone / ^ˆʔ /, while a **voiced glottalized initial* develops into Lahu high-rising tone / ˈ / by “glottal dissimilation” (see JAM 1970, 1972a:37-43):

<i>PLB</i>	<i>Lahu</i>
*ʔ-pak ^H	pâʔ ‘collapse’
*ʔ-bak ^L	pá ‘side’

Such a strange opposition seems clearly to call for an interpretation in terms of a still earlier contrast between sesquisyllabic forms like **ʔəpak* and **ʔəbak*.⁷²

The two “laryngealizing” prefixes **s-* and **ʔ-* had largely merged to **ʔ-* before stops, spirants, and resonants by the Proto-Loloish stage,⁷³ but were still kept apart before nasal initials in stopped syllables, with **s-* causing the syllable to join the **HIGH**-stopped class, and **ʔ-* causing it to join the **LOW**-stopped class (see above 4.2; JAM 1972a:23-25). There has been some controversy over how to reconstruct the causative prefix in Lolo-Burmese. Largely for tonal reasons, especially to account for the phenomenon of “glottal dissimilation”, I consider the marker of causativization at the Proto-Loloish (and probably

72. This interpretation is made all the more plausible by the need to reconstruct a velar member of the preglottalized series at the PLB level, as *e.g.* in PLB **ʔ-gak^L* ‘branch’ > WB *khak*, Lahu *qá*. A true series of unitary preglottalized stops typically lacks a velar or palatal member. See the situation in Karenic, §b below.

73. I am now inclined to reinterpret the “voiceless glottalized” initials in PLB **stopped syllables* with obstruental initials as sequences of prefixal **s-* plus voiceless stop:

<i>PLB (TSR)</i>	<i>PLB (New)</i>	<i>Lahu</i>
*grak ^L	*grak ^L	kâʔ
*ʔ-krak ^H	*s-krak ^H	kâʔ
*ʔ-grak ^L	*ʔ-grak ^L < **s-grak	ká

4.2.2: The glottal prefix: *ʔa- ≠ *(ʔ)ə- ≠ *ʔə̃- ≠ *ʔaŋ- ≠ *ʔak-

even the PLB) stage to have been the *ʔ- prefix, though the matter is complicated by a sporadic survival of prefixal *s- in Burmese where the phonological environment was favorable, with the clearest example being WB ʔip ‘sleep’ (< *(y)ip) / sip ‘put to sleep’ (< *s-(y)ip); see above 4.1.1.

(b) *Karenic*

Proto-Karen is reconstructed with four series of initial stops: ***plain**, ***aspirated**, ***voiced**, and ***voiced preglottalized**, with the latter series being confined to the labial and dental positions /ʔb ʔd/ (Haudricourt 1946, 1953, 1975).⁷⁴ This is the typical pattern for Southeast Asia: similarly defective glottalized series are to be found in Tai and Mon-Khmer, with both of which Karen has been in prolonged historical contact.

In addition to these series, Benedict (1979)⁷⁵ reconstructs a Proto-Karen ***voiceless preglottalized** series to account for about 14 examples where the Pa-o (Taungthu) dialect has voiceless unaspirates as against aspirates elsewhere. He suggests that the main source of this glottalization was the PTB *ʔ(ə)- prefix before voiceless initials.

(c) *Jingpho*

Jingpho dialects exemplify three stages of glottalization:

- (a) semi-syllabic prefixal ʔə-, as in ʔəkhá ‘bitter’, ʔəthàt ‘thick’ (see above);
- (b) preglottalized sonorants / ʔm ʔn ʔw ʔl ʔr ʔy /;
- (c) constricted vowels.

I have personally heard these preglottalized sonorants in the speech of LaRaw Maran (1963), who explicitly called them to my attention. In Dai *et al.* (1983), however, these words are written with plain initials and constricted vowels. This may simply be a matter of phonemic interpretation, though it is also possible that the Jingpho dialects of Yunnan are somewhat different in this respect from Maran’s dialect (Kachin State, Burma).

A stronghold of glottalized words is vocative kinship terms:

ʔmōi	‘mother-in-law!’ (voc. by wife to husband’s mother); Dai 520: mqi ³³
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74. Similar inventories are to be found in modern Karen languages. For Bwe Karen, Henderson (1997) records glottalized stops /ʔb ʔd/, nasals /ʔm ʔn/, and resonants /ʔw ʔl ʔr ʔy/, all contrasting with the corresponding members of the plain voiced series.

75. This is to be found in the second of his “Four forays into Karen linguistic history”, entitled “A note on the reconstruction of Karen preglottalized surd stops” (LTBA 5.1:8-12).

ʔwâ	‘father!’ (voc.); Dai 858: wâ ⁵¹
ʔwōi	‘grandma!’ (voc.); Dai 879: wōi ³³
ʔrát	‘sister-in-law!; brother-in-law!’ (voc. used by people of the same age; Dai 687: ʔat ⁵⁵
ʔnā	‘older sister!’ vs. nā ‘ear’; Dai 543 nā ³³
ʔnām	‘daughter-in-law!’ (voc. by mother-in-law to daughter-in-law); Dai 548: nām ³³ (vs. nam ³³ ‘enter menstrual period’)
ʔnû	‘mother!’; Dai 639 does not indicate constriction: nu ⁵¹
ʔnīŋ	‘maternal cross-cousin; form of address of girl to girls not of same clan’; Dai 595: nīŋ ⁵⁵)

Glottalization also occurs with a number of semantically miscellaneous noun and verb roots that have nothing to do with kinship:

ʔnīŋ	‘this way’; Dai 595 shows no constriction)
ʔmāŋ	‘purple’ vs. māŋ ‘corpse’ (māŋ ʔmāŋ ʔai ‘the corpse is purple’); Dai 479: māŋ ³³ ‘corpse’ / māŋ ³³ ‘purple’
ʔwàn	‘fire’ vs. wàn ‘round’; Dai 868 does not indicate constriction in ‘fire’
ʔyúp	‘sleep’ vs. yúp-māŋ ‘dream’; Dai 901 does not indicate constriction in ‘sleep’)
ʔyép	‘tobacco container’; Dai 892: jep ⁵⁵ vs. yép-yép ‘be intimately connected (as lovers)’
ʔyèn	‘to peel (fruit)’; Dai 892 writes with constriction: jēn ³³ (vs. jen ³³ ‘pickle, preserve in salt’ < Chinese)
məʔyēn	‘saliva’; Dai 515: mǎ ³¹ jēn ³³ (vs. mǎ ³¹ jen ³³ ‘tin’); this word has been doubly prefixed: < *m-ʔ-yen
ʔlòìʔ-lòì	‘a little, few’; Dai 431: lòi ³¹ lòi ³¹ (vs. lòì ‘easy’)
ʔlàn	‘do once; classifier for times’, ʔlàn-mòʔ ‘a little’; Dai 410: lən ³¹)

(4) Glottalization and nasalization

Glottality and nasality interact in a variety of ways in TB phonology and morphology. We have seen that at the PLB level the nasal and glottal prefixes are opposed paradigmatically in simplex (*nasal-) vs. causative (*glottal-) verb-pairs.⁷⁶ At a more remote time-depth, both the glottal and the nasal prefixes are characteristic of stative/intransitive (*i.e.* non-causative) verbs, as in Jingpho (ʔə- and mə-, often written “ă-”

4.2.2: The glottal prefix: *ʔa- ≠ *(ʔ)ə- ≠ *ʔə- ≠ *ʔaŋ- ≠ *ʔak-

and “mă-”) and Written Tibetan, where these prefixes are written with the symbols “a-chung” (here transcribed ʰ-), and m-.

The phonetic nature of the consonant represented by the WT letter “a-chung” is highly controversial.⁷⁷ Some scholars have interpreted it as “smooth vocalic ingress” (contrasting with initial glottal stop before vowels). Others have claimed that it represented nasalization when it occurred before an initial consonant.⁷⁸ In fact, however, the phonetic features of glottality and nasality themselves are organically connected through the phenomenon I have called rhinoglottophilia (JAM 1975b), which frequently manifests itself as subphonemic vowel nasalization in syllables with laryngeal onsets (h-, ʔ-, or Ø-initial). It is my view that a-chung represented a glottal onset that had engendered a rhinoglottophilic feature of nasalization: *ʔə- (see §2 above).⁷⁹

The use of *a-chung* before WT nouns (e.g. ʰbu ‘insect’, ʰbras ‘rice’, ʰdab-ma ‘wing’, ʰgul ‘neck’) often seems to parallel the bulk-providing function of reflexes of the *glottal prefix like WB ʔə- (§2 above). WT syllables beginning otherwise with a vowel are written with initial *a-chung*, which could well have represented glottal stop in that position, rather than being a mere “place-holder” for the vowel.⁸⁰

In any case it must be acknowledged that WT ʰ- and m- form a kind of natural class distributionally, in that both of these prefixes only occur before voiced or aspirated initials, never before voiceless unaspirates.⁸¹

76. The nasal ≠ glottal interplay is also found in no fewer than fourteen stop-finalled PLB roots, not all of which can now be recognized as simplex/causative pairs (and a couple of which are not even verbs). See *TSR* pp. 48-52, #’s 98-110, 179.

77. For a good discussion, see Beyer 1992:43, 47.

78. In this environment the WT ʰ- prefix frequently turns up as a nasal in modern dialects. In Lhasa lexical compounds where the second syllable begins with orthographic ʰ-, the first syllable often gets pronounced with a nasal coda. There are examples of WT variation between the ʰ- and m- prefixes before the same verb-root (ʰthol-ba ~ mthol-ba ‘confess’; ʰkhyud-pa ~ mkhyud-pa ‘embrace’), but such examples also exist between ʰ- and b- (ʰgrañ-ba ~ bgrañ-ba ‘count’; ʰdzo-ba ~ bzo-ba ‘to milk’).

79. More precisely, I consider *a-chung* to have represented a syllabic pre-glottalized nasal onset, something like [ʔ̃ṃ]. This is exactly what one finds synchronically in Nung (=Anong), where there is a series of syllabic nasals that are “normally realized as having a preceding glottal stop”, i.e. [ʔ̃ṃ ʔ̃ṃ ʔ̃ṃ ʔ̃ṃ ʔ̃ṃ]. (See *ZMYC*:331-6, and Namkung, ed. 1996:306.) An interesting parallel is to be found in Indo-European, where PIE syllabic *ṃ is reflected in Greek and Sanskrit as a (cf. “a-chung”), e.g. *dekṃ ‘ten’ > Gk. deka, Skt. daśa.

80. There is a good example of an etymon where WT has *a-chung* before a vowel, while WB has glottal stop, and Lahu has the high-rising tone which results from glottal dissimilation, implying glottal incidents at both ends of the syllable: ‘below/underpart’ WT ʰog, WB ʔauk, Lahu h́.

81. Other restrictions on pre-consonantal *a-chung*: it does not occur before simple fricatives, but only before affricates; and it does not occur before nasal initials (see *STC*:notes 338, 339).

A particularly interesting demonstration of the close relationship between the prosodies of glottalization and nasalization is furnished by *Mpi* (S. Loloish). In this language there are no fewer than 9 examples of etyma with the PLB rhyme **-ak* and **complex-nasal* initials (*i.e.* nasals preceded by the PLB **s-* or **ʔ-* prefixes). In all these cases a strange progressive assimilation has occurred, such that the original final **-k* has been replaced by a vowel quality containing both a nasal and a laryngeal component—a kind of rightward displacement of the original initial consonant cluster:⁸²

	<i>PLB</i>	<i>Mpi</i>	<i>Lahu</i>
‘black’	<i>*s-nak^H</i>	<i>naŋʔ³</i>	<i>nâʔ</i>
‘deep’	<i>*ʔ-nak^L</i>	<i>naŋʔ¹</i>	<i>ná</i>
‘dream’	<i>*s-mak^H</i>	<i>maŋʔ³</i>	<i>mâʔ</i>
‘open’	<i>*ʔ-ŋak^L</i>	<i>ŋaŋʔ¹</i>	<i>ŋá</i>

4.3 Prefixal **m-*, syllabic nasals, and prenasalized obstruents

4.3.1 Semantic functions of the various nasal prefixes

Prefixal *m-* occurs before both noun and verb roots. While Wolfenden (1928, 1929:139) attempted to draw a sharp distinction between its nominal and verbal usages, Benedict (*STC*:118) feels that “a single element is involved”.

Before verb roots, the nasal prefix generally signals *inner-directed states or actions*, including “middle voice” notions like stativity, intransitivity, durativity, reflexivity, as in WT verbs like *mgu-ba* ‘rejoice’, *mja-ba* ‘be, exist’, *mnal-ba* ‘sleep’, *mtshi-ba* ‘appear’, *mnab-pa* ‘dress oneself’, and PTB etyma like **m-nwi(y)* ‘laugh’, **m-tu:k* ‘spit’, **m-sow* ‘awaken’. As we have seen, in this usage it is sometimes found in paradigmatic opposition to the **s-* prefix, which marks *outer-directed action*, transitivity, causativity: *e.g.* WT *mnam-pa* ‘smell, stink’ (v.i.) vs. *snam-pa* ‘sniff, take a smell of’ (v.t.); Lahu *lêʔ*, Akha *myəʔ* ‘lick’ (< **m-lyak*) vs. Lahu *lé* ‘cause to lick, feed an animal’,⁸³ Garo *srak* (< **s-lyak*).

82. See JAM 1978b:22-24. These glottalized/nasalized syllables are written with the digraph *-ŋʔ* in Srinuan 1976.

83. We have seen (above 4.1.1) how the proto-opposition between PLB **prenasalized simplicia* and **pre-glottalized* (ultimately **pre-sibilantized*) causatives is reflected indirectly by manner and tonal contrasts in Lolo-Burmese verb-pairs.

4.3.1: Semantic functions of the various nasal prefixes

With noun roots, Benedict interprets **m-* as “an old pronominal element” (*STC* p. 119), which sometimes shows up as a 3rd person possessive prefix (often with inalienably possessed items like kinship terms and bodyparts), as in Meithei *na-ton məkʰul* ‘nostril’ (“nose its-hole”), *mə-yama* ‘his older brother’, *məmei* ‘tail’, *məko* ‘head’. In a number of cases, bodyparts with this prefix seem to be derived possessively from underlying stative verbs, *e.g.* PTB **m-kri-t* ‘gall’ (*STC* #412) (“its sourness” < **kri* ‘sour’; WT *mthe-bo* ‘thumb’ (“its largeness”) < PTB **tay* ‘big’ (*STC* #298); WT *mgal* ‘jaw’ < *hgal-ba* ‘be in opposition’; Jg. *məpyen* ‘wings’ < *pyen* ‘to fly’ < PTB **byam* (*STC* pp. 29, 51).

The “middle” and “inalienably possessive” notions can be related semantically through the idea of *inner-directedness*.

Since the nasal prefix occurs with so many bodypart roots, Shafer (1938) suggested that it derives from PTB **mi(y)* ‘person’, but Benedict explicitly rejects this “despite the parallelism presented by prefixed **s-* (< **sya* ‘flesh’)”.⁸⁴ On the other hand, *STC* (n. 301, p. 107) does recognize a “Bodo-Garo prefixed *mi-*” that occurs in animal names, and guesses that it might be related to that very PTB root, **r-mi(y)* ‘man (homo)’!⁸⁵

The complexity of the synchronic semantics of the nasal prefix is well exemplified in H. Hartmann’s recent study (2001a) of prenasalization and preglottalization in Daai and other Chin languages. In Daai, prefixal *m-* is often inseparable from a following noun or verb, and thus contributes nothing to the meaning, *e.g.* (*with verbs*) *mbei* ‘feed’, *mhlä* ‘like / love’, *msi* ‘spit’; (*with nouns*) *mhnüüp* ‘day’, *msi* ‘salt’, *mpai* ‘grass’, *mpui* ‘elephant’. It does however, occur frequently with bodyparts (*e.g.* *mtan* ‘calf’, *mpyong* ‘mouth’, *mni* ‘lip’), including several where it is also found in other TB subgroups: *mtin* ‘nail’, *mthin* ‘liver’, *mlei* ‘tongue’, *mjuung* ‘finger’, *mkha* ‘chin’.⁸⁶

84. *STC* n. 329. See above 4.2.1.

85. It is not clear why this prefix is reconstructed with the vowel *-i-*, since the examples given have a wide range of vowels, indicating that the quality was not distinctive (*e.g.* Garo *matram*, Dimasa *matham* ‘otter’; Garo *mattśa*, Dimasa *misi* ‘tiger’; Garo *mattśok*, Dimasa *moso* ‘deer’), causing Benedict to “note the vocalic harmony”.

86. See *STC* #'s 74, 234, 355, 470.

With verb roots, the Daai nasal prefix sometimes has a causativizing or transitivity function, which is paradoxically the opposite of its presumably original PTB role (see above):

do	‘be good’	mdo	‘make well / heal’
thu	‘rot’	mthu	‘cause to rot’
shot	‘leave’	mshot	‘drive out’
hlai	‘change’	mhlai	‘cause to change’

The stativizing function has been taken over by another Daai nasal prefix, *ng-*, which makes transitive verbs intransitive or reflexive/reciprocal:

yuk	‘write’	ng’yuk	‘be written’
mäh	‘carry (a child)’	ngmäh	‘be carried’
khü	‘call’	ngkhü	‘call each other’
hmuh	‘see / meet’	nghmuh	‘meet each other’
hlai	‘change’	nghlai	‘exchange’

4.3.2 *Phonetic types of nasal onsets in TB languages*

Although a given daughter language may well reflect the PTB **nasal prefix* as a syllabic nasal unspecified for position of articulation (*i.e.* homorganic with the following root-initial), there is reason to set the prefix up specifically as a *labial* at the PTB level, **m-* or **m̥-*. In Nungish and Kuki-Chin-Naga, the branches of TB where this prefix has reached its maximum development, it frequently appears as a labial stop instead of a nasal, *e.g.* Trung *pənam* ‘smell’ < **m-nam*, Nung *pəsin* ‘liver’ < **m-sin*, *pəle* ‘tongue’ < **m-lay*; Lakher *pəthi* ‘liver’, *pəhnei* ‘laugh’ < **m-nwi(y)*, *pətsi* ‘spittle’ < **m-ts(y)il*.⁸⁷

87. Other KCN languages with similar reflexes of **m-* include Zeme (Empeo) *bə-*, N. Khami *pə-* (but S. Khami *mə-*), Anal and Lamgang *bə- ~ pə-*. In Mikir this nasal prefix has been fully vocalized to *iŋ-*. *e.g.* *iŋthin* ‘liver’ < **m-sin*, *iŋkoi* ‘twenty’ < **m-kul*, *iŋnek* ‘laugh’ < **m-nwi(y)*, *iŋnim* ‘smell’ < **m-nam* (see *STC*, p. 119). A similar Mikir prefix *aŋ-* apparently descends from a variant of the glottal prefix **ʔa-*; see above 4.2.2(2).

4.3.2: Phonetic types of nasal onsets in TB languages

In general there are six types of nasal syllable-onsets exemplified in TB languages, modern or reconstructed:

(a)	plain nasal root-initials with no prefix (<i>e.g.</i> ma)
(b)	preglottalized nasals (<i>e.g.</i> ʔma); ^a usually from earlier <i>*s-ma</i> or <i>*ʔəma</i>
(c)	voiceless nasals (<i>e.g.</i> hma , ṃa); from earlier <i>*s-ma</i> , <i>*r-ma</i> , <i>etc.</i>
(d)	anacrusic nasal prefix, ^b minor portion of a sesquisyllable (<i>e.g.</i> mə-da)
(e)	syllabic nasals (<i>e.g.</i> ṇ-da)
(f)	prenasalized consonant series (<i>e.g.</i> ^mba) ^c

a. No TB language would ever have a contrast between preglottalized and postglottalized nasals (or stops), if we take “postglottalized” to mean that the realization of the feature appears mostly on the vowel of the syllable. However, an opposition is certainly possible between **voiceless/aspirated* nasals on the one hand and **preglottalized* nasals on the other, as in PLB (above 3.4.1) and in Proto-Kam-Sui (Li Fang-Kuei 1965).

b. This prefix is usually vocalized with schwa, though some languages have other unstressed vowels, or a vowel harmonic with the vocalism of the fully syllabic portion of the word.

c. See above 3.4.1(2), 3.4.1(4).

While syllabic nasals may take a tone (as in Jingpho or Mpi), a prenasalized obstruent functions as a single consonantal segment, and cannot be a “tone-bearing unit”. Both syllabic nasals (usually) and the onsets of prenasalized obstruents (always) assimilate in position of articulation: **m-b**, **ṇ-d**, **ṇ-g**, *etc.*, and **mb-**, **nd-**, **ng-**, *etc.* From a diachronic point of view, a syllabic nasal may be a reduction from a **C¹V(C²)**- syllable in a compound, where either **C¹** or **C²** was a nasal.⁸⁸

It is quite possible to maintain a voicing contrast in root initials after the nasal prefix, as *e.g.* in Loloish stopped syllables, where tonal evidence permits the reconstruction of two nasal manner series, *e.g.* Lahu **gàʔ** ‘striped’ < PLB **m-gak^L* vs. **gâʔ** ‘crawl / creep’ < PLB **m-kak^H* (TSR #'s 76, 81). Many modern languages have more than one manner series of prenasalized obstruents (see below).

Synchronically, some languages have nasal onsets of several types. We have seen that WT has both **m-** (probably phonetically **mə-**) and **ḥ-** (perhaps a preglottalized syllabic nasal). Jingpho also has both a semisyllabic **mə-** and a syllabic, tone-bearing nasal that assimilates to the following consonant.⁸⁹ Sometimes a given root may be preceded by

88. See the discussion of the different diachronic layers of nasal prefixes in Mpi, below.

89. The closely related Anong language also has syllabic nasals, as well as a series of preglottalized sonorants. In the latter feature Anong again agrees with Jingpho; see above 4.2.2(3c).

either one, with no semantic differentiation (məbūŋ ~ m̄-būŋ ‘wind’, mədžòʔ ~ ɲdžòʔ ‘topknot’), but in other cases there is a meaning change (dùp ‘pound’, mədùp ‘sledge’, ɲ-dùp ‘blacksmith’; bà ‘be big’, məbàʔ ‘chief, ruler’, m̄-bà ~ ɲɲ-bà ‘big and ferocious’). As this last example shows, the Jingpho syllabic nasal sometimes alternates with a full prefixal “formative” syllable of the form NVN-, like ɲɲ-, nùm-, or nàm-. It is unclear whether these (meaningless) full syllables are the ultimate source of some Jingpho syllabic nasals (*i.e.* whether the syllabic nasals are reductions of these formatives), or whether the formatives are later elaborations of more ancient unvocalized syllabic nasals.⁹⁰

The most important Jingpho morpheme expressed by a syllabic nasal is ɲ- ‘negative’, an obvious reduction of the fully syllabic PTB negative *ma, *e.g.* khá ‘bitter’, ɲ-khá ‘not bitter’; lâi ‘change’, ɲ-lâi. When the verb is under the low tone / ˊ/, the negative prefix causes it to assume the high-falling sandhi tone / ˊ˥/: lù ‘have’, ɲ-lù ‘not have’. Other Jg. syllabic nasal morphemes include n̄- ‘2nd person possessive with nouns; 2p agreement marker with verbs’ < nāŋ ‘you’; and ɲ- ‘suspensive clause-joiner’ < ɲ-ná (Hanson 1906/54:483).⁹¹

Sometimes, however, the Jingpho syllabic nasal is convincingly to be ascribed to earlier PTB *r- (see below 4.4).

4.3.3 Prenasalized obstruents and syllabic nasals

Phonetically the main difference between syllabic nasals and prenasalized obstruents is the syllabicity of the nasal element: when the nasal does not constitute a syllable by itself⁹² it may be regarded as a feature of the following consonant. From descriptions given in the sources on particular languages, it is often difficult to tell the two types of nasal onsets apart, especially since in both types the nasal element is normally homorganic to the following consonant.

Languages with one or more prenasalized series of consonants are widely distributed in TB:

90. The expansion of single segments to fully syllabic formatives has been termed “dimidiation” by P. Boodberg (1937) in connection with Chinese. There is at least one clear case involving a different Jg. formative, gùm-, where this explanation is clearly to be preferred, *e.g.* Jg. gùm-rà(ŋ) ‘horse’ < PTB *m-raŋ.

91. It is interesting to note that Chokri Naga (Angamoid group) has a similar suspensive particle *no*, which is also frequently reduced to a syllabic nasal. Coincidentally, Japanese has a nominalizing particle *no* which is often similarly reduced: *ikanai no desu* > *ikanai n’desu* ‘(it is the case that he) does not go’.

92. In tone languages a convenient test of syllabicity is whether the nasal element can bear a tone separate from the following vowel.

4.3.3: Prenasalized obstruents and syllabic nasals

Himalayish:

- Found in modern Tibetan dialects, including **Bla-brang** and **Zeku** of the Amdo group, and **Batang** and **Dege** (sDe-dGe) of the Khams group; also in **Baima**. Zeku has two series, voiced and aspirated; all the rest have a single prenasalized voiced series.

Loloish:

- **Mpi** (S. Loloish) has two prenasalized series, voiceless unaspirated and aspirated. All other Loloish languages so far described have only a single series, usually voiced (**Yi Dafang**, **Yi Xide**, **Noesu**, **Nosu**, **Naxi**). **Luquan** (Ma Xueliang 1949) has only an aspirated series, at 8 points of articulation:

mp'	nt'	nts'	ɲt'	ntɕ'	ntʂ'	ŋk'	ŋkʷ'
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- **Nasu**, as described by Gao Huanian (=Kao Hua-nien 1958), has a series of voiced aspirates corresponding to the Luquan prenasalized aspirates; these are transcribed by Chen Kang (1986) as prenasalized voiced aspirates:

mb ^h	nd ^h	ndz ^h	ndʑ ^h	ndʒ ^h	ndʒʰ ^h	ŋg ^h
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- **Mo-ang** (Wu 1993) has both a prenasalized series of obstruents and a preglottalized series of sonorants. (See above, 3.4.1 n. 52.)
- **Jinuo** (Gai 1986): the Youle variety of Jinuo has both voiced and voiceless nasals, and both of these series may be syllabic, *i.e.*:

m-ba, ɰm-ba; ɲ-da, ɰɲ-da

Qiangic:

Several Qiangic languages have three manners of prenasalized initials (plain, aspirated, and voiced, *e.g.* **mp**, **mp^h**, **mb**), including **Ergong**, **Guiqiong**, and the lCog-rtse (Zhuokeji) dialect of **rGyalrong** (Nagano 1984).⁹³ **Namuyi**, **Muya**, and **Lüsu** have only the voiced and aspirated series (like Tibetan), while **Zhaba** (=Queyu) and **Shixing** have only a single, voiced series.

93. Nagano 1984:16 (Namkung, ed., p.123): "...there is a prenasal phoneme to the stops and affricates, /N-/, which assimilates and is rather syllabic. In this sense, this phoneme is contrastive to /m-/ at the prefixing position which never assimilates." This is very similar to the two distinct Jingpho nasals, syllabic /ɲ-/ (which assimilates) and vocalized prefixal /m̥-/ which does not.

Of particular interest is the most anciently attested Qiangic language, **Xixia** (Tangut), where Nishida (1964/66, 1976) reconstructs a voiced prenasalized series. There are at least 5 striking etymologies (discussed in JAM 1978b:18) where there is independent Lolo-Burmese evidence for the nasal prefix which Nishida reconstructs:

<i>'ruler, lord, emperor'</i>
Xixia *ndzu (N. 1976:35)
PLB *m-dzəw ² > Lahu jô-mô, Luquan nts'y, Nasu dz'ɿ ³³ -mo ³³ , WB cûi 'rule, govern'

<i>'be settled; come to rest'</i>
Xixia *ndĩ (N. 1966:354)
PLB *m-diŋ ¹ ≈ *ʔ-diŋ ¹ > Lahu dè 'come to rest' ≈ tɛ 'put sthg down'. Cognate to OC *d'ieng / Mand. dīng 定 (GSR #833z). See below n. 7.5(6)

<i>'drink'</i>
Xixia *ndefi (N. 1966:415)
PLB *m-daŋ ¹ ≈ *m-doŋ ¹ > Lahu dò 'drink' ≈ tɔ (< *ʔ-d-) 'give to drink', Luquan nt'ɛ ¹¹ , Nasu d'ɔ ²¹³ , Yi Xide ndo ³³ , Yi Dafang ndɔ ²¹ , Mpi toŋ ⁵ ≈ taŋ ⁵ . Cf. also WT ɰthuŋ. (See JAM 1988:720.)

<i>'shine'</i>
Xixia *mbifi (N. 1966:447) ^a
PLB *m-ba ³ > WB pa', Lahu ba

a. The development of *-a > Xixia -i is quite regular, with many examples. See below 5.2.3.

<i>'tail'</i>
Xixia *mbifi (N. 1966:464)
PLB *m-ba ³ > Mpi m ² pa ⁴ . ^a

a. This root has yet to be discovered elsewhere in Loloish.

As is only natural, however, there are a few counterexamples. There are cases where Nishida reconstructs a prenasalized initial that so far has no independent support, e.g. 'waist' Xixia *ndžu / PLB *gyok (TSR #6). Contrariwise, sometimes Xixia has non-prenasalized forms in etyma where there is other evidence of a nasal prefix: 'pillow'

4.3.3: Prenasalized obstruents and syllabic nasals

PLB ***m-kum**², but Xixia ***yō** (N. 1966:386); ‘pus’ PLB ***m-blen**¹, but Xixia ***p̥ɰ** (N. 1966:490); ‘tears’ PLB ***m-brəy**¹, Xixia ***Bɿ** (N. 1966:414), but Mpi **m⁴pi**⁶.

Kamarupan:

Prenasalized initials seem to have developed more abundantly here than anywhere else in TB. In fact several Naga language names themselves have prenasalized initials (Ntenyi, Nruanghmei, Mzieme).

Some languages only have a single prenasalized series, as in the Mirish languages **Geman Deng** (only aspirated) and **Idu Luoba** (only voiced), or as in **Sema Naga** (only plain).⁹⁴

Two prenasalized series are found in **Khoirao** and **Ntenyi** (plain and aspirated), and in **Mzieme/Zeme** (plain and voiced). Mzieme has two series of prenasalized obstruents, as well as prenasalized fricatives and nasals, with the nasal element in the latter evidently syllabic, since these sounds are sometimes transcribed (inconsistently in the data of Marrison 1967) with apostrophes:

mp	nt	nts	ŋk
n'b	md		ŋg
	nz		
mm	n'n	n'ny	n'ŋ n'h

Even more complex systems are to be found in **Rongmei** (Nruanghmei) and **Rengma** (Tseminyu), which have three prenasalized series, *e.g.* / **mp mph mb** /, along with a series of syllabic nasals before sonorants / **mm nn ññ ŋŋ nl nr** / and (in Rengma) before fricatives / **ns nsh** /. Besides all this, **Liangmei** has what looks like voiceless nasal finals / **-mh -nh -ngh** /, though the “h” might rather represent breathy voice or glottal stop. Lotha has 3 series of prenasalized stops and affricates, *i.e.* / **mp mph mb** /; syllabic nasals before nasal, liquid, and spirantal initials / **ns nz nl nn** /; and (like Rengma) voiceless nasals / **mh nh nyh ngh** /. Lotha reflects PTB prefixal ***m-** with a syllabic nasal homorganic to the root-initial,⁹⁵ *e.g.* ‘tongue’ **nli** ~ **nni** (< ***m-lay**), ‘liver’ **ntɛ** (< ***m-sin**), ‘spit’ **ñtśa** (< ***m-tsyil**), ‘knee’ **ŋkho** (< ***m-ku:k**); but ‘lick’ **myak** (< ***m-lyak**).

94. In addition to its plain prenasalized series / **mp mt ml** /, Sema also has a set of voiceless nasals: / **hm hn hñ** /.

95. This is phrased somewhat differently than in *STC*, n. 327, where it is said that “Lotha has **n-** for ***m-** before dentals, velars, and palatals excluding -y-”. It seems clear that the nasal elements in “**ntś-**” and “**nkh-**” are actually homorganic to the obstruents, and they are usually so transcribed in Marrison 1967.

4.3.4 Diachronic layers of nasal prefixes: Proto-Loloish and Mpi

At least one **prenasalized series of obstruents* is easily set up for Proto-Loloish, since many Loloish languages have consistent manner-reflexes, *e.g.* the Lahu voiced series / **b d j g** /, the Luquan (Ma Xueliang 1949) prenasalized aspirates / **mp' nt'** *etc.* /, and the Nasu (Gao Huanian 1958) voiced aspirates / **b' d'** *etc.* /, as well as many dialects of Yi (above). In stopped syllables there is tonal evidence for two prenasalized series, **voiced* and **voiceless*, that led, *e.g.* to Lahu reflexes like *bàʔ* (< **m-bak*) vs. *bâʔ* (< **m-pak*).⁹⁶

Of special diachronic interest are the two series of prenasalized initials in Mpi (S. Loloish), since it can be demonstrated that the words in which they occur belong to several different strata, ranging from the very ancient to the very recent:⁹⁷

- (a) The oldest stratum contains those Mpi words which have extra-LB cognates which unambiguously point to PTB **m-*:

	<i>Mpi</i>	<i>PTB</i>	<i>Other</i>
‘door’	ŋ ⁴ ko ⁴	*m-ka	S. Khami əmkha, Jingpho məkha ‘be open, as a door’
‘dove’	ŋ ² khi ²	*m-krəw	Khami məkhru, Angami mekru, Lahu gû
‘kidney’	ŋ ⁴ kjo ⁵	*m-glun	Jingpho ñ-khyūn
‘pillow’	ŋ ² kwiŋ ²	*m-kum	Nung məkxim, Luquan ŋk'y, Lahu ú-gê

- (b) Of more recent origin are “prefixized” words which were originally dissyllabic compounds where the first constituent began with a nasal:

	<i>Mpi</i>	
‘ear’	m ² pha ²	<i>cf.</i> Lahu nā-pə ‘ear’, á-phàʔ ‘leaf’; Mpi 1 st syll. is ‘ear’ < PTB <i>*r-na</i> , 2 nd Mpi syll. < <i>*pak</i> ‘leaf; flat object’
‘face’	m ⁴ phjoŋ ²	<i>cf.</i> Lahu mēʔ-phû; 1 st syll. < <i>*s-myak</i> ‘eye’
‘hair (head)’	ŋ ⁴ khur ⁶	<i>cf.</i> Lahu ú-khē-mu, with order of syllables reversed: ú-‘head’, khē ‘thread’, mu ‘hair’ < PTB <i>*s-mul</i>
‘nose’	ŋ ⁴ khon ⁶	<i>cf.</i> Lahu nā-qhô < PTB <i>*s-na</i> ‘nose’ and <i>*kon</i> ‘hole, hollow passage’

96. See JAM 1972a (TSR), pp. 15-16, 43-53.

97. See below 4.5.2 “Diachronic layers of prefixes”, and the discussion in JAM 1978b:13-17.

4.4: The voiced stop and liquid prefixes */r- l- b- d- g- /

<i>Mpi</i>		
‘smoke’	mi ² -khwi ² ~ ŋ ² khwi ²	note the unprefixized doublet; <i>cf.</i> Lahu mû-qhê ‘ <i>id.</i> ’; 1 st syll. < PTB *məw ‘sky’
‘sunlight’	ŋ ⁴ tcho ⁶	<i>cf.</i> Lahu mû-cha ‘ <i>id.</i> ’; same 1 st syll.

- (c) Finally, and most numerous, are recent nasal-initial loanwords from Tai:

<i>Mpi</i>		
‘clock’	ŋ ² ka ⁴	<i>cf.</i> Thai naalikaa; here the first two syllables of the Tai form both undergo procrustean reduction to an Mpi prefix
‘eggplant’	ma ² khɿ ⁶ ~ ŋ ² khɿ ⁶	<i>cf.</i> Thai məkhyā; note the unprefixized doublet
‘lime’	n ⁴ na ⁵	<i>cf.</i> Thai mənāaw
‘percussion cap (of rifle)’	n ⁴ teɽ ⁶	<i>cf.</i> Lahu mǎɽ-têɽ ‘ <i>id.</i> ’ < Shan
‘scorpion’	m ² puŋɽ ⁶	<i>cf.</i> Thai mǎɛɛpɽɔŋ ~ mɛɛpɽɔŋ
‘teak’	n ⁴ sa ⁶	<i>cf.</i> Thai májsàk
‘well’	m ⁴ po ⁵	<i>cf.</i> Thai náambɔɔ; here it is hard to say whether it is the initial n- or the final -m of náam- which survives as the Mpi prefix

In 10,000 years these layers will undoubtedly be indistinguishable from each other.

4.4 The voiced stop and liquid prefixes */r- l- b- d- g- /

These prefixes are of relatively minor importance, and are mostly of uncertain semantic function. They are attested directly in certain branches of TB, indirectly or not at all (as far as can be determined) in others. While some roots can be reconstructed with these prefixes as far back as PTB, in many cases prefixes of this shape can be shown to be secondary developments within a given subgroup of TB, or even in an individual language.⁹⁸

98. These prefixes are briefly discussed in *STC*: *r- (pp. 109-10), *b- (pp. 110-12), *g- (pp. 112-14), *d- (pp. 114-17).

4.4.1 *r-

This prefix has been reconstructed at the PTB level for a thoroughly miscellaneous set of roots, mostly nouns but also a few verbs:

(1) *With nouns*

NATURAL OBJECTS	*r-ka ‘earth’, *r-mu:k ‘fog’, *r-wa ⌘ *g-wa ‘rain’, *r-luŋ ‘stone’
ANIMALS	*r-saŋ ‘lizard’, *r-may ‘tail’
BODY-PARTS	*r-ka:m ‘edge/lips’, *r-gu:ŋ ‘edge/shin’, ^a *r-miŋ ‘name’, ^b *r-sa ‘vein/sinew’, (n.) *r-ma-t ‘wound’
ARTIFACTS and HABITATIONS	*r-p ^w a ‘axe’, *r-wa ⌘ *g-wa ‘village’

a. The two words for ‘edge’ also have non-bodypart meanings.

b. ‘Name’ is not exactly a body-part, though it may be similarly viewed as inalienably possessed.

(2) *With verbs*

Wolfenden (1929) characterized this prefix as *directive* (i.e. transitive?) with verb roots, but treated it as an infix (pp. 43-44).⁹⁹ It is reconstructed at the PTB level with a few transitive verbs, e.g. ‘roast / fry’ *r-ŋaw [STC #270]; ‘roll up / wrap’ *r-tul [STC pp. 110, 147]; ‘steal’ *r-kəw [STC #33]; ‘scoop’ *r-ko-t [STC #420]. On the other hand it is also set up for several adjectival / stative verbs, e.g. ‘coarse / thick’ *r-tas [STC 426]; ‘lightweight’ *r-yaŋ [STC #328]; ‘old’ *r-ga [STC #445].

(3) *Attestation and reflexes in particular TB languages:*

In WT, prefixal r- occurs directly before the root-initial, with no orthographic vowel intervening: e.g. rtsaŋs-pa ‘lizard’, rtsa-ba ‘vein; root’, rtul-ba ‘blunt, dull’, rnil ‘gums’, rku ‘steal’, rga-ba ‘old’.¹⁰⁰ It appears with both transitive and intransitive verbs,

99. Wolfenden went rather overboard in postulating infixes for TB. Besides his -r-, he postulated an -l- infix (pp. 44-6), as well as an *-s- infix (pp. 46-9), and with less confidence, also -d- and -g- infixes (pp. 40-43). For some thoughts about infixes vs. layers of prefixes, see below 4.5.2.

100. As Gong Hwang-cherng observes (2000:47), medial -r- does not occur after the WT dentals /t th d ts tsh dz/, though WT prefixal r- is common *before* these initials. He adduces many comparisons between etyma with this WT prefix and OC forms where medial -r- is reconstructed (especially those included in Division II in the MC rhyme-books).

4.4.1: *r-

occasionally alternating with s-, e.g.: *rtaḅ-pa* ~ *staḅ-pa* (v.i.) ‘be in a hurry, confused, frightened’; *thuŋ-ba* ‘be short’, *rtuŋ-ba* ~ *stuŋ-ba* (v.t.) ‘shrink, shorten’.

The *r- prefix is usually vocalized into a minor syllable. In some languages the vocalic peak of sonority precedes the /r-/; in others it follows. Liquids, being highly vocalic segments, are in any case notorious for metathesizing with neighboring vowels. Languages where the rhotic segment is pronounced after an unstressed vowel include the Himalayish languages (C. Nepal) Magar (*ar-*) and Kham (*or-*), and the Kamarupan language Mikir (*ar-*):

- *Magar ar-*:

ar-ghan ‘wasp’, *ar-kin* ‘fingernail’, *ar-min* ‘name’

- *Kham or-*:

or-jəm ‘cock’s comb’, *or-na* ‘ear’, *or-ta* ‘intestines’, *or-ja* ‘lower back’, *or-kal* ‘penis’, *or-la* ‘side’, *or-mě:h* ‘tail’

- *Mikir*: The *ar-* prefix occurs with dozens of noun and verb roots (forms spelled as in the individual sources):

NOUNS: *ar-phek* ‘broom’ < **pyak* [STC #174]; *ar-klèng* ‘marrow’ < **r-kliŋ* [STC #126]; *ar-vè* ‘rain’ < **r-wa* [STC #443]; *ar-tho* ‘sinew / vein’ < **r-sa* [STC #442]; *ar-lōng* ‘stone’ < **r-luŋ* [STC #88]

VERBS: *ar-klok* ‘boil’ < **klak* ≠ **glak* [STC #124]; *ar-that* ‘thick’ < **r-tas* [STC #426]; *ar-džan* ‘light (weight)’ < **r-ya:ŋ* [STC #328]; *ar-nuk* ‘deep’ (cf. PLB **ʔ-nak* [TSR #157]; *ar-nu* ‘roast/fry’ < **r-ŋaw* [STC #270]

When the rhotic element precedes the unstressed vowel (as usually in, e.g. Naga and Bodo-Garo languages), the vowel may assume a number of lax, centralized qualities (e.g. [ə] [ɛ] [ɪ] [ɔ] [ʊ]), transcribed in a variety of ways (often with the unlauted symbol “ũ”) in the earlier sources.¹⁰¹ This is clear in a language like Angami Naga, where the *r-* prefix is of high frequency with both nominal and verbal roots (forms spelled as in the individual sources):

101. Further complicating the phonetics is the tendency of Naga and Bodo-Garo languages to harmonize the unstressed vowel with the full vowel of the sesquisyllable, in ways that remain to be investigated in detail. The same indeterminacy of the prefixal vowel obtains in these languages after the other prefixes as well.

• *Angami*:

NOUNS *reva* ‘leech’ (< **r-p^wat* [STC #45]); *rosi* ‘fruit’ (< **sey* [STC #57]); *radi* ‘peacock’ (< **m-don* [STC #341]); *rūkhru* ‘sweat’ (< **krul* [cf. STC p. 90])¹⁰²

VERBS *regu*, *rūgu* ‘steal’ (< **r-kəw*); *retuu* ‘roll up’ (< **r-tul* [STC pp. 110, 147]); *ranie*, *rūnyü*, *rən* ‘hear’ (< **r-na* [STC #453]); *rūna* ‘early’ (< **nap* ≠ **nak*; cf. TSR #131)

Since Jingpho lacks an /r-/ phoneme in any position, it generally reflects PTB *r- as syllabic ŋ- with noun-roots,¹⁰³ and lə- with verb-roots (next section).

4.4.2 “Prefixal l-”

*l- is not formally set up for PTB in STC, though it is “surreptitiously” introduced with the numeral ‘five’, which is set up at the PTB level with two allofams, *l-ŋa ≠ *b-ŋa [STC #78], on the strength of the WT reflex lŋa.¹⁰⁴ It is also hesitantly reconstructed at the PTB level for the root *l-tak ‘ascend; place above’ because of the agreement (“perhaps through coincidence”: STC n.308) between WT ltag-ma ‘upper part’ and Jg. ləthà? ‘upper, above’.

With a number of Jingpho words (especially verbs), prefixal lə- may be traced back to PTB *r- (*ləgú* ‘steal’ (< **r-kəw*), *ləkhót* ‘scoop’ (< **r-ko-t*), *ləthàt* ‘coarse’ (< **r-tas*), *ləgá* ‘old’ (< **r-ga*). With a few verbs, Jg. lə- can be shown to have nominalizing function: *bù* ‘wear’ > *ləbù* ‘lower garment’; *tšēn* ‘do’ (Hanson:83 “an obsolete root” [not in Dai *et al.*]) > *lətšēn* ‘work’ (there is also a causative form *šətšēn* ‘set, as a trap’ (Hanson:634); *šöt* ‘scrape’ > *ləšöt* ‘chisel / gouge’.

With nouns, as noted above, *r- usually becomes a Jingpho syllabic nasal, but there are also a few prenominal examples of Jg. lə- < PTB *r- (*ləmù* ‘sky’ (< **r-məw*), *ləsá* ‘sinew / vein’ < **r-sa*), as well as in several numerals: *ləŋâi* ‘one’, *ləkhôn* ‘two’ (both isolated in TB),¹⁰⁵ and *lətsa* ‘hundred’ (< **r-gya*).

102. Contra STC:220, this root is not confined to Lolo-Burmese. The PLB reconstruction is *ʔ-grwəy² < PTB *s-krul ≠ *s-ŋrul. See above 3.6.5(1).

103. Sometimes dimidiated to a full syllable, *niŋ-* or *num-*. Jingpho reflexes of the PTB roots cited above include: *ñ-sāŋ-sōn* ‘lizard’, *ñ-gām* ≠ *niŋ-gām* ‘edge’, *ñ-gūŋ* ‘back edge (of a blade)’, *ñ-lūŋ* ‘stone’, *ñ-mài* ‘tail’, *ñ-wā* ≠ *niŋ-wā* ‘axe’, *ñ-mà* ≠ *nùm-mà* ‘wound; scar’. The Jg. form for ‘earth’ “*n-ga*” cited in STC (p. 109, line 7) appears to be spurious, though the simplex *gá* certainly exists, along with the prefixed form *ʔəgá*.

104. It is possible that the WT lateral prefix with this root is a reduction of PTB *lak ‘hand’ (cf. STC #86). A similar association between ‘hand’ and ‘five’ is found in Austronesian (e.g. Indonesian *lima* ‘hand; five’). As we shall see, Jingpho prefixal lə- frequently occurs in words referring to the limbs.

4.4.3: *b-

Distinct from all the above are a number of Jingpho nouns and verbs relating to the arms or legs, where the prefixal *lə-* is certainly a reduction of PTB **lak* ‘hand / arm’: *ləbòp* ‘calf of leg’, *ləcòk* ‘pinch’, *ləgàì* ‘limp’, *ləgō* ‘foot / leg’, *ləgrà?* ‘handful’, *ləkùŋ* ‘limb / branch’, *ləkùŋ* ‘dexterity’, *ləkhā* ‘wind between thumb and forefinger’, *ləkhám* ‘to step’, *ləkhàp* ‘hamstring’, *ləkhàt* ‘kick’, *ləkhùt* ‘paw (as a horse); scrape with the front foot’, *ləkhôn* ‘bracelet’, *ləkhrá* ‘righthand’, *ləkhrè* ‘back of the ankle’, *ləkhrīŋ* ‘feel a cramp in the leg’, *ləkhrù?* ‘hoof’, *lakhyeŋ* ‘walk splayfooted’, *ləmò?* ‘short-legged’, *ləmòm* ‘groping one’s way’, *ləmyá* ‘toddle’, *ləmyīn* ‘nail, talon’, *lənū* ‘thumb, big toe’, *ləpāi* ‘lefthand’, *ləpò?* ‘blister’, *ləphà?* ‘shoulder’, *ləphàn* ‘palm, sole’, *ləphùm* ‘forearm’, *ləpùt* ‘knee’, *ləphō* ‘upper arm’, *ləsēŋ* ‘carpus and metacarpus’, *ləsīŋ* ‘wrist’, *ləšīn* ‘wash the hands’, *ləšūm* ‘a hold, a grip’, *lətá?* ‘hand’, *lətùm* ‘be amputated, as a limb’, *lətúp* ~ *lətsúp* ‘close the fist’, *lətón* ‘stretch out the arm’, *lətsā* ‘fingers and toes’, *lətsī* ‘be footsore’, *lətsòn* ‘keep the legs straight’, *ləthīn* ‘heel’, *ləthō* ‘leg just above the ankle’, *ləthóp* ‘have a white band around the leg (as an animal)’, *ləyūŋ* ‘digit’, *ləyót* ‘limp’.

Similarly, in Phunoi (S. Loloish) there are many examples of secondary *lə-* < **lak* ‘hand / arm’ (the prefixal syllable lacks a distinctive tone): *ləpu*¹¹ ‘arm’, *ləʔum*³¹ ‘biceps’, *ləshi*³³*ton*³³ ‘elbow’, *ləhjá*⁵⁵ ‘finger’, *ləshīŋ*¹¹ ‘fingernail’, *ləsup*¹¹ ‘fist’, *ləkhə*¹¹ ‘foot’, *ləkho*³³ ‘forearm’, *ləwoa*³³ ‘palm’, *ləba*³³ ‘thumb’, *ləko*³³ ‘wrist’. In Phunoi this prefix has evidently been generalized to several other bodyparts than the limbs: *ləpā*¹¹ ‘deaf’ (cf. the prefixless WB *pāŋ*, Lahu *pô*),¹⁰⁶ *ləba*³³*si*¹¹ ‘heart’, *ləkā*⁵⁵ ‘nose’,¹⁰⁷ *ləkua*³³ ‘tendon’, *ləkho*³³ ‘upper back’.

4.4.3 *b-

(1) *With nouns*

A handful of nouns are reconstructed with this prefix at the PTB level (*STC* pp. 111-2), including: ‘cotton’ **b-la*,¹⁰⁸ ‘forest’ **b-liŋ*, and ‘rat’ **b-yəw*.¹⁰⁹ In addition, the prefix occurs with two consecutive numerals: ‘four’ **b-ləy*¹¹⁰ and ‘five’ **b-ŋa*.¹¹¹

105. For a discussion of the possible etymologies of these unique numerals, see JAM 1994e. Here too the practice of counting on the fingers makes it possible that the lateral prefix is a reduction of the morpheme for ‘hand’.

106. This is an interesting case where Jingpho agrees with Phunoi in having a lateral prefix (Jg. *ləphán* ‘deaf’), so that one alloform of this root should probably be set up as PTB **l-paŋ* or **l-baŋ*. See below 7.1(3).

107. Again Jingpho has a word for ‘nose’ with the same prefix (*lədī*), but attached to a totally different root.

108. This root is declared to be confined to Kuki-Naga in *STC* (pp. 111, 202, 212), though it seems to occur in many Loloish languages (e.g. Lahu *śá-lá*, Yi Xide *sa⁴⁴lu³³*, Hani *sa³¹la³¹*), as well as in Dulong (*sa⁵⁵la⁵³*). See ZMYC #199. The morphemic identity of the first syllable in these words is still obscure, and perhaps we are dealing with an ancient loanword into TB.

109. It is possible that the *b-* in this root (as well as in ‘snake’, below) is a reduction of PTB **bəw* (*STC* #27) ‘insect / vermin / bug / snake’.

In many Bodo-Garo and Naga languages there is a 3rd person pronoun with labial initial, *e.g.* Bodo **bi**, Dimasa **bo**; Angami (Khonoma) **po**, (Kohima) **puo**; Chokri **pu**, Kezhama **pu**, Mao **pfo**, Phom **bü-pa**.¹¹² This seems to have become generalized into a noun-prefix in some languages: *e.g.* Dimasa **bu-gur** ‘skin’ (general term), vs. specified compounds like **sao-gur** ‘human skin’, **mi-gur** ‘animal skin, hide’, *etc.*

(2) *With verbs*

Like **g-** (below 4.4.4.), **b-** is an important prefix in the transitive paradigm of WT verbs.¹¹³ Intransitive WT verbs only have two forms, Present and Past, typically marked by the *a-chung* prefix **h-** and the **-s** suffix, respectively:

<i>PRESENT</i>	<i>PAST</i>
h—	—s

e.g., **hthig-pa** ‘drop, fall in drops’ (*present*) / **hthigs** (*perfect*).

Transitive verbs have a maximum of four distinct forms, Present, Past, Future, and Imperative (called respectively **de-lta**, **h̥das-pa**, **ma-oŋs-pa**, and **skul-tshig** by Tibetan grammarians). These “principal parts” are marked by means of various combinations of four affixes, the prefixes **h-**, **g-** and **b-** and the suffix **-s**. Although there are many exceptions and special morphophonemic adjustments which must be made to the underlying forms, Beyer (1992:164) has succeeded in reducing the underlying inflectional classes of WT verbs to four:¹¹⁴

<i>CLASS</i>		<i>PRESENT</i>	<i>PAST</i>	<i>FUTURE</i>	<i>IMPERATIVE</i>
I		h——	b——s	b——	——s
II		ḥ——	b——s	g——	——s
III		g——	b——s	b——	——s
IV		g——	b——s	g——	——s
EXAMPLES					
<i>I</i>	‘gather’	ḥthu	btus	btu	thus
<i>II</i>	‘lift up’	ḥdeg	bteg(s)	gdeg	theg

110. See §3 below for the atypical WB reflex of this etymon.

111. As we have seen (above 4.4.2), WT **l̥ja** has a lateral prefix with this numeral instead of a labial one.

112. See Marrison 1967, Appendix I, p. 118.

113. For an excellent discussion of WT verbal morphology, see Beyer 1992:161-85.

4.4.3: *b-

CLASS		PRESENT	PAST	FUTURE	IMPERATIVE
III	‘kill’	gsod	bsad	bsad	sod
IV	‘cut’	gtśod	btśad	gtśad	tśhod

As the chart indicates, prefixal **b-** is characteristic of both the Past and Future forms in the transitive paradigm, though intransitive verbs never take **b-** as the perfective prefix.¹¹⁵

Only a handful of verb-roots are set up with the ***b-** prefix at the PTB level, including: ***b-rey** ‘buy’ (STC:112); ***b-la:p** ‘forget’ (*ibid.*); ***b-ray** ‘fear’ (STC #450); and ***b-riŋ** ‘bark (of dog)’ (STC:n. 245). Also probably to be reconstructed this way is ***b-rəy** ‘draw / write’ (STC #429), on the basis of Tibetan allofams like **ḥbri-ba** ‘draw, write’, **bris** ‘a picture’ on the one hand, and **ris** ‘figure, form, design’ and **ri-mo** ‘*id.*’ on the other, as well as Jg. **məri** ‘to mark, line, rule’.¹¹⁶

In many Kamarupan languages, a labial causative prefix has arisen secondarily through reduction of an auxiliary verb meaning ‘give’ < PTB ***bəy** (STC #427),¹¹⁷ e.g. Dimasa (Bodo-Garo) **nu** ‘see’, **phu•nu** ‘show, point out’; Mikir **me** ‘good / well’, **pe•me** ‘heal/make better’ (Mk. **pi** ‘give’)¹¹⁸ < ***ma:y** ‘good’ (STC #300). In Angami Naga, a causative prefix **pə-** has become extremely productive, occurring with scores of verbs, both action verbs and adjectives¹¹⁹:

SIMPLEX		CAUSATIVE	
tū	‘be burning’	pətū	‘set on fire’
bá	‘sit’	pəbá	‘seat smn’
krq	‘weep’	pəkrq	‘make smn weep’
ŋū	‘see’	pəŋū	‘show’
ze	‘sleep’	pəze	‘put to sleep’
nə	‘laugh’	pənə	‘make smn laugh’

114. Among these adjustment rules is the deletion of the -s suffix of the Past and Imperative after dental finals, as well as certain ablaut changes in the vowel of the root (‘kill’ and ‘cut’ exemplify both of these phenomena). Such complications are only to be expected in inflectional paradigms, as e.g. in the many subclasses of Germanic strong verbs.

115. This is in line with Wolfenden’s suggestion (1929:33ff) that the WT **b-** prefix with verbs represents an “acting subject”.

116. This Jg. form is mis-cited as **məri?** in STC #429.

117. This suggestion goes back as far as Wolfenden (1929:166).

118. Contrast the cognate forms in Jingpho: **māi** ‘good’, **šəməi** ‘heal’ (note tone-change), with the more ancient ***s-** causative prefix (above 4.2.1).

<i>SIMPLEX</i>		<i>CAUSATIVE</i>	
lè	‘warm’	pələ	‘warm sthg up’
vī	‘good’	pəvī	‘make good’
ljò	‘fat’	pəljò	‘fatten’
mè	‘ripe’	pəmè	‘ripen’
tī	‘black’	pətī	‘blacken’
mū	‘sweet’	pəmū	‘sweeten’

(3) *Relationship between *b- and *m-*

There has been considerable confusion between the labial stop and labial nasal prefixes in several branches of TB, with Kachin-Nung and many Kamarupan languages showing mergers of the two, either in favor of the stop or the nasal:

	<i>*b-</i>	<i>*m-</i>
JINGPHO	mə-	mə-
NUNG	phə-	phə-
MEITHEI	mə-	mə-
RANGKHOL	mə-	mə-
S. KHAMI	mə-	mə-
LAKHER	pə-	pə-
N. KHAMI	phə-	phə-

In several roots, WB has shifted an original **b-* to *m-* before liquids:¹²⁰

	<i>PTB</i>	<i>STC#</i>	<i>WB</i>	<i>Insc. Bs.</i>	<i>Other</i>
‘arrow’	<i>*b-la</i>	449	hmrâ	mlā	Bahing bla, Newari bala, Garo bra
‘grandchild’	<i>*b-ləy</i>	448	mrê	mliy	Mikir phili-po ‘nephew’

119. The independent Angami verb ‘give’ is bi. A *p-* causative prefix is also found in Khumi (S. Chin) [p.c. David Peterson 2001]. Hartmann (2001a) cites a similar prefix in Maraa (Lakher): ahrei ‘lives’, apahrei ‘causes to live’; athi ‘dies’, apathi ‘causes to die’; achi ‘is bad’, apachi ‘makes bad’.

4.4.4: *g- vs. the Lolo-Burmese animal prefix *k-

	<i>PTB</i>	<i>STC#</i>	<i>WB</i>	<i>Insc. Bs.</i>	<i>Other</i>
‘snake’	*s-b-ru:l	447	mrwe	---	WT sbrul, Magar bul, Mikir phurul
‘submerged / overflow’	*brup	151	mrup	---	WT ḥbrub-pa, Garó bríp

However, a number of languages do keep the two labial prefixes quite distinct, *e.g.*:

	*b-	*m-
WT	b-	m-
MIKIR	phi-, phe-, phu-	iŋ- ^a
AO NAGA	pe-	me-
SEMA NAGA	pe-, po-	me-

a. See above 4.2.2(2), and 4.3.2.

	*b-	*m-	*m-	*m-
	*s-b-ru:l ‘snake’	*m-li:t ‘leech’	*m-krəw ‘dove’	*m-sin ‘liver’
WT	sbrul			mtšhin
MIKIR	phurul	iŋlit		iŋthin
AO NAGA	əpəyü	melet	ki-metsü	temesen
SEMA NAGA	apeyü		mekedu	

4.4.4 *g- vs. the Lolo-Burmese animal prefix *k-

(1) With nouns

A number of semantically disparate nouns are reconstructed with a velar prefix at the PTB level in *STC*, including: *g-pa ‘bamboo’ (#44), *g-na ≠ *r-na ‘ear’ (#453), *g-la ‘moon’ (#144), *g-məw ‘mushroom’ (#455), *g-ryum ‘salt’ (#245), *g-wa ‘village’ (#444), *g-ləy ‘wind’ (#454).

The word for ‘righthand’ (*g-ya ≠ *g-ra #98) is also reconstructed with this prefix, but in this case the velar element is undoubtedly fusional, a reduction of the morpheme *lak

120. An exception to this tendency is WB lē ‘four’ (< PTB *b-ləy), where WB has simply dropped the prefix altogether.

‘hand’ in compounds like *lak-ya or *lak-ra. Note that *lak shows “reduction on the right” (> -k) in this formation, whereas the same morpheme displays “reduction on the left” in those cases where it has been reduced to prefixal lə-, as in Jingpho verbs referring to action with the limbs (above 4.4.2).

Wolfenden (1929:73) recognized a 3rd *person pronominal function* of the velar prefix before nouns, as exhibited, *e.g.* with Jingpho kinship terms: šī àʔ kəwà ‘his father’, náʔ ñ-wà ‘your father’.

It is this pronominal function which *STC* (p. 113) posits as the source of the use of the velar prefix with *bodypart* words in many Kuki-Chin-Naga languages, though only one form is cited: Tangsa (Moshang) kəmul ‘body hair’. To these we may add: Wancho (Northern Naga) kereŋ ‘bone’, kao ‘hair of head’, kara ‘chin’, koron ‘horn, antlers’ (note the tendency toward harmony of the prefixal vowel with that of the root); Kom Rem (Kukish): kəču ‘armpit’, kəbiŋ ‘cheek’, kədəŋ ‘palate’, kəphər ‘scab’, kor kətaŋ ‘temple’; Sulong (an aberrant language of Arunachal Pradesh): kə³³maŋ³³ ‘face’, kə³³kie³³ ‘lip’, kə³³tuəŋ³³ ‘tooth’, kə³³tse⁵³ ‘waist’; Mikir (close to the KCN nucleus) keho ‘bile’, ketəŋg ‘fist’, kehot ‘glans penis’, kechèŋg ‘jaw’, ketwàr ‘shoulder blade’.

Perhaps to be related to this usage with bodyparts is the appearance of the velar prefix with *animal* names in a few languages: Sulong kə³³vit³³ ‘flea’, kə³³mot³³ ‘honeybee’, kə³³vat⁵³ ‘leech’; rGyalrong (Qiangic) kəbyam ‘bird’, kəwəs ‘fly’, kəthui ‘fox’, kətsu ‘monkey’, kəʃtʃək ‘leopard’.^{121/122}

Two numerals are set up with the velar prefix at the PTB level: ‘two’ *g-nis and ‘three’ *g-sum. Since extreme variability in numeral prefixes is the norm in TB,¹²³ it is not surprising that certain languages have generalized this prefix to other numerals, *e.g.* rGyalrong, where all the numerals from 1 to 9 have the velar prefix (except for wərjat ‘eight’): kətek ‘one’, kənəs ‘two’, kəsam ‘three’, kəwdi ‘four’, kəmŋo ‘five’, kəʃok ‘six’, kəʃnəs ‘seven’, kəŋgu ‘nine’.

121. As we shall see, this is a favorite rGyalrong prefix, massively used with numerals and verbs as well as common nouns. *Cf.* the numerous examples in the Caodeng and Benzen dialects, studied by Jackson Tianshin Sun (1994).

122. I believe the famous “velar animal prefix” of Lolo-Burmese to have a quite different origin. See §3 below.

123. See JAM 1995b.

4.4.4: *g- vs. the Lolo-Burmese animal prefix *k-

(2) *With verbs*

Several verbs (both transitive and intransitive) are reconstructed with PTB prefixal *g-, including: *g-yak ‘ashamed’ (STC #452), *g-lwat ‘free / release’ (#209), *g-ya ‘itch’ (#451), *g-sat ‘kill’, *g-ryap ‘stand’.¹²⁴

As we have seen (4.4.3), the g- prefix plays an important role in WT verbal morphology, occurring in the Present of Classes III and IV, and in the Future of Classes II and IV. On rather slim evidence, g- with the present form is interpreted by Wolfenden (1929:40-3) as “directive” (presumably conveying the meaning “highly transitive”) in verbs like gtug-pa ‘reach’, gtum-pa ‘wrap up’, gso-ba ‘pour out’.¹²⁵

Wolfenden in fact recognized another preverbal use of the velar prefix (contradictory to the “directive” one) with *stative verbs or adjectives*,¹²⁶ and it turns out that this is much more widespread in TB, occurring in West Himalayish (e.g. Pattani), Jingpho, Qiangic (e.g. rGyalrong, Queyu), Bodo-Garo (Kokborok), and Kuki-Chin-Naga (e.g. Kom Rem, Mikir, Tangsa, Tangkhul, Daai Chin):

- Pattani (West Himalayish): kəteg ‘bitter’, kəca ‘raw’;
- Jingpho¹²⁷ has gə- / kə- / khə- with many verb roots. While a few of these are transitive (kəkāŋ ‘roast, toast’; kəpà ‘mend, patch’), most are stative or otherwise intransitive: kəgət ‘run, flee’,¹²⁸ khərà ‘be indifferent’, kəjì ‘be small’, kəjòŋ ‘be startled’, kəkōm ‘itch’, kəkhām ‘yawn’, kəlèŋ ‘lie down’, kəmùn ‘suffer (as from stomach-ache)’, kənūŋ ‘to delay’, kəpòŋ ‘be full of holes’, and many others;
- rGyalrong: kəmbɾet ‘break (as a rope; v.i.)’, kəmtɕet ‘collapse’, kərnak ‘deep’, kəli ‘heavy’, kəndzɿ ‘melt’, kətfər ‘narrow’, kəmbəm ‘overflow’, kəzɡlɛt ‘set (of the sun)’, kələt ‘rain’, kəjak ‘thick’, kəmba ‘thin’;

124. Here, as elsewhere, Benedict’s reconstructive method (not always followed rigorously) was to reconstruct a given root with a prefix at the PTB level if it so appears in at least two separate branches of TB. By this reasoning, the root ‘long’ (STC #279) would be an excellent candidate, since the velar prefix occurs in both Kachinic and Bodo-Garo (Jg. gəlù, Dimasa galau), yet it is reconstructed simply as *low, not *g-low, perhaps because Benedict regarded the prefix as morphological in this root.

125. Hartmann (2001a) points out a similar ‘intensive, causative, directive’ function of the k- prefix in Daai Chin (bāü ‘be/do wrong’, kbāü ‘blame’; pou ‘appear’, kpou ‘bring out’).

126. Apparently he regarded this stativizing function of the prefix as related to the pre-nominal 3rd person pronominal usage, though this is far from obvious.

127. The velar prefix, freely varying between gə- and kə- (and rarely) khə-, is one of the commonest in Jingpho, occurring with roots that occupy about 46 pages of Hanson 1906/1954 (pp. 178-88, 243-78). See above 4.1.3.

128. Dai *et al.* 1983 have gəgət.

- Queyu: kə³³dʒa⁵⁵ ‘crawl’, kəthū⁵⁵ ‘drink’, kəṭe⁵³ ‘eat’, kəŋu⁵³ ‘listen’, kəce⁵⁵ ‘look’, kəze⁵⁵ ‘sleep’;
- Kokborok: kətor ‘big’, kəkha ‘bitter’, kəšəŋ ‘black’, kəbəŋ ‘be blown away’, kəcaŋ ‘cold’, kəbər ‘crazy’, kələ? ‘drown’, kəcal ‘far’, kəta ‘new’, kəba ‘vomit’, kəphu ‘white’, kərmu ‘yellow’;
- Kom Rem (Kuki): əbo kəsuk ‘ejaculate’,¹²⁹ kəsip ‘full’, kəkhop ‘satiated’, kənə ‘be sick’, kəčəp ‘weep’, kəkhuī ‘wrinkled’;
- Mikir: kethe ‘big’, kethor ‘bitter’, kekló ‘fall’, kəphé ‘fart’, keden ‘late’, keong ‘many’, keri ‘rich’, kemèn ‘ripe’, kediŋ ‘tall’, kelok ‘white’;
- Tangsa Moshang: kathot ‘go out’, katen ‘rise’.

In Daai Chin, prefixal *k-* serves as a relativizer when attached to a stative verb: *dām* ‘big’ > *nga kdām* ‘a big fish’. A related prefix *ak-*, serves to nominalize stative verbs: *do* ‘good’ > *akdo* ‘something good’; *thi* ‘dead’ > *akthi* ‘corpse’ (Hartmann 2001a:130-1).

Angami Naga also has a verbal prefix *ke-* which is used in nominalizations and relativizations (including relative clauses consisting only of an adjective), *e.g.*:

lesüda ke- ti
book PREF black
‘black book’

mhi ke- zhivi
eye PREF beautiful
‘beautiful eyes’

themie ke- dukhri vi mo
people PREF kill good NEG
‘killing people is not good’

The preverbal velar prefix reaches its apogee in Tangkhul Naga, where *k(h)ə-* is prefixable to virtually every verb root, whether or not it already had another prefix: *kəkəp* ‘shoot’ < **ga:p*, *kəthur* ‘sour’ < **su:r*, *khəyap* ‘fan’ < **ya:p*, *kətsap* ‘weep’ < **krap*, *khəməlek* ‘lick’ < **m-lyak*, *kəkhəyək* ‘be ashamed’ < **g-yak*, *khəŋənəm* ‘smell’ <

¹²⁹Evidently conceived of as an involuntary phenomenon.

4.4.4: *g- vs. the Lolo-Burmese animal prefix *k-

**m-nam*, etc. (See Pettigrew 1918:268-326).¹³⁰ This prefixed form is used for nominalizations (including citation forms) and relativizations, but does not appear with ordinary finite main verbs.

(3) *The velar animal prefix *k- in Lolo-Burmese*

Etymologically distinct from the cases discussed above, where the PTB velar prefix occurs in Kuki-Naga animal names, is an interesting set of Lolo-Burmese animal names, where WB has initial *k-* which is absent from its Loloish cognates.¹³¹ In all these sets, the root initial is a resonant (liquid or semivowel), so that this prefixial WB *k-* could form clusters with it. While direct consonantal traces of this prefix are almost totally lacking in Loloish (except perhaps for ‘ant’; see below), if the etymon in question happened to be a PLB stopped syllable (< */ -p -t -k /), the prefix has left an unmistakable tonal effect, causing the syllable to be shifted from the **LOW**-checked tone typical of syllables with voiced resonantal initials into the **HIGH**-checked tone characteristic of stopped syllables with voiceless initials. This animal prefix must therefore be reconstructed as **voiceless* at the PLB level. There are at least 6 good examples:

	<i>PLB</i>	<i>TSR</i>	<i>WB</i>	<i>Lahu</i>
‘cat’	*k-roŋ ¹	---	krauŋ	ḡḡ ‘wildcat’ ^a
‘fowl’	*k-rak ^H	#184	krak	ḡḡ ^b
‘leech’	*k-r-wat ^L	#167	krwat	vè ^c
‘rat’	*k-r-wak ^H	#188	krwak	fâ ^d
‘tiger’	*k-la ²	---	kyâ ^d	lâ

a. Cf. Jg. ṣəro(ŋ) ‘tiger’.

b. Contrast Lahu ḡḡ (low-stopped) ‘weave’ < PLB **rak* (WB *rak*).

c. In this case the velar prefix evidently did not survive into Loloish, which reflects simple **wat* (hence the Lahu voiced initial and **LOW**-stopped tone). The PTB reconstruction is **r-pat* (STC #45), modified to **k-r-p^wat* in JAM 2000a:#13.

d. Insc. Bs. klâ.

The origin of this LB animal prefix is perhaps to be sought in Mon-Khmer/Austroasiatic (cf. Mon *kula*, Munda *kul(a)* ‘tiger’), where it is probably to be

130. The aspirated variant of the prefix occurs before nasals and resonants.

131. This phenomenon was already discussed in JAM 1969:190-99 (“Lahu and PLB”) and 1972a:25-6, 68-70 (TSR), but had been independently observed by Benedict (STC, n. 301, p. 107).

derived from the etymon **kon* ‘child’, a frequent initial syllable in, *e.g.* Vietnamese animal names.¹³²

A somewhat different explanation is required for the fascinating etymon ‘ant’ (*STC* #199; *TSR* #183). Here WB has *pərwak*, where the prefix is obviously a reduction of PLB **bəw*² ‘insect’ (as in the cognates Atsi *pâu-voʔ*, Maru *phyò-γùk*, Hani *pi-φu*, Lahu *pú-ḡḡʔ*). Yet the HIGH-stopped tone of Lahu *-ḡḡʔ* is good evidence for a voiceless velar prefix here too, as is the striking Sani form (Vial 1909) *ka-vu*, pointing to a PLB prototype like **bəw-(k-)rwak* (or, if one prefers, two variant prototypes **bəw-rwak* and **k-rwak*). In this case, however, the velar prefix turns up in other branches of TB as well, notably WT *grog-ma*, rGyalrong *kərək*, Lohorong and Lambichong *khörək*.¹³³ The hypothesis of a Mon-Khmer origin for the prefix with this root is therefore not attractive, and we might as well reconstruct it as **g-rwak* at the PTB level.

Another tricky case is ‘dog’, PTB **kʷəy* (*STC* #159), where the velar root-initial has evidently been secondarily treated as a prefix, so that it has been dropped or replaced in certain languages, *e.g.* Lushai *ui*, Tiddim *ʔwi*, Karen *thwi*. See above 3.2(4).

4.4.5 **d-*

This prefix is reconstructed at the PTB level with a few nouns, as well as for the numerals ‘six’ and ‘nine’ (though ‘six’ presents complications; see below). Like **g-*, it has been claimed (Wolfenden 1929:40-3) that **d-* originally had a “directive” force with Tibetan verb roots, though this is far from evident from the comparative data. A number of TB languages, especially those of the Kuki-Naga group, have latched onto dentals as their favorite prefixes, often attaching them even to roots already preceded by an older prefix.

STC reconstructs **d-* with only two animal names at the PTB level: **d-wam* ‘bear’ (#461), where it is preserved by preempting the root-initial in forms like WT *dom*; and **d-kəy* ‘crab’ (#51), where it occurs in Lepcha *tāhi*. At the level of Proto-Kuki-Naga, the dental prefix is reconstructible with several other animal names, including **d-kəy* ‘deer (barking)’ (#54), **d-yuk* ‘deer (sambar)’ (#386), and **d-key* ‘tiger’ (#462).

The numeral **d-gəw* ‘nine’ (#13) is reconstructed with **d-*, largely on the strength of WT *dgu* (vs. *e.g.* WB *kûi*), though the sibilant prefix seems equally well attested (Garo *sku*, Kanauri *zgüi*, Pumi *sgiw*⁵⁵, Qiang Taoping *xguə*^{33,134}

132. See JAM 1973c, “The Mon-Khmer substratum in Tibeto-Burman.”

133. This eminently prefixable morpheme also occasionally occurs with the **s-* animal prefix (< PTB **sya* ‘animal’), as in Trung *sro*⁵³. See above 4.2.1(2).

4.4.5: *d-

The dental prefix is also tentatively set up at the PTB level for the following miscellaneous noun-roots: *d-ləy ‘bow’ (#463) > Miju təli, Nung thəli, Garo tsri, Dimasa džili (but Lepcha has səli, and Jingpho has ləli); *d-baŋ ‘strength’ (n. 325) > WT dbaŋ, WB ʔaŋ; *d-bu ‘head’ (*ibid.*) > WT dbu, WB ʔu’.

The reflexes of prefixal *d- in the various Kuki-Chin-Naga languages are interesting (see *STC* p. 116):

	<i>PTB</i>	<i>Khami</i>	<i>Lakher</i>	<i>Khoirao</i>	<i>Puiron</i>	<i>Bete</i>
‘bear’	*d-wam	təwun	tsəveu	tsəwom	kəbom	ivom
‘nine’	*d-gəw	təkɔ	tsəki	tsəku	kəkwa	ikok
‘six’	*d-ruk	təru	tsəru	səruk	kəruk	iruk

Note the affrication of *d- to tsə- in Lakher (C. Chin) and Khoirao (W. Kuki), which sometimes happens in Jingpho also (Jg. džəkhû ‘nine’), and the replacement of the dental prefix by a velar in Puiron.¹³⁵ Bete (Old Kuki) replaces the dental prefix altogether in favor of the vocalic element i-. Other Kuki-Chin languages replace the dental prefix in animal names by the morpheme sa- (< PTB *sya ‘animal’); *e.g.* Lushai sa-vom ‘bear’, sa-kei ‘tiger’.¹³⁶

There are several curious etyma with resonantal root-initials, where most of TB reflects a *dental prefix, while a significant number of other languages (especially Lolo-Burmese) have velars.¹³⁷ The most important of these is the numeral ‘six’,¹³⁸ where alongside dentally-prefixed forms like WT drug, Kanauri ʔüg, Lepcha təräk, Digaro thəro, Mikir therok (all < *d-ruk), we find forms with initial velars throughout Lolo-Burmese (WB khrauk, Zaiwa khjuʔ⁵⁵, Lahu khòʔ, Naxi khə¹¹³) as well as in, *e.g.* Jingpho krúʔ, Trung k'lu⁴⁴, Newari khu-gu:, and Monpa Cuona kroʔ⁵³. Rather different is the etymon ‘sew’ (set up as *d-rup in *STC* #456). Even though WT ʔdrub-pa and WB khyup show a similar correspondence to ‘six’, forms like Lahu tó and Akha tòʔ have dental initials. The Magari cognate rup shows that the both the dental and the velar elements could be treated as prefixal. A rather *ad hoc* way to explain the different outcomes in ‘six’ and ‘sew’ would be

134. See JAM 1995b/1997:§4.24, “Profile of number *nine*”.

135. This is reminiscent of the Lolo-Burmese development in ‘six’, and in several other roots in WB (‘sew’, ‘long for’ (see below).

136. See above 4.2.1(2).

137. These were already discussed in JAM 1969. See below 4.5.1(n. 153), 8.4(4), as well as *STC* n. 321, p. 115.

138. For a detailed discussion of the complications of this root see JAM 1995b/1997:§4.21.

to posit a distinction between a prefixal *d-* plus root-initial *r-* (*i.e.* **d-r*) in ‘six’, versus an intrinsic cluster (**dr-*) in ‘sew’, as *STC* halfheartedly suggests (nn. 320, 321). Alternatively, we might simply posit proto-variation between the dental and velar prefixes at various taxonomic levels, as in *TSR* #63, where three Proto-Lolo-Burmese allofams for ‘sew’ are reconstructed: **grup* \approx **ʔ-grup* \approx **ʔ-drup*. Indeed such variation is observable synchronically between dialects of a single language, as in Nung *təru* but Trung (Dulong) *k'lu*¹⁴⁴ ‘six’. In the case of the PLB etymon for ‘six’, *TSR* #35 takes a different approach, on tonal grounds, reconstructing an initial tri-consonantal sequence: PLB **C-krok* < PTB **d-krok* (see below 4.4.6).¹³⁹

As indicated above, a good number of TB languages have shown special fondness for dental prefixes (voiced or voiceless), and have introduced them secondarily with dozens of roots, usually nouns. These odontophiliac languages are scattered through various TB subgroups including Qiangic (rGyalrong),¹⁴⁰ Kachin-Nungish (Jili, Nung), Burmish (the Samong dialect of Hpun), Abor-Miri, and especially Naga languages (Ao, Chokri). Many roots that elsewhere in TB have no prefix, or a different prefix, have acquired a dental prefix in one or another of these languages, though it would be going too far to claim that they show regular correspondences that would allow reconstruction of PTB **d-*, *e.g.*: ‘dog’ (#159) PTB **kwəy*, but Nung *təgi*, Jili *təkwi*, Samong *təkhwi*, Chokri Naga *tiši*; ‘eye’ (#402) PTB **s-myak*, but rGyalrong *temnyak*; ‘leech’ (#45) PTB **r-pat*, but Nung *dəphat*, Miri *təpat*; ‘fire’ (#290) PTB **mey*, but Nung *thəmi*, Samong *təmi*, rGyalrong *timi*. Wolfenden (1929:140) gives a long list of Ao Naga body part terms with the prefix *te-*:¹⁴¹ *te-ni* ‘nose’, *te-po* ‘tooth’, *te-pok* ‘belly’, *te-ret* ‘bone’, *te-kâ* ‘hand’; *te-me-li* ‘tongue’, *te-me-sen* ‘liver’, *te-me-yon* ‘finger’, *te-mo-kok* ‘knee’, *te-mu-luŋ* ‘mind’, *etc.* As several of these examples neatly illustrate, this younger dental prefix could attach itself to roots that were already preceded by the older nasal prefix; *cf.* **m-lay* ‘tongue’ (#281), **m-sin* ‘liver’ (#234), **m-yuŋ* ‘finger’ (#355), **m-ku:k* ‘knee/angle’ (*STC*, p. 120), **m-luŋ* ‘mind/heart’ (*ibid.*).

139. Other, less well-attested etyma showing possible **d-* \approx **g-* variation are **d-rum* ‘long for / pine’ (#457: WT *drum-pa*, WB *khyûm*); and ‘tiger’ (#462), where a tentative allofam **g-key* is posited on shaky grounds alongside **d-key* (above). This latter is miswritten as **k-key* in the English-TB Index of *STC* (p. 220), and does not gibe with the reconstruction given in the Appendix of TB roots (p. 201), where the velar alternant is not recognized.

140. See Wolfenden 1936. As we have seen above (4.4.4), rGyalrong is also a stronghold of the velar prefix.

141. Another Ao stronghold of this prefix is kinship terms, *e.g.* *te-bu* ‘father’, *te-tsa* ‘mother’, *te-nu* ‘younger brother’, *te-yi* ‘elder sister’.

4.4.5: *d-

Chokri Naga has two very high-frequency dental prefixes, *tə-* and *thə-*, which can sometimes be shown to derive from PTB *d- and *s-, respectively, although they have clearly been generalized to many other items in the lexicon. These dental stop prefixes are especially common in animal names (*e.g.* *thəya* ‘bear’, *thəvə* ‘chicken’, *thəyo* ‘frog’, *təkhri* ‘louse’, *təki* ‘monkey’, *thəvə* ‘pig’, *thəzo* ‘rat’, *thəku* ‘sheep’, *təkho* ‘tiger’, *thədo* ‘water buffalo’), but also occurs with natural objects and foods (*e.g.* *thəzi* ‘dew’, *təri* ‘rain’, *thənu* ‘star’, *təhla* ‘uncooked rice’, *təkhra* ‘wind’), numerals (*thəna* ‘seven’ < PTB *s-nis, *tətha* ‘eight’ < PTB *b-r-gyat), *etc.* Sometimes the prefixal vowel harmonizes with a front root-vowel, *e.g.* *tiši* ‘dog’, *tiŋi* ‘snake’, *thiše* ‘chili pepper’.¹⁴²

As mentioned above, Wolfenden claims that prefixed *d-* had “directive” force in WT, much like *g-*, though this is far from clear from his examples (1929:40-3). Elsewhere in TB there is some slight evidence of such a function, as in Nung, which has both *də-* and *śə-* as causative prefixes, *e.g.* *suŋ* ‘be dry’ / *dəsuŋ* ‘dry sthg’ (*STC* p. 114). Similarly, although the productive causative prefix in Jingpho is definitely *śə-* ~ *džə-* (see above 4.2.1), there are a couple of cases where *də-* is used instead, *e.g.* *gùp* ‘be covered; wear (as a hat)’ / *dəgùp* ‘cover, envelop sthg’; *gàp* ‘be covered’ / *dəgàp* ‘cover with sthg wide and flat’ (*cf.* also *məgàp* ‘a lid; cover’).

In fact the dental prefix seems to have had several other, more important pre-verbal functions in TB languages, all of them well exemplified by Jingpho:¹⁴³

- Nominalizing

bu ‘be stubby’ / *dəbu* ‘hump on cattle’; *gyām* ‘hunt (as animals)’ / *dəgyām* ‘chicken coop’; *jù?* ‘converge at a central point’ / *dəjù?* ‘center’ (*cf.* *məjù?* ‘firmness, strength of character’; *nān* ‘here’ (adv.) / *dənān* ‘habitation, place, position occupied’; *rén* ‘have dysentery’ / *dərén* ‘dysentery’ (*dərén rén ?ai* ‘*id.*’); *rù* ‘pour into’ / *dərù* ‘a free or public rendezvous’.¹⁴⁴

142. These data are from a Field Methods class at Berkeley (1998-99); tone-marks have been omitted.

143. Jg. *də-* is relatively rare (only occupying pp. 139-42 in Hanson 1906/1954. Jg. *tə-* and *thə-* are even rarer, each with less than half a page of entries in Hanson. For relative frequencies of the Jg. prefixes see JAM 1999a (“TB Tonal typology in an areal context”), and above 4.1.3. Jg. *də-* is sometimes a reduction of *dùm-* or *dìŋ-*: *dəgró?* ‘put on sthg snug-fitting’ ~ *dùm-gró?* ~ *dìŋ-gró?* (last two called archaic by Maran, in prep.; *dəgrùm* ~ *dìŋ-grùm* ‘wrap oneself in a blanket’.

144. A similar nominalizing function is also performed by the ubiquitous Ao Naga prefix *te-*, already mentioned in its prenominal use: *tśak-ma* ‘to crack’ / *te-tśak-ma* ‘a crack’; *metśi* ‘to bud’ / *te-metśi* ‘a bud’; *əmaŋ* ‘believe’ / *təmaŋ* (< **te-əmaŋ*) ‘faith’.

- Nadverbializing (similar to nominalizing)¹⁴⁵

ràm ‘be sufficient’ / dərám ‘about, nearly, approximately’ (modifies a verb or can be the head of a clause; a “limited” noun)

- Attributive-adjectival

There is at least one good example of the Jg. dental prefix used to form an adjective (rather like an English past participle) from an intransitive verb: gùm ‘bend over’ / dægùm ‘bent’. Interestingly, however, Jg. has a much larger set of adjectives with də- referring to animal (esp. bovine) characteristics, providing a nice example of how semantically similar words can “attract” the same prefix: kyén ‘be aslant’ / dəkyén ‘be misaligned (as of a bovine’s horns one of which is straight and the other curved)’; láí ‘be different’ / dəlái ‘speckled, as cattle’; dægùk ‘curve-horned’;¹⁴⁶ dəbòn ‘white-legged (applied to cattle)’; dægām ‘chestnut color (applied to animals)’; dəlīn ‘red, brown (applied to animals)’; dəmūn ‘gray (of animals)’. The same prefix is used in a bovine noun: dəwài ‘dewlap’.

4.4.6 Tonal reflexes of the “C-prefixes” in Loloish

None of the PTB prefixes discussed in the above sections, */r- l- b- g- d-/, have left direct consonantal traces in Lolo-Burmese, though there are over twenty Loloish etyma where they seem to have caused special tonal developments in **stopped syllables* (*i.e.* syllables ending in PLB */-p -t -k/).¹⁴⁷ These etyma all reconstruct with PLB **voiceless root initials*, either voiceless stops or voiceless spirants, yet they are under the PLB **LOW-stopped tone*, instead of the **HIGH-stopped tone* that one would expect from syllables with a **voiceless onset*. All that can be reconstructed in these cases is “some sort of voiced prefix”, that had the power to shift the syllable from the PLB **HIGH-stopped* to the **LOW-stopped tone*.¹⁴⁸ In *TSR* the cover-symbol “C” was used to stand for this voiced element. In favorable cases there is extra-Loloish evidence for a voiced prefix, *e.g.* ‘kill’ (*TSR* #124) PLB **C-sat* > *e.g.* Akha seh LS (*cf.* WT gsod [pres.], bsad [perf.]; ‘one’ (*TSR*

145. The term *nadverb* was introduced in JAM 1973/82 (pp. 118-40, 308-15, etc.) to characterize morphemes or constructions that have both nominal and adverbial characteristics.

146. No simplex verb **guk* exists in Jingpho, though this is a widespread TB and ST etymon, which explains why this prefixed Jg. form has hitherto escaped notice. (It is cited neither in *TSR* #2, nor in *STC* pp. 72, 125, 159, 182.)

147. These are discussed in JAM 1972a (*TSR*):33-7, 55-6.

148. In Lahu the PLB **LOW-stopped tone* in stop-initial syllables is reflected by Lahu low-stopped tone, symbolized by a grave accent over the vowel plus glottal stop, /`ʔ/; while PLB **LOW-stopped tone* with spirant-initial syllables is reflected by Lahu high-rising tone, symbolized by the acute accent, /´/. In *TSR* Akha low stopped tone is symbolized by “LS”; this is the Akha tonal reflex of any **C*-prefixed syllable, whether with a stop or a spirantal initial.

4.5: Prefixes and syllable structure

#31) PLB *C-tik > *e.g.* Akha ti LS (*cf.* WT gtsig); ‘new’ (TSR #126) PLB *C-šik > Lahu ší, Akha shui LS (*cf.* rGyalrong kəsik < *g-sik); ‘breath/life’ (TSR #123) PLB *C-sak > Lahu šá, Akha sa LS (*cf.* Jingpho sà? ‘breathe’, ñ-sà? ‘breath’ (perhaps < *r-sak)¹⁴⁹; ‘vomit’ (TSR #38) PLB *C-pat > Lahu phè?, Akha peh LS, Luquan p’i⁵⁵ (*cf.* Jingpho ñ-phàt, rGyalrong mphet, Ersu nphsɿ^{55,150}). The best example of all is ‘six’ (TSR #35). As shown above, many TB languages (*e.g.* WT drug) point to a dental prefix in this root, while Lolo-Burmese unanimously reflects the PLB cluster *kr-: WB khrauk, Lahu khò?, Ak. ko LS, Lisu tʃho⁴¹, Hani khv³¹, *etc.* Since these Loloish forms also reflect the *LOW-stopped tone, this root cannot be reconstructed simply as PL *krok (which would give *HIGH-stopped tone); the solution I adopted was to reconstruct it as PL *C-krok, where the “C-prefix” in this case was undoubtedly the dental element found elsewhere in TB, *i.e.* reflecting pre-Loloish *d-krok.

In many other cases, however, the Loloish tonal developments are the only evidence for the C-prefix. To indicate this, TSR usually puts a slash through the C, thus: *~~C~~-. Exs. ‘bite down on’ (TSR #24) *~~C~~-tsat > Lh. chè?; ‘break off a piece’ (TSR #25) *~~C~~-ket > Lh. qhè?; ‘filthy/rat’ (TSR #26) *~~C~~-cak > Lh. chà?; ‘goat’ (TSR #27) *~~C~~-cit > Lh. á-chè? (*cf.* WB chit); ‘leaf’ (TSR #29) *~~C~~-pak > Lh. phà? (*cf.* WB phak); ‘pinch’ (TSR #32) *~~C~~-tsit > Lh. chì?; ‘return/give back/year’ (TSR #34) *~~C~~-kok > Lh. qhò?; ‘stir/mix’ (TSR #36) *~~C~~-krök > Lh. khò?; ‘day after tomorrow’ (TSR #37) *~~C~~-pak > Lh. phà?-ni; ‘draw water’ (TSR #39) *~~C~~-kap > Akha k’aw LS ≠ *kam¹ > Lh. qho; ‘morning’ (TSR #125); *~~C~~-sok > Lh. šó; ‘pluck’ (TSR #127) *~~C~~-šak > Lh. šá; ‘thirsty’ (TSR #129); *~~C~~-sip > Lh. ší.

4.5 Prefixes and syllable structure

4.5.1 Prefixes vs. clusters

When the root-initial is a resonant (liquid or semivowel), it is sometimes difficult to distinguish (either by internal reconstruction or comparatively) between an intrinsic cluster (*i.e.* a sequence of initial consonant plus glide) vs. a sequence of prefix plus root-initial.¹⁵¹ The first element in such sequences, even if originally part of the root, is susceptible of being reinterpreted as a prefix, and then dropped. Conversely, even if the

149. See above, 4.4.1(3) for PTB *r- > Jg. ɲ-.

150. The extra-Loloish forms mostly seem to point to a PTB *nasal prefix with this root, though this could not have existed in Proto-Loloish, since it would have led to a Lahu voiced initial, and a Luquan prenasalized aspirate. See above 4.3.

151. See above 3.6.1, “The structural place of glides in the ST/TB syllable”.

first element was originally a prefix, it may later be reinterpreted as part of an intrinsic cluster. Among the cases where “the distinction cannot be drawn with any assurance”¹⁵² are:

‘arrow’	*b-la or *bla	Bahing bla, WB hmrâ, Bhramu pəra, Magar mya, Tangkhul məla, Chepang la, Garo bra, Dimasa bala, etc. [STC #449]
‘horn’	*g-ruŋ or *gruŋ ^a	Vayu and Bahing ruŋ, Moshang əruŋ, Jingpho rūŋ ʷ n-rūŋ, Garo groŋ, Bodo goŋ (with prefix preemption; below 4.5.3), Dimasa groŋ ‘horn’, goron ‘side, angle’, bogron ‘corner, horn’ [STC #85 and p. 113]
‘monkey’	*m-ruk or *mruk	WB myauk, Bs. (Intha) mrok ~ mlok, Lahu mō? (with prefix preemption; below 4.5.3), Bhramu pəyuk, Chepang yuk, Bahing moro, Digaro təmyu, Gurung timyu [STC p. 112; TSR #133]

a. An alternative reconstruction (not relevant to the present point) is *g-rwa ʷ *g-rwaŋ (see STC n. 231).

A distinction is made in the Tibetan script between the cluster gy- (e.g. gyad ‘champion’) and the prefix + initial combination g-y (e.g. g-yas-pa ‘right hand’). No PTB roots have so far been unearthed that reflect an unambiguous intrinsic cluster *dr-;¹⁵³ in WT forms beginning with dr-, the stop may be shown to be prefixal on the basis of comparative evidence:

‘cut’	*d-ra-t	[STC #458] WT dra-ba, Lepcha hra, Nung rat, WB hra’, Garo ra ~ rat, Dimasa ra
‘filth / stench’ ^a	*d-ri(y)	[STC #459] WT dri-ma, Bahing ri-ku, Lepcha məri
‘six’	*d-ruk	[STC #411; TSR #35] WT drug, Lepcha tǎrāk, Digaro thəro, Mikir therok, Garo dok (with prefix preemption; below 4.5.3); WB khrauk, Lahu khō?

a. The prefixal status of the *d- in this root is further confirmed by its probable allofamic connection to *ri ‘gleet/purulent discharge/rot’, below 5.3.2(1); see especially Miri təri ‘wound, ulcer, sore’ cited there.

152. See STC, n. 314, p. 112.

153. A possible candidate for such an etymon is ‘sew’ (WT hdrub-pa, rGyalrong tup, Magar rup, WB khyup, Lahu tō), though this is still speculative (see above 4.4.5 and STC #456 and nn. 320, 321).

4.5.1: Prefixes vs. clusters

A particularly clear case of contrast between a cluster **kr-* and a velar-prefixed resonant **k-r-* is provided by Lolo-Burmese:

	<i>PLB</i>	<i>TSR</i>	<i>WB</i>	<i>Lahu</i>	<i>Akha</i>	<i>Lisu</i>
‘weave’	<i>*rak^L</i>	#192	<i>rak</i>	ḡàʔ	zàq (LS)	ya ⁶
‘crossbow’	<i>*krak^H</i>	#9	---	khâʔ	káq (HS)	hchya ²
‘chicken’	<i>*k-rak^H</i>	#184	<i>krak</i>	ḡâʔ	yā	a ¹ -ya ¹

As explained above (3.6.4), the intrinsic cluster **kr-* yields a Lahu front velar *kh-* (plain initial **k-* becomes Lahu postvelar *qh-*). But in ‘chicken’, the velar prefix leaves no direct consonantal trace in Lahu, where the initial remains ḡ- [ɣ] (< root-initial **r-*); on the other hand this voiceless prefix had the power to change the *tonal class* of the syllable, pushing it into the **HIGH**-stopped /^H/ instead of the **LOW**-stopped /^L/ tone.¹⁵⁴

Many etyma beginning with stop + resonant show extreme structural ambiguity, as evidenced by their disparate fates in the various TB languages. One of the best examples is ‘dog’, reconstructed as PTB **kwəy* [*STC* #159]. Most TB languages treat the initial consonant sequence as a cluster (e.g. WT *khyi*, Chepang *kwi*, Digaro *nkwi*, Jg. *gwì*, WB *khwê*). On the other hand, the Lahu reflex *phî*, with labial initial points to a prototype where the velar and the labial semivowel were fused into a labiovelar unit phoneme, **k^wəy*.¹⁵⁵ The Chin languages have treated the velar element as a prefix, and dropped it, yielding forms like Lushai and Lai *ui* (< **wəy* < **k-wəy*). Karenic has gone a step further, dropping the velar as if it were a prefix, and then substituting a different, dental prefix for it: Pwo *thwì*, Sgaw *thwì* (< **t-wəy* < **k-wəy* < **kwəy*).

Even more complex is a newly discovered root, PTB **b-raŋ* ≠ **g-raŋ* ‘chest / breast’. Forms like WT *braŋ*, Cuona Menba *praŋ*¹³, Tsangla *brang-tong*, Trung (Dulong) *pǎŋ*⁵⁵, and Apatani *há-bjaŋ* point to an original labial cluster **br-*. Other forms, however, have an initial velar element: Kaman Miju *gɔŋ*³⁵, Queyu *ka³³rō⁵⁵*. Still others reflect a simple **r-* initial: WB *raŋ*, Maru *ɣ³¹kɔ³¹*, Qiang Mawo *ɣu qhua*, Ersu *ro³³ŋo⁵⁵ma⁵⁵*. The Lai Chin cognate *traŋ* could derive from **graŋ* or perhaps from **braŋ*, for which Chin reflexes had been lacking. See above 3.6.4.1(2).

154. Several other examples of LB etyma that reconstruct with a voiceless stop prefix (usually **k-*) are presented in *TSR* pp. 68-70, including ‘ant’, ‘flower’, ‘maggot’, ‘pick up’, ‘rat’, ‘shadow’, and ‘stone’.

155. See the discussion of these labiovelars, above 3.2(4).

Similar complexities of interpretation attach to the many etyma which show variation in reflexes between a labial stop and the labial semivowel *w-* (e.g. ‘pig’ WT *phag*, WB *wak*; ‘bamboo’ WT *spa* ~ *sba*, WB *wâ*). While arguments may be made in favor of a cluster analysis (e.g. **pwak*), or a prefixal one (e.g. **p-wak*),¹⁵⁶ I now believe that the best explanation is in terms of an originally subphonemic “extrusion” of the semivowel from the stop initial, especially before the vowel **-a-* (so that we may write the *-w-* above the line, e.g. **p^wak* < **pak*).¹⁵⁷

4.5.2 *Diachronic layers of prefixes*

From the point of view of individual TB etyma, we may distinguish roughly between *primary* and *secondary* prefixes. A primary prefix on an etymon is one which is attested in several different branches of the family. Sometimes the antiquity of such a prefix is obvious, since it is so widely distributed, e.g. the labial prefix in **b-ləy* ‘four’: WT *b̥zi*, Thulung *bli*; Magar *buli*, Jg. *məlī*, Maru *byit*, Mikir *phli*, Digaro *kəprei*, Nung *əbyi* ¹⁵⁸, etc. Often, however, the evidence for primariness is more indirect. Thus, ‘pillow/block of wood’ is set up simply as **kum* in *STC* #482, although forms from at least three branches of TB support a reconstruction of **m-kum*: either overtly (e.g. Nung *əgo məkxim* (*əgo* ‘head’), rGyalrong (Suomo) *tə-mkəm* (with reprefixation), Naxi Lijiang *ku³³əŋgu³³* (*ku³³* ‘head’), Luquan Lolo *ŋk’ŋ*), or indirectly (e.g. Lahu *ú-gê* (*ú-* ‘head’), where the voiced initial points unambiguously to a prenasalized prototype).¹⁵⁹

Secondary prefixes exhibit several different types of morphophonemic behavior:

(1) *Replacement of a primary prefix by a secondary one.*

As still another manifestation of the power of *analogy* in morphological processes, many individual TB languages, as well as certain subgroups of the family, have developed a preference for particular prefixes, *i.e.* seem to have “favorite” prefixes (see above 4.1). Old Chinese seems to have had a special fondness for the **s-* prefix (see Benedict 1975c “The Chinese **s-* orgy”), as in, e.g. ‘four’ 四 OC *s̥jəd* < **s-ləy* (vs. general TB **b-ləy*). As we have seen (above 4.4.5), secondary dental prefixes (e.g. Chokri Naga *tə-* and *thə-*) are

156. This prefixal interpretation was the one I adopted in JAM 1997a (“Laryngeals”): n. 14.

157. Thirty-one etyma with initials of this type are discussed in JAM 2000a. An analogous phenomenon is observable in modern Japanese, where English words with velar initials plus /æ/ are automatically palatalized by an “extrusional” -y-, e.g. cabbage > Jse. *kyabetsu*. See above 3.6.1(n. 86).

158. Both the Digaro and the Nung forms show reprefixation, *i.e.* a secondary prefix superadded to the primary one (see below).

159. See my notes 123 and 387 in *STC*.

4.5.2: Diachronic layers of prefixes

especially frequent in certain Kamarupan languages. The numerous prefixed forms of Lepcha are “largely of late origin” (STC:104). Prefixation in the Karenic languages “is in large part of late origin”, with “only isolated instances of agreement” with the rest of TB in particular etyma (STC:131-2); striking examples are ‘dog’ (Karenic *thwi* < **t-wəy*, vs. general TB **kwəy* or **k-wəy* or **k^wəy*; see above) and ‘pig’ (Karenic *thoʔ* < **t-wak* vs. general TB **pwak* or **p-wak* or **p^wak*). See above 4.5.1.

The dental prefix is widely attested in ‘six’ **d-ruk* (above 4.4.5), but several languages have replaced it with a velar, e.g. Magar *kruk*, Nung *təru* ~ *kəru*, Jg. *krúʔ*, WB *khrauk*, Lahu *khəʔ*.¹⁶⁰

Occasionally one encounters a particular form that contains a truly exceptional prefix, e.g. WB *phyam* ‘otter’ vs. general TB **sram* or **s-ram* (see below).

(2) *Creation of a secondary prefix through **reduction** of a full syllable in a compound: “**prefixization**”*

A secondary prefix can sometimes be shown to descend from a reduced syllable in a compound, e.g. the many Jingpho nouns and verbs with the **lə-* prefix (< PTB **g-lak* ‘hand’ and **g-la* ‘foot’) that refer to the hands and feet or action with the limbs (see above 4.4.2). Similarly, the prefixal element in WB *pərwak* ‘ant’ is clearly a reduction of the full syllable *pûi* ‘insect’ (cf. Lahu *pú-yəʔ* ‘ant’) < PLB **bəw²-rwak*, an innovation not paralleled outside of LB. (Cf. forms with a velar prefix, like WT *grog-ma*, Lohorong and Lambichong *khörök*, rGyalrong *körök* < **k-rwak*.) See above 4.4.4(3)

For more on this process of “prefixization”, see below 4.5.4 (“The compounding/prefixation cycle”).

(3) *Addition of a secondary prefix to an older one: “**reprefixation**”*

Instead of replacing an earlier prefix, a younger prefix may simply be superadded to it, so that the form is doubly prefixed, as provided for in our PTB syllable canon (above Ch. 2). In these cases the prefix closer to the root is assumed to be historically prior (P₁), while the one further from the root is secondary (P₂):

160. See STC:94-5. This etymon is reconstructed in TSR #35 as PLB **C-krok^L*, where “C” stands for a *voiced prefix that disappeared after causing the word to acquire the LOW-stopped tone, hence from a hypothetical earlier sequence of prefixes < PTB **d-k-ruk* (see above 4.4.6). If this interpretation is correct, the LB forms do not exactly illustrate replacement of one prefix by another, but rather dropping one of them from a sequence after it has left a trace in the form of a tonal effect. But at the PLB stage the prefix had already been absorbed into the root, so that **kr-* was functioning as an intrinsic cluster (thus yielding the front velar in the Lahu form), so that **d-krok* is more appropriate for the PLB stage than **d-k-ruk*.

(P₂) (P₁) Ci (G) (V) (i) (Cf) (s).

Sometimes each of the two prefixes has schwa vocalism, so that a form is ‘doubly sesquisyllabic’. Thus Tangkhul Naga productively adds a secondary prefix *khə-* to all verb roots,¹⁶¹ preposing it to any older prefix that may survive, *e.g.* TN *khəmolek* ‘lick’, where TB languages generally reflect only **m-lyak* (≠ **s-lyak*), *e.g.* Ao Naga *məzak*, Lotha Naga *myak*, Jg. *mətáʔ*, Akha *myəq*, Jinuo *mɿa*^{55,162} A few Jingpho words appear doubly sesquisyllabic in Hanson’s (1906) transcription, *e.g.* *lāsāwi* (p.380) ‘bone marrow; kind of bamboo; whittle off’; *pāsāwi* (p. 526) ≠ *bəswi* (p. 73) ‘plaid cloth’; *ʔālāwan* (p. 13) ‘quickly, in haste’, but these are spelled with only a single unstressed vowel (*ləsūi*, *pəsūi*, *á-ləwān*) in Dai’s phonetically more accurate dictionary (1983).

Numerals show particularly complex behavior with respect to prefixes.¹⁶³ Lushai has generalized the prefix *pa-* to all its numerals from 1 to 9, but this actually represents four different morphophonemic processes:

	<i>PTB</i>	<i>WT</i>	<i>Lushai</i>		<i>PTB</i>	<i>WT</i>	<i>Lushai</i>
‘2’	<i>*g-nis</i>	<i>gnyis</i>	<i>pahnih</i>	‘6’	<i>*d-ruk</i>	<i>drug</i>	<i>paruk</i>
‘3’	<i>*g-sum</i>	<i>gsum</i>	<i>pathum</i>	‘7’	<i>*s-nis</i>	[<i>bdun</i>]	<i>pasarih</i>
‘4’	<i>*b-ləy</i>	<i>bzi</i>	<i>pali</i>	‘8’	<i>*b-r-gyat</i>	<i>brgyad</i>	<i>pariat</i>
‘5’	<i>*l/b-ŋa</i>	<i>lŋa</i>	<i>panga</i>	‘9’	<i>*d-kəw</i>	<i>dgu</i>	<i>pakua</i>

(a) <i>retention</i> of a primary labial prefix: FOUR; FIVE; EIGHT
(b) <i>replacement</i> of an older prefix by <i>pa-</i> : THREE; SIX; NINE
(c) <i>reprefixation/addition</i> of <i>pa-</i> to an older prefix, creating a doubly sesquisyllabic form: SEVEN ^a
(d) <i>replacement</i> of the primary prefix <i>*g-</i> by <i>*s-</i> (<i>*s-n-</i> > <i>hn-</i>), then <i>reprefixation</i> by <i>pa-</i> : TWO

161. Several dialects of rGyalrong (*e.g.* Zhuokeji, Ribu) also prefix *kə-*, *ka-* productively to verb roots. See Lin Xiangrong 1993.

162. Another widely attested alloform of this root is **s-lyak*, sometimes with causative meaning (Garo *srak*, Dimasa *salau* ‘lick’; Lahu *lêʔ* ‘lick’ (< **lyak*) ≠ *lé* ‘cause to lick; feed an animal’ (< PLB **ʔ-lyak* < PTB **s-lyak*). See *STC* #211 and p. 118; *TSR* #179.

163. See JAM 1995b (“ST numerals and the play of prefixes”), especially pp. 211-33. The prefixes of adjacent numerals frequently exert assimilatory attraction on each other, leading to ‘prefix runs’, as in Jingpho *məsūm* ‘three’, *məlī* ‘four’, *məŋā* ‘five’ (note also the tonal uniformity). A similar phenomenon is familiar in IE numeral sets, *e.g.* Russian *devjatj* ‘nine’ (< PIE **n-*), influenced by *desjatj* ‘ten’ (< PIE **d-*); Eng. *four* (instead of ***hour* < PGmc **h^w-* < PIE **k^w-*), influenced by five (< PIE **p-*).

4.5.2: Diachronic layers of prefixes

- a. The Lushai inner prefix *-sa-* reflects the primary prefix with this numeral (*cf.* Jg. *sənit*, Ergong *snie*, rGyalrong *kəfnəs* [with secondary prefixation of *kə-*]). WT *bdun* is virtually isolated in TB.

The double nature of the prefixation may be camouflaged by the fusion of the older prefix with the root-initial, as in Lushai *pahnih* (above), or in the etymon for ‘otter’, reconstructed as PTB **s-ram* on the basis of forms like Jg. *šəram*, Miri *si-ram*, Mikir *serim*. Two reflexes of the latter root, Lushai *sa-hram* and Lepcha *săryom*, both demonstrate the cyclical nature of TB prefixation. After the primary **s-* prefix had fused with the root-initial *r-*, yielding a voiceless liquid in Lushai (*hr-*) and a palatalized *ry-* in Lepcha,¹⁶⁴ the ‘animal prefix’ *sa-* (< PTB **sya* ‘animal’) was reprefixed to the syllable. In this case, both the primary and the secondary prefixes seem to be etymologically identical, both representing a reduction of the root for ‘animal’, but at different time-depths.¹⁶⁵

TB speakers seem to be quite aware of their prefixes as objects of wordplay. Jingpho children use reduplicated numerals when counting at play, where the second number of each pair has its prefix replaced by the “preformative” *dùm-*, along with certain alternations in the initial of the major syllable:

<i>ləŋâi</i>	‘one’	>	<i>ləŋâi dùm-bâi</i>
<i>ləkhônŋ</i>	‘two’	>	<i>ləkhônŋ dùm-brônŋ</i>
<i>məsūm</i>	‘three’	>	<i>məsūm dùm-brūm</i>
<i>məlī</i>	‘four’	>	<i>məlī dùm-dī</i>
<i>məŋā</i>	‘five’	>	<i>məŋā dùm-dā</i>

The reduplicated prefix may also be *khə-* or *ŋə-* : *ləŋâi khəbâi* ~ *ləŋâi ŋəbâi*, *ləkhônŋ khəbônŋ* ~ *ləkhônŋ ŋəbônŋ*, *etc.* (See Hanson 1906:126-7).

In a number of interesting cases, reprefixation in languages like WT and WB has led to complex consonant sequences, which were probably broken up phonetically by a single

¹⁶⁴.Prefixal **s-* is regularly reflected by medial *-y-* in Lepcha. See Benedict 1943 and above 4.2.1.

¹⁶⁵.As noted above, WB *phyam* ‘otter’ shows replacement of the primary **s-* by a different prefix (**p-ram*).

schwa; *i.e.* an older prefix first joined with the resonant root initial to form a cluster, after which a younger prefix, presumably followed by schwa, was preposed to it.¹⁶⁶

‘eight’ ***b-r-gyat** \approx ***b-g-ryat** WT *brgyad* [brəgyat]; rGyalrong *warzhet*

The reflexes of this phonologically complex numeral are predictably varied.^a WT and rGyalrong reflect a doubly prefixed allofam; other languages have simple velars (Gangte *giet*, Tiddim *giat*); still others have reflexes of simple *r-* or a cluster of *C + r* as the root-initial (PLB **ʔ-rit^L* [TSR #171] WB *hrac*, Lahu *hî*); Serdukpen (an obscure language of northern Arunachal Pradesh) has a doubly-prefixed form like WT and rGyalrong, but its first prefix is *s-*, not *b-* (*sargiat* < **s-r-gyat*); finally, Chinese 八 shows preemption of the initial cluster (below 4.5.3) by the labial prefix (OC *pwät* [GSR #281]).

‘leech’ ***k-r-p^wat** WB *krwat* [kərwat]

Forms reflecting the bare root **wat* include Lahu *vèʔ*, Akha *yèq*, Chang Naga *wat*, Lushai *vanj-vat*. The liquid prefix is attested in forms like Magar *ləwat*, Garo *ruat*, Angami Naga *reva*, Rangkhul *ervot*. The aberrant Kamarupan language Sulong has a velar prefix (*kəvat*⁵³), but only WB has both a velar and a liquid prefix in sequence. Several other prefixes are also attested with this root. (See TSR #167 and JAM 2000a (**p-/w-*) #13.)

‘rat’ ***k-r-wak** WB *krwak* [kərwak]

Some forms reflect the unprefixed root **rwak* (*e.g.* Chepang *rok-yu*, Pumi (Taoba) *yo*⁵³, Maru *yuk*³¹). The velar animal prefix (see above 4.4.4) superadded to the Burmese form is also reflected indirectly by the HIGH-stopped tone in Loloish forms like Lahu *fâʔ*.^{b/c}

‘snake’ ***s-b-ru:l** WT *sbrul* [səbrul]

The labial prefix **b-* is possibly a reduction of the same PTB morpheme **bəw* ‘insect; vermin’ as in ‘ant’ (§2 above). Many reflexes of this etymon reflect the naked root **rul* (*e.g.* Tangkhul *ru*, Lushai *ruul*, Tiddim *gu:l*, Palaychi (Karen) *rù*). Most others reflect only the labial prefix **b-rul* (*e.g.* Thebor *brul*, Maring *pharul*, Paangkhua *mañul*, WB *mrwe*), with the labial occasionally preempting the liquid root initial (*e.g.* Magar *bul*). Only WT has superadded another prefix, *s-*, presumably the animal prefix < PTB **sya* (see above, and below 9.3.2).

- For more details, see JAM 1995b (“Numerals”), pp. 203-7. For some modern forms it is hard to be sure of the relative order of the underlying prefixal elements; but metathesis is only to be expected with complicated consonantal sequences like these, especially since a liquid is involved.
- Evidently the PLB sequence **krw-* developed into Lahu *f-*, merging with the reflexes of **ʔ-w-* and **hw-*. See above 3.4.2(5).
- See STC pp. 2, 107; TSR #188; ZMYC #134; also ‘chicken’ (above 4.5.1) and ‘leech’ (above).

¹⁶⁶ See above 3.6.5 “Double glides”.

4.5.2: Diachronic layers of prefixes

Distinct from the phenomenon of reprefixation, whereby a new prefix is superadded to an older one, is the tendency to expand the distribution of a prefix preexistent in a language to new sets of words. Under favorable circumstances the diachronic layers of its occurrence can be traced, so that it makes sense to speak of ‘primary’ vs. ‘secondary’ distribution of the prefix. This has been documented for the syllabic-nasal prefix in Mpi (S. Loloish),¹⁶⁷ where the oldest stratum includes etyma with extra-LB cognates that reflect PTB *m- (‘pillow’, ‘dove’, ‘door’, ‘kidney’), while more recent strata comprise “prefixed” compounds where the first constituent began with a nasal (‘sunlight’, ‘smoke’, ‘hair of head’, ‘nose’, ‘face’, ‘ear’), and loanwords from Tai that begin with nasal initials (‘teak’, ‘lime’, ‘eggplant’, ‘watch / clock’, ‘well’, ‘scorpion’, ‘percussion cap’). Not all occurrences of a given prefix in a particular language are of equal antiquity.

The existence of multiple prefixes on a given root has led some scholars to consider the inner prefixes to be ‘infixes’. Such is the analysis presented in Wolfenden (1929:38-49) to account for the -r- and -s- in such WT consonant combinations as **brg-**, **brgy-**, **brt-**, **brd-**, **brts-**, **br-**, **brn-**, **brny-**; **bsg-**, **bsgr-**, **bst-**, **bsd-**, **bs-**, **bsn-**, **bsny-**. To speak of ‘infixes’ in such cases is an abuse of terminology, however, since a true infix intervenes in the middle of a root.¹⁶⁸ It would be equally inappropriate to consider non-final versatile verbs in a concatenation (or non-final particles in a string of clause-final particles) to be ‘infixal’, since they are all independent morphemes in their own right, and could well occur alone in their clause.

167. See above 4.3.4 and JAM 1978b:13-17.

168. True infixes are a hallmark of the Mon-Khmer language family, *e.g.* the causative infix -r- in Semai (Aslian branch): *sōh* ‘be afraid’, *sōh* ‘frighten someone’; *tlais* ‘escape’, *trlais* ‘deliver someone’. See JAM, to appear. Several pairs of Khmer loans in Thai preserve a MK infixational pattern, *e.g.* *truat* ‘examine, control’ / *tamruat* ‘police’, with the nominalizing infix -am-. For a “secondary infix” in Lepcha, see Benedict 1943 and above 4.2.1.

4.5.3 *Prefix preemption*¹⁶⁹

‘Prefix preemption’ refers to a change in syllable structure whereby an original prefix ‘drives out’ a weak root-initial (liquid, nasal, or semivowel), and comes to play the role of the root-initial itself. Among the numerous examples that could be cited are the following:

	<i>PTB</i>	<i>Reflexes</i>
‘four’	*b-ləy	Maru bīt ^a (vs. Cuona Menba pli ⁵³ , WB lē)
‘lick’	*m-lyak	Akha myəq, Lotha Naga myak, Jinuo mɿa ⁵⁵ (vs. Ao Naga məzak, Jg. mətáʔ, WB lyak)
‘louse’	*s-r(y)ik	Hayu sek (vs. Bunan śrik, Lushai hrik, Mikir rek, Kanauri rik)
‘penis’	*m-ley	Lahu nī (vs. WT mje, Jg. mənē, WB lî)
‘put to sleep’	*s-yip	WB sip, Sani ši ⁵⁵ (vs. WB ʔip ‘sleep’, Lahu í ‘put to sleep’)
‘seven’	*s-nis	PLB *s-ni-t > Lahu šī (vs. Jg. sənīt, rGyalrong kəʃnəs, Cuona Menba nis ⁵⁵ , Ergong snie)

a. -it is the regular Maru reflex of *-əy (see below 5.3.2).

4.5.4 *The compounding / prefixation cycle*

Prefixation in TB is closely related to the morphological process of compounding: still another manifestation of the key role played by prefixes in determining and changing syllable structure.

(1) *Prefixization: from disyllabic compound to sesquisyllable*

Compounding has been a pervasive morphological process for at least the past two millennia of the history of the ST family, as part of the languages’ response to the ever-present danger of homophony among their monosyllabic morphemes. Once a dissyllabic compound has been created, however, it is subject to phonological reduction of

169. This term was introduced in JAM 1972b (“Tangkhul Naga”). See also JAM 1979 (“QV”):24, and above 4.1.2(5).

4.5.4: The compounding / prefixation cycle

its first syllable, a process which is readily observable synchronically throughout the family, e.g. in Prinmi (Pumi Dayang):

$\Phi p\check{i}$ ‘belly’	>	$\Phi p\check{a}$ - $tf\acute{o}u$ ‘navel’
$tf\check{i}$ ‘water’	>	$tf\check{a}$ - $\Phi p\acute{a}$ ‘boiled water’

The unstressed vowel of the first syllable in such a compound is typically schwa; the tone loses its original contour and becomes “neutral”; if there is a final consonant it tends to drop; and eventually its semantic identity is likely to become obscured. This is the process of “prefixization”, whereby a fully meaningful morpheme is reduced to a prefix, in such a way that the original disyllable becomes a sesquisyllabic unit. Some additional examples:

‘ant’	PLB $*b\check{a}w^2$ - $rwak$ ($*b\check{a}w$ ‘insect’) > WB $p\check{a}rwak$ > Mod. Bs. $p\check{a}yw\acute{e}?$
‘gall / bile’	PTB $*sin$ - kri (cf. Jg. $s\grave{in}$ ‘internal organ’, $m\check{s}in$ ‘liver’) > Jg. $\check{s}agr\grave{i} \sim s\check{a}gr\grave{i}$
‘sandal’	Mod. Bs. $ph\check{a}n\acute{a}?$ < WB phi ‘nap (phi) ‘press, flatten’) ^a
‘son-in-law’	PTB $*za$ - mak ($*za$ ‘child/son’) > WB $s\check{a}mak$ > Mod. Bs. $\theta\check{a}m\acute{e}?$ ^b

a. For the semantics, cf. Lahu $kh\check{i}$ - $n\acute{o}?$ ‘shoe’ < $kh\check{i}$ ‘foot’ + $n\acute{o}?$ ‘pinch, squeeze’.

b. Similar examples may be cited from Tai, e.g. Siamese $s\check{a}d\check{h}$ ‘navel’, $s\check{a}$ - < $s\check{a}j$ ‘line, cord’; also many names for fruits and vegetables with the prefix $m\check{a}$ - (e.g. $m\check{a}m\acute{u}a\check{n}$ ‘mango’, $m\check{a}phr\acute{a}aw$ ‘coconut’, $m\check{a}kh\check{y}a$ ‘eggplant’, a reduction of Proto-Tai $*hmaak$. (See Li Fang-Kuei (1977:75, 92).

Sometimes the reduction of the first syllable goes so far that it results in a complex monosyllable without even a schwa to break up the initial consonant sequence:

‘elder sibling’	PLB $*ʔu^2$ -(y) ik^L ($*u$ ‘head; honorific for elder kin’ < PTB $*d$ - bu) > Proto-Loloish $*ʔ$ - $wyik^L$ > WB $?ac$ - kui , Lahu $v\acute{i}$, Akha $y\grave{i}q$ (see <i>TSR</i> #172 and p.72)
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(2) *Dimidiation of prefixes: from sesquisyllable to dissyllable*

In a way the mirror image of prefixization is a rarer process that we could call *syllabization* or *dimidiation*, whereby a formerly non-syllabic prefix becomes strengthened into a full syllable.¹⁷⁰ This replacement by or alternation with “preformatives” or fully syllabic forms is especially characteristic of Jingpho.¹⁷¹ Thus the

170. The term ‘dimidiation’ is due to Peter Boodberg, who used it to refer to the graphic rendering of an initial consonant cluster in Old Chinese by two separate characters, each of which was pronounced with one member of the cluster as initial. Yang (1985) is a detailed study of OC binomes representing putative velar clusters $*k$ - l - and $*k$ - r -, where the initial of the first character reconstructs with a velar and the second with a liquid.

Jg. velar prefixes *kə-* and *gə-* vary with *kum-*, *gin-* or *gum-*; while the nasal prefixes *ŋ-* and *mə-* alternate in many words with *niŋ-*, *nam-*, *num-* (e.g. *nùm-gá* ~ *məgá* ‘side’; *nìŋ-mà* ~ *nùm-mà* ~ *ŋ-mà* ‘a sore’, *nùm-phrà(ŋ)* ~ *ŋ-phrà(ŋ)* ‘wild, ferocious’, *nùm-ríŋ* ~ *məríŋ* ‘dew’).

There is a certain chicken-and-egg problem when confronted with such pairs of variants. Are the Jg. syllabic nasal and *Cə-* type prefixes reductions of former full syllables (via prefixization), or are the full syllables secondary dimidiations of former prefixes? The second interpretation seems preferable in view of cases like ‘horse’. This etymon was originally reconstructed with an initial intrinsic cluster as **mraŋ*, largely on the basis of WB *mrāŋ* (STC #145), but this was later modified to a prefixal reconstruction, **m-raŋ* ≠ **s-raŋ*, to accommodate forms beginning with *r-* (Kanauri *raŋ*, Hakha *raŋ*) as well as some Himalayish forms reflecting a younger, sibilant “animal” prefix (Bunan *śraŋs*, Manchad *hraŋ*, Chepang *səraŋ*). The Jg. cognate *gùm-rà(ŋ)* is fully dissyllabic,¹⁷² and Benedict is tempted to explain it by invoking a double prefixation, **k-m-raŋ*, relating it to the verbal root **m-raŋ* ‘high’ (Kanauri *raŋ*, WB *mrāŋ*), i.e. “the high / noble [beast]” (STC, n. 139; JAM 1979 (“QV”):26). I think it more plausible that Jg. simply added the syllabic prefix *gùm-* to the root for ‘phonological bulk’, as in many other words (e.g. *gùm-phrò* ‘silver’ < PTB **plu*).

(3) The cyclicity of changes in syllable structure

The following schematic diagrams¹⁷³ are an attempt to graphically summarize the diachronic interrelationships of types of syllable structure attested in TB:

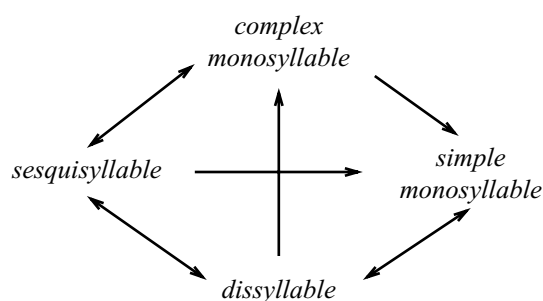


FIGURE 9. Directionalities of diachronic changes in syllable structure.

171. See STC p. 104; Hanson 1906:178, 242, 474.

172. The variant with final nasal is characteristic of the Hkauri dialect.

173. Reproduced from JAM 1990d:3-8.

4.5.4: The compounding / prefixation cycle

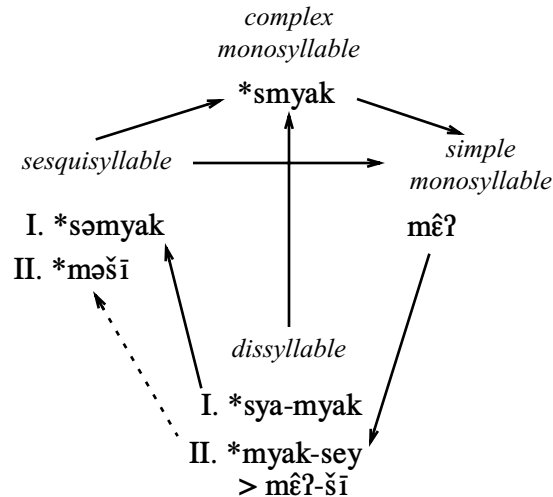


FIGURE 10. Possible fates of a word meaning ‘eye’.

We can imagine an original PTB/PST morpheme for ‘eye’ of the shape **myak* (this is in fact the actual WB form), that became at an early date elaborated into the dissyllabic compound **sya-myak*, where the first element meant ‘flesh; meat; body-part’. This compound could then be reduced to a sesquisyllable (**səmyak*) or even to a complex monosyllable **smyak*. By processes of phonological attrition this complex syllable simplified, e.g. to *mêʔ* (the actual Lahu form, where the **HIGH**-stopped tone reflects a Proto-Loloish **s-* prefix before the nasal; see *TSR*:24,58-61). Repeating the cycle, this simple monosyllable was later reinforced by another morpheme, *šī* ‘round object’ (< PTB **sey* ‘fruit’), to yield the new binome *mêʔ-šī* (the actual binome in modern Black Lahu). One might guess that sometime in the future this compound might be reduced to a monosyllable again, perhaps via a sesquisyllabic form like **məšī*.^{174/175}

174.If the Lahu of the future (unlike the present-day language) permits sesquisyllables!

175.Similar examples of change in syllable structure are readily found in English. The word *police* is normally pronounced sesquisyllabically [pəˈliːs] in a American English, but monosyllabically in many British dialects [pliːs], as if it were spelled “pleece”. The dissyllabic word *barrette* ‘small hair clasp’ is from the diminutive of French *barre* ‘bar’, but is usually pronounced as a sesquisyllable [bəˈrɛt], so that the morphemic identity of the first element is lost.

Rhymes: monophthongs and diphthongs

5.1 Overview of TB vowel systems

Systems of open rhymes in TB languages range in complexity from 5 or 6 to several dozen.¹ On the simpler side of the spectrum are languages like Written Tibetan (Modern Tibetan dialects have many more), Nocte, or Jingpho, with 5-vowel systems:

i	u
e	o
a	

Written Burmese has a rather more complex array:²

i	ui	u
e		
ai		au
a		
we	wa	wai

1. For inventories of the vowel systems of hundreds of TB languages and dialects, see Namkung, ed. 1996.
 2. For the phonemic interpretation of the WB vowels “ui” and “aw”, see below 5.3.1 and 5.4. For an account of how these WB vowels are indicated in writing, and how they have developed into the rhymes of Modern Burmese, see JAM 1976b.

5.1: Overview of TB vowel systems

The most complex vowel systems occur in those subgroups with the greatest degeneration of syllable-final consonants, *e.g.* Loloish, Qiangic, Naga, Baic. Lahu has a nine-vowel system quite typical for a Loloish language:³

i	ɨ	u
e	ə	o
ɛ	a	ɔ

The Qiangic language Pumi (= Prinmi), along with an extremely complex system of initials, also has a rich vowel inventory, including both oral and nasal monophthongs and diphthongs, as in the Dayang dialect (JAM 1998a).⁴ See Table 11.

<i>Monophthongs</i>					
<i>Oral</i>			<i>Nasal</i>		
i	ɨ ^a	ʉ	ĩ		ũ
e	ə		ẽ	ẽ̃	õ
ɛ	a	ɔ	ɛ̃	ã	õ̃

<i>Diphthongs</i>					
<i>Oral</i>			<i>Nasal</i>		
iw	iw		ĩw		
ey		ow	ẽy		õw
	əw	ɔw			

TABLE 11. Pumi Dayang monophthongs and diphthongs

a. This phoneme has the allophones [ɨ] and [ɨ̃] under certain conditions.

Pioneering attempts to reconstruct the vowels of PTB were made by Shafer (1940, 1941), but the foundations of further work in this area were laid by Benedict's brilliant

3. As always, however, the apparent symmetry of such a vowel system may be misleading, in that some vowels are of much higher frequency than others. The rarest Lahu vowel is /ə/, since it descends from a limited set of prototypes (mostly in words with initial *r- or *Cw- clusters, and with a special affinity of initial /m/). There is also much variation between /ə/ and the (much higher frequency) central vowel /ɨ/. See JAM 1973d/1982 (GL), Ch. I. By far the most common Lahu vowel, as is widely true of TB languages in general, is -a (below 5.2).

4. In many languages (*e.g.* of the Qiangic, Northern Loloish, Naga groups), the apparent complexity of the vowel systems may be aggravated by overtranscription (underphonemicization), non-recognition of free variation, or a failure to distinguish the native vowel system from sounds occurring only in recent loanwords.

reconstructions in *STC*. In the original (1942-3) version of *STC*, the following array of PST monophthongs and diphthongs was posited. See Table 12.

(-i)		(-u)
	-iy	-uw
(-e)		(-o)
	-ey	-ow
(-ew)		(-oy)
	-ay	-aw
	-a:y	-a:w
	-a	

TABLE 12. PST monophthongs and diphthongs

By the time *STC* was published (1972:n. 188), Benedict had reinterpreted the high diphthongs */ -iy -uw / as */ -əy -əw /, a change which introduced schwa into the system as a medial vowel (see below 5.3).

As the parenthesization implies, these rhymes are not all on a par, but may be categorized into high frequency or *primary* rhymes, and rare or *secondary* ones:

<i>Primary</i>		<i>Secondary</i>	
əy	əw	i	u
ey	ow	e	o
ay	aw	(ew)	(oy)
a:y	a:w		
a			

It is notable that the only monophthong of high frequency is *-a. Although *-i and *-u (especially *-u) are reconstructible, in many languages (*e.g.* WB and Lahu) they have merged with *ey and *ow, respectively. The evidence for monophthongal *-e and *-o is very weak.⁵ The core of the system is *-a plus a set of falling diphthongs.⁶ (For the purposes of exposition, for now we consider all syllables not ending in a nasal or stop to

5. This state of affairs is of course very reminiscent of Chinese. It is possible, *e.g.* to analyze Mandarin as having only two underlying monophthongal vowel rhymes, /-a/ and /ə/. See Hockett 1947, “Peiping phonology”.

6. Rising diphthongs like *-wa and *-ya are mentioned in several places below (*e.g.* 5.2.2, 5.2.3, 7.1), but they have already been discussed in more detail in the sections on medial -w- and -y- (above 3.6.2, 3.6.3).

5.1: Overview of TB vowel systems

be “open”; *i.e.* diphthongal syllables ending in -y or -w are included in the “open” category.⁷⁾

The original reconstruction of high diphthongs *-iy and *-uw was tantamount to conceiving the oppositions *-iy/*-i and *-uw/*-u as one of vowel length, *i.e.* *-iː / *-i and *-uː / *-u. Although Benedict himself never went this far, this approach could have been carried to an extreme, so that the other non-low diphthongs *-ey and *-ow would also be reinterpreted as long vowels, *-ē and *-ō, yielding a system like this:

<i>Primary</i>			<i>Secondary</i>	
ī		ū	i	u
ē	(-ə)	ō	e	o
	a			
ay		aw		
āy		āw		

The high and mid diphthongs */iy uw ey ow/, alias */əy əw ey ow/ are here reinterpreted as long vowels */ī ū ē ō/, with rarer monophthongal counterparts.⁸ In this scheme, the long/tense vowels are primary, and the short monophthongal ones are secondary. (The short diphthongs *-ay and *-aw are already tense/long by virtue of their occupying two morae.) The vowel /a/ would be tense by nature, and its lax counterpart could be interpreted as the schwa that occurs in atonic syllables (or, in Benedict’s revised scheme, as the first element in the diphthongs *-əy and *-əw).

In reality, however, it seems to make little difference whether one “phonemicizes” these oppositions as lax/tense, monophthongal/diphthongal, or short/long, since the phonetic reality behind the oppositions was undoubtedly as complex as that, *e.g.* between the vowels in English *heat* (higher, fronter, diphthongal, tenser) vs. *hit* (lower, backer, monophthongal, laxer).⁹

7. We will modify this interpretation in the context of contrastive vowel length (below 5.10, 6.3), since syllables with final -w and -y behave like those with final nasals or stops in tolerating a length contrast in the nuclear vowel.

8. See JAM 1973d (“How to move your vowels”).

9. Cf. also the many possible phonemic interpretations of the contrast between Siamese long vowels in open syllables vs. short vowels which are always automatically followed by glottal stop.

Against the length-based interpretation is the problem of assuming a typologically rare and counter-intuitive length contrast in open syllables.¹⁰ Mainly for this reason we follow *STC*'s revised interpretation of the high diphthongs as *-əy and *-əw.

Benedict worked out the basic vowel correspondences by relying principally on his five criterial languages: WT, WB, Lushai, Garo, and Jingpho (Kachin).¹¹ While there is no reason to doubt the fundamental soundness of these correspondences, it must be stressed that in detail vowel correspondences are always complex and riddled with exceptions.¹² Variational phenomena abound within individual languages, as well as cross-linguistically, and we cannot always be sure that we have selected the correct allofams of a given etymon for comparison. Even when allofamy is not at issue, vowel correspondences are highly dependent on conditioning by initials, medials, and/or finals (even by tones), so that it is essential to operate with *rhymes*, rather than individual vowels.¹³ It makes no sense, *e.g.* to ask globally “what happens to *a in Lahu?” Rather we must ask questions like “what happens to *-yak, *-wat, *-aŋ...?” In fact, of the nine basic Lahu vowels, seven occur as reflexes of the various rhymes with nuclear vowel *-a-:

<i>PTB</i>	<i>Lahu</i>	<i>PTB</i>	<i>Lahu</i>	<i>PTB</i>	<i>Lahu</i>
*-a	-a	*-am	-o	*-ap	-oʔ
*-wa	-u	*-an	-e	*-at	-eʔ
*-ya	-ɛ	*-aŋ	-ɔ	*-ak	-aʔ
				*-wak	-ɔʔ
				*-yak	-ɛʔ

For most branches of TB, reconstruction of vowels at the subgroup level remains to be achieved. Shining exceptions include Karenic, Northern Naga, Tani, and especially Lolo-Burmese.¹⁴

10. See below 5.9, “Vowel length contrasts in open syllables”.

11. For an overview of the basic vowel correspondences in open rhymes for these five criterial languages, see below 5.10.

12. This is especially true of inherently unstable features like vowel length. See below 5.9, 6.3.

13. The concept of *rhyme* is fundamental to the phonology of monosyllabic languages. The term may be defined as “the nuclear vowel of a syllable plus any preceding glide and/or following consonant”.

14. For Karenic, see Haudricourt 1942-45, Jones 1961, Burling 1969; for Northern Naga, see French 1983; for Tani (a branch of Mirish) see J. Sun 1993; for Lolo-Burmese, see Burling 1969; Bradley 1979; Hansson 1989; JAM 1969, 1972a, 1978b, 1979, 1994, 1997b.

5.2: PTB *-a

5.2 PTB *-a

*-a is by far the best attested and most stable open vowel rhyme. Of the approximately 500 numbered cognate sets in *STC*, well over a tenth (about 58) are reconstructed with this rhyme, including:¹⁵

<i>Gloss</i>	<i>PTB</i>	<i>STC</i> #	<i>Gloss</i>	<i>PTB</i>	<i>STC</i> #
‘bitter’	*ka	8	‘hundred’	*b-r-gya	164
‘put / place’	*s-ta	19	‘flesh / meat’	*sya	181
‘thin’	*ba	25	‘fish’	*ɲya	189
‘bamboo’	*g-p ^w a	44	‘borrow’	*r/s-ɲ(y)a	190
‘knife / axes / sword’ ^a	*s-ta	p. 22	‘salt’	*tsa	214
‘child’	*za ≈ *tsa	59	‘I / me’	*ɲa	406
‘eat’	*dzya	66	‘vein / sinew’	*r-sa	442
‘five’	*l/b-ɲa	78	‘rain’	*r-wa	443
‘ill’	*na	80	‘ear’	*r/g-na	453
‘nose’	*s-na	101	‘god / soul / beautiful’	*m-hla	475
‘moon’	*s/g-la	144	‘negative imperative’ ^b	*ta ≈ *da	p. 97

a. Cf. WT *sta-re* ‘axe’; WB *thâ* ‘knife, sword’; Lalo *á-thâ* ‘knife’; Ahi *mi-tho* ‘*id.*’. See SB 1998.

b. This etymon is widely distributed in TB, occurring in Himalayish, LB, BG, Qiangic, and Nungish. See e.g. ZMYC #1004.

At the subgroup level, where cognates are more abundant and the correspondences can be worked out in great detail, the number of sets that reconstruct with *-a is even larger.¹⁶

15. The reconstructions here given are sometimes slightly different from those in *STC*, based on subsequent reanalysis.

16. Inga-Lill Hansson and I long ago (1979/1990) managed to reconstruct over 80 Proto-Lolo-Burmese etyma with *-a just on the basis of Akha, Lahu, and WB. More recently, in a seminar on Lolo-Burmese (Spring 1999), utilizing among other materials the work of Björverud (1994) on Lalo (W. Loloish), about 120 PLB roots in *-a were reconstructed. The total number of etyma in the STEDT database that reconstruct with *-a (at all taxonomic levels) is now about 175.

The following is a sampling of Proto-Lolo-Burmese roots in *-a that do not appear in *STC*:¹⁷

<i>PLB</i>	<i>PLB</i>
‘antelope’ *ʔ-ya ²	‘help’ ^a *m-ga ³
‘all’ *ka ¹	‘interrogative prt.’ *la ²
‘between’ ^b *ʔ-gla ²	‘jewsharp’ *ta ²
‘box’ *ʔ-da ¹	‘nearby place / vicinity’ ^c *ba ²
‘buckwheat’ ^d *g-ra ²	‘patch’ *ʔ-ba ¹
‘bright / shine’ *m-ba ³	‘rice / paddy’ *dza ¹
‘cheek’ *ba ²	‘sow (seeds)’ *ka ³
‘civet cat’ ^e *ʔ-ba ²	‘stick (n.)’ ^f *da ¹
‘fern / bracken’ *m-da ¹	‘teach’ *ʔ-ma ^{1/2}
‘fontanelle’ *ra ²	‘time / when’ ^g *ta ²
‘get / obtain’ *ra ³	‘trap’ ^h *wa ³
‘good / permissible’ *ʔ-na ¹	‘trousers’ *ʔ-la ²
‘grain of rice’ *ka ¹	‘want / think / love’ ⁱ *m-ga ²
‘hear / listen’ *gla ²	‘winnow’ *ʔ-ra ¹

- a. See also Akha gā djā djā-ə ‘hire someone to work’. This root apparently has extra-LB cognates as well: Jg. gā ‘laborer called for joint or communal work’ (Hanson 1906:145).
- b. Cf. Jinuo *khlo*⁴⁴ lo⁴⁴, Tavoyan klà; also WB krâ ‘have a space between, be apart’ ≠ khrâ ‘be between, divide; different’, Lahu ð-kā ‘space between’. This root is also found in Karenic: Pa-o khrà, Kayah Li klē, Kayaw klá má, Blimaw klé, Pwo ʔəklā, Sgaw klá (all glossed ‘among’ in Solnit, in prep.) See above 3.6.4.1.
- c. Cf. WB ʔəpâ ‘space near a thing’, Lh. (ð-)pâ ‘place nearby’.
- d. *Fagopyrum esculentum*. Cf. Lh. ýâ, Lalo ɣà, Hani ɣa²¹, Lisu gua²¹.
- e. Also known as ‘tree civet, palm civet’ [*Viverridae*]. Cf. Lh. pā-vî, WB krauŋ-bhâ ‘weasel’. Both Lh. syllables are cognate to Akha phjà-ù (ILH), pya_i_ (Lewis).
- f. Cf. Lh. á-tà, Akha dá.
- g. Cf. Lh. thâ ‘temporal particle’, Lalo thà-sì ‘time’.
- h. Likely extra-LB cognates include Milang o, Kulung wo-mo (see JAM 1997a).
- i. Cf. Lh. gâ ‘desiderative particle’, Lalo gâ ‘want’.

17. Many of these etyma have extra-LB cognates as well.

5.2.1: *-a > back vowels

PTB *-a is preserved as such in most TB languages, including the five criterial languages of *STC*:

	<i>PTB</i>	<i>WT</i>	<i>WB</i>	<i>Jg.</i>	<i>Lushai</i>	<i>Garó</i>
	*-a	-a	-a	-a	-a	-a
‘bitter’	*ka	kha-ba	khâ	khá	kha	kha

5.2.1 *-a > back vowels

In a number of languages, however, PTB *-a has developed into a back vowel: /ɔ/, /ɔ̃/, /o/, /u/, or even /u/. These “a-backing” languages are scattered randomly all over TB, including some members of the Lolo-Burmese, Himalayish, Kamarupan, and Baic¹⁸ groups. A similar development has occurred in Mandarin after velar initials [see below §5.2.1(3), 5.2.4].

(1) Lolo-Burmese¹⁹

A number of forms for ‘bitter’ with back vowels in Loloish languages are to be found in *ZMYYC* #889: [Loloish] Yi Xide **khɯ**³³, Yi Dafang **khu**³³, Yi Mojiang **khɔ**³³, Lisu **khua**^{31, 20} Hani (Biyue) **khɔ**³¹, Haoni (Shuikui) **xɔ**³¹, Jinuo **a**³³**khɔ**⁵⁵; [Burmish] Achang **xɔ**³¹, Zaiwa **kho**²¹, Langsu (Maru) **khɔ**³⁵. Particularly interesting is the Luquan dialect of Lolo (Ma Xueliang 1949), where *-a regularly becomes -u:

	<i>PLB</i>	<i>Luquan</i>	<i>Lahu</i>
‘fern’	*n-da ¹	nt'u ¹¹	dà
‘many’	*mra ²	ɲu ³³	mâ
‘moon’	*s-la ³	ɲũ ²²	ha-pa
‘soul / spirit’	*s-la ^{1/3}	ɲu ¹¹	ð-ha

18. Cf. Bai (Dali, Jianchuan) **khɯ**³³, Bai (Bijiang) **qhu**³³ ‘bitter’. There is a similar reflex for ‘bitter’ in the unclassified Tujia language: **khɯ**³⁵ **tsi**⁵⁵.

19. In JAM 1972a (*TSR*:21-22) I used the fate of PLB *-a (*i.e.* whether it was maintained as -a or became a back vowel) as one way of subgrouping the Loloish family.

20. This interesting diphthongal form simultaneously preserves the original *-a and shows an innovative high back segment -u-.

The Maru reflex may be taken as exemplary in its regularity, as illustrated by the following forms (extracted from Sawada 1999):

	<i>PTB</i>	<i>Maru</i>		<i>PTB</i>	<i>Maru</i>
‘arrow’	*b-la	myò ^a	‘hundred’	*b-r-gya	təyô
‘child / son’	*za ɤ *tsa	tsò	‘I / me’	*ŋa	ŋô
‘dumb’	*ʔ-ga ² (PLB)	səkô	‘moon / month’	*s/g-la	lô
‘ear’	*r/g-na	nò	‘nose’	*s-na	nô
‘eat / food’	*dzya	tsò	‘righthand’	*g-ya	lôʔ-yô
‘father’	*p ^w a	əphó	‘salt’	*tsa	tshò
‘fish’	*s-ŋya	ŋò	‘tongue’	*s-l(y)a	šô
‘five’	*l/b-ŋa	ŋó	‘trousers’	*s-la	lò
‘flesh / meat’	*sya	šò			

a. Tonemarks: ˘ low; ˆ falling; ˙ ‘high; ʔ constricted.

(2) *Himalayish and Kamarupan*

Languages in these groups that have developed back vowels from *-a include Lepcha (Himalayish of Sikkim), where *-a > -o, and a number of Kamarupan languages: *-a > Mikir -o, Abor-Miri -o, Chang Naga -au ~ -ou ~ -o²¹:

	<i>PTB</i>	<i>Lepcha</i>	<i>Mikir</i>	<i>Chang</i>	<i>Abor-Miri</i>
‘bird / feather’	*wa	fo	vo	au	---
‘child / son’	*za ɤ *tsa	---	o-so	shou	---
‘come / arrive’	*la	---	lo	lo	---
‘ear’	*g/r-na	---	nò	nou	<i>nyo-rung</i>
‘eat’	*dzya	zo	chō	śau	do
‘fall’	*k/gla	klo	klo	---	---
‘father’	*p ^w a	---	po	apou	---
‘fish’	*ŋya	ŋo	---	ŋau	---
‘five’	*l/b-ŋa	fəngo	pho	ŋau	a-ŋo
‘I / me’	*ŋa	---	---	ŋo	ŋo
‘moon’	*s/g-la	---	chik-lo	---	po-lo
‘night’	*ya	---	a-jo	---	yo

5.2.1: *-a > back vowels

	<i>PTB</i>	<i>Lepcha</i>	<i>Mikir</i>	<i>Chang</i>	<i>Abor-Miri</i>
‘sinew / vein’	*r-sa	a-so	artho	hau	---
‘tooth’	*swa	---	só	hau	---

Cf. also the following:

<i>Lepcha</i>	wó-bo ‘dumb’ < *m-ʔa; u-kró ‘hair of head’ < *s-kra; əvo ‘husband / man’ < *wa; tho ‘put / place’ < *s-ta
<i>Mikir</i>	phelo ‘ashes’ < *pla; pijo ‘bee’ < *bya; bo ‘bring/carry’ < *ba; phelo ‘cotton’ < *b-la; cho ‘flesh’ < *sya; so, kəso ‘hot / sore’ < *tsa; paro ‘hundred’ < *b-r-gya; mo ‘negative’ < *ma; nò-kàn ‘nose’ < *s-na
<i>Chang</i>	wo ‘axe’ < *r-p ^w a; ɲəu ‘cattle’ < *ɲwa; kau-shang ‘chin / jaw’ < *s/m-ka; gəu ‘crow’ < *ka; ɲəu ‘fish’ < *ɲya; hau ‘go’ < *s-wa; gau ~ kau ‘land / earth’ < *r-ka; məu ‘lose’ < *ma; shau-bu ‘maize’ < *sya (<i>cf.</i> Lahu ša-ma); məu ‘wound/injury’
<i>Abor-Miri</i>	o ‘rain’ < *r-wa; -bo ‘masc. suffix’, as in mak-bo ‘son-in-law’ < *s-mak-pa

A group of little known Western Kukish languages, including Empeo (=Zeme), Kabui (= Rongmei), Maram, and Kwoireng, have developed high back vowels from *-a, presenting what *STC* (p. 58) calls “a bizarre set of correspondences”:

	<i>PTB</i>	<i>Empeo</i>	<i>Kabui</i>	<i>Maram</i>	<i>Kwoireng</i>
‘eat’	*dzya	teu	tu	tu	tyu
‘father’	*pa	əpeu	əpu	əphu	əpyu
‘five’	*b-ɲa	miɲeu	pəɲu	miɲu	məɲyu

21. These transcriptions in earlier sources probably all represent the same diphthong. Weidert (1987) transcribes this Chang rhyme more accurately as -ɬu.

(3) *Old Chinese*

These Western Kukish developments are of course no more “bizarre” than the development of Proto-Sino-Tibetan *-a > Old Chinese -o (> Mandarin -u) after velars (STC:186); see below 5.2.4(1).

	<i>PST/PTB</i>		<i>OC</i>	<i>GSR#</i>	<i>Mandarin</i>
‘bitter’	*ka	苦	k’o	49u	kǔ
‘fish’	*ŋya	魚	ngjō	79a-c	yú
‘five’	*l/b-ŋa	五	ngo	58a-d	wǔ
‘fox’	*gwa	狐	g’wo	41i	hú
‘I / me’	*ŋa	吾	ngo	58f	wú

5.2.2 *Special reflexes of *-wa*

Languages like Chang and Mikir, which already reflect *-a by a back vowel, are unlikely to have different reflexes of *-a and the prelabialized rhyme *-wa. Some languages, however, including WT, WB, and Lahu, do have special reflexes of *-wa:^{22/23}

	<i>PTB</i>	<i>STC</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>
	*-wa	---	-o	-a	-wa	-u
‘cattle’	*ŋwa	#215	---	ŋā	nwâ	nû
‘handspan’ ^a	*m-twa	#165	mtho	---	thwa	thu
‘tooth’ ^b	*s-wa	#437	so	wā	swâ	-šū ^c

a. Cf. also Lalo thý.

b. Cf. also Lalo fŷ-yá.

c. This Lahu morpheme only occurs in compounds referring to tooth-like parts of tools, for example, pī-kāʔ-šū ‘teeth of a comb’, gāʔ-šū ‘teeth of a rake’, līlā-šū ‘saw-tooth’. The ordinary Lahu word for ‘tooth’ is cì, cognate to WB cwai ‘canine tooth’ < *m-dzway (see below 5.5.2).

Since WT -o is also the reflex of PTB *-o and *-ow (see below 5.4, 5.6.1), the WB evidence is more valuable in reconstructing the *-wa rhyme.

22. For a general discussion of medial *-w-, see above 3.6.2. For a good example of alternation between *-wa and *-wan, see ‘garlic’, below 11.2.

23. An interesting analogy to the WT development is provided by the Scandinavian proper name *Ingvar* which was borrowed into Russian as *Igor* during the period of intense Viking activity between the Baltic and the Black Sea in the late first millennium A.D.

5.2.3: *-a > front vowels

The presence or absence of the glide *-w- may also affect the reflexes of rhymes with nuclear *-a- plus final consonant, e.g. *-ak vs. *-wak. See below 8.2(1).

5.2.3 *-a > front vowels

Solnit (in prep.) has noted the development of *-a into mid front vowels in the Central Karenic languages Kayah Li and Blimaw:

	<i>Proto-Karen</i>	<i>Pwo</i>	<i>Pa-o</i>	<i>Kayah Li</i>	<i>Blimaw</i>
‘bitter’	*ka	khâ	khá	khe	khe
‘moon’	*la	lā	là	lē	lé
‘star’	*cha	šâ	chá	che	ʃɛ

A curious evolution of *-a to a high front vowel is characteristic of several languages of the Qiangic group. The Dayang dialect of Pumi (=Prinmi) has complicated reflexes of *-a largely conditioned by the initial consonant, though the “default” reflex seems to be -i (see JAM 1998).

(1) *-a > -i	<i>PTB</i>	<i>Pumi Dayang</i>
‘borrow / lend’	*r/s-ŋ(y)a	də-nĩ ^a
‘ear’	*g-na ∞ *r-na	ŋí-dzɔ́
‘listen’	*ʔ-na ^b	thə-nĩ
‘moon’	*s/g-la	ɦí
‘month’	*s-(g)la	ʒí
‘hundred’	*r-gya	ʃí
‘salt’	*tsa	tshĩ
‘ill / hurt’	*na	ŋí
‘rest’	*na	khə-nĩ
‘wear clothes’	*gwa	gwĩ
‘buckwheat’	*g-ra ^{2 c}	(Taoba tō ³⁵ tɕi ³⁵ , Jinghua tǎu tʃə ¹³)
‘sparrow’	*m-tsa ^d	(Taoba gue ³⁵ tɕi ³⁵ , rGyalrong pa-tsa)
‘rice’	*dzya ^e	dzí ‘cooked rice’

a. See also Ergong ʒŋi, N. Qiang ŋuə, Muya ŋu⁵⁵, Guqiong ŋi⁵⁵, Namuyi ŋi³³.

- b. PLB (*DL*:726).
c. PLB; *cf.* Lahu ɣâ, Hani ɣa²¹, Lisu gua²¹ (*DL*:1116).
d. *Cf.* Lahu jà, WB ca < PLB *m-dzya¹ (*DL*:563).
e. *Cf.* Lahu cà ‘paddy’, Wancho tza, Newari ja (*DL*:443).

(2) *-a > i ^a	<i>PTB</i>	<i>Pumi Dayang</i>
‘bee’	*bya	bí
‘thin’	*ba	bí
‘edge / side’	*m-dzya ^b	dzǐ [dzǐ]
‘eat’	*dzya	dzǐ [dzǐ]
‘rightside’	*g-ya	zǐ
‘trousers’	*s-la	zǐ
‘meat’	*sya	ʃtǐ
‘child’	*za ≈ *tsa	tǝN ^c
‘fish’	*s-ɲya	dǐ
‘many’	*mya ≈ *mra	zǐ

- a. Mostly after *palatals. Exception: ‘laugh’ *rya > Pumi ʃǝ (see §3 below).
b. *Cf.* Lahu jâ, Akha dzà, Limbu ja (*DL*:563).
c. This form apparently reflects the suffixal *-n that sometimes appears on kinship terms, as in Dhimal tšan ‘son’, Lepcha a-zon ‘grandchild’ (see below 11.2.3). *Cf.* ‘five’ for a different source of a nasalized vowel.

5.2.3: *-a > front vowels

(3) *-a > -ɒ ^a	<i>PTB</i>	<i>Pumi Dayang</i>
‘bitter’	*ka	qhǒ ^b
‘chin’	*m-ka	mè-qó
‘open’	*ka	tə-qó
‘cattle’	*ŋwa	qwó
‘strength / win’	*k-ra ^c	qǒ
‘hoof’	*kwa ^d	ʒdʒwìN ɸpǒ
‘throw’	*s/m-ba ʌ *s/m-ba:y ^e	βbó (Jinghua Pumi sba ⁵⁵)
‘hammer’	*m-t(w)a ʌ *s-ta ^f	stǒ
‘box / cabinet’	*ta ^g	tó
‘father’	*pa	bó
‘five’	*l/b-ŋa	wǒN ^h
‘laugh’	*rya	ʂǒ

- a. Mostly after Pumi postvelars, labials, and dental stops. Exceptions: *ka ‘ditch’ (cf. Lahu qhâ > Dayang qhá); ‘thin’ *ba > bí, above (§2).
- b. Two other Qiangic languages do have -i as a reflex of this etymon: Guiqiong khi⁵⁵mu⁵⁵; Ersu tʃhi⁵⁵ (ZMYC #889).
- c. Cf. WB ʔâ ‘strength’, Lahu yâ ‘strength; to win’ (DL:1116), Lalo ʔà ‘win’. This seems certainly to be the same root as *ra ‘humans (classifier)’, above 3.4.2. Cf. English expressions like ‘20 men strong’.
- d. Cf. Written Burmese khwa.
- e. See JAM 1995a (“Palatal suffixes”):47-8.
- f. Cf. Lahu tha ‘strike with flat hand, slap, strike a sharp blow’, tha-tu ‘hammer’ (DL:671); also Written Tibetan (m)tho-ba ‘large hammer’ < *-twa.
- g. Cf. Lahu ta-qō ‘box’, Naxi to⁵⁵, Tujia tho⁵³, Karen dǒ⁵⁵.
- h. With nasalization of the vowel, apparently reflecting the original *nasal root-initial. Cf. ‘child’ for a different source of a nasalized vowel.

The PTB *-wa rhyme also has multiple Pumi Dayang reflexes, presumably conditioned by the initial consonant:

*-wa > -i	PTB	Pumi Dayang
‘handspan’	*m-twa	t̪chwí
‘rain’	*r-wa ɤ *s-wa ɤ *g-wa ^a	gwí
‘satiated’	*k-wa (cf. WB wa’)	kwĩ
<hr/>		
*-wa > i		
‘axe’	*r-p ^w a	ɸpí
‘snow’	PLB *wa ² b	ɸpí
<hr/>		
*-wa > ou		
‘tooth’	*swa	ʂóu

a. Other reflexes of this root include WB rwa, Lotha ení, Laker sua, Lepcha so, Digaro kəra (see STC #443). The final glottal stop in Lushai and Lai rwaʔ is unexplained, perhaps pointing to a variant in final *-s (see below Ch. 10).

b. Cf. Lahu vâ ‘hail’, vâ-məy ‘snow’ (DL:1323). This root is actually to be reconstructed as *s-p^wal at the PTB level. However, PTB *s-bal ‘frog’ > Dayang ɸpó. See below 9.3.1(1,3).

In at least one case, the rhyme *-ya is reflected by Pumi Dayang -ɛ:

*-ya	> -ɛ
‘tongue’ PTB *s-lyā (cf. WB hlyā)	> Dayang l̪ɛ

This is very similar to the fate of *-ya in Lahu:

	PTB	STC #	WB	Lahu
‘bee / bird’	*bya	177	pyâ	pê
‘swidden’ ^a	*hya	---	ya	hɛ

a. Cf. also Daai Chin jah ‘mountain field’ (Hartmann 2001b:146).

The presence or absence of the glide *-y- may also affect the reflexes of rhymes with nuclear *-a- plus final consonant, e.g. *-ak vs. *-yak. See above 3.6.3; below 8.2(1b).

The extinct Xixia (= Tangut) language is now definitely considered to have belonged to the Qiangic group. As demonstrated by Nishida (1973, 1976), both Xixia and a presumed modern descendant known from Chinese bilingual texts, Tosu, have also often developed -i from PTB *-a, e.g. *sya ‘flesh / meat’ > Xixia tshi; *za ɤ *tsa ‘child / son’ >

5.2.4: Chinese comparanda to PTB roots in *-a

Xixia rifl. More recently, Gong Hwang-cherng (1999) has compiled a list of his own Xixia reconstructions,²⁴ many of which confirm this finding:

	<i>PTB</i>	<i>Xixia</i>		<i>PTB</i>	<i>Xixia</i>
‘axe’	*r-p ^w a	wji ¹	‘negative’	*ma	mji ¹
‘child’	*za ʰ *tsa	zji ¹	‘neg. imperative’	*ta	tji ¹
‘come’	*la	lji ¹	‘nose’	*s-na	nji ²
‘eat’	*dzya	dzji ¹	‘put / place’	*s-ta	tji ¹
‘god / beautiful’	*m-hla	sji ²	‘salt’	*tsa	tshji ²
‘laugh’	*rya	djiij ¹	‘snow’	*s-p ^w a(l)	wji ¹
‘listen’	*g/r-na	nji ²	‘tooth’	*s-wa	śjwi ¹
‘flesh / meat’	*sya	tśhji ¹	‘trousers’	*s-la	ljii ¹
‘moon / month’	*s/g-la	lhji ²	‘wear clothes’	*gwa	gjwi ²

5.2.4 Chinese comparanda to PTB roots in *-a

(1) Where OC has -o, -i_o, -i_{wo}

Chinese is definitely to be included in the ranks of those languages that have developed back vowels from earlier *-a (see above 5.2.1). The great majority of good OC comparanda to PTB etyma in *-a are reconstructed with -o in *GSR*.²⁵ When the etymon had medial *-w-,²⁶ the reconstructed OC rhyme is usually -i_{wo}.²⁷

<i>PTB</i>			<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
*r-p ^w a	‘axe’	鉄 斧	101e 102h-i	p _i wo	‘id.’
*ka	‘bitter’	苦	49u	k’o	‘id.’ ^a
*s-na	‘crossbow’	弩	94z	no	‘id.’
*p ^w a	‘father ₁ ’	父	102a-e	b’i _{wo}	‘id.’ ^b
*s-grwa	‘feather’ ^c	羽	98a	g _i wo	‘id.’
*ŋya	‘fish’	魚	79a-c	ŋi _o	‘id.’

24. These are correlated to the 267 tentative Qiangic cognate sets presented in JAM 1999b.

25. Benedict observes (*STC*:161,187) that the *-a > -o shift must have occurred not long before the OC period since the original vowel is reflected in an early Chinese loan in Tai-Kadai: ‘five’ Proto-Tai *ha (< *hja; see Li Fang-Kuei 1977:249), Ong-Be ŋa.

Rhymes: monophthongs and diphthongs

<i>PTB</i>			<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
*g-ra	‘fishbone / spine’ ^d	呂	76a	gļjo	‘spine’
*l/b-ŋa	‘five’	五	58a-d	ŋo	‘id.’
*gwa	‘fox’	狐	41i	g’wo	‘id.’
*s-wa	‘go’	于	97a-g	gļwo	‘proceed / go to’
*ŋa	‘I / me ₁ ’	吾	58f-i	ŋo	‘id.’ ^e
*p ^w a	‘man / person / husband’	夫	101a-b	pļwo	‘man / husband’
*m-na	‘mother ₁ / older sister / daughter-in-law’	女	94a-e	njo	‘woman / lady / girl’
*m-ka	‘open(ing) / mouth / door’	戶	53a-b	g’o	‘door / opening’
*g-la	‘pay / give for’ ^f	與	89b	zjo	‘give to, give for’
*p ^w a	‘palm ₁ ’	扶	101f	b’iwo ~ p’iwo ^g	‘breadth of four fingers’
*s-ra	‘place’	所	91a-c	sjo ^h	‘place where’
*srya	‘yam / potato’	薯	--- i	djo	‘bulb, tuber / potato’
*r-wa	‘rain’	雨	100a-c	gļwo	‘id.’
*la	‘salt ₁ ’	鹵	71a-b	lo	‘salty / rock salt’
*m/s-twa	‘spit / spittle ₁ ’	吐	62d	t’o	‘vomit / spit out’ ^j
*gra	‘stranger / guest; enemy’ ^k	旅	77a	gļjo	‘guest, stranger; traveller’
*grwa	‘taro / potato’ ^l	芋	97o	gļwo	‘taro (<i>Colocasia esculenta</i>)’
*k-la	‘tiger’	虎	57b-e	xo ^m	‘id.’
*nya	‘woman’ ⁿ	女	74a	njo	‘woman, lady, girl’

a. This word is allofamically related to 肝 ‘liver’, with suffixed -n (see below §5).

b. This is undoubtedly the same morpheme as ‘man / person / husband’, below.

c. Cf. WT s-gro ‘large feather’. See Gong 2001:28.

d. Cf. WT gra-ma ‘fishbone’; Jg. ñ-nút-ñ-rā ‘bones, skeleton’; Tangkhul ā-ra ‘bone’, Wancho ho-ra, Nocte a-ar ‘id.’ See Gong 2001:27.

26. I.e., when it was *hé-kǒu* 合口 ‘closed mouth’ in traditional Chinese terminology.

27. See below: ‘axe’, ‘father₁’, ‘fox’, ‘man / husband’, ‘palm₁’, ‘rain’, ‘taro / potato’.

5.2.4: Chinese comparanda to PTB roots in *-a

- e. This word has an allofam in OC -â (see below §2).
- f. Cf. WT *gla* ‘pay, wages, fee’. See Gong 2001:31.
- g. This word has an allofam in OC -â (see below §3).
- h. This OC reconstruction was revised to *śrio* in *STC*:171.
- i. Not in *GSR* #45.
- j. This word has an allofam in -wâ (see below §2).
- k. Cf. WT *dgra* ‘enemy, foe’. The same association of ideas is found in IE: PIE **ghos-ti-* > PGermanic **gastiz* ‘guest’, Latin *hostis* ‘enemy’ (< ‘stranger’). Cf also the opposed meanings of English *host*: (a) ‘entertainer of guests’, (b) ‘army of foes’. See Gong 2001:27.
- l. Cf. WT *gro-ma* ‘medicinal herb; potato’. This comparison is from Gong 2001:28.
- m. This OC reconstruction was revised to *xlo* in *STC*:107,178.
- n. Cf. WT *nya-ma* ‘mistress of the house, housewife’. Also apparently in this word family are WT *nyag-mo* ‘woman’, and Chinese 孃 / 娘 ‘lady, woman, mother’ OC *njang* (not in *GSR* #730); *AD* 541 reconstructs *njang* for MC.

(2) Where OC has -â, -wâ

Karlgren’s “-â” represents a low back vowel. The available PTB comparisons to OC etyma with this rhyme are fewer and less persuasive than those for OC “-o”. Two of them (‘I / me₂’ and ‘spit / spittle₂’) have allofams in -o.

PTB			GSR	OC	Chinese Gloss
*p ^w a ≈ *b ^w a	‘grandmother’	婆	25q	b ^w â	‘old woman / grandmother’
*ŋa	‘I / me ₂ ’	我	2a-g	ŋâ	‘id.’
*tsa	‘salt ₂ ’	𩚑	5m	dz ^h â	‘id.’
*m/s-twa	‘spit / spittle ₂ ’	唾	31m	t ^w â	‘spit’
*m-ba	‘wave (in water)’	波	25l	pwâ	‘wave / surge’ ^a
*ka	‘word / speech’	歌	1q	kâ	‘sing / song’

- a. This root was variably prefixable in TB. WT has a doublet *rba*-(*kloŋ*) ~ *dba*-(*kloŋ*) ‘wave, eddy’, with both the *r*- and the *d*- prefix. Lolo-Burmese often reflects the nasal prefix, as in Lahu *ǵí-bâ*, *í-kâ?bâ* (*ǵí* and *í-kâ?* both mean ‘water’), *ḏ-chu-bâ-nâ* ‘roll of fat’; and Yi Xide *z₁³³mbo³³* (*z₁³³* ‘water’). (For the nasal-prefixal source of the Lahu voiced series of obstruents, see above 3.1.) Shixing (Qiangic group) *dze³³te³³nbu⁵³* also has the nasal prefix, but Pumi (also Qiangic) *tʃa⁵⁵ɸpa⁵⁵* reflects the **s*- prefix instead. This etymology is due to RSC:2000, who cites all the cognates mentioned here.

(3) *Where OC has -â [ɔ]*

Karlgren's “-â” represents a back vowel intermediate in height between “-o” and “-â”, something like IPA [ɔ].²⁸ The few available TB comparanda to OC words in -â almost all have *labial initials:

<i>PTB</i>			<i>GSR</i>	<i>AD</i>	<i>OC</i>	<i>Chinese Gloss</i>
*g-p ^w a	‘bamboo’	芭	39c	683	pâ	‘kind of fragrant herb’ ^a
		笆	(not in 39)	683	pâ	‘kind of bamboo’ (<i>AD</i>)
*p ^w a	‘father ₂ ’	爸	(not in 39)	683	pâ	‘id.’ (<i>AD</i>)
*gra	‘long (time)’ ^b	遐	33j	---	g’â	‘far, distant’
*ma ^c	‘mother ₂ / fem. suffix’	媽	(not in 40)	592	mâ	‘mother, old woman’ (<i>AD</i>)
*p ^w a	‘palm ₂ ’	巴	39a	683	pâ	‘palm of hand’ ^d
		把	39b	683	pâ	‘grasp, handful’
*grwa	‘birch’ ^e	樺	---	---	g’wâ	‘kind of birch’
*d-ŋa ^f	‘tooth’	牙	37a-b	---	ŋâ	‘id.’

a. Glossed ‘banana; fragrant plant’ in *AD* #683.

b. Cf. WB *kra* ‘be long in doing, be long in time’. See Gong 2001:26.

c. The ‘universal’ shape of this etymon makes it virtually useless for comparative purposes.

d. This is one of the glosses in *AD* #683. The *GSR* gloss is ‘snake’.

e. Cf. WT *gro-ga* ‘birch tree or its bark’. This comparison is from Gong 2001:28, but the OC reconstruction is JAM’s guess based upon the other characters in *GSR* #44; the Chinese character is not in *AD* #94 and not in *GSR* #44.

f. This root is very rare in TB, attested so far only by Pa-o Karen *təŋa* (*STC*:137).

28. See the table *Karlgren’s Transcriptional Conventions for Chinese* in the front matter.

5.2.4: Chinese comparanda to PTB roots in *-a

(4) With miscellaneous OC correspondences

PTB			GSR	OC	Chinese Gloss
*ŋwa	‘cattle’ ^a	牛	998a-c	ŋjǔg	‘bull / cow / ox’
*m-ʔa ^b	‘dumb’	啞	805f	ʔǎg	‘id.’
*r-na	‘ear’	耳	981a-b	ńjəg	‘id.’
*sa ^c	‘earth’	沙	16a-c	sa	‘sand’
*gla	‘musk deer’ ^d	麝	not in 807	dziǎg ^e	‘id.’
*g-ya	‘right side’	右	995i-j	gǔg	‘right (hand)’

- a. STC (n. 164) considers the TB root to be an early loan from Tai (PTai *ŋwa^{A2}; see Li Fang-Kuei 1977:239), although this is far from certain.
- b. This root undoubtedly has an imitative component. The nasal prefix is attested in Jingpho (məʔa) and Nung. Lolo-Burmese shows variation between *ʔa³ (> WB ʔa') and *ʔ-ga² (> Lh. qā). Cf. also Lushai a. See STC #105.
- c. This comparison dates from Benedict 1939, where he compared WT sa ‘earth’ with the Chinese word for ‘sand’, although he never reconstructed a general PTB or PST root with this shape. Baxter (1992) reconstructs the OC form as *srāj. See the detailed discussion in the context of the PTB “palatal suffix” in JAM 1995a:68-70. See also below 11.6.3.
- d. Cf. WT gla-ba ‘musk deer’. See Gong 2001:32.
- e. AD 865 reconstructs MC dž'ja. This OC reconstruction is a guess based upon the other characters in GSR #807.

(5) Where suffixes are involved

There are many TB/OC comparanda with nuclear vowel *-a, where TB and/or Chinese reflect(s) suffixal *-n, *-t, or *-k. These are almost all presented in more detail in Chapter VIII below, in the context of suffixation in general,²⁹ but are listed together here briefly for ease of reference.

PST		X-Ref.		GSR	OC	Ch. Gloss
*ka-n	‘bitter’	11.2.4(2)	苦	49u	k'o	‘bitter’
			肝	139l	kân	‘liver’
*tsa-n ≈ *za-n	‘child’	11.2.4	子	964a-j	tsjəg ~ dziəg	‘id.’
			親	382o-p	ts'jěŋ	‘parents / relatives’ ^a
*mwa-t ^b	‘curse’	---	罵	40h	mǎ	‘revile / curse’

29. See the *Cross Reference* column in the following table.

Rhymes: monophthongs and diphthongs

<i>PST</i>		<i>X-Ref.</i>		<i>GSR</i>	<i>OC</i>	<i>Ch. Gloss</i>
*dzya-n/k	‘eat / food’	---	飢	921e-f	dziæg	‘food / give food to’
		11.2.4(2)	餐	154c	ts’ân	‘eat / food / meal’
		11.5	食	921a-c	đ’jək	‘eat’
*s(y)a-n	‘animal / flesh / body’	---	獸	1100a-f	śiôg	‘animal’
		11.2.4	身	386a-c	śjĕn	‘body’
*swa-n	‘garlic / onion’	11.2.4	蒜	175b	swân	‘garlic’
*ŋa-n	‘goose’	11.2.4	鵝	2p	ŋâ	‘domestic goose’
			雁	186c	ŋan	‘wild goose’
*r-tswa-n	‘grass’	11.2.4	草	1049b-c	ts’ôg	‘grass / plants / herbs’
*m-ka-n	‘heavens / sun’	11.2.4(1)	乾	140c	g’jan	‘heaven / heavenly’
			天	361a-c	t’ien	‘heaven’
*s/m-ra-ŋ ^c	‘horse’	---	馬	40a-e	mă	‘ <i>id.</i> ’
*tsa-t ^d	‘hot / pain’	---	疾	494a-c	dźjət	‘sickness / pain’
*kwa-n ∅ *gwa-n	‘net (casting)’	11.2.4(1)	罟	41d	kwo	‘net’
*nya-n ^e	‘red ₁ ’	---	赧	216b	nan	‘blush’
*tya-n	‘red ₂ ’	11.2.4(2)	朱	128a-c	ṭju	‘red’
			丹	150a-b	tân	‘red / vermilion / cinnabar’
			緋	812t’	ts’iən	‘dark red’
			緋	378g	tsjĕn	‘pale red’
*gwa-n ∅ *kwa-n	‘wear / dress’	11.2.4(2)	冠	160a	kwân	‘cap / put on cap’
*na-ŋ ^f	‘you’	---	汝	94j-k	njo	‘thou’

a. For an alternative etymology for this Chinese form, see below 12.6.1(b).

b. This root is rare in TB. WT **dmod-pa** ‘curse’ reflects the *-t suffix. See *STC*:189.

c. Cf. WB **mrân**, Jg. **gùmrà(ŋ)**. See *STC* #145 and n. 139. Coblin (1974) cites an archaic Tibetan form **rmaŋ** ‘horse, steed’. See Gong 2001:24. The usual WT word for horse, **rta**, seems completely unrelated.

d. Cf. WT **tsha** ‘hot; illness’, **tshad-pa** ‘heat; fever’; WB **cha** ‘hungry’; Lahu **cha** ‘shine, be bright (of the sun)’; Garo **sa** ‘ache; sick’; Lushai **ša ~ šat** ‘hot’; Tangkhul **khə-kə-tsa** ‘ill’; Mikir **so** ‘hot, excessive; be ill, sore’. See *STC* #62.

e. This rare root has so far only been found in Pa-O (Karenic) **ña** ‘red’.

f. For the alternation between plain and suffixed variants of this root in pronominal paradigms, see JAM 1994b (‘Sangkong’) §3.3:592-4.

5.3: High vowels

5.3 High vowels

In this section we discuss the four rhymes originally reconstructed with high vowels in *STC*: the two relatively rare monophthongs *-u and *-i, and the much better attested diphthongs *-uw and *-iy, now reinterpreted as *-əw and *-əy.³⁰

5.3.1 *-u and *-uw/-əw

While monophthongal *-u is much less well exemplified than *-uw/*-əw, there are several widespread roots in which it does occur, and it is certainly better attested than monophthongal *-i (below 5.3.2). Still, most languages, including four of the five “criterial” languages in *STC*, do not have distinct reflexes of these two proto-rhymes. *-u is poorly attested in WT, and there is no clear example of a Garo reflex of *-u. The chief evidence for the contrast is provided by Lolo-Burmese and Nungish, with the most crucial evidence provided by WB itself. The reconstruction *-u has been reserved for roots showing -u in Lolo-Burmese (or Nung), providing that *-ow (which also > WB -u; see below 5.6.1) can be ruled out.³¹

<i>PTB</i>	<i>STC#</i>	<i>WT</i>	<i>WB</i>	<i>Jingpho</i>	<i>Lushai</i>	<i>Garo</i>
*-u		-u	-u	-u	-u	(-u)
‘bloom / bud’ *bu ∞ *pu	260	ḥbu-ba	phû	pù	--	--
‘dig’ *tu ∞ *du	258	--	tû	thù	tu	--
‘howl / grumble’ *wu	261	--	u	wû	u	--
*-uw / *-əw		-u	-ui	-u	-u	-u
‘bug’ *bəw	27	ḥbu	pûi	ləpú ^a	--	tíi-pu
‘carry on back’ *bəw	28	--	pûi	--	pu	--
‘grandfather’ *pəw	23	phu-bo	ʔəphûi	phu ^b	pu	bu
‘nine’ *d/s-kəw	13	dgu	kûi	džəkhû	ku-a	sku
‘smoke’ *kəw	256	--	mî-kûi	khú	mei-khu	wal-ku
‘steal’ *r-kəw	33	rku	khûi	ləgú	--	--

a. ‘snake’

b. ‘older brother’

30. This reinterpretation of the high diphthongs was singled out for particularly harsh criticism in the tendentious review of *STC* by Miller (1974). In my reply to Miller (JAM 1975a:157-8) I downplayed the significance of the reinterpretation, though now I do consider it to be preferable to the original reconstruction. See JAM 1985a (*GSTC*), note 33, p. 20.

The transcription of this latter WB rhyme as “ui” goes back to the pioneer epigraphers Blagden (1914) and Duroiselle (1916) — a highly reasonable interpretation, since the graph is a combination of the superscript symbol for “-i” and the subscript symbol for “-u”. Other scholars have experimented with other transcriptions, *e.g.* “iu”, or even “i” (the latter interpretation uniting -i and -u “horizontally” on the front/back dimension, rather than as two morae in syntagmatic sequence). Wolfenden (1920:197) attempted even greater phonetic precision, guessing that this WB vowel might have approximated the Dutch diphthong written “-ui”, as in *huis* /höüs/ ‘house’. In Inscriptional Burmese (attested since the early 12th century), this vowel was in fact written as “-uw”, with the symbol for consonantal -w following the vowel sign for -u- (just as the rhyme now reconstructed as *-əy was written as “-iy”).³² See Figure 11.

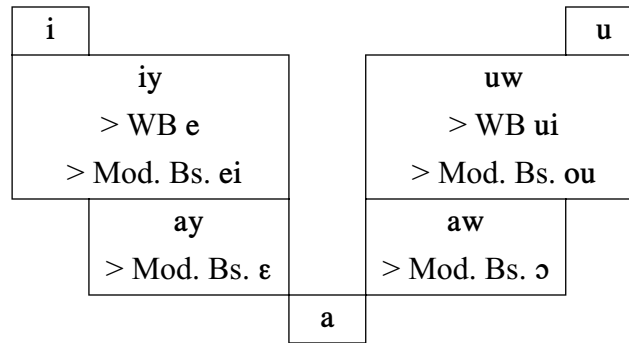


FIGURE 11. Inscriptional Burmese open rhymes

In any event, there was certainly a robust contrast between the two high back vowels in WB.

Many other Loloish and Burmish languages also have distinct reflexes of *-u vs. *-əw, as does Nungish, furnishing valuable confirmation of the WB contrast:

• *Lolo-Burmese*

The reflexes of these two rhymes in the modern LB languages are more complex than in WB, since the modern languages have had time to develop complex conditioned

31. See ‘thick’ (below) for an example of a case where it is impossible to distinguish between *-u and *-ow just on the basis of Lolo-Burmese evidence.

32. This was certainly a major factor in Benedict’s original reconstructions of these rhymes. In the etymologies in my Lahu dictionary (JAM 1988b), I adopted the convention of using *-iy and *-uw for the PLB level, and *-əy and *-əw for the PTB stage.

5.3.1: *-u and *-uw/-əw

reflexes of the rhymes (especially of *-əw) after different initials. First, some examples of PLB *-u:

	<i>PLB</i> ^a	<i>WB</i>	<i>Maru</i>	<i>Lahu</i>	<i>Akha</i>	<i>Lisu</i>	<i>Ahi</i> ^b	<i>Nyi</i>
*u		u	u / au	u	u	u	o	u
‘brood / incubate’ ^c	*ʔ-mu ²	---	---	mũ	---	---	---	---
‘crazy’	*ru ²	rũ	---	ǵũ	ù	vu ³³	---	ɣ ¹¹
‘egg / lay egg’	*ʔu ³	ʔu’	au ⁵⁵	u	úʔ	fu ⁴⁴	---	---
‘fry’ ^d	*ʔ-lu ³	---	---	hu	---	---	---	ɬʔ ⁴⁴
‘intestine’ ^e	*wu ¹	ʔu	---	ð-ɣù-êʔ	bɔ-ú	wu ⁴	---	---
‘irrealis particle’ ^f	*du ¹	---	---	tù	đú	du ³	---	---
‘awn (of grain) / panicle’ ^g	*ʔ/s-nu ¹	---	---	cà-nu	---	---	---	---
‘porcupine’	*ʔ-blú ¹	phru	pju ³¹	fâʔ-pu	ho-pú	hẽ ³⁵ pũ ³³	po ³³	pu ³³
‘prepare / practice / rehearse’	*m-gu ^{1/3}	ku ɤ ku’ ^h	---	gu	---	---	---	---
‘pumpkin / gourd’ ⁱ	*pu ²	bhũ	---	phê-má	---	---	---	o-phu -ma
‘resemble’ ^j	*su ²	---	---	šũ	---	---	---	---
‘soot / acrid (smoke)’ ^k	*ʔ-mu ²	---	---	mũ	---	---	---	---
‘squirrel (flying)’ ^l	*s-ru ²	hrũ	---	fâʔ-šũ	---	---	---	---
‘take’	*yu ¹	yu	ju ³¹	yù	yú	ʒu ³³	yo	yu
‘white’	*plu ¹	phlu > phru	phju ³¹	phu	pyú	phu ⁴⁴	tho	ślu
‘who / remote 3rd person pronoun’ ^m	*su ¹	su	---	šũ	---	---	---	---
[‘thick’ ⁿ		thu	thau	thu	tú	thù	thò	thù]

- a. It is particularly striking that two of these LB roots reflecting *-u have excellent cognates in the genetically distant Bai group: Bai (Jianchuan and Dali dialects) *vu*⁴⁴ ‘sit on eggs’; *vu*²¹ ‘mad person’, *vy*⁴² ‘go crazy’, implying PTB *ru. This is difficult to explain for those (e.g. L. Sagart, S. Starostin) who wish to banish Bai from TB entirely by calling it “a dialect of Chinese”! While ‘sit on eggs’ may indeed be a borrowing < Chinese 浮/驛 (Mand. fū), ‘crazy’ has no plausible Chinese source. See below 5.3.3(2). For an attempt to disentangle Chinese loans in Baic from possible cognates with Lolo-Burmese see JAM 2001d.
- b. These Ahi forms are taken from several different sources, where the tones are indicated differently.
- c. Cf. Lalo *ʔmù* For the identical Lahu/Lalo correspondence, see ‘soot / acrid (smoke)’ (this chart).
- d. Cf. also Yi Xide *ɬ ~ ɬu*³³ (DL:1072).
- e. For additional LB and Qiangic cognates, see ZMYYC #271 and JAM 2000a:#23c. This etymon should be reconstructed as *p^wu at the PTB level. There is also a good Chinese comparandum below 5.3.3(1).
- f. The Lahu particle indicates ‘unrealized, hypothetical, future, intended, purposive, or goal-oriented action’. The Akha particle is “used with statements where one is not sure ... that sthg will happen” (Lewis 1968:87). See DL:614.
- g. Cf. Lalo *ǰá-ny* (SB 1998).
- h. WB *ku* ‘help’, *ku* ‘give medicine; cure’ (DL:405).
- i. See STC:22 and Lalo *phỳ* (SB 1998). The -ə in the Lahu reflex is probably due to assimilation to the second syllable of the compound.
- j. Cf. Lalo *jỳ*, Sani *sɰ*⁵⁵, and many forms from Yi dialects (Xide *su*²¹, Weishan *ɕy*²¹, Nanjian *sɰ*⁵⁵). See TBL:#1729 and SB 1998. There is also a likely Chinese comparandum below 5.3.3(2).
- k. Cf. Lalo *ʔmù-fìq*. The second syllable of this Lalo form reflects PLB *C-sak^L ‘breath(e) / life’.
- l. *Petaurista alborufus*. For the same Lahu reflex /š/ < *s-r, see ‘otter’ and ‘gold / yellow’, below 5.3.2(2b).
- m. This is a general TB root. Cf. WT *su* ‘who; indefinite pronoun’; Cuona Menba *su*⁵³; Guiqiong *su*⁵⁵; Hani *a*³¹*so*⁵⁵; Jinuo *kho*³³*su*³³; WB *su* ‘he’, *bhai-su* ‘who’; Lahu *šu* ‘indefinite, remote, or contrastive 3rd person pronoun’, *a-šu* ‘who’. This etymon undoubtedly underlies the last syllable in many TB language names, e.g. *Lisu*, *Nasu*, *Moso*, *Bisu*, and perhaps also the last syllable of *Lahu*. The /h/ in the latter name could well point to a proto-type *s-lu (cf. WB *lu* ‘person’). This etymology was first suggested in JAM 1969.
- n. The LB reflexes of this etymon are totally consistent with the reconstruction *tu, though extra-LB evidence (Jg. *dāu*) points rather to *tow ≈ *dow at the PTB level. STC treats this etymology inconsistently (see below 5.6.1).

5.3.1: *-u and *-uw/-əw

Examples of PLB *-əw are even more numerous, *e.g.*:

	<i>PLB</i>	<i>STC</i> #	<i>WB</i>	<i>Maru</i>	<i>Lahu</i>	<i>Ak.</i>	<i>Lisu</i>	<i>Ahi</i> ^a	<i>Nyi</i> ^b
*-əw			ui	uk	ɔ / u	ø	u / i / ɿ	ɯ / i / ɿ	ɯ / i / u
‘awake(n) / conscious’ ^c	*s-nəw ²	---	nûi, hnûi	---	nô, nō	---	---	---	---
‘horn’	*krəw ¹	37	khruī	khjuk ³ ₁	khɔ	ø	o ⁵⁵ tʃhi ⁴⁴	o ⁵⁵ tʃhɿ ² ₂	khɯ ³³
‘nine’	*gəw ²	13	kûi	kuk ³¹	qô	ɣø	ku ⁵⁵	ku ⁵⁵	ku ⁵⁵
‘rat’	*b-yəw	93	---	ɣuk ³¹ ^d	---	---	---	---	---
‘smoke’	*kəw ²	256	khûi	mji ³⁵ - khuk ⁵⁵	mû- qhô	ù-xø	mu ³¹ khu ³¹	khɯ ²¹	khɯ ²¹
‘steal’	*kəw ²	33	khûi	khuk ⁵⁵	qhô	xø	khu ³¹	khɯ ²¹	khɯ ²¹
‘sweet’	*kyəw ¹	p.60	khyui	tʃhuk ³ ₁	chɔ	ø	tʃhɿ ⁴⁴	tʃhi ²²	tʃhi ³³
‘testicles / virility’ ^e	*səw ^{1/2}	---	sui, ʔəsûi	---	šɔ, ð-šɔ	---	---	---	---
‘weep’	*ŋəw ¹	79	ŋui	ŋuk ³¹	---	ŋø	ŋu ³³	ŋɯ ³³	ŋɯ ³³
‘widow’ ^f	*tšəw ²	---	mut- chûi	---	mê- chô- ma	tjhö ^g	---	---	---
‘wither’	*s-nəw ²	---	hnûi	---	nō ^h	---	---	---	---

a. The Ahi vowel /ɯ/ (as per Chen Kang 1986) is transcribed “ö” in the older sources used in *STC*. The apparently exceptional reflexes in ‘sweet’ and ‘horn’ are both transcribed with this same vowel in *STC*, viz. tšhō and tšhō. Note similar conditioned reflexes after these two affricate-initialled roots in Lisu.

b. The Nyi (=Sani) vowel /ɯ/ in the modern sources is transcribed as “ə” in the older sources used in *STC*, even in the apparently exceptional forms for ‘sweet’ and ‘weep’.

c. This is a simplex-causative pair in LB. WB nûi and Lahu nô reflect the unprefixed simplex *nəw² while WB hnûi and Lahu nō descend from the causative allofam *s-nəw². Cf. also Yi Mile nu²¹, Naxi Lijiang no³³, Hani nø³¹, Jinuo nø³³ (*ZMYC*:#583).

d. The disyllabic form is ɣuk³¹ nɔ³¹. Benedict was not aware of this Maru form (to be found in *ZMYC* #134), and considered the rhyme of this etymon to have been reconstructible “on the basis of the Nung evidence alone” (*STC* p. 61). See the section on Nungish below.

e. WB sui ‘penis of animal’ < PLB *səw¹, ʔəsûi ‘virility, testicles, uncastrated animal’ < PLB *səw²; Lahu (ð-)šɔ ‘potent male, intact male, stud male’ < PLB *səw² (*DL*:208).

f. Cf. also Lalo ʔmê-tjhə-pàq.

g. Glossed ‘poor, miserable’ by ILH. See *DL*:553.

h. ‘Wilt, wither, be past the prime (of crops, leaves)’. Cf *DL*:795.

Rhymes: monophthongs and diphthongs

After labials, **-əw* > Lahu *-u*, merging with the reflex of monophthongal **-u*. Akha retains its regular reflex *-ø* in this environment, while Lisu vacillates among *-i*, *-u*, and *-u:*

	<i>PLB</i>	<i>STC#</i>	<i>WB</i>	<i>Maru</i>	<i>Lahu</i>	<i>Akha</i>	<i>Lisu</i> ^a
‘carry on back’	<i>*bəw</i> ²	28	pûi	---	pû	bø	pi ⁵⁵
‘grandfather’	<i>*ʔ-bəw</i> ²	23	ʔəphûi	a ³¹ phuk ⁵⁵	ð-pû	---	a ²¹ phi ²¹
‘insect / vermin’	<i>*bəw</i> ²	27	pûi	puk ⁵⁵	pû	bø	bu ³¹
‘mushroom’	<i>*ʔ-məw</i> ¹	45 ^b	hmui	muk ³¹	mù [ɲ]	á-hím	mu ³³
‘price’	<i>*pəw</i> ²	41	ʔəphûi	a ³¹ phuk ⁵⁵	ð-phû	á-pø	e ⁵⁵ phu ³¹
‘sky’	<i>*məw</i> ²	488 ^c	mûi(gh)	muk ⁵⁵	mû [ɲ]	ìn	mu ⁴⁴

a. In at least one root, Lisu has developed *-i* after a non-labial initial: ‘wake / awaken’ PLB **ʔ-nəw*² > WB *nûi* ≠ *hnûi*; Lahu *nô* ≠ *nô*; Akha *nø*, Lisu (Fraser 1922) *yi⁶nyi¹*.

b. Forms for ‘mushroom’ shows alternation between a **plain nasal* (Lahu) and a **glottalized nasal* (WB, Akha).

c. The *-gh* in the WB form is a non-etymological “learnèd” spelling influenced by Sanskrit *megha* ‘cloud’. The Lahu phonemic syllable /*mu*/ (‘sky’, ‘mushroom’) is realized as a syllabic labiodental nasal (see JAM 1973/1982:3-4). The Akha vowel is similarly “swallowed up” after initial *m*.

After labials, Ahi and Nyi (=Sani) have both developed *-u* < **-əw*, paralleling the Lahu reflex. In the case of Ahi, this *-u* is distinct both from the reflex of **-u* (> Ahi *-o*) and the reflex of **-əw* after other initials (> Ahi *-u:*).³³ In Sani, however, this *-u* after labials represents a merger with the reflex of **-u*:

	<i>PLB</i>	<i>STC#</i>	<i>Ahi</i>	<i>Nyi (=Sani)</i>
‘carry on back’	<i>*bəw</i> ²	28	bu ²¹	bɣ ¹¹
‘grandfather’	<i>*ʔ-bəw</i> ²	23	---	p ⁴⁴ bɣ ⁵⁵
‘insect / vermin’	<i>*bəw</i> ²	27	bu ²¹	bu ²¹
‘mushroom’	<i>*ʔ-məw</i> ¹	45	mo ³³	mu ³³
‘price’	<i>*pəw</i> ²	41	phu ²¹	phu ²¹
‘sky’	<i>*məw</i> ²	488	mu ²¹	mu ²¹ ≠ m ¹¹

The interesting and perfectly regular Maru (= Langsu) reflex *-uk* < **-əw* (as well as the equally regular and parallel development of **-əy* > Maru *-it*; see below 5.3.2) have attracted the attention of scholars since the 1930’s, with some (especially Miller 1968, 1970) ridiculing the notion that a final stop could arise *ex nihilo* from an open syllable.³⁴ Such a development has obviously occurred in these rhymes, however, and there can be no

33. Note, however, the Ahi reflex *-o* in ‘mushroom’ (below).

5.3.1: *-u and *-uw/-əw

doubt whatsoever that these final consonants have been “extruded” secondarily from the vocalic nuclei of their syllables.

• *Nungish*

Although we have considerably less data on Nungish than on LB, the Nungish branch has reliably distinct reflexes of *-u and *-əw, with monophthongal *-u developing into Nung -u, while diphthongal *-əw becomes -ö or -ü.^{35/36}

	<i>PTB</i>	<i>STC#</i>	<i>Nung</i>	<i>WB</i>	<i>Lahu</i>
*u			u	u	u
‘bud / open’ ^a	*s-bu	260	phu	phû	pū
‘dig’	*s/m-du	258	du	tû	dû (v.i.) ≠ tû (v.t.)
‘nephew / grandchild’	*m-du	259	phədu	tu	ð-dù
‘porcupine’	*s-blu	---	bɿu ³³	phru	fâ?-pu
‘silver / white’	*plu	p. 60	phu ⁵⁵	phru	phu
‘take’	*yu	p. 60	ɿʉ ⁵⁵	yu	yù

a. Cf. WT ɸbu ‘open (of flower)’, Lisu bu²¹, Hani by²¹.

	<i>PTB</i>	<i>STC#</i>	<i>Nung</i> ^a	<i>WB</i>	<i>Lahu</i>
*əw			u	ui	ɔ / u
‘dark / faded / withered’	*ŋrəw	156	ŋyö ≠ əŋyü	ŋrui ≠ ñui ^b	---
‘horn’	*krəw	37	xɿu ⁵⁵	khruì	khɔ
‘insect / vermin’	*bəw	27	bɿu ⁵⁵	pûi	pû
‘mushroom’	*g/s-məw	45	mɿ ³¹ kham ⁵⁵	hmui	mù
‘nine’	*d/s-gəw	13	dɿ ³¹ gɿ ³¹	kûi	qô
‘price’	*pəw	41	phɿ ⁵³	phûi	phû
‘sky’	*məw	488	mɿ ⁵⁵	mûi(gh)	mû
‘smoke’	*kəw	256	mɿ ³¹ ɿ ⁵⁵ ^c	mî-khûi	mû-qhô
‘steal’	*r-kəw	33	khɿ ⁵⁵	khûi	qhô

34. See Wolfenden 1938; Benedict 1939 and 1948; Burling 1966; Lyovin 1968; Miller 1968 and 1970. See also *STC*, notes 192 and 193. Chinese actually has four similar examples of a secondary dental stop in cognates to PTB etyma in *-əy (see below 11.3.6).

Rhymes: monophthongs and diphthongs

	<i>PTB</i>	<i>STC</i> #	<i>Nung</i> ^a	<i>WB</i>	<i>Lahu</i>
‘sweet’	*kyəw	p. 60	dzu ⁵³	khyui	cho
‘weep’	*ŋəw	79	ŋu ⁵³	ŋui	---

- a. This Nung vowel is written “ü” or “ö” in the older sources cited in *STC*. The forms cited with “u” are from *ZMYC*, *TBL*, or Sun Hongkai 1982.
- b. The Jingpho form nyui cited in *STC* #156 (from Hanson 1906) looks like a loan from Burmese; it is absent from Dai *et al.* (1983).
- c. The loss of the initial velar in this Nung form is unexplained. The first syllable in all these words means ‘fire’.

Occasionally we may reconstruct *əw largely on the basis of Nungish evidence:

	<i>PTB</i>	<i>STC</i> #	<i>Nung</i>	<i>Other</i>
‘eagle / hawk’	*məw	257	thəmō	Mikir vo-mu, Lushai mu, <i>etc.</i>
‘rat’	*b-yəw	93	yü	Jg. yú ≠ yün, Lushai sa-zu, <i>etc.</i> ^a

- a. Actually Maru (Burmish) does confirm this reconstruction, contra *STC* (see note c in the chart of LB reflexes of *əw above).

When other TB languages point to a *high back vowel, but both Lolo-Burmese and Nungish forms are lacking, *STC* conventionally uses parentheses to show that we cannot decide between a proto-monophthong or -diphthong, *e.g.* *yu(w) ‘liquor’ (#94), *su(w) ‘cough’ (#423), *bu(w) ‘wear’ (#428), sru(w) ‘aunt’ (p. 108).³⁷

5.3.2 *-i and *-iy/-əy

The distinction between *-i and *-əy is considerably shakier than that between *-u and *-əw. The crucial evidence is from WB, and to a lesser extent from other Lolo-Burmese languages like Lahu and Maru. (Unlike the case of *-u vs. *-əw, Nungish is powerless to

35. Unlike LB, however, Nungish unfortunately seems to be of no help in distinguishing *-i from *-əy (below 5.3.2).

36. Although quite close to Nungish on the TB family tree, Jingpho does not have distinct reflexes of these rhymes. Thus we are unable to decide on the proto-rhyme of the newly discovered etymon *s-gu ‘sheep / goat’ on the basis of the two reflexes found so far: Jg. səgû ‘sheep’, Sulong (Lhoba) sə³³yü³³ ‘goat’. See *ZMYC* #11 and #117.

37. This is a situation where the old reconstruction “-uw” works better than *-əw!

5.3.2: *-i and *-iy/-əy

distinguish the two rhymes.) *-i is reconstructed when WB has -i, provided that *-ey (which also > WB -i) can be ruled out. When WB has -e, the reconstruction is *-əy:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>Nung</i>	<i>WB</i>	<i>Lahu</i>	<i>Maru</i>	<i>Garó</i>	<i>Lushai</i>
*-i	-i	-i	-i	-i	-i	-i	-i	-i (?)
*-əy	-i	-i	-i	-e	-ɪ / -i / -ɔ	-it / -a	-i	-i

(1) *Etyma with *-i*

There are many fewer examples of etyma with *-i than with *-u. In fact, only four are unambiguously set up in *STC*, and all of them are somehow problematic, involving tonal and suffixal morphology. Furthermore, no single etymon with *-i has reflexes in all 5 criterial languages.³⁸

‘gleet / purulent discharge / rot’	*ri	<i>STC</i> #263
	WB ri’ ≠ yi’ ‘be rotten (of cloth), to gleet (of pus)’, ʔəri’ ‘slimy discharge’; Jg. riʔ, ʔəriʔ ‘gleet’ ≠ ñ-yī ‘pus’ (glossed as ‘vomit from a corpse’ in Dai <i>et al.</i> , 1983); also Vayu (= Hayu) ri ‘decay’; Miri təri ‘wound, ulcer, sore’. The final glottal stop in some of the Jg. forms, as well as the creaky tone in WB, “possibly reflect a glottal accent” (<i>STC</i> , n. 198), or perhaps an allofam with *-k. As RSC points out, there is also a probable allofamic connection with *d-ri(y) ‘filth’, above 4.5.1.	
‘existence’	*s-ri-t	<i>STC</i> #264
	WB hri’ ‘to be’; WT srid-pa ‘existence’. Here again the WB cognate is under the creaky tone, while WT reflects a variant with final stop. This latter allofam also directly underlies the Lahu copula hêʔ < *s-ri:t. See below 8.3(2). ^a	
‘armpit / tickle’	*g-li	<i>STC</i> #265
	WB kəli’ ‘tickle’, lak-kəli’ ‘armpit’; Lahu pè-lí-kā ‘armpit’, ġì-lí yá ‘tickle’, ġù-lí lí ‘id.’ (< PLB *ʔ-li ³ ; see <i>DL</i> :1363); Lakher kili ‘tickle’, ba-kəli’ ‘armpit’; Nung khri ‘tickle’, ra-kyi tšíp ‘armpit’. Again WB has creaky tone, supported by the mid-tone Lahu variant (-li-) as reflecting PLB Tone *3. This root seems imitative in origin, a hypothesis strengthened by very similar forms in Austronesian and Tai: e.g. Proto-Indonesian *gəli ‘ticklish’, *kili ‘shoulder’, *kilit ‘carry under the arm’; Tai Khamti kap kəle ‘armpit’, tsuŋ kəri ‘tickle’ (<i>STC</i> , n. 199).	

‘urine’ *ts(y)i STC #77

WB chî [polite]; WT gtśi-ba ≈ gtśid-pa ‘urinate’, gtśin ‘urine’; Jg. tśí ≈ dźí ‘urinate’, dźit ‘urine’; Nung tsi ‘urine, urinate’; Dimasa si-di (di ‘water’) ‘*id.*’ Note that this etymon was suffixable by both *-n and *-t (below 11.2, 11.3). An allofam of this root, well attested in Lolo-Burmese, might be set up as PLB *zəy² or *žəy², underlying the vulgar WB synonym sê, as well as forms like Lisu rzi. However, a problem is presented by Lahu jî: although Lahu -ɿ is indeed the regular reflex of *-əy (see below), *z- or *ž- > Lahu y-, not j- (see above 3.3). This suggests that the immediate ancestor of the Lahu form was *N-džəy² (the Lahu voiced initial affricate j- reflects the nasal prefix; above 4.3), so that a better PLB reconstruction would be *tśi² ≈ *N-(d)žəy².

- a. Much of JAM 1985a (*GSTC*) is devoted to exploring the complicated phonosemantic allofamy of ST copular morphemes.

Several additional roots reflecting monophthongal *-i have been uncovered:

‘anvil’ PLB *bi¹ (*DL*:822)

WB pe,^a Maru byi, Lh. pî-tê, Akha (PL) bi ˘ nah ˘

‘dew’^b PLB *ʔ-dzi² (*DL*:465; *ZMYYC* #14)

WB chǐ, Lh. cî-yǐ, Yi (Xide) tɕw⁵⁵, Yi (Mile) tɕi⁵⁵ zi³³, Naxi (Lijiang) ndzəɣ³³, Achang tshe³¹, Lalo tsy̌-yǎ

‘female / girl’ *mi > PLB *mi^{2/3} (*DL*:985)

WB ʔəmi (again under creaky tone < Tone *3) ‘mother; miss; madam; daughter’; Maru mji³⁵ ‘wife’, mji³⁵ ye³⁵ ‘daughter’;^c Lahu -mî- (< Tone *2), as in ɬ-mî-ma ‘wife’, yâ-mî ‘girl; daughter’, mî-yâ ‘wife and children’ (see *DL*:985). This root seems also to occur in Qiangic (rGyalrong təmi, Pumi (Taoba) m̥ə³⁵ ba³⁵, Pumi (Jinghua) m̥i¹³ by⁵⁵ ba¹³, Ergong smɛ-ŋa, Namuyi zɿ³³ mi⁵⁵, Shixing ɔ³³-mi⁵⁵ ɔɣ⁵⁵-mi⁵⁵)^d and perhaps also in Mirish (Darang me³⁵ ja⁵³ ɔ³¹, Idu mi⁵⁵ juŋ⁵⁵, Bokar Adi ɲe mæː, Sulong a³³ mui⁵³ (see *ZMYYC* #291).

38. So far no Lushai reflexes of such etyma have been discovered at all, though there is one in the closely related Central Chin language Lakher (=Maraa). See ‘armpit / tickle’.

5.3.2: *-i and *-iy/-əy

‘ride (horse)’ *gyi ⌘ *dzyi (DL:461)

WB cî < Insc. Bs. ki; Lahu cî, Lisu dzi, Ahi dze, Nyi de (see STC:184). Again this root is also to be found in Qiangic (Ergong tɕi, Ersu ndzɛ⁵⁵, Namuyi tɕɛ³³, Shixing dze³⁵), as well as in Tujia (a so far unclassified language) tɕi⁵³ (ZMYC #571). There is also an obvious Chinese cognate 騎 [GSR #1u] OC *g’ia, Mand. qí. However, this is a “cultural” word that may well be an old loan into PST, perhaps from Austro-Tai (cf. Siamese khii).^e

‘lift up / raise’ *kyi^{1/2} (DL:526-8)

WB kyi ‘promote, exalt’ (< Tone *1) ⌘ kyî ‘lift, raise’ (< Tone *2); Lahu chî (< Tone *2). Here again there are promising extra-LB candidates for cognacy, including Qiang (Taoping) tsi³³ and several dialects of Baic: Dali tsi⁴², Jianchuan tɕɛ⁴², Bijiang tɕhe¹⁴²tɕe¹⁴² (see ZMYC #556).

- This WB reflex is irregular, possibly indicating that this is a loanword into LB.
- It is possible that this was a liquid-final root, perhaps *(d)zil at the PTB level: cf. WT zil-pa ‘dew’. For a similar case, cf. PTB *zril > PLB *di¹ ‘worm’ (below 9.3.2(1)).
- These forms establish that *-i > Maru -i (as opposed to *-əy > Maru -it/-ik; see below).
- Several of these Qiangic forms (rGyalrong, Pumi, Ergong) reflect the *s- prefix (< *s-mi), which may in fact be a reduction of the morpheme *za ‘child’, as in Lahu yâ-mî ‘girl; daughter’.
- See Benedict 1975:252.

(2) Etyma with *-əy

PTB	WT	Jg.	Nung	WB	Lahu	Maru	Garó	Lushai
*-əy	-i	-i	-i	-e	-ɪ / -i / -ɔ	-it / -a	-i	-i

This rhyme is abundantly attested throughout TB. It may be unambiguously reconstructed when WB has -e (written as “iy” in the Old Burmese Inscriptions). The most interesting reflexes of this rhyme so far discovered are shown by Maru (Burmish) and Lahu (Loloish). In Maru (=Langsu) *-əy has developed in most environments to -it (transcribed “-ik” in Chinese sources), with an “extruded” final consonant, exactly parallel to the fate of the corresponding back diphthong *-əw > Maru -uk (above). In Lahu *-əy usually becomes -ɪ, with other reflexes (-i, -ɔ) conditioned by the initial consonant of the syllable.

Rhymes: monophthongs and diphthongs

(a) *Where Lahu has -ɬ*

	<i>PTB/PLB</i>	<i>STC/DL</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Maru</i> ^a	<i>Lu.</i>
‘barking deer’ ^b	*d-kəy	#54	---	khyī	khye	chɨ	ʃɔ ³⁵ tʃhik ⁵⁵	sa-khi
‘barley’ ^c	*zəy ² (PLB)	---	---	---	---	yɪ	---	---
‘copper’ ^d	*grəy	#39	gri ^e	məgrī	krê	kî	kyít, kyik ⁵⁵	---
‘cough’ ^f	*ʔ-dzəy ² (PLB)	---	---	---	---	cî	---	---
‘die’	*səy	#232	śi-ba	sī	se	šɪ	ʃik ³¹	thi
‘excrement’	*kləy	#125	ltśi	khyí	khyê	qhê ^g	khjik ⁵⁵	---
‘foot’	*krəy	#38	khri ^h	---	khre	khɪ	khyít, khyik ³¹	---
‘gall / bile’	*m-krəy-t	#412	mkhris-pa	---	khre	kɪ	kjik ³¹	---
‘grass’ ⁱ	*s-yəy ² (PLB)	---	---	---	---	yî	---	---
‘liquor’ ^j	*m-dzəy ¹ (PLB)	DL:583	---	---	---	jî	ik ³¹	---
‘medicine / juice / paint’	*r-tsəy	#65	rtsi	tsì	chê	nâʔ-chî	tʃhik ⁵⁵	---
‘melt’ ^k	*s/m-grəy	---	---	---	---	kɪ	---	---
‘moon / moonlight’ ^l	*krəy	---	---	---	---	ha-pa- khɪ	---	---
‘parrot’	*gyəy ² (PLB)	DL:506	---	---	kyê	cî	cìt	---
‘rot / disintegrate’ ^m	*pəy ² (PLB)	---	---	---	---	phî	---	---
‘run’ ⁿ	*b-ləy	DL:1141	---	---	prê	yî	---	---
‘sap’ ^o	*dzəy ² (PLB)	---	---	---	---	šîʔ-cî	---	---
‘skin / outer covering’ ^p	*m-k-rəy ¹	DL:418	---	---	re	gɪ	---	---
‘urine’	*m-(d)zyəy ²	DL:582	---	---	sê	jî	ik ⁵⁵	---
‘wash’ ^q	*tsəy	DL:556	---	---	chê	chî	tʃhik ⁵⁵	---
‘water’	*rəy ¹	DL:1143	---	---	re	gɪ	rit, yək ³¹	---

5.3.2: *-i and *-iy/-əy

- a. Forms cited with “-ik” are from *ZMYYC* or *TBL*. The fact that the sources disagree in the way they record the final consonant is an indication of how weak and unreleased it must be. (I have never heard Maru spoken myself.) Reconstructions with tonemarks are at the PLB level, cited from JAM 1988b (*DL*).
- b. *Cf.* also Lalo tʃhó.
- c. *Cf.* Lalo zi; Lisu zu³³; Yi Xide zu²¹; Yi Nanjian zɿ³³; Yi Mile zo³³. See *ZMYYC*:#187 and SB 1998. Disyllabic forms like Jinuo mə⁴²tsi³³, Naxi Lijiang muw³³dze³³, Namuyi mu⁵⁵dzɿ⁵⁵, Bai Dali mi³⁵zo²¹ are apparent loans from Chinese 麥子 (Mand. *màizi* ‘wheat’).
- d. *Cf.* also Lalo gə.
- e. WT ‘knife’.
- f. *Cf.* Lalo tsɿ; Hani tshy³¹; Lisu tsɿ⁵⁵; Yi Xide tsɿ²¹; Jinuo tshi⁴⁴; Gazhuo tsɿ⁵⁵. A group of Qiangic forms may also be related: Daofu ʃtshə; Muya tə⁵³tshə⁵⁵qo⁵³; Guiqiong tɕhy³⁵; Shixing tsu^{Λ53}; Lüsü tshe⁵³. See *DL*:509 and *TBL*:1477.
- g. The irregularity of this Lahu reflex is explained by the fact that the syllable “qɦ” does not occur in the language.
- h. ‘chair’
- i. *Cf.* Lalo ʃə; Lisu ʃɿ⁵⁵; Naxi Lijiang zuw³³; Yi Xide zɿ³³; Yi Dafang sɿ³³. A likely extra-LB cognate is Tujia si²¹. See *ZMYYC*:#218.
- j. *Cf.* also many cognates in *ZMYYC* #420, and Lalo dʒá.
- k. Other Loloish cognates include Akha ɡý; Lalo ɡá (v.i.) ~ ká (v.t.); Naxi Lijiang ndzə³¹; Hani Dazhai ɡw⁵⁵, Jinuo tɕi³³; Yi Xide dzɿ³³; Yi Nanhua dzi³³; Yi Mile tɕi³³ (all < PLB *s-ɡrəy¹). The Lalo forms are a simplex/causative pair. Qiangic cognates include Qiang Mawo dzɿ; Qiang Taoping dzyi³¹; rGyalrong kə-ndzi; Ergong dzyu; Muya ndzyi⁵⁵. See *ZMYYC*:#772 and *DL*:351.
- l. *Cf.* Lalo xa-ba-khə ‘moonlight’ (< PLB *krəy¹). The first two syllables of the Lahu and Lalo forms mean ‘moon’. A number of Naga cognates meaning ‘moon’ establish *krəy as a general TB root: Angami (AW) ⁴krhu, Chokri khri, Khezha e-krü, Mao o-khro, Sema a-khi, Zeme (AW) ¹he⁵kei.
- m. *Cf.* Lalo phə.
- n. *Cf.* also Lisu (Frazer) rgh⁵, Luquan ji⁵⁵. This root may be established for PTB on the basis of Lai Chin tli, Cho (S. Chin) bli (p.c. KVB). For the initial correspondence, see above 3.6.4.1(2).
- o. *Cf.* Lalo dzi (SB 1998). The first syllable of the Lahu form means ‘tree’. This root is possibly allofamic with *r-tsəy² ‘medicine / juice / paint’ (> Lahu nâʔ-chê, Lalo ʔne-tshi), above, this table..
- p. *Cf.* also Yi (Dafang) ndzi²¹, Yi (Nanjian) gw⁵⁵tsu²¹, Naxi (Yong Ning) yu¹³, Hani sa³¹gw⁵⁵, Achang a³¹zɿ⁵⁵.
- q. Extra-LB cognates include several Qiangic forms: Queyu lə³⁵tsi⁵³, Namuyi tshɿ³³, Ersu tshe³³.

Another root with this rhyme which may be established at the PTB level is *dzəy ‘seed’ > WB ce’, Lai Chin tsi, Lu. (AW) tsî, Lu. (GEM) chi (p.c. KVB).

The following root shows variation between PLB *-əy and *-i:

PLB *k-ri(y)² ‘big’ > WB krî; Achang kɕə³¹; Langsu yə³⁵; Lalo yə; Lahu i; Lisu vu; Hani xu³¹; Nusu Bijiang zɿ⁵⁵, Yi Dafang yə³³; Yi Mojiang yɛ³³. See *ZMYYC*:#1172 and SB 1998.

(b) Where Lahu has *-i* (after labial stops, the labial nasal, and *n-*)³⁹

	STC#	PTB	WT	WB	Lh.	Maru	Other
‘earth’	152	*mləy	---	mre	mì	mjik ³¹	Nung məli
‘give’	427	*s-bəy-n	sbyin-pa	pê	pî	pjik ³¹	Mikir pi
‘grandmother’	36	*ʔ-pəy ^a	ʔa-phyi	ʔəphê	ð-pi	a ³¹ phjik ⁵⁵	Lushai pi
‘sun / day’	81	*nəy	nyi-ma	ne ‘sun’ ɤ ne’ ‘day’	ni	neɽ ³¹ ‘day’ ɤ na ⁵⁵ ‘sun’ ^b	Jg. ní

a. The glottal element apparently derives from the kinship/vocative *ʔa- prefix below 4.2.2(1a).

b. The irregularity of these Maru forms is unexplained. The reflex *-a* in ‘sun’ is otherwise characteristic of most etyma in *-əy with complex lateral initials (below).

For an example of an etymon in *-əy with labial initial that also had medial *-w-, see ‘bamboo rat’, below 5.3.2.1.

Exceptions and special cases include:

	PTB	STC	
‘borrow’	*s-kəy	31	(> WT skyi-ba) > PLB *kəy ² > WB khyê, Lahu chî, Maru tʃik ⁵⁵ .
			Again Lahu has <i>-i</i> instead of the expected <i>-ɿ</i> , suggesting that this word has been borrowed from Modern Burmese chēi.
‘gold / yellow’	*s-rwəy ¹ (PLB)	---	WB hrwe, Yi (Xide) ɣɿ ³³ , Lisu ʃɿ ⁴⁴ , Lh. ši, Jinuo ɕw ⁴²
			The WB reflex is irregular. The same Lh. initial reflex is found in ‘otter’ (PTB *s-ram > Lh. ɣì-šo) and ‘squirrel (flying)’ (PLB *s-ru ² > Lahu fâʔ-šū), from the same sequence of *s-r.
‘little / small’	*zəy	60	(> WT zi, Jg. zī) > PLB *ʔ-zəy ^{1/2} > WB sê, Lahu i
			PLB plain *z- regularly develops into WB s-/Lahu y- (above 3.3), but the syllable “yi” does not occur in native Lahu syllables, so the initial became zero in this case. ^a The glottal prefix is reconstructed for PLB on the basis of the Lahu mid-tone (unmarked in the transcription). ^b

39. The syllable “nɿ” does not occur in Lahu.

5.3.2: *-i and *-iy/-əy

- a. As for the Lahu vowel, a similar example is the causative member of the pair of verbs ‘sleep / put to sleep’ (PLB *yip ‘sleep’ > WB ʔip / Lahu yìʔ; PLB *sip > *ʔ-yip^L ‘put to sleep’ > WB sip / Lahu í). Here too Lahu has developed zero initial from *ʔ-y-, along with a fronting of the vocalic reflex from the expected /-ɪ/ to -i.
- b. The unusual PLB initial sequence *ʔ-z- seems to have led to tonal instability in this root, with the WB form reflecting Tone *2, while the Lahu form points rather to Tone *1.

(c) Where Lahu has -ɔ (after complex laterals)

After ***prefixed lateral initials**, the ***-əy** rhyme has the interesting Lahu reflex -ɔ (six examples), paralleled in three cases by the Akha reflex ø.⁴⁰ These developments have been discussed repeatedly in the literature as examples of unexpected but regular correspondences:⁴¹

	<i>PTB</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Akha</i>	<i>Jingpho</i>
‘boat’	*m-ləy	---	hle	hɔ-lòʔ-qō	---	lī
‘bow / sling’	*d/s-ləy ^a	gzu ^b	lê	hɔ̂-ma	ca-ø	ləlī
‘four’	*b-ləy	bzi	lê	ɔ̂	ø	məlī
‘grandchild’	*b-ləy	---	Insc. mliy > WB mrê	hɔ̂-ē	ø-pà	məlī ^c
‘heavy’	*s-ləy-t ^d	lci	lê	hɔ̂	---	lī
‘wind’	*g-ləy	rdzi	le	mû-hɔ̂	---	bũŋ-lī

- a. The *STC* is inconsistent in its reconstruction of prefixes. There is just as much evidence for the prefixability of *s- to this root as there is for *d-.
- b. I have often wished that this WT form were gzi ! Yet after palatal initials WT fairly regularly has -u corresponding to front vowels in other languages (*cf.* ‘ten’ Dakpa chi, Lahu chi, WB chay < *ts(y)ay, but WT bçu. See Michailovsky and Mazaudon 1994 (“Preliminary notes on the languages of the Bumthang group”), pp. 550,553.
- c. ‘young man’
- d. Many forms from Kamarupan languages point to a dental suffix in this root. *Cf.* *STC* #95.

Unfortunately there are no Lahu or Akha cognates⁴² to the following:

	<i>PTB</i>	<i>WT</i>	<i>WB</i>	<i>Jingpho</i>
‘flea’	*s-ləy	ldzi-ba	khwê-hlê	khələwī

40. The Lahu “darkening” of the vowel in the environment of a lateral is somewhat analogous to what has happened to the -a- in English words like *walk, talk, balk*.

41. See, *e.g.* JAM 1969:142 (“Lahu and PLB”); 1982a:22 (“Proto-Sprachgefühl”); 1994a:46-50 (“Regularity and variation”).

In five of these etyma, Maru also has a special reflex (-a), while Karen dialects have leveled several different proto-prefixes to k-:

	STC#	WB	Lahu	Maru	Pwo Karen	Sgaw Karen
‘boat’	474	hle	hɔ-	la ³¹	khli	klili
‘bow’	463	lê	hɔ̂-ma	la ³⁵	khli	khəli
‘flea’	440	khwê-hlê	---	khə ³¹ la ³⁵	khli	kli
‘heavy’	95	lê	hɔ̂	la ³⁵	---	---
‘wind’	454	le	mû-hɔ	la ³¹	li	kəli

In two cases, Maru has fused a *prefix with the root-initial *lateral, with the latter becoming medial -y-. The modern absence of the conditioning lateral permits these words to develop the “normal” reflex -it (= “-ik”):

	STC#	WB	Lahu	Maru	Pwo Karen	Sgaw Karen
‘four’	410	lê	ɔ̂ a	byit, pjik ³¹	li	lwi
‘grandchild’	448	mliy > mrê	hɔ̂-ē	myik ³¹	li	li

- a. The loss of the initial h- here is unexplained. A similar “cockneyism” is said to have occurred, yielding the irregular Latin form *ānser* ‘goose’, instead of the expected ***hanser* (< PIE *ghans-er).

(d) *Where there is no WB cognate*

Without evidence from WB (or other LB languages), we are helpless to distinguish between *-i and *-əy.⁴³ STC reconstructs such etyma with *-i(y),⁴⁴ e.g.:

	STC#
‘water’ *ti(y)	55
‘aunt’ *ni(y)	316
‘sour’ *kri(y)	413
‘fear’ *kri(y)	416
‘dirt / ordure’ *ri(y)	459
‘comb / rake’ *m-si(y)	466

42. Instead both these languages have compounds for ‘flea’ meaning “dog-louse”: Lh. *phî-še*, Akha *k̂-šé* (< PLB *k̂^wəy²-san²). The WB, Jg., and Lushai (ui-hli) forms similarly have the morpheme for ‘dog’ as their first element.

5.3.2.1: With medial *-w- : *-wəy

5.3.2.1 With medial *-w- : *-wəy

There are a surprising number of etyma that are to be reconstructed with the labialized version of this rhyme, *-wəy.⁴⁵ Key reflexes are WB -we and Lushai -ui. WT lacks a “-wi” cluster, but reflects this rhyme with -yi in at least three excellent examples (‘yam’; ‘dog’; ‘bamboo rat’). Jingpho usually has -wi (often spelled “ui”, “oi”, or “wi” in the sources). Maru has developed the rhyme *-a from *-wəy (see ‘blood’, ‘far’, ‘dog’), the same Maru reflex we have just seen for *-əy after lateral initials:

*-əy > Maru -a	/ l ____
	/ w ____

This seems reasonable enough, since l- and w- are so similar in articulatory terms (see above 3.6.3, 3.6.4).⁴⁶ The usual Lahu reflex of *-wəy is -ɪ; but after PTB *labial stops or nasals, *-wəy > Lahu -i.

(1) After non-labials

	STC#	PTB	WT	Jingpho	WB	Lahu	Garó	Lu.
		*-wəy	-yi	-wi (-i, -ai)	-we	-ɪ	-i	-ui
‘blood’ ^a	222	*s-hywəy	---	sàì	swê	šĩ	an-tsí	thi ^b
‘flow / suppurate’	167	*twəy	---	twĩ	twe	---	---	---
‘rot / pus’	183	*tswəy	---	mətswĩ	chwê	---	---	---
‘son / da- in-law’ ^c	244	*krwəy	---	khri ^d	khwrê- ma’	ð-khî- ma	---	---

43. Karenic is an example of a subgroup which is apparently of no help in this connection. Both rhymes give Pwo and Sgaw -i (STC pp. 147-8):

	PTB	Pwo	Sgaw
‘die’	*səy	θi	θi
‘urine’	*ts(y)i	shi	shi
‘water’	*ti(y)	thi	thi
‘wind’	*g-ləy	li	kəli

44. Again the older reconstruction works better with this parenthesized notation. See above, n. 37.

45. This rhyme sometimes has reflexes with lower nuclear vowel (-ay, -oy), which may merge with the reflexes of *-ay, *-way, or *-ey in a given language (below 5.5.2, 5.5.3). Cf. *s-hywəy ‘blood’ > Jg. sàì; *sywəy ‘scrape / shave’ > Tiddim Chin taii ‘plane’, Mikir sòy ‘chisel, plane, shave’. See JAM 1985a (GSTC), note 34 (pp. 20-1).

46. Maru -a cannot be from *-a, since that proto-rhyme developed into a Maru back vowel (above 5.2.1).

Rhymes: monophthongs and diphthongs

	<i>STC#</i>	<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>Garó</i>	<i>Lu.</i>
‘scrape / shave’	180	*sywəy	---	ləswí	swê	---	si	sui
‘slant / slope’	200	*s-rwəy	---	rwì	hrwe	---	---	---
‘sleep’	196	*r/s-mwəy	rmi- ba ^e	śəmwí	mwê	yìŋ-mí ^f	---	---
‘spindle / twirl’	195	*s-mwəy	---	---	hmwe’	---	---	hmui
‘sweat’	--- ^g	*ʔ-grwəy ² (PLB)	---	---	khwrê	kī	---	---
‘water / egg / spit’	168	*t/dwəy	---	məthwí	--- ^h	---	---	tui ⁱ
‘yam’	238	*kywəy	skyi- ba	---	kywê	---	---	---

a. Cf. also Maru sa ‘blood’.

b. We would expect *thui here, since -ui is the normal Lushai reflex in all other roots of this type.

c. The basic meaning of the plain root is ‘son-in-law’, with the meaning ‘daughter-in-law’ derivable by means of the feminine suffix -ma.

d. This Jg. word is actually a kinship term with complex polysemy, covering such relationships as “paternal aunt’s daughters”, “sister’s children”; ‘son-in-law’; ‘young girl’ (khrī-mà), etc. See the elaborate glosses in Hanson (1906:322) and Dai (1983:254).

e. WT lacks the syllable “myi”.

f. The tone of the second syllable is irregular; we would expect /mî/.

g. Contra *STC* (pp. 202, 220), this root is not confined to Lolo-Burmese; the PLB form descends from a widespread PTB etymon to be reconstructed something like *s-krul ≈ *s-ŋrul. See above 3.6.5(1) and below 9.3.2(4).

h. WB has two allofams, thwê ‘to spit’ (< *twəy) and tam-twê ‘spittle’ (< *dwəy), the latter being directly cognate with the Lushai form.

i. There is a tonal difference between Lushai tui³⁵ ‘water’ and tui⁵⁵ ‘egg’.

(2) *After root-initial w-*

The above correspondences are the same at the PLB level even when the labial semivowel functions as the root-initial. Thus PLB *wəy² ‘far’ > WB wê, Lahu vî, Maru wa. (There is actually some evidence that this root had an initial velar at the PTB and PST stages, as suggested by the following Qiangic forms: Qiang Mawo guə’x̥e; Qiang Taoping x̥ua³³; Muya qhue⁵⁵re⁵³; Queyu kua⁵⁵kua⁵³; Shixing qhua⁵⁵ [ZMYC #817], all perhaps < PTB *g-wəy. There is also an attractive comparison with Chinese 遠 OC giwǎn [GSR #256f-g] (Mand. yǎn), perhaps with suffixal *-n.) See below 11.2.4(2).

5.3.2.1: With medial *-w- : *-wəy

(3) After original labials

As we have seen, Lahu has developed the rhyme -i from *-əy after original PTB/PLB labial stops. This holds true even if the labial stop was followed by the semivowel *-w-:

	STC#	PTB	WT	Lushai	WB	Lahu	Akha
‘bamboo rat’	173	*bwəy	byi-ba	bui	pwê	fâʔ-phî	ho-pî

This root shows voiced \approx voiceless variation of the initial stop in Lolo-Burmese, with WB (like WT and Lushai) pointing to the voiced variant *bwəy, while the Lahu and Akha forms come rather from *pwəy. (See DL:1307).

(4) After original *labiovelars

As indicated above (3.2-3.4), Lahu has developed secondary labial stops in several roots that reconstruct with *labiovelar initials. By chance three of these etyma have the rhyme *-əy. In these words Lahu has the regular reflex -ɿ (rather than -i):

	PTB	STC#	WT	Lushai	Jg.	WB	Lahu	Maru	Mpi
‘dog’	*k ^w əy	159	khyi	ui	gwì	khwê	phî	kha	khw ²
‘nest’ ^a	*k ^w əy	---	---	---	---	---	phɿ	---	khw ⁶

a. See JAM 1978b:6 (“Mpi”).

The following root shows variation between *-i and *-əy at the PLB level:

‘comb’	PLB *ʔ-g ^w i(y) ² > WB phî \approx phrî; Lahu pɿ
--------	--

The WB vowel points to monophthongal *-i, while the Lahu vowel reflects *-əy. The correspondence between a WB aspirate and a Lahu plain initial, as well as the Lahu tone, point to a *preglottalized PLB initial. (It is not clear why WB, like Lahu, has a labial here, as opposed to the WB velar in ‘dog’.) Other TB languages have unambiguous labiovelar initials (Dimasa *se-kwi*, Lushai *khuiʔ*; see STC #480). The variation in the rhyme is probably due to the fact that this etymon should really be reconstructed as PTB *k^wis, with the final *-s attested by Karenic (e.g. Pa-o *khút*) as well as by the final glottal stop in the Lushai form.⁴⁷

47. See below Ch. 10, and Benedict 1979:13, correcting STC #480.

The Lahu reflexes of *-əy after labials are summarized here:

*-əy	Reflex	After	Examples
	-i	• simple labial stops or labial nasal • labial stops plus -w-	‘give’; ‘grandmother’; ‘earth’ ‘bamboo rat’
	-ɪ	• secondary labials < *labiovelars • root-initial w- • consonant plus medial -w-	‘dog’; ‘nest’; ‘comb’ ‘far’ ‘son- / daughter-in-law’; ‘sweat’

(5) When there is no WB cognate: *-wi(y)

When Lolo-Burmese cognates are lacking, the rhyme is to be reconstructed conservatively as *-wi(y):

	PTB	STC#	Jingpho	Lushai	Garó	Dimasa
‘cane / rattan / rope’ ^a	*s-rwi(y)	201	---	hrui	---	Digaro tərui
‘female’	*pwi(y)	171	šəwī	-pui	---	---
‘flow / stream’	*lwi(y)	210	lwī	lui	---	---
‘laugh’	*m-nwi(y)	191	mənī	nui	---	mini
‘sweet / tasty’	*twi(y)	166	dwì	tui	tśi	gidi

a. See below 5.5.4.

5.3.3: Chinese comparanda to PTB high back vowels

5.3.3 Chinese comparanda to PTB high back vowels

(1) Where OC has -u, -ɿu

	PTB		GSR	OC	Chinese Gloss
‘aunt’	*sru(w)	婁	133e	sɿu ^a	‘older sister’
‘body / corpse’	*s-kəw	軀	122g	k’ɿu	‘body, person’
‘breast / milk’	*nəw	乳	135a	ńɿu	‘nipple, milk, suckle’
‘head’	*d-bu	頭	118e	d’u	‘id.’
‘intestine’ ^b	*p ^w u	腑	[not in 136] ^c	pɿu	‘the bowels’
		肘	136o ^d	b’ɿu	‘intestines’
‘mouth’	*ku(w)	口	110ac	k’u	‘id.’
‘steal’	*r-kəw	寇	111a-b	k’u	‘rob’
		偷	125u	t’u ^e	‘steal’

a. This reconstruction was revised to *srɿu in STC:171,184,197.

b. See VSTB:126 and DL:1130.

c. This root is to be found in AD, character group #45.

d. This character is glossed ‘foot’ in GS, but as ‘intestines’ in GSR.

e. There are also several roots showing shifts in OC to palatal or dental initial from *velar stops:

PTB			GSR	OC	Chinese Gloss
*g(y)ip	‘ten’	十	686a-d	đɿəp	‘id.’
*kap	‘needle’	鍼	671o	ŋɿəm	‘needle’
*n-glun	‘kidney’	腎	368h	đɿĕn	‘kidney’
*m-kum ɤ	‘pillow / block’	榧	658f	tɿəm < *-im	‘chopping block’
*m-kim		枕	656g	ŋ’ɿəm < *-im	‘pillow / use as pillow’

See STC n. 464, p. 175.

(2) Where OC has *-(i)ôg/-i)ug/-iəg*

	<i>PTB</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
‘carry on back’	*bəw	負	1000a	b’iug	‘id.’
‘cough’	*səw ^a	嗽	1222s	sug	‘id.’
‘dove’	*m-k(r)əw	鳩	992n	kîôg	‘pigeon, turtledove’
‘egg / sit on eggs’	*ʔu ^b	孚	1233a	p’iug	‘to hatch’ (孵)
‘hand’	*tsyəw	手	1101a-b	śîôg	‘id.’
‘liquor’	*yəw	酒	1096k	tsîôg	‘spirits, wine’
‘nine’	*d-kəw	九	992a-d	kîug	‘nine’
‘owl’	*gu ɤ *ku	舊	1067c-e	g’iug	‘id.’
		鴞	1070i	xîôg	‘id.’
		梟	1070m	kîôg	‘kind of bird (owl?)’
‘resemble’ ^c	*su ² (PLB)	似	976h	dziəg	‘id.’
‘send on an errand / causative’	*ʔ-dzəy ¹ (PLB) ^d	使	975n	slîəg	‘command / cause / send’
‘thread / plait’ ^e	*krəw	糾	1064b	kîôg	‘twist, plait; unite’
‘womb’ ^f	*pru(w)	胞	1113b	pôg ~ p’ôg	‘placenta’

a. This root is reconstructed conservatively as *su(w) in STC #423.

b. Cf. PLB *ʔu³; Nusu (Bijiang) ʔu³¹; Bai (Dali) vɯ⁴⁴ ‘sit on eggs’ (the latter perhaps a loan from Chinese).

c. This comparison was suggested by DRM.

d. Cf. WB ce ‘send on business, employ; causative aux.’; Lh. cɿ ‘id.’.

e. Cf. WB krûi ‘thread, string, chain’. See Gong 2001:25.

f. Cf. WT pru-ma ‘uterus, matrix of animals’. See Gong 2001:22.

(3) Where OC has *-n* suffix⁴⁸

	<i>PTB</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
‘grandchild’	*syu(w)	孫	434a-c	swən	‘id.’
‘rabbit / hare / rat’	*b-yəw-n	兔	468s	tsîwən	‘hare’
‘smoke’	*kəw-n	熏	461a-c	xîwən	‘to smoke, to steam; aflame’

48. For more details, see below 11.2.4.

5.3.4: Chinese comparanda to PTB high front vowels

(4) Where OC has *-iət* or *-iəd*

	PTB		GSR	OC	Chinese Gloss
‘four’	*b-ləy	出	518a-d	s _ɿ əd	‘id.’
‘give’	*bəy	四	521a-b	p _ɿ əd	‘id.’
‘nephew’	*m-tu ɤ *m-du	昇	496a-e	t _ɿ iwət	‘id.’
‘sleep’	*r/s-mwəy	寐	531i-j	m _ɿ əd	‘sleep, lie down to sleep’

5.3.4 Chinese comparanda to PTB high front vowels

(1) Where OC has *-ia*, *-jo*, *-ju*

	PTB		GSR	OC	Chinese Gloss
‘count’	*r-tsyəy	數	123r	sl _ɿ u ^a	‘id.’
‘elephant’	*m-gwi(y)	為	27a-e	gwia	‘elephant (obsolete)’ ^b
‘foot’	*krəy	疋	90a	s _ɿ jo ^c	‘id.’
‘ride (horse)’	*gyi ɤ *dzyi ^d	騎	1u	g’ia	‘id.’
‘son / d.-in-law’	*krwəy	婿	90i	s _ɿ jo ^e	‘son-in-law’

a. This OC reconstruction is revised to s_ɿju in STC:170,171,186.

b. The oracle-bone graph is supposedly of an elephant and a hand 象. The use to mean ‘make / do’ is probably a graphic loan (假借 *jiǎjiè*). Karlgren notes in connection with the ‘make / do’ meaning of 為 that “The inference of some scholars that the archaic Chinese had tamed the elephant, causing it to ‘make, work’ is perhaps somewhat bold.”

c. This OC reconstruction is revised to s_ɿjo in STC:178,186.

d. This root is so far attested only in LB. It is also widespread in Tai and Hmong-Mian; see above 5.3.2(1).

e. This reconstruction is revised to s_ɿjo in STC:178,186,194.

(2) Where OC has *-t* or *-d* ⁴⁹

	<i>PTB</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
‘blood’	*s-hywəy	血	410a-c	xiwet	‘id.’
‘grandchild’	*b-ləy	姪	413o-p	d’iet ~ d’jēt	‘nephew, niece (nibling)’
‘heavy’	*s-ləy-t	輕	413e	tjēd	‘carriage low and heavy in front’
‘juice / paint’	*tsəy	漆	401b	ts’jēt	‘varnish tree’
‘sun / day’	*nəy	日	404a-d	ńjēt	‘id.’

(3) Where OC has suffixal *-n* ⁵⁰

	<i>PTB</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
‘dog’	*k ^w əy	犬	479a-d	k’iwən	‘id.’
		狗	108d	ku	‘id.’
‘man / person’	*r-mi(y)	民	457a-b	mjēn	‘people’

(4) Where GSR has OC *-r*

	<i>PTB</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
‘die’	*səy	死	558a-c	sjər	‘id.’
‘dung’	*kləy	屎	561d	śjər	‘id.’
‘earth / country’	*mləy	泥	563d	niər	‘mud / mire’
‘female (animal)’	*pwi(y)	牝	566i-j	b’jər ~ b’jən ^a	‘id.’
‘foot / stool’ ^b	*krəy	几	602a-b	kjər	‘stool, small table’
‘grandmother’	*ʔ-pəy	妣	566n-o	pjər	‘deceased mother or ancestress’
‘fine / delicate’	*mwəy ^c	微	584d-e	mjwər	‘minute / small’
‘snot’	*sna-ti(y) ^d	涕 洟	551f	djər	‘mucus from the nose’

49. See below 11.3.6.

50. See below 11.2.4 for more details.

5.4: The marginal mid vowels *-e and *-o

- This Chinese etymon could also be included in category (3) above, since it apparently could take the -n suffix.
- See above 5.3.2(2a). Also cognate is Xixia *khjɿ 'leg, foot' See Gong 2001:25.
- Cf. WB *mwe*.
- Literally "nose-water"; cf. Dhimial *hna-thi* 'snot'. See above 5.3.2.1(1).

5.4 The marginal mid vowels *-e and *-o

The monophthongal mid vowels */e o/ are found synchronically in many TB languages, but can usually be shown to be secondary. Only a handful of etyma have so far been reconstructed with these rhymes, so that only partial correspondence charts may be constructed.⁵¹

<i>PTB</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Jg.</i>	<i>Lushai</i>	<i>Garó</i>	<i>Digaro</i>	<i>Dimasa</i>
*-e	e	ai	?	e	e	e	e	ai
*-o	o	au	ɔ	o	o	?	?	?

Comparing these reflexes with those of the PTB falling diphthongs (to be discussed in detail in 5.5-5.7 below), we see there is much overlap between *-e and */-ay -ey/, on the one hand, and between *-o and */-aw -ow/ on the other.

<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Garó</i>	<i>Dimasa</i>	<i>Lushai</i>
*-aw	-o	-au	-au	-o	-au	-ou
*-a:w	-u / -o	-au	-au	-o	-au	-au
*-ow	-o	-u / -au	-u	-o	-au	-ou
*-ay	-e	-ai	-ai	-e	-ai	-ei
*-a:y	-e	-ai	-ai	-e	-ai	-ai
*-ey	-e	-i	-i	-e	-ai	-ei

Thus WT and Garó have -e as the reflex of all three front-vowel rhymes */-e -ay -ey/, while WT -o represents the merger of */-o -aw -ow/. WB has merged */-e -ay/ to -ai as well as */-o aw/ to -au.⁵² This leaves only Jingpho and Lushai⁵³ as key languages that

51. WT final -o is often from *-wa, as in 'tooth' and 'handspan' (above 5.2.2). Similarly, medial -o- in WT and Jg. frequently derives from rhymes with medial *-w-, e.g. PTB *g-lwat ɤ *s-lwat 'release, loosen; undress; slip' (#209) > WB k(h)ywat ɤ (h)lwat, WT glod-pa 'loosen, relax, slacken' ɤ hlod-pa 'loose, relaxed'; Jg. lòt 'be free', ʃəlòt 'set free'. See below 8.2(2).

largely preserve distinct reflexes: *-e > Jg. -e, Lu. -e; *-ay > Jg. -ai, Lu. -ei; *-ey > Jg. -i, Lu. -ei; *-o > Jg. -o, Lu. -o; *-aw > Jg. -au, Lu. -ou; *-ow > Jg. -u, Lu. -ou.

5.4.1 *Etyma with *-e*

There are problems with most of the tiny number of etymologies set up with this rhyme:

‘slip’	*ble	<i>STC</i> #141
	Kanauri ble , Digaro ble ‘slippery’ Neither of these languages has been shown to have an unambiguous reflex of *-e, so that this reconstruction is called “provisional” (<i>STC</i> p. 59). ^a	
‘punish’	*nye	<i>STC</i> #252
	WT nye-žo ‘mishap’, nyes-pa ‘calamity, punishment’; Jg. nyé ‘punish, cause woe’, dìŋ-nyé ‘punishment, woe’ I suggest revising this reconstruction to *nye-s ^b (<i>cf.</i> ‘break off piece’, below).	
‘bean / legume’	*be	<i>STC</i> #253
	Lushai be , Dimasa sabai , WB pâi	
‘break off a piece’	*be ≠ *pe	<i>STC</i> #254
	Lushai pe? , WB pai ‘be broken off’ ≠ phai ‘break off a piece’; Garo be ‘break; broken’ ≠ pe ‘break down; Dimasa bai ‘break, get broken, sabai ‘break’, gabai ‘broken’, phai ‘hatch’, do-phai ‘break with an instrument’.	

52. The WB rhyme here transcribed “-au” is written “-o” in some sources (including the *WB Rhyming Dictionary* (Benedict/Matisoff 1976), though *STC* also writes it as “-au”. The same goes for the transcription of the WB rhymes with this vowel and velar final consonants, with some authors preferring “-ok” and “-oŋ”, while we here (as in *STC*) write them as “-auk” and “-auŋ”. See below 7.3(3), 8.4(1).

53. Lushai is actually less reliable than Jingpho on this score, since Lushai -e is said to interchange with -ia, as well as with -ia, -iat, -iak, and -ial; while Lushai -o varies with -ou, as well as with -wa, -wat, -wak (no examples are given in *STC*, p. 58).

5.4.2: Etyma with *-o

Again there is reason to revise this reconstruction to **be-s* \approx **pe-s*, because of the Lushai final -ʔ (see below Ch. 10) and WB creaky tone / ʔ /. On the other hand, additional data from Northern Naga languages (Konyak *pai*, Chang *pei-n̄in* [W. French 1983:458]) induced Benedict to change the reconstruction to **bay* \approx **pay* (see *GSTC* #74).

- a. This root actually has a number of other reflexes: (Karenic) Pa-o *ple*, Pwo *phle* (< PKaren **p(h)le*) \approx Sgaw *ble*, Palaychi *bli* (< PKaren **ʔble*); see *STC*:148 and Jones 1961:#128. (Himalayish) Thulung Rai *phele phele*; PTamang (Mazaudon 1993-4) **plja* > Gurung *phle-baq*, Tamang Risiangku *plei*, Thakali *pli⁵⁵-mu⁴⁴*. (Kamarupan) Taraon *ble*; Apatami *buile*; Angami *beje*. A variant with final *-l is also well attested: PTamang *pljal*; Pattani (W. Himalayish) *brel-phi* ‘slip’, *brel-cha* ‘slippery’; Lushai *pelʔ*. These forms suggest that the proper reconstruction of this word family at the PTB level is **b/plya-l*. Cuona Menba *plek³⁵* might reflect a further variant with a velar suffix.
- b. See below 11.4.1 for the nominalizing suffix -s in WT. This root is allofamically related to **s-nyen* ‘hurt/oppress’, below 7.3(2).

5.4.2 Etyma with *-o

Thanks to Jingpho, this rhyme is somewhat better attested than **-e*, with several good comparisons available between Jg. -o on the one hand, and WT -o and/or WB -au on the other:

‘delight’	<i>*pro</i>	<i>STC</i> #130
	Jg. <i>prō</i> \approx <i>pyō</i> ; WT <i>spro-ba</i> ‘delight in, wish’; WB <i>pyau</i> ‘be pleased, enjoy oneself’	
‘high’	<i>*m-to</i>	<i>STC</i> #247
	Jg. <i>məthō</i> ‘high, pinnacle’; WT <i>mtho-ba</i> \approx <i>mthon-po</i> ‘be high’	
‘be related (as kin)’	<i>*do</i>	<i>STC</i> #249
	Jg. <i>dō</i> ; WB <i>tau</i>	

Besides these, a couple of roots in **-o* may be set up at the Proto-Kuki-Chin level, (e.g. ‘shield’ **d-po* > Lushai *pho*, Lakher *veu-pho*, Bete *ipho*), for which cognates remain to be discovered elsewhere in TB.

Two more sets presented in *STC* (**pro* #248 ‘come out’ and **ke* #251 ‘neck’), were revised to **pro(k)* and **ke(k)* on the basis of better Jingpho data⁵⁴ that revealed the

54. *STC*, n. 190, pp. 58-9. See below 11.5, “Velar suffix”.

presence of final -ʔ (Jg. *próʔ*, *kéʔ*). To these we may add another set where Benedict did not have access to the Jingpho form:

**pryo(k)* (#250) ‘boiled and soft’ > Jg. *pyóʔ* ‘boiled and soft; tender’, *šəpyóʔ* ‘to boil’; WB *prau* ≈ *pyau* ‘quite ripe, very soft’, *prau* ‘soft, tender’, *phrâu* ‘parboil’ (Jg. forms from Dai *et al.*, pp. 679,773).

Finally, there does exist one promising etymology where Jingpho -o corresponds to Lahu -ɔ, thus providing the only solid example of the Lahu reflex of PTB *-o: Jg. *džò* ‘harmonize; be proper, fitting, by right or chance’ (Hanson 1906:218; Dai *et al.* 1983:352) / Lahu *cô* ‘be fitting, proper, suitable; be right, correct; fall to by chance’ (JAM 1988b [DL]:289-91) / Bola *tšɔ*²¹ < PTB **džyo*.

5.5 The non-high palatal diphthongs *-ey, *-ay, *-a:y⁵⁵

Although there are a number of cases of inter- and intra-lingual variation between the rhymes *-ey and *-ay (see below 5.5.3), and many languages (*e.g.* WT, Garo, Dimasa, Lushai, Karen) have merged their reflexes entirely, the contrast clearly did exist at the PTB level, as attested by languages like Jingpho, WB, and Lahu:

PTB	WT	Jg.	WB	Lahu	Garo	Dimasa	Lushai
*-ey	-e	-i	-i	-i	-e / -i	-ai	-ei
*-ay	-e	-ai	-ai	-e	-e	-ai	-ei
*-a:y	-e	-ai	-ai	-e	-e	-ai	-ai

5.5.1 *-ey

This well-attested rhyme is reconstructed for at least a dozen roots in *STC* and/or *GSTC*, including:

	PTB	STC#	GSTC#		PTB	STC#	GSTC#
‘buy’	* <i>b-rey</i>	293	54	‘know’	* <i>syey</i>	182	48
‘eat’	[* <i>they</i> ^a]	---	144	‘language’	* <i>rey</i> ^b	---	132
‘fire’	* <i>mey</i>	290	47	‘leg’	* <i>pey</i> ^c	---	142

55. *GSTC* (JAM 1985a:20-54) is devoted to a detailed discussion of these rhymes. The whole thrust of this article is a reconstruction of the morphosemantics of the ST copula, which happens to be a morpheme with *-ay (PTB **way* ≈ **ray*). *-ay is also discussed in JAM 1995a in the context of TB palatal suffixes. See the discussion of *-ay vs. *-a-y, below 5.5.2.

5.5.2: *-ay and *-a:y : contrastive length in a low diphthong

	<i>PTB</i>	<i>STC#</i>	<i>GSTC#</i>		<i>PTB</i>	<i>STC#</i>	<i>GSTC#</i>
‘fruit / rose’	*sey	57	46	‘look / try to’	*ney	---	145
‘get / have’	*r-ney-t	294	50	‘rattan / cane’	*rey	478	53
‘hair (head)’	*ney	292	51	‘younger sibling’	*nyey	---	146

a. Reconstructed for PNN (French 1983:477), probably ultimately < PTB ***dzya** (q.v.).

b. Attested so far only in Kamarupan: Lakher *rei* ‘language, tongue, dialect, speech’; Boro *ray* ‘language, speech’

c. Attested so far only in Kamarupan: Tiddim *phei* ‘thigh’; Lushai *phei* ‘foot, leg’; Lakher *phei* ‘leg’; Tangkhul (Pettigrew) (*ā*)*phei* ‘foot, leg’, (Bhat) *phóy*.

The crucial correspondence here is WT **-e** / WB **-i**, with Lahu and Jingpho agreeing with the WB **-i** reflex:

	<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Garó</i>	<i>Lushai</i>
‘fire’	*mey	me	<i>myìʔ-phràp</i> ^a	mî	mī	---	mei
‘fruit / rose’	*sey	se-ba	sì	sî	šī	the	---
‘get / have’	*r-ney-t	rnyed	---	---	---	---	nei
‘know’	*syey-s	śes-pa ^b	šì ^c	si’	šī	masi	---
‘look / try to’	*ney	---	---	---	ni	ni	---

a. ‘lightning’

b. Note the **-s** suffix, shared by Vayu (= Hayu) *ses*, and perhaps also reflected by the creaky tone of the WB form. See below Ch. 10, 11.4.

c. ‘news’

New etyma reconstructible with this rhyme at the PLB level include:

	<i>PLB</i>	<i>Lahu</i>	<i>Lalo</i>	<i>Other</i>
‘lump / hunk / slab’ ^a	*m-dey ¹	šā-dî	xa-dε	---
‘plant (v.)’ ^b	*ʔ-dey ¹	ti	té	Yi Dafang tə ³³ ; Yi Mojiang tε ⁵⁵ ; Lisu tu ⁴⁴ ; Naxi Lijiang tv ³¹

a. These Lahu and Lalo compounds both mean ‘hunk of meat’. Cf. PTB ***sya-m** ‘animal / body / flesh / meat’.

b. See ZMYC:598 and SB 1998. For the same Lahu/Lalo correspondence as in these two etyma, cf. ***sey** ‘fruit / rose / round object’ > Lahu *ši*, Lalo *sè*.

5.5.2 *-ay and *-a:y : contrastive length in a low diphthong

As the following correspondence chart indicates, Lushai is the crucial language in distinguishing the short vs. long versions of the ***-a(:)y** rhymes: the reflexes of short ***-ay**

and *-ey have merged to yield Lushai -ei, while long *-ay has preserved the quality of its nuclear vowel and become Lushai -ai. Other languages do not distinguish the reflexes of short vs. long *-a(:)y at all. (The multiple reflexes in Lahu are conditioned by the initial consonant, not by original vowel length.)

	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Jg.</i>	<i>Mikir</i>	<i>Garó</i>	<i>Dimasa</i>	<i>Lushai</i>
*ay	e	ai	e / i / ɪ	ai	e	e	ai	ei
*a:y	e	ai	e	ai	e	e	ai	ai

When a Lushai cognate is not available, *STC* adopts the convention of reconstructing the etymon with a short vowel.⁵⁶

(1) *Etyma with short *-ay*

(a) *Reconstructed in STC (Benedict 1972)*

STC sets in short *-ay may be divided into three groups:

- Etyma for which a Lushai cognate in -ei is lacking, so that the short vowel in the reconstruction is “short by default” (*i.e.* there is no *positive* evidence for its shortness):

	<i>PTB</i>	<i>STC</i>	<i>GSTC</i>
‘big’	*tay	#298	#68
‘fear’	*b-ray-t	#450	#66
‘good / well’	*may ^a	#300	#65
‘this / that’	*day	#21	#67

- a. This reconstruction is amended to *may in *GSTC* #65, with the addition of the Lushai cognate **maih** ‘be in good condition; plump, well-favored’, perhaps ✕ *moy ‘beautiful’ (below 5.7).

56. In *GSTC* (JAM 1985a) I distinguish between cases where there is no Lushai evidence for a short vowel from those where such evidence does exist, writing the latter reconstructions with a breve: *-ăy. We shall return to the topic of vowel length in general below (5.9, 6.3).

5.5.2: *-ay and *-a:y : contrastive length in a low diphthong

- Etyma for which a Lushai cognate in -ei is available (*i.e.* the shortness of the vowel has contrastive status). In such cases, we add a breve / ˘ / to the reconstruction:

	<i>PTB</i>	<i>Lushai</i>	<i>STC#</i>	<i>GSTC#</i>
‘change / exchange’	*g/m/s-lăy	lei	283	69
‘I / me / self’	*ŋăy	ŋei	285	70
‘navel’	*s-tăy	tei	299	71
‘self’	*tăy	tei	284	71 ^a

a. The two separate *STC* roots (#’s 299 and 284) are combined into a single etymon ‘self / navel’ *s-tăy in *GSTC* #71, as already implied in *STC* p. 65.

- Etyma where Lahu, Burmese, and/or Lushai have “irregular” reflexes, and some kind of “vowel gradation” or allofamic variation is to be posited.⁵⁷

	<i>PTB</i>	<i>Lushai</i>	<i>STC#</i>	<i>GSTC#</i>
‘pass / exceed’	*lay ɤ *ley	lei	301	58
‘tail’	*r-măy	mei	282	72
‘ten’	*ts(y)i(y) ɤ *tsyăy	--	408, n.272	73
‘tongue’	*m/s-lăy	lei	281	56

(b) Reconstructed in *GSTC* (*JAM* 1985a)

Since a major portion of this article was devoted to *-ay, it is not surprising that a large number of new etyma with this rhyme were discovered⁵⁸:

	<i>PTB</i>	<i>Lahu</i>	<i>GSTC#</i>
‘laugh’ ^a	*ray (PLB)	ḡì	1
‘spleen’	*r-pay	ḍ-pe	94
‘encircled / ringed / striped’	*pay ɤ *bay	lâ?-pē ^b	96
‘mother / grandmother / maternal aunt’	*(y)ay	ḍ-e	100
‘do / make’	*dăy	te	103
‘quotative particle’	*dzay ɤ *tsay ^c	cê	104
‘repeat / practice’	*bay	---	107

57. For details on these irregularities, see below 5.5.3-5.5.5.

Rhymes: monophthongs and diphthongs

	<i>PTB</i>	<i>Lahu</i>	<i>GSTC#</i>
‘bold / heroic’	*s-ray ⌘ *s-yay ⌘ *s-way	---	110
‘small / inferior / offspring’	*ŋay	---	111
‘languid / leisurely’	*nay	---	113
‘plant (v.)’	*kay ⌘ *gay	---	114
‘noisy / agitated’	*syay	---	115
‘effaced’	*bray	---	117
‘shallow’	*day	---	120
‘lead / tend / watch / guard’	*s-r-way	---	121
‘leaf / paper’	*lay	---	123
‘fall’ ^d	*gla-y ⌘ *kla-y	ce	125
‘flaring’	*bray ² (PLB)	pé è	127
‘go / directional particle’ ^e	*ʔay	e	128
‘cattle / domestic animal’ ^f	*dzay	cê -cà	129
‘interrogative particle’ ^g	*lay	le	131
‘come / go’	*pay ^h (Kmrp)	---	139
<i>copula-related morphemes</i>			
‘nominalizer’	*way	ve	pp. 59-63
‘things / stuff’	*ray	ǵì	<i>ibid.</i>
‘pluralizer’	*s-ray	hɿ	<i>ibid.</i>
‘God’	*g-ray	ǵì -ša	<i>ibid.</i>

a. This root is reconstructed as *rya-t in *STC* #202, passing over the WB reflex ray in silence. This form is certainly to be reconstructed *ray at the PLB level. The variation is to be explained either in terms of metathesis or by invoking the “palatal suffix” (below 11.6).

b. ‘a ring’

c. This reconstruction is revised from *GSTC* *džay ⌘ *tšay.

d. This root is certainly related to *gla ⌘ *kla (*STC* #123). These variants in -y illustrate one of the principal functions (“motion away”) of the PTB palatal suffix (JAM 1995a). See below 11.6.

e. Cf. also Lalo jí.

f. Cf. also Lalo dǵì. Ultimately the same etymon as *GSTC* #106 and #143 (qq.v.). See below §2.

g. The final -y in this etymon has been shown to be suffixal (JAM 1995a).

h. Accidentally homophonous with a Tai root, PTai *pay ‘go’.

58. The forms tabulated below are sorted by *GSTC* set number.

5.5.2: *-ay and *-a:y : contrastive length in a low diphthong

(2) *Etyma with long *-a:y*

These etyma are reconstructed with a long vowel because of their Lushai (or other Kuki-Naga) supporting forms in -ai:⁵⁹

	<i>PTB</i>	<i>Lushai, etc.</i>	<i>Lahu</i>	<i>STC</i>	<i>GSTC#</i>
‘crab’	*d-k(y)a:y	ai	á-ci-ku	#51	59
‘whirl / brandish / wave’	*wa:y	vai	---	#90	60
‘twist / knead’	*m-na:y	[khənai] ^a	---	#286	61
‘middle / center / navel’	*la:y	lai	le ‘trigger’	#287	62
‘dig up’	*la:y	lai	---	#288	63
‘play’	*r-tsa:y	tśai	---	#289	64
‘good / well’ ^b	*ma:y	mai	---	#300	65
‘sting / scold’	*ta:y	tai- ^c	dê	---	93
‘belt / zone / waist’ ^d	*m/s-ta:y	tai	ð-de	---	95
‘lie / deceive / dissemble’	*ha:y	hai	hē	---	99
‘pound / crush’	*ta:y ≈ *da:y	[dai; khəŋətai] ^e	tē	---	102
‘pus’	*s-na:y	hnai	---	---	105
‘temperament / talent’	*(t)sa:y ≈ *(d)za:y ^f	zai	---	---	106
‘rust / dross / stain / shit’	*(t)sa:y	tai	---	---	108
‘face’	*s-ma:y	hmai	---	---	109
‘scoop / dip out’	*(t)sa:y	[sai-] ^g	---	---	112
‘retaliate / bear a grudge’	*m-ta:y	tai	---	---	118
‘lame / limp / askew’ ^h	*pa:y ≈ *ba:y	bai ≈ pai	---	---	124
‘love / make love’ ⁱ	*ŋ-(w)a:y	uai ≈ ŋāi	---	---	126
‘mango’	*ha:y (<i>Kmrp</i>)	hai	---	---	136
‘dew’	*da:y (<i>Kmrp</i>)	dai	---	---	137
‘pull / drag / lead’	*ka:y (<i>Kmrp</i>)	kai	---	---	138
‘conceive / pregnant’	*pa:y (<i>Kmrp</i>)	pai	---	---	140
‘pumpkin’	*ma:y (<i>Kmrp</i>)	mai	---	---	141

- a. This form is not from Lushai, but rather from Tangkhul Naga. The long vowel is confirmed by W. French's PNN reconstruction **ñā:y* 'soft' (1983:550).
- b. See the note in §1a, above.
- c. In the compounds *tai-tēm* ~ *tai-têng* 'name of a stinging nettle' and *tai-vâng* 'name of a large ant (that presumably inflicts a sting)'.⁵⁹
- d. Lh. *de*, *ð-de* 'belt of land between the high rain-forest and the plains; large expanse of terrain' and Luquan Lolo *nt^he*¹¹ 'plain / flat expanse', point to PLB **m-day*³. The *s-* prefix is reflected in WT *sde* 'part, portion (e.g. of a country), province, district, territory'. Lushai *tai* 'waist', *tai-von* 'wear in the belt' descend from the prefixless root. There is a good Chinese cognate, below 5.5.7.
- e. The first of these forms is from Lakher (Central Chin, like Lushai); the second is from Tangkhul Naga.
- f. I have discussed this etymology (which is actually to be combined with *GSTC* #143 'elephant / cattle' and *GSTC* #129 'cattle / domestic animal' (below) in a separate article devoted to semantic ramifications of word-families (JAM 1988a "Property / livestock / talent").
- g. This form is from Lakher (*sai-kyu* 'dipper, ladle', *thai* 'dip out, ladle out'). Cf. also WB *chai* 'take out of water, save from drowning' and Mikir (Grüssner) *chày* '[perform action] in sthg liquid'.
- h. This root is to be related to *STC* #47 'leftside' **b(w)ăy*, where Lushai has a reflex in *-ei* (5.5.2.1 below). It is misreconstructed with a short vowel in *GSTC* #124, not taking account of the Lushai cognates in *-ai*. This is really an instance of allofamic variation between long and short vowels. There is a possible Chinese comparandum (below 5.5.7).
- i. This etymon is misreconstructed with a short vowel in *GSTC* #126, not taking account of the Lushai cognate in *-ai*.

(3) *Lahu conditioned reflexes of *-a(:)y*

The most general Lahu reflex of these rhymes is definitely *-e* (see exs. above), though this is impossible to deduce from the forms cited in *STC*. By a strange coincidence, only three of the sets reconstructed in *STC* with **-ay* or **-ary* have known Lahu cognates ('ten', 'crab', 'tail'),⁶⁰ none of which have the most common Lahu reflex: Lh. *chi* 'ten', *á-ci-ku* 'crab', *mē-tu* 'tail'. There are actually three conditioned reflexes of these rhymes in Lahu:⁶¹

59. The following forms are sorted by their *STC* and/or *GSTC* set numbers. An additional example, noted first by KVB, is PTB **gray* 'scatter / sow / disperse' > WB *krâi*, Lushai *trai* (for the initial correspondence, see above 3.6.4.1(2)). I believe that this etymon also underlies WB *krai* and Lahu *məʔ-kə* 'star' (the scattered spots of light in the night sky). An allofamically related root is **glay* 'wide apart'. See JAM 1980 and below 5.5.7.

60. Two more ('chaff / husks', 'leftside') are reconstructed with medial *-w-* (below 5.3.2.1).

61. Other, problematic Lahu reflexes, including the *-ε* in 'tail', are discussed in *GSTC* pp. 49-52 (#'s 156-165).

5.5.2: *-ay and *-a:y : contrastive length in a low diphthong

(a) *After palatals*

PTB/PLB *-ay > Lahu i / c-, ch- _____ 62

	<i>PTB</i>	<i>WB</i>	<i>Lahu</i>	<i>Jg.</i>	<i>WT</i>	<i>STC#</i>	<i>GSTC#</i>
‘crab’	*d-k(y)a:y		á-ci-kuɤ á-cè-gu	---	---	51	4; 59
‘ten’ ^a	*tsyay	chai	chi	śī	b́cu	408	73
‘tooth / tusk’ ^b	*m-dzyway	cwai	cì	---	mt́she-ba	---	3; 160

a. For vowel gradation in this root, see below 5.5.5; for the WT reflex, see note in §5.3.2(2c) above.

b. This root does not appear in *STC*; despite its labial glide, for convenience we include it here instead of under 5.5.2.1.

(b) *After *-r-*

PTB/PLB *-ay > Lahu ɪ or ə / *-r- _____ 63

	<i>PTB</i>	<i>WB</i>	<i>Lahu</i>	<i>Jingpho</i>	<i>STC#</i>	<i>GSTC#</i>
‘god’	*g-ray	---	ǵì-śa	kərài-kəsāŋ	---	pp.59-62
‘insert / put into’ ^a	*ʔ-gray ¹ (PLB)	---	kə			
‘laugh’	*r-ya-y	rai	ǵì	---	202	1
‘pluralizer’ ^b	*s-ray	---	hɪ	---	---	<i>ibid.</i>
‘things / stuff’	*ray	---	ǵì	rái	---	<i>ibid.</i>
‘star’ ^c	*gray	krai	məʔ-kə	---	---	(JAM 1980)

a. Cf. Lalo ki; Yi Xide kɯ²¹; Sani kɔ³³; Lisu kɯ³³; Naxi Lijiang khɯ⁵⁵. The initial cluster is reflected by affricates in Yi Weishan cɛ³³; Yi Nanhua dʒi³³; Yi Wuding tɕɛ². See *TBL*:#1315.

b. Cf. also Lakher (= Maraa) hrai.

c. See above n. 59.

62. Note that after dental affricates, Lahu has the regular reflex -e (see above, ‘quotative particle’; ‘cattle’). In any case there is a good deal of synchronic variation in Lahu between -e and -i, as there is between -o / -u and -ɪ / -ə. See *GL*:pp. 10ff.

63. The regular Lahu reflex of *-r- is ǵ- [ɣ], but there is no synchronic Lahu syllable *[ǵe]. Voiceless *hr and preglottalized *ʔ-r- both become Lahu h-. See above 3.4.2. The -ə reflex in ‘star’ is not a big problem, since Lahu shows considerable synchronic variation between -ɪ and -ə. See n. 62.

In this post-rhotic environment *-ay merges with the Lahu reflex of *-əy:

	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>	<i>Lalo</i>
‘run’	*b-ləy ²	prê	gî	gə
‘water’	*rəy ¹	re	gî	yə

5.5.2.1 *-way and *-way

The most direct evidence for reconstructing medial -w- in these rhymes is provided by the WB reflex -wai. When a Lushai cognate is available, it can distinguish between the short and long versions, with short *-way becoming Lu. -ei (thus merging with the non-labialized short rhyme *-ay, above), while long *-way develops into Lu. -oi or -uai. So far no cognates have been found for etyma with these rhymes in languages like WT, Garo, or Dimasa:

<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Garo</i>	<i>Dimasa</i>	<i>Lushai</i>
*-way	?	-ai / -oi	-wai	?	?	-ei
*-way	?	-ai / -oi / -we	-wai	?	?	-oi / -uai

Six etyma with these rhymes are reconstructed in *STC*, three of which have a Lushai cognate in -oi or -uai, and are thus reconstructed with a long vowel:

	<i>PTB</i>	<i>STC#</i>	<i>GSTC#</i>	<i>WB</i>	<i>Lushai</i>	<i>Jingpho</i>
‘buffalo’	*lway	208	75	kywai	loi	wəlōi
‘dammer-bee’	*kway	157	76	kwâi	khuai ~ khoi	---
‘husks / chaff’ ^a	*pway	170	77	phwâi	phuai	šəpōi

- a. Lahu has a good reflex of this etymon: cà-*phî* ‘paddy-chaff’, vâ?-*phî* ‘powdery chaff fed to pigs’ (cf. also Mpi ko?*phua*²). Lahu shows a similar central vowel /ə/ in two other sets in this rhyme-group, also with labial initials, ‘finish / past’ and ‘yam’ (below). Another root probably to be reconstructed with the *-way rhyme is PLB *pwəy¹ ‘gray / pale’ > Lahu phî, Lalo phé.

Two other etyma have no Lushai cognate, and are reconstructed in *STC* with a short vowel “by default”, though the Jg. cognates seem to suggest an original long vowel:

	<i>PTB</i>	<i>STC#</i>	<i>GSTC#</i>	<i>WB</i>	<i>Jingpho</i>
‘conceal / shun’	*kwa(:)y	303	79	kwai	kōi, məkōi
‘easy’	*lwa(:)y	302	78	lwai	lōi ~ lwè

5.5.2.1: *-way and *-wa:y

The remaining etymon in this group (‘left’) actually belongs to a complex word-family, comprising allofams both with and without medial -w-, and with semantic ramifications into the semantic area of “awkward, misaligned; lame, limp”⁶⁴:

	<i>PTB</i>	<i>STC</i>	<i>GSTC</i>	<i>WB</i>	<i>Lushai</i>	<i>Jingpho</i>
‘left / lame / askew’	*b(w)ǎy	#47	#124	bhai ‘left’ ^a	vei ‘left’	əpāi ‘awkward’

a. Other WB allofams include lak-wai ‘left hand’ and wāi ‘speak with a brogue’.

Nine additional roots with *-wa(:)y are reconstructed in JAM 1985a (*GSTC*). Three of these have Lushai reflexes, and are set up with a long vowel:

	<i>PTB</i>	<i>GSTC</i> #	<i>Lushai</i>	<i>Jingpho</i>	<i>Lahu</i>
‘wither / fade’ ^a	*hwa:y	98	uāi ~ vuāi	wái ~ wói	hwē
‘flurried / dazed / foolish’ ^b	*h(w)a:y	135	hāi ‘dizzy, giddy’ ɤ vǎi ‘bewildered’	---	---
‘hang’ ^c	*k(w)a:y	134	khai ‘suspend’ ɤ kuǎi ‘droop’	---	---

a. Cf. also Tangkhul khəŋəhui (Pettigrew), hùy (Bhat). This set presents a perfect TN/Lahu parallel to *way ‘copula’ > TN wui, Lh. ve. See above §1b.

b. This etymon is so far attested only in Chin languages. Cf. Tiddim hai ‘foolish’.

c. This is another Kamarupan root, misreconstructed in *GSTC* #124 with a short vowel. Confirming the long vowel are Tiddim Chin kai ‘be suspended’, xai ‘hang something up’.

Most of the other etyma in this group are reconstructed with a short vowel “by default”. Several show variation between labialized and non-labialized prototypes:

	<i>PTB</i>	<i>GSTC</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>
‘cohesive / elastic’	*s/ʔ-n(w)ay	#97	ʔnāi ɤ ʔnōi	---	nê
‘divert / push aside’	*s/ʔ-lway ɤ *s/ʔ-rway	#101	---	hrāi ɤ lwāi	hē
‘put together; be even with / up to’ ^a	*dway	#116, #119	tōi ɤ tòi	twāi	---
‘hang from / cling to / creeper’ ^b	*dway ɤ *nway	#153	nói	twai ɤ nwai	te

64. See above 5.5.2(2) and below 5.5.5, 5.5.7.

	<i>PTB</i>	<i>GSTC</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>
‘yam’ ^c	*m-n(w)ay	#165	ʔəʔnài	---	mā

- a. This root was split into two sets in *GSTC*, though only a single etymon is involved, as the glosses of the individual forms make clear: Jg. *tōi* ‘put together’, *tōi* ‘be even with’, *tōi-tōi* ‘*id.*’ (as in *ləphút tōi-tōi* ‘knee-deep’), Lakher *tai* ‘as far as; up to; all the way to’.
- b. The interesting *d- \approx *n- variation in this etymon makes it worthwhile to cite the supporting forms in detail: WB *twai* ‘cling to, attach’, *twâi* ‘be pendent, hang’, *twai* ‘hang suspensively’, *nwai* ‘stretch along, as a creeper’, *ʔənwai* ‘creeper’; Lahu *te*, *ð-te* ‘creeper’; Jg. *nōi* ‘cling to, depend on’, *nōi* ‘suspend, hang’, *ʔənōi* ‘hang on to’, *mənōi* ‘cling to, be united’, *mənōi rù* ‘a variety of creeper’.
- c. Cf. also Lotha Naga *mání*, Sgaw Karen *nwe*; the Lahu form shows preemption by the prefix.

In one case, Lushai cognates in -ei permit the definite reconstruction of a short vowel:

- ‘finish / past’ *b^wăy (*GSTC* #164) > Jg. *bōi* ‘be ended’; WB *p^wâi* ‘be past the season’; Lushai *pěih* ‘finish, complete’, *vêi* ‘come to an end’; Tangkhul *kəpəy* ‘be complete’.⁶⁵

For the similarity between the reflexes of *-way and *-oy, see below 5.7.

In the following sections (5.5.3-5.5.6), I list the considerable number of diphthongal roots with front vowels that display “vowel gradation”.⁶⁶ However, as *STC* (pp. 68-9) makes clear, “Generally speaking, TB vowel gradation is sporadic and irregular, and can hardly be compared with that found in Indo-European...”⁶⁷

5.5.3 *-ey and *-ay interchange⁶⁸

		<i>STC</i>	<i>GSTC</i>
‘near’	*s-ney \approx *s-na:y *ney > Jg. <i>nì</i> , WB <i>nî</i> *s-na:y > Lushai <i>hnai</i> , Tangkhul <i>khəŋənai</i> , Tiddim <i>na:i</i> , Lahu <i>nê</i> .	p.68	#55
‘tongue’	*s-ley \approx *s-lay \approx *s-l(y)a This highly variable root displays both *-ey \approx *-ay and *ay \approx *a variation ^a : *m/s-lay > WT <i>ltse</i> , Jg. <i>lài</i> (couplet form), Dimasa <i>salai</i> , Lushai <i>lei</i> , Mikir <i>de</i>	#281	#56

65. For the similarity between the Lahu -ə reflex in ‘yam’ and its -ɨ reflex in ‘chaff’, see notes 62, 63 above.

66. Allofamic variation involving diphthongal roots with back vowels will be discussed below (5.6.3-5.6.4).

67. See below Ch. 12.

5.5.3: *-ey and *-ay interchange

		STC	GSTC
	<p>*C-ley (PNN) > Yogli li, Wancho le, Konyak yi, Phom yei; also Tiddim Chin lei, Jg. śinli (another couplet form)</p> <p>*s-lya > WB hlya, Lahu ha-tē.</p>		
‘pass / exceed’	<p>*s-lay ≈ *s-ley</p> <p>*s-lay > Jg. lài ≈ śəlài, Dimasa lai, Mikir le, Lushai lei ≈ hlei, Tiddim lai, Lakher lai-pa ‘leftovers’</p> <p>*s-ley > Lakher hlei ‘more than others’.</p>	#301	#58
‘buy / barter’	<p>*b-rey ≈ *r-ley</p> <p>Contra STC (n. 205, p.64) this root certainly seems allofamically related to *g/m-lay ‘change / exchange’ (STC #283).^b</p>	#293	#54
‘tail’	<p>*r-may ≈ *r-mi or *r-mey</p> <p>*r-mey > WB ʔəmrî, Akha dè-mì</p> <p>*r-may > Jg. ò-mài</p> <p>Lushai mei is consistent with either reconstruction; Mikir has a doublet: arme ≈ -mí. French (1983) reconstructs PNN *C-mey. The Lahu reflex mē(-tu) is not regular for either proto-rhyme (see also ‘left’, below 5.5.5).</p>	#282	#72
‘rice / paddy’	<p>*may ≈ *mey</p> <p>The rhyme of this etymon (attested mostly in Bodo-Garo) is not reconstructed with certainty in STC: “*m[a/e]y”. There is also evidence for a monophthongal allofam *ma.^c</p>	pp.65,192	#57
‘bamboo strip (for tying)’	<p>*ʔ-nay^{1/2} ≈ *ʔ-ney</p> <p>*ʔ-nay > Lahu vâ-ne (vâ ‘bamboo’) [< PLB Tone *1]; Akha á-nè [< *2]; Bisu né-phò</p> <p>*ʔ-ney > WB hnî; Proto-Karen *ñai ‘fiber’ (Mazaudon 1984); Proto-Tamang hnāi (<i>ibid.</i>)</p>	---	#130
‘bridge / ladder’	<p>*s-lay ≈ *s-ley</p> <p>*s-ley > Lushai lei, Tiddim lèi, Lakher hlei-ri</p>	---	#133 & n.78

68. For more details on these etymologies, see JAM 1985a (GSTC), §4.211 (pp. 26-7).

STC GSTC

*s-lay > Chepang hlayʔ; Tangkhul śay ‘small bridge’, śay-ron
‘ladder’^d

- a. See below 11.6 (“Palatal suffixes”).
 b. Benedict claims that *b-rey ≠ *r-leɣ is a loan from Austro-Tai (PAT *(m)baʎi).
 c. See JAM 1995a “Palatal suffixes”, and below 11.6.
 d. There is also an excellent Chinese comparandum, 梯 OC *tjær (*GSR* #591-L), Mand. tī. See below 5.5.7.

These two proto-diphthongs seem to have largely fallen together in Karenic, with rampant intralingual variation (see *STC*:149-50; *GSTC* p.23), though much more data collection and comparative work remains to be done on Karen dialects:

	<i>PTB</i>	<i>Pwo</i>	<i>Sgaw</i>	<i>Palaychi</i>	<i>Pa-o^a</i>
	*-ey	-e	-e	-i / -e / -ə	-i / -e
‘fire’	*mey	me	me	mi	mi ≠ me
‘get / obtain’	*ney	ne	ne	ni ≠ ne	---
‘know’	*syey	θe	θe	---	---
‘rattan’	*rey	ye	ye/ɣi	ɣi	re
‘rice’	*mey/*may ^b	me	me	mə	---
‘tiger’	*d-key	khe	khe	---	---
	*-ay	-ai / -e / -ɛ	-ɛ / -e	-ɛ / -ə / -i / -e	-e
‘exchange’	*g-lay	lai	lɛ	---	---
‘navel’	*s-tay	de	de	di-	pəde
‘tail’	*r-may	me	mɛ	mə	me
‘tongue’	*s-lay	phle	pəle	ple	phre
‘yam’	*m-n(w)ay	nai ≠ néʔ	nwɛ	nwɛ	nwe
	*-a:y	-ai / -e	-ɛ / -e	-ɛ / -ə	-e
‘bee’	*kwa:y	kwe	kwɛ	---	---
‘chaff’	*pwa:y	phe	phe	---	phe
‘crab’	*d-ka:y	shwai ≠ shwe	shɣɛ ≠ shwɛ	shwɛ	tshwe
‘love’	*ŋ-wa:y	ai	ɛ	ʔə	ʔe

- a. This Karen dialect was formerly known as “Taungthu” (< Burmese “mountain-folk”), an exonym now felt to be pejorative.

5.5.4: *-i(y) and *-ey interchange

b. See above for the indeterminate reconstruction of this root.

Summary of fates of *-ey and *-ay:

	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Bahing</i>	<i>Jg.</i>	<i>Mikir</i>	<i>Garó</i>	<i>Dimasa</i>	<i>Lushai</i>
*ey	e	i	i	i	i	e	e	ai	ei
*ay	e	ai	e / i / ɿ	e	ai	e	e	ai	ei

5.5.4 *-i(y) and *-ey interchange⁶⁹

There are several cases of alternation between *-ey and short *-i or long *-əy (= *-iy). The reflexes of *-i and *-ey are identical (*i.e.* -i) in any case for many languages, including WT, WB, Jingpho, and Lahu.

		<i>STC#</i>	<i>GSTC#</i>
‘aunt’	*ney ≍ *ni(y) *ney > WT ʔəne, Tsangla ənye, Kanauri əne *ni(y) > Lushai ni, Garó ma-ni, Mikir ni Jg. nī could descend from either variant.	316	---
‘cane / rattan / rope’	*rey ≍ *s-rwi(y) *rey > Magari ri ‘cane’; Jg. rì ‘rattan, cane, cord, string, thread’, sūm-rī ‘a cord or rope’, sūm-rì ‘be tied, united, as by cords of friendship’ (Hanson 1906:596, tones from Maran, in prep.); Nung thəri ‘cane’, ban-rī ‘rope, string’, səri ‘thread’; Garó re; Dimasa rai ‘rattan, cane’; Abor-Miri ri-bui ‘cane, creeper’. *s-rwi(y) > Lushai hrui; Digaro tərui ~ tərōi, Abor tərū ‘cane’.	478, 201	
‘earth’	*m-ley ≍ *m-ləy *m-ley > Lushai lěi, Tangkhul ɲəɾəy, Lahu mī *m-ləy > Mikir mili ≍ meli ‘sandbank’, Muya (Qiangic) məli, WB mre, Hpun (Samong) təmli	152	152 ^a

69. As observed above, “*-(i)y” is a convenient abbreviation for “*-i or *-əy”; it does not work to write “*-(ə)y”, since there is no open-syllable rhyme *-ə.

		STC#	GSTC#
‘penis’	<p>*m-ley \approx *m-li</p> <p>*m-ley > WT mdže</p> <p>*m-li > Kanauri kut-<i>li</i>, Bahing bli, Garo <i>ri-gaŋ</i>, Dimasa li</p> <p>WB lî and Lahu nî (with preemption by the prefix and assimilation of the prefix to the original root-initial) could descend from either variant. Jg. mənè ~ mənè? (with similar assimilation of the initial to the prefix) seems to reflect neither of these allofams, but could descend from PTB *m-le (see above 5.4).</p>	262	49
‘tiger’	<p>*d-kəy \approx *d-key</p> <p>*d-key > Mikir teke, Lakher tsəkei, Proto-Kiranti *key-ba ‘tiger’, Miri si-ke ‘species of civet’</p> <p>*d-kəy > WB <i>khye-sac</i> ‘leopard cat’</p>	p.116	52

a. STC does not recognize the variant in *-ey. By coincidence these sets are numbered the same in STC and GSTC!

5.5.5 *-i(y) and *-ay interchange

A few etyma (most importantly the numeral ‘ten’) show this variation:

		STC	GSTC
‘ten’	<p>*ts(y)i(y) \approx *tsyay</p> <p>*ts(y)i(y) > Jg. (t)śī, Garo tsi, Dimasa dži, etc.</p> <p>*tsyay > WB ʔəchai, Lahu chi ^a</p>	#408	#’s 2 and 73
‘left’	<p>*r-bi(y) \approx *b(w)ăy</p> <p>*r-bi(y) > Mikir arvi</p> <p>*b(w)ay > WB bhai ‘left’ \approx lak-wâi ‘left hand’, Jg. pāi, Lushai vei, etc.</p> <p>The -ε vowel in the Lahu reflex làʔ-mē ‘left hand’ is irregular, like ‘tail’, above 5.5.3; the Lahu initial is also irregular in this complex etymon. See above 5.5.2(2), 5.5.2.1, and below 5.5.7.</p>	#47; p. 68	#’s 80 and 124

a. For more discussion see JAM 1995b (“Numerals”), §3.22, pp. 134-5.

Finally, alongside the basic copular morpheme *way \approx *ray reconstructed in GSTC, there is a group of others with *-i or *-ay vocalism : *rəy, *s-ri, *s-rin, *s-rit (JAM 1985a:pp. 63-4).

5.5.6: *-ey and *-eN interchange

5.5.6 *-ey and *-eN interchange

STC (pp. 79, 171, 183) sets up a PTB root *sre[ŋ] ‘squirrel; weasel’, on the basis of WT sre-moŋ ‘weasel’, Mikir iŋren ‘mongoose’, and WB hrañ ‘squirrel’.⁷⁰ Several additional forms cited in *GSTC* #151 point to a variant in *-ey (Lushai hlěi ‘squirrel’, Abor-Miri lí-po, Tangkhul Naga saŋri, khərey, cireŋ), leading to a pan-allofamic formula like *s-ley ⇌ *s-leŋ ⇌ *s-rey ⇌ *s-reN.⁷¹

5.5.7 Chinese comparanda to PTB palatal diphthongal roots

Chinese is of little help in differentiating these TB rhymes, though *STC* makes nine specific comparisons of Chinese forms with PTB roots in *-ay, *-ey, or *-oy, and *GSTC* (n. 42) goes on to add several more:

	PTB		OC	GSR	STC#	GSTC#
‘beautiful’	*moy	美	mjər	568a-e	304	81
‘belt / zone’	*m/s-ta:y	帶	tād	315a	---	95
‘big’	*tay	泰	t’ād	316a	298	68
		大	d’ād	317a-c		
		太	t’ād	317d-e		
‘bridge / ladder’	*s-lay ⇌ *s-ley	梯	tjər	591l	---	133
‘come’ ^a	*la-y	來	ləg	944a	---	185
‘crab’	*d-k(y)a:y	蟹	g’əg	861d	51	4; 59
‘love’	*ŋ-(w)a:y	愛	ʔəd	508a	pp.150,192	126
‘near’	*s-ney ⇌ *s-na:y	邇	ńjār	359c	291	55
‘repeat / practice’	*bay	倍	b’wəg	999c’	---	107
‘rhinoceros’	*b-sey	犀	siər	596a-b	p.193	---

70. *STC* sets up the nasal-finalled allofam with *-ŋ, even though *-n seems equally likely, probably because the putative Chinese cognate, OC *srjēŋ ‘weasel’ (*GSR* #812t-u) has -ŋ.

71. This alternation between final semivowel and nasal is similar to the much better attested *-ay ⇌ *-an, below 12.4.

Rhymes: monophthongs and diphthongs

	<i>PTB</i>	<i>OC</i>	<i>GSR</i>	<i>STC#</i>	<i>GSTC#</i>
‘rice’	*may/*mey	miər	598a-c	p.65 <i>etc.</i>	57
‘spleen’	*r-pay	b’iǎg	874h	---	94
‘tail’	*r-may	miwər	583a-b	282	72
‘talent / aptitude’ ^b	*(t)sa:y *(d)za:y	dz’æg	934a	---	106
‘vegetable’	*r-tsa:y	(MC) ts’âi’ ^c	AD1025	---	161
‘wide apart’ ^d	*glay	𐌂𐌆	t’ia	3t	---
‘younger sibling’	*doy *toy	d’iər	591a-c	309	86

a. Cf. JAM 1995a (“Palatal suffixes”).

b. Cf. JAM 1988a (“Property, livestock, talent”).

c. In *AD*, Karlgren marks MC *qùshēng* tone with “ ’ ” at the end of the syllable.

d. Cf. Lai Chin (KVB) tlay ‘be apart, be separated; be weaned’, WB kyai ‘wide, broad’, kyâi ‘wide apart’. This root seems to be allofamic with *gra:y ‘scatter, sow, disperse; star’ (above n. 59). The Chinese form means ‘wide, extend’. See Gong 2001:30-1.

Another attractive comparison is PTB *pa:y
*ba:y and Chinese ‘walk lame’, OC pwâ (*GSR* #25m), reconstructed by WHB as OC pajʔ. See above 5.5.2(2).

Perhaps the most important ST etymon with a palatal diphthongal rhyme is *way
*ray ‘copula’, the main topic treated in *GSTC* (JAM 1985a).⁷² On the TB side, forms reflecting the *way allofam include:

- (*Loloish*) Lahu ve ‘nominalizer; marker of citation form of verbs; subordinator’; Akha ø ~ ɔ̃ ‘subordinator; citation-form marker; terminator of utterances in declarative mood’; Lisu (Fraser 1922) rgh⁵ (*i.e.* /ɣ⁵/); Phunoi and Mpi ø; Bisu hú; Luquan ve³³ ~ ve⁵⁵ ‘subordinator; final particle’ (Ma 1949)
- (*Jingpho-Nung*) Jg. ʔai ‘relativizer; marker of citation form of verbs; nominalizer’; Dulong e⁵³ ‘copula’ (Sun Hongkai 1982)
- (*Himalayish*) Sherpa wəy ~ wye ‘final particle in VP’s in certain tenses and persons’; Khaling we ‘past tense suffix after negated verb’, e ‘evidential particle marking

72. See esp. *GSTC*:57-8. This paper revised the reconstruction *wəy offered in Thurgood 1982. See also Bradley 1979:#’s 838, 844.

5.6: The non-high labial diphthongs: *-ow, *-aw, *-a:w

reported speech’; Newar *ye* ~ *e* ‘marker of citation form of verbs; of non-past conjunctive verb stems ending in -n or -l’

- (*Kamarupan*) Lushai *e* ~ *ve* ‘verbal expletive or verbal ending’; Gallong *ye* ~ *re* ‘future indefinite or negative; question marker; incomplete past’; Abor-Miri *ai* ‘clause final particle, *ái* ‘interrogative particle’ (Lorrain 1907); Tangkhul Naga *wui* ‘genitive particle’; Meithei *oi-ba* ‘copula’ (Thoudam 1980:48); Garo *-e-* ‘marker of adverbial clauses’; Nocte *-e-* ‘continuous action; stativity’
- (*Karenic*) *-wé-* ‘reported speech’
- (*Qiangic*) Xixia *vje* (Kepping 1975), *wji* ‘do, make, be; act as’ (Nishida 1964/1966).

On the Chinese side, Benedict (1981) cited several likely comparanda, especially a copular morpheme written variously as 佳唯維惟, OC *d̥iwəŋ* (*GSR* #575n-o) > Mand. *wéi*, changing the reconstruction to a doubly prefixed form **s-g-wəy* (better: **s-g-way*) on the basis of *xiéshēng* evidence.⁷³

5.6 The non-high labial diphthongs: *-ow, *-aw, *-a:w

The mid-vowel labial diphthong **-ow* is reconstructed when WT has *-o* and Lushai has *-ou*, corresponding to WB and Jingpho *-u*. In the absence of WT and/or Lushai cognates, WB and Lahu alone are powerless to distinguish between **-ow* and **-u*, both of which give *-u* in both languages.⁷⁴ On the other hand, WT and Lushai by themselves cannot distinguish between **-ow* and short **-aw*, both of which become *-o* in WT and *-ou* in Lushai. The contrast between short **-aw* vs. long **-a:w* is reflected best in Lushai. See the following charts:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Garó</i>	<i>Dimasa</i>	<i>Lushai</i>
<i>*-ow</i>	<i>-o</i>	<i>-u / -au</i>	<i>-u</i>	<i>-u</i>	<i>-o</i>	<i>-au</i>	<i>-ou</i>
<i>*-aw</i>	<i>-o</i>	<i>-au</i>	<i>-au</i>	<i>-o</i>	<i>-o</i>	<i>-au</i>	<i>-ou</i>
<i>*-a:w</i>	<i>-u / -o</i>	<i>-au</i>	<i>-au</i>	<i>-o</i>	<i>-o</i>	<i>-au</i>	<i>-au</i>

73. In his appendix to *GSTC* (p. 66), Richard Kunst cites another Chinese copular form written 惠 (inscriptional form), or 惠 (received text form) OC *g̊iwəd* (*GSR* #533a-d) > Mand. *huì*, found in the oldest (Western Zhou) stratum of the *Yijing* 易經.

74. In the etymologies given in my Lahu dictionary (“*DL*”; JAM 1988b), I did not invoke PLB **-ow*, since PTB **-u* and **-ow* merged in both WB and Lahu, e.g.: Lh. *chu* ‘fat’ < PLB **tsu*¹ < PTB **tsow* (*DL*:530); Lh. *chû* ‘thorn’ < PLB **tsu*² < PTB **tsow* (*DL*:531); Lh. *thu* ‘thick’ < PLB **tu*¹ < PTB **tow* (*DL*:679). Maybe this decision should now be revisited in the light of other LB languages, especially since *DL* does recognize PLB **-ey*, which has similarly merged with **-i* in WB and Lahu.

Compare these reflexes to those of the high back monophthong and diphthong (above 5.3.1):

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Garó</i>	<i>Lushai</i>
*-u	-u	-u	-u	-u	(-u)	-u
*-uw / *-əw	-u	-u	-ui	-ɔ / -u	-u	-u

These correspondences are beautifully paralleled by the reflexes these languages display for the corresponding palatal diphthongs, so that we can express the relationships in exactly the same way. As shown above (5.5), the mid-vowel palatal diphthong *-ey is reconstructed when WT has -e and Lushai has -ei, corresponding to WB and Jingpho -i. In the absence of WT and/or Lushai cognates, WB and Lahu alone are powerless to distinguish between *-ey and *-i, both of which give -i in both languages. On the other hand, WT and Lushai by themselves cannot distinguish between *-ey and short *-ay, both of which become -e in WT and -ei in Lushai. The contrast between short *-ay and long *-a:y is again reflected best in Lushai:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>Nung</i>	<i>WB</i>	<i>Lahu</i>	<i>Garó</i>	<i>Dimasa</i>	<i>Lushai</i>
*-ey	-e	-i	-i	-i	-i	-e / -i	-ai	-ei
*-ay	-e	-ai	-ɛ	-ai	-e	-e	-ai	-ei
*-a:y	-e	-ai	-ɛ	-ai	-e	-e	-ai	-ai

We may similarly compare these reflexes to those of the high front monophthong and diphthong (above 5.3.2):

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>Nung</i>	<i>WB</i>	<i>Lahu</i>	<i>Maru</i>	<i>Garó</i>	<i>Lushai</i>
*-i	-i	-i	-i	-i	-i	-i	-i	-i (?)
*-əy	-i	-i	-i	-e	-ɪ / -i / -ɔ	-it / -a	-i	-i

5.6.1 *-ow

STC reconstructs 14 etyma with *-ow:

<i>STC#</i>			<i>STC#</i>		
‘tender / soft’	*now	274	‘arise / awake’	*m-sow	295
‘boil / bake’	*tsyow	275	‘blue / green’	*s-ŋow	296
‘thorn’	*tsow	276	‘female relative’	*mow	297

5.6.2: *-aw vs. *-a:w : contrastive length in a low diphthong

		STC#			STC#
‘fat’	*tsow	277	‘hammer’	*tow × *dow	317
‘nit’ ^a	*s-row	278	‘cross over’	*gow	318
‘long’	*low	279	‘thick’	*tow	319
‘work / move’ ^b	*mow	280	‘pine / fir’	*row	320

- a. To the two reflexes of this rare etymon cited in *STC* (Central and West Tibetan *sro-ma*, Jg. *tsɿ-rù*) may now be added forms from several dialects of rGyalrong: Puxi *ʃvəʷ*, Caodeng *ⁿdʒruʔ*, Muerzong *srəʔ* (data from Jackson Sun).
- b. Cf. Jg. *mú* ‘work, affair, matter’; WB *mu* ‘do, perform’, *ʔəmu* ‘deed action’; Lalo *ʔmú*; Garo *mo* ‘move’, Dimasa *mau* ‘*id.*’ The Lalo preglottalized initial is a reduction of the nominalizing prefix *ʔə-.

A few examples in detail:

	<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>Garo</i>	<i>Dimasa</i>	<i>Lushai</i>
	*-ow	-o	-u	-u	-u	-o	-au	-ou
‘boil / bake’	*tsyow	ʰtsho	džù	chu	---	so	sau	śou
‘fat’	*tsow	tsho	---	chu	chu	---	---	---
‘hammer’	*t/dow	mtho	sùm-dū	tu	---	---	dau-bu	---
‘long’	*low	---	gəlū	lu	---	ro	galau	---
‘tender / soft’	*now	---	nù	nû × nu’	nû	---	---	nou
‘thorn’ ^a	*tsow	---	džú	chû, cû	í-chû	su	su	seu

- a. Cf. also Lepcha *džu*; Mikir *su* ‘thorn, sting, panji (spike planted in ground in warfare)’, *iŋ-su* ‘thorn’; Tangkhul *kəsui*; WB *chû* ‘thorn, string of an insect’, *cû* ‘prick, pierce; piercer, awl’; Garo and Dimasa *su* ‘pierce, thorn’; Lushai *seu* ‘panji’. KVB suggests a connection with Lai *tsow*, Lushai *cho* ‘dig’, as well as with Proto-Bodo **cauʔ* ‘dig’ (> *e.g.* Garo *coʔ*; see Burling 1959).

5.6.2 *-aw vs. *-a:w : contrastive length in a low diphthong

In general, the low labial diphthongs *-aw and *-a:w are less well attested than their low palatal counterparts *-ay and *-a:y. As indicated above, Lushai is the only criterial language capable of distinguishing vowel length in these rhymes:

<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>Garo</i>	<i>Dimasa</i>	<i>Lushai</i>
*-aw	-o	-au	-au	-o	-o	-au	-ou
*-a:w	-u / -o	-au	-au	-o	-o	-au	-au

Etyma reconstructed with short *-aw include:

	<i>STC#</i>	<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lushai</i>
‘basket (a kind of)’	266	*kaw	---	---	khâu	khau
‘call’	14	*gaw	---	gâu	khau ^a	kou
‘dig out / weed’	269	*klaw	---	krâu	---	thlou
‘risk / defy / hostile’	267	*daw	sdo-ba	---	---	dou
‘withered / residue / corpse’	268	*raw	ro	---	rau	rou

- a. There is a clear Lahu cognate qho ‘summon by calling’ (cf. ð-ha qho ve ‘call back a soul’, gâ? qho ve ‘call chickens’), which establishes -o as the regular Lahu reflex of *-aw. Lahu kù ‘call, shout’ reflects a distinct etymon; the front velar implies cognacy or allofamy with WB krau ‘shout, call out’ < PLB *gru¹ or *graw¹ (cf. my note 67 in *STC*).

Also: ‘bark / outer covering’ *s-graw (#121); ‘swim / float’ *pyaw (#176); ‘mix’ *ryaw (#207); ‘roast / bake’ *r-ŋaw-t (#270); ‘head’ *m-gaw (#490).

The few etyma reconstructible with long *-a:w include:

	<i>STC#</i>	<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lushai</i>
‘oil / grease’	272	*sa:w	---	sâu	---	thau
‘shout’	273	*ʔa:w	---	---	ʔau	au
‘younger brother’	271	*na:w	nu-bo ≠ no-bo	nâu	---	nau

The grammaticalized closed class of Lahu “spatial demonstratives”⁷⁵ (chò ‘here’, ô ‘there’, cô ‘way over there’, mô ‘down there’, nô ‘up there’) shows fusion of various locative morphemes with a deictic element *-aw : e.g. nô ‘up there’ < na ‘in front of and above’ + *-aw; chò ‘here’ < chi ‘this’ + *-aw.⁷⁶

5.6.3 *-ow and *-a(:)w : contrast and interchange

As we have seen, Lushai has merged *-aw and *-ow to -ou, although it distinguishes between short *-aw and long *-a:w, reflecting the latter as -au. In fact, other

75. See JAM 1973/82 (GL), pp. 51-2.

76. See JAM 1995a:82-84 (“Pal. suff.”), which takes sharp issue with the unmotivated analysis of these morphemes in Benedict 1983a (“*This* and *that* in ST/TB”).

5.6.3: *-ow and *-a(:)w : contrast and interchange

Kuki-Chin-Naga languages also seem to reflect the contrast between **aw* and **ow* on the one hand, and **a:w* on the other:⁷⁷

	<i>PTB</i>	<i>Lushai</i>	<i>Lakher</i>	<i>Thado</i>	<i>Bete</i>	<i>Empeo</i> ^a	<i>Tangkhul</i>
‘call’	<i>*gaw</i>	kou	---	kou	koi	gu	---
‘fly’ (n.)	<i>*m-tow</i>	thou	mætheupa	thou	ithoi	---	---
‘field’	<i>*low</i>	lou	lo	lou	loi	lu	lui
‘grease’	<i>*sa:w</i>	thau	tho	(thou)	thai	pəthau	thau
‘y. sibling’	<i>*na:w</i>	nau	nɔ	nau	nai	---	nau
‘grasshopper’	<i>*ka:w</i> ^b	khau	khɔ-sú	khau	---	---	khau

a. This Naga language is now usually called Zeme.

b. Contra *STC* (pp. 201, 214), where the reconstruction is given with a short vowel **kaw*.

Despite the merger of **-aw* and **-ow* in Lushai, evidence from WB and/or Jingpho can usually distinguish the two rhymes:

	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Jg.</i>	<i>Mikir</i>	<i>Garó</i>	<i>Dimasa</i>	<i>Lushai</i>
<i>*ow</i>	o	u	u	u	u	o	au	ou
<i>*aw</i>	o	au	o	au	u	o	au	ou

Jingpho seems less reliable than WB in this respect, however, since there are several roots where Jg. has *-au* corresponding to WB (and Lahu) *-u*, pointing to proto-variation between **-aw* and **-ow*:

‘cross over’	<i>*gow</i> (#318) > Jg. gāu, but WB kû
‘thick’	<i>*tow</i> (#319) > Jg. dāu, but WB thu, Lahu thu
‘pine / fir’	<i>*row</i> (#320) > Jg. mərāu, but WB thāŋ-rû

At least one TB etymon with a rhyme that might be either **-aw* or **-ow* has a likely Chinese cognate:

‘bird’	Garó do (pronounced with echo-vowel as doʔo), Dimasa dau, Pwo and Sgaw Karen tho < PTB <i>*daw</i> or <i>*dow</i> (<i>cf.</i> also <i>*m-tow</i> ‘a fly’); <i>cf.</i> Chinese 鳥 OC <i>*tiōg</i> (<i>GSR</i> #1116a; see <i>STC</i> pp. 149, 192) ^a
--------	---

77. See *STC*:66.

- a. As observed in *GSR* #1116, the Mandarin pronunciation of this word with initial nasal (niǎo) “is irregular, quite a riddle”. Perhaps this anomaly is ultimately to be traced back to the same nasal prefix reconstructed for **m-tow* ‘fly’! Cf. *STC* n. 332.

5.6.4 **-ow and *-əw (= uw) interchange*

There are also a few roots where variation must be posited between **-ow* and the diphthong reconstructed as **-əw* or **-uw* (above 5.3.1; *STC* p. 69):

‘hammer’	general TB <i>*tow</i> (#317), but Lushai <i>tu-bauʔ</i> < <i>*tu(w)</i>
‘steal’	general TB <i>*r-kəw</i> (#33), but Dimasa has <i>khau</i> < <i>*kow</i>
‘thorn’	general TB <i>*tsow</i> (#276), but Dimasa ^a has <i>busu</i> < <i>*tsu(w)</i>

- a. Dimasa regularly has *-u* < **-u* or **-əw*, and *-au* < **-ow*.

5.6.5 *Chinese comparanda to PTB labial diphthongal roots*

As *STC* observes (p. 192), “Our comparative material on these finals is still scanty,” with several reconstructed OC rhymes corresponding to each PTB **labial diphthong*. Among the best examples are the following:

(1) *OC comparanda to PTB *-a(:)w*

PTB			GSR	OC	Chinese Gloss
<i>*ŋa:w</i>	‘ape’	禹	124a-b	ŋi <u>u</u>	‘monkey’
<i>*daw</i> or <i>*dow</i> ^a	‘bird’	鳥	1116a	tiôg	‘id.’
<i>*zya:w</i> ≈ <i>*zyu(w)</i>	‘decay’	廋	1096h	ziôg	‘id.’
<i>*sa:w</i>	‘fat’	臊	1134e	sog	‘fat of swine or dog’
<i>*r-ŋaw</i>	‘roast’	熬	1130h-i	ngôg	‘fry / roast’
<i>*ʔaw</i>	‘vomit’	嘔	122i	ʔu	‘id.’

- a. This root is confined to Bodo-Garo. See *STC*:149,192.

(2) *OC comparanda to PTB *-ow*

PTB			GSR	OC	Chinese Gloss
<i>*tsyow</i>	‘boil / cook’	煮	45m	fi <u>o</u>	‘id.’
<i>*tsow</i>	‘thorn’	楚	88a-c	tɕʰi <u>o</u>	‘thorny trees / thorns’
<i>*mow</i>	‘woman’	母	947a-e	məg	‘mother’

5.7: PTB *-oy and the new rhyme *-uy

<i>PTB</i>			<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
*syow ^a	‘rat’	鼠	92d	śjo	‘rat’
*tow × *dow	‘thick’	寫 敦	not in 1116 464p-q	tiog twən	‘deep / profound’ ‘solid / thick / lie thick on’ ^b

a. This PTB form is derived by Benedict from the binome **śa-yəw where the first element meant ‘animal’.

b. An alternative (and probably better) etymology derives this word from a prototype with liquid final. See below 9.3.4 and JAM 1994d.

5.7 PTB *-oy and the new rhyme *-uy

Like English, PTB had *-oy but not the symmetrical diphthong *-ew.⁷⁸ *STC* reconstructs *-oy in a series of 12 consecutively numbered roots (#’s 304-315), on the basis of forms from Jingpho, Lushai, and Burmese. The reflexes tend to be variable, and there is some overlap with the rhymes *-way and *-wəy:

<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Garó</i>	<i>Dimasa</i>	<i>Lushai</i>
*-way	(?)	-oi / -we	-wai	(?)	(?)	-oi / -uai
*-wəy	-(y)i	-ai / -(ə)wi	-we	-i	-i	-ui / -i
*-oy	(?)	-oi / -we / -wi	-we	-e	-ui / -i	-oi / -ui / -uai

STC reconstructs *-oy when Jingpho and Lushai have -oi but WB has -we; when a WB cognate is lacking, *-oy is conventionally reconstructed instead of *-way.

	<i>PTB</i>	<i>STC#</i>	<i>GSTC#</i>
‘beautiful / perfectly’	*moy ^a	304	81
‘bud / blossoming’	*(r)moy	305	82
‘graze / passing close’	*soy	306	83
‘bend / curved’	*koy	307	84
‘cowlick’	*boy	308	85
‘younger sibling’	*doy × *toy	309	86
‘crow / howl’	*groy	310	87
‘shellfish’	*kroy	311	88

78. However, this latter diphthong is apparently reconstructible at the level of Proto-Kuki-Chin-Naga (below 5.7.1).

Rhymes: monophthongs and diphthongs

	<i>PTB</i>	<i>STC#</i>	<i>GSTC#</i>
‘borrow / debt’	*kroy	312	89
‘surround’	*kroy	31	90
‘monkey’	*b-woy	314	91
‘gentle / quiet’	*ŋoy	315	92
‘propitiate / appease’	*tway or *toy	---	122

a. This root is probably allofamically related to *ma:y ‘good’ (above 5.5.2).

To these we may possibly add *woy ‘fart’, on the basis of Lahu vî; Xixia (Nishida 1964/1966) wiN, rGyalrong wu-; as well as a group of Chin forms: Hakha Lai voi?; Womatu vei?; Ahraing Khumi vɔ; Awa vü.⁷⁹

Several of the verbal roots among these etyma may be interpreted as having had a stative or inchoative component, indicating an emergent or permanent quality, one of the semantic roles posited for PTB “palatal suffixes”, suggesting that the final -y in the *-oy rhyme may sometimes have been suffixal.⁸⁰

An additional diphthongal rhyme *-uy is reconstructed in “Following the marrow” (JAM 1992:171-3), in order to accommodate the distinctive yet similar reflexes shown by etyma for ‘follow’ and ‘marrow’ in Chinese and various TB languages:

‘follow’	<i>Chinese</i>	隨 OC*dzwia [<i>GSR</i> #11g] (Mandarin suí)
	<i>Kamarupan</i> ^a	Lushai zui, Siyin yui, Konyak woi-lak, Sangtam i-vü, Sema athiu-wu, Mao fū, Chokri mü-zwi, Angami me-dzi, Mzieme sui, Liangmai shai-shwi, Zeme chai-sui, Tangkhul athi-shur
	<i>Lolo-Burmese</i>	WB sui ‘thus, in this way; towards, into, unto’; Lahu šɔ ‘arrange, channel, follow’

This etymon may be reconstructed as a simplex/causative pair, *m-yuy ꜜ *s-yuy. As the WB (-ui) and Lahu (-ɔ) reflexes show, the rhyme *-uy merged with *-əw at the Proto-Lolo-Burmese level.^b

a. *STC* (p. 51) sets up in passing a root *ywi ‘follow’ on the basis of the Lushai and Siyin forms, but mistakenly claims that it is restricted to Kuki-Naga.

79. Cf. Luce 1985, *DL*:1329, and JAM 1997a.

80. See JAM 1995a:57. These stative/inchoative roots include *moy, *(r-)moy, *soy, *koy, and *ŋoy.

5.7: PTB *-oy and the new rhyme *-uy

- b. In the absence of extra-LB data, we cannot tell which of these two PTB rhymes is represented by sets like the following: WB *sui* ‘penis of animal’ (< PLB *səw¹), ʔəsūi ‘virility; testicles; uncastrated animal’ (< PLB *səw²) / Lh. šš ‘intact male animal’, as in nû-šš ‘bull’, í-mû-šš ‘stallion’ (< PLB *səw²) < PLB *səw^{1/2} ‘testicles; virility’ (DL:1225).

‘marrow’	<i>Chinese</i>	髓 OC *swia [GSR #11h] (Mandarin suǐ)
	<i>Jingpho</i>	lăśăwi (Hanson 1906), ləsūi (Dai <i>et al.</i> , 1983:418) ^a
	<i>Other</i>	Darang Deng (N. Assam) ru ⁵³ su ⁵³ (ru ⁵³ ‘bone’); Chang (N. Naga) h̥li, Kham (C. Nepal) su; ; Dulong (SW Yunnan) mu ³¹ si ⁷¹³

This etymon may be reconstructed as PST *suy. It seems certainly related allofamically to the widespread root for ‘blood’, PTB *s-hywəy.^b Chinese reflects a dental suffix < PST *s-hywəy-t.

- a. Another example of Jingpho -ui corresponding to Karlgren’s reconstruction of OC -wia is ‘elephant’: Chinese 為 OC *gwia [GSR #27a-e], Jg. məgūi < PST *m-guy.
- b. I first proposed the semantic association in Sino-Tibetan between ‘marrow’ and ‘blood’ in JAM 1978a (VSTB):183-4. Chinese 血 ‘blood’ (OC *xiwet [GSR #410a-c]; Mand. xuě) reflects a variant with dental suffix, PST *s-hywəy-t. Jingpho sài ‘blood’ reflects still another prototype, perhaps *(w)ay.

Another good candidate for an etymon in *-uy is attested in Jingpho and Bodo: ‘sweet / tasty’ Jg. dūi ~ dəwì; Bodo dáy. Several other forms with the same meaning have zero-initial (Milang ai; Achang Longchuan uai³¹, Achang Xiandao oi³¹), but the Achang forms might be loans from Tai; cf. Proto-Tai *oi ‘sugar-cane’ (Li Fang-Kuei 1977:244-7, 287-8).

The reflexes of this marginal rhyme may be summarized as follows:

PST/PTB	OC (GSR)	WT	Jg	Lushai	PLB	WB	Lahu
*-uy	-wia	(?)	ui	ui	*-əw	ui	ɔ

As might be expected, *-uy was prone to merge in one or another language with the similar finals *-wəy and *-əw. In Lolo-Burmese *-uy merged with *-əw at an early date. In Jingpho, PTB *wəy and *uy merged to -ui⁸¹; but these rhymes had a different fate from *əw, which became Jg. -u (e.g. ‘stale’ Jg. tsù / WB sūi < PTB *(t)səw; see JAM 1974:#220).

81. Jingpho forms unambiguously reflecting PTB *-wəy include ‘dog’ (Jg. gūi / WB khwê) and ‘suppurate’ (Jingpho tūi ‘fester’, mətsəwī ‘pus’ / WB twe). The Jg. form “məthwi” ‘spit’ cited and compared to WB thwê in Benedict 1972 (#168) is not to be found in Hanson or Dai, which give the form məthó.

5.7.1 The marginal rhyme *-ew

Another marginal diphthong *-ew (the front diphthong analogous to the relatively well-attested *-oy) is set up in a few roots (*STC*:68), but only at the level of Proto-Kuki-Naga, since cognates have yet to be identified elsewhere:

	<i>PTB</i>	<i>Lushai</i>	<i>Lakher</i>	<i>Mikir</i>
	*-ew	-eu(?)	-ei / -ua	-e
‘burrow’	*hrew	hreu?	rei	---
‘lean back’	*ɽew	eu	əua	---
‘scratch’	*d-kew	kheu? ≈ khei	tśəkhei	ar-ke
‘spoiled / wasted’	*m-hew	heu	pəhua	---

5.8 Secondary/fusional diphthongs (across morpheme boundary)

In the course of a study of the PTB rhymes *-an and *-ay (*JAM* 1985a, *GSTC*), it became apparent that many etyma displayed variation between the monophthongal *-a rhyme and diphthongal *-ay, motivating the reconstruction of allofamic prototypes that recognized both variants, *e.g.*:

	<i>PTB</i>	<i>GSTC</i> #
‘big’	*ta ≈ *tay	68
‘come’	*la ≈ *lay	185
‘fall’	*kla ≈ *klay ≈ *gla ≈ *glay	125
‘I / self’	*ŋa ≈ *ŋay	70
‘interrogative particle’	*la ≈ *lay	131
‘rice / paddy’	*ma ≈ *may or *mey	57
‘throw’	*ba ≈ *ba:y	147

It soon became clear that these diphthongal allofams were actually bimorphemic in origin, incorporating a “palatal suffix”.⁸² Eventually this vague entity was explained as a

82. See *JAM* 1989a, “The bulging monosyllable, or the mora the merrier” and below, 11.6.

5.9: Vowel length contrasts in open syllables

phonological falling together of three originally separate morphological elements, each derived from a full syllable that had both stressed and unstressed variants, and each well exemplified in Lahu:⁸³

	<i>Stressed</i> (less fused)		<i>Unstressed</i> (more fused)	
	<i>PTB</i>	<i>Lahu</i>	<i>PTB</i>	<i>Lahu</i>
<i>Transitive motion</i>	*ay	e	*-ăy	/-y/
<i>Diminutive</i>	(*za ʔ) *ya	ɛ	*-yă	/-y/
<i>Nominalizer / subordinator</i>	*way	ve	*(w)ăy	/-y/

One consequence of this analysis was a reinterpretation of a widespread process of doublet formation in Lahu,⁸⁴ where forms with simple back vowels / u o ɔ / may also be pronounced with rising diphthongs consisting of /w/ plus the front vowel of the same height / i e ɛ /, e.g. *ŋâ-ku* ~ *ŋâ-kwi* ‘dried fish’, *co* ~ *cwe* ‘era; period of time’, *yè-mí-t̃* ~ *yè-mí-twē* ‘bear’.⁸⁵ However, instead of considering these to be “prelabialized” forms, it is now apparent that they are rather “postalatalized”, with incorporation of the diminutive palatal suffix and concomitant loss of syllabicity of the original back vowel.

5.9 Vowel length contrasts in open syllables

Contrastive vowel length is characteristic of West Himalayish languages.⁸⁶ This is apparently carried to an extreme in Manchad (=Manchati=Pattani), for which S. R. Sharma (1997) gives several specific minimal pairs between long and short vowels in open syllables:

lhi-pi	‘be heavy’	lhi:-tsi	‘abduct’
rhi	‘white mongoose’	rhi:	‘field’

83. This theory was developed in JAM 1995a (“Sino-Tibetan palatal suffixes revisited”), where some 30 roots and word-families involving these suffixes are presented.

84. First discussed in GL:19.

85. The diphthongal variants sometimes convey a more colloquial or vivid tone than the monophthongal ones. In a few cases the monophthongal form has been completely displaced, e.g. *chí-pí-qwè?* ‘barking deer’ (but not **chí-pí-qò?*); *mû-tí-pwè?* ‘lightning’ (but not **mû-tí-pô?*). The last syllable of the latter form is directly cognate to that of Jingpho *myi?-phráp* (*-ap regularly > Lh. -oʔ; see below 8.2(3)).

86. Length contrasts are marked systematically in e.g., the Kanauri forms in Bailey (1911) and D.D. Sharma (1988).

Often, however, this vowel length seems to be morphological rather than purely phonological, serving *e.g.* to mark possession:

dù	‘he; she’	dù:	‘his / her; curd’
ḍù	‘cloud’	ḍù:	‘of cloud’

Sharma also cites a few examples of length contrasts in closed syllables (*e.g.* ar ‘towards’/ar ‘desire to eat’), but here too vowel length is pressed into grammatical service, *e.g.* to signal the first person singular future form of verbs:

kog	‘feed for birds’	ko:g	‘I shall speak’
dog	‘grace, splendor’	do:g	‘I shall meet’
jog	‘leech’	jo:g	‘I shall walk’

In any case, vowel length contrasts (especially in open syllables) seem quite marginal in this language, and are plausibly to be attributed to contact influence from Indo-Aryan. Certainly no length contrast in open syllables can be posited for TB in general.

An interesting case of secondary vowel length in open syllables is provided by Tamang (Mazaudon 1978), where the loss of final stops has left long vowels, whether or not the proto-vowel was long to begin with:

<i>PTB</i>	<i>Tamang</i>
*s-ma:k ‘son-in-law’	ma:
*sak ‘breath(e)’	sa:

5.10 Summary of reflexes of PTB open rhymes

The following charts display the system of PTB open rhymes, and their reflexes in some key TB languages.

(1) Monophthongs

-i	-u
(-e)	(-o)
	-a
	-wa

5.10: Summary of reflexes of PTB open rhymes

<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>Garó</i>	<i>Dimasa</i>	<i>Lushai</i>
*-a	-a	-a	-a	-a	-a	-a	-a
*-wa	-o	-a	-wa	-u	-a	-a	-a
*-i	-i	-i	-i	-i	-i	-i	-i
*-u	-u	-u	-u	-u	-u	-u	-u
*-e	-e	-e	-ai	(?)	-e	-ai	-e
*-o	-o	-o	-au	-ɔ	(?)	(?)	-o

TABLE 13. PTB open rhymes

(2) *Diphthongs*

Palatal			Labial		
-ey	-əy	-uy	(-ew)	-əw	-ow
	-wəy	-oy			
	-ay	-a:y			
	-way	-wa:y	-aw	-a:w	

<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>G.</i>	<i>Dim.</i>	<i>Lushai</i>
*-əy	-i	-i	-e	-ɪ / -i / -ɔ	-i	-i	-i
*-wəy	-yi	-ui	-we	-ɪ ^a / -i ^b	-i	-i	-ui
*-ey ^c	-e	-i	-i	-i	-e	-ai	-ei
*-ay	-e	-ai	-ai	-e	-e	-ai	-ei
*-a:y	-e	-ai	-ai	-e	-e	-ai	-ai
*-way	(?)	-ai / -oi	-wai	-e / -i / -ɪ / -ə	(?)	(?)	-ei
*-way	(?)	-ai / -oi / -we	-wai	-e / -i / -ɪ / -ə	(?)	(?)	-oi / -uai
*-oy	(?)	-oi / -we / -wi	-we	(?)	-e	-ui / -i	-oi / -ui / -uai
*-uy	(?)	-ui	-ui	-ɔ	(?)	(?)	-ui
*-əw	-u	-u	-ui	-ɔ / -u ^d	-u	-u	-u
*-ow	-o	-u / -au	-u	-u	-o	-au	-ou
*-aw	-o	-au	-au	-o	-o	-au	-ou
*-a:w	-u / -o	-au	-au	-o	-o	-au	-au

TABLE 14. PTB diphthongs

- a. The usual Lahu reflex of *-wəy is -ɪ, with numerous examples: ‘blood’ WB swê / Lh. šĩ; ‘comb’ PKaren *khwis / Lh. pĩ (see Benedict/Matisoff 1979:13); ‘daughter-in-law’ WB khrwê-ma / Lh. ð-khî-ma; ‘dog’ WB khwê / Lh. phî; ‘far’ WB wê / Lh. vî; ‘snake’ WB mrwe / Lh. vî < PLB *m-r-wəy¹ < PTB *s-bru:l; ‘sweat’ WB khrwê / Lh. kî.
- b. Lahu has -i instead of -ɪ in at least three etyma, under conditions that are not yet understood: ‘bamboo rat’ WB pwê (< *b-) / Lh. fâŋ-phî (< *p-) [the WB and Lh. forms also disagree in voicing]; ‘gold’ WB hrwe / Lh. šĩ; ‘rub; polish; whet’ WB swê / Lh. šĩ.
- c. Nung has developed -i < *-ey, but -ɛ < *-ay. Mikir has merged *aw and *ow to -u, and *-ay and *-ey to -e.
- d. Lahu reflects this rhyme as -u after labial initials, e.g. ‘big’ (WB pûi / Lh. pû); ‘carry on back’ (WB pûi / Lh. pû); ‘grandfather’ (WB ʔəphûi / Lh. ð-pû); ‘high’ (WB mui ʔ mui ‘elevated; raised in the center’ / Lh. mu ‘high’ (the conventional wisdom identifies the Lahu form with PLB mraŋ ‘high’, though the rhyme correspondence is off; a parallel is provided by ‘horse’ WB mrâŋ / Lh. í-mû, but against this are ‘see’ (WB mraŋ / Lh. mð), ‘mushroom’ (WB hmui / Lh. mù), ‘price’ (WB ʔəphûi / Lh. phû), ‘sky’ (WB mùi(gh) / Lh. mù).

Closed rhymes and the role of vowel length

As indicated by the PTB syllable canon (above Ch. 2), the following final consonants are reconstructible for PTB:

-p	-t		-k
-m	-n		-ŋ
	-s		
-w	-l	-r	-y

The semivowels -w and -y have already been discussed from the point of view of their diphthongal combinations with the preceding vowel (above 5.3-5.8). Final liquids and *-s will be treated below, Chs. 9 and 10.

No manner contrasts are posited for PTB final stops. In conformity with an East and SE Asian areal feature (exemplified in all language families of the region except for Austronesian), final stops in TB are always unreleased, voiceless unaspirated, and lenis.¹ Unlike Mon-Khmer, PTB had no final palatal stop or nasal **/ -c -ñ / , and no final **-h.²

Direct evidence for PTB final stops and nasals is abundantly provided by languages like WT, Lepcha, the Kiranti group of E. Nepal, Jingpho-Nung, the rGyalrong-Ergong branch of Qiangic, Lushai and other Chin languages, Mikir, Meithei, Bodo-Garo, and WB

1. This lenis quality has led to their being written with voiced symbols “-b -d -g” in WT orthography, and in other writing systems influenced by Tibetan, like Kanauri (Takahashi 1999) and Manchad (S.R. Sharma 1997; see above 5.9). The well-known transcription of Thai devised by Mary R. Haas also uses the voiced symbols for final stops (despite the fact that Thai lacks a /g/ in initial position).

2. The palatal finals -ñ and -c in WB, from proto-rhymes like *-iŋ and *-ik, are secondary developments undoubtedly encouraged by Mon contact influence. See below 7.2(4), 8.3(1).

CHAPTER 6: Closed rhymes and the role of vowel length

and the other Burmish languages. Even in other branches of the family where most final consonants have disappeared (*e.g.* Loloish, Naga, Qiangic proper, Karenic, and Baic), they have usually left differential traces in their influence on the vocalic nucleus, so that these languages provide equally good indirect evidence of their former presence.

The northern dialects of the Qiang language have developed a number of highly atypical final consonants like -z or -ʒ, due to the reduction of the second element in many compounds,³ *e.g.*:

	<i>S. Qiang</i>	<i>N. Qiang</i>
‘earth’	zuə-pə	zəp
‘seed’	zuə-za	tʃhaz
‘water buffalo’	tsuə-zɿ-ŋu	tsəʒ

The final consonant clusters in the Kanauri dialect studied by D.D. Sharma 1998 (see Namkung, ed. 1996:155), are secondary combinations of root-final consonant plus suffixal *-s (see below 11.4), or else are to be found in loanwords from Indo-Aryan:

-ms	-nɿ	-ŋs	-ŋč	-ŋk
			-lč	-lk
		-rz		-rk
			-kč	-šk

The Sino-Tibetan languages display a continuum of final stop and nasal preservation that we may roughly break down into four stages:

- *Stage I:*

All six final stops and nasals / -p -t -k; -m -n -ŋ / are preserved as such, as *e.g.* in WT, Dzongkha, Lepcha, Lushai, Kanauri, Mikir, Garo, Cantonese.

- *Stage II:*

Final stops and/or nasals remain at one or two points of articulation, but one or more have been reduced or dropped altogether. The velars may be the first to go, often replaced by glottal stop, as in Jingpho and Nung, which have / -p -t -ʔ / (while maintaining all the final nasals).⁴ Alternatively, as in Thebor

3. See Benedict 1983b, JAM 1991a:493.

or Dimasa, the final velars may drop entirely, leading to a system of finals like / -p -t -m -n /.

Sometimes it is the final labials that merge with another position. Such is the case *e.g.* with Mandarin and Achang Lianghe (Burmish group), but the patterns of merger were quite different. In Mandarin the *labial nasals became dentals, while all final stops disappeared, giving a system / -n -ŋ /. In Achang Lianghe both the *labial nasals and the *labial stops became velars, yielding a system / -t -k -n -ŋ /.⁵

• *Stage III:*

All final stops are reduced to glottal stop or glottal constriction, while final nasals may lose their oral occlusion and transfer their nasality to the preceding vowel. This is what has happened in Modern Burmese and Pwo Karen. Other Karen dialects,⁶ as well as Loloish languages like Lahu, have developed glottal stop (*i.e.* checked tones or constricted vowels) in words with original final oral stops, but have no nasalized vowels.

Different degrees of constriction may sometimes be distinguished,⁷ as in Modern Burmese, where “tone 3” is characterized by creaky voice (or a “glottal catch”), while “tone 4” (from former syllables with final stops) has a sharp postvocalic glottal stop and an extra-short vowel.

• *Stage IV:*

At the extreme of final consonant decay, neither of the sets of final *stops or *nasals has left any segmental or phonational trace (*i.e.* neither glottalization nor nasalization), so that their former presence can only be deduced by the changes that their different positions of articulation have caused in the quality of the vowel of the syllable.

4. Final -ʔ went untranscribed in earlier sources on Jingpho (*e.g.* Hanson 1906), and the same is doubtless true for many other TB languages. Modern Jingpho words with final -k are loans from Shan, Burmese, or Pali (via Shan or Burmese), *e.g.* *nəm-mùk-tərā* ‘ocean’, *ʔəyàk-ʔəkhàk* ‘with great difficulty’.

5. See JAM 1991c (“Jiburish”):94-5.

6. For more details on Karen see STC:144-6 and Benedict 1979. In the latter work, Benedict (pp. 6-7) ascribes some instances of the loss of Karenic final stops to “glottal dissimilation” (see JAM 1970).

7. R.B. Jones’ reconstruction of Proto-Karen (1961) goes a bit overboard in this direction, by recognizing both a fortis and a lenis final glottal stop (symbolized by -ʔ and -q respectively) for PK. For this, and for much else, his analyses are criticized in Burling 1969.

6.1: Differential reflexes of closed rhymes

Sometimes, but not always, there is parallelism in the reflexes of homorganic nasal and stop rhymes. Thus the Lahu reflexes of **-am* and **-an* are parallel to those of **-ap* and **at*, but this is not true of the reflexes of **ak* and **aŋ*:

<i>PLB</i>	<i>Lahu</i>	<i>PLB</i>	<i>Lahu</i>	<i>PLB</i>	<i>Lahu</i>
<i>*-am</i>	-o	<i>*-an</i>	-e	<i>*-aŋ</i>	-ɔ
<i>*-ap</i>	-oʔ	<i>*-at</i>	-eʔ	<i>*-ak</i>	-aʔ

For actual cases of variation (inter- and intra-lingual) between homorganic stop and nasal finals, see below 12.5.

6.1 *Differential reflexes of closed rhymes*

In general, final consonants are best attested after *-a-*, and next best after the high vowels *-i-* and *-u-*. As we would expect, they are least well exemplified after *-e-* and *-o-*, since the mid vowels are also far less frequent lexically in open syllables (see above 5.4).

Medial **-a-* is generally preserved before final consonants in the five criterial TB languages of *STC* (WT, WB, Jingpho, Lushai, and Garo ⁸) as well as in most other TB languages that preserve final stops and nasals. In the numerous languages where final consonants have largely disappeared, or have been reduced to nasalized or constricted vowels, *e.g.* Loloish, Karenic, Qiangic (except for rGyalrongic), Baic, and Naga, medial **-a-* is subject to fronting or backing and/or raising according to the position of articulation of the original final consonant, *e.g.*:

<i>PTB/PLB</i>	<i>Lahu</i>	<i>PTB/PLB</i>	<i>Lahu</i>
<i>*-am</i>	-o	<i>*-ap</i>	-oʔ
<i>*-an</i>	-e	<i>*-at</i>	-eʔ
<i>*-aŋ</i>	-ɔ	<i>*-ak</i>	-aʔ

Languages that preserve final consonants, yet have developed mid vowels from medial **-a-* include Lepcha, Kanauri, and Mikir, with occasional examples from other languages, *e.g.* WT and Jingpho (see below 7.1, 8.2).

8. Actually medial **-a-* does often shift to *-i-*, *-e-*, or *-o-* in Bodo-Garo, especially in the rhyme **-aŋ* after liquids; see below.

The high medial vowels *-i- and *-u- are well maintained in WT, Jingpho, and Lushai, but partial or complete replacement by lower vowels (-o-, -e-, or -a-) is characteristic of Burmese, Garo, Mikir, and many other TB languages (STC:75).

Length contrasts are recoverable in some closed syllable rhymes with high vowels (below 6.3). There are many instances of inter- and intra-lingual allofamic variation between the two high vowels in closed syllables, especially in the environment of a labial consonant (below 7.2(1), 8.3(3b), 12.1). Several languages systematically reflect ***high medial vowels** by secondary -a-, including (Himalayish) Magari, Lepcha;⁹ (Kamarupan) Digaro, Chang Naga; and (Burmish) Maru. Mikir shows parallel but not entirely regular developments of the high vowels in closed syllables before final stops, nasals, and liquids, sometimes retaining the high vowel, but sometimes lowering it to -e- or -o-.

6.2 The symbolization of phonational contrasts

It is in the nature of phonational features like glottal constriction or breathiness to be “suprasegmental”, so that it is somewhat artificial to localize them in a particular part of the syllable. A constricted syllable in a given language might be transcribed with a glottal stop at any of several points, *e.g.* ʔmaŋ vs. mʔaŋ vs. maŋʔ vs. maŋʔ, so that it is often hard to determine exactly what is going on phonetically. Historically glottal constriction or creakiness may arise from consonantal perturbations at either end of the syllable: either from the influence of a “glottogenic prefix” (*ʔ- or *s-; see above 4.2), or through the reduction of a final stop */-p -t -k / or root-final or suffixal *-s; see below Ch. 10, 11.4).

Prefix-induced creakiness is characteristic of several closely related Burmish languages, including Bola, Atsi (= Zaiwa), and Maru (= Langsu), where *ZMYYC* symbolizes the phonation by a line under the vowel, sometimes with the addition of a final glottal stop:¹⁰

	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>	<i>Bola</i>	<i>Zaiwa</i>	<i>Maru</i>
‘porcupine’	*ʔ-bl <u>u</u> ¹	phru	fâʔ-pu	pju ⁵⁵	pju ⁵¹	pju ³¹
‘teach’ ^a	*ʔ-ma ^{1/2}	hma	mā	ma ³⁵	mōʔ ⁵⁵	mōʔ ⁵⁵

a. The WB form reflects PLB tone *1, while the Lahu unambiguously points to tone *2. See above 3.4.1(2).

9. Some examples from Lepcha: ‘two’ *g-nis (STC #4) > Lp. nyāt; ‘gums’ *r/s-nil (STC #3) > Lp. nyāl ʔ nyel; ‘joint’ *tsik (STC #64) > Lepcha tsāk.

6.2: The symbolization of phonational contrasts

Usually a post-vocalic glottal stop symbol does represent the direct reflex of a former final stop (*e.g.* ‘eye’ PLB *s-myak^H > Lahu mêtʔ; ‘vomit’ PLB *C-pat^L > Lahu phèʔ; ‘stroke’ PLB *sap^H > Lahu šôʔ),¹¹ even though synchronically it is better to regard this glottal constriction as a tonal feature.¹²

Occasionally, however, secondary glottal constriction serves a grammatical function, as is the case with Lahu “imperative glottal stop”, symbolized by a hyphen plus “-ʔ”: mɛ ve ‘to sit’, mɛ-ʔ ‘Sit down!’, câ ve ‘to eat’, câ-ʔ ‘Eat!’.¹³

Constricted syllables in Mpi (S. Loloish) are written with -ʔ (Srinuan 1976), though they do not all have the same historical status. Some do reflect original PTB final consonants, but others are secondary results of feature displacement triggered by assimilatory or dissimilatory impulses from elsewhere in the syllable. Most interestingly, there are nine examples of PLB etyma with the rhyme *-ak and an onset consisting of a glottogenic prefix plus nasal, which have undergone a “double suprasegmentalization” in Mpi, whereby the syllable has become simultaneously nasalized and creaky, symbolized by the post-vocalic sequence “-ŋʔ”:¹⁴

	<i>PLB</i>	<i>Mpi</i>
‘banana’	*s-ŋak ^H	naŋʔ ⁴ -su ²
‘black’	*s-nak ^H	naŋʔ ³
‘deep’	*ʔ-nak ^L	naŋʔ ¹
‘open wide’	*ʔ-ŋak ^L	ŋaŋʔ ¹

10. See JAM 1991c (“Jib. revisited”), p. 93. Burling (1967/68) writes such constricted syllables in Atsi and Maru with a glottal stop after the initial consonant, *e.g.* pʔju, mʔo.

11. Some authors prefer the more typable symbol “-q” to indicate the glottal stop, as in the Egerod/Hansson transcription of Akha, *e.g.* myáq ‘eye’, pɛq ‘vomit’, sáq ‘stroke’.

12. Burmese “Tone 3” is usually called “creaky tone”, though in this case it does not derive from a final consonant, but rather from prefixal *s- (Thurgood 1981). See the discussion of “phonation-prominent tone systems” in JAM 1999a:16-20 (“TB tonology”).

13. This is actually a brusque intonation that shortens the vowel (see GL:353-4). It was profoundly misunderstood by Jin Youjing (1988), who was led by this marginal phenomenon to posit a whole system of Lahu creaky vowels parallel to the modal ones.

14. See JAM 1978b:22 *ff.*

In a number of languages, a final glottal stop is merely an optional concomitant of an open tone. In the Dayang dialect of Pumi, a few words under the high tone acquire a final glottal stop or constriction of the vowel in some repetitions:

‘face’	zíw	~	zíwʔ
‘invite to eat’	dzyú	~	dzyúʔ
‘mouth’	khwá ră	~	khwá ră
‘soybean’	ŋé	~	ŋéʔ
‘sweat’	ʃtʃhí	~	ʃtʃhíʔ

Similarly in Hpun (Burmish group), G.H. Luce recorded -h, glottal catches [ʔ], or glottal stop [ʔ] in many otherwise open syllables, but doubted whether they were significant. Henderson (1986:112-3) believed that they were merely “prepause features, ways of rounding off the utterance, but not meaningful as segments in themselves”, and pointed to an almost identical phenomenon in Bwe Karen.¹⁵

In syllables with final nasals, liquids, or semivowels, Chepang (C. Nepal) has a thoroughgoing contrast among clear, breathy, and creaky phonations, with the latter two symbolized by -h and -ʔ respectively:¹⁶

-mh	-nh			-ŋh
-wh	-lh	-rh	-yh	-yŋh
-mʔ	-nʔ			-ŋʔ
-wʔ	-lʔ	-rʔ	-yʔ	-yŋʔ

In other languages, especially in the Kuki-Chin group (*e.g.* Lushai, Lai, Liangmei), the missionary-devised writing systems often use the symbol “-h” to stand not for breathiness, but rather for final glottal stop.¹⁷

15. A Pwo Karen dialect recently described by Phillips (2000:104-5) displays a rather analogous propensity for secondary *nasalization*, especially with high vowels: ‘grandmother’ phîn < *pəy; ‘wind’ lîn < *g-ləy; ‘urine’ chîn < *tši; ‘four’ lín < *b-ləy; ‘medicine’ θín < *tsəy; ‘grandfather’ phûn < *pəw; ‘mouse’ jun < *b-yəw.

16. See Caughley 1972, 1990; Namkung, ed. 1996:77. These Chepang phonational distinctions correlate to some degree with tonal contrasts in Kuki-Chin, a fact which greatly impressed Weidert (1987). See also Joseph and Burling (1999), where Bodo-Garo phonational/tonal correspondences are described that I have shown informally to be roughly relatable to tonal distinctions in PLB.

17. The most frequent source of final -ʔ in these languages is *-s (below Ch. 10). See also Ostapirat 1987.

6.3: Vowel length contrasts in closed syllables

6.3 Vowel length contrasts in closed syllables

Contrastive vowel length in closed syllables¹⁸ is posited for PTB, according to the proto-syllable canon presented above Ch.2:

(P2) (P1) Ci (G) V (:i) Cf (s)

The evidence offered in *STC* for length contrasts in closed syllables (as in diphthongs) is mostly from Kuki-Chin, especially Lushai and its close relatives in the Central Chin group, with occasional confirmatory evidence available from other languages (*e.g.* Lepcha, Mikir, Tangkhul Naga, rGyalrong/Ergong, Written Burmese, Bodo-Garo). Such evidence is all but completely lacking in the rest of TB, including Tibetan, Jingpho, Qiangic proper, Loloish, Karenic, and Baic.

In general contrastive vowel length must have been an inherently unstable feature in TB, even in Kamarupan, with much inter- and intra-lingual allofamic variation. In fact it seems reasonable to suppose that length contrasts have come and gone cyclically in the history of TB, with the effects of later changes largely obscuring the results of earlier developments.^{19/20} Since the default or unmarked length of vowels in closed syllables was short, *STC* concentrates on those sets where there is positive evidence for a long vowel.

There is always a temptation to abuse putative proto-vowel length contrasts as wildcards or *dei ex machina*, in order to multiply the number of valid patterns of correspondence. Nevertheless, even a conservative approach to comparative TB data does justify setting up proto-length contrasts in certain nasal- and stop-final rhymes. These will be discussed in more detail below,²¹ in the context of particular nuclear vowels.

No general tendency can be determined as to whether a ***long vocalic nucleus** is more likely than a ***short** one to preserve the quality of the proto-vowel or the final consonant. Thus the short rhyme ***-it** has become **-ac** in WB, while long ***-i:t** developed into WB **-it**, preserving both the vowel quality and the original final consonant; on the other hand, short

18. In the present context a “closed syllable” is defined as one ending in a nasal or stop. For convenience we have considered syllables ending in a semivowel to be open. The length contrasts in the low diphthongs ***-ay** / ***-a:y** and ***-aw** / ***-a:w** have been discussed above (5.5.2, 5.6.2). For long vowels before final liquids, see below 9.4.

19. See JAM 1985a (*GSTC*):22-3 *ff.* A similar cyclical viewpoint appears to be the best way of looking at the history of *tones* in TB (see JAM 1994c “Protean prosodies”).

20. Under favorable circumstances the source of a secondary vowel length contrast in a particular language may be traced with confidence, *e.g.* the marginal long vowels in Lahu that have resulted from the fusion of an echo-vowel in certain adverbial expressions. See JAM 1989a.

21. See, *e.g.* 7.2(2), 8.3(2), 8.4(1).

*-ap has remained -ap in Garo, while long *-a:p has evolved to Garo -o, with both the vowel and the final consonant undergoing change.

As observed above (3.4.1), nasalized vowels occur in many TB languages, either due to rhinoglottophilia after laryngeal initials (above 3.5); or through the spreading of the feature from a nasal root-initial (as in *Mpi*; above 6.2);¹ or, most commonly, through the decay of a syllable-final nasal (Modern Burmese, Akha, Pumi, *etc.*).

More unusual is the occasional exploitation of a nasalized vowel for sound symbolic purposes, as in a restricted class of Lahu vivid adverbials formed by nasalizing the vowel of a verb and postposing the particle *kàʔ* : *ḡá* ‘spread open’ > *ḡán kàʔ* ‘wide open’; *thê* ‘straight’ > *thên kàʔ* ‘straight as an arrow’.²

Sometimes a final nasal is of demonstrably secondary morphophonemic origin, as in some Lai Chin collocations where the second syllable begins in a labial stop, and an originally open first syllable acquires the homorganic final nasal:³

thli ‘wind’	(< PTB * <i>g-ləy</i>)	+	pīi ‘big’	>	thlim pīi ‘storm’
chu ‘vagina’	(< PTB * <i>s-tu</i>) ^a	+	pu:r ‘dig’	>	chum pu:r ‘masturbate (of a female)’

a. This root is widespread in TB, e.g. WT *stu*, rGyalrong *tæctu*, Thulong Rai *thiu*, Lushai *chhu*, Tiddim Chin *sú*, Meithe i *thù*, Nocte *ʼthu*, Lisu *tu⁵⁵bi²¹*, Lalo *tṵw*.

1. There is at least one example in Portuguese of a nasal vowel having arisen from a nasal initial: *muĩto* ‘very much’ (pers. comm. 1997, M. Juge).
2. See JAM 1973/82:302-3 and 1989b (“Sound symbolism”):125.
3. Pers. comm. 2000, KVB.

CHAPTER 7: Final nasals

The PTB nasal rhymes exemplified in *STC* are as displayed in Table 15:

-iŋ	-i:ŋ		-uŋ	-u:ŋ
-eŋ			-oŋ	
		-aŋ	-a:ŋ	
		-waŋ		
-in	-i:n		-un	
-en			-on	
		-an		
		-wan		
-im			-um	-u:m
(-em)				
		-am	-a:m	
		-wam		

TABLE 15. PTB nasal rhymes

The nasal rhymes with -ŋ are the most numerous, followed by those with -n, with the smallest number before -m. (*-em occurs in only in one etymon where it varies with *-yam : *nem ≠ *nyam (#348) ‘low’.) There are no examples at all of **-om. Length contrasts (often sparsely attested) are demonstrable only with -a-, -i-, -u-, never with the mid vowels.

Even if a language should completely lose its final nasals, before or during their departure they may have left unmistakable traces by their differential influence on the vowel quality of the syllable. Black Lahu has nine basic vowels:

i	ɪ	u
e	ə	o
ɛ	a	ɔ

Of these nine, all except i and a may reflect a prototype with final *nasal, *i.e.*:

<i>Lahu</i>	<i>PLB proveniences</i>		<i>PLB</i>	<i>Lahu</i>
-e	*-an, *-wan	‘filter/strain’	*kya ¹	che
		‘slave’	*gywa ¹	cè
-ɛ	*-iŋ, *-um, *-im	‘name’	*ʔ-miŋ ^{1/3}	mɛ

<i>Lahu</i>	<i>PLB proveniences</i>		<i>PLB</i>	<i>Lahu</i>
		‘pillow’	*m-kum ²	ú-gê
		‘set (of sun)’	*gim ¹	qè
-u	*-aŋ (after *mr-), *-waŋ	‘horse’	*mraŋ ²	í-mû
		‘high’	*mraŋ ³	mu
		‘well (water)’	*dwaŋ ²	g̃i-tû
-o	*-am, *-wam	‘fathom’	*lam ¹	lò
		‘swollen / plump’	*m-pwam ^{2/3}	bô ê
-ɔ	*-aŋ, *-waŋ (after labials), *-oŋ	‘you’	*naŋ ¹	nò
		‘open’	*pwaŋ ³	pho
-ɪ	*-in	‘weigh’	*kyi:n ¹	chɪ
		‘time’	*kri:n ¹	khɪ
-ə	*-un	‘powder’	*ʔ-mun ^{1/3}	mə
		‘finish’	*bun ¹	pə

In the following sections, the discussion is organized according to the particular nuclear vowel, paying special attention to those nasal rhymes for which length contrasts may be determined.

7.1 Nasals after *-a-

The reflexes of nasal rhymes with the vowel *-a- are quite regular in the criterial languages:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Bodo-Garo</i>
*-am	-am	-am	-am	-o / -u	-am	-am
*-an	-an	-an	-an	-e	-an	-an / -en
*-aŋ	-aŋ	-aŋ	-aŋ	-ɔ	-aŋ	-eŋ / -iŋ

7.1: Nasals after *-a-

(1) *-am

STC reconstructs about two dozen etyma with this PTB rhyme, *e.g.*:

	STC#	PTB	WT	Jg	WB	Lahu	Lushai	Bodo/Garo
‘road’	87	*lam	lam	lām	lām	lo ^a	lam	ram-a (G)
‘smell’	464	*m-nam	mnam	mənām	nām ^b	nû ^c	nam	manam (B)
‘otter’ d	438	*sram	sram	šrām	phyam ^e	ğì-šo-lo	sahram	matram (G)

- This word has been grammaticalized to a locative particle in Lahu, and no longer retains its full nominal meaning. It reflects PLB Tone *3, while the WB form is from Tone *2.
- WB has two allofams, **nam** ‘have a smell’ (v.i.) < Tone *1 and **nām** ‘smell sthg’ (v.t.) < Tone *2. The Lahu cognate reflects *2.
- The usual Lahu reflex of *-am is -o, but the regular reflex after n- is -u (*cf.* also ‘ear of grain’ PLB *s-nam¹ > Lh. nu; ‘sesame’ PLB *s-nam² > Lh. nū).
- Cf.* also Kham (Nepal) **rih-sərəm**; the first syllables of the Kham and Lahu forms mean ‘water’ and are cognate, allowing us to set up *røy at the PTB level.
- The WB labial initial is unexplained. It has been suggested that it derives from fusion with a Mon-Khmer root of similar meaning (JAM 1989d, “Otter and jackal”).

Other etyma reconstructible with this rhyme include *s-lam ‘womb / placenta’ > Lushai **hlam**, Lahu **lò**, Thulung Rai **wām** (*VSTB*:225-7, *DL*:1380) and *m-gam ‘ladder / ramp’ > Jg. **n-gàm**, Lh. **go**.⁴

In several languages that preserve final *-m (*e.g.* Lepcha, Mikir, Kanauri), the low vowel of the *-am rhyme has been raised to mid and/or high:

Lepcha: PTB *-am > Lp. -om :

*tsam ‘hair’ > Lp. **ătsom**^a

*lam ‘road’ > Lp. **lom**

PTB final *-a also > Lepcha -o (above 5.2.1):

*s-ta ‘put / place’ > Lp. **tho**

*wa ‘husband / man’ > Lp. **əvo**

Mikir: PTB *-am > Mk. -im *or* -em :

*s-nam ‘sesame’ > Mk. **nem-po**

*sram ‘otter’ > Mk. **serim**

4. The Lahu voiced initial reflects the nasal prefix still overtly present in the Jingpho form. See above 3.1.

Lepcha: PTB *-am > Lp. -om :

*m/s-nam ‘smell’ > Mk. iṇnim ‘to smell’ ≠ nem-so ‘slight stink’

PTB final *-a also > Mikir -o (above 5.2.1):

*b-la ‘cotton’ > Mk. phelo

*b-r-gya ‘hundred’ > Mk. paro

Kanauri: PTB *-am > Kanauri -em *or* *-am :

*s-nam ‘daughter-in-law’^b > Kan. stem

*dzam ‘bridge’ > Kan. tshamm

*m/s-nam ‘smell’ > Kan. stam

a. WT has also exceptionally developed -om from *-am in this root: WT ʔag-tshom ‘beard of chin’.

b. Reflexes of this etymon include other forms from Himalayish languages (e.g. Byangsi and Chaudangsi nam-sia, Lepcha nyom ‘daughter-in-law’, Magar ar-nam ‘maiden’), Jingpho-Nung (Jg. nām, Nung ɲam-mɛ ‘sister’), Qiangic (rGyalrong s-nom ‘sister’), Bodo-Garo (Garo nam-tsik ‘daughter-in-law’), and Lolo-Burmese (WB mauṇ-hnam ‘husband and wife’ [archaic], Lahu nò ‘term of endearment usable to persons of either sex’). See STC:#103 and DL:779.

There is a parallel Kanauri reflex for the homorganic stopped rhyme (see 8.2(3) below): PTB *kap ‘needle’ > Kan. kheb. However, Kanauri preserves the open rhyme *-a as such: *b-r-gya ‘hundred’ > Kan. rā; ‘five’ *l/b-ṇa > Kan. ṇa; ‘eat’ *dz(y)a > Kan. za.

There are no unequivocal examples of the long rhyme *-a:m, though several roots show variation in Chin languages between *-am and *-a:m:

	PTB	STC	Reflexes
‘fathom’	*la(:)m	n. 220	Lushai has hlām (short) but Tiddim has la:m (<i>cf.</i> also WB lam; Lahu lò; Jg. ləlám)
‘bank (river) / precipice’	*r-ka(:)m	#329	Lushai has kam ‘bank, shore’ ≠ kha:m ‘precipice’ (<i>cf.</i> also Jg. ñ-gàm ‘precipice’, WB kām ‘riverbank; seashore’, Garo rikam ‘bank, margin, rim’)
‘stay / sojourn’	*dza:m	[KVB]	WB cam ‘enjoy, take delight in; (of royalty) stay’ (<i>Myanmar-English Dictionary</i> :114); Lai Chin tsaam ‘stay (as a guest)’, but Lushai cham ‘remain in a place over a day or a night; sojourn, stay for a time’

7.1: Nasals after *-a-

The labialized rhyme **-wam* has developed into *-om* in several languages (WT,⁵ Kanauri, Jingpho). Lushai varies between *-om* and *-uam*:⁶

	<i>PTB</i>	<i>STC#</i>	<i>WT</i>	<i>Kanauri</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lushai</i>
‘bear’	<i>*d-wam</i>	461	dom	hom	[ləwàp]	wak-wam	sa-vom
‘swollen / plump’	<i>*bwam</i>	172	sbom-pa	----	bōm	phwam’	puam

This backing to *-om* does not occur in Jingpho and Lushai when the **w-* is functioning as the root-initial consonant:

	<i>PTB</i>	<i>STC#</i>	<i>WT</i>	<i>Kanauri</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lushai</i>
‘dare’	<i>*s-wam</i> or <i>*hwam</i> ^a	216	---	---	wām	wam’	huam

- a. Cf. also Proto-Tamang (Mazaudon 1993-4) **wam* ‘coax’, Pumi Dayang wā. The STC reconstruction is **hwam* (#216). There is a possible Chinese cognate, below 7.5(1).

The palatalized rhyme **-yam* has developed into Jingpho *-en*, with both raising of the vowel and change of the final nasal to a dental (see *STC*, n. 171, p. 51):

	<i>PTB</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>Ahi</i>	<i>Nyi</i>
‘fly’ (v.)	<i>*byam</i> ^a	pyēn	pyam	pò	thö	tlö
‘snow / ice; cold’	<i>*kyam</i>	khyēn	khyâm	---	---	---

- a. Cf. also rGyalrong *kabyam*, and many other cognates in *ZMYYC* #782 and *TBL* #1318. Note the lateral affricate reflex of the initial in Nyi (C. Loloish).

This same shift occurs in Jingpho in two other words where medial *-y-* cannot be invoked as an explanation:

	<i>PTB</i>	<i>Jingpho</i>	<i>WB</i>
‘rough / coarse’	<i>*gram</i>	grèn	krâm
‘breath / voice’	<i>*m-sam</i> ^a	nìŋsén ~ ñ-sén	ʔəsam

5. All three labialized rhymes with final nasals (**-wam*, **-wan*, **-waŋ*) have developed *-o-* vocalism in WT (> *-om*, *-on*, *-oŋ*), just as the open rhyme **-wa* has become WT *-o* (e.g. ‘tooth’ **swa* > WT *so*). See above 5.2.2.

6. Although the evidence is scanty, perhaps a vowel-length difference is involved here, with short **-wam* > Lu. *-om*, but long **-a:m* > Lu. *-uam*.

- a. The Jg. and WB forms both mean ‘voice/sound’. In this case, WT has also developed an allofam with mid vowel: WT *sem(s)* ‘soul, spirit’, *sem(s)-pa* ‘think’ ≠ *bsam-pa* ‘thought’. Cf. also Bahing *sam* ‘breath, life’, Lepcha *a-sóm* ‘spirit, breath’.

The Loloish and Qiangic languages provide good examples of the differential effects that final **-m* could exert on a preceding **-a-* nucleus.⁷ There are over a dozen well-attested roots with **-am* reconstructible for PLB, with WB faithfully retaining the proto-rhyme:

	<i>PLB</i>	<i>WB</i>		<i>PLB</i>	<i>WB</i>
‘bear’	<i>*d-wam</i> ^{1/2}	wak-wam	‘fly’ (v.)	<i>*byam</i> ¹	pyam
‘belly’	<i>*p-wam</i> ²	wâm	‘hair (head)’	<i>*tsam</i> ¹	cham
‘bridge’	<i>*dzam</i> ¹	cam	‘iron’	<i>*syam</i> ¹	sam
‘dare’	<i>*wam</i> ³	wam’	‘otter’	<i>*sram</i> ¹	phyam
‘ear (grain)’	<i>*s-nam</i> ¹	hnam	‘road’	<i>*lam</i> ^{2/3}	lâm
‘fathom’	<i>*s-lam</i> ^{1/2}	lam ≠ hlâm ^a	‘sesame’	<i>*s-nam</i> ²	hnâm
‘fence’ ^b	<i>*kram</i> ¹	khram	‘smell’	<i>*nam</i> ^{1/2/3}	nam, nâm, ʔnam’ ^c

a. The aspirated allofam means ‘to stretch out the arm’; the **s-* prefix is also reflected in Yi Mile *tu*³³ and Jinuo *te*³³.

b. This is probably a general TB root, as implied by WT *khram* ‘notched wood’ (Jäschke), ‘tally sticks’ (Róna-Tas 1956).

c. *nam* ‘stink’, *nâm* ‘smell’, *ʔnam* ‘a smell’.

Reflexes of these etyma in other Burmish languages are quite regular:

	<i>Achang</i>	<i>Zaiwa</i>	<i>Langsu</i>	<i>Leqi (Lashi)</i>
‘bridge’	tɕam ⁵⁵	tsam ⁵¹	tsẽ ³¹	tsam ³¹
‘ear / spike of grain’	tɕɔ ⁵⁵ n̩am ⁵⁵	a ²¹ n̩am ⁵¹	kauk ³¹ n̩ẽ ³¹	a ⁵⁵ n̩am ³³
‘otter’	sam ⁵⁵	xam ⁵¹	xẽ ³¹	ʃam ³³

7. Much of JAM 2002 (“Wedge issues”) is devoted to the reflexes of the **-am* rhyme in Loloish and Qiangic.

7.1: Nasals after *-a-

However, on the Loloish side, the reflexes in the various languages and dialects are distributed all over vocalic space:⁸

	<i>BRIDGE</i>	<i>EAR (OF GRAIN)</i>	<i>FATHOM</i>
	* <i>n-dzam</i> ¹	* <i>s-nam</i> ¹	* <i>s-lam</i> ¹
<i>Lahu (Black)</i>	cò	ò- <i>nu</i>	lò
<i>Yi Xide</i>	dzi ³³	ŋi ³³	li ³³
<i>Yi Nanjian</i>	yo ²¹ dzy ⁵⁵	ny ⁵⁵	---
<i>Yi Nanhua</i>	dzu ³³	nu ³³	lu ³³
<i>Yi Mile (Axi)</i>	tsi ³³	---	tu ³³
<i>Yi Mojiang</i>	dzu ²¹ gu ²¹	ne ⁵⁵	le ²¹
<i>Yi Dafang</i>	thu ^{33a}	nu ³³	lu ²¹
<i>Lisu</i>	kho ³¹ dze ³³	e ⁵⁵ ni ³³ , e ⁵⁵ ne ³³	---
<i>Naxi Lijiang</i>	ndo ³¹	---	ly ³¹
<i>Naxi Yongning</i>	dzo ³³	ŋu ³¹	
<i>Hani Biyue</i>	tse ³³ kv ³¹	ɔ ³¹ ne ⁵⁵	le ⁵⁵
<i>Hani Dazhai (Luchun)</i>	lo ⁵⁵ dzo ⁵⁵	a ⁵⁵ no ⁵⁵	lo ⁵⁵
<i>Hani Shuikui (Mojiang)</i>	tcho ³¹	tʃhe ⁵⁵ ny ⁵⁵	lu ⁵⁵
<i>Akha</i>	law [~] dzm [~]	---	lm [~]
<i>Jinuo</i>	khɛa ³³ tʃhe ³³	ko ³³ ne ⁴⁴	tɛ ³³
<i>Gazhuo</i>	tɛ ³³	tʃhe ³³ ne ²⁴	lɛ ²⁴
<i>Yi Sani</i>	tsɿ ³³	nɿ ⁴⁴	lɿ ³³
<i>Yi Wuding</i>	ntshe ¹¹	ne ³³	le ¹¹
<i>Yi Weishan</i>	yo ²¹ dzy ⁵⁵	ɿny ⁵⁵ / ɿy ⁵⁵	---
<i>Nusu (Bijiang)</i>	gu ⁵⁵ dza ³³	ŋa ³³	la ³³

a. Note the deaffrication of the initial, as in *Mpi* (see above 3.3).

	<i>FLY (v.)</i>	<i>IRON</i>	<i>OTTER</i>
	<i>*byam¹</i>	<i>*syam¹</i>	<i>*sram¹</i>
<i>Lahu (Black)</i>	pò	šo	ǵì-šo-lo
<i>Yi Xide</i>	dzi ³³	ɣu ³³ du ³³	so ³³
<i>Yi Nanjian</i>	by ⁵⁵	xy ⁵⁵	---
<i>Yi Nanhua</i>	du ³³ (also biu ³³)	xu ³³	zi ²¹ ɣi ³³
<i>Yi Mile (Axi)</i>	ti ³³	---	xu ³³
<i>Yi Mojiang</i>	be ²¹	ce ²¹	zi ²¹ ce ⁵⁵
<i>Yi Dafang</i>	di ²¹	xu ²¹	zi ²¹ si ³³
<i>Lisu</i>	dze ³³ (also bi ³³)	xo ⁴⁴	---
<i>Naxi Lijiang</i>	mbi ³¹	ɣu ³¹	ɣu ³¹
<i>Naxi Yongning</i>	dze ¹³	ɣe ³³	ɣua ³³
<i>Hani Biyue</i>	pe ⁵⁵	se ⁵⁵	ɣ ⁵⁵ se ⁵⁵
<i>Hani Dazhai (Luchun)</i>	bjo ⁵⁵	so ⁵⁵	u ⁵⁵ so ⁵⁵
<i>Hani Shuikui (Mojiang)</i>	pu ⁵⁵	fu ⁵⁵	ɣu ⁵⁵ fu ⁵⁵
<i>Akha</i>	---	shm ^ː	ui ^ː shm ^ː ~ i ^ː shm ^ː
<i>Jinuo</i>	pɛ ³³	ce ⁴²	ce ⁴²
<i>Gazhuo</i>	phɣ ³¹	se ³³	---
<i>Yi Sani</i>	thi ³³	xu ³³	z ³³ ɣ ⁴⁴
<i>Yi Wuding</i>	qe ¹¹	ce ¹¹	ji ¹¹ se ³³
<i>Yi Weishan</i>	by ⁵⁵	cy ⁵⁵	---
<i>Nusu (Bijiang)</i>	bia ³³	ɣa ³³	ɳa ⁵⁵ dza ⁵⁵

Of the 20 Loloish languages and dialects studied, 13 have quite regular reflexes of *-am, with the conditioning for multiple reflexes largely explicable in terms of the prevocalic consonant. Thus the regular Lahu reflex is -o, with -u appearing after initial n- ('ear/spike',

8. Data from ZMYC and TBL.

7.1: Nasals after *-a-

‘sesame’, ‘smell’), while -ɔ is the reflex of labialized *-wam (‘bear’). The predominant reflexes in the other well-behaved languages are as follows:

<i>Akha</i> ^a -ṃ	<i>Nusu (Bijiang)</i> -a
<i>Gazhuo</i> -ɛ	<i>Yi Dafang</i> -ɯ
<i>Hani Biyue</i> -e	<i>Yi Nanhua</i> -ɯ
<i>Hani Dazhai (Lüchun)</i> -ɔ	<i>Yi Nanjian</i> -y
<i>Hani Shuikui (Mojiang)</i> -u	<i>Yi Weishan</i> -y
<i>Jinuo</i> -ɛ	<i>Yi Wuding</i> -e

a. Akha is the only language where the reflex of *-am retains a direct trace of the former final consonant in the shape of a syllabic (and tone-bearing) labial nasal.

The other languages have multiple reflexes whose conditioning is still obscure:

<i>Lisu</i> -o / -u / -e	<i>Yi Mojiang</i> -e / -ɯ / -o
<i>Naxi Lijiang</i> -u / -v / -o / -y / -ua	<i>Yi Sani</i> -ɣ / -ɯ / -ɪ
<i>Naxi Yongning</i> -o / -e / -ua / -v / -u	<i>Yi Xide</i> -o / -i / -ɯ
<i>Yi Mile (Axi)</i> -i / -ɯ	

In all there are no fewer than 15 Loloish reflexes of *-am, scattered all over the articulatory map:

i	y	ɿ	ɯ	ɤ	u	ua
ɪ			ɤ			
e					o	
ɛ					ɔ	
		a	ṃ			

Equally unruly are the Qiangic reflexes of the *-am rhyme, as illustrated by the following four cognate sets:⁹

<i>BRIDGE</i>	<i>PTB *n-dzam</i>		<i>(ZMYYC #477; TBL #70)</i>				
<i>PT</i>	dzã ³⁵	<i>PJH</i>	dziãu ¹³	<i>PJL</i>	dzã ³⁵	<i>PD</i>	dzõuN
<i>QM</i>	tshi	<i>QT</i>	tshie ³³ da ²⁴¹	<i>QA</i>	tshua	<i>RGS</i>	ta ndzam
<i>RGM</i>	ta ndzam	<i>RGB</i>	tɛ-ndzɛm	<i>RGC</i>	ndzem	<i>DF</i>	dzo
<i>EG</i>	dzo	<i>MYS</i>	ndzo ³⁵	<i>MYG</i>	ndzo ²⁴	<i>QYY</i>	dzã ⁵⁵
<i>QYX</i>	tso ⁵⁵	<i>ZB</i>	ptsI ⁵⁵	<i>GQY</i>	zɔ̃ ³³ pũ ⁵³	<i>GQG</i>	zã pũ ⁵⁵
<i>ES</i>	dzi ⁵⁵	<i>LS</i>	dze ³⁵	<i>NM</i>	dzo ⁵⁵	<i>SXS/SXM</i>	zẽ ⁵⁵
<i>FLY/RUN</i> ^a	<i>PTB *byam > PQiangic *m-byam</i>		<i>(ZMYYC #782; TBL #1318)</i>				
<i>PT</i>	khə ³⁵ bẽ ³⁵	<i>PJH</i>	khə ¹³ bɜ̃ɛ ¹³	<i>PJL</i>	bɜ̃ɛ ¹³	<i>PD</i>	b(d)ɜ̃ɛN
<i>QM</i>	gzi	<i>QT</i>	dze ²⁴¹	<i>RGS</i>	ka bjam	<i>RGM</i>	ka bjam
<i>RGB</i>	ka-nbjam	<i>RGC</i>	kɛ-qɛ-lɛbjəm?	<i>DF</i>	bjo	<i>EG</i>	bzo la
<i>MYS</i>	ndzye ³⁵	<i>MYG</i>	thi ³³ ndzue ⁵⁵	<i>QYY</i>	tə ³⁵ de ⁵⁵	<i>QYX</i>	rde ¹³
<i>ZB</i>	tə ⁵⁵ mdzI ⁵⁵	<i>GQY</i>	phu ⁵⁵	<i>GQG</i>	phu ³¹	<i>LS</i>	bze ³⁵
<i>SXS</i>	bu ³³ ɜ̃ɪ ⁵⁵	<i>SXM</i>	dzẽ ⁵⁵	<i>NMM</i>	ndzu ⁵⁵		
<i>IRON</i>	<i>PTB *syam</i>		<i>(ZMYYC #38; TBL #54)</i>				
<i>PT</i>	ɕi ⁵⁵	<i>PJH</i>	ʂɔ̃ ⁵⁵	<i>PJL</i>	ʂɛ ⁵⁵	<i>PD</i>	ʃiN
<i>QM</i>	su ¹ mu	<i>QT</i>	ɕi ⁵⁵	<i>QA</i>	su ¹ mu	<i>RGS</i>	ʃam
<i>RGM</i>	ʃam	<i>RGB</i>	ʃam?	<i>RGC</i>	ʃəm?	<i>DF</i>	tɕo
<i>EG</i>	tɕo	<i>MYS</i>	ɕe ⁵³	<i>MYG</i>	ɕe ⁵³	<i>QYY</i>	ɕã ⁵⁵
<i>QYX</i>	ɕo ⁵⁵	<i>ZB</i>	ɕi ⁵⁵	<i>GQY</i>	ʃɔ̃ ⁵³	<i>GQG</i>	ʃã ³¹
<i>ES</i>	ʂe ⁵⁵	<i>LS</i>	ʂu ⁵³	<i>NM</i>	ʂu ⁵³	<i>SXS</i>	ʂã ³⁵
<i>SXM</i>	ʂɔ̃ ³⁵						
<i>OTTER</i>	<i>PTB *sram</i>		<i>(ZMYYC #133, TBL #317)</i>				
<i>PT</i>	xɪ ⁵⁵	<i>PJH</i>	skhẽ ⁵⁵	<i>PJL</i>	ʂɛ ⁵⁵	<i>QM</i>	ɣdzɿ
<i>QT</i>	tsuə ³³ ma ³¹ ɲy ³³	<i>QA</i>	ɣdzə̃	<i>RGS</i>	tʃə ʃram	<i>RGM</i>	tʃhə sram
<i>RGB</i>	ʃram	<i>RGC</i>	ʃəm?	<i>DF</i>	ʂsəm	<i>EG</i>	sɜ̃ɛm
<i>MYS</i>	dzyɛ ³⁵	<i>MYG</i>	dzuə ²⁴	<i>QYY</i>	sɔ̃ ⁵³	<i>QYX</i>	ʂsɛ ⁵⁵
<i>ZB</i>	tɬ ³³ ʂi ³³	<i>GQY</i>	wi ⁵⁵ zɪ ⁵³	<i>GQG</i>	tʃhə ⁵⁵ sã ⁵⁵	<i>ES</i>	ʂɪ ⁵⁵ ʂi ^{55b}
<i>LS</i>	ʂe ³⁵	<i>SXS</i>	ʂẽ ⁵⁵	<i>SXM</i>	ʂẽ ⁵⁵		

a. This root often means 'run' in Qiangic.

b. Judging from the Lusu and Shixing forms, it is the first syllable of this compound which is the cognate; but it is apparently the Guiqiong second syllables which are cognate.

7.1: Nasals after *-a-

Several well-attested roots show variation between *-am and *-ap (e.g. ‘draw water’; ‘swell up/swollen’). See below 12.5.1.

(2) *-an

STC reconstructs relatively few (and sparsely attested) etyma with this rhyme: six with *-an and five with *-wan, and none with a long vowel. All five criterial languages of *STC* preserve *-an as such, except for Garo, which shows hesitation between -an and -en. Kanauri also reflects *-an as -en, parallel to its treatment of *-am as -em (above). The labialized rhyme *-wan becomes WT -on and Jg. -on or -un, parallel to their development of -om < *-am.

	<i>PTB</i>	<i>STC</i>	<i>WT</i>	<i>Kan</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lus</i> <i>hai</i>	<i>Gar</i> <i>o</i>
‘bore / pierce’	*lwan	p.49	---	---	gəlùn	lwan	---	---
‘casting net’	*gwan	#158 ^a	rgon-pa	---	sùm-gòn	kwan	---	---
‘convalesce ,	*bran	#133	---	bren	brān	pran ^b	---	---
‘cut’	*dan	#22	---	---	dàn	---	tan	den
‘dry up’	*kan	p.166	---	---	kán	khân	---	---
‘dry’	*tan	p.190	than-pa	---	---	than’-than’	---	---
‘hawk’	*dzwan	p.49	---	---	---	cwan	(Lahu á-cè)	
‘wrinkle / shrink’	*dwan [×] *twan ^c	p.49	---	---	thūn	twan’	---	---

a. Lepcha and Nung reflect *-wan as -un : ‘casting net’ Lepcha *kun*, Nung *gun*. There is a Chinese comparandum that lacks final -n (see below 11.2.4).

b. The WB form means ‘return, repeat; recover from fainting’, i.e. “get back to normal”.

c. The Jg. form reflects a *voiceless initial, while the WB form points to a *voiced prototype.

9. Language abbreviations: PT: Pumi (Taoba); PJH: Pumi (Jinghua); PJL: Pumi (Jiulong); PLP: Pumi (Lanping); PD: Pumi (Dayang); QM: Qiang (Mawo); QT: Qiang (Taoping); QA: Qiang (Mao, Aba Prefecture); RGB: rGyalrong (Benzhen); RGC: rGyalrong (Caodeng); RGS: rGyalrong (Suomo); RGM: rGyalrong (Maerkang); DF: DaoFu (= Horpa = Stau); EG: Ergong; MYS: Muya (Kangding, Shade); MYG: Muya (Kangding, Ganzi); QYY: Queyu (Yajiang) [“Zhābā”]; QYX: Queyu (Xinlong); ZB: Zhābā (Daofu County); GQY: Guiqiong (Kangding, Yutong); GQG: Guiqiong (Kangding, Ganzi); ES: Ersu; LS: Lüsu; NML: Namuyi Muli Luobo; NMM: Namuyi Muli; SXS: Shixing (Shuiluo River); SXM: Shixing (Muli, Liangshan).

Two of the roots in *STC* show variation between **-an* and the open rhyme **-a*, implying that the final nasal was suffixal: ¹⁰

‘dress’ (#160) PTB **gwa-n* ≠ **kwa-n*

Cf. WT *bgo-ba* ‘put on clothes’ ≠ *gon-pa* ‘clothing’ ≠ *skon-pa* ‘dress smn’; Lisu *gwa*, Nung *gwa*, Garo *gan*, Mikir *kan* .

‘goose’ (p.99) PST **ŋa-n*

Cf. WB *ŋân*, WT *ŋaŋ-pa*; but it is a Chinese doublet that directly attests to the variation: 鵞 OC **ŋâ* [*GSR* #2p] (> Mand. *é*) ‘domestic goose’ < PST **ŋa* ≠ 雁 OC **ŋan* (> Mand. (*yàn*) ‘wild goose’). This is an example of the ‘collectivizing’ function of suffixal **-n*. See below 11.2.4.

Several other roots in the above group have likely Chinese cognates (see 7.5(2) below):

‘cut’ PTB **dan*

斷 OC **twân* ≠ **d-wân* [*GSR* #170a] (> Mand. *duàn*) ‘cut off; decide; resolute’

剗 OC **twân* [*GSR* #168e] (> Mand. *duān*) ‘cut’

膊 OC **d̥iwan* ≠ *t̥iwan* [*GSR* #231k] (> Mand. *shuān* ≠ *zhūan*) ‘cut meat; slice’

‘dry up’ PTB **kan*

旱 OC **g’ân* [*GSR* #139s] (> Mand. *hàn*) ‘to dry; dry’

‘hawk’ PLB **dzwan*¹

鳶 OC **d̥iwan* [*GSR* #230a] (> Mand. *yuān*) ‘hawk; kite’

¹⁰. See below 11.2.

7.1: Nasals after *-a-

At least a dozen more etyma with *-an are reconstructed at the PTB and/or PLB level in *GSTC* (JAM 1985a:#'s 7-17, 37). All of them have Lahu cognates in -e, whether or not there was a medial glide (*-y- or *-yw-):

	<i>PLB</i>	<i>Lahu</i>	<i>WB</i>	<i>Other</i>
‘arrow’	*ʔ-dzan ¹	khá-ce	---	PNN *(la)-dza:n (French 1983:448)
‘braid / plait’	*pan ²	phê	---	Mpi pheʔ ¹ (? < *C-pat) ^a ; ≈ WB pâñ ‘go around the end of a thing’ (< PLB *ban ²) ^b
‘filter’	*ʔ-g/kyan ¹	che	kyan ≈ khyan	---
‘haze/fog’	*džan ¹	cè	---	PKaren *jan (Haudricourt 1942-5)
‘object to’	*k(y)an ¹	qhe	chan	---
‘sharpen’	*kywan ^{1/2/3}	che ≈ chê ^c	khywan ≈ khywân	Akha tje; Mpi tche ³
‘spread wide’	*ʔ-bran ³	phe	pran’ ≈ phran’	Jg. phyàn ≈ phrân ≈ yàn
‘straight / upright’ ^d	*tan ²	thê	---	Achang tan ²¹ ‘be straight’, than ²¹ ‘straighten’
‘stretch out’	*ʔ-dz/tšan ³ ^e	che	can’ ≈ chan’	Lalo tjhi
‘strong / firm’	*zan ¹	yè	san	WT btsan-po; ^f PNN *jan (French, p.497)

a. This form is reconstructed with the C- prefix because of the Mpi low-stopped tone. See above 4.4.6.

b. Kamarupan cognates include: Lushai phân ‘knit, crochet, net’, Tiddim phan ‘weave, plait’, Garo pan? ‘wind into a ring or spiral’; Boro phan ‘twist’. See *GSTC* #37. This root is distinct from *byar ≈ *pyar ‘affix / plait / sew’ (below 9.2.1).

c. Lahu che means ‘make pointed / sharpen’; chô means ‘coming to a point / pointed’. See *DL*:533-4.

d. See *GSTC*:n. 87 and *DL*:682.

e. This form is to be reconstructed with a PLB palatal affricate rather than a dental one (contra *GSTC* #11) because of the testimony Lisu tɕh³³. See Handel 2001:11.

f. This WT form implies the PTB reconstruction *b-tsan ‘strong / firm’.

A newly reconstructed PLB root with with rhyme is:

PLB *ʔ-wan¹ or *hwan¹ ‘wide’ > Lahu fe; Lalo fí; Naxi Yongning fə³³; Nusu Bijiang fha³⁵ (*ZMYYC*), fɿə (*TBL*) Yi Wuding fe³³; Yi Xide a³³fu³³ (see *ZMYYC*:185; *TBL*:#966, #976).

Several etyma with PLB *-an descend from PTB rhymes with final liquids:¹¹

‘louse’	PLB *san ^{1/2} > Lahu še (< Tone *1); WB sân (< *2) < PTB *sar (<i>cf.</i> rGyalrong sar, sor; Geman Deng sāl ⁵³ [ZMYC #162])
‘scatter / pour’	PLB *swan ^{1/2} ≠ *swat ^H > WB swan, swân; Lahu šê ≠ šê? < PTB *sywar (<i>cf.</i> WT ḥtśhor-ba, Dimasa di-sor [STC #241]) ^a
‘wolf / dhole’	PLB *wan ¹ > Lahu vè; Jinuo ø ⁴ ; Akha xà-yé, Lalo ví-pàq < PTB *kywal > Jg. tśəkyōn; PNN *C-khyual (French 1983:576)
‘slave’	PLB *gywan ¹ > WB kywan, Lahu cè < PTB *k(y)wal ≠ *g(y)wal (<i>cf.</i> WT khol-po ‘servant’; see Luce 1981)

a. For discussion of this interesting etymon, see JAM 2000b (“On ‘Sino-Bodic’”) and 2000d (“Three PST/PLB word families”).

Intralingual variation between -al and -an is attested in WT in the following root:

‘fight / quarrel’	PTB *ra:l ≠ *ran > WT ḥgran-pa ‘fight’ ≠ ral-gri ‘sword’ (“war-knife”); <i>cf.</i> also Lushai ra:l ‘war against’, Tiddim ga:l ‘battle; enemy’, WB ran ‘quarrel’ (STC n. 220)
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11. Good Chinese cognates exist for ‘scatter / pour’, ‘louse’, and ‘slave’. See “Final liquids”, below 9.2.4, 9.3.4.

7.1: Nasals after *-a-

Several cases of *-an ⇌ *-ay variation in TB word families have been identified:¹²

‘crab’	PTB *d-ka:y > Tangkhul Naga <i>khai-reu</i> , Khoirao tśəy̯ai, Khami təai, Lushai ai; but Jingpho tśəkhán (STC #51)
‘single / one / whole / only’	PTB *day ⇌ *dan or *tay ⇌ *tan > Jg. tãi, Boro otay, Lakher dei, Lahu tê (all from *-ay); but Chinese 單 OC *tân ‘single, simple; a unit’ [GSR #147a-d] points to a nasal variant, which might in turn go back to an even earlier *-r (cf. WT thor-bu; Abor-Miri-Dafla *tur ? < *twar); see GSTC #148; “Pal. suff.” #27.
‘red’	PTB *(y)a ⇌ *(y)an ⇌ *(s)a:y. This complex etymon displays both *-a ⇌ *-ay (see below 11.6) and *-an ⇌ *-ay variation: PTB *(y)a > WB ta, tya ‘flaming red’; PTB *(y)an > Lushai sén, Tiddim san ⇌ tshan; PTB *(s)a:y > Lushai tâi ‘rosy, ruddy, red’; Lakher sai ‘id.’, sai-law ‘scarlet’. Several Chinese comparanda support the nasal-final allofam, including 丹 OC *tân [GSR #150a-b] red; vermilion; cinnabar; see STC:pp. 17-8, etc.; GSTC #150; “Pal. suff.” #7.

Several well-attested roots show variation between *-an and *-at (e.g. ‘spirit / demon’; ‘braid / plait’; ‘run / dance’). See below 8.2(2b), 12.5.2.

(3) *-aŋ

The *-aŋ rhyme is the best attested nasal-final rhyme in TB, just as *-ak is the best attested stop-final rhyme, below 8.2(1). It is preserved as such in WT, WB, Jingpho,¹³ and Lushai. In Mikir and Bodo-Garo, however, the rhyme tended to be raised and fronted to -eŋ or -iŋ. Two allofamically related roots seem to establish the Mikir reflex:¹⁴

	PTB	Reflexes	STC
‘cold’	*graŋ	WT <i>graŋ</i> -ba, Lushai <i>taŋ</i> -tho:m ‘cold weather’, Mk. <i>niŋ</i> -kreŋ ‘cold weather, winter’	#120 and n. 124
‘freeze / congeal’	*glaŋ	Trung <i>glaŋ</i> ‘cold’, Mikir <i>paŋ</i> -kleŋ ‘freeze, congeal’	n. 124

12. See GSTC:46-9; 64-6 and JAM 1995a (“Pal. suff.”):54-5; 79-82. See below 12.4.

13. In one root Jingpho has exceptionally developed -oŋ from *-aŋ : *kraŋ ‘mosquito / firefly’ (STC #322) > Jg. džìŋ-gròŋ (but WB khaŋ, Rawang məgaŋ, Trung kraŋ). This suggests a pre-Jingpho variant *krwaŋ.

14. There is another allofam with final stop, PLB *m-krak ⇌ *ʔ-krak (TSR #99). See below 12.5.3.

Yet in other roots, Mikir retained the original vowel:

	<i>PTB</i>	<i>Reflexes</i>	<i>STC</i>
‘morning’	*b-raŋ *s-raŋ	Mikir praŋ, Garo phriŋ, Dimasa phoroŋ, Lahu šó-pō ‘tomorrow’	#332
‘light (weight)’	*r-ya:ŋ ^a	Mikir ar-džaŋ, Garo rit-tséŋ, Dimasa re-dženg, Lushai za:ŋ	#328

a. In this root the *long vowel might be the reason for the conservative Mikir reflex. This suggests that ‘morning’ should also be reconstructed with a long vowel, even in the absence of a Lushai cognate.

As illustrated by the last two sets, Bodo-Garo languages also tend sporadically to develop front vowels in this rhyme. See also:

	<i>PTB</i>	<i>Reflexes</i>	<i>STC</i>
‘eagle / vulture / falcon / bird of prey’	*g-laŋ *g-lak	Garó do-reŋ ‘falcon’, Bodo dau-leŋ-a ‘eagle’, Dimasa dau-liŋ ‘kite’ (dau ‘bird’)	#333 and n. 225 ^a
‘follow’ ^b	*s-naŋ	Garó sniŋ ‘follow, imitate’; but Dimasa phanaŋ ‘attach to’	#334

a. This etymon is apparently an old loan into TB from Mon-Khmer (*cf.* Proto-Bahnaric *kəlaŋ, Pearic khlaŋ ~ khlaeŋ, Khasi klin, Mon liŋ-liəŋ, Proto-Wa-Lawa *klaŋ), and has also been borrowed into Chinese (鷹 OC ʔiaŋ (*GSR* #890c) and into Hmong-Mien (*e.g.* Green Hmong tlaŋ, I Miao qləŋ). A stop-finalised allofam is represented by WT glag ‘eagle/vulture’.

b. See below 7.5(3) for other reflexes of this root.

7.1: Nasals after *-a-

Including etyma that show allofamic variation, there are altogether about 40 sets reconstructed with this rhyme in *STC*, including 3 with long vowel (*-a:ŋ) and 7 with labial medial (*-waŋ). Some examples:

	<i>PTB</i>	<i>STC</i>	<i>WT</i>	Jg.	<i>WB</i>	<i>Lahu</i>	<i>Lu.</i>
‘big / older (brother / uncle)’ ^a	*maŋ ^b	p. 189	---	---	mâŋ	mô	---
‘dung’	*s-baŋ ^c	p. 21	sbaŋs	---	bhaŋ	---	---
‘give birth’ ^d	*braŋ	#135	hbraŋ-ba	---	---	pɔ	piaŋ
‘pine’ ^e	*taŋ	n. 215	thaŋ-siŋ	---	thâŋ-rû	thô	---
‘single’	*r-kyan	#34	rkyan-pa	---	khyân	--	---
‘you’	*naŋ	#407	---	nāŋ ≠ nā	naŋ	nò	---

a. Cf. also Lalo mû.

b. Cf. also Trung dəmaŋ ‘big (of persons); older male relative’; WB û-mâŋ ‘uncle’, mâŋ ‘ruler, governor, official’; Lahu cho-mô ‘elder, ancestor’, jô-mô ‘lord, chief’. There is a good Chinese comparandum, below 7.5(3).

c. Cf. also WB phaŋ ‘anus’ < *paŋ.

d. Cf. also Akha bô (ILH). This root is reconstructed as *braŋ³ at the PLB level.

e. Cf. also Lalo thû-dzí, Hayu thoŋ, Tangkhul mataŋ. See *DL*:691.

Many additional roots with this rhyme can be reconstructed at the Proto-Lolo-Burmese level or higher, including:

<i>PLB</i>	<i>Reflexes</i>
‘clear away / disentangle’	WB phyaŋ (< Tone *1) ≠ phyân ‘hew off useless parts’, ʔephyân ‘chaff’ (< Tone *2) ≠ Lahu phô (< Tone *2) ‘clear undergrowth with heavy bush-knife’
‘cooked rice / dish to eat with rice’	WB hân ‘curry’ ^a ; Lahu ɔ̄, Lisu waw ⁵ , Akha hò, Mpi hoŋ ² , Bisu hàn-tsá (all ‘cooked rice’)

	<i>PLB</i>	<i>Reflexes</i>
‘corpse’	*s-maŋ (PTB) ^b	(Himalayish) Chepang hmāŋ, Newari si-mha; (Naga) Nocte ¹ maŋ, Tangsa Moshang mi-mang, Lotha ¹ o ¹ muŋ; (Barish) Garo maŋ; (Tani) Padam-Mising shi-mang, Bokar Lhoba ɕo-moŋ; (Qiangic) Qiang Yadu z ¹ mu; (Jingpho) Jg. māŋ; (Lolo-Burmese) Lalo mú, Maru m ³ 3 ¹ , Lashi maŋ ³¹ , Achang Xiandao tɕu ⁵⁵ m ³ oŋ ⁵⁵ , Yi Xide mo ³³ , Nasu ɕi ³³ m ³ o ³³ , Bola m ³ 5 ⁵ .
‘earring’ ^c	*raŋ ² ≈ *waŋ ²	Lh. nā-γō ~ nā-vō; Lalo ɲà-wù; Yi Nanjian na ²¹ -yu ²¹ ; Yi Wuding nu ¹¹ vo ³³ .
‘green vegetables / cabbage / mustard’	*raŋ ²	Lh. γō-cá ‘mustard greens’, γō-cá-ō ‘cabbage’, γō-ma ‘greens (general term)’; Ahi vu ²⁴ tse ⁴⁴ , Sani o ¹⁴ tse ⁵⁵ , Lalo ù, Yi Dafang yo ⁵⁵ , Yi Mile vu ²⁴ tho ³³ , Lisu o ³⁴ phu ⁴⁴ (DL:1135, ZMYC:#207).
‘hill / high ground’	*kaŋ ¹	WB khaŋ ‘roof, strip of high ground’; Lahu qhō ‘hill, mountain’ ^d
‘intimate / friend’	*kyaŋ ²	WB khyāŋ- ‘mutually’, ʔəkhyāŋ ‘one who is connected with another’; Lh. chō ‘close to, intimate with’, ð-chō ‘friend’ (DL:553)
‘lazy / tired of’	*m-baŋ ¹	WB paŋ ‘tired, fatigued’, paŋ-pān ‘tiresome’; Lahu bò ‘lazy, bored, tired of’ (DL:949-50)
‘lightweight’	*laŋ ¹	Lahu lō; Lalo lú; Lisu lo ³³ ; Yi Dafang lo ²¹ ; Yi Nanjian lu ⁵⁵ ; Yi Mojiang lo ²¹ . ^e
‘long (time)’	*ʔ-myāŋ ^{1/3}	WB hmyāŋ ‘draw out long’, Lh. mō ‘be/take a long time’, Akha (ILH) mǰāŋ ‘be a long time’ ≈ à-mjaŋ ‘always’ (DL:1028)
‘marrow’	*ʔ-glaŋ ¹	WB khaŋ-chi, Lahu ð-cō-pō ≈ ð-chō-pwe ^f
‘person / human being’	*tsaŋ ¹	Lh. chō, Bisu tshāŋ, Mpi tshōŋ ⁶ , Lisu (Fraser) htsaw ⁴ , Akha (Lewis) tsaw ^h ha [~] , Lalo tshú (DL:544)
‘practice / train’	*m/ʔ-gyaŋ ^{1/3}	WB kyaŋ ‘do, perform, practice; be habituated to; teach, train, break in (as an ox or buffalo)’ < *gyaŋ ³ ; Lahu jō ‘study, practice, drill oneself’ (< *m-gyaŋ ¹) ≈ cō ‘train someone; cause smn to practice’, Lalo dzú (< *ʔ-gyaŋ ¹ ; cf. JAM 1975c) ^g

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	PLB	Reflexes
‘river / valley’	*laŋ ¹	Lahu lɔ̌, Lisu law ⁴ hku ⁵ , Akha lɔ̌-bà (DL:1401-4)
‘spider’ ^h	*m-kaŋ	Lahu a-gò-a-lí-pè, Zaiwa a ⁵⁵ kaŋ ²¹ , Achang (Xiandao) koŋ ³¹ kau ⁵⁵ , Leqi laŋ ³¹ kaŋ ³³
‘spin’	*ʔ-gyaŋ ¹	Lahu cɔ̌ ‘go around; turn; spin’ ⁱ ≠ *m-gyaŋ ¹ (> WB gyaŋ ‘a top (toy)’)
‘spread / stretch out’	*kaŋ ²	WB khâŋ, Lahu qhɔ̌, Akha xhò (DL:305)
‘think / feel an emotion’	*m-daŋ ^{1/2}	WB thaŋ (< Tone *1); Lh. dɔ̌, Nasu d’u ³⁴ (< Tone *2). See TSR:15, DL:712-19
‘wait’	*lyaŋ (PTB)	PLB *ʔ-laŋ ¹ > Lahu lo; Lalo ʔlw; Yi Nanjian lu ³³ ; Yi Mile lu ³³ zi ²¹ ; Lisu lo ⁵⁵ ŋɛ ³⁵ ; Achang luan ⁵³ ; Maru lɔ̌ ⁵⁵ ; Bola lɔ̌ ⁴⁵ ; Zaiwa laŋ ⁵⁵ . Qiangic forms include: Ergong liaŋ; Guiqiong lɔ̌ ⁵⁵ di ³⁵ ; Ersu and Namuyi lo ⁵⁵ . See also Anong lɔ̌ ³¹ ; Geman Deng a ³¹ laŋ ³⁵ ; Darang Deng ka ³¹ liŋ ³⁵ ; Bokar Adi (Lhoba) kə-jaŋ (see ZMYYC #706, DL:1395, SB 1998).

- A sort of semantic flipflop has occurred in Burmese; cf. Siamese khâaw ‘cooked rice’, kàpkhâaw ‘curry; dish eaten with rice’.
- This is an extremely widespread root, occurring in at least seven branches of TB.
- The first syllables of these forms mean ‘ear’. See ZMYYC #742, TBL #484, SB 1998, and DL:1336.
- Cf. also WT sgaŋ ‘projecting hill or spur’, Chinese 岡 ‘hill / ridge’, OC kâŋ [GSR #697a] < PTB/PST *s-gaŋ; see DL:299-303.
- Several forms with voiced fricative initials perhaps reflect rather PTB *r-yaŋ (above, this section): Achang zaŋ⁵⁵; Naxi Lijiang zu³¹; Tujia zu⁵³;
- The non-aspirated Lahu variant reflects *ʔ-gyaŋ¹; the aspirated WB and Lahu forms are from *kraŋ¹ and *kyaŋ, respectively; see VSTB:35.
- Definitely belonging to the same word family are WB kyaŋ ‘be acquainted with; be familiar, understand well’ (< *gyaŋ¹) and Lahu jo ‘experiential particle’ (probably < *m-gyaŋ³, with grammatically functioning PLB Tone *3, yielding Lahu mid-tone (unmarked). If we are willing to admit a voicing contrast in non-stopped syllables after the PLB *nasal prefix, we could alternatively derive Lahu jo from *m-kyaŋ¹, with the voicelessness of the PLB *root-initial also yielding Lahu mid-tone, while the nasal prefix led to voicing of the modern Lahu initial.
- Extra-LB cognates Thulung goŋ-ga-yoŋ-ma ‘daddy long legs’, Tshona (Wenlang) kaŋ⁵⁵pra⁵⁵mo⁵⁵ ‘spider’, Pa-O Karen jàu kâŋ. There are probable allofamic connections with *waŋ ≠ *p^haŋ ‘spin / spindle’, and *m-ga ‘spin / card fibers’ (> Lh. gā ‘spin / card’, a-gù-na-gá-pè ‘spider’; Lisu ga ‘spin’; Bisu gā ‘spin, as a spider’).
- Lahu khɔ̌ ‘a top’, with atypical aspirated initial under the very-low tone, is probably an early loan from Shan màak-khàaŋ (cf. Siamese lûuk-khàaŋ); see DL:486, 384.

New roots in **-aŋ* at the PTB level include:

	<i>PTB</i>	<i>Reflexes</i>
‘be there / have’	<i>*m-dzyaŋ</i>	(<i>Loloish</i>) Lisu jaw ⁴ , Phunoi cǎ, Bisu tǎǎ, Akha jó, Mpi tɛǎ ³ [Bradley 1979:#610]; also Lalo djú, Yi Xide dzo ³³ , Naxi Lijiang dzy ³³ , Caiyuan Hani tsǎ ³³ , Jinuo tǎa ³¹ , etc. [ZMYYC #735]; (<i>Baic</i>) Dali tsu ³³ , Jianchuan tsu ³³ , Bijiang dʒi ³³ ; (<i>Qiangic</i>) Ergong ntɕho, Muya ndzø ³⁵ , Guiqiong jẽ ⁵⁵ , Ersu dʒo ⁵⁵ , Shixing dzǎ ⁵³ , etc. (See JAM 2000c)
‘deaf’ ^a	<i>*l-baŋ</i> ≈ <i>*m-baŋ</i>	(<i>Lolo-Burmese</i>) WB pǎŋ; Lahu pǎ; Lisu na ⁵⁵ bo ³¹ ; Lalo ɲà-bù, Yi Dafang bo ³³ ; Phunoi ləpǎ; Naxi xe ³³ mpu ³³ ; (<i>Jingpho</i>) Jg. ləphǎŋ, nà phǎŋ; (<i>Qiangic</i>) Pumi Taoba zɛ ³⁵ bō ³⁵ , Ersu na ³³ nbo ⁵⁵
‘word / language / sound’	<i>*glaŋ</i> ≈ <i>*klaŋ</i>	Zhangzhung glang ~ klang; Lahu khǎ ^b
‘tense / tight’ ^c	<i>*taŋ</i> ≈ <i>*daŋ</i>	WT thaŋ-po ‘tense, tight, firm’; WB tâŋ ‘tighten’
‘strong / firm / tense / distended’ ^d	<i>*kraŋ</i> ≈ <i>*graŋ</i>	WT (m)khaŋ ‘hard, solid, firm’; WB kraŋ’ ~ kyaŋ’ ‘tense, tight’; Lushai traŋ ‘be distended’, thraŋ ‘grow’.

a. See above 4.4.2 and ZMYYC #301.

b. Although there is a similar Tai etymon represented by Shan khǎ, this now seems to be a genuine PTB root. (See DL:380 and JAM 1999c (“Zhangzhung”):#30).

c. See Coblin 1986:150 and below 7.5(3). Thanks to Axel Schüssler for expanding this etymology. This root is probably allofamically related to the following item in the table.

d. For the Lushai reflexes tr- / thr- < **gr-* / **kr-*, see above 3.6.4.1(2). For possible Chinese comparanda with both velar and dental initials, see below 7.5(3).

As illustrated by the above examples, the consistent Lahu reflex of **-aŋ* is -ǎ. After the consonant group **mr-*, however, the Lahu reflex vacillates between -ǎ (‘see’) and -u (‘high’; ‘horse’):

	<i>PTB</i>	<i>STC</i>	<i>WB</i>	<i>Lahu</i>	<i>Other</i>
‘see’ ^a	<i>*mraŋ</i>	#146	mraŋ	mǎ	Rawang yaŋ
‘high / long’	<i>*m-raŋ</i>	p.43	mraŋ’	mu	Trung mraŋ; Rawang yaŋ
‘horse’	<i>*m/s-raŋ</i>	#145	mrǎŋ	í-mû	Chepang sǎraŋ, Jg. gùm-ràŋ ^b

7.1: Nasals after *-a-

- a. This etymon constitutes a simplex/causative pair in LB. The causative allofam **s-mraŋ*¹ ‘show’ is represented by Lh. *mɔ* (mid-tone). See *GL*:3.616, *DL*:1027.
- b. The ordinary WT word for ‘horse’ is the unrelated *rta*, but Beyer (1992:85) cites an archaic Tibetan form *rmañ*, with a final palatal nasal.

Since *-u* seems to be the Lahu reflex of **-waŋ* (see ‘pit / hole’ and ‘uncle’, below), it is possible that the Lahu forms for ‘high’ and ‘horse’ reflect pre-Lahu **mwaŋ*. Interchange between **r* and **w* has been noted in several other etyma, a phenomenon that may be called the “widdle wabbit syndwome” (see above 3.4.2(1) and *VSTB*:56).

A few roots are set up with the long vowelled rhyme **-a:ŋ*, on the basis of forms from Kuki-Chin-Naga languages:

	<i>PTB</i>	<i>STC</i>	<i>Reflexes</i>
‘light (weight)’	<i>*r-ya:ŋ</i>	#328	Mikir <i>ar-dzaŋ</i> , Garo <i>rit-tseŋ</i> , Dimasa <i>re-dzeng</i> , Lushai <i>za:ŋ</i>

The following root, artificially separated into two sets in *STC* (#330 and #331) shows internal vowel length and/or tonal variation in KCN and Jingpho, and was evidently prefixed in several languages:

	<i>PTB</i>	<i>STC</i> #’s	<i>Reflexes</i>
‘roast / toast / burn / be dry’	<i>*ka(:)ŋ</i>	330 & 331	Jingpho <i>kàŋ</i> ‘be hot’, <i>kāŋ</i> ‘be dry’, <i>kəkāŋ</i> ‘roast, toast, bake’; Nung <i>dəgaŋ</i> ‘toast’; WB <i>kaŋ</i> ‘broil, roast, toast’ (< PLB <i>*gaŋ</i> ¹); Lahu <i>qɔ</i> (< PLB <i>*ʔ-gaŋ</i> ¹) ‘roast in bamboo tube; expose to heat’; Lushai <i>ka:ŋ</i> ‘burn’, <i>kaŋ</i> ‘evaporate; dry up; fry’; Lai Chin <i>kaaŋ</i> (I) / <i>kaŋ</i> (II) ‘be burning’ (v.i.), <i>khaaŋ</i> (I) / <i>khaŋ</i> (II) ‘burn sthg’ (v.t.); Tiddim Chin <i>kăŋ</i> ‘dry up’, <i>kā:ŋ</i> ‘burn’

In many closed syllable rhymes, including **-a(:)ŋ*, Tangkhul Naga reflexes are sensitive to the length of the proto-vowel (see JAM 1972b:280-1): **-aŋ* > TN *-əŋ*, **-a:ŋ* > TN *-aŋ* :

	<i>PTB</i>	<i>STC</i>	<i>Tangkhul</i>	<i>Lushai</i>
‘dream’	<i>*maŋ</i> ≠ <i>*mak</i> ^a	#82	<i>məŋ</i>	<i>măŋ</i>
‘black’	<i>*ha:ŋ</i> >	---	<i>maŋ</i>	<i>màaŋ</i>

a. This root has an allofam with homorganic stop final; see below 8.2(1) and 12.5.3.

The presence of medial *-w- in this rhyme led to special reflexes in some languages:

<i>PTB</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>
*-waŋ	-oŋ	-waŋ	-u	-uaŋ

	<i>PTB</i>	<i>STC#</i>	<i>Reflexes</i>
‘come / enter’ ^a	*hwaŋ	218	WT ɬoŋ-ba; Bunan hwaŋs ‘come out, go out’; WB waŋ
‘encircle / fence’	*hwaŋ	217	Jg. wāŋ, ^b WB wāŋ, Lushai huaŋ
‘hole / cave / pit / well (for water)’	*dwaŋ	169	WT doŋ; WB twāŋ ‘hole’, re-twāŋ ‘well’; Lahu ɣì-tû ‘well’; Tiddim Chin waŋ ^c
‘lofty / elevated’	*dzwaŋ	---	WB cwaŋ ‘be erected, elevated, perched on high’; Lai Chin cuaŋ (I), cuan (II) ‘be lofty, visible (as a banner)’

- a. The direction of motion signalled by this etymon varied enantiomorphically, in a way typical of deictic verbs; *cf.* the variable use of verb pairs like English *bring/take, come/go* according to the speaker’s deictic viewpoint.
- b. When the w- is functioning as the root-initial, as here, the Jg. reflex remains -aŋ. *Cf.* also ‘spin / spindle’ (*STC* #48) with secondary w- initial in Lolo-Burmese: PTB *p^waŋ > WT phaŋ, Jg. kəbāŋ; but WB wāŋ ‘swing around, spin’, waŋ-rûi ‘spindle’; Lahu vō ɣō ‘spin rapidly’ (< PLB *waŋ²). (For an account of the LB initial in terms of “extrusion”, see JAM 1998b.) Here too, since the labial element is acting as syllable-initial, the Lahu reflex remains -ɔ instead of -u.
- c. The long vowel is established by the Tiddim form, which evidently treated the dental element as a prefix.

One interesting etymon in *-aŋ displays variation between an initial labial stop and initial *w-:

‘uncle / senior male relative’ *b^waŋ ≈ *p^waŋ^a

- a. Reconstructed as *bwaŋ in *STC*:23, 174, 189; for more details see JAM 2000a:#21, and below 7.5(3). See also *ZMYC* #321, the source for several of the forms cited here.

Forms with stop initials include WT ʔa-baŋ, baŋ-po ‘parent’s sister’s husband’; Chepang paŋ ‘father’s brother’; Geman Deng poŋ³⁵ ‘father’s older brother’. Reflecting the semivowel initial are forms like Nung a-waŋ ‘father’s brother’; Lashi vaŋ-mo ‘father’s older sister’s husband, husband’s father’; Zaiwa a⁵⁵va²¹mo⁵⁵ ‘father’s older brother’; Yi Xide pha⁵⁵vu³³ ‘*id.*’; Lisu o⁵⁵yo⁴¹pho³¹ ‘*id.*’. The vocalism of the Lahu cognate ð-u-phâ ~ ð-o-phâ¹⁵ is parallel to that of ‘hole / cave / pit / well’ (above), implying that the labial

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element was treated as part of the vocalic nucleus (and not as the syllable-initial) in pre-Lahu.

In one complex word-family (‘horn / angle’) *STC* sets up one of several allofams with the rhyme *-waŋ, though their interrelationships are far from clear.¹⁶

(a)	*g-rwa (> <i>e.g.</i> WT grwa ‘angle’, rwa ‘horn’)
(b)	*g-rəw (> <i>e.g.</i> WT gru ‘angle’, ru ‘horn’; PLB *krəw ¹ (> WB khruī, Lahu khə)
(c)	*g-run, later changed to *(g-)rwaŋ (> <i>e.g.</i> Jingpho rūŋ, ñ-rūŋ; Lepcha ṣróŋ, Garo groŋ, Bodo goŋ [with prefix preemption])

Several well-attested roots show variation between *-aŋ and *-ak (*e.g.* ‘eagle’; ‘dream’; ‘cold’; ‘ink / black’), or between *-waŋ and *-wak (*e.g.* ‘speak’). See below 12.5.3.

7.2 Nasals after high vowels *-i- and *-u-

(1) *-im and *-um

These two rhymes are kept distinct in many TB languages (*e.g.* WT, Jingpho, WB, Lushai, Mikir), but have fallen together in a number of others (*e.g.* Lahu), while some languages (*e.g.* Nung, Bodo-Garo) show allofamic or free variation between the two. Neither rhyme permits a preceding labial semivowel (*i.e.* **-wim and **-wum are not attested).¹⁷ A marginal length contrast has been established for these rhymes, with only one example of *-i:m,¹⁸ but three plausible examples of *-u:m.

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Mikir</i>	<i>Bodo-Garo</i>
*-im	-im	-im	-im	-ɛ	-im/-in	-em	-im/-um
*-um	-um	-um	-um	-ɛ	-um	-om	-um/-im/-am

15. This Lahu form has a variety of related meanings: (1) ‘older brother of a girl’, (2) ‘a girl’s mother’s brother’, (3) ‘wife’s brother’, (4) ‘man’s brother-in-law’. The basic meaning is ‘guardian of a young girl’. The office of guardian is filled by an older brother, if the girl has one, otherwise by a maternal uncle or other older male relative.

16. The elliptical discussion is scattered among pp. 32, 75, and 113.

17. In Chinese terms we could say that these rhymes lack a 合口 *hékǒu*.

18. See ‘rattan / cane’, below.

(a) **-im*

Only four or five roots are set up with **-im* in *STC*:

	<i>PTB</i>	<i>STC</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Other</i>
‘sweet / delicious’	<i>*dzyim</i>	#71	<i>zim-pa</i>	---	<i>chim</i> ’	Tangkbul <i>kəšim</i>
‘threaten / terrify’	<i>*krim</i>	#379	---	<i>khṛim</i>	<i>krîm, khṛîm</i>	Dimasa <i>migrim</i>
‘dark-colored’	<i>*syim</i>	#380	---	---	---	Lushai <i>thim</i> ; Dimasa <i>sim-ba</i> × <i>sum-ba</i>
‘rattan / cane’	<i>*ri(ɪ)m</i> ^a	p.107	---	<i>rîm-</i> ^b	<i>krim</i>	Lepcha <i>rim</i>

a. Cf. also Maru *wram*. *STC* sets up this root with a long vowel, without explanation, probably because of the retention of the original vowel in the Lepcha form, since Lepcha tends to lower short *high vowels in closed syllables (see ‘block’ / ‘pillow’ and ‘warm’, below).

b. This is a bound form in Jingpho, occurring in the name of rattan species like *rîm-khá*, *rîm-šât*, *rîm-šin*. The free form for rattan is an open syllable, *rî*.

Thanks to the forms given in *ZMYYC* (#’s 6 and 805) and *TBL* (#’s 7 and 983), to this short list we may add two more roots in **-im* that are well attested in both Qiangic and Lolo-Burmese:

‘cloud’	<i>*s-dim</i>	
	<i>Qiangic</i>	Qiang Mawo <i>zdɿm</i> , Qiang Taoping <i>χde</i> ³³ , Pumi Taoba <i>zə⁵⁵rē⁵⁵</i> , Pumi Jinghua <i>sdĩ⁵⁵</i> , Pumi Jiulong <i>dē³⁵</i> , rGyalrong <i>zdem</i> , Ergong (Daofu) <i>zdo-mɛ</i> , Muya <i>ndur</i> ³³ <i>zɛ³⁵</i> , Queyu <i>ɕtie⁵⁵</i> , Zhaba (扎坝) <i>ʂtei</i> ³¹
	<i>Lolo-Burmese</i>	WB <i>tɪm</i> , Yi Xide <i>mu</i> ³³ <i>tɪ</i> ³³ , Yi Dafang <i>tie</i> ³³ , Yi Nanjian <i>ɑ⁵⁵mu²¹tɪ⁵⁵</i> , Yi Nanhua <i>tɪ</i> ³³ , Yi Mile (Ahi) <i>tɛ</i> ³³ , Yi Mojiang <i>tɛ</i> ⁵⁵ , Naxi Lijiang <i>tɕi</i> ³¹ , Naxi Yongning (Moso) <i>tɕi</i> ³³ , Hani Biyue <i>nɿ</i> ³¹ <i>tshi</i> ³¹ , Hani Haoni <i>u</i> ³¹ <i>tu</i> ⁵⁵ , Jinuo <i>mur</i> ³³ <i>tjɐ</i> ³³ , Gazhuo <i>tɿ</i> ²⁴
‘shallow’	<i>*dim</i> ^a	
	<i>Qiangic</i>	Pumi Taoba <i>zē³⁵mə⁵³</i> , Pumi Jinghua <i>sdĩ⁵⁵</i> , Queyu <i>ndiɛ⁵⁵</i>
	<i>Lolo-Burmese</i>	WB <i>tɪm</i> , Yi Xide <i>i</i> ⁴⁴ <i>dɪ</i> ³³ , Yi Dafang <i>du</i> ²¹ , Yi Nanhua <i>dɛ</i> ³³ , Yi Mile <i>du</i> ³³ , Yi Mojiang <i>dɛ</i> ³³ , Yi Wuding <i>dɛ</i> ¹¹ , Lisu <i>thɛ</i> ³¹ , Naxi Lijiang <i>dy</i> ⁵⁵ , Hani Dazhai <i>tɛ</i> ³³ , Sani <i>tv</i> ³³ , Jinuo <i>a</i> ³³ <i>tɛ</i> ³³ , Gazhuo <i>tɛ</i> ³²³

7.2: Nasals after high vowels *-i- and *-u-

- a. This root might also be reflected in Baic: Bai Dali t̪ɕhɪ³³, Bai Jianchuan t̪ɕhɪ³³. On the other hand these forms could be loans from Chinese 淺 (Mand. qiǎn).

Note the identical Pumi Jinghua and WB reflexes of these two etyma.

(b) *-um

The rhyme *-um is somewhat better attested, with about eight examples in *STC*, including the following:

	<i>PTB</i>	<i>STC#</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lushai</i>
‘round’	*zlum	143	zlum-pa	lùm	lùm	hlum
‘salt’	*g-ryum ^a	245	---	džùm	---	---
‘long for / pine’	*d-rum	457	drum-pa	---	khyùm	---
‘three’	*g-sum	409	gsum	məsùm	sùm	thum
‘warm’	*lum ʔ	381	---	lūm, məlūm	lum	---
‘make warm’	*s-lum ^b		---	šəlūm	hlum, hlum’	---
‘block / pillow’	*m-kum	482	---	-khum ^c	khum	khum

a. Cf. also Kiranti rum ʔ yum, Kadu sum, Moshang šum, Meithei thum.

b. The variant with the *s- prefix forms causatives/transitives meaning ‘heat up; cause to be warm’. Although *STC* only recognizes the rhyme *-um for this root at the PTB level, several daughter languages have reflexes in -im (Nung lim; Dimasa lum ~ lim ‘be hot, have fever’, gilim-di ~ gulum-di ‘sweat’ [“heat water”]), while Lepcha, Bodo, and Garo have reflexes in -am. For the quasi-regular development of *-um to -am in certain languages, see below.

c. The Jg. morpheme occurs in several compounds, e.g. b̃uŋ-kh̃um ‘pillow’ (b̃uŋ ‘head’), l̃əkh̃um ~ p̃uŋ-kh̃um ‘chair, bench’. The WB form reflects PLB Tone *1, but the Lahu cognate ú-gê ‘pillow’ (ú- ‘head’) is from Tone *2. The voiced initial of the Lahu form, as well as Luquan Lolo ŋk’v³³ and Nung əgə məkhim (əgə ‘head’) unequivocally point to a nasal prefix with this root. Note the front vowel in the Nung form.

Other roots reconstructible with this rhyme at the PTB level include:

- PTB *s-grum ‘contracted / stunted / dwarfish’ > Lai Chin trum ‘stunted’, WB kyum ‘be contracted, drawn together, shrunk’, Lahu chɔ-kɛ-nɛ ‘short person, a “shrimp”’, chɪ-kɛ-nɛ ‘barking deer’ (a small species), qhɔ-kɛ-nɛ ‘barren mountain on which nothing grows’. The Lai and Lahu forms reflect *-r-, but WB has -y-; both WB and Lahu reflect PLB Tone *3. See above 3.6.4.1.
- PTB *dzum ʔ *tsum ‘pair’ > (Lolo-Burmese) WB chum ‘meet, come together’, Akha tsm̃ ‘join at a spot, form a joint’ (< PLB *tsum¹); Akha dz̃m ‘classifier for pairs’, Lahu cɛ ‘pair, even number’ (< PLB *dzum³); Yi Dafang dzw²¹, Lisu dze⁴¹, Naxi Yongning

dzɿ³³, Hani Biyue tsɔ³¹, Jinuo tsø³³, Achang tɕəm³¹, Zaiwa tsum⁵⁵, Langsu (Maru) tsam⁵⁵; (Jingpho-Nung) Dulong dzum⁵⁵, Jingpho tsūm. Cf. ZMYYC:958, DL:481.

New roots reconstructible at the PLB level include:

	<i>PLB</i>	<i>WB</i>	<i>Loloish</i>
‘numb / befuddled’	*tum ¹	thum ‘numb, stupefy’	Lh. m̄â-n̄ô-m̄â- <i>the</i> ‘befuddled, dazed’; q̄â-b̄ò-q̄â- <i>the</i> ‘sheepish, all confused, foolish looking’ (DL:687)
‘taro’	*blum ²	---	Lh. p̄ê, Lisu (Fraser) bi ⁶ , Phunoi p̄m̄, Bisu pl̄um, Akha b̄y (DL:850)

Several important roots show *-im ⇌ *-um variation, both language- and subgroup-internally, as well as across subgroups of TB. This is a special case of the widespread variational pattern of *-i- ⇌ *-u- in closed syllables, especially in the environment of a syllable-initial or syllable-final labial (below 12.1).¹⁹ Examples to be found in *STC* include:

	<i>PTB</i>	<i>STC</i>	<i>Reflexes</i>
‘house’	*k-yim	#53	WT khyim, Bahing khyim, Mru kim, Limbu him, Chepang kyim ~ tim, Vayu kim ~ kem, Andro kem, Kadu tyem, Mikir hem, ^a Chinbok im, WB ʔim; Lushai and Lai Chin in (with dentalization of the final consonant) ^b
	*k-yum		Lepcha khyūm, Miri əkum, Namsang hum, Meithei yum
	*k-yim ⇌ *k-yum ^c		Magari im ~ yum, Nung kyim ~ tsim ~ tsum, Moshang yim ~ yūm.
‘dark / dusk’	*rum	#401	WT rum ‘darkness, obscurity’; perhaps also WB hrūm ‘lose, be defeated’
	*rim		Jg. rīm ‘be dusk, dark’ ŋ-rīm ~ níŋ-rīm ‘evening’, sərīm ‘twilight’; ^d Nung rim-rim na ‘gray’, rim-rim wə ‘twilight’

19. In some languages (especially in the Bodo-Garo group) variation between medial -u- and -i- is pervasive, affecting vowels with surrounding consonants at any point of articulation.

7.2: Nasals after high vowels *-i- and *-u-

- High medial vowels are frequently lowered to mid vowels in Mikir. For another example before *-m, cf. ‘hold in the mouth’ *m-u:m > Mikir om.
- An opposite development of the *-m to the velar nasal -ŋ is postulated for the Chinese comparandum 宮 ‘dwelling-house; palace; temple’ OC *kǝŋ [GSR #1006a-d]. A similar Chinese development at a later time period is assumed for 熊 ‘bear’, reconstructed in Karlgren’s *Analytic Dictionary* as OC *gǝm (cf. PTB *d-wam) but MC jiuŋ. See below 12.6.2(3).
- As these forms show, sometimes there is variation within a single language. Reflexes of this root in languages with depleted final consonants are often powerless to distinguish between the front and back variants; e.g. Lahu yè could come from either *yim or *yum.
- These tones are according to Maran’s unpublished dictionary. They disagree with the tones given in Dai *et al.*, 1983: rīm; n-rīm; nīŋ-rīm.

A new example of *-im \times *-um variation was proposed in JAM 2000d:²⁰

‘set (of the sun)’ PTB *g(l)im \times *g(l)um

(a) Forms reflecting a simple initial velar stop include:

		*gim \times *gum	
Proto-Kiranti	*gim ^a	Dumi gi:m, Thulung gam	
Lolo-Burmese	*gum	Lahu qè ^b , Nanjian Yi yu ⁵⁵ , Lisu go ³³ ze ⁴⁴ , Naxi (Lijiang and Yongning) gv ³¹ , Hani Caiyuan (Biyue) kɔ ³³ , Hani Shuikui (Haoni) kɔ ³³ ji ⁵⁵	
Qiangic	*gim ^c	Qiang (Mawo) a qe [ZMYYC], a qa [TBL]; Shixing mie ³³ γī ⁵⁵ [ZMYYC], gī [TBL]; Namuyi mi ³³ qæ ⁵⁵ (cf. ŋi ⁵⁵ mi ⁵⁵ ‘sun’)	
Baic	*gum ^d	Jianchuan ɣo ⁴² [ZMYYC], ɣu ²¹ [TBL]; Dali o ⁴²	

(b) Forms with affricates or clusters that might point to an earlier *cluster include:

		*glim \times *glum	
Nungish	*glim \times *glum	Anong Nu dʒim ⁵⁵ , Dulong glɔm ⁵³	
Lolo-Burmese	*glum or *gyum	Yi Weishan ʒe ⁵⁵ ; Yi Nanhua dʒo ³³ ; Yi Wuding dɣ ¹¹ ; Sani tɬ ³³ ; Jinuo krɔ ³³ [TBL], kra ³⁵ [ZMYYC]	
Qiangic	*glim or *glum ^e	Daofu (Ergong) nə ndʒo, Queyu pu ⁵⁵ tɕha ¹³ , Lusu ne ³³ tɕu ⁵³ , Pumi (Taoba) nə ³⁵ dʒɛ ³⁵ , Pumi (Jinghua) nə ¹³ dzie ⁵⁵ , Ersu tɕho ⁵⁵	

- Michailovsky (1989).
- The Lahu form could come from either *-im or *-um, though the other Loloish reflexes seem to point to a PLB *back vowel.
- These Qiangic forms seem mostly to reflect a *front vowel.
- These Baic forms seem rather to reflect a *back vowel.

e. The Daofu, Lusu, and Pumi first syllables mean ‘sun’ (< PTB *nəy).

Several languages (Bodo, Garo, Lepcha) have developed a secondary -am reflex from *-um.²¹ In the case of Lepcha, this is useful in determining the length of the proto-vowel, since short *-um > Lepcha -am, but long *-u:m > Lepcha -ǔm (with preservation of the original vowel quality). Examples with short vowel include:

	<i>PTB</i>	<i>STC#</i>	<i>Reflexes</i>
‘mortar’	*(t)sum	#75	WB chum , Jg. thùm , Lushai sum ; but Lepcha tuk-sam , Garo sam
‘salt’	*g-ryum	#245	Jg. džùm , Moshang śum , Meithei thum ; but Garo khari-tśham
‘sweet’	*s-klum	p. 75	Lushai thlum , Meithei thum ; but Lepcha khlyam
‘warm’	*s-lum	#381	Jg. lūm , WB lum ; but Lepcha lyam , ^a Garo gram-tśi ‘sweat’, Bodo galam ‘to sweat’
‘three’	*g-sum	#409	WT gsum , Jg. məsūm , WB sūm ; but Lepcha sam , Garo githam , Dimasa gatham ^b
‘block / pillow’	*m-kum	#482	Jg. khúm , WB khum , Lushai khum ; but Lepcha kam ‘block’, thyak-kam ‘pillow’ (thyak ‘head’), kuŋ-kám ‘block used as a seat’

a. Lepcha prevocalic -y- is often the reflex of the *s- prefix. See above 4.2.1.

b. Note that a similar development of PST medial *-u- to -a- has occurred in Chinese 三 ‘three’ (OC **səm** / MC **sâm**) [*GSR* #648a-c].

20. Most of the supporting forms for this etymology are to be found in *ZMYYC* #752 and *TBL* #1512.

21. The same development is occasionally found in other languages, e.g. ‘house’ *k-yum > rGyalrong **tšam**.

7.2: Nasals after high vowels *-i- and *-u-

Three etyma are set up with the long vowel rhyme *-u:m, on the basis of a long vowel in Lushai and/or a reflex -ũm in Lepcha:

	<i>PTB</i>	<i>STC</i>	<i>Reflexes</i>
‘bud’	*mu:m	#364	WB mum ‘begin to form, as a bud’; Lushai kuʔ-mu:m ‘to bud’
‘arched / vaulted; convex / concave’	*ku(:)m	pp.75, 78	Lepcha kũm, WB khûm, Lushai kum ~ ku:m (note the length variation in Lushai)
‘hold in the mouth’	*m-ʔu:m	#108	WT ʔum ‘a kiss’; Lepcha ũm ‘receive into the mouth’, ^a Miri um-bom ‘hold inside the mouth’; Mikir om ‘chew / mouthful’; Jg. mǝũm ‘hold in the mouth’ ^b

a. Despite the Lepcha reflex, this etymon was reconstructed with a short vowel in *STC* #108; this was revised to a long vowel (p.181) in the context of citing the Chinese comparandum 噙 OC ʔəm ‘hold in the mouth’ [not in *GSR*].

b. Also apparently cognate are Lushai and Lai hmoom (KVB), reflecting a variant with *s- prefix, where the m is treated as the root initial.

One important TB root with a good Chinese comparandum shows variation between *-um and *-uŋ:²²

‘use’ *zum ʷ *zuŋ	
PST *zuŋ	Jg. súŋ; Zaiwa tʃhuŋ ⁵¹ ; cf. Chinese 用, OC *d̥iŋ (GSR #1185a-e)
PLB *zum ²	WB sũm; Lahu yê; Lisu ze ³¹ ; Yi Nanhua zu ³³ , etc.

(2) *-in and *-i:n

These rhymes are quite rare at the PTB level, with only a few etyma discovered so far. *STC* reconstructs just two roots²³ with short *-in, and only a single one with long *-i:n.²⁴ As always, the Chin languages (especially Lushai) are crucial for establishing the length

22. See below 12.6.2(3).

23. In the first version of *STC* a third root, ‘claw/nail’, was reconstructed with this rhyme, though this was later modified to the rhyme *-yen. See below 7.3(2).

24. A second etymon with long *-i:n ‘time / occasion’ is reconstructed in JAM 1978:35 (*VSTB*). See below.

difference, but for this rhyme Lolo-Burmese also provides key evidence for the distinction:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Garó</i>
*-in	-in	-in	-añ	-ɛ	-in	-in
*-i:n	-in	-in	-in	-ɪ	-i:n	?

As we have just seen, WB does not provide any evidence for distinguishing between short and long medial *-i- and *-u- before final -m : PTB *-um/ *-u:m > WB -um; PTB *-im/*-i:m > WB -im, e.g. ‘mortar’ *t(s)um > Lushai sum, WB chum; ‘bud’ *mu:m > Lushai mu:m, WB mum. Before final -n, however, both WB and Lahu clearly distinguish between short and long *-i(:)- :

	<i>PTB</i>	<i>STC#</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Mikir^a</i>
‘liver’	*m-sin ^b	234	mtśhin	məsɪn	ʔəsâñ	ð-šē	thin	iŋ-thin
‘ripe’	*s-min	432	smin-pa	myɪn	hm(y)añ	mɛ	hmin	men

TABLE 16. Examples of PTB *-in .

- a. Note that the Mikir reflexes are unreliable clues to the proto-rhyme. This Mikir variation between -in and -en is parallel to its multiple reflexes of *-am (> -im or -em) and *-iŋ (-iŋ or -eŋ). See 7.1(1) above and 7.2(2) below.
- b. Cf. also the Karenic reflexes, e.g. Pwo θüN, Sgaw θu.

	<i>PTB</i>	<i>STC</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Mru</i>
‘weigh’ ^a	*kyi:n	#369	śīn ɤ (t)śēn	khyin	chɪ	ki:n	---
‘time / occasion’	*kyi:n ɤ *kri:n ^b	---	---	ʔəkhyin	khɪ	---	rin ɤ khin

TABLE 17. Examples of PTB *-i:n .

- a. In this root the testimonies of WB and Lushai agree perfectly.
- b. *-r- ɤ *-y- variation must be posited in this root, since the Lahu front velar derives from a *velar-plus-r cluster (see above 3.6.4). This is confirmed by the form in Mru (Arakan and E. Bengal) with initial r-, which permits this etymon to be reconstructed at the PTB level. The Mru doublet khin is perhaps a loan < Burmese.

7.2: Nasals after high vowels *-i- and *-u-

A new PST/PTB etymon with the rhyme *-in has just been proposed:²⁵

‘body / owner / agentive nominalizer’ PST/PTB *sin

WB sañ ‘owner; proprietor’ (< PLB Tone *1); Lahu ð-šē ‘body’, ð-šē-phâ ‘owner; doer or performer of an action’, šē-phâ ‘agentive nominalizer’ (< PLB Tone *2); Lai Chin (KVB) sin ‘possessive particle’. An excellent Chinese comparandum is 身 ‘body’ OC śjĕn (*GSR* #386a-c).^a

- a. *STC* (pp. 99, 158, 169, 197) attempts to relate this Chinese form rather to PTB *sya ‘flesh / meat’, via the “collectivizing suffix” -n (see below 11.2.3).

Still another root with this rhyme may be reconstructed for PLB:

‘bowl / dish / cup’ PLB *krin²

Lh. khê; Lalo á-kjê.^a

- a. For the same Lahu/Lalo correspondence, cf. ‘nail / claw’ PTB *m-tsyen > PLB *sin² > Lh. làʔ-šē-qú, Lalo liʔ-kw-sê.

The most interesting reflex of *-in is WB -añ, with a final palatal quite atypical for TB. It represents the merger of four *rhymes with front vowels before dental or velar nasals, */-in -iŋ -en -eŋ / , exactly parallel to the WB reflex -ac of the homorganic quartet of *stopped syllable rhymes, */-it -ik -et -ek / , below 8.3(1-2), 8.5(1-2). For more on WB -añ, see below 7.4.

(3) *-un

This rhyme is extremely rare. Only a single etymon with *-un was reconstructed in the first version of *STC*:

‘all’ *kun (*STC* #10)

WT kun ‘all’; WB kun ‘come to an end, used up’, ʔəkun ‘all’; Lepcha gŭn ‘all’^a

- a. This Lepcha form may well be a loan from Tibetan.

However, the discovery of a pair of Mikir forms (Mk. koi ‘all’, iŋkoi ‘twenty’) made it clear that these are all reflexes of a much more widespread etymon with liquid final, *m-kul (*STC* #397) ‘twenty’, with an original meaning like “such a large number that one

25. See JAM 2000c and below 11.2.4.

has to use all the fingers and toes to count up to it”, and which still means ‘twenty; a score’ in many TB languages.²⁶

Another root in **-un* reconstructible at the PTB level is **s-mun* > WT *mun-pa* ‘obscurity, darkness; obscure, dark’, *dmun-pa* ‘darkened’; WB *hmun* ‘dim, dusky, blurred’. There are good Chinese comparanda, below 7.5(8).

Still another **-un* etymon reflected in more than one branch of TB has been discovered:

‘kidney’ PTB **m-glun* > Jg. *ñ-khyūn*, Mpi *ŋ⁴kyo⁵*

This may indeed be the most widespread etymon with this rhyme in ST as a whole, since there is a likely Chinese cognate. See below 7.5(8).

We can further come to the rescue of this hapless rhyme by providing two fairly secure etyma that can be reconstructed with **-un* at least as far back as the PLB level:

‘powder’	PLB <i>*ʔ-mun^{1/3}</i>
WB <i>mun</i> ’, <i>hmun</i> ’ ‘small, minute’, <i>ʔə(h)mun</i> ’ ‘pulverized matter, powder’ (all < PLB Tone *3) ≠ <i>ʔəhmun</i> ‘fine dust’ (< Tone *1); Lahu <i>mə</i> ‘pulverize’, <i>ð-mə</i> , <i>ð-məy</i> ‘powder’ (with mid-tone characteristic either of Tone *3 or Tone *1 with <i>*glottalized initial consonant</i>)	
‘finish’ ^a	PLB <i>*bun¹</i>
Phunoi <i>pán</i> ; Bisu <i>pín</i> ; Lahu <i>pə</i> Several other likely cognates are to be found in <i>TBL</i> #1702: Zaiwa (Atsi) <i>pan⁵¹</i> ; Langsu (Maru) <i>pəŋ³¹</i> ; Bola <i>pẽ³⁵</i> ; Leqi (Lachi) <i>pa:n</i> .	

a. This root is reconstructed in JAM 2000c (“PLB fable”), where more details are given.

The Lahu reflex is schwa in both of these cases, which motivates the parallel reconstructions. It must be said, however, that the relatively rare Lahu vowel *-ə* is especially associated with labial initials,²⁷ so that more examples will be required to establish the “regular” Lahu reflex.

26. See below 9.3.2(4) and JAM 1995 (“ST numerals”), §3.511, pp. 149-51.

27. See GL:12.

7.2: Nasals after high vowels *-i- and *-u-

As noted, above 7.1(2), several languages (Jingpho, Nung, Lepcha) have developed secondary -un from PTB *-wan (Jingpho sometimes has -on instead):

‘casting net’	*gwan	#158	WB kwan, Jg. sùm-gòn, Lepcha kun, Nung gun
‘bore / pierce’	*lwan	p.49	WB lwan ‘bore with gimlet, Jg. gəlùn ‘thrust with spear’

Another etymon reconstructible with *-un displays rampant variation, affecting the initial consonant, the vowel, and the final consonant: ‘skin’ *pun × pin × wun × wul. See below 9.3.2(6) and 12.1.

Given the paucity of the data, no length contrast can be set up for *-un. The same goes for the homorganic rhyme *-ut, below 8.4(3).

(4) *-iŋ

This rhyme is quite well attested, with at least a dozen etyma reconstructed in *STC*, including several with good Chinese comparanda. The reflexes in key languages are as follows:

PTB	WT	Jg.	WB	Lahu	Lushai	Garó	Mikir
*-iŋ	-iŋ	-iŋ	-añ	-ε	-iŋ	-iŋ	-eŋ / -iŋ

Examples from *STC* include:

‘name’ ^a	*r/s-miŋ (#83) > WT miŋ; Jg. myiŋ, šəmyiŋ; WB mañ, hmañ; Lahu mɛ (V), ð-mɛ (N), Lushai hmiŋ; Garó miŋ ‘to name’, bimun ‘a name’
‘neck’	*m-liŋ (#96) > WT mdziŋ-pa; WB lañ; Lushai riŋ ^b
‘full’	*bliŋ × *pliŋ (#142) > Jg. phriŋ ‘full’, džəphriŋ ‘fill’; WB prañ ‘full’, phrañ ‘make full, fill’, prañ ‘measure of capacity’; Lahu pɛ ‘plenty’; Lai tliŋ ‘full, complete’; Lushai tliŋ ‘attain proper height / weight’, Mikir pleŋ ‘full’ ^{c/d}
‘land’	*gliŋ (#128) > WT gliŋ; Jg. kriŋ-mun; WB krañ ^e
‘tube / flute’ ^f	*gliŋ (p. 41) > WT gliŋ ‘flute, fife’; WB kyañ ‘tube closed at one end’
‘bark (v.)’	*priŋ (#377) > Jg. phriŋ ^g
‘forest / field’	*b-liŋ (#378) > WT žiŋ; Jingpho and Nung məliŋ; Garó briŋ ~ buruŋ ^h
‘long’	*s-riŋ (#433) > WT riŋ-ba ‘long’, sriŋ-ba ‘extend, stretch’; WB hrañ ⁱ

- a. The prefixed Jg. and WB allofams are transitive/causative verbs ‘give a name to’. The solid Chinese cognate is 名 OC **mjǝng* (GSR #826a-c) > Mand. *míng*.
- b. Also Lepcha *túk-liŋ*, Nung *liŋ*. With the **r-* prefix, Rangkhol *ermin*, rGyalrong *termi*. There are two Chinese comparanda, 領 ‘neck; collar’, OC **ljǝng* (GSR #823f) > Mand. *líng*; and 頸 ‘neck’, OC *kjǝŋ* \approx *g’jǝŋ* (GSR #831n) > Mand. *jǐng*. See below 7.5(6).
- c. Also, with unexplained vocalism: Digaro *blon*; Dimasa *phuluŋ*. The best Chinese comparandum is 盈 OC *djǝng* (GSR #815a-b) > Mand. *yíng*. See below 7.5(6).
- d. For discussion of several etyma in this semantic area, see JAM 1988a (“Straight, flat, full”), where an allofamic connection is posited among **bliŋ* \approx **pliŋ* ‘full’, **pleŋ* (#138) ‘flat’, and **bleŋ* \approx **pleŋ* (#352) ‘straight’.
- e. *STC* also claims cognacy for the second syllable of Lahu *mì-gì* ‘land’, but this is doubtful considering the consistency with which this rhyme has developed into Lahu *-e*.
- f. See JAM 1970 (“Glottal dissimilation”) #98.
- g. The other criterial languages lack reflexes of this etymon, but *cf.* Dimasa *birin* ~ *buruŋ*. Contra *STC* (n. 245) Chang Naga *lǎŋ* seems related rather to Lahu *lǎ* (*DL*:1404) < PTB **laŋ*, since *-ɔ* is the regular Lahu reflex of **-aŋ*; see above 7.1(3). There is a Chinese comparandum, below 7.5(6).
- h. Also Dimasa *ha-bliŋ*, Lepcha *lyǎŋ*. The discrepancy in position of articulation of the final **nasal* is against relating this etymon to Chinese 林 ‘forest’ OC **gliǝm* (GSR #655) > Mand. *lín*. For a better ST etymology, see below 7.5(1).
- i. Dhimal *hrin* and Jg. *rèn* ‘long’, *šərèn* ‘lengthen’ reflect an allofam with final dental nasal; the aspirated WB form reflects the causative **s-* prefix (as in WT and Jg.), even though the verb is intransitive in Burmese.

Newly discovered etyma with this rhyme include:

- **riŋ* ‘sun / sunshine’ > Bodo *riŋ* ‘sunshine’ \approx *rí* ‘give sunshine’, Sulong *kə³³ri³³* ‘sun’, Taraon (Darang) *ring* (NEFA) ‘*id.*’. The Darang dialect recorded in *ZMYYC* has *ɽun⁵³*, which corresponds closely to Milang *me-ruŋ* ‘sun’, perhaps pointing to **-i-* \approx **-u-* variation in this root.
- **liŋ²* \approx **lik^L* ‘python’ (PLB) > Mpi *liŋ²*, Lh. *lê*; the stop-final allofam is reflected by Akha (ILH) *liq* (*DL*:1390).
- **ʔiŋ* ‘endure / bear (suffer)’ > WB *ʔauŋ[?]-ʔaŋ[?]*; Lai *ʔiŋ* (KVB).
- **niŋ* ‘way / method / custom’ > WB *nâŋ[?]*;²⁸ Lai *niŋ* (KVB).
- **dziŋ* ‘plant (n.) / tree’ > Lh. *ə-cə* ‘plant’, *šîŋ-cə* ‘tree’; Lalo *siq-dzí*; Yi Nanjian *sɿ³³dzɿ⁵⁵*, Lisu *e⁵⁵dzɿ³³*, Naxi Lijiang *ndzəɽ³¹*; Jinuo *a³³tsuɽ³³*, Achang *saŋ³¹tseŋ⁵⁵*. Extra-LB forms include Anong *sɿ⁵⁵dzuɽ³¹*; Bai (Dali, Jianchuan) *tsuɽ³³*.²⁹

Since WB *-aŋ* is the reflex of both PTB **-in* and **-iŋ* (as well as of the rarer rhymes **-en* and **-eŋ*), and since Lahu has consistently merged the four nasal rhymes **-um*, **-im*,

28. This is deemed to be a loanword from Pali *naya* both in Judson (1893/1966) and in the *Myanmar English Dictionary*:235, but this seems unlikely in view of the Lai cognate.

29. The first syllables of most of these forms are from PTB **siŋ* \approx **sik* ‘tree’. Several more Loloish cognates are to be found in *ZMYYC* #178.

7.2: Nasals after high vowels *-i- and *-u-

*-in and *-iŋ to -ɛ, we cannot be sure of the exact proto-rhyme merely on the basis of a WB -añ / Lahu -ɛ correspondence. In cases like this, it seems best to provisionally reconstruct *-iŋ, since this is by far the most frequent of the four rhymes that have led to WB -añ:

‘narrow / constricted’	PLB *ʔ-gyiŋ ² > WB kyâñ ‘be narrow’, khyâñ ‘make narrow’; Lh. cē ‘be too narrow (of an opening)’ (DL:484)
‘release / send forth’	PLB *priŋ ^{1/2} ≠ *pyiŋ ^{1/2} > WB phrañ (< PLB Tone *1), phyâñ ‘with irregular, violent starts of heat’ (< *2); Lahu phê, Lalo phỳ (< *2)
‘thread’	PLB *kriŋ ¹ > WB khrañ; Lahu khe, Lalo khó

Mikir shows inconsistent reflexes of *-iŋ, sometimes retaining it (e.g. *s-niŋ ‘heart / mind’ (#367) > Mk. niŋ; *s-niŋ ‘year’ (#368) > Mk. niŋ), but more often lowering it to -eŋ.³⁰

	PTB	STC#	Mikir
‘alive / green / raw’	*s-riŋ (≠ *s-r(y)aŋ)	404	reŋ
‘full / fill’	*bliŋ ≠ *pliŋ	142	pleŋ
‘marrow/brain’	*r-kliŋ (≠ *r-kl(y)aŋ)	126	ar-kleŋ
‘tree / wood’	*siŋ (≠ *sik)	233	theŋ

Lepcha shows similar variational tendencies, occasionally retaining *-iŋ as such (e.g. ‘neck’ (#96) *m-liŋ > Lp. tũk-liŋ), but usually developing a rising diphthongal rhyme, -yaŋ or -yan :

	PTB	STC#	Lepcha
‘forest’	*b-liŋ	378	lyăŋ
‘full / fill’	*bliŋ ≠ *pliŋ	142	ă-blyăŋ
‘long’	*s-riŋ	433	hryăŋ
‘marrow / brain’	*r-kliŋ (≠ *r-klan)	126	(ă)yăŋ ~ (ă)yón

Although this development of -yaŋ from *-iŋ seems to be a secondary phenomenon internal to Lepcha, it does reflect a widespread TB variational tendency. Certain etyma must be reconstructed with *-i- ≠ *-ya- variation even at the PTB level.³¹

30. This is similar to the development of *-im to Mikir -em, e.g. *k-yim ‘house’ > Mk. hem. See above (1).

A few roots show $*-iŋ \approx *-aŋ$ or $*-eŋ \approx *-aŋ$ variation even in the absence of a palatal semivowel at the PTB stage:

	<i>PTB</i>	<i>Reflexes</i>
‘marrow / brain’ ^a	$*r-kliŋ \approx *r-kl(y)aŋ$ (STC #126)	
	$*r-kliŋ$	Lushai <i>thliŋ</i> , Mikir <i>ar-kleŋ</i>
	$*r-kl(y)aŋ$	WB <i>khraŋ-chi</i> , Lahu <i>ð-cho-pwe</i>
‘alive / green / raw’	$*s-riŋ \approx *s-r(y)aŋ$ (STC #404)	
	$*s-riŋ$	Manchati <i>sriŋ</i> , Lushai <i>hriŋ</i> , Tangkhul <i>khəriŋ</i> , Meithei <i>hiŋ</i> , Mikir <i>reŋ</i> , Jg. <i>tsiŋ</i> , Nung <i>məsiŋ</i>
	$*s-raŋ$	WB <i>hraŋ</i> ; Garo <i>thaŋ</i> , <i>gathaŋ</i>
‘leg / stalk’	$*keŋ \approx *r-kaŋ$ (STC n. 218)	
	$*keŋ$	Mikir <i>keŋ</i> , Thado <i>keŋ</i> ; Lushai <i>ke</i> ; Tiddim Chin <i>xe</i> ; Chinese 脛 OC <i>g’ieŋ</i> ‘leg, shank, shin’ (GSR #831k) > Mand. <i>jīng</i> \approx 莖 OC <i>g’ěŋ</i> ‘stalk’ (GSR #831u) > Mand. <i>jīng</i> ; see below 7.3(3).
	$*r-kaŋ$	WT <i>rkaŋ-pa</i>

a. It is interesting to note the resemblant Proto-Mon-Khmer etymon $*kruaŋ$ ‘marrow’.

Three etyma show a secondary development from PTB $*-iŋ$ to Proto-Lolo-Burmese $*-ik$.³² The original nasality of the final is confirmed for two of these etyma (‘tree’; ‘year’) by their Chinese cognates:

‘tree / firewood’	PTB $*siŋ \approx$ PLB $*sik$ (#233)	
	$*siŋ$ ^a	WT <i>śiŋ</i> , Lushai <i>thin</i> , Mikir <i>then</i>
	$*sik$ ^b	WB <i>sac</i> , Lahu <i>šɿʔ</i>
‘year’	PTB $*s-niŋ \approx$ PLB $*s-nik$ (#368)	
	$*s-niŋ$ ^c	WT <i>na-niŋ</i> ‘last year’; Jg. <i>nīŋ</i> \sim <i>šənīŋ</i> , Mikir <i>niŋ</i> , Pyu <i>snì</i> , Proto-Karen <i>*hneŋ</i>
	$*s-nik$	WB <i>ʔəhnac</i>
‘heart / mind’	PTB $*s-niŋ \approx$ PLB $*s-nik$ (#367)	

31. The most famous example is ‘eye’ PTB $*s-mik \approx *s-myak$. See *VSTB*:40-1 and below 12.2.1.

32. See below 12.5.3.

7.2: Nasals after high vowels *-i- and *-u-

*s-niŋ	WT snyiŋ, Kanauri stiŋ, Lushai niŋ, Mikir niŋ, Garo təniŋ
*s-nik	WB hnac
d / e	

- a. Cf. Chinese 薪 ‘firewood’ OC sǿn (GSR #382n) > Mand. xīn.
b. TSR #118.
c. Cf. Chinese 年 ‘year’ OC *nien (GSR #364a-c) > Mand. nián.
d. TSR #146.
e. Lahu *ni-ma* reflects an open-syllable variant *s-ni.

It is noteworthy that the Chinese cognates to ‘tree’ and ‘year’ have both developed dental nasals from original *velars after *-i-. We have observed a similar palatalizing effect of the high front vowel on final velar nasals in WB and Lepcha:

<i>PST</i>	<i>OC</i>	<i>WB</i>	<i>Lepcha</i>
*-iŋ	-ǰǿn / -ien	-ań	-yan

(5) *-uŋ and *-u:ŋ

This well attested rhyme is preserved as such in WT, Jg., and Lushai; it tends to be lowered to -oŋ in Mikir and Bodo-Garo; and it is reflected by the WB rhyme transcribed either “-oŋ” or “-auŋ” (the latter transcription is used here);³³ the consistent Lahu reflex is -ɔ. A length contrast can be reconstructed on the basis of the Lushai, WB, and Lepcha reflexes. The Bodo-Garo reflexes are variable, but also seem to differentiate between *long and *short varieties, with *-u:ŋ usually developing into BG -iŋ:

<i>PTB</i>	<i>WT</i>	<i>Lepcha</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Bodo-Garo</i>	<i>Mikir</i>
*-uŋ	-uŋ	-ǰŋ	-uŋ	-auŋ	-ɔ	-uŋ	-oŋ / -aŋ	-oŋ
*-u:ŋ	-uŋ	-uŋ	-uŋ	-uiŋ	-ɔ	-u:ŋ	-iŋ / -uŋ	-oŋ

STC reconstructs about 17 etyma with this rhyme, 10 with short *-uŋ and 7 with long *-u:ŋ. Examples with the short vowel include:

	<i>PTB</i>	<i>STC#</i>	<i>Reflexes</i>
‘sword / spear’	*m-duŋ	p.118	WT mduŋ; Jg. n-dūŋ, nīŋ-dūŋ
‘sad / ill / achy’	*s-nyuŋ ^a	194	WT snyuŋ; Jg. nyuŋ; WB nyauŋ

33. In modern Burmese this rhyme is pronounced /aũ/.

	<i>PTB</i>	<i>STC#</i>	<i>Reflexes</i>
‘finger’	*m-yuŋ ^b	355	Jg. yùŋ, ləyūŋ; WB lak-khyaŋ; Lahu làʔ-nɔ; Lushai zuŋ
‘born/ alive / green’	*kruŋ ^c	382	WT ʰkhruŋ-ba ‘be born, sprout’; Jg. khrūŋ ‘alive’, məkrūŋ ‘fresh sprout’.

- a. More accurate Jg. forms from Maran 1979 have preglottalized ʔn- : ʔnyūŋ-ʔnyūŋ ‘crestfallen, dejected’; kəʔnyūŋ-kəʔnyūŋ ‘troubled, downcast, disquieted’ (note the -i- ʔ -u- alternation in the elaborate couplet). This glottal element corresponds well to the prefixed s- in WT.
- b. The first element in Jg. ləyūŋ and in the WB and Lahu forms means ‘hand’; the initial velar in WB khyaŋ is best viewed as a perseveration of the final -k of the first syllable, so that the compound is underlyingly lak-yaŋ. The Lahu initial n- is paralleled by other Loloish forms, e.g. Bisu là-*hñuŋ*, Akha làʔ-*nɔ*; these seem all to have derived by preemption from the nasal prefix attested directly by Khami məyuŋ ~ məzuŋ and Ao Naga temeyong (the latter with secondary te- superadded to the original prefix). There is an unrelated PLB root (contra *STC* n. 234) *ʔ-nyəw² ‘index finger’ > WB lak-*hñu*, Atsi nʔyui, Maru nʔyuk.
- c. Bodo-Garo languages have unpredictable -aŋ reflexes: Bodo gakhraŋ ‘firm, healthy’; Dimasa gakhraŋ ‘green’.

New etyma to be reconstructed with this rhyme include the following:

	<i>PTB /PLB</i>	<i>Reflexes</i>
‘set (a trap) / cock (a weapon)’	*tuŋ ¹ (PLB)	WB thaŋ, Lh. tho, Akha (ILH) thán (<i>DL</i> :689)
‘hollow / hole / empty’ ^a	*guŋ ʔ *kuŋ	WB khâuŋ ‘be hollow’, ʔəkhâuŋ ‘a hollow, cavity’ (< PLB *kuŋ ²); Lahu qô ‘empty, vacant; hollow; loose (of clothes)’ (< PLB *guŋ ²)
‘loris’ ^b	*ʔ-luŋ ¹ (PLB)	WB myauk- <i>hlaŋ</i> ; Akha (ILH) mjòq- <i>láj</i> ; Lh. lo
‘mountain’	*m/r-duŋ	WT rduŋ ‘small mound, hillock’; WB tauŋ ‘mountain’; Cho (S. Chin) mtuŋ ^c
‘wing’	*duŋ ^d	
	<i>Qiangic</i>	Pumi Taoba <i>diã</i> ³⁵ <i>ka</i> ⁵⁵ ; Pumi Jinghua <i>dõ</i> ¹³ ; Guiqiong <i>dɔ</i> ³⁵ <i>npha</i> ⁵³ ; Namuyi <i>du</i> ⁵⁵ <i>tɕɿ</i> ⁵⁵ ; Shixing <i>dũ</i> ⁵⁵ <i>que</i> ³³
	<i>Nungish</i>	Anong <i>da</i> ³¹ <i>təhiŋ</i> ⁵⁵ ; Nusu <i>bia</i> ⁵⁵ <i>dũ</i> ⁵⁵

7.2: Nasals after high vowels *-i- and *-u-

PTB /PLB	Reflexes
<i>Lolo-Burmese</i> ^e	WB <i>tauŋ</i> ‘measure in cubits’, <i>ʔətauŋ</i> ‘cubit, wing’; Zaiwa <i>tuŋ</i> ⁵¹ ; Langsu <i>a</i> ³¹ <i>tuŋ</i> ⁵⁵ ; Lahu <i>t̥ɔ̄-làʔ-qú</i> ; Bisu <i>ʔaŋ-tɔŋ</i> ; Mpi <i>mu</i> ² <i>tuŋ</i> ⁶ ; Luquan <i>d̥y</i> ¹¹ ; Lisu <i>du</i> ⁴ - <i>lá</i> ⁶ ; Akha <i>à-d̥á</i> ; Yi Dafang <i>do</i> ²¹ - <i>la</i> ¹³ ; Naxi Lijiang <i>ndv</i> ³³ <i>phi</i> ³¹ ; Hani Dazhai <i>a</i> ³¹ <i>dɔ</i> ⁵⁵ .

- There are excellent Chinese comparanda; see below 7.5(9).
- Specifically, a nocturnal primate known as the ‘slow loris’ (*Nycticebus coucang*). The first syllables of the WB and Akha forms mean ‘monkey’, see below 8.4(1a). The glottal prefix in this root descends from the *s- animal prefix, see above 4.2.1(2).
- The Chin-Burmese comparison is due to KVB. For a Chinese comparison, see below 7.5(9) and Gong (2000):22. RSC suggests a group of possibly related Tibetan forms: *mtho-ba* ‘high, tall, elevation’; *mthon-ma* ‘high, elevated’; *thog* ‘uppermost, on top of’.
- This root is well attested in Qiangic and Nungish, as well as in LB. See JAM 1985b: §3.1 (“Arm, hand, and wing”) and DL:640; also ZMYC #171.
- All these forms point to PLB Tone *1, except Lahu *t̥ɔ̄-*, which has the tone characteristic of Tone *2 words with glottalized initials, *ʔ-don². A variant Black Lahu form *t̥ɔ̄-làʔ-qú* also exists.

Etyma are reconstructed with long *-u:ŋ on the strength of a long vowel in Chin languages like Lushai, and/or the special WB reflex -u:ŋ. This WB rhyme, paralleled by the homorganic stopped rhyme -uik, below 8.4(1), is written with the symbol for the complex vowel “ui” (above 5.3.1), so that it seems to have represented a long vowel or diphthong of some sort, but its exact phonetic nature is unclear.³⁴ It appears in relatively few words, but among them are several general TB roots. Lepcha is sometimes also helpful in establishing vowel length, since there is a strong tendency for short medial PTB *-u- to be lowered to Lepcha -a- or -ǎ-, while long *-u:- remains -u- or -ǔ-,³⁵ e.g. ‘stone’ *r-luŋ (#88) > Lp. *lǎŋ* vs., ‘overcast’ *mu:ŋ (#362) > Lp. *muŋ*.³⁶ Mikir does not differentiate length in this rhyme, usually lowering both the *long and *short varieties to -oŋ: ‘stone’ *r-luŋ (#88) > Mk. *ar-loŋ*; *r-gu:ŋ ‘edge; shin’ > *ar-koŋ* ‘shin’ (but also *ɤ kuŋ* ‘side, edge’).³⁷

34. It is pronounced /aĩ/ in Modern Burmese.

35. This is true not only before final nasals, but also before final stops and -s. See below 8.4(1), Ch. 9.

36. An etymon meaning ‘horn’ was originally reconstructed (STC #85) as *ruŋ, on the basis of forms like Bahing *ruŋ*, Moshang *əruŋ*, Jg. *h-rūŋ*, but this was later changed to *rwaŋ partly because of the Lepcha reflex *ǎróŋ* (i.e. neither -aŋ nor -uŋ). See above 7.1(3) and STC n.231.

37. A similar lowering of the vowel occurs in the Mikir reflex of *-um, e.g. *um ‘hold in the mouth’ > Mk. *om* (see 7.2(1), above). Another case where Mikir retains the original high vowel is ‘back / behind’ *s-nuŋ > Mk. *ənuŋ* (see below).

Examples with long vowels from *STC* include:

	<i>PTB</i>	<i>STC</i> #	<i>Reflexes</i>
‘branch / stem’	*ku:ŋ	359	Lepcha kuŋ, əkuŋ; Jg. kùŋ, ləkùŋ; WB ʔəkhuŋ, ʔəkûŋ; Lushai ku:ŋ
‘cage’	*kru:ŋ	389	WB khruŋ’ ~ khyuŋ’; Garo grŋ
‘inside / middle’	*tu:ŋ ^a	390	Lushai tshu:ŋ ^b ; Bodo siŋ; Dimasa bisŋ
‘edge / shin’	*r-gu:ŋ ^c	395	Jg. ñ-gùŋ ‘knife-edge’; Mikir ar-koŋ ‘shin’ (≠ Mk. kuŋ ‘edge’).

- a. Also Tiddim Chin suŋ; (Nungish) Rawang əduŋ ‘in; middle’, Trung atuŋ ‘middle’. A solid Chinese comparison is 中 ‘middle’ OC *tjəŋ (*GSR* #1007a-e), below 7.5(9).
- b. *STC* cites this form as tshu:ŋ but this probably represents a dental rather than a palatal affricate. In any case, there is no phonemic contrast between dental and palatal affricates in Lushai.
- c. The long vowel is established on the basis of BG forms: Garo rikŋ ‘edge’, dza-rikŋ ‘shin’ (‘leg-edge’); Bodo giŋ ‘side’. Dimasa retains back vowels in ruŋ ‘next to, beside’, buruŋ ‘rim, knife-edge’ ≠ di-rgoŋ ‘riverbank’.

A newly discovered root with this rhyme is supported both by WB and Chin evidence:

	<i>PTB</i>	<i>WB</i>	<i>Lai Chin</i> ^a
‘post / column’	*du:ŋ	tuŋ	tuuŋ

a. P.c., KVB.

One root set up in *STC* with a long vowel on the basis of a WB form should actually be set up with long ≠ short variation:

‘valley / river’	*kluŋ ≠ *klu:ŋ	<i>STC</i> #127	WT klun; Jg. krūŋ; WB khyuŋ’
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This is an East/SE Asian *Wanderwort*; cf. Siamese khlōŋ, Old Mon kruŋ, Cham krauŋ, Chinese 江 (OC *kǔŋ; *GSR* #1172v).³⁸ The WB form khyuŋ’ cited in *STC* to justify the *long vowel means ‘concave; concave piece of ground, valley’, but two more WB alloforms that point rather to a *short vowel were overlooked: WB khyauŋ ‘stream’, khyâuŋ ‘valley’. See below 7.3(3) for a possible PTB doublet *klyoŋ.

38. An alternative Chinese etymology is offered in Gong 2001:30; see below 12.5.3.

7.2: Nasals after high vowels *-i- and *-u-

On the other hand, another root originally set up with a short vowel was later recognized to have a long variant:

‘long / length’	*duŋ ⇌ *tu:ŋ	STC #20	Lushai duŋ (< *duŋ), but Lepcha (ă-)thũŋ (< *tu:ŋ)
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This root also displays -u- ⇌ -i- variation: Jg. dīŋ-dūŋ ‘length; northward’,³⁹ Mikir diŋ ‘long’.

Variation between *-uŋ and *-aŋ is assumed in the following set:⁴⁰

‘smell / scent’	*b-suŋ	STC #405	*b-suŋ > WT bsuŋ ‘smell, fragrance’; Jg. sũŋ ‘scent, odor’
	*saŋ		WB sãŋ ‘emit pleasant odor’

A superficially similar development of -aŋ from *-uŋ was noted in Bodo-Garo reflexes of *kruŋ (#382) ‘born / alive / green’ (above), but BG has a general tendency to lower *-u- before final nasals; cf. the examples of *-um > BG -am, above 7.2(1).

Several etyma show variation between *-uŋ and the homorganic stopped rhyme *-uk (see below 12.5.3), including:

‘sit’	*m-d/tu:ŋ ⇌ *m-duk.
A root *duŋ ⇌ *tu:ŋ is reconstructed in STC #361, on the basis of Jg. dūŋ and WB thuŋ. This is confirmed by Bokar Adi duŋ, Sulong toŋ ³³ , and probably also by a number of Qiangic and Loloish forms (ZMYC #574) with (often prenasalized) affricated initials, including Namuyi ndzu ⁵⁵ , Shixing dzũ ⁵⁵ , Naxi Lijiang ndzu ³¹ , Hani Dazhai dzo ⁵⁵ (< *m-duŋ). But a stop-final allofam *m-duk should now also be recognized to accommodate WT ḥdug.	
‘stone’	*r-luŋ ⇌ *k-luk.
Most TB languages point to *r-luŋ, e.g. Bahing luŋ, Lepcha lăŋ, Jingpho ñ-lùŋ, Magari hlŋ, Lushai luŋ, Garo roŋ, Dimasa loŋ, Mikir ar-loŋ, Qiang Mawo ɽlu, Idu ɽ ³¹ laŋ ⁵⁵ , Bokar Adi ɯ-luŋ. Burmish languages, however, reflect a stopped allofam with velar prefix, *k-luk: WB kyauk (written klauk in Inscriptions), Lashi lūk, Langsu lauk ³¹ tsan ³¹ . ^a	

39. Hanson 1906:115. This form is miscited in STC #20 as “dinduŋ”.

40. See below 12.3.1.

‘back / behind’ *s-nuŋ ⇌ *s-nuk.

The nasal-final allofam *s-nuŋ is reflected by WB hnâuŋ ‘be after’, ʔəhnauŋ ‘back of a knife’; Lushai hnūŋ ‘the back’, hnūŋ-a ‘after, behind’; Mikir ənuŋ ‘back’. But a stop-final allofam *s-nuk must also be recognized, at least for PLB, yielding forms like WB nauk ‘space behind, past time’ and Lahu qhəŋ-nɔ́ ‘back (of body); space behind; later time’.^b

‘overcast / foggy / sullen’ *mu:ŋ ⇌ *r/s-mu:k^c

*mu:ŋ Lepcha so-muŋ ‘cloudy weather’; Jg. mūŋ ‘cloudy; sullen, sulky’; WB hmuŋ ‘dull, downcast’, hmūŋ ‘very dark’.

*r/s-mu:k WT rmugs-pa, smug-pa ‘fog’; Lepcha muk ‘foggy, misty’, muk-muk ‘dullness, darkness’; WB muik ‘dark, ignorant; Lushai mu:k ‘dull (color); Jg. mú? ‘thunder, cloudy’; Angami Naga hmuu-tśa ‘fog’

a. See *STC* #88, *TSR* #190, *ZMYC* #42.

b. See *STC* #354, *TSR* #155.

c. Two separate roots, *mu:ŋ (#363) and *r/s-mu:k (#357) are set up in *STC*, though they are explicitly recognized as doublets (p. 78).

7.3 Nasals after mid vowels *-e- and *-o-

(1) *-em

Although mid vowels occur before final labial nasals synchronically in many TB languages (*e.g.* WT, Lepcha, Kanauri, Jg., Nung, Lushai, Mikir), virtually no etyma are reconstructible with such rhymes at the PTB level. Etymologizable words with the synchronic rhymes -em and -om can usually be shown to derive from PTB rhymes like *-im or *-yam (*e.g.* ‘house’ *k-yim > Mikir hem), or *-um (*e.g.* ‘hold in mouth’ *m-ʔu:m > Mk. om), or *-wam (*e.g.* ‘bear’ *d-wam > WT dom, Kanauri hom).

7.3: Nasals after mid vowels *-e- and *-o-

So far no roots have been reconstructed with PTB *-om, and only a single one with *-em. Even this single etymon does not display a pure *-em rhyme, but varies with *-yam:

‘low’	*s-nem	≈ *s-nyam ^a (<i>STC</i> #348, <i>ZMYYC</i> #803)
	*s-nem	*s-nem > Jg. <i>nèm</i> ‘long’, <i>šənèm</i> ‘lengthen’; Nung <i>ənem</i> , <i>šənem</i> ‘ <i>id.</i> ’; WB <i>nim</i> ; Lahu <i>nè</i> ; Ersu <i>ni⁵⁵ni⁵⁵</i> ; Yi Nanjian <i>ni⁵⁵</i> , Yi Mile <i>ne³³</i> ; Anong <i>tchi⁵⁵ni³¹</i> ; Geman Deng <i>ku³¹nām⁵⁵</i>
	*s-nyam	Lushai <i>hniam</i>

a. This *-e- ≈ *-ya- variation closely parallels the *-i- ≈ *-ya- pattern that has been noted for several roots (e.g. ‘eye’, ‘pheasant’; see below 12.2.1).

Evidently *-em had already merged with *-im by the PLB stage, with both becoming WB -im. The Lahu reflex of *-em is -ε, the same as for five other nasal-final rhymes:

*/ -im -um -in -en -iŋ /

(2) *-en and *-on

WB has merged *-en with *-in, *-iŋ, and *-eŋ (below), into the rhyme -añ. Once again Lahu has the reflex -ε. At the PTB level, the rhyme *-en is much better attested than *-em, with at least six good examples that can be established through extra-LB evidence:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>Lushai</i>	<i>WB</i>	<i>Lahu</i>	<i>Bodo-Garo</i>
*-en	-en	-en	-in	-añ	-ε	-en

	<i>PTB</i>	<i>STC</i>	<i>Reflexes</i>
‘nail / claw’	*m-(t)syen ^{a/b}	#74	WT <i>sen-mo</i> ; Miju <i>msen</i> ; Dhimal <i>khur-siŋ</i> ; WB <i>ʔəsâñ</i> ‘nail’; lak- <i>sâñ</i> ‘fingernail’, <i>khre-sâñ</i> ‘toenail’; Lahu <i>làʔ-šē-qú</i> ‘fingernail’, <i>khɿ-šē-qú</i> ‘toenail’; Lushai <i>tin</i> ; Khami <i>msiŋ</i> ~ <i>mseŋ</i> .
‘mole / wen’	*r-men	#104	WT <i>rmen-pa</i> , <i>ša-rmen</i> ‘gland, wen’, <i>rme-ba</i> ‘speck, mark, mole’; WB <i>hmañ</i> ‘mole’.
‘hurt / oppress’	*s-nyen ^c	#193	WT <i>nyen</i> ‘be pressed hard, toil and moil’; Jg. <i>nyèn</i> ‘defraud’, <i>šənyēn</i> ‘take by force, coerce’; WB <i>hñyâñ</i> ‘hurt, oppress, bully’

	<i>PTB</i>	<i>STC</i>	<i>Reflexes</i>
‘know’	*m-kyen ^d	#223	WT mkhen-pa; Jg. tšē ɤ tšêŋ (Hkauri dialect); also Apatani čin, Padam ken (J. Sun 1993)
‘equal / line up / connect in a row’	*s-ren	#346	Jg. rên ‘be equal’, dîŋ-rên ‘place in a long, even row’; WB rañ-tu ‘be equal’, hrañ ‘put together side by side’; Dimasa ren ‘line, Mikir ren ‘line, range, row’; Lushai rîn ‘a line, a scratch; draw a line’ ^e
‘pus / boil (n.)’	*m-blen	p.143	Lepcha fren ~ frăn; Pho and Sgaw Karen phi; WB prañ; Lahu bè ‘be infected’, bè-ğì ‘pus’ (the voiced Lahu initial points to the nasal prefix); Mpi pju ⁶ ~ pju ^{6.f}

a. This reconstruction is a revision of a previous *m-(t)sin, made possible by Benedict’s recognition of a contrast between a unit proto-phoneme *tś- and a palatalized dental *tsy- (see *STC* n. 122). See above 3.6.3.

b. This morpheme is homophonous with ‘liver’ (< *m-sin) in WB and Lahu.

c. This root is undoubtedly allofamic with *nye-s ‘punish’, above 5.4.1

d. A possible Chinese cognate is 見 ‘see’ OC *kian (*GSR* #241a-d). See below 7.5(10).

e. There seems to be a liquid-final allofam *g-ral, as well as a sold Chinese comparandum (see below 9.3.4).

f. See JAM 1978b (“Mpi”) #26, and *DL*:947. Many additional cognates are to be found in *ZMYC* #286, including: (Qiangic) Pumi Taoba pē⁵⁵; Ersu pē⁵⁵re⁵⁵; Shixing bē⁵³; Namuyi mbe³⁵ (note the prenasalized initial); (Lolo-Burmese) Yi Nanhua bi³³zi³³; Lisu bu³³tŋi³¹; Naxi Lijiang mbə³¹ (with prenasalized initial); Hani Dazhai bjo⁵⁵; Jinuo pju³¹; Achang pzəŋ³⁵; Zaiwa pjiŋ⁵¹viŋ²¹; Langsu pjaŋ³¹kjə³⁵; (Nungish) Nusu bə³⁵; Dulong su³¹biu⁵³

One etymon has been discovered that displays *-en ɤ *-et variation (see below 12.5.2):

‘fart’	*pyen	> WT phyen, h̥phyen
	*pyet	> Jg. phyèt

The rhyme *-on is quite rare, with only three such etyma reconstructed in *STC*. It is preserved in WT, Meithei, and Jingpho, and (on the basis of one example each) has apparently been lowered to -an in WB, and raised to -un in Nung:

	<i>PTB</i>	<i>STC</i> #	<i>Reflexes</i>
‘ride’	*dzyon	72	WT zón-pa; Jg. džòn ‘mount, ride (animal)’; Nung zun
‘go / come’	*byon	179	WT h̥byon-pa ‘go’; Jg. byōn ‘come or go out of’

7.3: Nasals after mid vowels *-e- and *-o-

	<i>PTB</i>	<i>STC</i> #	<i>Reflexes</i>
‘nauseated / vomit’	*ʔon	343	Jg. òn-òn, gəòn, wòn ‘feel squeamish, nauseated’; WB ʔan ‘retch, vomit’; Meithei on ‘vomit’ (Chelliah 1997:316)

(3) *-eŋ and *-oŋ

Another rare rhyme is *-eŋ, which is reconstructed for only five etyma in *STC*. Two of these five, *pleŋ (#138) ‘flat / plank’ and *bleŋ \approx *pleŋ (#352) ‘straight / straighten’, are undoubtedly allofamically related to each other. WT and Bodo-Garo preserve this rhyme as -eŋ; Jingpho and Mikir hesitate between -eŋ and -en; Nung (one example) has -en; and WB has developed -añ, as with the other front vowels before dental or velar nasals. Reflexes in many other languages (*e.g.* Lushai, Lahu) are unknown. The etyma in this group show considerable inter- and intra-linguistic variation, both between -eŋ and open -e (‘red / blushing’; ‘squirrel’), and between -eŋ and -aŋ (‘leg / foot’).

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>Nung</i>	<i>WB</i>	<i>Mikir</i>	<i>Bodo-Garo</i>
*-eŋ	-eŋ	-eŋ / -en	-en	-añ	-eŋ / -en	-eŋ ^a

a. Garo/Dimasa.

	<i>PTB</i>	<i>STC</i>	<i>Reflexes</i>
‘red / blushing’	*kyeŋ	#162	WT skyeŋ-ba ‘be ashamed’; Jg. khyēŋ ~ khyē ‘red’ ^a
‘squirrel’	*s-rey \approx *s-reŋ	p.79	WT sre-mo(ŋ) ‘weasel’; Mikir iŋ-ren ‘mongoose’, WB hrâñ ‘squirrel’ ^b
‘flat surface / plank’	*pleŋ	#138	Jg. brēn ~ byēn ‘flat and wide’, lùŋ-byēn ‘slab of rock’, phún-pyēn ‘plank’ (phún ‘wood’); Nung síŋ-byen ‘plank’; WB pyañ “be reduced to a level; plank; flat surface”, kyauk-pyañ ‘stone slab’; Mikir kapleŋ ‘plank’; Garo bol-pleŋ ‘ <i>id.</i> ’, Dimasa bo(ŋ)-palaŋ ‘ <i>id.</i> ’
‘straight / straighten’ ^c	*bleŋ \approx *pleŋ	#352	Jg. prēn ‘straight’; Garo diŋ-breŋ ‘ <i>id.</i> ’; Dimasa beleŋ, gi-bleŋ ‘erect’, si-phleŋ ‘straighten out’

	<i>PTB</i>	<i>STC</i>	<i>Reflexes</i>
‘leg / foot’	*r-kaŋ ɤ *keŋ	n.218	The basic form of this etymon seems to be *r-kaŋ > WT rkaŋ, Pwo Karen khǎ, Sgaw Karen kho, Pa-o Karen kaŋ-ya, though an allofam *ke-ŋ is suggested by Thado keŋ, Lushai ke, Tiddim χε. Mikir keŋ is consistent with either reconstruction, since *-aŋ sometimes > Mk. -eŋ [above 7.1(3)]. ^d

- a. WB ni kyaŋ-kyan ‘pale red’ (< *gyan) might be allofamically related.
b. Cf. OC *s(r)ǰǰ ‘weasel’ 狴 (812t) or 𪚩 (812u). See below 7.5(10).
c. Both of these sets (‘flat’ and ‘straight’) are in turn relatable allofamically to *bliŋ ɤ *pliŋ ‘full’ (#142), with the common semantic core being “a complete or ideal realization of a quality appropriate to a particular dimensionality in space”. See JAM 1988a (“Straight, flat, full”), and above 7.2(4). Good Chinese comparanda (not in *STC*) are available for both ‘flat’ and ‘straight’:

‘flat’ 平 OC *b’ǰǰ (*GSR* #825a)

‘straight’ 正 OC tǰǰ (*GSR* #833j)

For this latter comparison see Schüssler 1975:229-30.

- d. The Chinese comparanda are also not dispositive here. See below 7.5(10) and above 7.2(4).

One PTB etymon which might reflect the hitherto unattested rhyme *-e:ŋ is PTB *s-le:ŋ ‘cart’ > WB hlǎn and Proto-Kuki-Chin *leen > Lai Chin leen, Tiddim (Bhaskararao 1996) leen, Sizang leang (Naylor 1925).

By far the best attested of the mid-vowel-plus-nasal rhymes is *-oŋ, with about ten good examples to be found in *STC*. This *rhyme is preserved as such in WT, Jingpho, Lushai, Bodo-Garo, and Mikir, but it does not seem to have survived in Lolo-Burmese, where it has merged with *-uŋ both in WB (to -auŋ) and in Lahu (to -ɔ):

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Mikir</i>	<i>Bodo-Garo</i>
*-oŋ	-oŋ	-oŋ	-auŋ	-ɔ	-oŋ	-oŋ	-oŋ

7.3: Nasals after mid vowels *-e- and *-o-

	<i>PTB</i>	<i>STC#</i>	<i>Reflexes</i>
‘thousand’	*s-ton	32	WT ston; WB thaun ^a
‘wild yak / buffalo’	*bron	136	WT ḥbron ‘wild yak’; WB praun ‘buffalo, bison’
‘burn’	*plon	139	Jg. prōn ‘be burned, as a house’, kəprōn ‘parboil’; Mikir phlon ‘burn the dead; cremation’
‘run / flee’	*plon	140	Jg. phrōn ‘flee’; Lahu pho ‘ <i>id.</i> ’ (DL:914); Akha phó, Mpi phjvɿn ³ ‘run’; Mikir arplon ‘run’, in-plon ‘run, gallop’; perhaps also Proto-Mirish *pljon ≠ *pron ‘steal’ (J. Sun 1993) ^b
‘guard / tend (cattle)’	*s-gyon ^c	161	WT skyon-ba ‘guard; keep, tend (cattle)’; WB kyauṇ ‘feed, tend cattle’
‘boat’	*m-lon	467	WB lâun ‘canoe’; Akha lə ‘boat’; Lushai lon; Hakha laun; S. Khami mlaun; N. Khami phlaun; Kyo Chin mlaun; Lakher bəleu; Chang Naga lon
‘cat / wildcat’	*s/k-ron	p.107	Jg. rōn, šərō(ṇ); WB kraun; Lahu ḡd ^d
‘stream / valley’	*klyon	---	WT ldžons ‘large valley’; Lepcha kyon ‘river’; WB khyauṇ ‘stream’, khyauṇ ‘valley’ ^e
‘peacock / pheasant’	*m-don ≠ *dan	341	WT mdonṣ “eye in peacock’s feather”; Jg. ù-tōṇ ‘peacock’; ^f WB ʔu’-dāun. ^g
‘wait / watch for’	*dzon	---	WB caun ‘lay by for future use, wait’; Lushai and Lai Chin tson ‘wait for, watch for’

a. Many more cognates are to be found in ZMYC #940, including: (Qiangic) Qiang Mawo *stun*-tsu; Qiang Taoping *χto*⁵⁵; Pumi Jinghua *stī*⁵⁵; rGyalrong *ston*-tso; Zhaba (=Queyu) *tū*⁵⁵; Namuyi *tu*³³; (Nungish) Anong *tu*³¹; Dulong *tu*⁵⁵; (Loloish) Yi Xide *tū*³³; Yi Dafang *to*³³; Lisu *tu*⁴⁴; Naxi Lijiang *tv*³¹; Hani Dazhai *tho*⁵⁵; Hani Shuikui *thu*⁵⁵.

b. Cf. perhaps Tangkhul *khəyon*. WB *hraun* ‘avoid; shun’ may also be related.

c. *STC* has *kyon, but a reconstruction with voiced initial seems preferable, given the non-aspiration of the WB form.

d. The Jg. and Lahu forms mean ‘wildcat’ or ‘tiger’, while the WB form refers to the domestic cat. See also Maru *raun* ‘wildcat’. The initial *k-* in WB is an instance of the famous “velar animal prefix”, above 4.4.4(3).

e. See above 7.2(5).

f. This Jg. form is given with a spurious voiced initial “*u-don*” in *STC* #341; Hanson (1906) has *u-tawng*, and both and Dai *et al.* 1983:857 have *u*³¹*ton*³³.

- g. A large number of other cognates exist, often glossed ‘pheasant’. Pheasants and peacocks are highly similar members of the order *Phasianidae*, which also includes quails and partridges (see JAM 2000b “Three TB/ST word families” for all forms not cited in *STC*). Many of these cognates have the rhyme *-aŋ* rather than *-oŋ*: Kan-auri *daŋ*; Limbu *sam-daŋ-wa*, Dulong *pu³¹daŋ³³*, Nu Bijiang *dɔ⁵⁵* (all ‘pheasant’). Several forms in languages spoken in Burma belonging to the Burmish, Chin, and Karen groups seem to be loanwords from Burmese: Tid-dim Chin *u¹tong²*, Lai Chin *ʔoo-too*, Leqi *wo³³təŋ³³*, Zaiwa *u⁵⁵təŋ⁵⁵*, Hpun *ú-təŋ*, Pa-o Karen *wâ-təŋ* (all ‘peacock’). Several Loloish forms look like genuine cognates to (not loans from) Burmese: Hani (Luchun) *sɔ⁵⁵dɔ³¹*, Hani Mojiang *fu⁵⁵ti³¹*, Akha *shín-də* (all ‘peacock’). At the moment it is hard to decide whether to set up this etymon with proto-variation as **doŋ* ≠ **daŋ*, or to assume a medial *-w-* in order to have a single proto-form, e.g. **dwaŋ*. The rhymes **-waŋ* and **-oŋ* have merged to *-oŋ* in both WT and Jingpho, but they have been kept apart in WB: **-waŋ* > WB *-waŋ*, **-oŋ* > WB *-aŋ*.

One etymon with the **-ok* rhyme has developed a secondary nasal final in WB, due to assimilation to a nasal-initial suffix:

	<i>PTB</i>	<i>STC</i>	<i>WT</i>	<i>WB</i>
‘poker / pudding stick’	<i>*s-k-yok</i> ≠ <i>*yoŋ</i>	p. 14	yog-po ‘poker’, skyogs ‘ladle’	yauk-ma’ ~ yaŋ-ma’ ‘pudding stick’

7.4 The *-aŋ* rhyme of Written Burmese

As we have seen, the WB rhyme *-aŋ* has four major⁴¹ sources: short **-i-* and **-e-* before velar and dental nasals. (Long medial **-i:-* is preserved before *-n*; there is no attested PTB root with long medial ***e:-* before such finals.)

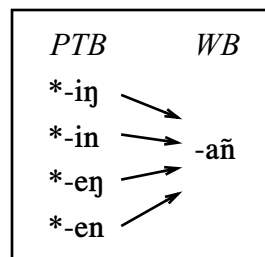


FIGURE 12. Sources of WB *-aŋ*

41. A rarer source for WB **-aŋ*, attested in one instance, is **-el*: ‘sleepy’ **myel* (#197) > *myaŋ*. See below 9.3.3.

7.4: The -añ rhyme of Written Burmese

	<i>PTB</i>	<i>STC</i>	<i>WB</i>
‘full’	*bliŋ ꜜ *pliŋ	142	prañ’ ꜜ phrañ’
‘neck’	*m-liŋ	96	lañ
‘name’	*r-miŋ	83	mañ
‘long’	*s-riŋ	433	hrañ
‘ripe’	*s-min	432	hmyañ’
‘liver’	*m-sin	234	ʔəsâñ
‘plank	*pleŋ	138	pyañ
‘squirrel’	*s-rey ꜜ *s-reŋ	p.79	hrañ’
‘mole / wen’	*r-men	104	hmañ’
‘align’	*ren	346	rañ ꜜ hrañ
‘nail / claw’	*m-tsyen	74	ʔəsâñ
‘hurt / oppress’	*s-nyen	193	hñâñ

This -añ reflex is a striking example of “feature shuffling”, whereby the palatal element of the syllable has moved from the vocalic nucleus to the final consonant. It is exactly parallel to the development of the homorganic stop-final rhymes */-ik -it -ek -et / to WB -ac . In the case of the high vowel before dentals, the WB reflexes are able to differentiate between *long and *short prototypes; *i.e.* only the short rhymes */-in -it / have developed into WB / -añ -ac / , while the long rhymes */-i:n -i:t / have been retained as WB / -in -it / . See above 7.2(2) and below 8.3(2).

The typologically unusual development of final palatal consonants, virtually unknown in the rest of TB, was undoubtedly stimulated by prolonged contact with Mon, since final palatals are the norm in the Mon-Khmer family.

A further complication in connection with WB -añ is the fact that it has no fewer than four different reflexes in Modern Burmese. These multiple reflexes are not correlatable with any distinctions in PTB, so they must have arisen due to factors internal to Burmese.

The only explanation that can be given for the moment is in terms of “dialect mixture”, the last refuge of scoundrels:⁴²

<i>WB</i>	<i>Mod. Bs.</i>	
	<i>STC</i>	<i>WBRD</i> ^a
-añ	-ĩ	-ĩ
-añ	-e	-ei
-añ	-ε	-e
-añ	-ẽ	-ĩ

- a. See STC n. 241 (78-9). The *Written Burmese Rhyming Dictionary* (Benedict 1976b, pp. 39-43) divides up the words ending in -añ according to their Modern Burmese reflexes, transcribed somewhat differently than in *STC*.

	<i>PTB</i>	<i>STC</i> #	<i>WB</i>	<i>Mod.Bs.</i>
‘ground’	*g-liŋ	128	krâñ	cî
‘sleepy’	*myel	197	myañ	myi’
‘nail / claw’	*m-tsyen	74	ʔəsâñ	ʔəθî
‘long’	*s-riŋ	433	hrañ	hye
‘full / fill’	*bliŋ × *pliŋ	142	prañ × phrañ	phye’
‘mole / wen’	*r-men	104	hmañ	hmε’
‘ripe’	*s-min	432	hm(y)añ	hmε’
‘liver’	*m-sin	234	ʔəsâñ	ʔəθê
‘neck’	*m-liŋ	96	lañ	lε
‘hurt / oppress’	*s-nyen	193	hñâñ	hnyê ^a
‘plank’	*pleŋ	138	pyañ	pyẽ
‘align / line up’	*ren	346	rañ × hrañ	yẽ × hyẽ
‘squirrel’	*s-re-ŋ	p.79	hrañ	hyẽ’

- a. For typographical reasons nasalization in this word is indicated by a subscript hook instead of by a superscript tilde, since the space above the vowel is preempted by the circumflex tone symbol. Note that all four of these examples of *Mod. Bs.* -ẽ come from medial *-e-, though other roots with *-e- have other reflexes (‘sleepy’; ‘nail’; ‘mole’).

42. A similar conundrum may be cited from the history of English. The Old English rhyme *-ōd has three outcomes in modern English, as in *good* [gʊd], *food* [fuːd], and *flood* [flʌd], though they rhymed perfectly both in Old and Middle English: ‘good’ OE gōd > ME god, gode; ‘food’ OE fōda > ME fode; ‘flood’ OE flōd > ME flod, flud.

7.5: Chinese comparisons to PTB nasal-final roots

Evidently this has been an unstable area in the history of Burmese phonology. Occasionally there is even variation in the Modern Burmese reflexes of co-allofams:

	<i>PTB</i>	<i>STC</i>	<i>WB</i>	<i>Mod. Bs.</i>
‘name’	*r/s-miŋ	#83	mañ ‘be named’ (< *miŋ ¹)	mi
			hmañ ‘to name smn’ (< *s-miŋ ³)	hmẽ

7.5 Chinese comparisons to PTB nasal-final roots⁴³

(1) Chinese comparanda to PTB *-am

The many Chinese comparanda to this PTB rhyme are reconstructed in *GSR* with OC -ə̃m, -ẫm, or -am. PTB etyma with medial -y- correspond to OC -iə̃m, -jā̃m, or -iə̃m (with one example of “-ɛ̃m” in ‘salty’). Cognates to the two PTB roots in *-wam are reconstructed differently in OC: -ẫm in ‘dare’, but -jū̃m in ‘bear’.

<i>PTB</i>		<i>STC</i>		<i>GSR</i>	<i>OC</i>	<i>Ch. Gloss</i>
*tam ^a	‘carry on shoulder’	---	擔	619k	tām	‘id.’
*s-wam or *hwam	‘dare’	#216	敢	607a-c	kām ^b	‘id.’
*ʔam	‘eat / drink’ ^c	#481	飲	654a	ʔjəm	‘drink / give to drink’
*r-ka(:)m	‘edge / bank / precipice; lips / mouth’ ^d	#329	壩	---	k’əm	‘cliff / bank; steep’
			嶽	652k	k’jəm	‘precipitous’
*la:m	‘fathom’	p. 71	尋	662a	dzjəm	‘a measure’ ^f

43. These comparisons are mostly to be found in the labyrinthine notes to *STC*, pp. 160ff. They are conveniently listed according to their *GSR* set number in Chou Fa-kao 1972.

Final nasals						
<i>PTB</i>		<i>STC</i>		<i>GSR</i>	<i>OC</i>	<i>Ch. Gloss</i>
*kram	‘fence / garden’ ^g	---	檻	609g	g’lam	‘railing; cage’
*ram ^h	‘forest / jungle / field / country’	---	林	655a-d	g’ljam	‘forest, grove’
*(t)sam	‘hair of head’	#73	彡	AD 850 ⁱ	sam	‘hair / feather’
*g-ram ^j	‘indigo’	---	藍	609k	glâm	‘id.’
*gram	‘net’ ^k	---	籃	--- ^l	glam	‘basket’
*gam	‘put into mouth / seize with mouth; jaw / molar’ ^m	#’s 50, 491	含	651l’	g’əm	‘hold in mouth / put in mouth’
			頷	651n’	g’əm	‘jaw’
			嚙	655m	g’ljam	‘shut the mouth’
*s-ryam ⁿ	‘sharp’	p. 53	銛	621a	sjam ^o	‘id.’
*nyam ^p	‘soft’	---	荏	667s	ñjam	‘id.’
*g-t/dam ^q	‘talk / speak’	---	談	617-l	d’am	‘speak’
			譚	646c	d’əm	‘speak / talk about’
*s-nyam ^r	‘think’	---	念	670a-e	niəm	‘id.’
			恁	667q-r	ñiəm	‘think’
*s-lyam	‘tongue / flame’ ^s	#211	舔 ^t	AD 997 ^u	t’iam	‘lick / taste’
			舌	288a	d’iam < **liam	‘tongue’
			甜	AD 862 ^v	d’iam	‘sweet / savoury / agreeable’
*hyam ^w	‘salty’	p. 138	鹹	671f	g’em	‘salt / salty’
*d-wam ^x	‘bear (n.)’	#461	熊	674a-b	g’jum	‘id.’

a. Cf. WB thâm.

7.5: Chinese comparisons to PTB nasal-final roots

- b. This Chinese velar is paralleled by Chin forms with velar nasals: Lai ɲaʔm; Lushai ɲam [~ huam, above 7.1(1)].
- c. Cf. Nung am, Pwo ā, Sgaw ɔ, Pa-o am ‘eat’, but Dhimal am ‘drink’ and Lushai (and other Kuki-Chin) in ‘drink’. For the final dental in Kuki-Chin, see below 12.6.3.
- d. Cf. Lushai kam ‘bank, shore, mouth’ ≠ kha:m ‘precipice’; WB kâm ~ khâm ‘bank of river or sea’, hnut-khâm ‘lips’ (‘mouth-bank’).
- e. Not in GSR #658.
- f. A more complete gloss: “an ancient measure of length equal to about eight 尺”. See above 7.1(1).
- g. Cf. WB khram ‘fence, enclosure’; Lahu kho ‘garden, fenced-off enclosure’. See above 7.1(1) and Gong 2001:26.
- h. This comparison is due to A. Schüssler. Cf. general Kuki-Chin ram ‘forest; country’ (Lushai and Lai rām, Tiddim gam²-vok ‘wild boar’, gam-keel ‘wild goat’, Thado gam ‘wild land’).
- i. Not in GSR #453.
- j. Cf. WT rams.
- k. Cf. WB krâm ‘weighted bamboo screen pushed to drive fish into a weir’ (*Myanmar-English Dictionary* 1993:45). See Gong 2001:26.
- l. Not in GSR #609.
- m. Cf. WT ḥgam ‘put or throw in mouth’, Miri gam ‘seize (with teeth, as a tiger)’; also WB ʔam-swâ ‘molar’ (mis-cited as ʔām in STC:25), Trung skam ‘id.’ (< sa-kam [sa ‘tooth’]). The zero-initial in WB is paralleled in several other roots that have velars elsewhere, e.g. ‘needle’ WT khab, rGyalrong takyep, but WB ʔap (< PLB *k-rap TSR #191) and Trung ʔuop¹²; ‘strength’ PLB *k-ra² > Lahu gâ, but WB ʔa (DL:1160).
- n. This TB root has so far only been found in Kuki-Chin.
- o. The OC reconstruction is revised to srjam in STC:171.
- p. Cf. WB ñam’, Lushai nem.
- q. Cf. WT gtam ‘talk / discourse / speech’, gtom-pa ‘to talk / speak’.
- r. Cf. WT snyam-pa ‘think / imagine; though/mind’, nyam(s) ‘soul / mind / thought’.
- s. This root is represented directly by forms like WB ʔəhlyam ‘coruscation of flame’ and Bahing liam ‘tongue’, and allofamically by Proto-Kiranti *lem ‘sweet’ (> Waling, Nachereng, Chingtang, Rungchangbung lem, Limbu ke-lim-ba, Yakha lim). See STC:172.
- t. The (hidden) phonetic in this character is 𪛗, reconstructed in GSR #288a as OC ɗʔat, although the Cantonese reading li:m led Benedict to change its reconstruction to OC liam (STC:n. 458, p. 172).
- u. Not in GSR #621.
- v. Not in GSR #621.
- w. This root seems to be confined to Karenic, e.g. Sgaw hɔ, Pwo ɣa. Cf. also Siamese khem < PTai *gem (Li Fang-Kuei 1978:199), prob. a borrowing from Chinese.
- x. This animal name seems especially prone to borrowing or replacement, probably due to hunter’s taboo or folk-fear, which militate against using the ordinary native term (cf. Japanese kuma, Korean kom, both close to the OC form). In European languages the bear has been referred to by such euphemisms as ‘honey-eater’ (e.g. Russian medvedj) or ‘the brown one’ (e.g. Eng. bear and bruin, ult. < PIE *bher- ‘bright/brown’).

(2) *Chinese comparanda to PTB *-an*⁴⁴

The relatively few Chinese comparanda to this PTB rhyme are all reconstructed with -ân, except for ‘hawk / kite’ (-iwan), where the medial -w- has played a role (but *cf.* ‘garlic’, also with PTB *-w-).

<i>PTB</i>		<i>STC</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
*m-dan ^a	‘crossbow’	p. 190	彈	147n	d’ân	‘shoot pellets at’ (<i>GSR</i>); ‘crossbow/bullet’ (<i>AD</i> 968)
*dan	‘cut’	---	斷	170a	*twân ✕ *d-wân	‘cut off; decide; resolute’
			剗 膊	168e 231k	*twân *điwan ✕ t̃iwan	‘cut’ ‘cut meat; slice’
*tan	‘dry’	p. 190	灘	152m	t’nân ^b	‘dry up (as a river)’
*kan	‘dry up’		旱	139s	*g’ân	‘to dry; dry’
*g-wan ^c	‘hand / wrist’	---	挽 腕 擊	260m 260n 273b	?wân ?wân ?wân	‘wrist’ ‘ <i>id.</i> ’ ‘ <i>id.</i> ’
*dzwan	‘hawk / kite’	p. 169	鳶	230a	điwan	‘hawk / kite’
*swan ^d	‘onion / garlic’	p. 175	蒜	175b	swân	‘garlic’
*glan	‘repair / mend’ ^e	---	繕	205f	điān	‘repair / put in order’
		---	善	205a-c	điān	‘good; approve; make good’

a. *Cf.* Jingpho ñ-dân ‘crossbow’, (Hkauri) kūṇ-lī ñ-dân ‘bow’.

b. The phonetic series to which this character belongs (*GSR* #152) has some members with MC dental stops and others with dental nasals, leading Karlgren to reconstruct OC *t’n- for the former.

44. See above 7.1(2) for more examples.

7.5: Chinese comparisons to PTB nasal-final roots

- c. Cf. Khoirao wan ‘hand’; Lotha e-won ‘arm’; Nthenyi agwün ~ akhwen ‘hand’; Lepcha a-gon ‘fin’, ŋo-gon ‘fin of fish’ (JAM 1985b:434).
- d. Cf. Lai Chin kha-*tshuan* ‘onion/garlic’ (kha ‘bitter’); WB *krak-swan* ‘onion’ (krak ‘chicken’), Lh. šü ‘onion/garlic’ (< PLB *swa-n^{1/2}).
- e. Cf. WT glan ‘patch, fix, mend’. See Gong 2001:32.

(3) Chinese comparanda to PTB *-aŋ, *-a:ŋ

There are numerous good Chinese comparanda to PTB etyma in *-aŋ. Almost all of them are reconstructed with OC *-(j)aŋ or *-(j)a:ŋ. In two examples with PTB medial *-w- or *-r-, the OC form has *-iwaŋ (‘see / look toward’, ‘uncle / older brother’). In a few roots (‘dream’, ‘heavy / thick’, ‘father / grandfather’), the nuclear vowel in the OC form is, or alternates with, -u-. In the case of ‘dream’, a different PTB allofam is probably to be invoked (see below).

PTB		STC		GSR	OC	Chinese Gloss
*maŋ ^a	‘big / older (brother, uncle)’	p. 189	孟	761e	mǎŋ	‘eldest (of brothers); great / principal’
*graŋ ^b	‘cold (weather)’	#120	涼	755l	gl̥aŋ	‘chilly / cold’
*r-maŋ	‘dream’	#82	夢	902a-b	m̥iũŋ ^c	‘dream; darkened / blind’
*glaŋ	‘elephant’ ^d	---	象	728a	dz̥iaŋ	‘elephant’
*kaŋ ^e	‘father / grandfather’	p. 190	公	1173a-f	kuŋ	‘father / prince’ ^f
*s-braŋ ^g	‘fly (n.) / bee’	#492	蠅 ^h	892a	d̥iəŋ	‘id.’
*s-naŋ ⁱ	‘follow / repeat’	#334	仍	945e	ńiəŋ	‘repeat as before / again and again; follow / imitate’
*kyaŋ ^j	‘ginger’	p. 174	薑	710d	k̥iaŋ	‘ginger’
*s-naŋ ^k	‘heavy / thick (of liquids)’	p. 190	濃	730f	ńiaŋ	‘heavy with dew’
			穰	730h	ńiaŋ	‘rich growth (of grain)’

						Final nasals
<i>PTB</i>		<i>STC</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
			濃	1005i	nun̩ ~ ń̩un̩	‘thick / rich (sc. dew)’
			穠	1005k	n̩un̩	‘thick covering / luxurious growth’
*s-gaŋ ^l	‘hill / mountain’	---	岡	697a	kân	‘hill / ridge’
*laŋ	‘lift / raise’ ^m	---	揚	720j	d̪iaŋ	‘ <i>id.</i> ’
*praŋ	‘loud / bright’ ⁿ	---	炳	757i	p̪iǎŋ	‘bright’
*graŋ ɹ *kraŋ	‘measure / count’ ^o	---	量	737a	liǎŋ	‘measure; to measure’
*graŋ	‘provide food’ ^p	---	糧	737d	liǎŋ	‘grain; provisions’
*mraŋ	‘see / look toward’	#146	望	743df	m̩iwaŋ	‘look from afar / look towards; admire; hope’
*p̪waŋ	‘spin / spindle’ ^q	#48	紡	740r	p̪iwaŋ	‘spin’
*kraŋ ɹ *graŋ	‘strong / firm; tense / distended’ ^r	---	梗	745e	kǎŋ	‘strong’
			長	721a	d̪’iaŋ ~ t̪iaŋ	‘long; grow tall, increase’
			張	721h	t̪iaŋ	‘give tension to a bow; stretch, extend’
*zryaŋ ^s ɹ *ryaŋ	‘uncle / a superior’	#205	尚	725a-c	ḍiaŋ	‘upwards; high / admirable; superior (used as a title)’
*b̪waŋ ^t	‘uncle / older brother’	p. 23	兄	765a-e	x̩iwaŋ	‘elder brother’

7.5: Chinese comparisons to PTB nasal-final roots

PTB		STC		GSR	OC	Chinese Gloss
*s-tyaŋ ɤ	‘upper part /	p. 52	登	883e-h	təŋ	‘rise / ascent; raise’
*pʷaŋ u	rise / raise’					
			再	894a-c	fiəŋ	‘lift / hold’
			乘	895a-c	diəŋ	‘mount / ascend; ride / drive; be on top / above’
			丞	896g	diəŋ	‘lift / hold’
*glaŋ	‘willow / poplar’ v	---	楊	720q	diəŋ	‘poplar’

- See above 7.1(3).
- Cf. WT *graŋ*-ba; Lahu *gò* is from a variant with nasal prefix, *m-*graŋ*. See above 7.1(3). The reconstructed cluster in OC is established by the co-presence of MC reflexes with both velar and liquid initials in *GSR* #755.
- A closer phonological fit with this OC form is PTB *mu:ŋ ‘cloudy / dark / sullen’ (*STC* #362). Still another allo-fam in this family is PTB *mu:k ‘fog / foggy; dark / dull’ (*STC* #357).
- Cf. WT *glaŋ* ‘ox, bullock, elephant’. See Gong 2001:32. In the same article, (p. 31) Gong also compares this WT form to Chinese 羊 ‘sheep, ram’ (OC *ziəŋ*; *GSR* #732a). I prefer relating this later form to WT *gyag* ‘yak’. See below 12.5.3.
- Cf. Trung *akhaŋ* ‘grandfather’; WB *pha’-khaŋ* ‘father’, *ni-khaŋ* ‘mother’, *khaŋ*-pwân ‘spouse’ *khaŋ*-bhyâ ‘sir, madam; polite second person pronoun’.
- Reglossed as ‘father’ > ‘grandfather (vocative; honorific)’ in *STC*:n. 488, p. 190.
- Cf. WT *sbraŋ* ‘fly, bee’, Lepcha *sum-bryon* ‘fly’, Kanauri *yăŋ* ‘fly, bee’, WB *yaŋ* ‘fly, insect’ (cf. MC *ʔiəŋ*). A possible Chinese doublet is represented by 𪛗 Mand. *cāng* ‘housefly’ (listed in *AD* 1036, but with no reconstructed MC or OC form).
- Gong 2001:24 compares the WT form rather to Chinese 虻 ‘gadfly, horsefly’ (OC *măŋ*; *GSR* #742s-t), reconstructing *mraŋ, with medial *-r-, because of its appearance in Division II in MC.
- Cf. Jg. *nāŋ* ‘follow’, *mənāŋ* ‘companion’, *šənāŋ* ‘adhere to, follow up’; WB *hnaŋ* ‘with, together with’. See above 7.1(3).
- Cf. WB *kyāŋ*, Methei *siŋ*, Nung *luŋ*-*ziŋ*, Dimasa *ha-jīŋ*. This is actually a Southeast Asian *Wanderwort*, prob. of Austronesian origin. Cf. Proto-Indonesian **tāŋ* from PAN **saŋ*; Proto-Tai **xiŋ* (Li Fang-Kuei 1977: 208, 210-11; Proto-Kam-Sui **siŋ* (Li Fang-Kuei 1965); Hlai *khüŋ*; Proto-Hmong (DRM) **qhiŋ*. See Benedict 1975 (ATLC):303.
- Cf. Lushai *hnaŋ* ‘thick, viscous (of fluids)’.
- See above 7.1(3).
- Cf. WT *laŋ* ‘rise, arise, get up’; WB *laŋ* ‘high raised frame; stage’. See Gong 2001:21.
- Cf. WB *praŋ* ‘violent, virulent; very; loud’. See Gong 2001:22-3. The semantics here might appear dubious, but cf. the English expression *loud colors*.
- Cf. WT *graŋ* ‘count, judge, consider’, *graŋ* ‘number’, *hgraŋ* ‘to number, count’; WB *khraŋ* ‘to measure with a measure of capacity’. See Gong 2001:26-7.
- Cf. WT *hgraŋ* ‘satisfy with food, satiate’. See Gong 2001:27.
- Another attractive Chinese comparandum is 网, 網 ‘net/web’ OC *miwāŋ* (*GSR* 742l, 742a’). See Coblin 1986:138, Gong 1995:#238, JAM 2000a:#19.
- Cf. WT (m)*khraŋ* ‘hard, solid, firm’; WB *kraŋ* ‘tense, tight’. See Gong 2001:24, and above 7.1(3).

- s. For the PTB initial *ʒr or *zry-, see above 3.6.4.2 “Rare or dubious liquid clusters”. Cf. also Amdo Tibetan (Bla-Brang dial.) pzaŋ ‘maternal uncle’; Lai Chin traŋ ‘father’s sister’s husband’, Falam Chin raŋ ‘*id.*’.
- t. *STC* (p. 174) derives *GSR*’s OC xjwǎŋ from an earlier **plwǎŋ, on the basis of a possible connection with 伯 OC pǎk (*GSR* #782i) ‘eldest brother’, as well as a putative parallel example of PST *labial-plus-w clusters becoming ɣw- in OC, *i.e.* PTB *bʷar ≈ *pʷar ‘fire’ alongside OC 燔 bʷiǎŋ ‘burn / roast’ (*GSR* #195i) ≈ 火 ɣwǎr ‘fire’ (*GSR* #353a-c). A parallel development is posited for Karenic, *e.g.* PTB *pʷa ‘bamboo’ > PKaren *hwa.
- u. Although this TB etymon seems to be confined to Himalayish (*e.g.* WT steŋ, Ladakhi staŋ ‘that which is above, the upper part, top surface’, Limbu taŋ ‘above’), there might well be an allofamic connection with PLB *C-tak (*TSR* #42; *DL*:676) ‘upper side, top surface’ (cf. WB ʔəthak, Lahu thǎʔ) as well as Jg. kəthǎʔ ‘above, overhead’, ləthǎʔ ‘upper’, pointing to a PTB word family *-tak ≈ *-taŋ. See below 8.2(1).
- v. Cf WT glaŋ-ma ‘a large kind of alpine willow’; see Gong 2001:31.

(4) Chinese comparanda to PTB *-im

The six good Chinese comparanda to PTB etyma in *-im are all reconstructed with OC -jǐəm.

PTB		STC		GSR	OC	Chinese Gloss
*s-grim	‘catch / hold fast’ ^a	---	禽	651j-m	gʷjǐəm	‘bird, animal / catch, capture’
			擒 ^b	651n	gʷjǐəm	‘catch / capture’
*krim	‘custom / prohibition’ ^c	---	禁	655k	kljǐəm	‘prohibit’
*b-rim ^d	‘distribute / cast away’	p. 178	稟	668a-b	bljǐəm ~ pljǐəm	‘rations / to receive’ (<i>GSR</i>); ‘grain allowance from public granaries / receive from superiors’ (<i>AD</i> 554)
*grim	‘hasten’ ^e	---	咍	652g	gʷjǐəm	‘obstruct / shut’ ^f
*g-dzim ^g	‘sleep’	p. 170	寢	661f-g	tsʰjǐəm	‘lie down to sleep’
*syim ^h	‘sweep’	p. 170	𦏧	661a-b	tsʰjǐəm	‘sweep over / invade’
			侵	661c-d	tsʰjǐəm	‘sweep over / invade’

a. Cf. WT sgrim-pa ‘hold fast’, WB krim ‘meet with, find’.

b. According to *GSR* #651m, this character represents the same word as the preceding one.

7.5: Chinese comparisons to PTB nasal-final roots

- c. Cf. WT *khrim*s ‘right, law, custom’. The same association of ideas occurs in Western Hmong: Mong Leng (Green Hmong) *cai* /tcai³³/ ‘custom, law, ritual, prohibition’ ≠ *caiv* /tcai²⁴/ ‘be under prohibition or taboo; be forbidden by taboo’ (p.c. DRM 2002).
- d. Cf. WT *hbrim-pa* ‘distribute, deal out, hand out’; Nung *ərim* ‘cast away’.
- e. Cf. WT *grim* ‘hasten, hurry’, *hgrim* ‘go, walk, march about’.
- f. According to Gong 2001:27, the *Shuo Wen* gloss of this character is 喑, 口急也 ‘close-mouthed; tight-lipped; speaking hurriedly or haltingly’ (*Hanyu Da Zidian*: 1.643.7).
- g. Cf. WT *gzim-pa* ‘fall asleep, sleep’.
- h. Cf. Rawang *šim*, Trung *šyəm*, Maru *šam* ‘sweep’; WB *sim* ‘strike with a motion toward oneself’.

(5) Chinese comparanda to PTB *-in, *-i:n

There are only a few good Chinese comparanda to this relatively rare PTB rhyme.

PTB		STC		GSR	OC	Chinese Gloss
*sin ^a	‘body / owner / agentive nominalizer’	---	身	386a-c	šĭĕn	‘body’
*d-rin	‘compassion / love’ ^b	---	憐	387l	lien	‘to pity’
*dzin ^c	‘exhaust / come to an end’	p. 170	盡	381a-b	dz’iĕn	‘exhaust / entirely’
*m-sin’ ^d	‘liver / bitter’	#234; p. 180	辛	382a-f	siĕn	‘bitter / pungent’
*mi:n	‘order / command’	p. 180	命	762a-b	miĕn ~ mĭăŋ ^e	‘order, command; name, designation’

a. For this newly proposed etymology, see above 7.2(2).

b. Cf. WT *drin* ‘kindness, favor, grace’, WB *rāñ-cā* ‘sweetheart’. See Gong 2001:29.

c. Cf. WT *zin-pa* ‘draw near to an end, be at an end; be finished, exhausted, consumed’.

d. This etymon universally means ‘liver’ in TB, the connection with ‘bitter’ presumably having arisen secondarily in Chinese via the gall bladder. The same semantic association is found with the principal TB etymon for ‘bitter’, *ka (above 5.2), which has a bodypart meaning in Barish (Garo and Kachari *bi-ka* ‘liver’, Garo *kha-khit* ‘bile’. The Chinese word for ‘liver’ 肝 OC *kān* (GSR #139-l) has been shown (STC:154, 158, 165) to represent a suffixed form of *ka ‘bitter’, with the open syllable allofam becoming Chinese 苦 ‘bitter’, OC *k’o* (GSR #49u). See JAM 1978a (VSTB):207, and above 5.2.4.

e. Cf. WB *min* ‘speak authoritatively, command’. Karlgren recognizes both of these OC readings, observing (p. 202) that *miĕn* is “an alternative reading indicated by several *Shijing* rhymes”. STC (p. 155) claims a further relationship with 名 ‘name’ (below §6), as well as with 令 OC *liĕŋ* ‘command’ (GSR #823a), all from *mliŋ < **m-riŋ. Cf also WB *mrañ* ‘find fault with, scold’.

(6) Chinese comparanda to PTB **-iŋ*

The OC comparanda to PTB etyma in **-iŋ* are reconstructed consistently with **(i)ěŋ*, with a few examples of *-ieŋ*.

<i>PTB</i>		<i>STC</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
<i>*priŋ</i>	‘bark (as dog)’	#377	猩	812z	<i>sieŋ</i> ~ <i>sěŋ</i> ^a	‘bark as a dog / monkey’ ^b
<i>*bliŋ</i> × <i>*pliŋ</i> ^c	‘full / fill’	#142	盈	815a-b	<i>dĭěŋ</i>	‘ <i>id.</i> ’
<i>*s-riŋ</i> × <i>*s-raŋ</i>	‘live / alive; green / raw’	#404	生	812a-d	<i>sěŋ</i> ^d	‘live; bear / be born; fresh (as greens)’
<i>*r-miŋ</i> ^e	‘name’	#83	名	826a-c	<i>mĭěŋ</i>	‘ <i>id.</i> ’
<i>*liŋ</i>	‘neck’	#96	領 頸	823f 831n	<i>lĭěŋ</i> <i>kĭěŋ</i> ~ <i>g’ĭěŋ</i> ^f	‘neck / collar’ ‘neck’
<i>*m/s-diŋ</i> ^g	‘settled / fix, establish’	---	定	833z-a’	<i>d’ieŋ</i>	‘ <i>id.</i> ’
<i>*sriŋ</i> ^h	‘sister / matrilineal lineage’	p. 108	姓 ⁱ	812q-r	<i>sĭěŋ</i>	‘clan / family / family name’
<i>*mriŋ</i>	‘sound / noise’ ^j	---	鳴	827a	<i>mĭěŋ</i>	‘cry of birds, sounds of animals / to sound’
<i>*bliŋ</i> ^k	‘string / cord’	p. 176	繩	892b	<i>đ’iěŋ</i>	‘string’
<i>*diŋ</i> ^l	‘top / summit’	p. 180	頂	833e	<i>tieŋ</i>	‘top of head / summit’

a. *STC* revises the OC reconstruction to *srieŋ* ~ *srěŋ*.

b. *GSR* observes that the *Shuo Wen* defines the character as ‘bark’ in the first reading, but there is no textual occurrence. The character is used to mean ‘orangutan’ in Mandarin (*xīng*).

c. For semantic interconnections of this root with other adjectival etyma expressing “perfection in a certain dimension”, see JAM 1988a (“Straight, flat, full”), where it is claimed that **dyam* × **tyam* ‘full / flat’ (*STC* #226) and **dyam* ‘straight’ (*STC* #227) are actually one and the same etymon.

d. The OC reconstruction is revised to *śrěŋ* in *STC*:155, 170.

e. See the allofamically related root **mi:n* ‘order / command’, above §5.

7.5: Chinese comparisons to PTB nasal-final roots

- f. The identical rhymes and meanings of these two Chinese forms, one with initial lateral and the other with a velar, are strong evidence that both are to be derived from a prefixed prototype like *g-liɛŋ.
- g. Cf. Xixia ndiẽ (Nishida 1966) and PLB *m-diŋ¹ ≠ *ʔ-diŋ¹ (> Lh. dẽ ‘come to rest’ ≠ tẽ ‘put sthg down’). See above 4.3.3 and JAM 1978b:18.
- h. Cf. WT sriŋ-mo ‘man’s sister’, i.e. ‘the one carrying the matriclan name’. See Benedict 1941.
- i. Gong 2001:29-30 compares the WT form rather to 甥 ‘sister’s son or daughter; son-in-law’ (OC səŋ; GSR #812g).
- j. Cf. WB mrañ ‘sound, produce sound’. See Gong 2001:24.
- k. Cf. Metu (Nungish) am-briŋ ‘cord’ (STC); other Nungish reflexes include Dulong aŋ³¹bɿuŋ⁵⁵ and Anong a³¹xuŋ⁵⁵. Also undoubtedly cognate are (Qiangic) Qiang Taoping bze³³, Qiang Mawo biɾa, Pumi Jinghua bz̥a¹³; (Mirish) Geman Deng bɿaŋ⁵³, Idu a⁵⁵tɕe⁵⁵mbɿaŋ³⁵ all ‘rope’ (thanks to DRM for identifying these latter forms).
- l. Cf. Jg. pūŋ-dīŋ ‘zenith, top’.

Two TB etyma in *-i(:)ŋ have reliable OC cognates with secondary palatalization of the velar nasal to a dental. See ‘tree / firewood’ and ‘year’, above 7.2(4) and below 12.6.1(2).

(7) Chinese comparanda to PTB *-um

OC comparanda to PTB etymon in *-um are consistently reconstructed with -(i)əm, except for Benedict’s reconstruction of ‘salt’ (-iam). This latter etymon has PTB medial -y-, but the exact motivation for Benedict’s reconstruction is unclear.

PTB		STC		GSR	OC	Chinese Gloss
*m-kum ≠ *m-kim	‘block / pillow’ ^a	#482	榧	658f ^b	tɿəm	‘chopping block’
			枕	656g	tɿəm	‘pillow / use as pillow’
*rum ≠ *rim	‘dark / shade’ ^c	#401	陰	651y	ʔiəm	‘shade, darkness, cloudy’
*gum ≠ *kum	‘die / kill’	p. 175	戡	658q	k’əm	‘vanquish / kill’
			戕	651v ^d	k’əm	‘kill’
*s-brum	‘pregnant’ ^e	---	妊	667i-k	ŋiəm	‘id.’
*m-ʔu:m	‘put in mouth’	#108	吮	AD 238 ---f	ʔəm	‘put in mouth / hold in mouth’
*gryum	‘salt’	#245	鹽	609n	gliam ^g	‘id.’
*g-sum	‘three’	#409	參	647a-b	ts’əm	‘three / a triad’
			三	648a-c	səm	‘three’

- a. Pillows in ancient times were made of a block of wood, usually with a concavity on top.
 b. This *GSR* #658 has members with OC palatal, dental, and velar initials (for an example of the latter see ‘die / kill’), perhaps pointing to a Proto-Chinese *ky- initial for most of them.
 c. See below 12.1(2a) and Gong 2001:28.
 d. *GSR* #651, with phonetic 今 ‘now’ OC *kjəm*, also contains members with both OC velar and dental initials.
 e. Cf. WT *sbrum-pa* ‘pregnant, big with young’. See Gong 2001:24.
 f. Not in *GSR* #614.
 g. No OC reconstruction is ventured in *GSR*, but see *STC*:177.

(8) *Chinese comparanda to PTB *-un*

Two OC comparanda to PTB etyma in *-un have been discovered:

<i>PTB</i>		<i>STC</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
*s-mun ^a	‘dark’	p. 155	悶	441d	mwən	‘sad / dull / stupid’
			殯	457f	mwən	‘blinded / confused’
			昏	457j-l	xmwən	‘dusk, evening / darkness / blinded’
*m-glun ^b	‘kidney’	---	腎	368h	ḍjĕn	‘id.’

a. Cf. WT *mun-pa* ‘obscurity, darkness; obscure, dark’, *dmun-pa* ‘darkened’; WB *hmun* ‘dim, dusky, blurred’. See the next table for an allofamically related root *mu:ŋ.

b. Cf. Jg. *ń-khyūn*, Mpi *ʔkjo*⁵. See above 3.6.4.1(1).

(9) *Chinese comparanda to PTB *-uŋ, *-u:ŋ*

The OC comparanda to these PTB rhymes are reconstructed with -uŋ, -jūŋ, -jǔŋ, -jōŋ, or -jəŋ.

<i>PTB</i>		<i>STC</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
*r-duŋ	‘beat / strike’ ^a	---	撞	1188f	ḍ’ūŋ	‘strike’
*guŋ ^b	‘body’	p. 182	躬	1006e	kjōŋ	‘body / person’ (躬)
*mu:ŋ ^c	‘cloudy / dark / sullen’	#362	夢	902a-b	mǔŋ	‘dream / darkened / blind’
		---	瞢	902d	mǔŋ	‘darkened / ashamed / despondent’
		---	蒙	1181a	muŋ	‘to cover / ignorant / dark’

7.5: Chinese comparisons to PTB nasal-final roots

<i>PTB</i>		<i>STC</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
*guŋ ɤ	‘hollow / hole	---	空	1172h	k’uŋ	‘hollow / empty /
*kuŋ	/empty’	---	孔	1174a	k’uŋ	hole’
						‘empty’
*dyuŋ ^d	‘insect’	p. 182	蟲	1009c	d’iŋ	‘insect / reptile, scaly creature’
*tu:ŋ	‘inside / middle’	#390	中	1007a-e	tjəŋ	‘middle / midway; proper’
*m/r-duŋ	‘mountain / hillock’ ^e	---	冢	1218h-i	tjəŋ	‘mound / tumulus / peak’
*ku:ŋ	‘tree / branch / stem’	#359	弓	901a-d	kjũŋ	‘bow’ ^f

- a. Cf. WT rduŋ-ba ‘beat, strike; cudgel, drub; smash, thrash’. Cf. 8.4(1d) for a probable allofam with final stop.
- b. Cf. Rawang guŋ ‘body, animal, self’; Jg. gòŋ ‘body’, ñ-gòŋ ‘corpse’; Tsangla Motuo k^hoŋ⁵⁵ me⁷⁵⁵ ‘lower body’; Chantyal gfo ‘body’; WB ?əkaŋ ‘body, animal body’; Zaiwa kuŋ⁵¹ tu²¹ ‘body’; Xixia (Tangut) kon¹ ‘id.’. For the Sani reflex, see above 3.1. This PTB root might also be reconstructed as *goŋ, in which case it would belong in §10 below.
- c. This root is allofamic with *mu:ŋ ɤ *mu:k ‘overcast / foggy / sullen’ (12.5.3), *r-man ‘dream’ (§3 above), and with *mun ‘dark’ (§8 above).
- d. This root is apparently confined to Bodo-Garo (e.g. Garo dzoŋ, Dimasa yuŋ).
- e. This TB/Chinese comparison is due to Gong (2000:#22). See below 7.2(5).
- f. Evidently this word referred to a curved vertically held bow, rather than the technologically subsequent ‘cross-bow’ (see *m-dan, above §2). Cf WB ?əkhuiŋ ‘stalk, branch’, ?kũiŋ ‘large branch, bough’, kũiŋ ‘hand over in a curve, bend downwards’.

(10) Chinese comparanda to PTB mid vowels + nasal (*-eN, *-oN)

Since -e- and -o- are the rarest nuclear vowels in PTB nasal-final etyma, it is not surprising that there are only a handful of good OC comparanda to roots of this type. On the basis of the limited material available, the correspondences seem to be as follows:

<i>PTB</i>	<i>OC</i>
*-em	-jəm
*-en	-jan, -ian
*-eŋ	-jəŋ, -ieŋ, -ěŋ
*-oŋ	-uŋ

<i>PTB</i>		<i>STC</i>		<i>GSR</i>	<i>OC</i>	<i>Chinese Gloss</i>
*sem ^a	‘soul / mind / spirit / heart’	p. 184	心	663a	sĭəm	‘heart’
*ren ^b	‘equal / place in a row / line / row’	#346	連	213a	lĭan	‘connect / unite / in a row, consecutively’
			聯	214a	lĭan	‘join / bring together’
*m-kyen	‘know’	#223, p. 175	見	241a-d	kian	‘see’
			現	241e	g’ian	‘appear’
*sre(ŋ) ^c	‘weasel / squirrel’	p. 79	狴	812t	sĭěŋ ^d	‘weasel’
			鼯	812u		
*keŋ ^e	‘leg / stem / stalk’	pp. 70, 142	脛	831k	g’ien	‘leg / shank / shin’
			莖	831u	g’ěŋ	‘stalk’
*kyeŋ ^f	‘red’	#162	經	831x	t’ĭěŋ	‘id.’
			赭	834m	t’ĭěŋ	‘id.’
			騂	821c	sĭěŋ	‘red ox; red’
*b-tsoŋ	‘onion’	pp. 169, 181	蔥	1199g-h	ts’uŋ	‘id.’

a. Cf. WT sem(s) ‘soul, mind, spirit’, sem(s)-pa ‘think’.

b. See above 7.3(2).

c. Cf. WT sre-mo(ŋ) ‘weasel’, Mk. iŋ-ren ‘mongoose’, WB hrañ ‘squirrel’.

d. The OC reconstruction is modified to sĭěŋ in STC:171.

e. Cf. Mk. keŋ, Thado keŋ ‘leg, foot’. An allofamically related root is *r-kaŋ > WT rkaŋ-pa ‘foot, leg; stem, stalk’, Pa-o Karen kaŋ-ya, Pwo khā, Sgaw khə.

f. Cf. WT skyeŋ-ba ‘be ashamed’, Jg. khyēŋ ‘red, crimson’, WB ni kyaŋ-kyan ‘bright red’.

8.1 Overview

8.1.1 At the PTB level

The following stopped finals are exemplified in *STC*:

ik, i:k	uk, u:k	it, i:t	ut, u:t	ip, i:p	up, u:p
--- ---	ok, o:k	--- ---	ot	ep	op, o:p
ak, a:k		at		ap, a:p	

Final stops in Sino-Tibetan, as in virtually all mainland Southeast Asian languages of the Tai-Kadai, Hmong-Mien, and Mon-Khmer families, are unreleased, with no contrasts in voicing or aspiration in that position. This lenis unreleased quality has sometimes motivated the use of voiced symbols to transcribe them, as in WT (*e.g.* *khrag* ‘blood’, *brgyad* ‘eight’, *ḥdžibs* ‘suck’), and in other Himalayan languages under Tibetan orthographic influence, like Kanauri, Ladakhi, and Manchatī.¹

Final stops at three positions of articulation are generally well preserved in the five criterial languages of *STC*, though in phonologically eroded branches of TB like Loloish, Karenic, and Qiangic they have left only indirect traces in the form of vowel quality differences, creaky (constricted) phonation, and/or glottal stop. This glottal stop is often best regarded as a suprasegmental or prosodic feature, so that it makes sense to speak of “stopped tones”.² While tonal contrasts are frequent in TB stopped syllables, they are

1. The same convention is adopted in M.R. Haas’ well known transcription of Siamese.
2. The terms “stopped tone” and “checked tone” are used synonymously in the literature.

8.1.2: Stopped rhymes in Lolo-Burmese

seldom more than two-way (usually simply HIGH vs. LOW), in sharp distinction to non-stopped syllables which may have up to six or more phonemic tones.³

Similarly to the case of nasal-finalled rhymes, the best attested stopped rhymes have medial *-a- (below 8.2), while the rarest are those with mid vowels *-e- and *-o- (below 8.5-8.6). Although *STC* provides no examples at all of etyma with PTB *-ek and *-et, a few have been uncovered since then, especially at the subgroup level.⁴

Length contrasts may be established for most stopped rhymes, though examples of long-vowelled stopped etyma are relatively scanty. Among the most interesting long/short pairs are *-it / *-iɾt and *-uk / *-u:k, for both of which WB provides evidence; see below 8.3(2) and 8.4(1).

8.1.2 Stopped rhymes in Lolo-Burmese

WB preserves PTB final stops quite well, with one important exception: PTB/PLB *-ik and *-it > WB -ac (> Mod. Bs. -ɾɿ); see below 8.3(1-2). However, WB itself is of no help in reconstructing stopped rhymes with *mid vowels; for this we must rely on the rather slender evidence that Loloish languages can provide.

The following stopped rhymes may be set up for PLB:

ik	uk, u:k	it, i:ɿ	ut	ip	up
ek	ök	et		ep	
	ak		at		ap
yak	wak		wat	yap	wap

TABLE 18. PLB Stopped Rhymes

The Lahu reflexes of these rhymes (displayed in the same relative positions as their PLB prototypes) may be taken as typical of the final-eroded Loloish languages:

ɪʔ	uʔ, oʔ	iʔ, eʔ	əʔ	ɪʔ	ɔʔ
eʔ	ɔʔ	ɛʔ		ɛʔ	
	aʔ		eʔ		oʔ
ɛʔ	ɔʔ		eʔ	oʔ	oʔ

TABLE 19. Lahu Stopped Rhymes

3. Perhaps partly for this reason, traditional Thai linguistic terminology distinguishes between “live” syllables (ending in a vowel, semivowel, or nasal) and “dead” syllables (ending in stops).

4. The rhymes *-ek, *-et, *-ok, and *-ök are reconstructed for Proto-Lolo-Burmese in JAM 1972a (*TSR*). See below.

Final stops				
<i>PLB</i>	<i>Lahu</i>		<i>PLB</i>	<i>Lahu</i>
*-ak	-aʔ, -á ^a	‘weave’	*rak ^L	ǵàʔ
		‘join’	*ʔ-dzak ^L	cá
*-wak	-ɔʔ	‘emerge’	*ʔ-twak ^H	tôʔ
*-yak	-ɛʔ	‘eye’	*s-myak ^H	mêʔ
*-ik	-ɪʔ, -í	‘tree’	*sik ^H	šîʔ
		‘joint’	*ʔ-dzik ^L	cí
*-uk	-uʔ / -oʔ / -ɔʔ, -ú / -ó / -ó ^b	‘burn (v.i.)’	*duk ^L	tòʔ
		‘kindle (v.t.)’	*ʔ-duk ^L	tú
		‘crooked’	*guk ^L	qòʔ
		‘bean’	*s-nuk ^H	nôʔ
		‘back’	*ʔ-nuk ^L	qhòʔ-nó
*-ek	-eʔ	‘kick’	*tek ^H	thêʔ
*-ök	-ɔʔ	‘shoot’	*m-pök ^H	bôʔ
*-at	-eʔ	‘vomit’	*C-pat ^L	phêʔ
*-wat	-eʔ	‘release’	*k-lwat ^H	lêʔ
*-it	-iʔ, -í	‘wipe’	*sit ^H	šîʔ
		‘eight’	*ʔ-rit ^L	hí
*-i:t	-eʔ	‘goat’	*C-tši:t ^L	á-chèʔ
		‘blink; shut abruptly’	*mi:t ^L	mèʔ
*-ut	-əʔ	‘blow’	*s-mut ^H	môʔ
*-et	-ɛʔ	‘break off a piece’	*C-ket ^L	qhêʔ
*-ap	-oʔ, -ú	‘layer’	*tap ^H	thôʔ
		‘stand’	*ʔ-rap ^L	hú
*-wap	-oʔ	‘swell up’	*C-pwap ^L	phòʔ
*-yap	-oʔ	‘narrow’	*gyap ^L	còʔ
*-ip	-ɪʔ, í / -í	‘sleep’	*yip ^L	yìʔ
		‘put to sleep’	*ʔ-yip ^L	í

8.1.2: Stopped rhymes in Lolo-Burmese

<i>PLB</i>	<i>Lahu</i>		<i>PLB</i>	<i>Lahu</i>
		‘lac’	*ʔ-grip ^L	a-kí
*-up	-ɔʔ	‘suck’	*C-tšup ^L	chòʔ
*-ep	-ɛʔ	‘scale (of fish)’	*sep ^H	šêʔ

- a. In items with *voiced glottalized initials, the Lahu vocalic reflex is usually the same, but the syllable is in the high rising tone: -á, -í, -ú, etc. (See JAM 1970, 1979, etc.) Occasionally an etymon acquires a different vowel under this high rising tone: see below, ‘burn’ (tòʔ) vs. ‘kindle’ (tí) and ‘sleep’ (yìʔ) vs. ‘put to sleep’ (í); also ‘wear clothes’ (vəʔ) vs. ‘dress someone’ (fí).
- b. In my previous PLB reconstruction (e.g. in *TSR* and *DL*), I attempted to distinguish between PLB *-uk and *-ok on the basis of the Lahu reflexes (*-uk > Lh. -uʔ, *-ok > Lh. -ɔʔ), but this now seems questionable.

There are tremendous differences in the frequencies of the three final stops in Lolo-Burmese. Rhymes with final *-k are by far the most frequent lexically, and show the most contrasts in vowel quality; a distant second are rhymes with final *-t; and even less numerous are etyma that reconstruct with final *-p. The breakdown of the nearly 200 stop-finalled sets in JAM 1972a (*TSR*) according to final consonant is approximately as follows (sweeping most variations under the rug for the moment):

<i>Final Stop</i>	<i>Rhyme</i>	<i>Examples</i>	<i>Total</i>
*-k	*-ak	67	128
	*-ok	22	
	*-ik	15	
	*-uk	12	
	*-ek	6	
	*-ök	6	
*-t	*-it	16	37
	*-at	12	
	*-ut	6	
	*-et	3	
*-p	*-ap	17	29
	*-up	7	
	*-ip	5	

TABLE 20. Distribution of stop-final rhymes in *TSR*

8.2 Stops after medial *-a-

(1) *-ak

This is by far the best attested stopped rhyme in TB/ST. Among the most important etyma reconstructed with this rhyme are the following:

	<i>PTB/PLB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>G</i>
‘ascend / top’ ^a	*l-tak	n.338	#98	ltag-ma	ləthàʔ	tak, ʔəthak	tâʔ	---	dak
‘ashamed ₁ ’	*g-yak	#452	#182	---	kəyàʔ	---	yàʔ-to	zak	---
‘ashamed ₂ ’	*s-rak	#431	#182	śrag ^b	---	hrak	---	---	---
‘bird’	*s-ŋak	---	#141	sŋag ^c	---	hŋak	ŋâʔ	---	---
‘black / deep’	*s-nak ≠ *s-mak	p.88	#142 / #157	nag-po ^d	---	nak	nâʔ; ná ^e	---	---
‘boil / cook’	*s-glak	#124	#61	---	khyā ^f	kyak, khyak	cá	tlak	---
‘breath(e) / life’	*sak	#485	#123	---	ñ-sàʔ	sak, ʔəsak	śá, ð-śá	---	---
‘cockspur / hoof’ ^g	*dak ^L (PLB)	---	---	---	---	ʔətak, krak-tak	ð-tàʔ, yâʔ- khɪ-tàʔ	---	---
‘descend’ ^h	*zak	p.87	#121	---	---	sak	yàʔ	---	---
‘expensive’ ⁱ	*kak	p.166	#11	---	---	---	qhâʔ	---	---
‘fowl / chicken’ ^j	*k-rak	pp.88, 107	#184	---	---	krak	gâʔ	va-rak	---
‘graze (forage)’ ^k	*ʔ-klak ^H ≠ *glak ^H (PLB)	---	#105	---	---	câ- kyak ^l	qâʔ	---	---
‘hand’	*g-lak	#86	#166	lag-pa	lətáʔ	lak	làʔ	---	---
‘armpit / cubit’	*g-yak ^m	p.34	---	---	---	gyak- kəli’	jâʔ ⁿ	---	dzak
‘hide (v.)’	*s-p ^w ak	#46	#178	phag	---	phak, hwak	vàʔ, fá	---	---
‘iron / iron instrument’	*l-tsyak ^o	---	---	lcags	---	jak ^p	---	---	---
‘itch’	*m-sak	#465	---	---	məsàʔ	---	---	thak	---
‘join’	*s-dzak	---	#44	---	---	chak	cá	---	---
‘leaf’	*r-pak	#40	#29	---	phàʔ	phak	phàʔ	---	---

8.2: Stops after medial *-a-

	<i>PTB/PLB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>G</i>
‘mutually / reciprocal action’ ^q	* m-dak ^L (PLB)	---	#106	---	---	---	dàʔ	---	---
‘pig’ ^r	* p ^w ak	#43	#168	phag	wáʔ	wak	vàʔ	vok	wak
‘plantain’ ^s	* s-ŋak	#477	#139	---	ŋàʔ	hŋak	---	---	---
‘rock / stone’ ^t	* b-rak	#134	---	brag	lùŋ- brá	---	há	---	roŋ- brak
‘rope / cord / navel’ ^u	* ʔ-kyak ^H (PLB)	---	#58	---	---	khyak	câʔ	---	---
‘rough’ ^v	* sak	---	#115	---	---	---	šâʔ	---	---
‘scratch / rake (v.)’ ^w	* m-krak	---	#96	---	---	khrak	gâʔ	---	---
‘sharp’	* tak	p.87	#41	---	---	thak	thâʔ	---	---
‘soldier / war’	* d-mak	---	#135	dmag	---	mak	màʔ	---	---
‘weave’ ^x	* t(r)ak	#17	#192	hthag-pa	dàʔ	rak	ğàʔ	taʔ	dak

- a. A group of Chinese comparanda point to a PST allofam with final *-ŋ; see above 7.5(3).
- b. Bunan.
- c. ‘voice / sing’.
- d. WT **nag-po** ‘black’. See also the WT allofam **smag** ‘dark, darkness’.
- e. Lahu **nâʔ** ‘black’, **ná** ‘deep’; WB **nak** has both meanings.
- f. This form, meaning ‘prepare glutinous rice’, is irregular, in that it lacks final glottal stop (see below).
- g. Cf. also Akha (ILH) **ja-dàq** ‘cockspur’, Lalo **dĩʔ** ‘hoof’. The first syllable of this Ak. form, as well as those of WB **krak-tak** and Lh. **ŋâʔ- khî-tàʔ** mean ‘fowl/chicken’ (DL:601). See below in this chart. Possibly related is PTB ***r/g-dek** ‘kick’, with several good Chinese comparanda; see below 8.2(1).
- h. A possible allofam with -u- vocalism is widely attested: Jg. **ʔyúʔ**, Lushai **zúk** < ***s-yuk**. Cf. also open-syllable forms like Limbu **yui**, Bahing **yu**, PNN (French 1983) ***yəw** > Konyak **yú** ~ **yú**, etc.
- i. In TB this root has so far only been attested in Loloish, where it sometimes means ‘be at its peak’ (cf. Akha **xáq**, Lisu **khaʔ**). However, there is a good Chinese comparandum (see below), which makes it probable that more TB cognates will be found.
- j. There are also several cognates in Tani languages, e.g. Pailibo and Abor **rok-**, Nishing **rop** (with secondary labial). See Jacquesson (1998:103).
- k. See DL:236 and JAM 1983:#2.
- l. Insc. Bs. **nwā-klak**.
- m. This etymon seems allofamic to ‘hand’; cf. also rGyalrong **təyak**.
- n. Lahu **jâʔ** ‘cubit’
- o. Cf. Benedict 1939:217, quoting Houghton (1896).
- p. WB **jak** ‘bit (bridle)’.
- q. The Lh. morpheme is a post-verb particle; see GL:4.1a, 4.61(1). Cf. Ak. (ILH) **tàq** ‘do sthg. with smn. else’.
- r. For the initial (also in ‘hide’) see JAM 2000a (“Extrusional approach to ***p-** / **w-**”). Lotha Naga has a curious disyllabic reflex **wókò** (with echo-vowel?), where the original final *-k has become the initial of the second syllable.
- s. Cf. also Pa-o Karen **ŋàʔ**, PNN (French 1983) ***ŋa:k** > Konyak **ngao**, etc.

- t. Cf. also Thulong Rai *broa* ‘cliff, steep place’, and Tujia *ya²¹pa²¹*. The lack of final glottal stop in the Jg. form is unexplained. Other Loloish forms include Lisu (Frazer) *rgha¹*, Hani *xə³¹lɿ³³* (< PLB *ʔ-rak^L). See *DL*:1061.
- u. The Lahu and other Loloish forms mean ‘rope / string’; the WB, as well as other Burmish forms (e.g. Maru *choʔ*) mean ‘navel’, the semantic connection presumably having arisen via the umbilical cord. See *DL*:455. This association is confirmed by the Lalo forms: *tjhiq-pat-ja* ‘umbilical cord’, *tjhiq-ma-dw̃* ‘navel’ (SB 1998:174).
- v. Cf. also Thulung *sak-teor*; Bokar *ca-get*; Achang *tsaʔ⁵⁵*.
- w. Cf. also Maru *kyak*, Ak. *káq* ‘rake / harrow’, Lalo *káq* ‘rake’. Several additional cognates are to be found in ZMYYC #555, including: rGyalrong *kə rə khrok*, Naxi (Yongning) *kuə³¹kuə¹³*, Nusu *kɿq⁵³*, Geman Deng *glua³⁵*. Lahu has a doublet form *ɣâʔ* ‘gather together, scoop together’ < PLB *k-rak. See *DL*:1123.
- x. Loloish languages (e.g. Lahu and Lalo) have also developed the meaning ‘drive / chase’ from this root, as indicated in *DL*:1125. The semantic association seems to be via the driving motion of the shuttle of the loom.

The reflexes of this rhyme are straightforward in key languages, with medial semivowels -w- and -y- often giving rise to special conditioned reflexes (e.g. in WT, Jingpho, Lahu, Lushai):⁵

<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Bodo-Garo</i>
*-ak	-ag	-aʔ	-ak	-aʔ	-ak	-ak
*-wak	-og	-oʔ (?)	-wak	-ɔʔ	-uak, -ok	?
*-yak	-yag	-(y)aʔ	-yak	-ɛʔ	-iak, -iat	-ak

Jingpho has regularly developed -ʔ from *-k. Modern Jg. words in -k are loans from Shan or Burmese, or from Pali via Shan or Burmese, e.g. *ʔəyàk ʔəkhàk* ‘troublesome’ (< Shan); *nàmmùkdəṛā* ‘ocean’ (ult. < Pali).

The Burmish languages have also generally developed -ʔ in this rhyme, with back vowels for the most part (Modern Burmese is exceptional, with the front vowel reflex -ɛʔ):^{6/7}

<i>PTB</i>	<i>WB</i>	<i>Mod.Bs.</i>	<i>Achang</i>	<i>Hpun</i>	<i>Maru</i>	<i>Zaiwa</i>	<i>Bola</i>
*-ak	-ak	-ɛʔ	-ɔʔ	-uʔ	-oʔ	-oʔ	-aʔ

5. Languages which have developed back vowels from the open rhyme *-a also tend to reflect *-ak with rhymes like -ok, even in the absence of a palatal semivowel, as in the following Maru examples (extracted from Sawada 1999):

	‘bird’	‘chicken’	‘eye’	‘hand’	‘navel’	‘pig’
<i>PTB</i> :	*s-ŋak	*k-rak	*s-myak	*g-lak	*ʔ-kyak ^H (PLB)	*p ^w ak
<i>Maru</i> :	ŋóʔ	ýôʔ	myôʔ	lôʔ	chóʔ	vôʔ

6. JAM 1991c (“Jiburish revisited”), discusses 42 LB and Jingpho *-ak cognate sets (pp. 96-104).

7. Another LB language with a front vowel reflex of this rhyme is Lalo, which almost always reflects *-ak by -iq (“q” is glottal stop in the transcription of Björverud 1998), e.g. *p^wak^L ‘pig’ > Lalo á-viq; *g-lak^L ‘hand’ > Lalo líq; *tak^H ‘sharp’ > Lalo thíq; *s-nak^H ‘black’ > Lalo níq, etc. Two roots where Lalo has developed a palatal semivowel are exceptional, yielding Lalo -aq: PLB *kak^H ‘village’ > Lh. qhâʔ, Lalo kjháq (for additional cognates, see *TSR* #22 and *ZMYYC* #362; PLB *rak^L ‘weave / drive / chase’ > Lh. ɣàʔ, Lalo jàq.

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The Naxi reflexes of this rhyme are particularly unruly (data mostly from Rock 1963):⁸

<i>PLB</i>	<i>Naxi</i>	<i>PLB</i>	<i>Naxi</i>
*-ak	-u	*-ak	-u
‘boil’	³ dgyu ~ ³ dtyu	‘dream’	mu ³³ / mɿ ³³ a
‘emerge’	³ t'u	‘soldier’	mu ³¹
‘pig’	¹ bu	‘son-in-law’	mu ⁵⁵
‘rat’	³ ffü		
*-ak	-a	*-ak	-a
‘black’	¹ na	‘hand’	¹ la
‘crossbow’	³ k'a	‘mutual’	³ dta b
‘fowl’	¹ ʔa	‘sharp’	³ t'a
*-ak	-ɔ c	*-ak	-ɔ
‘breath’	³ ssaw	‘night’	³ haw
‘descend’	¹ zaw	‘weave’	¹ ddaw
‘hide’	³ gkaw		
*-ak	-o	*-ak	-o
‘ascend’	² ndo	‘deep’	³ ho
‘branch’	³ gko		
*-ak	-ou	*-ak	-ou
‘ashamed’	³ shou ¹ ndou		

TABLE 21. Naxi Reflexes of PLB *-ak

a. ‘boil’, ‘emerge’, and ‘pig’, He and Jiang 1985.

b. < PLB *n-dak^L.

c. “-aw” in Rock.

The development to Naxi -u is the most clearly conditioned, with all the above examples (except ‘boil’) having a *labial component in the prevocalic consonant sequence, either medial *-w- or initial *m-. (In the case of ‘boil’, perhaps the original medial *-l- labialized

8. See Okrand 1974; JAM 1979:31 (“QV”); JAM 1991c:97.

in pre-Naxi to -w-.) However, at least two other examples of **-wak* have different Naxi outcomes:

	<i>PLB</i>	<i>Naxi</i>
‘ant’	<i>*p-rwak^H</i>	<i>tʂhua⁵⁵ ua³³</i> (<i>TBL</i>), <i>tʂho⁵⁵ lo³³</i> (<i>ZMYYC</i>)
‘bowl’	<i>*kwak^H</i>	<i>ʔk'wua</i>

(a) **-wak*

The labialized rhyme **-wak* is faithfully maintained as such in WB, and to a less regular extent in Lushai. The medial **-w-* has backed the vowel in WT and Lahu. Jingpho and Bodo-Garo cognates of etyma with this rhyme have yet to be identified.

<i>PTB</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>
<i>*-wak</i>	-og	-wak	-ɔʔ	-uak, -ok

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>
‘ant’	<i>*p-rwak^a</i>	#199	#183	grog-ma	pərwak	pú-ǵôʔ	
‘bowl’ ^b	<i>*kwak</i>	---	---	skyogs ^c	khwak	---	---
‘emerge’	<i>*s-twak</i>	p.17	#102	--- ^d	thwak	tôʔ	tʂhuak
‘half’	<i>*pwak^e</i>	p. 24	---	---	ʔəwak	---	---
‘leaf’ ^f	<i>*rwak</i>	---	---	---	rwak	---	---
‘rat’	<i>*k-r-wak^g</i>	p. 107	#188	---	krwak	fâʔ	---

a. Cf. Dulong səɔʔ⁵⁵, rGyalrong khörök, Miri tərək.

b. Cf. Benedict 1939:220, and JAM 1991c (“Jiburish”):100.

c. Glossed ‘scoop, ladle; drinking cup, bowl, goblet’ in Jäschke (1881:31).

d. A possible example of an unusual preservation of this proto-rhyme in WT is the morpheme *dwags* in the compounds *ri-dwags* ‘animals of chase; game’ (Jäschke:526; perhaps “hill-emerge”) and *yi(d)-dwags* ‘famished ghost’ [Buddhist] (Jäschke:509; perhaps “mind-emerge”; p.c., Paul K. Benedict).

e. Cf. rGyalrong əphak.

f. Cf. also Achang (Longchuan) a³¹xɔʔ⁵⁵, Zaiwa a²¹xəʔ⁵⁵, Maru fəʔ⁵⁵. Extra-LB cognates include: rGyalrong təjwək, Tujia yue⁵⁵tha⁵⁵ (ZMYYC #224). See JAM 1991c:102.

g. Cf. Chepang rok-yu.

The Lahu reflex -aʔ (rather than -ɔʔ) in ‘rat’ is to be explained by an immediate prototype **ʔ-wak^H*, where the **w-* functioned as the main component of the root-initial, rather than as a medial semivowel. This is similar to the Lolo-Burmese treatment of ‘pig’ (PLB **wak^L* > WB *wak*, Lahu *vàʔ*), as well as ‘hide’ (PLB **s-p^wak* > WB *phak* / *hwak*, Lahu *vàʔ* / *fá*,⁹ where the PLB rhyme must be deemed to be **-ak* rather than **-wak*.¹⁰ The

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essentially ambiguous status of -w- is brought home by the fact that in many other TB languages it has backed the vowel, as if it were part of the vocalic nucleus rather than the initial (*e.g.* Lushai *vok*, Lotha *wókò*).

(b) *-yak

A similarly ambiguous status is characteristic of -y- before *-ak. Sometimes the palatal element behaves like a feature of the **rhyme*, so that the vowel quality of the reflex is affected. In cases like this, Lahu has the special development *-yak > -ɛʔ (see ‘destroyed / ruined’, ‘lick’, ‘very / real’, and ‘eye’, below).¹¹ In other etyma, the **y-* is functioning rather as the root-initial, so that any preceding consonant is to be regarded as a prefix; here Lahu has the normal development *-ak > -aʔ (see ‘armpit’ and ‘ashamed¹’, above). Occasionally there is cross-linguistic variation between the presence and absence of **-y-* (‘spend the night / day of 24 hours’; ‘very / real’). Most interestingly, there are several etymologies where **-yak* \approx **-ik* variation must be posited at the PTB level (see ‘eye’, ‘pheasant’, ‘drop / drip’, ‘very / real’, below). The Lushai reflexes of **-yak* are unpredictable; usually one finds the “normal” reflex -iak, but occasionally the final velar assimilates to the palatal medial, yielding -iat (see ‘broom’, ‘scratch’, below).¹²

In a recently discovered etymon in **-yak*, Jg. has the reflex -eʔ:

<i>PTB</i>	<i>Jingpho</i>	<i>Lahu</i>
<i>*s-myak</i>	myéʔ	mé
‘vanish / get lost’	‘be lost, gone, vanish’	‘get lost, disappear, vanish’ ^a

a. Contra *DL*:1014, this word is unrelated to Lahu *mèʔ* ‘shut abruptly, flicker’ (> **s-mi:t*). See below 8.3(2b).

<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Bodo-Garo</i>
<i>*-yak</i>	-yag / -eg	-aʔ, -eʔ	-yak	-ɛʔ	-iak, -iat	-ak

9. This is a simplex / causative pair: ‘hide oneself (v.i.)’ / ‘hide sthg (v.t.)’.

10. The regular reflex of **-ak* in the Central Chin language Lakher (=Maraa) seems to be -ao, as illustrated by a pair of Lahu / Lakher cognates that has graced a blackboard at STEDT for several years now: ‘pig’ **wak* > Lahu *vàʔ*, Lakher *vāo*; ‘hide’ **wak* > Lahu *vàʔ*, Lakher *vāo*.

11. Several other languages seem regularly to have developed -ek < **-yak*, *e.g.* Mikir, Tangkhul Naga (cf. ‘lick’, below). This also happens occasionally in WT, though other Bodish languages retain the original vowel quality (see ‘bear’, below).

12. This is analogous to the sporadic development of PTB **-ik* > Lushai -it. See ‘eye’ and ‘pheasant’, and below 8.3.

Over a dozen roots are reconstructible with a palatal element *-y- before the rhyme *-ak, including:

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>
‘bear / endure’ ^a	*tyak	p.52	---	theg-pa	---	---	---
‘broom’ ^b	*pyak	#174	---	phyag-ma	---	---	hmun <i>phiat</i>
‘destroyed / ruined’ ^c	*s-pyak	---	#64	---	pyak, phyak	pê?	---
‘fold up / turn up’ ^d	*pyak (PLB)	---	#93	---	---	phê?	---
‘grease / oil’ ^e	*s-ryak	#204	---	žag	wat-rak	---	sa-hriak
‘lick / tongue’ ^f	*m/s-lyak	#211	#179	ldžags	lyak	lè?	liak
‘pulverize / shatter / diminutive’ ^g	*s-nyak	---	#158	---	ñak, hñak	nê?, né	---
‘red / gold’ ^h	*tsyak	#184	---	---	---	---	raŋ-ka-tśak
‘scratch’	*hyak	#230	---	---	yak	---	hiat
‘spend night’ ⁱ	*s-r(y)ak	#203	#174	žag	rak	há	riak
‘wet’ ^j	*s-nyak	---	#150	---	---	nê?	---

- a. This root has so far only been identified in Bodish, e.g. Ladakhi *thag* ‘bear’, Purik *thyak* ‘lift’, Balti *thyak-pa* ‘patience’.
- b. Cf. also Mikir *arphek*, Abor *pek*, Empeo *piag*, Chepeng *phek*.
- c. Cf. also Jg. *byá?* ‘be destroyed’, *šəbyá?* ‘destroy sthg’. The Lahu cognate means ‘lose its power; dissipate; get stale; be infertile; be good-for-nothing’.
- d. The Lh. form means ‘fold up, roll up (as cuffs or trouser legs)’. Cf. also Akha *bya^* ‘fold over, fold up, close’.
- e. The WB form means ‘juice of flowers’. The voiceless Lushai initial motivates the reconstruction of prefixal **s-* (contra *STC*).
- f. Cf. also Garo *srak*, Mikir *inlek*, Tangkhul *khəmolek*, Jg. *mətá?*. There is a Lahu causative allofam *lé* ‘cause to lick; feed an animal’.
- g. The WB forms are morphologically a simplex/causative pair, although the meanings of both are now intransitive (*ñak* ‘be made fine, reduced to powder’, *hñak* ‘be smaller than common, undersized’. Lh. *nê?* is a full verb, while both *nê?* and *né* function as a diminutive element in compounds (e.g. *cho-tê?-né* ‘little guy, short person’, *khî-tô-nê?* ‘stump of a leg’); see DL:783-4, 787. Extra-LB cognates include Mzieme *niak*, Lotha Naga *enhyak*.
- h. Cf. Garo *gittśak* ‘red’, Jg. *džà* ‘gold’ (with unexplained loss of -ʔ; also perhaps WT *khrag* ‘blood’. There is a good Chinese cognate (below).
- i. Cf. also Lalo *hìq*. This root means variously ‘night’, ‘spend the night’, or ‘a full day and night of 24 hours’. Prefixal **s-* is reconstructed on the basis of Manchat *hrag*, as well as the initial sibilant in the Chinese cognate (below).

8.2: Stops after medial *-a-

- j. Cf. also Mpi *paŋʔ*¹ (the glottalized final nasal is the regular Mpi reflex of *-k in this environment; see JAM 1978b:22-4), and above 6.2. Probably related (with fronting of the final consonant to -t) is Chep-ang *nyat-sa* ‘become wet’, *nyāt-ʔo* ‘wet’ *ʔæʔ* *nik-ʔo* ‘cold and wet’. This root was reconstructed as **s-nek* in *TSR* #150 on the basis of insufficient data.

Variation between **-yak* *æ* **-ik* is attested in a number of roots at the PST or PTB level, including the following:

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>
‘eye’ ^a	<i>*s-myak</i>	#402	#145	---	<i>myak</i>	<i>mêʔ</i>	---
	<i>æ</i> <i>*s-mik</i>			<i>mig</i>	---	---	<i>mit</i>
‘pheasant’ ^b	<i>*s-ryak</i>	#403	---	<i>sreg-pa</i>	---	---	---
	<i>æ</i> <i>*s-rik</i>				<i>rac</i>		<i>va-hrit</i>
‘drop / drip’ ^c	<i>*m-dzak</i>	---	#82	<i>ḥdzag / ḥtshag</i>	<i>cak</i>	<i>jâʔ</i>	---
	<i>æ</i> <i>*g-tyik</i>			<i>gtig-pa / thigs-pa</i>	---	---	---
‘very / real / certain’ ^d	<i>*tak</i>	p.52	---	<i>thag-pa</i>	<i>tak-tak</i>	---	<i>tak</i>
	<i>ææ</i> <i>*tyak</i>			<i>tig-tig</i>	<i>tyak-tyak</i>	---	---
	<i>æ</i> <i>*tik</i>						

a. Cf. also rGyalrong *təmnyak* < **s-myak*; and Jg. *myiʔ*, Limbu *mik*, Garo *mik* < **s-mik*.

b. Cf. also Lepcha *kəhryak-fo* (< **s-ryak*); and Jg. *ù-riʔ*, Garo *do-grik* (< **s-rik*). Lahu *gōʔ* ‘silver pheasant; bar-tailed pheasant’ (*DL*:1141) points to a PLB variant **rwak*.

c. Cf. also Tamang *syak-pa*. The nasal prefix reflected by the voiced Lahu initial is directly attested in cognates like rGyalrong *nthək*, Ersu *ntho*⁵⁵, Naxi *ndə*³³, Luquan Lolo *nts'a*²². There is a good Chinese cognate to the allofam with -i- vocalism (below).

d. This root has allofams both with and without **-y-*, and also displays **-yak* *æ* **-ik* variation. Cf. also Mikir *ʔəthik* (< **tik*). Also probably cognate are Lahu *dāʔ* ‘good’ (< **mdak*) *æ* *qha-dêʔ* ‘well’ < **mdyak*. Another possible allofam is Lh. *têʔ* ‘quotative particle’ (*i.e.* “that is really what was said”) < **dyak*.

(c) **-a:k*

A long vowel may be reconstructed in this rhyme for several etyma on the testimony of Lushai:

<i>PTB</i>	<i>WT</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Garo</i>
<i>*-a:k</i>	<i>-ag</i>	<i>-aʔ</i>	<i>-ak</i>	<i>-aʔ</i>	<i>-a:k</i>	<i>-ak</i>

	<i>PTB</i>	<i>STC</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Garó</i>
‘bat’	*ba:k ^a	#325	---	---	---	ba:k	do-bak
‘hawk / gag / choke’	*ha:k	#323	---	hak	---	ha:k	---
‘phlegm’ ^b	*ka:k	p.71	---	---	---	kha:k	---
‘son-in-law’ ^c	*s-ma:k	#324	mag-pa	səmak	ð-má-pā	ma:k-pa	---
‘fork / branch’	*s-ka:k ^d	#327	---	ʔəkhak	ð-qá	ka:k	---

- a. This root is also well attested in Northern Naga: Chang pak, Wancho ao-pak, Konyak ou-pak (ao, ou ‘bird’). See French 1983:454.
- b. Cf. Mikir tšin-khak ‘expectorate; cough up phlegm’. This root may be allofamic with ‘hawk / gag’, although one or both of them may well be sound-symbolic.
- c. See *TSR* #153; also Miri mag-bo, Dhimal hma-wa.
- d. The WB and Lahu forms are from PLB *ʔ-gak^L (*TSR* #43).

(d) *-ak ≈ *-aŋ

A couple of roots display variation between *-ak and the homorganic nasal rhyme *-aŋ.¹³ In both these cases the Chinese cognate reflects the nasal allofam (see the list of Chinese comparanda below):

	<i>PTB</i>	<i>Reflexes</i>
‘cold’	*m/s-glak ≈ *m-glaŋ (<i>STC</i> p.39; <i>TSR</i> #99)	
	*m/s-glak	WT khyag(s)-pa; Lahu kâʔ; Atsi kyoʔ; Maru kyòʔ; Akha gáq
	*m-glaŋ	WT graŋ-ba; Trung glaŋ; Lepcha hyán; Lushai ʔaŋ-tho:m; Mikir niŋ-kreŋ ‘winter’, paŋ-kleŋ ‘freeze, congeal’; Lahu gò
‘dream’	*r/s-mak ≈ *r/s-maŋ (<i>STC</i> #82; <i>TSR</i> #144)	
	*r/s-maŋ	WT rmaŋ; Jg. ʔyúp-māŋ; Nung ip-maŋ; Trung mləŋ; Lushai máŋ; Garó džú-maŋ; WB hmaŋ-ca-saŋ ‘walk in one’s sleep’
	*r/s-mak	WB ʔip-mak; Lahu yìʔ-mâʔ; Akha máq

13. See below 12.5.

8.2: Stops after medial *-a-

One etymon shows an unusual variation between *-ak and *-ap:¹⁴

	<i>PTB</i>	<i>Reflexes</i>
‘early morning’	*m-nak ⚡ *m-nap (not in <i>STC</i> ; <i>TSR</i> #131)	
	*m-nak	WB mənək; Lahu tē nà?, mû-nà?; Lisu ná ⁶ ; Bisu ʔaŋ-dà
	*m-nap	Jg. mənàp; Ao Naga tənáp; Mikir mənáp ~ pənáp

(e) Chinese comparanda

There are over a score of likely Chinese cognates to TB etyma in *-ak. Over half of them are reconstructed in *GSR* with OC $-(\dot{\imath})\text{ək}$, $-\dot{\imath}\text{ək}$ or $-(\dot{\imath})\text{ǎk}$. Six more reconstruct with an OC back nuclear vowel ($-\dot{\imath}\text{uk}$, $-\dot{\imath}\text{ôk}$, $-\dot{\imath}\text{ok}$, $-\text{iok}$, $-\dot{\imath}\text{og}$, $-\text{ǎ} [\text{ɔ}]$), while the rest are scattered over a number of miscellaneous rhymes ($-(\text{w})\text{âk}$, iek , ieg , ək). There are several reasons for this apparent inconsistency: the over-differentiation in the *GSR* rhyme categories themselves; the fact that several of the etyma show rhyme variation in TB and/or Chinese (e.g. ‘ashamed’, ‘drip / drop’, ‘eye’, ‘good’, ‘outer covering’, ‘pheasant’, ‘pig’); and the widespread tendency for vowels to show more secondary sound changes before velars than before consonants at other points of articulation. (Cf. the discussion of the multiple reflexes of *-ak in Naxi, above 8.2.)

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese</i>
‘armpit / cubit’ ^a	*g-yak	p. 34	#100	腋	zjak	800m	‘armpit’
‘ascend / lift / raise / top’ ^b	*l-tak	p. 123	#’s 42, 98	陟	tjak	916a-c	‘mount / advance / promote’
‘ashamed’	*s-rak ⚡ *g-yak ^c	#’s 431, 458	#182	色	sjək ^d	927a	‘color (of face) / looks, beauty / lust’
		---	---	怍	dz’âk ^e	806r	‘ashamed’
‘bat’	*ba:k	#325	---	蝠	pjuk	<i>AD</i> 52 ^f	‘ <i>id.</i> ’
‘black / ink / deep’ ^g	*s-nak	p.88	#’s 142, 157	墨	mək	904c	‘ink’
				黑	xmək	904a-b	‘black’
‘breath(e) / life’	*sak	#485	#123	息	sjək	925a	‘breathe’

14. See below 12.6.

							Final stops
	<i>PTB</i>	<i>STC</i>	<i>TSR</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese</i>
‘cord / tie / bind’ ^h	* grak	---	---	絡	glâk	766o	‘silk thread / cord / bridle’
‘drip / drop (n.)’ ⁱ	* m-tsak ʰ * t(s)ik	---	#82	滴	tiək	<i>AD</i> 987 j	‘a drop / to drop, drip’
		---	---	瀝	giək ^k	954i	‘drip’
‘eye’	* s-myak ʰ * mik	#402	#145	目	mîôk	1036a-c	‘ <i>id.</i> ’
‘fear’ ^l	* krak ʰ * grak	#473	#104	雒	glâk	<i>AD</i> 411	‘to fear’ ^m
				恪	k’lâk	766g	‘to respect / reverent’
				覷	χiäk	789a	(= 覷) ‘fear’
				嚇	χäk	779b	‘scare’
				覷	χiäk	787d	‘fear’
				佑	giüğ	995k	‘assist’
				友	giüğ	995e	‘friend / associate’
				右	giüğ	995i-j	‘the right hand, on the right / assist’
‘fowl’	* k-rak	p. 107; 187-8	#184	酉	ziog	1096a-g	‘cock (calendrical term)’
‘good / beautiful’ ^o	* l(y)ak ʰ * l(y)aŋ	p. 54	---	麗	lieg	878a-b	‘elegant / beautiful / refined / good’
				良	liəŋ	735a-d	‘good’
				易 ^p	djĕk	850a	‘at ease / well-ordered’
‘grease / oil’	* s-ryak	#204	---	液	ziäk	800n-o	‘fluid / moisture’
‘hand’ ^q	* g-lak	#86	#166	翼	giək ^r	954d	‘wing’
‘lick / tongue’	* m/s-lyak	#211	#179	舌	điät ^s	288a	‘tongue’
				臄	giäk	803h	‘tongue’

8.2: Stops after medial *-a-

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese</i>
‘outer covering’ ^t	*r-kwa(:)k ≠ *kok	#342	#71	鞞	k’wâk	774i	‘leather’
				革	kək	931a-b	‘hide / skin’
‘(at its) peak / expensive’	*kak	p. 166	#11	極	g’iək	910e-f	‘ridge of house / the highest point / extreme limit, utmost’
‘pheasant’	*s-ryak ≠ *s-rik	#403	---	翟	d’iok	1124a-b	‘ <i>id.</i> ’
‘pig’	*p^wak	#43	#168	豕	pâ	39d	‘sow / pig’
				豕	g’i^uwag^u	803a-b	‘kind of boar’
‘red / blood v / gold’	*tsyak	#184	---	赤	t’iäk	793a-c	‘red’
‘shine / flash’ ^w	*glwak	---	---	爚	djok	1119f	‘shine’
				耀 耀 耀	djog	1124i-k	‘shine / gleam’
‘spend the night / day of 24 hrs.’	*s-r(y)ak	#203	#174	宿	sjôk^x	1029a-b	‘pass the night’
‘weave’	*t(r)ak	#17	#192	織	t’iək	920f	‘ <i>id.</i> ’

- a. Cf. Lushai *zak* ‘armpit’; WB *gyak-kəli* ~ *chak-kəli* ‘*id.*’; Lahu *jâ?* ‘cubit’; Akha *căq* ‘length of outstretched fingers’; Garo *džak* ‘arm’; Dimasa *yau* ‘*id.*’ This root is allofamically related to **g-lak* ‘hand’ (below).
- b. This is a complex TB word family, including **tak* and **tyak* as the basic allofams, with the former precedable by several different prefixes: **l-tak* > WT *ltag-ma* ‘upper part or place’, Jg. *ləthà?* ‘upper, above’; **g-tak* > Jg. *kəthà?* ‘above, overhead’; PLB **ʔaŋ-tak* > Lahu *ð-thà?* ‘top, surface’, *thà?* ‘accusative noun particle’; PLB **ʔ-tak* ‘climb / ascend’ > WB *ʔəthak* ‘upper part, space above’, Lahu *tâ?* ‘climb, ascend’. The palatalized variant **tyak* > WT *theg-pa* ‘lift, raise; bear, endure’. Also possibly related is WT *thog-ma* ‘upper end, uppermost place’, perhaps < **twak*.
- c. *STC* sets up 2 separate *PTB* roots, **s-rak* (> e.g. WB *hrak*) and **g-yak* (> e.g. Lahu *yàʔ-tə*). Support for keeping them separate is furnished by Gong (2000:45, 2001:25), who compares WB *hrak* both to WT *khrag* ‘blood’ (presumably via the notion of blushing) and to Chinese 赫 ‘red, fiery red’ (OC *χāk*; *GSR* #779a). However, Gong also compares this same Chinese character (alternatively glossed ‘majestic, awe inspiring, brilliant’) to WT *grags* ‘fame, reputation, good name, renown, glory’ and WB *krak* ‘honor, glory, prosperity’ (2001:26).
- d. This *GSR* reconstruction is modified to *śrjek* in *STC*:170.
- e. This comparison suggested by RSC.
- f. Not in *GSR* #933.

- g. Lahu differentiates between *nâ?* ‘black’ (< PLB *s-nak) and *ná* ‘deep’ (< PLB *ʔ-nak), while WB has *nak* for both meanings. There is also a nasal-final allofam represented by WB *maŋ* ~ *hmaŋ* ‘ink’ (< PLB *s-maŋ or ʔ-maŋ).
- h. Cf. WT *grags*, *hgrags* ‘bind’. See Gong 2001:26.
- i. This etymon has two well-established allofams, one with *-a-, and one with *-i- : PTB *m-tsak > WT *hdzags* ‘drop, drip, trickle’, *htsag* ‘cause to trickle, strain, filter, sift’; PLB *m-tsak^H > WB *cak* ‘fall in drops’, *ʔəcak* ‘a drop’; Lahu *jâ?* ‘to drip’, *ʔ-jâ?* ‘a drop’; Akha *dzaq* ‘to drip, a drop’. Also PTB *t(s)ik > WT *thigs-pa* ‘a drop’, Akha *dzýq* ‘id.’, *Mpi tu?*. OC *tiək* apparently descends from the latter allofam. For a coincidentally similar vowel gradation in English, cf. *drip* vs. *drop*; *dribs* and *drabs*. See JAM 1978b(“Mpi”):2-3, 29.
- j. Not in *GSR* #877.
- k. This *GSR* reconstruction might well be revised to *tjək*, by the same reasoning as adduced for OC ‘wing’, below.
- l. This is another root showing vowel gradation, this time between *-a- and *-o-. The former allofam is represented by WT *skrag-pa* ‘be terrified, afraid’, as well as by the Chinese forms. The latter allofam (better attested in TB) underlies WT *dkrog-pa* ≈ *skrog-pa* ‘rouse, scare up’, *dogs-pa* ‘fear’, as well as by PLB *m-krok ≈ *ʔ-krok (> WB *krauk* ‘fear’, *khrauk* ‘to frighten’, Lh. *kʔ?* ‘be afraid’, etc.).
- m. Glossed only ‘a kind of bird’ in *GSR* #766q.
- n. Cf. WT *grogs(-po)* ‘assistant; friend, associate, companion’. For the semantics of the Chinese comparanda, cf. the English expression *right-hand man*. See Gong 2001:28.
- o. This root exhibits both final stop ≈ nasal variation (see below 12.5.3) as well as variation between initial lateral and voiced stop; see JAM 1990b and above 3.4.2(4c).
- p. This comparison is due to Bodman 1980.
- q. This wide-spread root is allofamic with *g-yak ‘armpit / cubit’ (above). See JAM 1985b (“Arm, hand, wing”).
- r. *STC* (p. 171) revises this *GSR* reconstruction to *djək* because of the presence of 趨 *t’jək* ‘sound of marching’ in the same phonetic series (954g-h).
- s. For the occasional fronting of final velars to dentals after high vowels in OC, see below 12.6.1.
- t. The proto-gloss in *STC* is ‘bark / rind / skin’. Here, as in other cases of TB -a- ≈ -o- variation, *STC* (n. 229, p. 74) reconstructs PST **-â-. See below 8.6(9.1.1).
- u. The velar initial in this form is paralleled by a velar prefix in several Kamarupan languages: Zeme (=Empeo) *gəbak*, Liangmei *kabak*, Rongmei (= Nruanghmei = Kabui) *gəwək*. See JAM 2000a (“p / w”):158.
- v. Cf. WT *khrag* ‘blood’, isolated in this sense in TB.
- w. Cf. WT *glog* ‘lightning, flash of lightning’. See Gong 2001:31.
- x. The OC reconstruction is revised to *sriək* in *STC*:155,171. Probably allofamic to this etymon is the root set up in *STC* #417 as *ya (better *s-ya) ‘night’ based on Proto-Karen *hya, Chepang and Nung *ya, Miri *yo, Mikir *dzô, etc., since there are good Chinese comparanda with final velars: 夕 ‘evening, night’ OC *dzjək* (*GSR* #796a-d) and 夜 ‘night’ OC *zjäg* (*GSR* #800j-k).

(2) *-at

Etyma with this rhyme are discussed in detail in JAM 1985a (*GSTC*), especially in connection with the rhymes *-an and *-ay. The reflexes of *-at are straightforward in the criterial TB languages:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Garó</i>
*-at	-ad	-at	-at	-eʔ	-at	-at
*-yat	-yad	-at	-ac	-iʔ	-iat	-et
*-wat	-od	-ot	-wat	-eʔ	-(u)at	-uat

8.2: Stops after medial *-a-

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>GSTC</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lus.</i>
‘bite down on’	* tsat ^a	---	#24	#25	---	---	---	chè?	---
‘break / cut’	* tsyat	#185	#40	#18	gtśod-pa, btśad ^b	---	chat ^c	chê?	tśat
‘kill’	* g-sat ^d	#58	#124	#21	gsod-pa, bsad ^e	sat	sat	---	that
‘smell / odor’	* bat ^f	---	---	#30	---	bàt	---	ò-pè?	---
‘vomit’	* m-pat ^g	---	#38	#26	---	ñ-phàt	phat	phè?	---
‘wind around’	* bat	---	---	#31	---	bàt	pat	pê? ^h	---

- a. Cf. also Akha tsèq. This root was originally reconstructed (*TSR*, *GSTC*) only at the PLB level as *C-tsatl, but PNN *tsat (> Wancho tsat, Konyak jei; French 1983:455) shows that this is a general TB root.
- b. These WT forms are the present and perfect.
- c. This WB form means ‘brittle’.
- d. Cf. also Dimasa thai, Mikir that, and PNN *ʔsot (French 1983:504).
- e. These WT forms are the present and perfect.
- f. Cf. also Akha bèq -làq.
- g. There are many cognates throughout TB, in Lolo-Burmese, Qiangic (rGyalrong mphet; Namuyi mphi³³ pɛ³³; Ersu nphs¹⁵⁵; Pumi Jinghua tɔ⁵⁵ spha⁵⁵; Queyu lɔ⁵⁵ phø⁵⁵; Shixing phi⁵⁵); Northern Naga (Nocte phat, Konyak pát), and Mirish (Padam-Mising bat; Geman Deng phat; Milang a-bot); cf. also Tujia phi³⁵.
- h. This Lahu form means ‘strip, slice; classifier for strips of land’; cf. Jg. dīŋ-bàt ‘crossbar, beam; arch, space, as between two posts and a top-bar’; Akha béq ‘rafter that goes lengthwise on posts at side of house’.

Etyma with this rhyme that have so far been attested only in Lolo-Burmese include:

	<i>PLB</i>	<i>TSR</i>	<i>GSTC</i>	<i>WB</i>	<i>Lahu</i>	<i>Akha</i>
‘alive’	* dat ^L	#1	#24	---	tè?	dèq
‘cut apart / cut into’	*ʔ-bratl ✕ *C-pratl ^a	---	#27	prat, phrat ^b	phè?	---
‘flail / flap’	* pat	---	#28	phat-lat	phê?-dô	---

- a. Gong 2001:23 proposes WT hbrad, sbrad ‘scratch, lacerate by scratching’ as cognate, also offering Chinese comparanda. See below 8.2(2c).
- b. WB prat ‘be cut in two, be broken (as the skin)’, phrat ‘cut in two’. There is an apparent Lh. doublet pè? ‘split, crack, get cracked’ < PLB *bratl.

The palatalized version of this rhyme, **-yat*, has special reflexes (with mid front vowels) in a few languages, *e.g.* Thulung Rai *-et*, Garo *-et*. By far the most important and complicated etymon with this rhyme is ‘eight’:

‘eight’	<i>*b-r-gyat</i> ⌘	WT <i>brgyad</i> ; Thulung <i>yet</i> ; Jg. <i>mətsát</i> ; WB	<i>STC</i> #163; <i>TSR</i> #171; <i>GSTC</i> #41
	<i>*b-g-ryat</i> ^a	<i>hrac</i> ; Lahu <i>hí</i> ; Garo <i>tshet</i> ; Lushai <i>riat</i> ^b	

a. Many other allofams of this etymon are reconstructed at various subgroup levels of TB in JAM 1995b (“Numerals”):203-7, 236.

b. Here Lushai has *-iat*, against its reflex *tśat* of **tsyat* ‘break / cut’ (above), which is good grounds for treating the **initial* of ‘break / cut’ as a unitary palatal affricate, rather than as a sequence of dental affricate plus semivowel **tsy-*. See the discussion of the phonemic status of the PTB palatal series, above 3.6.3.

This numeral is reconstructed as **ʔ-rit* at the PLB level (*TSR* #171). Evidently **-yat* had already merged with **-it* in PLB, yielding WB *-ac*; see below 8.3(2c). The normal Lahu reflex of **-at* is *-eʔ*, but in ‘eight’ it is *-í* (not *-é*).¹⁵ It is hard to say whether this is due to the palatalizing effect of the *-y-*, or just the raising effect of the high-rising tone, for which there are a few other examples (*e.g.* the simplex/causative pairs *tòʔ* ‘be on fire’ (< PLB **duk*) ⌘ *tú* ‘set on fire’ (< PLB **ʔ-duk*); *vəʔ* ‘wear clothes’ (< PLB **wat^L*) ⌘ *fí* ‘dress someone’ (< PLB **ʔ-wat^L*) [see below for this last example].

(a) **-wat*

The labialized version of this rhyme, **-wat*, similarly has special reflexes (with mid back vowels) in several languages, including WT and Jg. Although examples are few, Lushai and Garo seem often to preserve the medial as *-uat*.

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Garo</i>
<i>*-wat</i>	<i>-od</i>	<i>-ot</i>	<i>-wat</i>	<i>-eʔ</i>	<i>-(u)at</i>	<i>-uat</i>

15. The Lahu high-rising tone is normal as the reflex of stopped syllables with **glottalized initials*. See above, 4.2.2.

8.2: Stops after medial *-a-

There are a good number of etyma with this labialized rhyme, including:

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>GSTC</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>
‘flower’	*b/s-wat ^a	p.24	#185	#20	---	---	wat	ší-vê?
‘free / release’	*g/s-lwat ^b	#209	---	#22	glod-pa, hlod-pa	lòt, šəlòt	lwat, kywat / hlwat, khywat	lê?
‘leech’	*r-p ^w at ^c	#45	#167	#19	pad-ma	wòt	krwat	vè?
‘stick into’	*swat ^d	---	---	#29	---	---	swat	šê?
‘stiff / tough’	*rwat	#198	---	---	rod-pa	---	rwat	---

- a. Cf. also rGyalrong *tapat*; Nung *šín-wat* (*šín* ‘tree’). *STC* reconstructs *bwat, and JAM 2000a:#7 reconstructs *b^wat, but the Proto-Loloish high-stopped tone points to a voiceless prefix at the PLB level, undoubtedly *s- (*s-wat^H), a reduction of the morpheme *sin̥ ≈ *sik ‘tree’ that is the first element of the compound meaning ‘flower’ in several languages (e.g. Nung, Lahu).
- b. Jg. *šəlòt* and WB *hlwat* ≈ *khywat* are causative forms. The Lahu cognate means ‘slip, slide; smooth, fluent’. This root is not reconstructed in *TSR*, but it belongs to Class DD “Voiceless prefix plus resonant” (*TSR*:68-70), and should be reconstructed as PLB *k-lwat ≈ *s-lwat. See *DL*:1375.
- c. Cf. also Lushai *van-wat* (where the *w-* is treated as the root-initial); Lepcha *fot*; Mikir *ing-phat*; Magari *ləwat*; Boro *luwád*; Rangkhól *ervot*; Angami Naga *reva*; Chang Naga *wat*. WB *krwat* reflects the “velar animal-prefix” (< PLB *k-r-wat), while the forms in Loloish languages (e.g. Lahu *vè?*, Akha *yèq*, Lisu *vé*⁶) descend from the unprefixed allofam *wat.
- d. So far this root has only been uncovered in LB. The WB form means ‘put into a small opening (as a letter into an envelope)’, while the Lahu form means ‘put on / wear socks or leggings’ (cf. *khí-šê?* ‘leggings, gaiters, puttees’).

In several *-at etyma with initial or medial *(-)w-, Lahu has developed a central vowel, -i? or -ə?, instead of its normal reflex -e?. (As we have seen, in other such cases Lahu retains the regular reflex; see ‘free / release’, ‘leech’, ‘stick into’, above.)

	<i>PLB</i>	<i>STC</i>	<i>TSR</i>	<i>GSTC</i>	<i>WB</i>	<i>Lahu</i>
‘pluck’	*ʔ-cwat ^H	---	#57	#33	chwat	cî?
‘hungry’	*mwat ^L ≈ *ŋ(w)at ^L	---	#132	#34	mwat ≈ ŋat	mə?
‘star / moon’	*mwat ^L ^a	---	---	#35	---	mə?-kə

- a. < PTB *s-ŋ^w(y)a-t. Cf. also Angami Naga *thèmvǎ* ‘star’ and the excellent Chinese comparandum meaning ‘moon’ (below). This etymon is the chief focus of discussion in JAM 1980 (“Stars, moon, and spirits”). Note the variation between *m-* and *ŋ-* induced by the medial -w- in both ‘hungry’ and ‘star / moon’.

(b) *-at \approx *-an

Variation between *-at \approx *-an must be posited in the important root *nat \approx *nan ‘ill / suffer / hurt / evil spirit’ (TSR #136, GSTC #36):

PLB	Reflexes
*nat	WB nat; Jg. nát; Akha nêq, etc.
*nan	Lahu nê, Sani ni ⁵⁵ , Lisu ni ⁵ , etc.

Both the -t and the -n in this etymon may be suffixal, ultimately deriving from *na ‘ill / suffer / hurt’ (STC #80) > WB na, Lahu nà. We would then have a tripartite word family of the shape *na \approx *nan \approx *nat.¹⁶

Another possible case of *-a \approx *-an \approx *-at variation is a word-family meaning ‘wear clothes’ (as a simplex intransitive) or ‘dress someone’ (as a causative). This etymon is reconstructed *wat in STC and GSTC:

	PTB	STC	TSR	GSTC	WB	Lahu
‘wear / clothe’	*wat	p.24	#181	#32	wat	vəʔ \approx fí ^a

- a. This is one of the cases where Lahu has a central vowel (as in ‘pluck’, ‘hungry’, and ‘star / moon’, above. Cf. also Rawang nuŋ-wat ‘cover breasts (nuŋ) with cloth’, rGyalrong wat (Nagano 1984), kawat (ZMYC), tewyet ‘clothes’ (CHANG Kun). Several Loloish languages have forms which point to a prototype with *high front vowel (e.g. Ahi vi⁴⁴, Luquan i⁵⁵), which led me to reconstruct PLB “*wik / *ʔwik or *wit / *ʔwit” in TSR #181. Cf. also Lalo iq. The rGyalrong forms tewyet ‘clothes’ and wyan ‘I wear’ show similar palatalization.

A separate root *gwa-n \approx *kwa-n is set up in STC #160. The open-syllable allofam is well represented (some of the following are from ZMYC #646):

‘wear / clothe’	*gwa \approx *kwa	WT bgo-ba ‘put on clothes’; Nung g(w)a [v.i.], dæg(w)a [v.t.]; Lisu gwa ³¹ ; Qiang Taoping guə ³³ ; Pumi Jinghua tə ⁵⁵ gui ⁵⁵ ; Namuyi ɣə ³³
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16. See JAM 1978a (VSTB):110-11, 254-55. Chinese 難 is a comparandum to the nasal-finalled allofam (see below). For a general discussion of final variation between homorganic dental stops and nasals, see below 12.5.2.

8.2: Stops after medial *-a-

The nasal-final variant is also well attested:

‘wear / clothe’	*gwan ⚭ *kwan	WT gon-pa ‘put on clothes’, skon-pa ‘dress someone’; Jg. khòn ‘wear (as bracelets)’; Garo gan ‘wear, dress’; rGyalrong wyan ‘I wear’; Proto-Karen *kwan ‘put on a lower garment’
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If we treat the initial velar in these forms as prefixal, we can accommodate everything in one large word-family of the shape ***s-g-wa-n/t**,¹⁷ where the ***s-** represents the causative or transitivizing prefix that is directly attested in several languages (WT, Nung, Lahu). This prefix could then account for the variation in voicing of the following velar.

There are many verb roots that show allofamic variation between ***-at** and the open rhyme ***-a**.¹⁸ These are best treated below (11.3) under “suffixal ***-t**”, even though the semantic contribution of the suffix is often unclear.

(c) Chinese comparanda

Chinese cognates/comparanda to TB etyma in ***-at** include:

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	
‘belly / stomach’ ^a	*grwat	胃	giwəd	523a	‘stomach’
‘break / cut’	*tsyat	絕	dz’iwat	296a	‘cut off / break off’
		脆	ts’iwad	296c	‘brittle’
		折	t̪iat	287a-b	‘break / bend / destroy’
‘cut apart / cut open’ ^b	*brat ⚭ *prat	裂	liat	292f	‘tear asunder / divide’
		別	b’iät	292a	‘divide / separate / distinguish / different’
‘eight’	*b-r-gyat	八	pwăt	281a-d	‘eight’
‘free / release / relax’ ^c	*g/s-lwat	脱	t’wât ~ d’wât	324m	‘peel off / take of (as clothes) / escape / disappear’
		悦	diwat	324o	‘pleased / glad’

17. A key form here is rGyalrong **wyan**, with a nasal final but lacking an initial velar, implying an allofam something like ***wan**.

18. A few examples: ***rya-t** ‘laugh’ (STC #202); ***hwa-t** ‘light / brightness’ (#221); ***ma-t** ‘exhausted / spent’ (#425); ***r-ma-t** ‘wound / injured’ (#446).

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	
		蛻	d̥iwat	324e	‘exuviae of insects or reptiles’
‘hero’	*gyat ^d	傑	g̥iat	284b	‘of a surpassing quality / hero’
‘kill’	*g-sat	殺	săt	319d	‘kill’
‘star / moon’	*s-ŋ ^w (y)at	月	ngiwat	306a-f	‘moon’
‘vomit’	*m-pat	發	piwât	275c	‘throw out / shoot / send forth’ ^e
‘cap / wear’	*g-wa-n/t	冠	kwân	160a	‘cap / put on cap’
‘ill / suffer / hurt / evil spirit’	*na-n/t	難	nân	152d-f	‘difficult / calamity’
‘travel / go through’ ^f	*grwat	越	giwăt	303e	‘transgress / extend’

- a. Cf. WT *grod* ‘belly, stomach’. See Gong 2001:28.
b. This root may now be set up for TB as a whole. See above 8.2(2) and Gong 2001:23.
c. Cf. WT *glod-pa* ‘loosen / relax / slacken / comfort / console / cheer up’. See above §(a).
d. Cf. WT *gyad-pa* ‘champion / athlete’ (*STC*:174).
e. This comparison is suggested in Coblin 1986:130, who reconstructs the OC form as *pjat.
f. Cf. WT *hgrod* ‘go; travel’, *bgrod* ‘walk, go, wander; get through’. See Gong 2001:28.

(3) *-ap

Over twenty etyma are reconstructed with this rhyme in *STC*, of which five are reconstructed with long vowels. In this rhyme Bodo-Garo evidence is just as valuable as the testimony of Lushai in distinguishing vowel length. At the PLB level, seventeen roots in *-ap are reconstructed in *TSR*. The correspondences in the key TB languages are quite consistent:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Bodo-G.</i>	<i>Dimasa</i>	<i>Kokborok</i>
*-ap	-ab	-ap	-ap	-oʔ / -ú	-ap	-ap	-a(p)	-a
*-a:p	-ab	-ap	-ap	-oʔ / -ú	-a:p	-o	-au	-auʔ
*-wap	---	-op	-wap	-əʔ	-uap	-op	---	---
*-yap	-eb	-(y)ap	-yap	-oʔ ~ -uʔ	---	---	---	---

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lu.</i>	<i>Bodo-G.</i>
‘bite / snap at / mouthful’	*hap	#89	p.27	hab	---	hap	---	hap	---

8.2: Stops after medial *-a-

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lu.</i>	<i>Bodo-G.</i>
‘chop’ ^a	*ts(y)ap	---	---	btsab-pa	ʒep ³¹ b	---	---	---	---
‘fall over’	*m-bap ^c	---	#83	ḥbab	---	---	bôʔ	---	---
‘fireplace ₁ ’	*g-tap	#18	---	thab	dàp	---	---	tap	G. tsúdap; B. gadap
‘fireplace ₂ ’	*g-rap ^d	#84	---	---	ràp, kəràp	-rap-	gòʔ	rap	---
‘fold / layer’	*g/l-tap ^e	#493	#51 ^f	ltab-pa	thàp	thap	thôʔ	---	---
‘fork / groin’	*kap	#338	---	---	---	---	---	kap	Dimasa ya-khap
‘join / connect’	*tsyap	#186	---	---	tśáp	cap	---	---	G. tsáp-tśap
‘leaf’	*lap ^g	#321	---	lob-ma ^h	làp	---	---	---	---
‘needle’	*k-rap ⁱ	#52	#191	khab	---	ʔap	ʔòʔ	---	---
‘repay’	*tsap ^j	#63	---	ḥtshab-pa	---	chap	---	---	---
‘snot’	*s-nap	#102	#152	snabs	nèp, nyèp ^k	hnap	nú	hnap	---
‘weep’	*krap ^l	#116	---	khrab	khràp	---	---	ʔap	G. grap
‘wedge’	*sap ^m	---	---	---	---	sap	---	---	---

- a. This root is fairly widely attested elsewhere in TB, including Burmish (Zaiwa tʃap²¹, Leqi (=Lashi) tʃa:p³¹, Achang Luxi tsap³¹, Langsu (= Maru) and Bola tʃeʔ³¹), Qiangic (rGyalrong ka-c̥ɕop, Qiang Taoping tshua⁵⁵, Zhaba (TBL) 扎坝 a³³ʂtsa⁵⁵, Pumi Lanping thə¹³ʈʃa⁵⁵), Himalayish (Motua Menba tsap, Cuona Menba tsap⁵³). See LaPolla 1987, #111.
- b. This Jingpho form, as well as Dulong a³¹tsep⁵⁵, point to a variant with medial palatal, *tsyap.
- c. Cf. also Moso nbjA¹¹; the WT form reflects a PTB *voiced root-initial, but the Lahu high-stopped tone points to a PLB voiceless initial, *m-pap^h.
- d. Jg. ràp ‘central fireplace’, kəràp ‘lower screen over fireplace’; WB mî-rap-pàun ‘wooden fireplace’ (mî ‘fire’); cf. also Nung mərap (mə- < *mey ‘fire’), Maru ʔre, Mikir rap ‘shelf over fire’; Lahu ʔòʔ ‘classifier for households’ (hearths and homes), ʔòʔ-kə ‘drying rack over fireplace’, ʔòʔ-pa ‘wall’; Lalo j̥yq ‘household’. Benedict (*STC* p.19 n.69) suggests that both *tap and *rap are co-allofams of a single prototype *trap ≈ *drap, ultimately a loan from Austro-Tai. For a similar interplay between dental stop and *r, see *trak ‘weave’ above, 3.6.4.2.
- e. Cf. *DL*:686. Shades of meaning of this etymon include ‘repeat; place one thing atop another’ (cf. WT ltab-ma ‘a fold’, ltab-pa ‘do again, repeat’; Jg. kəthàp ‘add, place one upon another; again and again’. There is a similar Tai root (Shan thap, Si. tháp ‘place / be on top of sth else’). Some forms reflect a *palatal semivowel: WT ldeb-pa ‘bend around or back’, lteb-pa ‘turn down, turn in’, thebs ‘series, succession’ < *l-tyap. There is a good Chinese comparandum, below ʃe.
- f. *TSR* reconstructs a PLB root *ʔ-tap^h glossed ‘adhere / stick together’, citing the same WB form thap ‘place one on another’, lak-thap ‘join one’s hands (in marriage)’ and a Lahu form with unaspirated initial, tōʔ ‘adhere to each other’, làʔ-qə tōʔ ‘have one’s hands joined (in marriage)’. Contra the note in *DL*:640, I now consider PLB *ʔ-tap^h ‘scoop with both hands’ to be a separate root, as it is considered to be in *TSR* #59.
- g. Cf. also Kanauri lab, Takpa blap, Nung ʂəlap.
- h. The Tibetan form cited is “Western Tib.” (Jäschke 1881:552); standard WT has an open syllable, lo-ma.

- i. Cf. also rGyalrong *tekyep*; Trung *ʔuop*; Pumi Dayang *qhõ*; Namuyi *ko*³³. This etymon was first reconstructed as **kap*, then as **kəp* in *STC* (n.82). It shows variation between the HIGH- and LOW-stopped tones in Loloish, with the LOW-stopped forms (e.g. Lahu *ḡòʔ*, Akha *à-ḡòq*, Sani *ʔʔ*²², Lalo *á-j̣yq*) reflecting an unprefixal PLB allofam **rap*^L, while the HIGH-stopped forms (e.g. Bisu *kjāw*, Hani *ko*³³, Lisu *wəʔ*) point to the prefixed allofam **k-rap*^H. The velar prefix has presumably preempted the root-initial **r-* to produce the WT form.
- j. Cf. also Dulong *tsaap*⁵⁵, Zaiwa and Achang *tshap*.
- k. The Jg. forms (not cited in *STC*, but see Hanson 1906:467, 515) point to a variant with medial palatal, **nyap*. Many more cognates are to be found in *ZMYYC* #278, e.g. Qiang Mawo *str xu*¹, Qiang Taoping *χŋi*⁵⁵ *tsuə*³³, Ergong *snau*. A few forms show assimilation of the final stop to the nasal initial: rGyalrong *təʃnem*, Pumi Taoba *ḡā*⁵⁵ *bzē*⁵³, Anong *ŋim*⁵⁵.
- l. Cf. also Kanauri *krap*; Tshangla *gep*; Magari *hrap* ~ *rap*; Meithei *kəp*; Siyin *kap*, Nocte *sap*; Angami Naga *krə*; Digaro *k(h)ro*; Pumi Taoba *xue*⁵⁵, Pumi Jinghua *squa*⁵⁵; Pumi Dayang *χqwa*; Mishmi *gra*; Darang Deng *khro*⁵³; Idu *ɑ*⁵⁵-*təɑ*⁵⁵; Bokar Adi *kap*; Bai (Dali, Jianchuan) *kho*⁴⁴, Bai Bijiang *qho*⁵⁵.
- m. Reconstructed in JAM 2002 (“Wedge issues”). Cf. also Tshangla Monpa (Menba Cangluo Motuo) *sap* (*ZMYYC* #413, *TBL* #620), *ceŋ*⁵⁵ *sap*⁵⁵ (*ceŋ*⁵⁵ ‘wood’); Daofu *zav*; Ergong *sui-zau* ‘wedge’ (*sui-* ‘wood’); Pumi Dayang *tsó*; Namuyi *so*³⁵; Tangkhul Naga *thin-tap* (*thin-* ‘wood’); Lai Chin *tsop*. There is a good Chinese comparandum, below 8.2(3e).

Several other etyma in **-ap* have been reconstructed at the PLB level, including:

	<i>PLB</i>	<i>TSR</i>	<i>WB</i>	<i>Lahu</i>	<i>Akha</i>	<i>Lisu</i>	<i>Sani</i>
‘blanket’	<i>*m-pap</i> ^H	#78	---	<i>á-bôʔ</i>	---	<i>yi</i> ² - <i>bu</i> ³ a	<i>u</i> ⁴⁴ - <i>by</i> ⁴⁴
‘dry in sun’ b	<i>*ʔ-lap</i> ^L	---	---	<i>hú</i>	---	---	---
‘enter’	<i>*lap</i> ^L	#165	---	<i>lòʔ</i>	---	---	<i>ly</i> ²²
‘pack into / put into’	<i>*m-tap</i> ^H	#85	<i>tap</i>	<i>dôʔ</i>	<i>dóq</i>	---	---
‘rub / stroke’	<i>*sap</i> ^H	#116	<i>sap</i>	<i>šôʔ</i>	<i>sóq</i>	<i>saw</i> ¹	---
‘scoop with both hands’	<i>*ʔ-tap</i> ^H	#59	---	<i>tôʔ</i>	<i>tóʔ</i>	---	<i>ty</i> ⁴⁴
‘split apart / split open’	<i>*s-lap</i> ^H	---	<i>ʔəhlap</i> c	<i>lôʔ</i> d	---	---	---
‘stick into / insert ₁ ’	<i>*kyap</i> ^H	#21a	<i>kyap</i> / <i>gyap</i>	<i>chôʔ</i>	<i>cóʔ</i>	---	---
‘stick into / insert ₂ ’	<i>*tsap</i> ^H e	#21b	---	---	<i>tsóʔ</i>	---	<i>tš</i> ¹ <i>y</i> ⁴⁴
‘turn over’ f	<i>*pyap</i> ^H	#20	---	---	<i>pyóʔ</i>	<i>hpaw</i> ²	---

a. The Lisu reflex is unexplained.

b. Cf. also Achang *lap*⁵⁵, Zaiwa *lap*⁵⁵ (*ZMYYC* #749). For an exactly parallel Lahu reflex see ‘stand’ (§b below).

c. Glossed ‘anything peeled off; flake; petal of flower’, *DL*:1381.

d. ‘split sthg. apart, split open, be split open’

e. Cf. also Phunoi *tsáp*-ù; Luquan *ts’u*²².

f. There is an allofamically related root **pup* (*TSR* #19); see below 8.4(4).

8.2: Stops after medial *-a-

(a) *-wap

Only a couple of etyma (neither of which has a WT reflex) have so far been reconstructed with the labialized rhyme *-wap. The medial causes the vowel to back to -o- in Jg. and Garo:

	<i>PTB</i>	<i>Jg.</i>	<i>WB</i>	<i>Lushai</i>	<i>Garo</i>
	*-wap	-op	-wap	-uap	-op

	<i>PTB</i>	<i>STC</i>	<i>Jg.</i>	<i>WB</i>	<i>Lushai</i>	<i>Garo</i>
‘lungs’	*tsywap ^a	#239	sìn-wóp	---	chuap	kasop
‘rustle’	*krwap	#243	kròp	krwap-krwap	---	---

- a. See the extensive discussion in JAM 1978a (*VSTB*:113-123), where this etymon is reanalyzed as an old compound *tsəy-wap, with the second syllable meaning ‘spongy’ (cf. Jg. wóp ‘be spongy’, sìn-wóp ‘lungs’); the first syllable of this compound is well represented in Loloish (e.g. Lahu ð-*chî* -phô?) and Qiangic (e.g. Ergong ʒtshe¹⁴, Pumi Jinghua tshy¹³).

The following Lolo-Burmese set displays variation between *-wap and *-rap:

‘munch / bite onto’	PLB *m-gwap ^L ≈ *C-krap ^L (<i>TSR</i> #90)	
	*m-gwap ^L	WB kwap (~ kyap) ‘clamp, make fast, firm, secure’; Lahu gə̀? ‘hold firmly in mouth’
	*C-krap ^L	WB krap ‘clamp, make fast, firm, secure’; Lahu khò? ‘munch, bite noisily’

(b) *-yap

A few roots may be reconstructed with the palatalized rhyme *-yap. The semivowel causes the vowel to front to -e- in WT, Khaling, and Meithei, and to -i- in Nung:

	<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>
	*-yap	-eb	-(y)ap	-yap	-oʔ / -uʔ

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>
‘glitter / flash / lightning’	*s-lyap ^a	#213	---	---	---	hlyap	---
‘narrow / crowded’ ^b	*gyap	---	---	---	---	kyap	còʔ

Final stops							
	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>
‘squeeze’	*s/r-nyap	#192	#147	rnyab	nyàp	ñap, hñap ^c	nô? ~ nú?
‘stand’	*g-ryap ^d	#246	#175	---	tsáp	rap	hú
‘thin / flat’	*lyap	#212	---	leb-mo, gleb-pa	lyap	---	---

- a. Lepcha has a back mid vowel: **lyop** ‘flash, glisten’, **səlyop** ‘sheet-lightning’. This root has been identified as a “Pan-Southeast Asianism” by Bauer (1992), who relates it also to PTB *ya:p ‘wave, fan’ (below).
- b. There is a good Chinese comparandum; see (e) below.
- c. The WB forms are a simplex / causative pair. This verb appears with ‘foot’ in Loloish compounds meaning ‘shoes’ (“foot-squeezers”), e.g. Lahu **khí-nô?**, Ahi **tši²²-no⁴⁴**, Lisu **hchi³-ni³**. This root is allofamically related to *s-nip ‘crush / compress’; see below 8.3(3).
- d. Cf. also Lepcha **hryām** (with nasal final); Bahing **rap**; Dhimal **džap**; Mikir **ardžap**, Empeo / Zeme **sap**; Khaling **rep**; Nung **rip**; Meithei **lep**. WB **rap** reflects an unprefixd PLB prototype *rap^L, though the Lahu high-rising tone and initial h- clearly point to PLB *ʔ-rap^L. (Several other Loloish languages also have reflexes with initial laryngeals.)

(c) *a:p

Several etyma with this rhyme are to be reconstructed with long vowels on the testimony of Chin and Barish languages:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lu.</i>	<i>B&G</i>	<i>Dim.</i>	<i>Kokb.</i>
*-ap	-ab	-ap	-ap	-oʔ / -ú	-ap	-ap	-a(p)	-a
*-a:p	-ab	-ap	-ap	-oʔ / -ú	-a:p	-o	-au	-auʔ

Whereas the short rhyme *-ap is preserved as such in Barish languages (Bodo, Garo, sometimes Dimasa), the long rhyme *-a:p has developed into open syllables (Bodo and Garo -o, Dimasa -au). In Kokborok¹⁹ (Tripuri), on the other hand, the short rhyme has become an open syllable, while the long rhyme preserves a final glottal stop:²⁰

*-ap							
	<i>PTB</i>	<i>STC</i>	<i>Lushai</i>	<i>Garo</i>	<i>Bodo</i>	<i>Dimasa</i>	<i>Kokborok</i>
‘weep’	*krap	#116	ɬap	grap	gap	gara	kra
‘fireplace’	*g-tap	#18	tap	tśudap	gadap	gap	---

19. This Kokborok data is from a field methods class at Berkeley (1987-88), for which the consultant was Dr. Prashanta Tripura, now at the University of Dhaka, Bangladesh.

8.2: Stops after medial *-a-

*-ap							
	PTB	STC	Lushai	Garó	Bodo	Dimasa	Kokborok
‘fork / crotch / groin’	*kap	#338	kap	---	---	ya-khap	---

*-a:p							
	PTB	STC	Lushai	Garó	Bodo	Dimasa	Kokborok
‘shoot’	*ga:p ^a	#219	ka:p	go	gau	gau	kau?
‘fan / paddle’	*ya:p ^b	#92	za:p	tso	džau	džau	čau?
‘forget’	*b-la:p ^c	#335	---	---	---	balau	pəlau?
‘capable / fit / beautiful’	*ta:p ^d	#337	---	ni-to	---	thau	---

- a. Cf. also Tshangla gap, Magari ṇap, Jg. gàp. There are also several Northern Naga reflexes, e.g. Moshang gap, Nocte a-hap, Konyak khep (French 1983:545). This root should perhaps be reconstructed with a velar prefix and laryngeal root-initial, e.g. *g-ha:p, to accommodate forms like Nung hwap ~ ap, Bahing ap, Miri ap, Lepcha óp, Vayu wop.
- b. Cf. also WT yab-mo; Miri məyap; WB yap; Mikir hi-dzap; Jingpho kətsəp; Tangkhul Naga kəyap. Tangkhul is also good for distinguishing vowel length in this rhyme. Short *-ap > TN -əp (e.g. ‘snot’ *s-nap > TN nəp, while *-a:p > TN -ap, as in ‘to fan’. See JAM 1972b:280-1.
- c. Cf. also Jg. məlāp.
- d. Cf. also Jg. thāp. Possibly related is the root *m-daw > WB tau ‘fit, suitable, worthy’, Lahu dō ‘be able to fit into’ (DL:712; above 5.6.2), which might ultimately derive from *m-da:p, with a vocalization of the final labial stop to -w as in Bodo-Garó.

See also the following:

‘graze / rub / almost hit’ ^a	*s-ra:p	Lai Chin hraap ‘be abrasive’; WB hrap ‘graze, pass over slightly touching; cursory, slight’, hrap-tuik ‘walk with a shuffle’, hrap-hrap ‘shuffling (adv.)’, hrap-pu-tuik ‘apply heat by rubbing palms together’
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- a. This etymology is due to KVB. PTB *soy (STC #306) has roughly the same meaning: Jg. sòi, gəsói ‘graze, almost hit; abrade, scratch’, Lushai thoi ‘slightly graze, go or pass close by’.

20. No generalization can be made as to whether TB final consonants are better preserved after long vowels than after short ones. Thus in the case of the rhymes *-in / *-it vs. *-i:n / *-i:t, WB preserves the final dental consonants */-n -t / after the long vowels, while after the short vowels the final consonants are palatalized to /-ñ, -c / . See above 7.2(2) and below 8.3(2), 12.5.

(d) **-ap* \approx **-am*

There are a few cases attested where an etymon shows variation between **-ap* and **-am*:²¹

‘swell up / be swollen / stout / calf of leg’ <i>*bwap</i> \approx <i>*s-bwam</i>	
<i>*bwap</i>	Jingpho <i>bòp-lé-lé</i> , <i>bòp</i> , <i>ləbòp</i> ‘calf of leg’; Lahu <i>phò?</i> ‘swell up’ < PLB <i>*C-pwap</i> ^L (TSR #92)
<i>*s-bwam</i>	WT <i>sbom-pa</i> ‘thick, stout’; Jg. <i>bōm</i> ‘to swell’ \approx <i>bòm</i> ‘round and chubby’; WB <i>phwam</i> ‘plump’, Lushai <i>puam</i> ‘swollen; to swell’ (STC #172)

The following root with **long vowel* shows this same pattern of variation:

‘draw / scoop water’ <i>*ka:p</i> \approx <i>*kam</i>	
<i>*ka:p</i>	WB <i>khap</i> , Akha <i>xəq</i> , Lisu <i>hkaw</i> ⁶ ‘draw water’, Lahu <i>qhò?</i> ‘cupped, concave’ (TSR #39); Garo <i>ko</i> ; Dimasa <i>khau</i> (STC #336)
<i>*kam</i>	Lahu <i>qho</i> ‘draw water’ (< PLB <i>*kam</i> ¹). See TSR #39 and the discussion in JAM 1978a (VSTB:108-109).

(e) *Chinese comparanda*

Chinese comparanda to TB etyma with the rhyme **-ap* include:

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>GSR Gloss</i>
‘bite / snap at / mouthful’	<i>*hap</i>	呷	<i>xap</i>	[629]	‘inhale / drink / sip’
‘draw water’	<i>*ka:p</i>	汲	<i>kjəp</i>	681h	‘draw water’
‘fold / layer’	<i>*g/l-tap</i>	疊	<i>d’iəp</i>	1255a-b	‘pile on / duplicate / repeat’
		褶	<i>d’iəp</i>	690g	‘double / lined (garment)’
‘fork / groin’ ^a	<i>*kap</i>	挾	<i>kjap</i> ~ <i>kap</i>	630f	‘chopsticks’
‘join / connect’	<i>*tsyap</i>	接	<i>tsjap</i>	635e	‘connect / come in contact / close to’

21. Cf. also ‘needle’, where the Chinese comparandum (see below) has a final nasal.

8.2: Stops after medial *-a-

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>GSR Gloss</i>
		輯	dz'jəp	688d	'come together / assemble / collect' ^b
		集	dz'jəp	691a-c	'id.'
		揖	tsiəp	688g	'cluster together / crowd'
'leaf'	*lap	葉	djəp	633d	'leaf'
'lungs'	*wap	肺	p'jwǎd	501g	'lungs' ^c
'narrow'	*gyap	狹	g'ǎp	630e	'id.'
'needle'	*kap	針	tjəm	671o	'needle'
'pinch / squeeze'	*r/s-nyap ^d	捻	njəp	AD 670	'pinch / nip with the fingers'
		鑷	njap	AD 667 ^e	'pincers / tweezers / to pinch / a pinch'
		撮	śnjap	638e	'pinch between'
'practice / learn' ^f	*s-lwap	習	dzjəp	690a	'practice / exercise'
'repay'	*tsap	摺	dzjəp	AD 781	'duplicate'
		贄	tjəb	685m	'ceremonial gift'
		答	təp	676a-b	'respond to / answer' ^g
'shell / shield' ^h	*krap	甲	kap	629a	'shell'
'stand'	*g-ryap	立	gliəp	694a-d	'stand'
'wedge'	*sap	接	tsjap	635f	'peg / tenon'
'weep'	*krap	泣	k'liəp	694h	'weep'

a. This Chinese comparison, as well as those to 'repay' and 'wedge', are due to J. Cikoski (p.c. 2001).

b. This and the following two comparanda are suggested by RSC.

c. The final dental in OC could have arisen by assimilation to the *-s suffix that may be posited in this root, which is under the 去聲 *qùshēng* in Middle Chinese. See the discussion in *VSTB*, pp. 113-123.

d. This etymon is allofamically related to *nip 'crush / compress / press on', below 8.3(3).

e. Not in *GSR* #638b.

f. Cf. WT slob-pa, fut. bslab 'learn / teach', slobb 'exercise / practice'; Dulong suw³¹lap⁵⁵ 'teach / tell', suw³¹lap⁵⁵u³¹ 'study'. See Gong 2001:32.

g. There is a similar Tai root (cf. Siamese tǝɔp, Lungchow taap), though it is probably a loan from Chinese. See Li Fang-Kuei 1977:101.

h. Cf. WT khrab 'shield / scales'. See Gong 2001:24.

8.3 Stops after medial *-i-

(1) *-ik and *-i:k

This is a fairly common rhyme, with about a dozen examples in *STC* and around 16 examples in *TSR*. In several languages (notably WB, Lushai, and Meithei), the final *velar has been fronted to a palatal or dental stop by the nuclear vowel *-i-.²² The Mikir reflexes show variation between a high and a mid vowel. There is only one good example of the corresponding long rhyme *-i:k (see ‘scorpion’, below). A number of etyma show variation between *-ik and similar rhymes, including *-iŋ, *-yak, *-ek, and *-it (see below).

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Mikir</i>	<i>Meithei</i>	<i>Garó</i>
*-ik	-ig	-iʔ	-ac	-ɪʔ / -í ^a	-it	-ek / -ik	-it	-ik
*-i:k	-ig				-i:t			-ik

a. The final glottal stop disappears (with compensatory development of the high-rising tone) in Lahu reflexes of PLB etyma with *glottalized or *voiceless sibilant initials. See ‘bowels / stomach’, ‘joint’, ‘new’, ‘elder brother’, below.

As noted above (7.2[2,4]), WB -ac represents the merger of the four PTB stopped rhymes */ -ik -it -ek -et / , just as the corresponding WB nasal rhyme -añ reflects the four homologous PTB rhymes */ -iŋ -in -eŋ -en /.²³ It is especially interesting to note that the PTB > WB shift in palatality from the vowel to the final consonant has been reversed in the passage from WB to the modern Rangoon dialect, where the reflex has become [-iʔ], *i.e.* a front vowel again but a non-palatal final stop:

	<i>PTB</i>	<i>WB</i>	<i>Mod. Bs.</i>
‘leopard’	*zik	sac	θiʔ
‘joint’	*tsik	chac	shɪʔ
‘pheasant’	*s-rik	rac	yɪʔ

22. Not all secondary shifts in position of articulation involve high vowels, *e.g.* *-am > Jg. -en, *e.g.* *sam ‘breath, voice’ > Jg. n-sén, above 7.1(1). Cf. also the Lianghe dialect of Achang (Burmish group), where final *labials have become velars, *e.g.* PLB *dzam¹ ‘bridge’ > Lianghe tśyan⁵⁵; PLB *ʔ-rap^L ‘stand’ > Lianghe zɯk⁵⁵. See JAM 1991c (“Jiburish revisited”):94-5.

23. The palatal rhymes -ac and -añ are transcribed “-ats” and “-añ” in *STC* (p.78), and “phonemicized” as / -ait / and / -ain / , though they could equally well be considered to represent the neutralization of final dentals and velars: -ait / -aik and -ain / -aiŋ. As mentioned above, these WB palatal finals undoubtedly developed because of Mon influence; final palatals, extremely rare in TB, are the norm in Mon-Khmer.

8.3: Stops after medial *-i-

Similarly, the rhyme *-ik is usually fronted to -it in Lushai and Meithei, *e.g.* ‘eye’ *s-mik > Lushai mit, Meithei mít; ‘pheasant’ *s-rik > Lu. va-hrit; ‘scorpion’ *s-di:k > Lu. tirt.²⁴ (A counterexample is *s-r(y)ik ‘louse’ > Lu. hrik.) Mikir occasionally preserves the original vowel in this rhyme (*e.g.* *ʔik ‘elder brother’ > Mk. ik), but usually lowers the vowel to -e-, *e.g.* *pik ‘bowels’ > Mk. phek, *tsik ‘joint’ > Mk. sek, *mik ‘eye’ > Mk. mek, *s-r(y)ik ‘louse’ > Mk. rek; *r-lik ‘penis / testicle’ > Mk. che-lèk; *wik ‘tusk / canine tooth’ > Mk. vek.

Etyma reconstructible with this rhyme include:

	<i>PTB</i>	<i>STC#</i>	<i>TSR#</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Garó</i>
‘bamboo sprout’ ^a	*s-m(y)ik	237	---	smyig-ma	hmyac	---	---	bimik
‘bowels / stomach’ ^b	*p ^w ik	35	176	---	---	ð-ŋ̃-qō	---	bibik
‘burn / angry’ ^c	*m-(t)sik	---	77	ḥtshig-pa	---	yîŋ	---	---
‘itch’ ^d	*m-tsik	---	84	---	cac-cac	jîŋ	---	---
‘joint’	*tsik	64	45	tshigs	chac	cí	---	tśik
‘leopard’ ^e	*g-zik	61	122	gzig	sac	məŋ-yîŋ ^f	---	---
‘louse’ ^g	*s-r(y)ik	439	---	śig	---	---	hrik	tik
‘mosquito’ ^h	*ʔ-bik ^L (PLB)	---	---	---	---	pí	---	---
‘new’ ⁱ	*g-sik	--	126	---	sac	ð-ŋ̃	---	---
‘older brother’ ^j	*ʔik	112	172	---	ʔac-kui	ð-ví-pā	---	---
‘penis / testicle’ ^k	*r-lik	---	170	rlig-pa	---	---	---	---
‘pinch / twist’ ^l	*sik	---	130	---	---	śí	---	---
‘strangle’ ^m	*ʔik	113	---	---	ʔac	---	---	---
‘tie / bind’	*kik ⁿ	484	---	ḥkhyig-pa	kyac	chîŋ	---	---
‘tusk / canine tooth’ ^o	*wik	---	---	---	---	---	---	---

a. It is unlikely that there was ever a firm contrast between *-ik and *-yik. See also ‘filthy’, ‘tie / bind’, and ‘one’, below.

b. The immediate precursor of the Lahu form is PLB *ʔ-wik^L; *cf.* also Mikir phek. See below 8.4(1) for an allofam of this etymon with high back vowel (*pu:k), as well as the extended discussion in JAM 1978a (*VSTB*):124-130.

24. Evidently a medial palatal semivowel *-y- sometimes had the same power as nuclear *-i- to front the Lushai reflex of an original final velar, *e.g.* ‘sweep’ *pyak > Lu. phiat (*STC* #174).

- c. The WT form, glossed as ‘angry’ in *ZMYC* #728, literally means ‘burn, destroy by fire; be in rut (of animals)’. Lahu *yɪʔ* means ‘angry’, as do Sani *n⁴⁴z⁴⁴*, Lisu *dzi³* (*TSR*). Many more cognates with this meaning are to be found in *ZMYC* and *TBL* #1621, e.g. Cuona Monpa *tshik⁵³ pa⁵³za¹³*; Motuo Monpa (Tsangla) *ro-tsik*; Yi Dafang *ne³³zi³³*; Yi Nanhua *dzi³³vu³³*; Naxi Lijiang *z³¹tchi⁵⁵*; Hani Dazhai *nu³³zi⁵⁵*. Achang *tsit⁵⁵* (*ZMYC*; *TBL*) apparently reflects secondary fronting of the final, as in Lushai and Meithei. It is quite possible that the etymon ‘itch’ (below) is allofamically related to this root (as suggested by RSC).
- d. *TSR* also cites Akha *dzýq*. Cf. also Lalo *dziq*. Many more cognates are to be found in *ZMYC* #900 and *TBL* #1749, e.g.: Amdo Tibetan (Bla-brang) *tshək*; Qiang Taoping *dzɿ³¹ za²⁴¹*; Pumi Jinghua *dzy⁵⁵*; Guqiong *tsø⁵⁵*; Yi Xide *zi³³*; Yi Nanjian *dzi³³*; Hani Caiyuan *tsɿ³³*.
- e. Cf. also Lalo *zìq-pàq*.
- f. The Lahu form, literally “monkey-leopard”, designates *Felis nebulosa* ‘cloudy leopard’.
- g. Cf. also Jingpho *tsɿʔ*.
- h. Cf. Lalo *ú-pìq* (SB 1998).
- i. Cf. also rGyalrong *kəsik* (*STC*:113), *kəfək* (*ZMYC* #866); Zaiwa *a²¹sik⁵⁵*.
- j. The WB and Lahu forms reflect PLB **ɬ-wyik^L*. Cf. also Mikir *ik*.
- k. Cf. also Spiti *lik-pa* ‘testicle’; Kanauri *lik-pā* ‘penis (polite)’ is prob. a loan < Tibetan; Pattani (Manchad) *ɰig-lhig* ‘egg (of animal)’; Cuona Menba *thi⁵⁵li⁵³* ‘testicle’; Mikir *che-lək* ‘penis’; Tangut (Nishida) **Le*, (Dai Qingxia) **le*; Nasu *to²¹*; Naxi *læ³³*; Akha *lèq* (all ‘testicle’). Mostly on the basis of this Akha form, this root was reconstructed as **r-lek* in *TSR*, since the usual Akha reflex of **-ik* is *-yq* [ɿʔ], e.g. **tsik^L* ‘joint’ > Akha *tsýq*; ‘new’ **sik^L* > Ak. *shýq*; ‘elder sibling’ **ɬ-wyik^L* > Ak. *à-jýq*. However, the Akha syllable “ɿq” [ɿʔ] is very rare, and in any event the testimony of WT should take precedence, so the reconstruction with **-ik* is preferable.
- l. Cf. Lisu (Fraser) *shɿ¹*, Luquan *sz^{55/33}*, Lalo *zìq*, Tangkhul *kħməsik*. *TSR* #130 suggests a relationship with WB *rac* ‘wind around, encircle’, though this now seems far-fetched.
- m. Cf. also Nung *iʔ*.
- n. This root shows alternation between **-ik* and **-it*. See below 12.6.1.
- o. So far this root has been identified in only two languages: Lepcha *vik*; Mikir *vek*.

Thanks to Central Chin cognates with long vowels, two etyma may be reconstructed with long **-i:k*.²⁵

‘expose / lay open’	<i>*s-li:k</i> (KVB) > WB <i>hlac</i> ‘open / expose’, Lai Chin <i>hliik</i> ‘expose sthg / retract (as the foreskin)’
‘scorpion / crab / shrimp’	<i>*s-di:k</i> (<i>STC</i> #56) > WT <i>sdig-pa</i> ‘scorpion’, <i>sdig-srin</i> ‘crab / crawfish’ (<i>srin</i> ‘insect’); Lushai <i>tɿt</i> ; Garo <i>na-tik</i> ‘shrimp’ (<i>na</i> ‘fish’)

In certain etyma **-ik* has been found to vary with other similar rhymes:

(a) **-ik* ⇔ **-it*

‘tie / bind’ <i>*k(y)ik</i> ⇔ <i>*k(y)it</i> ^a (<i>STC</i> #484)	
<i>*k(y)ik</i>	WT <i>ħkhyig-pa</i> ; WB <i>kyac</i> (< <i>*gyik</i>); Lahu <i>chɿʔ</i> ; Kom, Aimol, Hallam (all Kuki-Chin) <i>khit</i> ; Lakher <i>tsəkhi</i>

25. As noted above 7.2(4), no etyma have so far been reconstructed with the homologous long nasal rhyme ***-i:ŋ*.

8.3: Stops after medial *-i-

‘tie / bind’ *k(y)ik ≈ *k(y)it ^a (STC #484)	
*k(y)it ^b	Jg. kyít ‘gird’, gyít ‘tie up’
<p>a. The variation in this etymon is established cross-linguistically, though we have pointed out a similar phenomenon intra-linguistically in Lushai, where ‘louse’ > Lu. -ik, while ‘eye’, ‘pheasant’, ‘scorpion’ > Lu. -it.</p> <p>b. The Chinese comparandum reflects the variant with final dental (see §e below). For a similar case of Chinese final dental stop corresponding to velars elsewhere, see ‘joint’ (<i>ibid.</i>).</p>	

(b) *-ik ≈ *-yak²⁶

‘eye’ *s-mik ≈ *s-myak (STC #402; TSR #145)	
*s-mik	WT mig; Limbu mik; Jg. myiŋ; Garo mik; Lushai mit; Meithei mit; Mikir mek, <i>etc.</i>
*s-myak	rGyalrong təmŋak; WB myak; Lahu mēŋ -śī; Akha myáq, <i>etc.</i>
‘pheasant’ *s-rik ≈ *s-ryak (STC #403)	
*s-rik	Jg. ù-riŋ; WB rac; Garo grik (< *g-rik); Lushai va- <i>hrit</i>
*s-ryak	WT sreg-po; West Tib. śrag-pa; Lepcha kəhryak
‘one / only’ ^a *g-t(y)ik ≈ *tyak (STC pp.84, 94, <i>etc.</i> ; TSR #'s 31, 48, 70)	
*g-t(y)ik	*g-t(y)ik > WT gtśig ‘one’; WB tac ‘ <i>id.</i> ’; Akha tìq ‘ <i>id.</i> ’; Lahu tí ‘only’ (< PLB *ʔ-dik ^L), a-cí ‘a little bit’ (< PLB *ʔ-gyik), WB kyac ‘be diminutive / smaller than ordinary’
*tyak	Bumthang t(h)ek; Cuona Monpa t'eŋ ⁵⁴ ; Bai tia
<p>a. This complex word family is discussed in more detail in JAM 1995b (“Numerals”):128-30.</p>	

(c) *-ik ≈ *-ek²⁷

‘filthy’ *s-n(y)ik ≈ *s-n(y)ek (STC #235) ^a	
*s-n(y)ik	WT snyigs-ma ‘impure sediment’; WB ñac ‘dirty / filthy’; Dimasa dźi- <i>ni</i> ‘dirt’; Nung ni ‘excrement’
*s-n(y)ek	Garo antśnek ‘dirt’, snek ‘sloppy’
<p>a. STC also cites Jg. “nyi ~ nye ‘evacuate the intestines’” in support of the variation in rhyme, though the “nye” variant is not to be found either in Hanson (1906), Dai <i>et al.</i> (1983), or Maran (1979); the latter two sources agree that nyí is in the high-rising tone / ˥ /, with no final glottal stop.</p>	

26. Both ‘eye’ and ‘pheasant’ have already been adduced in connection with the *-(y)ak rhyme, above 8.2(1b). See also JAM 1978a (VSTB):40-1.

27. Cf. the intra-lingual variation between the Mikir reflexes of etyma in *-ik (above).

(d) **-iŋ* \approx **-ik*

In both of these examples the stop-final allofam seems to be confined to Lolo-Burmese:²⁸

‘tree / wood’ <i>*siŋ</i> \approx <i>*sik</i> (STC #233; TSR #118)	
<i>*siŋ</i>	WT <i>śiŋ</i> ; Bahing <i>siŋ</i> ; Lushai <i>thŋ</i> ; Mikir <i>then</i> ; Bisu <i>tsùŋ</i>
<i>*sik</i>	WB <i>sac</i> ; Atsi <i>sik</i> ; Lahu <i>šĩ?</i> ; Nasu <i>si?</i> ³²
‘heart’ <i>*s-niŋ</i> \approx <i>*s-nik</i> (STC #367; TSR #146)	
<i>*s-niŋ</i>	WT <i>snyiŋ</i> ; Kanauri <i>stiŋ</i> ; Limbu <i>niŋ-wa</i> ; Lushai <i>niŋ</i> ; Garo <i>təniŋ</i> ; Bisu <i>nuŋ-ba</i>
<i>*s-nik</i>	WB <i>hnac</i> ; Zaiwa <i>nik</i> ⁵⁵ -lum ²¹ ; Luquan <i>ni?</i> ²² ; Lahu <i>ni-ma</i> (< PLB <i>*ʔ-ni</i> ³)

(e) *Chinese comparanda*

Chinese comparanda to the TB etyma discussed in this section fall into several interesting classes:

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese gloss</i>
‘joint’	<i>*tsik</i>	節	<i>tsiet</i>	399e-f	‘knot / joint’
‘louse’ ^a	<i>*s-r(y)ik</i>	蟲	<i>ʃiet</i>	506a	‘louse’
‘tie’	<i>*k(y)ik</i> \approx <i>*k(y)it</i>	結	<i>kiet</i>	393p	‘to tie / knot’
‘eye’	<i>*s-mik</i> \approx <i>*s-myak</i>	目	<i>mjôk</i>	1036a-c	‘eye’
‘one’	<i>*g-t(y)ik</i> \approx <i>*tyak</i>	隻	<i>tjăk</i>	1260c	‘single / one’
‘pheasant’	<i>*s-rik</i> \approx <i>*s-ryak</i>	翟	<i>d’iok</i>	1124a-b	‘pheasant’
‘tree / wood’	<i>*siŋ</i> \approx <i>*sik</i>	薪	<i>sjĕn</i>	382n	‘firewood’
‘heart’	<i>*s-niŋ</i> \approx <i>*s-ni-k</i>	情	<i>dz’jĕng</i>	811/’	‘feelings’

28. See below 12.5.3.

8.3: Stops after medial *-i-

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese gloss</i>
‘strangle’	*ʔik	縊	ʔieg	849g	‘strangle’
‘bamboo sprout’ ^b	*s-m(y)ik	苗	m̥jog	1159a	‘grain in the blade / sprout’
‘burn / angry’	*m-(t)sik	焦	tsjog	1148a,b	‘roast / burn / scorch’
		樵	dz’jog	1148i	‘burn fuel’
		灼	ʔjok	1120f	‘burn / brilliant / illuminate’

a. See above §(1) and Tangut šjiw² (Gong 2001:29).

b. This Chinese comparison is due to J. Cikoski.

In ‘joint’, ‘louse’, and ‘tie’, Chinese has a similar development to TB languages like Lushai, with the original final **velar* fronted to a dental.²⁹ In those etyma showing PTB variation between **-ik* and **-yak* (‘eye’, ‘one’, ‘pheasant’), Chinese reflects the **-yak* allofam. In etyma with variation between final homorganic stop and nasal (‘heart’, ‘tree / wood’), Chinese reflects the nasal-final allofam;³⁰ ‘tree / wood’ illustrates both this Chinese preference for the nasal-final allofam and its propensity for fronting an original final **velar* to a dental (as in ‘joint’, ‘louse’, and ‘tie’). Finally, the original velar final was preserved in OC ‘strangle’, ‘bamboo sprout’, and ‘burn / angry’, though it disappeared by the MC stage (except in 1120f), leading *GSR* to reconstruct OC **-g* instead of **-k*.

(2) **-it and *-it*

Unlike the marginal nature of the length contrast in the **-ik* rhyme, there are a number of good contrasts between etyma with short **-it* vs. long **-it*. Not only do languages with synchronic length contrasts (e.g. Lushai) directly reflect this, but so do Lolo-Burmese languages like WB and Lahu.³¹

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Mikir</i>	<i>Garó</i>
*-it	-id	-it	-ac	-iʔ / -í	-it	??	-it
*-i:t	-id	-it	-it	-eʔ / -əʔ	-i:t	-it / -et	-it

29. For the variation between final velar and dental in these etyma, see below 12.6.1.

30. The rather speculative comparison between PTB **s-nin* and OC dz’iəng ‘feelings’ is to be found in Benedict 1976a (STAL).

- Short *-it has merged with *-ik to become WB -ac, while long *-i:t has managed to preserve its final dental stop, becoming WB -it.³²
- In this rhyme Lahu is of equal value with WB in distinguishing vowel length. Short *-it > Lahu -iʔ (or -í after *glottalized initials), whereas long *-i:t has developed into Lahu -eʔ (varying with -əʔ after Lh. ġ [ɣ] (< *r-) or after Lh. g- (< *m-k/g(r)-); see ‘reap’ and ‘grind’, below).³³
- Mikir reflexes of four etyma with this rhyme have been identified. All of them happen to exemplify the long version, *-i:t. As with the *-ik rhyme (see (1) above), Mikir hesitates between high (‘grind’; ‘leech’) and mid (‘reap’; ‘extinguish’) vowels in these words: *kri:t ‘grind’ > Mk. t̚sɪŋ-krit ‘gnash teeth’, *m-li:t ‘water leech’ > Mk. iŋ-lit; but *ri:t ‘reap’ > Mk. ret, *s-mi:t ‘extinguish’ > Mk. met.³⁴

(a) *-it

Examples of etyma with short *-it include:³⁵

	<i>PTB/PLB</i>	<i>TSR#</i>	<i>WB</i>	<i>Lahu</i>	<i>Akha</i>	<i>Lisu</i>
‘scorch / burning hot’ ^a	*kyit	13	khyac ^b	chîʔ ^c	---	---
‘squeeze’ ^d	*s-nyit	159	hñac	ní	nyèq	nyi ¹
‘whistle ₁ / trill’	*ʔ-dit ^L	50	thac ^e	tí-šîʔ	---	---
‘whistle ₂ ’ ^f	*sit	119	---	tí-šîʔ	---	sî ³
‘drunk’ ^g	*yit	163	yac	---	yèq	yi ⁶
‘move’ ^h	*m-kyit	112	---	jîʔ	jíq	tʃɿ ⁵⁵

a. This set does not appear in *STC*. Extra-LB cognates include Tangkhul kəšit, Trung džit⁴⁴. There is also a good Chinese comparandum, below (e). In *DL:529*, this etymon is erroneously reconstructed as *kyik, and the claim is made that it does not appear in *TSR*, where it is actually reconstructed *kyit in set #13!

b. ‘be burnt, as food’.

c. ‘be hot enough to burn; burn oneself; burn by applying something hot’.

31. See JAM 1985a (*GSTC*):18-20. These differential Lolo-Burmese reflexes were missed in *STC*, leading to the misreconstruction of several roots (e.g. ‘seven’, ‘sleep / nod’, and ‘grind’; see below). This oversight is all the more surprising in view of the fact that *STC* does clearly differentiate length in the homologous nasal-final rhyme *-in vs *-i:n, largely on the basis of the WB reflexes; see above 7.2(2).

32. This is exactly parallel to the fate of the homologous nasal-final rhymes in WB: PTB *-in > WB -añ, but *-i:n > WB -in. See above 7.2(2).

33. The syllables ġe and ge do not exist in native Lahu words.

34. In a couple of etyma WT also has a mid-vowel reflex “-ed”; see ‘extinguish’ and ‘split’, below.

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- d. \approx *s-nip (> WB nip, hnip) \approx *s-nyap; see 8.3(3) below.
- e. The WB form means ‘to notch / interrupt a continuous sound by stops and breaks, as in stuttering’.
- f. An excellent extra-LB cognate is WT sid-pa. For a likely connection of these forms with *tsut \approx *tsi(t) ‘lungs’, see below 8.4(3).
- g. Cf. also Sani yi²², Lalo djé iq (1st syll. ‘liquor’, 5.3.2(2a)). Several more apparent cognates are to be found in ZMYC #779, including: (Loloish) Yi Nanjian zɿ²¹, Hani Dazhai jɿ³¹; (Qiangic) Queyu zi³⁵ si⁵³, Ersu the³³ zɿ⁵⁵. Alternatively these Qiangic forms might come from a well-attested open-syllable variant, reflected by WT bzi-ba ‘drunk’ and PLB *m-dzəy¹ ‘liquor’ (> Lahu jɿ [dzɿ], Akha dží, Lisu dʒɿ³³).
- h. Cf. also rGyalrong kəntʃi, Muya thu⁵⁵ tchi⁵⁵, Ersu tʃhɿ⁵⁵ tʃhɿ⁵⁵, Yi Dafang ndzɿ²¹, Yi Nanhua dze³³ (all from ZMYC #591).

To these should be added PTB *ɿt ‘one’ (STC:94) > Kanauri id, WB ʔac ‘one / unit’, with a good Chinese cognate (below §e).

(b) *-i:t

Etyma reflecting the long rhyme *-i:t include:

	PTB	STC#	TSR#	WT	Jg.	WB	Lahu	Lushai
‘grind’ a	*kri:t	119	94	---	krɿt	krit	gəʔ	---
‘reap’ b	*ri:t	371	169	---	---	rit	gəʔ	ri:t
‘sleep / nod’ c	*g/r-nyi:t	236	---	gnyid	---	ñit	---	---
‘goat’ d	*tsi:t	p. 88	27	---	---	chit	á-chèʔ	---
‘leech’ e	*m-li:t	396	---	---	líp	---	---	hlit
‘extinguish / shut / blink’ f	*s-mi:t	374	---	med-pa g	---	hmit	mèʔ	timit
‘split’ h	*(d)zi:t \approx *(t)si:t	---	88	zed	šit	cit	jêʔ i	---
‘copula / be’ j	*s-ri:t	264	---	srid-pa	---	---	hêʔ	---

- a. Also Lalo gəq, Bahing khrit; Nung əgyit, Mikir tɿŋkrit. The Jg. and Mk. forms refer to grinding the teeth, as does WT so *khriḡ-khriḡ* byed-pa (so ‘tooth’), the latter reflecting a variant in *-ik.
- b. Also Lisu (Fraser) rgh⁶; Achang zɿt⁵⁵; Mikir ret; Miri rit.
- c. Also WT rnyid-pa ‘wither / droop’.
- d. Also Dulong ɑ³¹tɕit⁵⁵, rGyalrong tʃhət, and many other cognates, to be found e.g. in ZMYC #116 and #117, including: (Qiangic) Pumi Jinghua tshɿ⁵⁵ ʒəu, Ergong tshɛ-yi, Muya tshu⁵⁵ ɤa³⁵, Namuyi jo⁵⁵ tshɿ³⁵; Shixing tshɿ⁵⁵; (Lolo-Burmese) Langsu tʃhat⁵⁵ pɛ⁷⁵⁵, Yi Xide tɕhɿ⁵⁵, Lisu ɑ⁵⁵tʃhɿ⁴¹, Naxi Lijiang tshu⁵⁵ zu³¹, Jinuo tchi⁴⁴ pɛ⁴².
- e. Also Lepcha hlet-bŭ, Ao Naga melet, Mikir iŋ-lit. The Jg. form reflects a variant with final labial stop.

35. None of these appear in STC, probably because most of the supporting forms are from Lolo-Burmese.

- f. Probably because of the meaning difference from the forms meaning ‘extinguish’, WB *hmit* ‘shut the eye / blink’ is not cited in *STC*. Lahu *mèʔ* means ‘shut abruptly (as the mouth or eyes) / wink / blink / go on and off rapidly / flicker’ (*DL*:1008). Cf. also Akha *míq* ‘be extinguished’, *myáqmíq* ‘close one’s eyes’, Mikir *met*, Garo *kimit* ‘extinguish’. The low-stopped tone of the Lahu form reflects the unprefixed root **mit*, but the **s-* prefix is clearly reflected in WB *hmit*, as well as in Nung *śomit*, Jg. (Assamese dial.) *simit*, Tangkhul *khəsimít*, and Lushai *timit*. The short vowel in the latter form suggests that a long \approx short alternation should be set up for this root. WB *hmîn* ‘have the eyes shut’ points to an allofam with homorganic final nasal, **s-mi:n* (below 12.5.2). This etymon also has an excellent Chinese cognate (see below).
- g. The WT form means ‘not to exist’. I have elsewhere interpreted this WT form as a fusion of *mi* ‘negative’ plus *red-pa* ‘be’ (the latter related to WT *srid-pa*; see ‘copula / be’, below). See JAM 1985a(*GSTC*):64.
- h. This root shows fricative \approx affricate variation (see above 3.3).
- i. *TSR* has Lahu *jîʔ*, but *DL*:572 correctly gives *jêʔ* as the basic form.
- j. The WT and Lahu forms are allofamically related to WB *hriʔ* (< **s-ri* (see above 5.3.2). Another variant, with *-u*-vocalism, underlies WB *hut* ‘be the case’ (< **s-rut*). See the discussion of “copular allofamy” in JAM 1985a (*GSTC*), esp. pp. 19, 63–4.

(c) *****yat > *-it***

The important root for ‘eight’ **b-r-gyat* \approx **(b)g-ryat* (*STC* #163) is reconstructed with **-yat* at the PTB level (> WT *brgyad*, Thulung *yet*, Jg. *mətsát*, rGyalrong *wərjat*, Garo *tśhet*, Lushai *riat*), though it had developed to **ʔ-rit^L* by the PLB period.³⁶

‘eight’ PLB **ʔ-rit^L* (*TSR* #171) > WB *hrac*, Atsi *šit*, Lahu *hí*, Akha *yèq*, Lisu *he⁴¹*, etc.

This close relationship between the rhymes **-yat* and **-it* parallels the interchange between **-yak* and **-ik*, above 8.3(1b).

(d) *****is > *-it***

In several cases an etymon reconstructible with **-it* at a relatively recent time-depth (e.g. at the PLB stage) can be shown to descend from an earlier PTB rhyme with sibilant final, **-is*:³⁷

‘two’	PTB <i>*g-ni-s</i> (cf. WT <i>gn̄yis</i> ; <i>STC</i> #4) > PLB <i>*ʔ-nit</i> (cf. WB <i>hnac</i>), Lahu <i>nî</i> (< <i>*ni²</i>); <i>TSR</i> #160)
‘seven’	PTB <i>*s-nis</i> (cf. Kanauri <i>stis</i> , Jg. <i>sən̄it</i> ; <i>STC</i> #5) > PLB <i>*s-ni-t</i> (cf. WB <i>khu’-hnac</i> , Lahu <i>šī</i> (< <i>*s-[n]i²</i> , with prefix preemption); <i>TSR</i> #128)
‘wet / soak’	PTB <i>*m-ti-s</i> (cf. Kanauri <i>thiss</i> ‘wet’; Jg. <i>mədī</i> ‘wet’, <i>mədīt</i> ‘make wet’; <i>STC</i> p.16 etc.) > PLB <i>*m/ʔ-tit^H</i> (cf. Lahu <i>tîʔ</i> , Akha <i>dȳq</i> ‘soak’ \approx PTB <i>*ti(y)</i> ‘water’ (cf. Lahu <i>dī</i> (< PLB <i>*ndi¹</i>) ‘ejaculate’; <i>STC</i> #55, <i>TSR</i> #109)

36. For more detailed discussion see JAM 1995b (“Numerals”):203–6.

37. See below 10.2.

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(e) Chinese comparanda

Chinese comparanda to TB etyma discussed in this section include:

	<i>PTB</i>		<i>OC</i>	<i>GSR#</i>	<i>Chinese gloss</i>
‘eight’	*b-r-gyat 𠬞 *(b)g-ryat	八	pwăt	281a-d	‘eight’
‘extinguish / blink’	*s-mi:t	滅	mjät	294b	‘drown / extinguish / destroy’
‘leech’	*m-li:t	蛭	ŋjět	--- a	‘water leech’
‘one’	*ŋit	一	ŋjět	394a-d	‘one’
‘seven’	*s-nis	七	ts’jět	400a-d	‘seven’
‘two’	*g-nis	二	njər	564a-d	‘two’

a. Not in *GSR* #413.

At least three roots (‘tear / rip’, ‘wipe’, ‘lung’) show variation between *-it and *-ut; they will be discussed under the *-ut rhyme, below 8.4(3). See also 12.1 below.

(3) *-ip

*-ip is the least well attested of the stopped rhymes with the vowel *-i-, but even so there are about eight good examples of etyma with this rhyme in *STC* and *TSR*. In several cases an etymon shows variation between *-ip and *-up. What little evidence there is for a length contrast in this rhyme is provided by languages like Lushai where contrastive vowel length persists synchronically. The reflexes of *-ip are straightforward in the criterial languages:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Mikir</i>	<i>Lushai</i>	<i>Garö</i>
*-ip	-ib	-ip	-ip	-iʔ / -əʔ / -iʔ / -eʔ	-ip / -ep	-ip	-ip
*-i:p						-i:p	-ip

As with most stopped rhymes after medial *-i-, Mikir here shows variation between -i- and -e- : *gip ‘ten’ > Mk. kep, but *b/pip ‘conceal / bury’ > Mk. pip (see below). The “regular” Lahu reflex seems to be -iʔ (*cf.* ‘sleep’), with -əʔ appearing after ġ- [ɣ] < *r- (‘shade / shadow’), since no Lahu syllable of the form **ġiʔ exists. In etyma with PLB *dental stop initials (‘wrap’), the Lahu reflex is -iʔ, since Lahu dental stops do not occur before -i or -ə in native words. In etyma with PLB *glottalized or *prefixed sibilant initials (‘put to sleep’; ‘thirsty’, perhaps also ‘squeeze’), Lahu has the vowel -i in the

high-rising tone: -í. Finally, in the one example of a lateral-initialled etymon with this rhyme, Lahu has -eʔ.

Examples of etyma with the invariant **-ip* rhyme include:

	<i>PTB/PLB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>
‘roll (n.) / curled object’	<i>*lip^L</i> (PLB)	---	---	---	---	ʔəlip	ə-lèʔ
‘shade / shadow’	<i>*g/s-rip</i>	p.113	#189	ḡgrib-pa ^a	kríp	(ʔə)rip	ə-ḡəʔ ^b
‘ten’	<i>*gip</i>	#16	---	---	---	(ʔə)kyip ^c	---
‘thirsty’	<i>*C-sip^L</i> (PLB)	---	#129	---	---	mwat-sip ^d	śí

- a. Other WT allofams include *sgrib-pa* ‘darken(ed)’, *grib* ‘shade / shadow’, *srib-pa* ‘grow dark’, *rab-rib* ~ *hrab-hrib* ‘mist / dimness’; the Jg. form means ‘abate / die down (as a fire)’; *cf.* also Tangkhul Naga *yuu* ‘be shady’.
- b. Lh. has a doublet ə-ḡəʔ ‘ember, glowing thing’ from the unprefix variant **rip^L*. See DL:1152.
- c. The ordinary WB word for ‘ten’ is *chay*; *kyip* is substituted “when counting rational beings”. This etymon is not reflected in the other criterial languages, but *cf.* Limbu *gip*, Miju *kap* ~ *kyep*, Mikir *kep*, Maring *tśip*, Yawdwin (So. Kukish) *gyip*. There is a Chinese cognate (below).
- d. The WB form is glossed ‘be hungry or thirsty’ in Judson 1953 / 66:797; for *mwat* ‘hungry’, see above 8.2(2). So far this root has only been found in Lolo-Burmese; *cf.* also Zaiwa *vui⁵¹jit⁵⁵*, Ahi *sɿ⁴⁴*, Sani *sɿ²²*, Lisu *se⁴¹*, Jinuo *ci³³*, Lalo *siq*. The Lahu high-rising tone reflects some sort of voiced prefix at the PLB stage, symbolized by “C-”.

The following root (not in *STC* or *TSR*) has so far only been identified in Kamarupan languages:

‘scale (of fish)’^a **s-lip* > Mikir *lìp*; Lushai *phu-hlip*; Moyon *ṇa-phrìp* (< *ṇa-phu-rip*); Tiddim *lip³*; Rongmei *ka-lip*; Liangmei *ka-kha-lêp*; Zeme *he¹ka⁵lip¹*; Tangkhul *ərip¹*; Kom Rem *ṇərip*

- a. This root is quite distinct from **sep* ‘scale’, below 8.5(3).

(a) **-i:p*

The lone example of long **-i:p* so far uncovered rests on Chin evidence:

‘shut / close / be
close together’ **dzyi:p* (*STC* #370) > Garo *tśip*; Lushai *tśip*; Lai *ciip*; WB *cip* ‘set close together; close / near (in time or space)’.

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(b) **-ip* ≈ **-up*

A number of etyma with this rhyme display front ~ back variation, either already at the PTB stage or at the level of a particular subgroup of TB (especially Bodo-Garo)³⁸. Roots showing **-ip* ≈ **-up* variation include:³⁹

	‘sleep’ <i>*s-yip</i> ≈ <i>*s-yup</i> (<i>STC</i> #114, <i>TSR</i> #180; <i>ZMYC</i> #582)
<i>*s-yip</i>	WT <i>yib-pa</i> ‘hide oneself’; Jg. (y)íṗ ‘conceal information’, Bahing <i>ip</i> ; Nung <i>ip</i> ; Ao Naga <i>yip</i> ; WB ṙip ‘sleep’, <i>sip</i> (< <i>*s-yip</i>) ‘put to sleep’; Lahu <i>yîṙ</i> ‘sleep’, í (< <i>*ṙ-yip</i> < <i>*s-yip</i>) ‘put to sleep’; Sani ší ⁵⁵ ‘put to sleep’; Guiqiong <i>jø⁵⁵</i> ; Namuyi <i>jy³³</i>
<i>*s-yup</i>	Jg. ṙúṗ ‘sleep’; Miri <i>yup</i> ; Akha <i>yùq</i> ; Bisu <i>jù</i> ; Zaiwa <i>jup⁵⁵</i> ; Bokar Adi <i>jup</i>
	‘sink ¹ / dive’ <i>*lip</i> ≈ <i>*lup</i> (<i>STC</i> #375) ^a
<i>*lip</i>	Jg. <i>phūn-líp</i> ‘dive’; Garo <i>tíi ríp</i> ‘dive’, <i>srip</i> ‘sink’
<i>*lup</i>	Bodo <i>thrup</i> ‘sink’
	‘wrap’ <i>*tip</i> ≈ <i>*tup</i> (<i>TSR</i> #23, <i>ZMYC</i> #663) ^b
<i>*tip</i>	Lahu <i>thîṙ</i> ; Akha <i>ṭóq</i> ; Yi Dafang <i>thi³³</i> ; Yi Nanjian <i>thy³³</i>
<i>*tup</i>	Jg. <i>thúp</i> ; WB <i>tup</i> ‘tie together’, <i>thup</i> ‘wrap up’
	‘conceal / bury’ <i>*b/pip</i> ≈ <i>*b/pup</i> (<i>STC</i> #376) ^c
<i>*b/pip</i>	WT <i>byib-pa</i> ‘cover / wrap up / conceal’; Mikir <i>pip</i> ‘bury’
<i>*b/pup</i>	Bodo <i>phop</i> ~ <i>fop</i> ‘bury’

a. Dimasa shows internal variation: *lip* ~ *lup* ‘dive’, *gilib* ~ *gulub* ‘drown’.

b. This root also has an allofam with the homorganic final nasal: **tum* > WT *ḥthum* ‘cover over / wrap up / envelop’, Jg. *thùm* ‘tie in a knot’.

c. Dimasa again shows internal variation: *bib* ~ *bub* ‘conceal oneself’, *phip* ~ *phup* ‘bury’.

There is a particularly interesting word-family involving the **-ip* rhyme, which comprises intransitive verbs in the semantic area of *sinking*, as well as transitive verbs

38. See below 8.4(3) and 12.1.

39. For an example of **-ip* ≈ **-op* variation, see ‘suck’, below 8.6(3). See also the WT variation in ‘whisper’, below §c.

referring to *compression* / *pinching* (i.e. causing to sink). This word family illustrates four types of variation in rhyme:

- | | |
|-----|--|
| (a) | front \approx back high vowels: *-ip \approx *-up |
| (b) | monophthongal *-ip \approx diphthongal *-yap ^a |
| (c) | final labial \approx dental stop: *-ip \approx *-it ^{b/c} |
| (d) | final stop & nasal: *-ip \approx *-im ^d |

- a. Cf. the discussion of *-ik \approx *-yak variation, 8.3(1b) above.
- b. *STC* does not recognize the phonosemantic interrelationship among its three separately reconstructed roots, *nip ‘crush / compress’ (p.84), *nup ~ *nip ‘sink’ (#400), and *nyap ‘pinch / squeeze’ (#192). The allofam *s-nyit is not recognized in *STC* at all. *TSR* (p. 60) recognizes the “close relationship” between PLB *s-nyap (*TSR* #148) and PLB *nip \approx *ʔ-nip \approx *ʔ-nyit (*TSR* #159). There are good Chinese comparanda, below (c).
- c. Another ramified word-family with similar variational patterns is ‘body hair’ *s / r-mul \approx *-mil \approx *-myal, below 9.3.2(2).
- d. Cf. WB hnip ‘crush / put down / oppress’ \approx Lai Chin hním ‘press down’

*s-nip	Bahing nip ‘compress / express’; WB nip ‘be kept down’, hnip ‘crush / put down / oppress’; Jg. n̄ip ‘set (of the sun) / grow dark / cast a shadow / be dim’, Nung n̄əm nip lam ‘west’ (“sun-sink-path”) [cf. <i>STC</i> p. 84; <i>TSR</i> #159]
*s-nup	WT nub-pa ‘fall gradually / sink / set (sun, moon) / decay / decline’, nub ‘west, evening’; Lepcha n̄up ‘be covered with water’; Proto-Barish *(h)nap < *s-nup ‘set (sun) / sink / drown / enter / penetrate’ [Cf. <i>STC</i> #400]
*s/r-nyap ^a	WT rnyap-pa ‘seize or snatch together’; Jg. nyàp ‘squeeze / extort’; WB ñap ‘be squeezed’, h̄nap ‘pinch / squeeze / blacksmith’s tongs’; Lahu nô? ‘pinch / squeeze’, khí-nô? ‘shoes’ (“foot-pinchers”), mé-nô? ‘scissors’ [cf. <i>STC</i> #192; <i>TSR</i> #147]
*s-nyit ^b	WB h̄nac ‘squeeze / to milk’; Lahu ní ‘squeeze / press / force smn / oppress’, ^c Akha nyèq; Lisu nyi ⁵⁵ , Zaiwa ne ⁵⁵ ; Langsu nai ⁵⁵ [cf. <i>TSR</i> #159, <i>ZMYC</i> #671]

- a. This variant has already been presented under *-ap, above 8.2(3).
- b. This variant has already been presented under *-it, §2 above. Jingpho occasionally shows interchange between final -p and -t after front vowels, e.g. š̄ɲlèt \approx š̄ɲlèp ‘tongue’ (Hanson 1906:623). Cf. also Jg. líp ‘sp. of horse-leech’ < PTB *m-liit (*ibid*).
- c. This Lahu form could alternatively descend from the *s-nip variant, since the Lh. reflex of *-ip is -í after *glottalized initials (above).

8.4: Stops after medial *-u-

(c) Chinese comparanda ⁴⁰

Chinese comparanda to the etyma in this section include:

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese gloss</i>
‘ten’	*gip	十	ḍiəp	686a-d	‘ten’
‘sink / enter’	*nip ɤ *nyap ɤ *nup	入	ḥiəp	695a-d	‘enter / bring in’
‘crush / compress / press on’ ^a	*nip ɤ *nyap	躡	nɿap	638b	‘trample’
‘whisper’ ^b	*syip ɤ *syup	耳	ts’iəp ~ tsɿəp	688a	‘id.’

a. This is probably the same etymon as ‘sink / enter’, the common core of meaning being downward motion.

b. Cf WT śib-pa ~ śub-pa (contra *STC*:170, which has the typo “sib-pa”).

8.4 Stops after medial *-u-

(1) *-uk and *-u:k

This is a very well attested rhyme, with about 17 good examples in *STC* and over 20 in *TSR*.⁴¹ There is considerable evidence for a length contrast in this rhyme, especially from Burmese, Lepcha, Bodo-Garo, and Kuki-Chin-Naga languages like Lushai, Sho, and Tangkhul Naga. The reflexes in the criterial languages are as follows:

<i>PTB</i>	<i>WT</i>	<i>Lp.</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lu.</i>	<i>Sho</i>	<i>TN</i>	<i>Garō</i>	<i>Dimasa</i>
*-uk	-ug	-ăk	-uʔ	-auk	-ɔʔ	-uk	-ok	-u	-ok	-o
*-u:k	-ug	-uk	-uʔ	-uik	?	-u:k	-ūk	-uk	-ik	-i(k) ~ -u(k)

(a) *-uk

Sets exemplifying short *-uk include:

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg</i>	<i>WB</i>	<i>Lahu</i>	<i>Lu.</i>	<i>Garō</i>	<i>Dim.</i>
‘basket / pouch’	*kuk	#393	---	khug-ma	---	---	---	---	khok	baiŋ- kho
‘bean’ ^a	*s-nuk	---	#140	---	noʔ ³¹	nauk	nɔʔ	---	---	---

40. See below 12.1(3).

41. The sets in this category are reconstructed with PLB *-ok in *TSR*. For discussion of a possible *-uk / *-ok contrast at the PLB level, see below 8.6(1).

Final stops										
	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg</i>	<i>WB</i>	<i>Lahu</i>	<i>Lu.</i>	<i>Garó</i>	<i>Dim.</i>
‘bend sthg. down’ ^b	* muk (PLB)	---	#137	---	---	---	mùʔ	---	---	---
‘brain’ ^c	* s-nuk	#483	#156	---	núʔ	û- <i>hnauk</i>	ú-nòʔ -nêʔ	---	---	---
‘collide / butt against’ ^d	* m-kuk (PLB)	---	#80	---	---	---	gûʔ	---	---	---
‘crooked / bent’ ^e	* g/kuk	p.77	#2	h̥gug-pa	---	kauk	qòʔ	---	---	---
‘cut / knock’ ^f	* tuk	#387	#15	---	---	tauk	thôʔ	tuk	dok / dak	do
‘deer’	* d-yuk	#386	---	---	---	---	---	sa-zuk	mat- tśok _g	moso
‘enough’	* luk ^h	p.88	#164	---	---	lauk	lòʔ	---	---	---
‘monkey’	* m-yuk ⁱ	p.112	#133	---	---	myauk	mòʔ	---	---	---
‘neck’	* tuk ^j	#392	---	---	dùʔ	---	---	---	gitok	godo
‘pen / corral’ ^k	* kruk	---	#16	---	---	---	khôʔ	---	---	---
‘pick up’ ^l	* s-g-ruk	---	#187	sgrug-pa	---	kauk	g̊ôʔ ~ vôʔ	---	---	---
‘poison’ ^m	* duk	#472	#113	dug	---	tauk	tòʔ	---	---	---
‘return / year’ ⁿ	* kuk	---	#34	---	---	---	qhòʔ	---	---	---
‘shoot’ ^o	* m-puk	---	#108	---	---	p(h)auk	bôʔ	---	---	---
‘six’	* d/k-ruk	#411	#35	drug	knúʔ	khrauk	khôʔ	ruk	dok	do
‘steep’	* tsyuk	#353	---	---	---	tsauk	---	tśhuk	---	---
‘waist’ ^p	* gyuk	---	#6	---	---	kyauk- kap	còʔ	---	---	---
‘wear on head’ ^q	* kuk	---	#12	---	---	---	qhôʔ	---	---	---

a. Cf. also Akha á-ny̌q, Lisu no⁴⁴, Sani nu⁴⁴, Bisu nū-kòŋ. Many extra-LB cognates are to be found in ZMYC #201, e.g. (Qiangic) rGyalrong testok, Ergong sthɔ (both with denasalization), Pumi Taoba ŋo⁵³, Muya ndur³⁵xu⁵³, Queyu nu⁵³, Guiqiong ŋo³⁵, Namuyi u⁵⁵ly³³, (Nungish) Anong a³¹nu⁵⁵, Nusu nu⁵³, Dulong a³¹no⁵⁵.

b. Cf. also Akha (ILH) mòq ‘bend head down’. Contra TSR #137 there is no connection with *m-lyəw-k ‘swallow (v.)’, which has become Akha myòq.

c. The first morpheme in WB and Lahu means ‘head’. Cf. also Sgaw Karen khóʔ-nùʔ, Pwo Karen khóʔ-nò (khóʔ ‘head’).

d. Cf. also Sani gɿ⁴⁴ (Ma Xueliang 1951). This root remains sparsely attested. See DL:408.

8.4: Stops after medial *-u-

- e. Cf. also Bahing *guk* ‘be bent’ \approx *kuk* ‘make bent’, Limbu *pegək*. This root is allofamic both with **kuk* ‘return / year’ and **m-ku:k* ‘angle, knee’; there are also solid Chinese comparanda (see §§b,d).
- f. Glossed ‘peck / strike with curved instrument / hook onto’ in *TSR*; see Lahu *thō?* ‘peck (as fowl), strike (as snake)’ (< PLB **tuk^H*) \approx Lh. *dō?* ‘strike, beat’ (< PLB **m-tuk^H*). Cf. also Lepcha *tyók* ‘collide, knock against’. There is a possible relationship between this root and ‘spit / spew’ (below, § b); cf. Mikir *in-tok*, glossed ‘to spit, dart, peck, bite (as a snake); spittle’ (*STC*, n. 189).
- g. Garo has a variant *mat-tśak*, displaying the same -o- \approx -a- alternation as in ‘cut / knock’.
- h. This root is best attested in LB (cf. also Lalo *ʔlūq*, with unexplained preglottalized initial), but (contra *STC* pp. 203, 213) it is also to be found elsewhere, e.g. Shixing *lu³⁵*; Bai Jianchuan *lu⁵⁵*; Karen *lō⁵⁵*.
- i. The prefixal nature of the labial nasal is evidenced by forms like Chepang *yuk*, Bhramu *pəyuk*, Digaro *təmyu*, Gurung *timyu*, Bahing *moro*. Many more cognates are to be found in *TSR* #133 and *ZMYC* #128.
- j. Cf. also Lepcha *tūk-tok*, Mikir *tśethok*. The Lepcha vowel reflex is irregular (we would expect Lp. -āk < **uk*; see § c(ii) below. This led Benedict to revise the PTB reconstruction to **twak* (*STC*, n. 231), though this is inconsistent with the Jingpho form.
- k. Possible cognates include Shixing (Qiangic) *khue* and several Lolo-Burmese forms, including Achang *kok⁵⁵*, Yi Xide *xo³³*, Hani Luchun *kū³³*, Gazhuo *xv³³*; perhaps also Bai Jianchuan *yū²¹*. See *TBL* #'s 503-507.
- l. *TSR* #187 reconstructs PLB **k-ruk^H* (HIGH-stopped tone); cf. also Akha *yōq*, Maru *kyuk*. Many other cognates are to be found in *ZMYC* #556, including: Cuona Menba *ru¹³*, Muya *tho⁵⁵ngw³⁵*, Ersu *ngo⁵⁵*, Yi Xide *ngu³³*, Yi Dafang *kə³³*, Yi Nanjian *yo³³*, Yi Mile (Axi) *ku³³*, Lisu *go⁴⁴*, Hani Caiyuan *ky³³*, Hani Dazhai *yū³³*, Hani Shuikui *y³³*, Jinuo *ko⁴²*, Achang *ku⁵⁵*, Zaiwa *ku²¹*. The complex initial consonant group has been broken down differently in the various languages: some languages (e.g. WB, Lisu) have undergone preemption of the resonant root-initial by the velar prefix (**k-ruk* > **kuk*); others (e.g. WT, Maru) preserve traces both of a prefix and the resonant initial; while still others (e.g. Lahu, Akha, Cuona Menba, Yi Nanjian, Hani Dazhai) seem to reflect the simple resonant (**ruk*), although the HIGH-stopped tone of the Loloish cognates is due to the influence of the voiceless velar prefix that still existed at the PLB stage (**k-ruk^H*).
- m. Lahu *tō?* ‘be poisonous; be revolted by food, as a pregnant woman’, *ō-tō?-ma* ‘poison’. There is an excellent Chinese cognate (below §d).
- n. This morpheme means ‘return’ in the sense of ‘give / take back’, and by extension ‘year’ (a year keeps returning in annual cycles). A voiced prefix must be hypothesized at the PLB stage to account for the low-stopped tone, i.e. **C-kuk^L*. There are many cognates in Loloish, including Akha *xōq*, Ahi *khū⁴⁴*, Sani *qhu²²*, Lisu *kho⁴¹*, Naxi Lijiang *khv⁵⁵*. Several of the Qiangic forms cited in *ZMYC* #63 are probably also cognate, including Pumi Taoba *ko³⁵*, Ergong *ko*, Muya *kui⁵³*, Queyu *ko⁵⁵*, Namuyi *kuə⁵⁵*, Shixing *qhe⁵⁵*. This root is allofamic with ‘crooked / bent’, above.
- o. WB *pauk* ‘go off, as a gun’ \approx *phauk* ‘to fire a gun’; the voiced Lahu initial reflects a nasal prefix (confirmed by Yi Xide and Yi Dafang *mbe³³*). This etymon was reconstructed with the unusual PLB rhyme **-ōk* in *TSR* #108, because of several Loloish reflexes with front rounded, central, or back unrounded vowels: Akha *bōq*, Bisu *pṛ*, Nasu *b'ə³²*, Lisu *bu⁴⁴*. See also *ZMYC* #688.
- p. The WB form means ‘kidney’ (lit. ‘waist-adjoin’). Other LB cognates include Akha *jōq*, Ahi *dzu⁴⁴*, Bisu *kjō* ~ *tšō*. Two PLB allofams are reconstructed in *TSR* #6, “**gyok* \approx **džok*”; now revised to **gyuk* \approx **džuk*. The latter variant seems more widespread both in Lolo-Burmese and in TB as a whole. Several putative Qiangic cognates are to be found in *ZMYC* #261 and *TBL* #98, including: Pumi Taoba *dzi³⁵*, Pumi Jinghua *dʒə¹³*, Guiqiong *zə³⁵*, Ersu *dʒu⁵⁵*, Namuyi *dzu³³*.
- q. This root may be confined to Lolo-Burmese. Cf. also Akha *xōq*, Sani *qhu⁴⁴*, Lisu (Fraser) *hkaw²*, Lalo *khúq*, Bisu *khō*, Yi Weishan *kho³³*, Yi Nanhua *khū³³*, Jinuo *kho⁴²*; cf. *TBL* #1252.

(b) *-u:k

Sets exemplifying long *-u:k include:

	<i>PTB</i>	<i>STC</i>	<i>WT</i>	<i>WB</i>	<i>Lushai</i>	<i>Garo</i>	<i>Dimasa</i>
‘knee / angle’ ^a	<i>*m-ku:k</i>	p.120	<i>khug(s)</i>	---	<i>khu:p</i>	---	---
‘cave / belly’ ^b	<i>*p/bu:k</i>	#358	<i>phug-pa</i>	<i>wam'-puik</i>	<i>pu:k</i>	---	---

Final stops							
	<i>PTB</i>	<i>STC</i>	<i>WT</i>	<i>WB</i>	<i>Lushai</i>	<i>Garó</i>	<i>Dimasa</i>
‘cubit / armlength’ ^c	* mu:k	#394	---	muik	---	mik	mu (Bodo)
‘deep / thick’	* tu:k	#356	ḥthug-pa	thuik	thu:k	dik	dib-bi, dub-pa ^d
‘foggy / dark’	* r-mu:k	#357	rmugs-pa	muik	mu:k	---	---
‘refuse / dust’ ^e	* mu:k	#363	---	ṛəhmui:k	---	---	---
‘shear / strip / pare’	* ku:k	#388	---	kuik	---	kik	khu
‘spit / spew’	* m/s-tu:k ^f	p.58, etc.	---	---	---	---	---

- a. Cf. also Ao Naga **temokok**, Lhota **nkho**, Tangkhul **khuk-sau**, Lakher **pəkh**, Hakha **kuk**. The final -p in Lushai is unexplained. See below 12.6.2(2).
- b. Garo **ok** ‘belly’ points to a variant with *short vowel. This root is placed in the context of a much larger word-family of the shape *[s / ʔ]-[p / b][u / i](c)[k] in JAM 1978a (*VSTB*):124-6.
- c. Cf. also Proto-Kiranti ***muk** (Lambichong, Chingtang, Yakha **muk**).
- d. The final labial stop in the first syllable looks like a secondary anticipation of the labial initial of the suffix.
- e. Cf. also Lepcha **muk**, Miri **pəmuk**.
- f. The long vowel is established by Lepcha **tyuk** ‘to spit’ ≠ **dyuk** ‘spittle’ (see §c-ii below.) Cf. also Mikir **in-tok** (see *-uk table under §a above); Maru **tau:k** ‘vomit, spew’; Pa-o Karen **pəthoʔ**, Sgaw Karen **thuʔ-pye** ‘spittle’, Pwo Karen **tho-phliʔ** ‘to spit’. A distinct root ***m/s-twa** is set up to accommodate forms like WT **tho-le**, Jg. **məthó**, Garo **stu**, Rawang **du**, Dimasa **khu-di thu**.

(c) *Differential reflexes in individual languages*

Evidence (or the lack of it) for the length distinction in this rhyme may be summarized language by language as follows:

(i) *Mikir*

Medial *-u- is usually lowered to Mikir -o- before final consonants of all types (nasals, stops, and liquids; see above 7.2), whether the *-u- was long or not:

	<i>PTB</i>	<i>Mikir</i>
*-uk	‘neck’ * tuk	tse-thok
	‘pouch / bag’ * kuk	hok
	‘deer’ * d-yuk	thi-dzok
*-u:k	‘cave / belly’ * p/bu:k	pok
	‘spit’ * m/s-tu:k	intok

8.4: Stops after medial *-u-

(ii) *Lepcha*

Before many types of final consonants (stops, nasals, -s, and perhaps liquids), short medial *-u- is lowered to Lepcha -a- or -ă-, while long *-u:- remains a high vowel, transcribed -u- or -ũ-:⁴²

<i>PTB</i>			<i>Lepcha</i>
*-uk	‘six’	*d-ruk	tăřăk
*-u:k	‘cave / belly’	*pu:k	tăfuk
	‘weeds’	*mu:k	muk
	‘foggy / dark’	*r-mu:k	muk
	‘spit’	*m/s-tu:k	tyuk ‘to spit’ dyuk ‘spittle’ ^a

a. Lepcha medial -y- frequently reflects the PTB *s- prefix (Benedict 1943). Cf. also Pa-o Karen pəthoʔ.

(iii) *Sho (S. Kuki)*

Short *-uk is lowered to Sho -ok, while long *-u:k maintains its high status:

<i>PTB</i>			<i>Sho</i>
*-uk	‘six’	*d-ruk	sok
*-u:k	‘cave / belly’	*pu:k	pūk
	‘deep’	*tu:k	thūk
	‘foggy / dark’	*mu:k	mūk

(iv) *Tangkhul Naga*

Short *-uk becomes the high back unrounded vowel -u in the transcription of Bhat 1969, while long *-u:k retains its final stop and vowel rounding:⁴³

<i>PTB</i>			<i>TN</i>
*-uk	‘six’	*d-ruk	thəru
*-u:k	‘angle / knee’	*m-ku:k	khuk

42. See above 7.2(1) for Lp. reflexes of *-um vs. *-u:m; 7.2(5) for Lp. reflexes of *-uŋ vs. *-u:ŋ; and below 10.3 for Lp. reflexes of long and short *-u- before -s.

43. See JAM 1972b:280-1.

(v) *Bodo-Garo*

As illustrated by the above cognate sets, Bodo-Garo has two distinct sets of correspondences for short *-u- vs. long *-u:- before velar stops, with the long vowel tending to be fronted to -i- :⁴⁴

PTB	Lushai	WB	Garó	Dimasa
*-uk	-uk	-auk	-ok	-o ^a
*-u:k	-u:k	-uik	-ik	-i(k) ≠ -u(k)

a. The apparent open-vowel reflex in Dimasa may be due to inaccurate recording in old sources; perhaps a better transcription would reveal that these words have final glottal stop.

	PTB	Garó	Dimasa
‘basket / pouch’	*kuk	khok	baɪŋ-kho
‘neck’	*tuk	gi-tok	go-do
‘six’	*d/k-ruk	dok	do
‘cubit / armlength’	*mu:k	mik	mu (Bodo)
‘deep / thick’	*tu:k	dik	dib-bi ≠ dub-pa ^a
‘shear / strip / pare’	*ku:k	kik	khu

a. See above, §b.

(vi) *Burmese*

WB clearly distinguishes short and long *-u(:)- before velars, whether stops or nasals (see above 7.2(5) for *-uŋ vs. *-u:ŋ):⁴⁵

PTB	WB
*-uŋ	-auŋ
*-u:ŋ	-uiŋ
*-uk	-auk
*-u:k	-uik

44. Similar BG reflexes may be distinguished before the homorganic nasal rhymes; see above 7.2(5).

PTB	Lushai	WB	Garó	Dimasa
*-uŋ	-uŋ	-auŋ	-oŋ	-oŋ
*-u:ŋ	-u:ŋ	-uiŋ	-iŋ	-iŋ ≠ -uŋ

BG languages are similarly useful in distinguishing length in the *-ap rhyme; see above 8.2(3).

8.4: Stops after medial *-u-

As speculated above, the peculiar diphthongal vocalism of WB **-uik** (now pronounced [-aiʔ] in standard spoken Burmese) might well have developed under Mon influence.

(vii) *Lahu*

The normal Lahu reflex of ***-uk** is **-oʔ**, with many examples (above).⁴⁶ In a couple of unexplained cases, however, Lahu has a higher vowel, **-oʔ** or **-uʔ** / **-ú**:⁴⁷

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>WB</i>	<i>Lahu</i>
‘burn / kindle’	*duk	---	#62	dugs-pa	tauk	tòʔ ɤ tú ^a
‘pierce / plant / erect’	*(d)z(y)u:k	#360	#107	ḥdzugs / zug^b	cuik	jûʔ

- a. The Lahu forms are a simplex / causative pair: tòʔ ‘burn, be on fire’ (v.i.) < ***duk ɤ tú** ‘set on fire, cause to burn’ (v.t.) < PLB ***ʔ-duk**. The high-rising tone of tú is conditioned by the *glottalized initial. Cf. also Pumi Jiulong dy¹¹, Yi Wud-ing du¹¹, Sani dyʔ, Gazhuo tsɿ³³to³⁵ (*TBL* #1269).
- b. Cf. also WT **ḥdzug** ‘prick, pierce; put into; enter, begin’. This root shows length variation, since Lushai **fuk** points to a short allofam. See *DL*:569.

Another root showing length variation is ***pru(:)k** ‘scratch’ (*STC* #391) > WT **ḥphrug-pa**, WB **phrauk** ~ **phyauk**, Garo **brik**, Dimasa **buru**. Although WB points to short ***-uk**, the Bodo-Garo forms reflect long ***-u:k**; see §v above.

(d) *Chinese comparanda*

Chinese comparanda to the etyma with the TB rhymes discussed in this section include:

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>GSR Gloss</i>
‘belly’ ^a	*p/bu:k	腹	pjôk	1034h	‘belly’
‘crooked / bent’	*g/kuk ɤ *m-ku:k	曲	k’juk	1213a	‘bend / bent / crooked / unjust’

45. WB also has differential reflexes of long and short ***-i-** before dentals, whether stops and nasals. For the WB treatment of ***-in** vs. ***-in̥**, see above 7.2(2); for WB reflexes of ***-it** vs. ***-it̥**, see above 8.3(2).

46. There are unfortunately no known examples of Lahu reflexes of etyma with long ***-u:k**.

47. In my note 232 (p.76) in *STC*, I attempted to posit a distinction between PLB ***-ok** (> Lh. **-oʔ**) and ***-uk** (> Lh. **-uʔ** or **-oʔ**). This is quite wrong, however (most of the cited examples are extremely doubtful), and in fact both Lahu and WB have merged PTB ***-uk** and ***-ok** (to **-oʔ** and **-auk**, respectively), as illustrated by ‘beneath’ and ‘fear’, below 8.6(1). There is also a case of PTB ***-ok** > Lahu **-ú** (‘outer covering / bark’), below, *ibid*.

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>GSR Gloss</i>
		局	g'juk	1214a	'compressed / bent / curved / curl, twist (hair)'
		跼	g'juk	1214b	'bend the body'
'custom / manner' b	*luk	俗	dzjuk	1220a-b	'rustic / vulgar / popular usage / custom'
'daytime / noon' c	*g-duk	晝	tjôg	1075a	'time of daylight / day'
'piebald / speckled' d	*bruk	駁	pök	1127a	'horse with mixed colors / mixed / varicolored'
'poison'	*d/tuk	毒 e	d'ôk	1016a	'poison'
'rouse / awaken / disturb' f	*kruk	覺	kôk ~ kôg	1038f	'awake / rouse into understanding'
		攪	kôg	1038i	'disturb'
'sheep' g	*luk	羴	dju	125k	'sheep'
'six'	*d-k-ruk	六	liôk	1032a-d	'six'
'strike' h	*r-tuk	𪔐	tũk	1218c	'beat / strike / castrate'
'weep / wail' i	*ku:k	哭	k'uk	1203a	'lament / weep'

a. See the extended discussion of the word family to which this root belongs in JAM 1978a (*VSTB*):123-7.

b. Cf. WT lugs 'way / manner / method / established manner / custom / usage / rite'. See Gong 2000:#46.

c. Cf. WT gdugs (eleg.) 'midday / noon / umbrella / canopy'. See Gong 2000:#32.

d. Cf. WB prauk 'speckled / spotted'. See Gong 2001:22.

e. Since the Lahu cognate to this form, tǝ, can mean 'be revolted by food, as a pregnant woman' (above §a), I have speculated that a similar shade of meaning in Chinese might have motivated the graphic component 母 'mother' in this character. *GSR* calls the explanation of this graph "uncertain."

f. Cf. WT dkrug 'stir / agitate / disturb', hkhruḡ 'be disturbed'; Tangut kio¹ ~ kio² 'drive / urge'. See Gong 2001:25.

g. Cf. WT lug 'sheep'. See Gong 2001:22.

h. Cf. WT rdug-pa 'conquer / vanquish / strike against / stumble at' and perhaps Lahu dǝ 'hit / strike / beat', nī-šī dǝ ve 'castrate (cattle) by beating the testicles to a pulp'; Yi Xide ndu²¹ < PLB *m-tök^H 'cut by a blow' (TSR #101). See Gong 2000:#20 and *DL*:721. A probable allofam is *r-duḡ 'beat / strike' above 7.5(9).

i. Cf. Lushai kuik 'shriek' (*STC*:182).

Also to be compared are WB kauk 'rice plant' (< PTB *guk) and OC kuk 穀 'grain' (*GSR* #1226i). See *STC*:181.

8.4: Stops after medial *-u-

(2) *-uk ≈ *-uŋ

There are several good examples of variation between *-uk and the homorganic nasal rhyme *-uŋ, including ‘back / behind’ *s-nuŋ ≈ *s-nuk; ‘stone’ *r-luŋ ≈ *k-luk; ‘sit’ *m-d/tu:ŋ ≈ *m-du(:)k; ‘overcast / foggy / sullen’ *mu:ŋ ≈ *r/s-mu:k. These have already been discussed in 7.2(5), above. See also 12.5.3 below.

(3) *-ut

This rhyme is relatively rare, with only about a dozen examples in *STC* and *TSR* combined. What little evidence there is for a length contrast comes from Lepcha, but even this is equivocal (see below). There is a pronounced tendency for etyma with this rhyme to have inter- or intra-lingual variants with the corresponding front-vowel rhyme -it. The reflexes of *-ut are straightforward for the most part:

<i>PTB</i>	<i>WT</i>	<i>Lepcha</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>	<i>Garó</i>
*-ut	-ud	-ǎt / -ut	-ut	-ut	-əʔ / -ɪʔ	-it

Examples include:

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Lepcha</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>
‘blow’ ^a	*s-mut	p.75	#143	ḥbud ^b	măt ≈ sũŋ-mut ^c	kəwùt	hmut	mêʔ
‘boil (v.)’	*prut	#131	---	---	---	prùt (v.i.) ≈ šəprùt (v.t.)	prut	---
‘burn / raze’ ^d	*put	---	#8	---	---	phùt	phut	---
‘mischievous / rowdy / hooligan’ ^e	*b-rut	---	---	---	---	---	bərut	---
‘inferior / fallen; worse’ ^f	*s-ryut	#206	---	---	---	yút ≈ šəyùt	yut ≈ hрут	---
‘knee’ ^g	*put	#7	---	pus -mo	tũk-păt	phùt ≈ ləphùt ^h	---	---
‘scrape / carve’ ⁱ	*ku(:)t	#383	---	---	kut	khùt	kut ≈ khut	---
‘swaggering / noisy’ ^j	*ʔut	#109	---	ʔud	---	---	ʔut	---

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Lepcha</i>	<i>Jingpho</i>	<i>WB</i>	<i>Lahu</i>
‘tear / rip’ ^k	*dzyut	---	#110	---	---	---	cut ʌ chut	jɪʔ

- a. *STC* cites a Jg. (Assam dialect) form “mut” (not in Hanson 1906, Hertz 1935, Maran 1979, or Dai *et al.*, 1983), but *kəwüt* (with curiously lenited initial) is the ordinary form. The Lahu high-stopped tone, as well as the aspirated WB initial, confirm the *s- prefix. See also Bahing (h)mut, Miri mut. Many more cognates are to be found in *ZMYC* #544, including: Tsangla (Motuo Menba) mu; Pumi Taoba xə³⁵ma³⁵; Ergong gw-wmur; Guiqiong mu³⁵; Namuyi fu⁵³; Shixing hū⁵⁵; Yi Xide mo³³; Yi Nanhua mu³³; Lisu mu⁴⁴; Naxi Lijiang mu³¹; Hani Shuikui my³³; Achang mut⁵⁵; Zaiwa mut²¹; Dulong mut⁵³; Idu mu⁵⁵; Bokar Adi mit. Note the lenition (similar to the Jingpho form) in Namuyi and Shixing. The nasalization in Shixing either reflects the earlier nasal initial, or (more likely) is due to rhinoglottophilia after the secondary h-.
- b. See Benedict (1939):217.
- c. māt ‘blow’ ʌ sŭŋ-mut ‘wind’.
- d. Cf. also Akha pyq; Hani pu³³; Lisu phu³¹; Jinuo phu⁵⁵; Naxi Lijiang py⁵⁵.
- e. Cf. Lai Chin ruu (form I) ʌ ruut (form II) ‘be mischievous, irresponsible’, mi-rut ‘abnormal person’. The Burmese form is glossed as ‘personne marginale, qui vit sans loi, qui n’a pas de tenue; voyou’ in Bernot 1988, Fasc. 11, p. 42. The *Myanmar-English Dictionary* defines it as ‘mischievous or rowdy person’ (p. 311). Etymology by KVB.
- f. Jg. yút ‘grow worse, as illness’, šəyüt ‘be apathetic, indifferent’; WB yut ‘inferior, mean’, hrut ‘put down’. Cf. also WT rud ‘a falling or fallen mass’, kha-rud ‘avalanche’, sa-rud ‘landslide’ (WT forms not cited in *STC* #206 but mentioned in Benedict (1939):217).
- g. The WT form is from *put-s (WT dental stops do not occur before final -s); there is a W. Tibetan variant pis-mo; cf. also Nung phaŋ-phit ‘knee’, ur-phut ‘elbow’, ra-phut ‘shoulder’; Trung bak⁵⁵put⁵⁵ ‘knee’; Anong ra-phut ‘shoulder’; Maru pat-lau ‘knee’; Lepcha pūt-li ‘shoulder blade, scapula’. The intralingual vowel variation in WT, Nung and Chinese (see below) could justify including this set in the category of *-ut ʌ *-it etyma (§a below).
- h. phūt ‘kneel’ ʌ ləphūt ‘knee’.
- i. The semantics of this root are interesting: Lepcha kut ‘to rule a line’, ākut ‘strake’, hut ‘scratch’, āhut ‘a rake’; Jg. khūt ‘scrape, rub’; Nung tsəkut ‘itch’; WB kut ‘scratch’, khut ‘gash, chop, cut, beat (metal)’; Garo kit ‘carve’, kəkit ‘itch’; Dimasa khu ‘engrave on wood or stone’.
- j. This is a sparsely attested root, with semantically divergent reflexes: WT ʔud ‘swaggering, bragging’; WB ʔut ‘noisy’. A homophonous etymon *ʔut ‘belch / burp’ is reconstructed in *TSR* #161 (> Lahu əʔ-əʔ te ve; Akha ɔq; Moso ʌ¹¹), though the semantic connection with ‘noisy’ is doubtful, and this word seems imitative in any event.
- k. The WB forms are a simplex / causative pair: cut ‘be torn’, chut ‘tear, sever’. The voiced initial in Lahu reflects a prenasalized PLB variant *m-džut. Many likely cognates are to be found in *ZMYC* #553, including: Ersu htʃ⁵⁵; Yi Nanhua tʃi³³; Yi Mojiang tɕi³³; Lisu tʃi³⁵; Hani Caiyuan tʃh⁵⁵; Hani Dazhai tsɿ³³; Bai Bijiang tɕhui⁵⁵ xuc⁵⁵; Tujia tʃhi⁵⁵ tʃha⁵³; Achang tʃhe⁵⁵; Zaiwa laŋ²¹ tʃhe⁵⁵; Langsu (Maru) lɔ⁵⁵ tʃhat⁵⁵; Nusu tʃhi⁵³; Geman Deng dʒit⁵⁵; Bokar Adi pu-ɕet. Many of these cognates have front vowels, leaving open the possibility that this is an etymon with front / back variation, *dzyut ʌ *dzyit.

Another widespread TB root with this rhyme is PTB *k(r)u-t ʌ *g(r)u-t ‘hand’, which appears mostly in Kuki-Chin and Himalayish languages. The stop-finalled allofam is reflected, *e.g.*, by Hayu got ‘hand’, Kanauri gud(h) ‘hand, arm’, Magari mi-huʔ ‘id.’, Lushai kut-zung ‘finger’, Hill Miri kod ‘hand, earth’, Meithei khut-sa ‘finger’, khut-tum ‘fist’, Tiddim Chin khut-zûŋ ‘finger’, Kom Rem kut tun ‘fist’. Reflexes with medial -r- include Chepang krut-pak ‘palm’, krut-brəyɰh ‘finger’; Gurung pā:khruq ‘arm’; in Mru rut ‘hand’, the medial has evidently been reinterpreted as the root initial. The open-syllable allofam appears in WT khu-tsor ‘fist’, Meithei khu-jin ‘fingernail’, Lushai ku-tang ‘finger’, *etc.*, and perhaps also in WB khu ‘unit, individual thing’.⁴⁸

8.4: Stops after medial *-u-

As noted in 8.4(1) above, Lepcha typically lowers medial *-u- to -ă-, while long *-u- remains -u-. The alternation between ‘blow’ (Lp. *mẵt*) and ‘wind’ (Lp. *sũŋ-mut*) can thus be interpreted as reflecting an earlier *-mut \times *-mu:t alternation, providing some slight evidence for a length contrast in this rhyme. Carrying this further, Lp. *tũk-pẵt* can be said to confirm the short vowel in *put ‘knee’, while Lp. *kut* would reflect a long vowel in *ku:t ‘scrape, carve’ (this is not suggested in *STC*).

Another possible root with the rhyme *-u:t is most clearly attested in the Chin languages:

‘enter’ *s-lu:t Lushai and Lai *lùut*, Laizo *lûut*, Tiddim *luut*¹ ‘enter’; Thado *hluut* ‘put into’ (*i.e.* “cause to enter”, reflecting the causative *s- prefix)

Several Loloish forms are perhaps cognate, including Lh. *lòʔ* (there are no native Lahu syllables of the form ***ləʔ* or ***lɿʔ*); Sani *lɿʔ*²²; Naxi *khv³¹tɕy³¹lu^{33.49}*. A couple of Qiangic forms might also be related: Queyu *lə³⁵lu⁵³*; Namuyi *qo³³ lo³³ lo³³ bi⁵⁵* (see *ZMYC* #746).

(a) Variation with other rhymes

As usual with high-vowel stopped rhymes, one would expect cases of front \times back variation between *-ut and *-it. The following etymon is a good candidate:⁵⁰

‘wipe’ *sut \times *sit ^a	
*sut	WT <i>śud</i> , <i>bśud</i> ‘rub’; Jg. <i>kətsút</i> ; WB <i>sut</i> ; Namuyi <i>su³⁵</i> ; Shixing <i>su⁵⁵</i> ; Yi Xide <i>sɿ³³</i> ; Yi Mile (Axi) and Yi Mojiang <i>sɿ³³</i> ; Lisu <i>ʃɿ³⁵ ~ sɿ³⁵</i> ; Naxi Lijiang <i>su⁵⁵</i> ; Hani Shuikui <i>sɿ³³</i> ; Achang and Zaiwa <i>sut⁵⁵</i> ; Langsu <i>sat⁵⁵</i> ; Cho (S. Chin) <i>thut</i> ‘wipe’; Lai <i>thuʔ</i> (Form II); Tangkhul <i>kəkəsut</i> ‘scrub’
*sit	Lahu <i>šɿʔ</i> ; Akha <i>síq</i> ; Sani <i>sɿ⁴⁴</i>

a. Cf. *TSR* #120, *ZMYC* #624. This etymon was already recognized in Benedict 1939 (“Semantic differentiation in Indo-Chinese”):217. See below 12.1(2c).

48. See JAM (1985b “Arm, hand, wing”):431-2. In WB *khu’-hnac* ‘seven’ (*hnac* ‘two’) the first syllable in perhaps to be explained as referring to the fingers of the hand as a “unit” in counting (5+2=7). See JAM 1995b: (“Numerals”):393 and 1985b:432.

49. This root was diffidently reconstructed as PLB “*luk or *lap” in JAM 1972a (*TSR*) #165 and in *DL*:1382.

50. Cf. also the intralingual variation in the Nung and Tibetan forms for ‘knee’, above.

Several roots show variation between *-ut and an open syllable, so that the dental stop appears to be suffixal (see below 11.3):

‘join / tie / knot’ *du-t ɤ *tu-t ^a	
*dut ɤ *tut	WT <i>dud-pa</i> ‘to tie, knot’, <i>mdud</i> ‘knot, bow’, <i>sdud-pa</i> ‘put together, join, unite’, <i>sdud</i> ‘folds of a garment’ ^b ; Jg. <i>tút</i> ‘be joined, bound or tied together’, <i>mətút</i> ~ <i>kətút</i> ‘join, connect’, Nung <i>dəthut</i> ‘join, unite’; Garo <i>stit</i> ‘tangle’, <i>kə-əni bi-stit</i> ‘a knot’
*du ɤ *tu	WT <i>ɸdu-ba</i> ‘assemble, meet, join’, <i>ɸthu-ba</i> ‘gather, collect’; Nung <i>thu</i> ‘join (as a stream)’

a. Cf. *STC* #421.

b. WT *sdud-pa* has an interesting polysemy, traced by Jäschke (1881:294-5) as follows: (1) ‘to collect, gather;...put together, compile’; (2) ‘to unite, join, combine’; (3) ‘to condense, comprise; to contract, compress, abridge;...to close, conclude, finish, terminate...’. Bodman (1969) convincingly relates WT *sdud-pa* in its sense ‘to close, conclude, finish, terminate’ to a Chinese word meaning ‘finish; die’ (see below).

The following two etyma show both front ɤ back and *-ut ɤ open syllable variation:

‘stop up / plug up’ *tsu(w)-t ɤ *tsəy ^a	
*tsut	Jg. <i>tsút</i> ‘stop up, plug, cork’, <i>mətsút</i> ‘stopper’
*tsəw	Nung <i>sü</i> ‘to cork’, <i>ənsü</i> ‘a cork’; WB <i>chui</i> ‘stop up’, <i>ɤəchui</i> ‘stopper, plug’ (< PLB *tsəw ³)
*tsəy	Lahu <i>chî</i> ‘close off, close up, stop up, block off, plug’ (<i>DL</i> :556-7)
‘lungs’ ^b *tsut ɤ *(t)si-t ^c	
*tsut	WB <i>chut</i> ; Atsi <i>tsʔut</i> ; ; Hayu <i>jot</i> ; Lakher <i>pa-chao</i>
*tsəy	Lahu <i>ə-chî-phô?</i> ; Sani <i>tshî</i>
*(t)sit	Axi <i>tsɿ</i> ⁴⁴ - <i>pu</i> ²² ; Lisu (Fraser) <i>sĩ</i> ³ ‘whistle’; WT <i>sid-pa</i> ‘ <i>id.</i> ’; Garo <i>raʔŋ-sit</i> ‘breathe, exhale’

a. Cf. *STC* #422.

b. See above 8.3(2). Note the exactly parallel Lahu forms in ‘stop up / plug’ and ‘lung’. For fricative ɤ affricate variation, see above 3.3. Many more cognates are to be found in *ZMYC* #274 and *TBL* #143, including several in the Qiangic group. rGyalrong *tərtshos* (alongside such other Qiangic forms as Pumi Taoba *tshø*³⁵, Ergong *zʔtshe*, Muya *tshu*⁵³, Ersu *tshu*⁵⁵, Namuyi *ntshu*³³*phu*⁵⁵, Shixing *tsho*⁵⁵) make one wonder whether this root should be reconstructed with a final *-s. Note the last two syllables of Lahu *ə-chî-phô?*, identical etymologically to the Namuyi disyllable.

c. Cf. *TSR* #56, #119; *VSTB* 119-21; *DL*:163, 557; *ZMYC* #274.

The root presented (above §1) as *(d)z(y)u:k ‘pierce / plant / erect’ (> WT *ɸdzugs* ɤ *zug* ɤ *ɸdzug* ‘prick, pierce; put into; enter, begin’; WB *cuik* ‘erect, set upright, plant’;

8.4: Stops after medial *-u-

Lahu *jûʔ* ‘pierce, stab’; Lushai *fuk* ‘be erect’) has several allofamic reflexes that point to final *-ut: WT *ɣdzud-pa* ‘put, lay’, *ɣtshud* ‘be put into’; Jingpho *džút* ‘be pierced’, *šədzút* ‘pierce’), thus establishing *-ut ≈ *-uk as an attested TB variational pattern. See below 12.6.1. There is also an open-syllable root **tsow* glossed ‘thorn’ (above 5.6.1) that seems allofamically related.

A word-family with truly impressive internal variation has the semantic range ‘suck / breast / milk’. Not only does it show a three-way variation in position of articulation of its final stop (-p ≈ -t ≈ -k), but also front-back variation (*-up ≈ *-ip) and alternation between stopped and open-syllable allofams. Although variants of this root include **dzyut* (> WB *cut* ‘suck, imbibe, absorb’) and **tsyuk* (> Jg. *cúʔ*, Mpi *təhuʔ*¹) the word-family as a whole is better discussed under *-up (below §3) and *-o:p, below 8.6(3).

(b) Chinese comparanda

There are only a couple of Chinese comparanda so far available for the etyma discussed in this section:

	PTB		OC	GSR	OC Gloss
‘knee’	*put	市	<i>pɿwət</i>	#501a-b	‘knee covers / kneepads’
		韍	<i>pɿwət</i>	#276l	‘id.’
		韠	<i>pjět</i>	#407m	‘id.’
‘tie / knot; conclude / finish’	*s-dut	卒	<i>tsɿwət</i>	#490a	‘finish; die’

(4) *-up

Like *-ut, *-up is sparsely attested, with only about a dozen examples in *STC* and *TSR* combined, many of which show variation with the corresponding front-vowel rhyme *-ip⁵¹. Very little evidence for a length contrast between *-up and *-u:p has been found so far. The reflexes in the criterial languages, as far as can be determined, are as follows:

PTB	WT	Jg.	WB	Lahu	Mikir	Lushai	Bodo-Garo
*-up	-ub	-up	-up	-ɔʔ / -uʔ ^a	-up / -op	-up	-up / -ip

51. No good Chinese comparanda to PTB etyma with the invariant rhyme *-up have yet been discovered.

- a. The conditioning for the alternate Lahu reflexes seems clear, with -u? appearing after *labials (see ‘mildew / spots / write’; ‘satiated’; ‘turn over’) and -ɔ? otherwise (‘sew’; ‘suck’). This is precisely the conditioning for the Lahu reflexes of the *-əw rhyme (above 5.3.1).

Etyma in *-up that apparently show no variation with *-ip include:

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lu.</i>
‘cover ₁ / wrap’ ^a	*klup	#479	---	klub-pa	grúp	---	khu?
‘cover ₂ ’ ^b	*ʔup	#107	---	---	ʔúp ≠ wúp ≠ kəúp	ʔup	ʔup ^c
‘overflow / gush’ ^d	*brup	#151	---	hbrub-pa	phrúp	mrup ≠ hmrup	---
‘rot / spotted / write’ ^e	*m-bup ^f	---	#s 75, 89	---	---	pup	---
‘satiated’ ^g	*m-pup	---	#86	---	---	---	---
‘sew’ ^h / i	*d/g-rup	#456	#63	hdrub-pa	---	khyup	---
‘snuff up / sip’ ^j	*s-rup	#384	---	---	---	hrup	---
‘turn over / search for’ ^k	*m-pup	---	#19	hbub-pa	---	---	---

- a. Bodo-Garo reflexes include: Bodo *džokhlop* ‘cover, shut’; Dimasa *phukhlub* ‘tuck in’, *sukhlub* ‘drown, immerse’, *phun-khlub* ‘wrap around’. Cf. also Pwo Karen *khlaʔ*, *khliʔ*; ‘cover; put on a hat; shut (as a lid)’; Sgaw Karen *kləʔ* ‘cover’.
- b. Cf. also Mikir *up* ‘cover’; Achang *up*⁵⁵ ‘hatch’, *xup*⁵⁵ ‘cause to hatch’ (*i.e.* by covering the eggs). A variant in *-ap must definitely be reconstructed, with a range of meaning also including both ‘cover (in general)’ and ‘incubate eggs’: *wap ‘cover; incubate eggs’ > WB *wap* ‘incubate eggs’; Jg. *ʔap* ‘cover, as a dish with a plantain leaf’. There is also the possibility of an etymological connection between this root and *yip ≠ *yup ‘sleep / conceal’ (below); if this is valid, we must recognize *-i- ≠ *-u- variation in this etymon as well.
- c. Lushai ‘shelter’.
- d. Glosses of these forms: WT *hbrub* ‘cause to overflow, gush, spout forth’; Jg. *phrúp* ‘squirt, as water with the mouth’; WB *mrup* ‘be submerged, overwhelmed, buried’, *hmrup* ‘submerge’. Cf. also Garo *brip* ‘flood’, *prip-at* ‘overwhelm’; Achang *muʔ*⁵⁵, as well as a number of possible cognates in *ZMYYC* #757, including: Qiang Taoping *bə*³³; Guiqiong *phu*³³; Ersu *bzɿ*⁵⁵; Yi Xide *mbɿ*⁵⁵; Yi Dafang *bu*⁵⁵; Yi Mojiang *mur*²¹; Tujia *phu*²¹.
- e. The semantic range of this root is interesting: the basic meaning seems to have been ‘rot; have spots of rot or mold’, whence ‘be spotted, mottled’, thence to the notion of ‘write’ (perceived by pre-literate people as making spots on paper). *TSR* treats ‘rot / spoil’ (#75) as a separate etymon from ‘write / make spots’ (#89).
- f. Cf. also (Lolo-Burmese) Atsi *pùp*; Achang *pup*⁵⁵; Maru *páp*; Lahu *bùʔ* ‘rot (as wood), be mildewed (clothing, books); be spotted, mottled, pockmarked, striped, patterned; write, draw on paper’; Akha *bùq* ‘rot, spoil’, *bòq* ‘make a design, write’; Lisu (Rui Yifu) *bwìʔ* ‘mildewed’, *bo*⁴⁴ ‘write’; Yi Xide *bɿ*³³; Hani Caiyuan *py*³³; Hani Dazhai *bɿ*³¹; Jinuo *pu*⁵⁵; (Nungish) Dulong *bũp*⁵⁵; (Qiangic) Muya *mbu*⁵⁵ (all ‘rot’). See *ZMYYC* #792 (‘rot’) and #623 (‘write’).
- g. Cf. Lahu *bùʔ*; Axi *bu*⁴⁴; Sani *bɿ*⁴⁴; Hani *pu*³³; Woni *pu*⁵⁵; Nasu *b’uʔ*³² (all from *TSR*); other Loloish forms are to be found in *ZMYYC* #896, *e.g.* Yi Xide *mbu*³³; Yi Dafang *mbə*³³; Yi Nanjian *bo*³³; Yi Mojiang *bɿ*³³. Forms from Baic (*ibid.*) prove that this is a general TB root: Bai (Dali and Jianchuan) *pu*³³, (Bijiang) *bu*³³.

8.4: Stops after medial *-u-

- h. *Cf.* also rGyalrong (Maerkang dial.) tətʂop; Lahu tɔ́; Akha tɔ́q (all < *d-rup). Magari rup descends from the unprefixed root. Most other TB languages are like WB, reflecting the velar prefix instead, e.g.: Trung krap; Dulong kɾup⁵⁵; Tangkhul kəkhop; Nusu Nu khɿɔ⁵⁵; Geman Deng ku³¹kɿap⁵⁵; Achang xzop⁵⁵; Zaiwa khjup⁵⁵; Yi Xide gu⁵⁵; Hani Luchun gu⁷³; Hani Mojiang ky³¹; Akha gùq; Lalo gùq; Bisu kù (see *TBL* #1324). Note the Akha doublet tɔ́q ≈ gùq, providing evidence for both prefixes. Lepcha hrup seems to reflect still another prefix (< *s-rup). The Lahu reflex has high-rising tone because of the PLB *glottalized initial (*ʔ-drup).
- i. *STC* (p. 114-5) attempts to draw a distinction between a true initial cluster *dr- on the one hand (as in ‘sew’), which led to WB khy- and Lahu t-; and prefixal *d- plus root initial r- (*d-r-), as in ‘six’, which developed into WB khr- (khrauk) and Lahu kh- (khɔ́ʔ), see §1 above. This seems far-fetched, however, and it seems simpler to posit prefixal variation in ‘sew’.
- j. WB hrup ‘snuff up, sip, sup’; Dimasa surup ‘sip, lap, smoke’ ≈ khu sirip ‘gargle’ (khu ‘mouth’); *cf.* also Man- chati srub ‘spittle’; Lepcha hūp ‘a sip, gulp’ ≈ háp ‘to suck’. This Lepcha doublet perhaps provides some slight evidence for a length contrast in this rhyme. *Cf.* the discussion of the Lepcha reflexes of ‘blow’ under *-ut, above (2).
- k. *Cf.* Lahu phûʔ ‘turn over, roll; search for’; Akha pɔ́q ‘roll over; search for’; Lalo phúq ‘turn over’; Yi Luquan phu²²; Lisu ti⁵⁵pho³⁵; Yi Xide mbo³³ ≈ pɿ³³ ≈ phɿ³³; Yi Dafang bu³³; Yi Nanhua phɿ³³; Hani Luchun lɿ³¹pɿ³³; Achang phu⁷⁵; Namuyi mbu³³ li⁵⁵; Shixing be³³ ji⁵⁵; Queyu təʂpuə⁵⁵; Zhaba (TBL) 扎坝 təpho⁵⁵; Lusu ɳe³³phu⁵³; Dulong pɔ́ʔ⁵⁵. See *ZMYC* #762 and *TBL* #'s 1309, 1806, 1807.

(a) *-up ≈ *-ip

Most etyma which clearly show *-up ≈ *-ip variation have been discussed under *-ip, above 8.3(3b), including:

‘sleep’	*s-yip ≈ *s-yup
‘sink ₁ / dive’	*lip ≈ *lup
‘wrap’	*tip ≈ *tup
‘conceal / bury’	*b/pip ≈ *b/pup
‘sink ₂ / submerge / squeeze’	*nip ≈ *nup

To these we may add a couple more:⁵²

‘wring / crumple’ <i>*(t)syup</i> \approx <i>*(t)syip</i> ^a	
<i>*(t)syup</i>	Jg. <i>tšùp</i> ‘close, as the hands when catching a ball; gather, as the mouth of a sack’, <i>šùp</i> ‘wring, squeeze out’; WB <i>chup</i> ‘clench the fist’, Atsi (Zaiwa) <i>tsʔup</i> ‘ <i>id.</i> ’; Langsu (Maru) <i>tʃap</i> ⁵⁵ ; Akha <i>tsúq</i> ‘sink the claws into, as eagle to chicken’; also perhaps Bai Jianchuan <i>tsue</i> ³³ , <i>tsui</i> ⁴⁴ ; Tujia <i>tɕiu</i> ⁵³
<i>*tsyip</i>	Lahu <i>chî?</i> ‘crumple, clench, squeeze into a ball’; Lalo <i>tshìq</i> ‘pinch with nails’
‘suck / breast / milk’ PTB <i>*dz/tsyop</i> \approx <i>*dz/tsyup</i> \approx <i>*dz/tsyip</i> ^b	
<i>*dz/tsyup</i>	PLB <i>*C-tšup</i> ^L > Lahu <i>chò?</i> ‘suck’ \approx PLB <i>*ʔ-dzyup</i> > Lahu <i>cú</i> ‘milk’; Atsi <i>suʔ-cʔup</i> , Maru <i>cʔap</i> , Achang <i>tšop</i> ⁵⁵ , Akha <i>cúq</i> , Hani Mojiang <i>tʃhy</i> ³¹ , Jinuo <i>tʃhu</i> ⁵⁵ (all ‘suck’). Extra-LB cognates with back vowels include: Mikir <i>in-jùp</i> ; rGyalrong <i>scçup</i> ; Bokar Luoba <i>bjuŋ tɕop</i> .
<i>*dz/tsyip</i>	WT <i>ɦdžibs-pa</i> ‘suck’; Cuona Menba <i>dzip</i> ³⁵ <i>pa</i> ⁵³ , Lusu <i>tɕhi</i> ³¹ ; Geman Deng <i>jip</i> ⁵⁵ ; Lisu <i>tʃhɪ</i> ³¹ ; Naxi <i>tɕhi</i> ⁵⁵ ; Bai Jianchuan <i>tɕi</i> ³³ .

a. *TSR* #66; *ZMYC* #554; *TBL* #1533. Possibly related is a similar root with liquid final **tsyur* ‘wring’ (*STC* #188); see below 9.2.2(3).

b. Other allofams include **dzyut* \approx **dzyuk* \approx **dzyəw* \approx **dzyow*. This complicated word-family has open-syllable variants (**dzyəw* > WB *cui* ‘suck’; Akha *ɕ* ‘breast, milk’; **dzyow* > WT *ɦdžo-ba* ‘to milk’, *žo* ‘milk’), as well as stopped allofams at all three positions of articulation (**dzyuk* > Jg. *tšú?* ‘breast, milk’; **dzyut* > WB *cut* ‘suck, imbibe, absorb’ (above § 2). In the present context it also exemplifies **-up* \approx **-ip* variation: **dzyo:p* (*STC* #69; see below 8.6(3)) > PLB **-džup* \approx **-tšup* (*TSR* #73); *TBL* #'s 1648, 94.

8.5 Stops after medial **-e-*

Many TB languages (including 4 of the 5 criterial languages of *STC*: WT, Jingpho, Lushai, and Garo) have a full set of mid vowels before final stops (/ -*ek* -*et* -*ep* -*ok* -*ot* -*op* /). However, very few roots are reconstructible with such rhymes at the PTB level, and we must assume that a large proportion of the occurrences of mid vowels in stopped syllables are secondary developments in the various languages, especially due to the influence of the medial semivowels **-y-* and **-w-*.⁵³

52. See below 12.1(2a).

53. Cf. such sound-changes as PTB **-wat* > WT -*od* and Jg. -*ot* (e.g. ‘free smn’ **s-lwat* > WT *hlod-pa*, Jg. *šəlòt*), or PLB **-yak* > WT -*eg*, Lahu -*ɛ?* (e.g. ‘partridge’ **s-ryak* > WT *sreg*; ‘eye’ **s-myak* > Lh. *mê?*).

8.5: Stops after medial *-e-

Written Burmese is of no use in distinguishing *-i- and *-e- in stopped syllables, since the limited evidence available shows that *-ik, *-ek, *-it, *-et have all merged to WB -ac, while *-ip and *-ep have merged to WB -ip. Nevertheless, Lolo-Burmese comparative evidence can occasionally shore up the reconstruction of a mid-vowel stopped syllable, indicating that such rhymes might still have enjoyed a tenuous existence at the PLB stage.

(1) *-ek

Only two or three PTB roots are reconstructed with this rhyme in *STC*, along with half a dozen in *TSR*.⁵⁴ From the scattered evidence available, the following correspondences may be pieced together:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Akha</i>	<i>Lisu</i>	<i>Lushai</i>	<i>Bodo-Garo</i>
*-ek	-eg	-eʔ	-ac	-eʔ	ɛʔ	iʔ	-ek (?)	-ek
[*-e:k]							-e:k]	

The best example so far unearthed is ‘kick’:

	<i>PTB</i>	<i>PLB</i>	<i>TSR</i>	<i>WT</i>	<i>Lahu</i>	<i>Lisu</i>
‘kick’	*r/g-dek	*tek ^H	#14	rdeg-pa ^a	thêʔ	hti ²

a. This form is also glossed ‘beat, strike, smite; push, knock’ (Jäschke 286); there is a variant with back vowel, rdog-pa ‘kick’.

The velar prefix is attested in Garo **ga-tek** and Tangkhul Naga **kəkəthək** (the first **kə-** in TN is a general prefix occurring before all verbs, above 4.4.4(2); it is the second **kə-** that corresponds to Garo **ga-**. More Lolo-Burmese cognates are cited in *ZMYYC* #565 (Hani Caiyuan the⁵⁵; Hani Shuikui the⁵⁵; Achang thep³⁵), as well as possibly related forms from

54. Of the six in *TSR*, four are now reconstructed differently in the present work. Only one set (‘give’) was presented in both *STC* and *TSR*.

other subgroups, *e.g.* Bai Jianchuan tɕhɛ⁴⁴; Idu pɑ⁵⁵tɿ³⁵; Bokar Adi duk. There is also an excellent quartet of Chinese comparanda:⁵⁵

		<i>OC</i>	<i>GSR</i>
‘kick’	踢	d’ieg	866q
‘id.’	踢	t’iek	<i>AD</i> #195 ^a
‘animal’s foot, hoof’	蹄	tiek	877o
‘id.’	蹄	d’ieg	877h

a. Not in *GSR* #850.

Alongside an open-syllable root for ‘give’, *bəy (*STC* #427; see above 5.3.2), *STC* (pp. 101, 149) mentions a variant with velar suffix, *pe(k), at the “Kuki-Naga” level, where it appears in Chin languages in what is now called “Form II” of verbs (used mostly in subordinate clauses), *e.g.*:

	<i>Form I</i>	<i>Form II</i>
<i>Lushai</i>	pè	pe:k
<i>Tiddim</i>	pia ¹	piak ¹
<i>Lai</i>	pee	peek

However, the stopped allofam appears independently in Loloish (which lacks any such formal dichotomy for verbs), reconstructed in *TSR* #3 as PLB *bek^L > Akha bɪq, Lahu pè? ‘give, bestow’ (alongside Lh. pî ‘give’, from the open-syllable allofam).

A “Kuki-Naga” etymon with the long version of this rhyme, *ʔe:k ‘feces; defecate’, has been set up on the basis of Chin forms like Lushai e:k; Hakha, Rangkhoh, Sho ek; and Lakher i, with additional support from Karenic (Pwo and Sgaw e ‘feces’ (*STC* p. 146). While this may well be a valid root, it seems imitative and hypocoristic in origin; *cf.* the Lahu baby-talk expression ê-ê te ve ‘make poo-poo’ (*DL*:129).

Another root reconstructible with long *-e:k has broader support, and may perhaps be set up for PTB as a whole. Again, *STC* (p. 41) parenthetically proposes a “Kuki-Naga” etymon *gle:k ‘thunderbolt / lightning’ on the basis of Lushai ʔe:k and Sho glek. In *TSR* #67, a PLB root *trek is reconstructed by using this same Lushai form “trêk” (with the initial retroflex stop transcribed as “tr” instead of “ʔ”), along with two Loloish forms, Lahu mû-thê? ‘thunder and lightning’ (mû ‘sky’) and Akha té? ‘roar of thunder and crackle

55. Here suggested for the first time.

8.5: Stops after medial *-e-

of lightning’. Against this etymology is the Lahu reflex -εʔ (instead of -eʔ as in ‘kick’ and ‘give’, above), as well as the fact that the Lushai reflex of another putative root with initial *tr- (*t(r)ak ‘weave’, *STC* #17) is taʔ, with ordinary dental (not retroflex) t-.⁵⁶ On the other hand, the Lushai form ɬe:k / trêk ‘lightning’ poses a problem for the *velar-plus-lateral etymology, since in the only other available example with *gl-, *gla-k ‘fall’ (*STC* #123), Lushai has a lateral affricate, tla:k, not a retroflex stop.⁵⁷ On balance, however, the velar etymology seems preferable, since it can accommodate two other key forms: WB *cac-cac* ‘in a keen, darting, or shooting, sharp or sudden manner’, *hlyap-cac* ‘lightning’ and WT *glog* ‘lightning’, *glog-sprin* ‘thundercloud’. The back vowel in WT is another problem (we would have hoped for “gleg”), but it is interesting that the same front/back alternation is found in another *-ek root, ‘kick’ (WT *rdeg-pa* ≈ *rdog-pa*), above. The last word has yet to be said on this etymology, but all the forms cited seem related somehow.

Three other *TSR* roots with PLB *-ek are better reconstructed otherwise: ‘be / be able’ *C-prek (*TSR* #68) is now reinterpreted as *C-pret^L (see §2 below); ‘testicle’ *r-lek (*TSR* #170) is now *r-lik (8.3(1), above); and ‘wet’ *s-nek (*TSR* #150), is now reconstructed as *s-nyak (8.2(1), above).

Contrariwise, a PLB root previously reconstructed with *-yak, ‘sticky’ *ʔ-nyak^L (*TSR* #154), on the basis of Lahu *né* ‘stick onto, plaster on, smear on’ and Sani *ñεʔ*²², might well be better assigned to PTB *ne:k, in view of the apparent cognate in Lai Chin: *neek* (Form I) ~ *neʔ* (Form II) ‘stick to’. Against this is the Lahu reflex with ε, which is the regular outcome of *-yak (above 8.2(1b)), while *-ek or *-e:k should give Lahu -eʔ (as in ‘kick’ and ‘give’); on the other hand we have just noted the same Lahu ε reflex in ‘thunderbolt / lightning’ (*mû-thêʔ*).

(2) *-et

Not a single root is reconstructed with this rhyme in *STC*, though several have been set up in *TSR*. On the basis of the fragmentary evidence available, the following correspondences may be deduced:

PTB	WT	Jg.	WB	Lahu	Akha	Lisu	Lushai	Bodo-Garo
*-et	[-ed]	-et	-ac	-εʔ	-εʔ / -øʔ	-eʔ / -iʔ	[-et]	[-et]

56. The final Lushai glottal stop in ‘weave’, instead of -k, is unexplained.

57. *STC* laments (p. 41) that “neither *gl- nor *bl- can be traced with certainty” in Lushai.

No WT, Lushai, or Bodo-Garo cognate to any **-et* root has yet been found, although one would expect the reflexes included in square brackets.

The most solid etymon reconstructible with this rhyme is ‘scratch / scrape’:

‘scratch / scrape’	PTB <i>*m-kret</i> ^a Jg. <i>khṛèt</i> ‘rasp, grate’, <i>ʔəkhṛèt</i> ‘gnaw, as a mouse’, <i>ʔəgrèt</i> ‘scratch, as a thorn; graze, as a bullet’, <i>məkhṛèt</i> ‘mark, as with a finger; strike, as a match’; WB <i>khṛac</i> ‘mark with the nails, scrape’, <i>kyac</i> ‘scratch earth out of hole in ground, as an animal’; Achang <i>khzət</i> ³⁵ ; Langsu <i>khjat</i> ⁵⁵ ; Lahu <i>gêʔ</i> ‘rasp, scrape’ (the voiced initial confirms the <i>*nasal prefix</i>); Sani <i>gy</i> ⁴⁴ ; Akha <i>jéq</i> ‘scrape, rake, shave away’; Nasu <i>tš'iʔ</i> ³² ; perhaps also Nusu <i>kɿq</i> ⁵³ , Dulong <i>ɑ³¹xɿɔt</i> ⁵⁵ , rGyalrong <i>kəkhrot</i>
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a. *TSR* #97; *ZMYYC* #555; *TBL* #'s 1170, 1352.

Another fairly widespread root with this rhyme is ‘vagina / vulva’:

‘vulva / vagina’	PTB <i>*b(y)et</i> (<i>TSR</i> #5) Kanauri <i>phɛ:ts</i> ; Tamang Risiangku <i>pít-si</i> ; Bahing <i>pi-si</i> ; Hayu <i>bi-mli</i> ‘genitals’ (<i>mli</i> ‘penis’); Sak (Dodem) <i>əpet</i> ; Bai <i>pĩ</i> ⁴⁴ ; Meithei <i>seŋ-bi</i> ; Zeme <i>pe¹mu</i> ⁵ ; Lahu <i>pèʔ</i> ‘be randy’, <i>cha-pèʔ</i> ‘vagina’; Akha <i>à-bèq</i> ; Lisu <i>tu⁵⁵biʔ²¹</i> , <i>tə³⁵biʔ²¹</i> ; Bisu <i>tə-pé</i> ; Nesu <i>pi</i> ⁵⁵ ; Sani <i>pæ</i> ⁵⁵ . A couple of forms have <i>-a-</i> vocalism rather than a front vowel: WB <i>cauk-pat</i> ; Geman <i>paʔ</i> .
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A PLB verbal root meaning ‘break off a piece / notch / chip’ is reconstructed as **C-ket^L* (*TSR* #25) on the testimony of Lahu *qhèʔ* and Akha *xèq* ‘break by bending, as firewood or a leg’. Other Loloish cognates include Lalo *kjhàq*, Yi Nanhua *khɛ*⁵⁵, and several more to be found in *ZMYYC* #761 and *TBL* #1582. Lai Chin *khek* ‘peel’ is possibly related, although the final velar is a problem.

8.5: Stops after medial *-e-

An etymon meaning ‘be; be able’ was formerly reconstructed with PLB *-ek (*TSR* #68; see section (1) above), but it seems better to revise its rhyme to *-et in view of the Lahu reflex -ɛʔ:

‘be / be able’ ^a	PLB *C-pret ^L WB phrac; Lahu phèʔ; Lisu hpyeʔ ²¹ ‘be able, succeed in doing’; Akha pyøq ‘be’; <i>cf.</i> also Hani Mojiang pɛ ³³ (<i>TBL</i> #1531). The Akha and Lisu reflexes are different than in the other sets reconstructed with *-ek, so this reconstruction is still somewhat unsure.
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a. So far this etymon has not been discovered outside of Lolo-Burmese.

(3) *-ep

This rhyme is also extremely rare, with only two examples in *STC*. A third example, ‘scale (of fish, reptile)’ is to be found neither in *STC* nor *TSR*. The reflexes in Jingpho, Lushai, and Garo are as expected (-ep), and that is also the presumable WT reflex, though no examples are available. This rhyme has merged with *-ip in Lolo-Burmese, with one possible exception (‘scale’).

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>Lushai</i>	<i>Bodo-Garo</i>	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>
*-ep	[-ep]	-ep	-ep	-ep	*-ip	-ip	-ɪʔ

‘bug / ant / cochineal / lac insect’^a PTB *s-krep (*STC* #347) > Jg. krép, šəkrép ‘bedbug’; see also Rawang rap ‘lac insect’, rip ‘flying ant’

PLB *ʔ-grip^L (*TSR* #46) > WB khrip ~ khyip, Lahu a-kí ‘pitch pine [*Pinus merkusii*]; pine torch’, a-kí-cî ‘pine sap, pine resin; cochineal’ (*DL*:68-9).

‘slice / pare off’ *s-lep (*STC* #351)

Jg. lèp, gəlèp; Lushai and Lai Chin hlep; Garo rep; Dimasa lep; Limbu lɛ:p-u ‘slice, saw’. *Cf.* also Lepcha lip ‘slice, cut in slices’.^b

‘scale (of fish or reptile)’^c

*sep

Jg. ṇá-sèp; Dulong ṇa⁵⁵sep³¹; Lahu ṇâ-šêʔ ‘fish scale’, vî-šêʔ ‘scale of snake’^d; Sani ṇa⁵⁵sa⁵⁵; Tsangla (Motuo Menba) sep⁵⁵; Ergong ṇɛ¹³tɕ^hep⁵³. *Cf.* also Limbu se:k (with velar final) and Lepcha a-ší (open syllable).

- a. WB *khrip* ~ *khyip* ‘lac, gum lac; cochineal’ (the variant with medial -y- is non-etymological, since the Lahu front velar points unmistakably to a *velar-plus-r cluster; see above 3.6.4). The sibilant prefix is reflected both in the Jg. prefixed variant and the *preglottalization of the PLB form (leading to the Lahu high-rising tone). Cochineal is a red dye made of the dried and pulverized bodies of a certain species of tiny sap-sucking insects inhabiting the bark of a kind of pine tree. For the interesting semantics of this root, see Benedict 1939:226-7. A possible Chinese cognate is 蠟 ‘wax / candle’ OC *lâp (AD#550; not in GSR).
- b. WB *hlî* ‘cut with a sliding motion, cut a slice’ (< PLB *s-ley or *s-li) is possibly related. Lahu *lí-lə* ‘a saw’ is a loan from Shan *lik-ləə* ‘filing iron’, as is Lisu *lek⁴⁴lura⁴¹* (see DL:1364).
- c. This root seems quite distinct from *s-lip ‘scale’, above 8.3(3).
- d. The vowel of the Lahu form is different than in ‘lac insect’, for which a variety of *ad hoc* explanations might be offered: *e.g.* perhaps the merger with *-ip was complete in ‘lac insect’, while ‘scale’ retained a distinct *-ep rhyme at the PLB stage; or maybe the rhyme of ‘scale’ was confused in LB with *-et at an early date, leading to Lahu -eʔ.

Two Chinese comparanda for TB etyma with this rhyme are offered in Gong 2000 (#53, #54):

	PTB		OC	GSR	OC Gloss
‘butterfly’ ^a	*lep	蝶	d’iap	633h	‘butterfly’
‘flat / flat object’ ^b	*lep	牒	d’iap	633g	‘tablet’

a. Cf. WT *phye-ma-leb* ‘butterfly’.

b. Cf. WT *leb-mo* ‘flat’, *bhag-leb* ‘flat loaf of bread’, *śiŋ-leb* ‘board, plank’. The Chinese morpheme now means ‘official document, certificate’, the probable semantic association being ‘a flat object written upon’.

8.6 Stops after medial *-o-

(1) *-ok

This rare rhyme is reconstructed in a few roots where WT has -og and WB has -auk. The one available Lushai reflex is -ok (‘outer covering’), and this would also presumably be the development in Garo. Jingpho has -oʔ [ɔʔ] in one example (‘ravine / gulf’), but -uʔ in another (‘below / under’). The Lahu reflex is -ɔʔ in three examples (‘below’; ‘fear’; ‘jump’), but -ú in another (‘outer covering’). There is evidence for *-ok ⇌ *-wak interchange (‘fear’; ‘outer covering’).

PTB	WT	Jingpho	WB	Lahu	Lushai	Garo
*-ok	-og	-oʔ / -uʔ	-auk	-ɔʔ / -ú	-ok	-ok (?)

	PTB	STC#	TSR#	WT	Jg.	WB	Lahu
‘below / under’ ^a	*ʔok	110	173	hɔg	ləwúʔ	ʔauk	hɔ
‘fear’ ^b	*g/krok	473	104	dkrog-pa	---	krauk	kɔʔ

8.6: Stops after medial *-o-

	<i>PTB</i>	<i>STC#</i>	<i>TSR#</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>
‘ravine / gulf’	*grok	122	---	grog-po	khəróʔ	khyauk	---
‘outer covering / bark / rind / skin’ ^c	*kok	342	71	skog-pa ɤ kog-pa	---	ʔəkhauk	ð-qú ^d
‘white’ ^e	*bok	p. 181	---	---	---	---	---

- a. *Cf.* also Akha làq-òq ~ làq-óq, Bisu ʔaŋ-ʔək, Lisu (Fraser) wu⁵-paw¹, Lalo ùq-fí ‘further down’, as well as the following forms from *ZMYC* #58: Jinuo pɔ⁴² o³³; Hani Dazhai a³¹u³³; Achang u⁷³¹pa³¹; Zaiwa a²¹o⁵¹ma⁵⁵; Langsu ɔ³¹. The Jg. prefixized element lə- and the first syllable of the Akha forms (làq) mean ‘hand’ (see above 4.4.2); *cf.* English locative expressions like *right-hand side*.
- b. *Cf.* also WT skrog-pa ‘rouse, scare up’, and the following forms from *ZMYC* #730: (Qiangic) Qiang Taoping qu³³, Pumi Jinghua skie¹³, Shixing zo³⁵; (Lolo-Burmese) Yi Xide tɕe³³, Yi Dafang dzɔ³³, Yi Nanjian go³³, Yi Nanhua and Mojiang dzu³³, Lisu dzo⁴⁴, Hani Caiyuan khe³³, Hani Dazhai gu³³, Hani Shuikui ky³³, Achang zo²⁵⁵, Zaiwa kju²¹, Langsu kjauk³¹; also Nusu gɤ⁵³, Tujia kwe⁵³. Several other forms point to an allofam with -a- vocalism: WT skrag-pa ‘be afraid’, Muya qɔ⁵⁵, Ergong stɕa¹, Naxi Yongning (Moso) dua¹³ (< *d-krak), Sulong kɔ³³jua⁵³. There are also several Chinese comparanda with -a- vocalism (see below). The vocalic variation in this root led to *STC*’s revision of the reconstruction to *grāk ɤ *krāk. For a similar gambit, see ‘outer covering’ (below) where *STC* revised the original reconstruction *kok to *r-kwāk.
- c. *Cf.* also Bahing kok-te ‘skin’, siŋ-kok-te ‘bark of tree’; Lushai khok ‘peel off, pull off (skin, bark)’; Jinuo a⁴⁴kho⁴²; Zaiwa ʃɔ²¹ku²⁵⁵. Several forms suggest an allofam *kwak (Chang Naga kwok ‘to strip (as fibres)’, Chourasya kwak-te ~ kok-te, Thulungya kwok-si ~ kok-si), rGyalrong werkhwak, as does one of the Chinese comparanda (see below).
- d. The Lahu reflex -ú here is unexplained, since *-wak also regularly > Lahu -ɔʔ, the same reflex as in ‘below’ and ‘fear’ < *-ok; see above 8.2(1a). The Lahu high-rising tone is due to the preglottalized initial, PLB *ʔ-guk^L, which doubtless reflects the s- prefix found in WT skog, and/or the r- prefix in rGyalrong we-rkhwak.
- e. This root has so far only been attested in scattered TB languages: (Chin) Sho and Chinbok bok, Yawdwin pok; (Barish) Garo gi-bok ~ gi-pok, Dimasa gu-phu; and perhaps Lepcha ā-bók ‘white and black; piebald (of animals)’. There is, however, a good-looking Chinese comparandum (below).

Two other roots that are good candidates for this rhyme category, even though they lack any reflexes in the five “criterial” languages, are the following:

‘jump’ PTB *p(r)ok

This etymon is set up as PLB *ʔpök in *TSR* #55, on the basis of forms like Lahu pɔʔ and Bisu pɤk. *Cf.* also Lalo páq. That this is a general TB root is shown by many cognates in Abor-Miri-Dafla: J. Sun (1993) reconstructs “Proto-Tani” *pok (> *e.g.* Padam-Mising (=Abor-Miri) pok, Bokar Adi pok, Tagin pok-nam, Apatani poʔ, Bengni puk). Several Himalayish languages have apparent cognates with medial -r- (*e.g.* Tamang Sahu prok-ton, Thulung prok-, Bahing prɔt-, Sunwar pre:k-cā, Khaling pro-ne), which go with Kamarupan forms like Angami Naga pru-shi and Geman Deng phlu⁵³.^a

‘time / occasion’	*s-pok (TSR #40)
	Lahu p̚ɬ; ^b Achang p̚k ⁵⁵ ; Yi Weishan pho ³³ ; Akha p̚q; Ahi pu ⁴⁴ -nu ⁴⁴ . Possibly related are several extra-LB forms in <i>TBL</i> #917: Queyu phuə ⁵⁵ , Shixing pu ⁵⁵ , Darang Deng bu ³⁵ . A solid Nungish cognate is Rawang poq (LaPolla 1987, LaPolla and Poa 2001:107).

- a. Cf. also Zeme (Naga) *pak-chu*; Lalo (Loloish) *paq*, Hani (Khatu dial.) *phó*, Ergong (Qiangic) *ncu-pho*. An allofam with final nasal, *p^hjoŋ (> e.g. Thakali *phyong-la*) is set up for Proto-Tamang (see Mazaudon 1980, 1985). Gurung *p̚ā:q* looks like a loan from Nepali *phaṭ-kanu*.

- b. Note the homophony with ‘jump’.

Note that WB, which lacks medial mid-vowels, has merged *-uk and *-ok to -auk,⁵⁸ while Lahu has merged these rhymes to -ɔʔ (with the unexplained exception of ‘outer covering’).⁵⁹

Terrific Chinese comparanda are available for a few of the above etyma:

		<i>OC</i>	<i>GSR</i>	<i>Chinese gloss</i>
‘fear’	恪	k’lâk	766g	‘respect, reverent’
	雛	(g)lâk	AD #411 ^a	‘kind of bird; to fear’ ^b
	懼	χi ^h wak	778e	‘scared’
	覷	χi ^h ăk	789a	‘fear’ ^c (= 覷 787d-f)
‘outer covering’	殼	k’ũk	1226a	‘hollow shell; husk’
	鞞	k’wâk	774i	‘leather’
	革	kək	931a-b	‘hide, skin; flay, peel’
‘ravine’	壑	χâk	767a ^d	‘moat, canal, ditch; valley’
‘white’	白	b’ăk	781a-c	‘id.’

- a. Not in *GSR* #766.

- b. Only the meaning ‘kind of bird’ is given in *GSR* #766q.

58. This is exactly parallel to the WB developments of the corresponding nasal-final rhymes: PTB *-uŋ and *-oŋ > WB -auŋ; see above 7.2(5) and 7.3(3). Before labials and dentals, WB merges *-o- rather with *-a-: PTB *-ap and *-op > WB -ap, PTB *-am and *-om > WB *-am; PTB *-at and *-ot > WB -at, PTB *-an and *-on > WB -an. See above 7.3, §1 and §2; below, §2 and §3.

59. My attempt in *STC*, n. 232 (p.76) to distinguish between PTB *-ok and *-uk on the basis of the Lahu reflexes -ɔʔ vs. -uʔ must be rejected, since several of the Lahu/WT/WB comparisons offered there (‘scoop’; ‘mane’; ‘dry’; ‘drink’) are highly dubious. In the absence of extra-LB cognates, I conventionally reconstructed a number of PLB roots with *-ok in the etymologies of *DL* (JAM 1988b). These are herein revised to PLB *-uk, largely because of pattern symmetry, since the rhyme *-ek is so sparsely attested.

8.6: Stops after medial *-o-

- c. This character seems to be of the “combined meaning” (會意 *huìyì*) type, since the two components are TIGER + SEE.
d. *AD* #77 glosses this character as ‘ravine; gully; pool’.

(2) *-ot

Only three etyma are reconstructed with this rhyme in *STC*; in one of these (‘dig’ / ‘scoop up’) the -t appears suffixal, and in another (‘womb / vessel’) there is variation between *-ot and *-ut. The reflexes in the criterial languages are as expected (except that no examples are available for Lushai, Garo, or Lahu). WB has merged *-ot with *-at (see note 58).

	<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>
	*-ot	-od	-ot	-at

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>
‘deer (sambar) / antelope’ ^a	*tsot	#344	#10	gtsod ~ btsod	---	chat
‘dig out / scoop up’ ^b	*r-k/go-t	#420	---	rkod-pa ~ rko-ba	gót	---

- a. Cf. also Akha tséq, Lisu (Fraser) htsye², Sani tshw⁴⁴, Bisu tshē, Luquan ts'i²², along with many probable cognates in *ZMYC* #129: (Qiangic) Pumi Jinghua tsə⁵⁵, rGyalrong rtshəs, Ergong ztse, Muya and Queyu tsə⁵³, Ersu tsɿ³³ bu⁵⁵, Namuyi ntshe³⁵, Shixing tsho³⁵; (Lolo-Burmese) Yi Xide tshe³³, Yi Nanjian tsɿ³³, Yi Nanhua tshw³³ ma²¹, Lisu tshe³⁵, Naxi Lijiang tshuo⁵⁵, Naxi Yongning tsha¹³, Hani Caiyuan kho³¹ tshe³³, Hani Dazhai xe³¹ tse³³, Hani Shuikui xa³¹ tshj³³, Jinuo tshe³³, Zaiwa tshat⁵⁵, Langsu tshə⁷⁵⁵; (Nungish) Anong tshe⁵³, Nusu tsha⁵⁵. See also *GSTC* #23. One or more of the Loloish forms cited may alternatively be derived from PLB *d-kəy¹ ‘barking deer’ (*Cervulus muntjac*) > WB khye ~ gyi, Lahu chɿ (see *STC* #54 and *DL*:554).
- b. Besides gót ‘be scooped out’, Jg. has several prefixed forms of this root, including the causative šəgót ‘scoop up’, two forms with the ‘hand-action’ prefix lə- (ləgót ‘to scoop’ ≠ ləkhót ‘scoop up (rare)’ and (Hkauri dialect) dəgót ‘scoop, ladle’. A possible reflex of the open-syllable allofam is Lahu qô (< PLB *gəw²) ‘hoe, dig up weeds’ (*DL*:252-3). There is a good Chinese comparandum to the stopped allofam (below).

The following root shows variation between *-ot (WT) and *-ut (WB):

	‘womb / mouth / vessel’ *s-not ≠ *s-nut ^a
*s-nod	WT snod ‘vessel’, bu-snod ‘uterus’ (bu ‘child’) ^b
*s-nut	WB hnud ‘mouth; womb’

a. *STC* p. 145.

b. *Cf.* also Pwo and Sgaw Karen no? ‘mouth’.

One etymon in this group has a plausible Chinese comparandum:

	<i>PTB</i>		<i>OC</i>		<i>GSR</i>	<i>Chinese gloss</i>
‘dig out’	*r-k/go-t	掘	g’i̯wət ≠ g’i̯wăt	496s		‘dig out (earth)’
		堀	k’wət	496p		‘dig in the ground; underground’

(3) *-op

This is perhaps the rarest of the PTB stopped rhymes, with only three examples uncovered so far, two of which display variation with other rhymes. On the basis of this fragmentary evidence (*e.g.* there are no WT reflexes available), the following correspondences can be established:

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Dimasa</i>
*-op	[-ob]	-op	-ap	-ɔʔ	-op	
*-o:p				-o:p		-op

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>Jg.</i>		<i>WB</i>	<i>Lushai</i>
‘hole / crack’	*pop	#345	---	---		pap	pop
‘calf (of leg)’ ^a	*bop	#30	#92	bòp, ləbòp	---	bop	‘hind leg’

- a. This root is only one allofam of a complex word-family with variants in *-wap and *-wam, including *s-bwam ‘plump / swollen’, set up as a separate root in *STC* #172 (> *e.g.* WT sbom-pa ‘thick, stout’, Jg. bòm ‘swell; fat’, Lushai puam ‘*id.*’, WB phwam ‘fat, plump’). This allofamy was recognized in *TSR* #92, which reconstructs PLB *m-pwap ≠ *C-pwam ‘swell up / be swollen / stout / calf of leg’. See above 7.1(1), 8.2(3).

8.6: Stops after medial *-o-

An even more complex word-family ‘suck / kiss / breast / milk’ includes an allofam with the long version of this rhyme, as attested by the Lushai cognate:

‘suck / kiss’ *dzo:p (*STC* #69) Dimasa **džop**, Lushai fo:p,^a Thado **tsop**, Siyin **tuop**

a. Lai Chin has the irregular reflex *doop*, perhaps pointing to stop ≠ fricate variation in this root.

Several allofams are reconstructed with PLB *-up in *TSR* #73, including *C-**tsyup** (> Lahu **chòʔ** ‘suck’) and *ʔ-**dzyup** (> Lahu **cú** ‘milk’, Atsi **suʔ-cʔup**, Maru **cʔap** ‘suck’). As discussed under the rhymes *-ut and *-up (8.4, and §§3-4 above), a large number of other variants must also be recognized, including:

*dzyip	WT ɣdʒibs ‘suck’
*dzyuk	Jg. tšúʔ ‘breast, milk’; Mpi tɕhuʔ ¹ ‘suck’
*dzyut	WB cut ‘suck, imbibe, absorb’
*dz(y)əw	WB cui’ ‘suck’; Akha ɕ ‘breast, milk’
*dzyow	WT ɣdʒo-ba ‘to milk’ ≠ ʒo ‘milk’

9.1 *The reflexes of final *liquids in various TB languages*

Although final *-r and *-l must definitely be set up for PST/PTB, they have proven to be highly unstable in the history of the language family. Most modern languages lack them entirely. Others have merged them in favor of one or the other, or have retained one and dropped the other. Still others have developed -n from one or both. A number of languages (notably WB) show conditioned reflexes depending on the preceding vowel, or display unexplained multiple reflexes in the same environment.¹

The special phonetic properties of syllable-final liquids are responsible for several interesting phenomena:

- (a) Long vowels seem to be especially frequent before liquid finals in reconstructible roots. (See the individual rhymes below, and section 9.4.)
- (b) Many etyma with final liquids show variation in the quality of the preceding vowel.^a
- (c) There is an unusually large number of roots with final liquids that reconstruct with laryngeal (including zero and semivowel) initials.^b
- (d) Many modern languages have rhotic (r-colored) vowels, but these do not usually derive from *final liquids, but seem most often to be have been conditioned by certain initial consonants, especially retroflexes (ultimately < medial *-r-).^c

1. See *STC*:14-17, 172-3.

9.1.1: Languages which retain both *-r and *-l

- a. This should not be too surprising, since in general vowels are particularly variable before liquids. *Cf.* the celebrated isoglosses among American English dialects, in some of which the following groups of words rhyme completely, while in others they do not: *marry, Mary, merry; aural, oral; furry, hurry; lord, lard.*
- b. They number at least 30. See above 3.5 and JAM 1997a (PSLTB):47-8. There is no obvious phonetic explanation for this phenomenon, which one is tempted to call *rhoto-glottophilia*.
- c. These languages are scattered over virtually all subgroups of TB, including Baic (Bijiang, Dali); Qiangic (Lüsu, Qiang Mawo, Qiang Yadu, Namuyi, Xixia); Himalayic (Tsangla); Kamarupan (Sulong); Nungish (Trung Dulonghe); Loloish (Jinuo, Luquan, Nasu, Naxi, Nusu). For inventories of these rhotic finals in the individual languages, see Namkung, ed., 1996.

9.1.1 Languages which retain both *-r and *-l

The testimony of these conservative languages is especially valuable. They include:

HIMALAYISH:	<i>Written Tibetan, Kanauri, Lepcha</i>
NUNGISH:	<i>Nung</i>
CHIN:	<i>Lushai, Lai</i>
BARISH:	<i>Dimasa</i>
N. NAGA:	<i>Moshang</i>
MIRISH:	<i>Mising/Miri</i>
QIANGIC:	<i>rGyalrong Zhuokeji (lCog-rtse)</i>

9.1.2 Where the two *liquids have merged into a liquid

- GARO has merged *-r and *-l to -l:

	<i>PTB</i>	<i>STC#</i>	<i>Garó</i>
‘bloom’	*barr	1	bi-bal
‘twenty’	*m-kul	397	khol ≠ khal

9.1.3 Where one *liquid is retained but the other is dropped

- In **MIKIR**, *-r is retained as -r, but *-l is generally dropped, usually leading to -i :

	<i>PTB</i>	<i>STC#</i>	<i>Mikir</i>
‘sour’	*s-kyur	42	thor
‘hair’	*mul ≠ *mil	2	mi
‘bloom / flower’	*barr	1	par
‘tend grazers’	*wul	p. 83	vi

Mikir varies between -l and -i in one important root:

‘twenty’	*m-kul	399	iŋ-kol ~ iŋ-koi
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- **TANGKHUL NAGA** also drops final *-l or reflects it as -y:

	<i>PTB</i>	<i>STC#</i>	<i>Tangkhul</i>	<i>Lushai</i>
‘snake’	*s-bru:l	447	phəru	rúul
‘belly / guts’	*ri:l	---	khəri	ríil
‘filth / excrement’	*ba:l	---	páy	bàal

Final *-r is retained in Tangkhul after originally long vowels and after short *-a-, but becomes -y after short back vowels:²

	<i>PTB</i>	<i>STC#</i>	<i>Tangkhul</i>	<i>Lushai</i>
‘shine / white’	*hwa:r	--- a	hor	va:r
‘fowl’	*ha:r	---	ər; hor-hai	ǎar
‘peel / husk’	*ko:r	---	kor	kóor
‘sister (man’s)’	*dzar	68	əzǎr-vǎ	---
‘new’	*sar	pp. 147, 172, 189	thər	thár
‘fly’	*pur	398	puy	---
‘horse’	*kor	---	si-kuy	sà-kǒr
‘make noise / hum’	*ʔur	---	huy	---

a. Cf. *STC* #221 (where the reconstruction is hwa-t) and JAM 1997a:44-5,48.

2. See JAM 1972b:280.

9.1.4: Where one or both of the *liquids became nasal

9.1.4 Where one or both of the *liquids became nasal

- In **JINGPHO**, both *-r and *-l > -n, thus merging with -n < *-n:

	<i>PTB</i>	<i>STC</i>	<i>Jingpho</i>
PTB *-r > Jg. -n			
‘star’	*s-kar	#49	šəgān
‘flower’	*ba:r	#1	pān
PTB *-l > Jg. -n			
‘hair’	*mul	#2	mūn
‘tired’	*bal	#29	bàn
PTB *-n > Jg. -n			
‘convalesce’	*bran	#133	brān
‘bore / pierce’	*lwan	p. 49	gəlùn

9.1.5 Languages with obstruentization/fricativization of final *-r

- **SANGKONG** has merged PTB *-ar and *-al to -an (e.g. SK san⁵⁵ ‘louse’ < PTB *s(y)ar, SK san³¹ ‘scatter, pour’ < PTB *sywar; SK han⁵⁵ ‘dhole, wild dog’ < PTB kywal), but these words remain distinct from reflexes of PTB *-an, which has become SK -e (e.g. SK phe³¹ ‘stir, mix’ < PTB *pan).
- In **TIDDIM CHIN** (as well as in **SIYIN**, and probably other Northern Chin languages), *-r > -k, merging with the reflex of *-k:³

	<i>PTB</i>	<i>STC</i>	<i>Lushai</i>	<i>Tiddim</i> ^a	<i>Siyin</i>
‘flat’	*pe:r	#340	pèer	péek	p’iak
‘flower’	*ba:r	#1	páar	pāak	pak
‘fowl / chicken / quail’	*ha:r	---	ǎar	āak	ak
‘new’	*sar	pp. 147 <i>etc.</i>	thár	thāk	---
‘nose’ ^b	*s-na:r	#101	hnàar	nàak	---
‘sell’	*ywar	pp. 15, 51, 89	zuár	zuāk	yuak

a. In this transcription the tonemarks in Henderson 1965 have been replaced by macron (level), grave (falling), and acute (rising).

b. Also cognate is Mikir iŋ-nar ‘elephant’ < *m-nar, lit. ‘the snouted one’ (PKB 1940 and STC n. 57).

3. See Solnit 1979.

A similar development from *r- to g- occurred in Tiddim in initial position (see above 3.4.2):

	<i>PTB</i>	<i>STC#</i>	<i>Lushai</i>	<i>Tiddim</i>
‘bamboo’	*g-p ^w a ≈ *r-p ^w a	44	rua	guā
‘bone’	*rus	6	ruʔ	guʔ
‘rain’	*rwa	443	rya	gua

This suggests that the /r/ phoneme in this branch of TB had a fricative, “uvular” articulation similar to that of Parisian French, something like [ɣ], which was suitable for further occlusivization to a stop.⁴

On the other hand, final *-l is preserved as such in Tiddim:

	<i>PTB</i>	<i>STC</i>	<i>Lushai</i>	<i>Tiddim</i>
‘belly / stomach; intestine / guts’	*ri:l	---	riil	gil
‘enemy / quarrel / war / strife; sword’	*g-ra:l	pp. 50, 71, <i>etc.</i>	raal	gaal
‘snake’	*s-b-ru:l	#447	ruul	guul

- **SULONG** is an obscure language of northern Arunachal Pradesh,⁵ that has so far not been classified into any larger TB nucleus. Several examples show that final liquids have been occlusivized into Sulong -ṭ, -t, -k:

	<i>PTB</i>	<i>STC</i>	<i>Sulong</i>
‘arrow’	*tal	pp. 168, 169, <i>etc.</i>	me ³³ taḱ ³³
‘flower’	*bar	#1	mə ³³ buat ⁵³
‘hail’	*wal	---	aŋ ³³ viṭ ⁵³
‘new / fresh’	*g-sar	pp. 147, <i>etc.</i>	a ³³ faṭ ³³
‘star’	*s-kar	#49	ha ³³ yaṭ ⁵³

4. As Solnit observes (1979:116), there is a widespread tendency toward occlusivization in Chin languages, with developments like *s- > th-, *v- > z-, and *w- to v- in both Tiddim and Lushai.

5. Most of our information on Sulong comes from *ZMYYC*, where it appears as the last (#52) language of each synonym set, labelled as a variety of “Luoba”.

9.1.6: Languages which show variable treatment of the final *liquids

9.1.6 Languages which show variable treatment of the final *liquids

In Chinese, both final PST *liquids usually became OC -n; occasionally, however, either final *liquid is retained as OC -r (in the reconstruction of GSR).⁶

- **MEITHEI** has merged both final liquids to -l, but “the lateral -l varies freely with -n syllable finally: thus, [lón] or [lól] ‘language’” (Chelliah 1997:20).

	<i>PTB</i>	<i>Meithei</i>
‘sell’	*ywar	yol ~ yon
‘sister (man’s)’	*dzar	i-tsal ~ i-tsan
‘snake’	*s-b-ru:l	lil ~ lin
‘twenty’	*m-kul	kul ~ kun

- **WRITTEN TIBETAN** really belongs in category (1) above, since both final *-r and *-l are well preserved (see many examples below). Final *-r is the more consistently maintained, since there are several cases where etyma with PTB final *-l either show WT variation between -l and -n (‘worm’; ‘fight / sword’), or have replaced *-l by -n entirely (‘all / twenty’; ‘eyebrow’; ‘mountain goat’):⁷

	<i>PTB</i>	<i>STC</i>	<i>WT</i>	<i>Other</i>
‘worm’	*zril	pp.15-16 ...	sril ≈ srin-bu	Thado til
‘fight / sword’	*ra:l	pp.15, 21...	ḥgran-pa ‘fight’; ral-gri ‘sword’	Lushai ra:l; Tiddim ga:l
‘twenty / all’	*m-kul	#397	kun ‘all’	Garo khol ~ khal
‘mountain goat’	*kye:l	#339	skyin	Lushai ke:l
‘eyebrow’ ^a	*s-mul ≈ *s-mil	#2	smin-ma	Lushai hmul; Garo kimil

a. This last case might be due to assimilation to the suffix -ma.

- The reflexes of the final *liquids in **WRITTEN BURMESE** are complicated, depending partly on the preceding vowel, but showing unexplained variation between open syllables and final -n in etyma with such rhymes as *-al, *-ar, and *-ul. Other liquid rhymes (e.g. *-il) have more than one open syllable reflex in WB.⁸

6. See *STC*:172-3, and the Chinese comparanda, below 9.2.4, 9.3.4.

7. See *STC* n. 53 (p. 15).

9.2 Root-final *-r

A nearly full set of rhymes with final *-r is reconstructible after all five PTB vowels, both long and short, though some are much better exemplified than others:

---, -i:r	-ur, -u:r
-er, -e:r	-or, -o:r
-ar, -a:r	

9.2.1 *-ar

PTB	*-ar	*-a:r ^a
<i>WT</i>	-ar	-ar
<i>KANAURI</i>	-ar	---
<i>LEPCHA</i>	-or / -ar	---
<i>RGYALRONG</i>	-ar	---
<i>JINGPHO</i>	-an	-an
<i>WB</i>	-an / -ai	-an / -a
<i>LUSHAI</i>	-ar	-aar
<i>TIDDIM</i>	-ak	-aak
<i>TANGKHUL NAGA</i>	-ər	-or
<i>MEITHEI</i>	-al / -an	(-en)
<i>MIKIR</i>	-ar	-ar
<i>GARO</i>	-al	-al
<i>DIMASA</i>	-ar	-ar

- a. There are no examples available to illustrate the reflexes of long *-a:r in Kanauri, Lepcha, or rGyalrong, although presumably they would be the same as for short *-ar. There is one possible example of -en as the Meithei reflex of *-a:r (see ‘bird / chicken’, below).

The usual WB reflex of both long *-ar and short *-a:r is -an,⁹ although in a couple of cases (‘sell / buy’, ‘lead / bronze’) *-ar > WB -ai, while in one instance (‘dance’) *-a:r > WB -a (see below). The Loloish languages seem to have merged *-a(:)r completely with

8. See the discussion of the individual rhymes below, and *STC* n. 54 (p. 15).

9. See above 7.1(2) under the rhyme *-an for more discussion.

9.2.1: *-ar

*-an. The usual Lepcha reflex of *-ar is -or, though in one example (“man’s sister”) the *-ar is retained as such.

(1) Short *-ar

‘affix / sew / plait / braid’	*byar ≈ *pyar WT ḥbyar-ba ~ ḥbyor-ba ~ sbyor-ba (< *-bwar) ‘stick / adhere to, join / connect’; Bahing phyer ‘sew’; Lushai phiar ‘knit / plait, be entangled’.	STC #178
‘beard / moustache’	*yar Lahuli (Tibetan) yar-sam ‘moustaches’ (Jäschke, p.572) ≈ WT ya-ma ‘the temples’; Tsangla ja-wu ‘beard’; Yakha ya-muṅ ‘moustache’, wi:-ya-muṅ ‘whiskers of animal’; Kaike wā-yē ‘beard’; Bunan əl-tshəm; Lepcha kāyat ‘beard’ (with unexplained -t).	JAM 1997a (PSLTB):47
‘fresh / radiant’	*s-lar WB lân ‘be fresh, invigorated (plants, face); radiant, buoyant’; Lai hlar ‘fresh’	KVB
‘frost’	*s-ŋar rGyalrong (Zhuokeji) sŋar, (Suomo, ZMYYC) sŋe ¹ ; Ergong sŋa ¹ ; Bengni ŋur-kam; PLB *s-ŋan > Zaiwa ŋan ⁵¹ phju ⁵¹ , Achang ŋan ⁵⁵ , Langsu ŋəŋ (with assimilation of final to initial), WB hnəŋ-khəi (with metathesis of the two nasals), Lahu a-ŋə.	JAM 2000 “*p-/w-”:147
‘lead / bronze’	*kar WT ḥkhar-ba ~ mkhar-ba ‘bronze, bell-metal’; WB khəi ‘lead’; Tiddim (Henderson 1965) hək ‘lead’.	STC: 15
‘leave / abandon’	*gar Nung gar; Garo gal; Dimasa gar	STC #15
‘louse’	*s(y)ar or śar ^a rGyalrong sar ≈ sor; Ergong wəau; Nusu ʂa ¹ 55; Geman sāl ⁵³ ; PLB *san ^{1/2} (> WB sân (< Tone *2); Lahu ʂe (< Tone *1); ^b Achang ʂan ³¹ ; Zaiwa jin ²¹ ; Maru ʂin ³⁵ ; Yi Nanjian ʂi ⁵⁵ ; Naxi Lijiang ʂu ³³ ; Jinuo ʂɛ ³³ phro ³³ ; Lisu xu ⁴⁴); Proto-Karen *sən (> Sgaw ʈú; Pwo ʈən; Pa-o sý ~ sí ~ sá).	STC:15, 53, etc.; ZMYYC #162

‘new / fresh’ ^c	*g-sar	STC pp. 147,172,189
	WT <i>gsar-ba</i> ; Queyu (<i>TBL</i> #1050) <i>xsar</i> ⁵⁵ <i>pe</i> ⁵⁵ ; Rawang <i>aŋ-sar</i> ; Trung <i>ak-sal</i> ; Lushai <i>thar</i> ; Thado <i>ǎtha</i> ; Tiddim <i>thak</i> ; Proto-Karen (Jones 1961) * <i>sành</i> (> <i>e.g.</i> <i>a</i> ³¹ <i>tθ</i> ⁵⁵ [<i>TBL</i> #1050], Pa-o <i>təsà</i>); Sulong <i>a</i> ³³ <i>fa</i> ³³ .	
‘phlegm’	*har	JAM 1997a (PSLTB):36
	Chepang <i>hār?</i> ; Lepcha <i>hor</i> ; Monpa Motuo <i>har-khak-taŋ</i> .	
‘rise / east’	*syar or <i>śar</i>	STC: 28
	WT <i>śar</i> ‘east’, <i>śar-ba</i> ~ <i>tśhar-ba</i> ‘rise, appear, become visible (<i>e.g.</i> of sun)’; Kanauri <i>sar</i> ‘lift, bear, carry’, <i>sar-sí</i> ‘rise (refl.)’; Nung <i>nam sarr</i> ‘sunrise, <i>nam sarr kha</i> ‘east’ (<i>nam</i> ‘sun’).	
‘run / ride / go by vehicle’	*gyar ≈ *hyar	JAM 1997a (PSLTB):41
	Geman Deng <i>gial</i> ³⁵ ‘run’; Tamang <i>yar^h</i> ‘ <i>id.</i> ’; Tsangla (Tilang) <i>yar</i> ‘ <i>id.</i> ’; Apatani <i>har</i> ‘run’, <i>har-gu-ko</i> ‘ride’. ^d	
‘sister (man’s)’	*dzar	STC #68
	Lepcha <i>far-nu</i> ; Jg. <i>džān</i> ; Tangkhul <i>əzār -vǎ</i> ; Meithei <i>i-tśal</i> ~ <i>i-tśan</i> ; Kadu <i>san</i> ‘younger sister’.	
‘star’	*s-kar	STC #49
	WT <i>skar-ma</i> ; Kanauri <i>kar</i> ; Lepcha <i>sāhor</i> ; Miri <i>təkar</i> ; Jg. <i>šəgān</i> ; Khoirao <i>səgan</i> ; Khami <i>ka-si</i> ~ <i>a-si</i> ; Lushai <i>ar-si</i> (note loss of initial velar in some Kuki-Chin languages); Sulong (<i>ZMYC</i> #4) <i>ha</i> ³³ <i>yat</i> ⁵³ .	
‘sunshine’	*tsyar or *tśar ^e	STC #187
	Bahing <i>tśyar</i> ‘shine’; Tiddim Chin <i>ni-sa</i> ‘sunshine’; the following forms all mean ‘sun’: Jingpho <i>džān</i> ; Tangsa Moshang <i>roŋ-śarr</i> ; Tangsa Yogli <i>rang-shal</i> ; Wancho <i>rang-han</i> ; Nocte <i>san</i> ; Garo <i>sal</i> ; Dimasa <i>saing</i> ; Bodo <i>san</i> ; Deuri <i>sá</i> . Also undoubtedly cognate is Tangkhul <i>kəcər</i> ‘white’.	
‘trade / buy / sell’ ^f	*par	STC p.35
	WT <i>phar</i> ‘interest (on money); exchange; agio’; Lepcha (a) <i>far</i> ‘price’ ≈ <i>par</i> ‘buy’; Kanauri <i>be-par</i> ‘trade’; rGyalrong <i>mphar</i> ‘be for sale’; Garo <i>phal</i> ‘sell’.	

a. It is often difficult to distinguish reflexes of this root from those of *s-r(y)ik ‘louse’, above 8.3(1).

b. The tonal instability of this root in LB is another example of the tonogenetic power of *s- (above 3.3, below 11.4.5).

9.2.1: *-ar

- c. Qiang Mawo *khsə* (ZMYC #866), like rGyalrong *kəfək*, seems to descend rather from *g-sik, above 8.3(1). There are two good Chinese comparanda (9.2.4).
- d. A number of “look-alike” forms meaning ‘ride’ in TB languages of Nepal are loans from Nepali *ghoḍa* ‘horse’ (cf. Sanskrit *ghoṭa*), e.g. Khaling *ghar*, Chepang *ghor a-haŋ lanh-sa*, Gurung *gohḍaq krebaq*. See below 9.2.3.
- e. The restricted distribution of this root, found chiefly in Jingpho, Bodo-Garo, and Northern Naga, led Burling (1983) to consider it a key isogloss for subgrouping the TB family, dubbing this group “the Sal languages” in honor of the Garo reflex. This root may well be related to the complex word-family *hwal \bowtie *hwar, etc. ‘fire / shine’ (see below 9.6).
- f. \bowtie ? *ywar ‘sell / buy’, §3 below.

(2) Long *-ar

‘fowl / chicken / quail’ ^{a/b}	*har	JAM 1997a (PSLTB):47
	Lushai <i>ʔaar</i> ; Tangkhul <i>har-nao</i> , <i>hor-hai</i> ; Tiddim <i>a:k</i> ; Ao Mongsen <i>an</i> , Ao Chungli <i>aen -techanu</i> ; Yacham-Tengsa <i>an</i> , <i>an-shu</i> . Perhaps also Meithei <i>yen-nao</i> , Lotha <i>hon-oro</i> , and Sangtam <i>hün-aza</i> .	
‘bloom / flower’	*bar	STC #1; ZMYC #228
	WT <i>ḥbar-ba</i> ‘to blossom’; Lushai <i>par</i> ‘flower; to bloom’; Mikir <i>par</i> ‘petal’, <i>aŋ-phar</i> ‘flower’; Garo <i>bibal</i> ; Dimasa <i>bar-guru</i> ‘to blossom’; Dhimal <i>bar</i> ‘to flower’; Jg. <i>pān</i> ‘flower’; WB <i>pān</i> ; Pwo Karen <i>phau</i> , Sgaw Karen <i>phə</i> ; Shixing <i>bu³³bu³³</i> ; Zaiwa <i>pan²¹</i> ; Langsu <i>pəŋ³⁵</i> ; Naxi <i>ba³¹</i> ; Jinuo <i>a³³pə³³</i> ; Geman Deng <i>phan⁵³</i> ; Darang Deng <i>ta³¹pu⁵⁵</i> ; Idu <i>a⁵⁵pe⁵⁵</i> ; Bokar Adi <i>puŋ-pin</i> ; Sulong <i>mə³³buat⁵³</i> .	
‘dance / leap / stride / sing’	*gar ^c	STC #11
	WT <i>gar</i> ‘a dance’; Jg. <i>gān</i> , <i>kəgān</i> , <i>khān</i> ‘leap, bound, canter’; Lushai <i>kar</i> ‘to step, pace, stride’; Garo <i>kaʔl</i> ‘play’.	
‘hang / impale’	*tar	STC #326
	Jg. <i>thàn</i> ‘hang, as a sword at the side’, <i>məthán</i> ‘impale, as the head of a robber’; Lushai <i>tar</i> ‘stick on a pole, make or set up a landmark, hang up’; Mikir <i>tar</i> ‘impale’.	
‘other / outside’	*yar	
	Kanauri <i>yar</i> ‘other’; Tangkhul <i>āyār</i> ‘exterior, border, brink’; <i>āyārshon</i> ‘outside’, <i>āyār khanā</i> ‘outskirts’.	
‘solid / frozen’ ^d	*kar \bowtie *gar	cf. STC n.54
	WT <i>gar-ba</i> ‘strong’, <i>gar-bu</i> ‘solid’, <i>gar-mo</i> ‘thick (as soup)’; Lushai <i>khaar</i> ‘congeal, crust over, be frozen’.	

‘spread / extend / sail’	<i>*yarr^e</i>	<i>STC</i> pp. 138, 146, <i>etc.</i>
	Lushai <i>zar</i> ‘hang up (cloth), spread (sail)’; Tiddim <i>za:k</i> ‘spread a blanket’; Jg. <i>yàn</i> ‘be unrolled, spread out, extended’, ʔəyān ‘extended, continuous’; Proto-Karen <i>*ya</i> ‘sail; expand to a great extent (as branches); spread sail’.	

- a. This root seems to be an ancient loan from Mon-Khmer into PST. *Cf. e.g.* E. Khmuʔ *h̥iʔiər*, W. Khmuʔ *h̥əʔiər* ~ ʔiər (Suwilai 2002). Several other TB animal names are also convincingly imputed to MK sources, especially **k-la* ‘tiger’ and **g-laŋ* ‘eagle / bird of prey’. See above, 3.6.4.1(1), and 7.1(3).
- b. So far this root has only been found in Kamarupan, although there is an excellent Chinese comparandum (below 9.2.4). Moso æ¹¹, despite its phonological similarity to the above forms, is probably < **k-rak*, above 8.2(1).
- c. An open-syllable variant **s-ga* is reflected by rGyalrong *ta-rga* (*ZMYC* #684); Jg. *kà* ‘leap’; WB *ka*’; Lahu *qā* ‘traditional dance’, *qā- qhêʔ* ‘to dance’; Lisu *gwa*³³ ‘to dance’. The Chinese comparandum 歌 means ‘sing’ (below 9.2.4).
- d. This root probably ≠ **kal* ‘congeal’ (below 9.3.1).
- e. WT *g-yor-mo* ‘sail’ shows vowel gradation. There are several good Chinese comparanda (9.2.4).

(3) **-war*

The labialized version of this rhyme has distinctive reflexes in many languages, including WT, WB, Jg., Mikir, Meithei, Garo, and Dimasa:

<i>PTB</i>	<i>WT.</i>	<i>Lp.</i>	<i>Jg.</i>	<i>WB</i>	<i>Lushai</i>	<i>Meithei</i>	<i>Mikir</i>	<i>Garo</i>	<i>Dimasa</i>
<i>*-war</i>	-or	-or	-on	-wan	-uar	-ol ~ -on	-or	-ol	-or

Examples include the following:

‘cut / chop’	<i>*tsywar</i> or <i>*t̥s̥war</i>	<i>STC</i> #240; <i>ZMYC</i> #602
	Bahing <i>t̥s̥war</i> ‘cut with a knife by one stroke’; Mikir <i>t̥s̥or</i> ‘cut, chop’; Amdo (Zeku) <i>pt̥cal</i> , (Bla-brang) <i>t̥cal</i> ; Qiang (Taoping) <i>tshua</i> ⁵⁵ , (Mawo) <i>tua</i> ; Pumi Jinghua <i>thə</i> ¹³ <i>st̥fa</i> ⁵⁵ ; Zhaba (TBL) 扎坝 <i>a</i> ³³ <i>st̥sa</i> ⁵⁵ ; Daofu (Ergong) <i>xt̥sa-xt̥sə</i> ; Shixing <i>tsh̥</i> ⁵⁵ ; Nung <i>pha</i> ³¹ <i>dzan</i> ⁵⁵ .	
‘hawk’	<i>*hwar</i>	JAM 1997a (PSLTB):39
	WT <i>hor-pa</i> ; Sema Naga <i>al-hok-hu</i> ; Naxi Lijiang <i>uə</i> ³¹ .	
‘sell / buy’	<i>*ywar</i>	<i>STC</i> pp. 51, 89 ^a ; <i>ZMYC</i> #616, #617

9.2.1: *-ar

Lushai *zuar*; Tangkhul *khəyor*; Mikir *džor*; Meithei *yol ~ yon* (all ‘sell’); Rawang *wan* ‘buy’ (rather than the expected **war*); PLB **way*¹ (> e.g. WB *wai* ‘buy’; Lahu *vɪ^b* ‘*id.*’). Many other Lolo-Burmese cognates are to be found in ZMYC #617 (‘sell’), and the following from #616 (‘buy’): Yi Dafang *va*²¹; Yi Mojiang *vɛ*²¹; Lisu *vu*³³; Naxi Lijiang *xa*³¹; Naxi Yongning *xua*³¹; Hani Caiyuan *ɣ*⁵⁵; Hani Dazhai *ɣ*⁵⁵; Jinuo *jo*³¹; Achang *oi*⁵⁵; Zaiwa *vui*⁵¹; Langsu *vai*³¹. Cf. also Namuyi *hē*; Shixing *jɛ*⁵⁵; Nusu *ue*³⁵; Darang Deng (Taraon) *bɹai*³⁵; Bokar Adi *rə*; Sulong *vɛ*³³.

‘throw / throw away / divorce (a spouse)’	<i>*b^war</i> ≈ <i>*h^war</i>	<i>STC</i> pp.172-4,191; PSLTB:40; JAM 2000a (“p/w”):#18
	<i>*b^war</i>	WT <i>ḥbor-ba</i> ^c
	<i>*h^war</i>	Bahing <i>war</i> , <i>wa-li</i> ; Chepang <i>war</i> ; Mikir <i>var</i> ; Lushai <i>vor?</i> ; Newari <i>wān-chat</i> ; Dumi <i>wər-ni</i> ; Tangkhul <i>hor-hai</i> ; Ao Chungli <i>a-on</i> ; Ao Mongsen <i>en-chuk</i> ; Bokar <i>or-ang</i> ; Tagin <i>or-nam</i> ; Apatani <i>jar</i> ; Milang <i>yur-cen-ma</i>

- Benedict believed this root was “definitely a loan from Austro-Tai”, citing Proto-Indonesian **d'ual* ‘sell’ (*STC*:51).
- The Lahu vowel is irregular with respect to WB.
- There are also good Chinese comparanda with initial labial stop (9.2.4 below).

Of particular interest is the complex allofamy exhibited by the following etymon:

‘flow / pour / scatter’	<i>*sywar</i> or <i>*śwar</i> ^a	<i>STC</i> #241; JAM 2000b (“Sino-Bodic”)
	WT <i>ḥtshor-ba</i> ‘escape; flow out, run over’; Lepcha <i>tšhor</i> ‘the pouring of water’; Garo <i>sol-aŋ</i> ‘flow’, <i>sol-gipa</i> ‘current’; Dimasa <i>di-sor</i> ‘flow’; Jg. <i>šōn</i> ‘flow (as tears, sweat, water poured on ground)’.	

- Limbu has a complex set of related forms reflecting alternations among final -r, -n, -t, -s, and open syllable: *-ser ~ -set-* ‘scatter, be split, go in separate directions’ ≈ *send- ~ sen-* ‘split up, disperse, break up’ ≈ *-ses- ~ -se-* ‘scatter, spill, sow’. This root may well be allofamically related to **tsyur* (= **tśur*) ‘wring / squeeze’ (below). There is also evidently an open-syllable allofam **g/b-sywa* or **g/b-śwa* > WT *gśo-ba ~ bśo-ba* ‘pour out’; Jg. *ḍžó ~ tšó* ‘pour out, cast, enamel, dye’.

Both Lolo-Burmese and Chinese (see below 9.2.4) reflect a pair of allofams with homorganic final nasal and stop, *swan \approx *swat:

*swan \approx *swat	
PLB *swan ^{1/2}	WB swan ‘pour out, spill, shed’ \approx swân ‘pour upon, cast by pouring liquid into a mold’; Lahu šē ‘pour; sow broadcast’; Akha sè ‘sow seeds’, sjè ‘pour’; Mpi se ¹ ‘sow broadcast, scatter seed’
PLB *swat ^H	Lahu šê? ‘pour, spill’; Akha sjéq; Sani xv ⁴⁴ ; Bisu šèt

(4) *-war \approx *-or

‘hole / pit / valley / cave’	*kwar \approx *kor	STC #349, #350 ^a
	*kwar	Lushai khuar \sim khur ‘hole, cavity’; Nung duŋ-khər ‘hole’
	*kor	WT kor ‘round, circular’ (West Tib. ‘hollow in the ground, pit’); Lushai kor ‘small valley, ravine’; Garo a-khol ‘cave’; Dimasa ha-khor ‘id.’; Bodo ha-khor ‘hole, valley’ (a \sim ha ‘earth’).

a. STC (p. 74) insists that these roots are “to be kept distinct”, but they are obviously co-allofams.

9.2.2 *-ir and *-ur

No sets are reconstructed with invariant short *-ir, and there are only a few examples of invariant short *-ur, though three other sets show *-ur \approx *-ir variation. Both these rhymes occur with long vowels in a few cases, though the one example of long *-i:r varies with *-ya:l. Both long and short *-u(:)r show variation with the labialized rhyme *-wa(:)r.

(1) *-ir

‘iron’	*syir \approx *syal ^a	STC #372
	*syir	Dhimal śir; Dimasa śer; Lushai thir; Garo sil
	*syal	(Kiranti) Bahing syal; Sangpang syel \sim sel; Dumi sel; also Darang (Taraon) sai ⁵³ .

a. This etymon illustrates both *-r \approx *-l and *-i- \approx *-ya- variation. STC (n. 244) speculates that it might be an old loanword from Austro-Tai, though this root is not mentioned in Benedict 1975a. Two other roots for ‘iron’ have been presented above: *syam 7.1(1); *l-tšak 8.2(1).

9.2.2: *-ir and *-ur

(2) *-ur

<i>PTB</i>	<i>WT</i>	<i>Kan.</i>	<i>Lp.</i>	<i>rGyal.</i>	<i>Lu.</i>	<i>Lai</i>	<i>Lak.</i>	<i>TN</i>	<i>Mk</i>
*-ur	-ur							-uy	
*-u:r	-ur	-ur	-ór	-ur	-uur	-uur	-ao	-or	-or

‘hand’ *kur ɤ *ʔur a/b

Dulong ʔr⁵⁵, ul⁴⁴, Dumi khur; perhaps also Bokar Lhoba aɕur, Sunwar kuy, Bahing gyje.

‘make noise /
hum / chat /
babble’ *ʔur (JAM 1970 “GD” #69)

WT ɰur ‘noise, hum; talk, babbling, chitchat’, ɰur gtoŋ-ba ‘to talk, chat’; Lahu nəʔ-ú ú ve ~ nəʔ-ú te ve ‘chat, converse’^c; Yi Wuding ɣ¹¹ ‘chat’; Sgaw Karen (Yue) tə³¹u⁵⁵, (Hinthada) tθa⁵⁵u⁵⁵ ‘hum’ (Dai Qingxia), Karen u⁵⁵gă³¹li³³ ‘chat’ (TBL); Tangkhul huy ‘hum’; Thado ð ~ ó ‘noise’.

‘tremble / shake /
pulse’ *tur (KVB)

WB tun; Lushai and Lai tur.

- This reconstruction is revised from *ul (JAM 1997a (PSLTB):47).
- This etymon remains to be firmly established. Michailovsky (1991) derives the Sunwar and Bahing forms rather < *kut, above 8.4(3). Cf. perhaps *s-hwal ‘joint / wrist’, below 9.3.1.
- The Lahu high-rising tone suggests a secondary occlusivization of the final *-r to a stop (see also ‘spittle’ (below 9.3.2). There is a good Chinese comparandum (9.2.4).

(3) **-ur*

'gills / beak / mouth / face' ^a	<p>*mu:r (STC #366)</p> <p>WT <i>mur</i> 'gills', <i>mur-gon</i> 'temples', <i>mur-ḥgram</i> 'jaw', <i>mur-ba</i> 'gnaw, masticate'; Limbu <i>mura</i> 'mouth, beak'; Nung <i>mər</i> 'face, mouthful'; Lushai <i>hmuur</i> 'point, tip, prow'; Lai Chin <i>hmúur</i> 'beak'; Lakher (Maraa) <i>hmao</i> '<i>id.</i>'; Thado <i>mu</i> '<i>id.</i>'; Khoibu <i>mur</i> 'mouth'; Tangkhul <i>khəmor</i> 'mouth'.</p>
'rainy season'	<p>*zu:r</p> <p>Lai Chin <i>fùur</i>; Lakher (Maraa) <i>sao</i> ^b</p>
'wring / squeeze'	<p>*tsyur or *tsúr ^c (STC #188)</p> <p>Bahing <i>tśyur</i> 'wring'; Bunan <i>tśhur</i> 'squeeze out'; Kanauri <i>tsūr</i> 'to milk'; Hakha <i>śur</i>, Lai Chin (KVB) <i>sùur</i> 'wring; milk a cow'; Lakher (Maraa) <i>sao</i> '<i>id.</i>'</p>

a. This root may also be reflected in Loloish forms like Lahu *mâ* 'lip, mouth, jaws; tip, point, peak' (DL:1044, 1046), Lisu *mur³ɬur³⁵* 'mouth', Jinuo *mø³³mø³³* '*id.*'. The Chinese comparandum (9.2.4 below) means 'gate / door'.

b. This comparison is due to KVB (2001). So far no extra-Chin cognates have been found.

c. A long vowel is tentatively reconstructed for this root because of the Lai form. This root may well be allofamically related to **sywar* or **śwar* 'flow / pour / scatter' (above) and/or to 'wring / crumple' **(t)syip* \approx **(t)syup* (TSR #66), above 8.4(4).

(4) **-ur* \approx **-ir*

'fly (v.)' ^a	*pur \approx *pir (STC #398)	
	*pur	<p>WT <i>ḥphur-ba</i>; Thakali (Tukche) <i>pyuhr-wa</i>; Chamling <i>bur^h-</i>; Magar <i>bhur-ke</i>; Kham <i>buhr-nyā</i>; Newar (Kathmandu) <i>bwɔ(l)-</i>, (Dolakha) <i>bwɔr-</i>, <i>bwa-la</i>; Guiqiong <i>phur</i>; Tangkhul Naga <i>puy</i>; ^b Nung <i>əphər</i> 'shake (as a cloth)'</p>
	*pir	<p>Central Tib. <i>ḥphir-ba</i>; Thakali (Tukche) <i>pihr-la</i>; ^c Gurung <i>pihr-i-bā</i>; Cuona Mama <i>phir⁵⁵</i>; Tsangla Motuo <i>phen</i>; Garo <i>bil</i>; Dimasa <i>bir</i></p>
'wash' ^d	*hur \approx *hir	<p>JAM 1997a (PSLTB):38</p> <p>Newar <i>hir-</i>, <i>hi(l)-</i> 'wash clothes'; Thulung <i>hur-</i> 'wash hair/head'; Kulung <i>hur-su</i>; Dimasa <i>hu</i>; Zeme <i>hui</i>; Apatani <i>har-su</i>; Miri <i>hur-kak-na</i>; Bengni/Bokar <i>hur</i></p>

9.2.2: *-ir and *-ur

- a. This root is allofamic with ‘butterfly’ (below §5). There are three plausible Chinese comparanda (9.2.4). *Cf.* also *byer (below 9.2.3), with a distinct Chinese comparandum (9.2.4). Another distinct root for ‘fly’ with labial initial is *byam, above 7.1(1).
- b. *-uy seems to be the regular Tangkhul reflex of *-ur; see above ‘make noise/hum’ *ʔur > TN huy.
- c. Note the intralingual vocalic alternation in both WT and the Tukche dialect of Thakali.
- d. This set is perhaps related to *hus ‘wet / moisture’, below 10(10.3).

(5) *-ur ≈ *-war

‘butterfly’ ^a	*pur ≈ *pwar
	*pur Bokar Lhoba paŋ-pur; Apatani po-pur; Damu dzo-por ; Pattani phər-phi-tig; Nung khon-phər ‘moth’
	*pwar Bahing ʔbar; Geman Deng phal ⁵⁵ tɕon ³⁵ ; Milang bo-par ; Sulong bua ³³ pit ³³

- a. No set for ‘butterfly’ appears in *STC*, although Nung khon-phər ‘moth’ is cited along with əphər ‘shake (as a cloth)’ under *pur ~ *pir (#398) ‘fly’ (§4 above). The resemblance to Hebrew *parpar* ‘butterfly’ is surely fortuitous.

(6) *-ur ≈ *-war

‘sour’	*s-kyur ≈ *sur ≈ *s-kywar ≈ *swar	<i>STC</i> #42; <i>ZMYC</i> #887
	*s-kyur	WT skyur-ba; rGyalrong kətsyur; Ergong wtɕhuwtɕhu ¹ ; Lepcha tsór ‘sour’, sə-tsór-lă ‘sourish’; ^a Tsangla tsur-pa; Bahing dzyur; Nusu tɕə ³⁵ ; Pumi Taoba tɕu ⁵⁵ mə ⁵³ ; Pumi Jinghua tɕu ⁵⁵ ; Muya tɕu ⁵⁵ ; Namuyi tɕu ³⁵ ; Shixing tɕi ⁵⁵ ; Xixia tshjwɿ ¹ (Gong Hwang- cherng1999); the nasalized vowels in Queyu tɕō ⁵⁵ tɕō ⁵⁵ and Guiqiong tsō ⁵⁵ mu ⁵⁵ indicate a development from *-r > -n in Qiangic. ^b
	*sur	Lushai suur; Kanauri sur-k; Rodong sur-e; Mikir thor; Trung sul ‘spoiled’; perhaps also Geman sāl ⁵⁵

- a. The Lepcha forms, as well as the excellent Chinese comparandum (9.2.4 below), point to the variant with *-waɪ-.
- b. Loloish forms like Lahu ci ~ ce, Yi Xide tɕi³³, Lisu tɕu⁴⁴, Hani Caiyuan tshɿ⁵⁵, Jinuo a³³tɕhu³³ are cognate to each other, but not necessarily to the forms above. WB khyañ (presumably < *kyin or *kyiŋ) seems unrelated to the Loloish forms.

(7) *-ur ✕ *-ir ✕ *-war

‘sweat’^a *hur ✕ *hwar ✕✕ *hir ✕ *hyar JAM 1997a (PSLTB):48

Gallong a-ur, a-wur, a-yur; Tagin ha-*cer*, ha-*yer*, Miri har; Bokar ho-*war* len; Milang *hi:l* -ma; Darang ha:-*u*; Lhoba fion-*jar* (with assimilation to the final of the first syllable); Mikir ing-*i*; Anong in⁵⁵

- a. This root is part of the immense word-family clustering around the meanings ‘fire/heat/shine’ presented below 9.6.

9.2.3 *-er and *-or

Examples of etyma with these rhymes are few, but solid:

(1) *-er

‘fly’ *byer STC pp. 83, 166; ZMYYC #782

Bahing byer; Kulung per-a; Sunwar *ber*-ca; Khaling *bher*-ne; Rumdali *per^{fi}* - ma; Limbu *per*-; Nusu (Central) *bia*³³; Dulong (Nuijiang) *zer*³³, (Dulonghe) *ber*⁵⁵; Trung *biel*; Mikir ing-*jar*; Padam-Mising (Abor-Miri) *ber*; Bokar Lhoba *bjar*; Damu *piar*-ra; Hill Miri *jar*-nam; Bengni *jur*; Apatani *jar*^a

‘give / *s-ter
causative’ WT *ster*-ba ‘give, bestow; let, permit’; Lai Chin -*tèr* ‘causative suffix’ (e.g. *tlaak-tèr* ‘cause to fall’, *kanj-tèr* ‘cause to burn’, *ril?-tèr* ‘cause to roll’) ^b

‘hail / *ser STC:172; ZMYYC #15; Weidert 1987
sleet’

WT *ser*-ba ‘hail’ (Tsangla *ser*⁵⁵ *ba*¹³, Bumthang *ser*-pa, Tamang *ser*-pa, and Tashigang *sir-ser*-ba are probably loans < Tibetan); Thakali Thukche *ti-sjor*; Dzongkha *si-u*; Jg. *sin*³³; Garo *sil-te*; Trung *sǎn*⁵³ *wa*⁵⁵ *za*⁷⁵⁵; Chang Naga *sàn*; Khamngan *sun*²¹; Qiang Taoping *syē*³³ *tan*¹³ *tsɿ*; Pumi Jinghua *sdzē*⁵⁵; Pumi Taoba *zē*³⁵; Guiqiong *si*⁵⁵ *wi*⁵⁵; Bai Bijiang *sue*⁴⁴ *ua*⁴²; Bai Jianchuan *su*⁴⁴ *po*⁴² *tsi*³³; Darang (Taraon) a:*thei*; Idu a³¹ *the*⁵³. ^c

- a. There is a good Chinese comparandum (9.2.4 below).

- b. This suffix is productive in Lai, where it is added to Form II of verbal roots.

- c. Lotha *še¹ru¹* and Sangtam *šu²ru¹* apparently show dimidiation (disyllabification) of the original monosyllabic root. Chinese 霰 is a good comparandum (see 9.2.4).

9.2.3: *-er and *-or

(2) *-er

‘dry’ ^a	*he:r-s	JAM 1997a (PSLTB):36
	Kulung har-a; Limbu he:r-, he:s-	
‘flat / thin’	*pe:r	STC #340; ZMYC #825
	Dimasa gepher ‘flat’; Lushai pe:r ‘flat and thin’; Nusu bia ¹ ³⁵ bia ¹ ³¹	

a. This etymon (reconstructed in PSLTB with a short vowel) needs more support.

(3) *-or

‘distribute’ ^a	*hor	JAM 1997a (PSLTB):35
	Miri hor-mi-si; Gallong or-si-nam; Bengni hūr	
‘horse’	*kor	JAM 1972b (“TN and TB”):280
	Lushai sà-kōr, Tangkhul si-kuy, Tiddim sa ¹ kōl ³ ; Thado sāl ¹ kōl ³ ; Meithei sa-gol; Ao Chungli kor; Dulong mūr ³¹ gūr ⁵³ ; Proto-Tani (J. Sun 1993) *kūr (> Bokar Adi cəkūr, Bengni si-ki); PNN (French 1983) > Konyak koi, Maram takoi ^b	
‘snore’	*s-ŋor ^c	
	WT sŋur-ba ‘snore’, ŋur-ba ‘grunt (of pigs and yaks)’; Sherpa ŋor-pa; rGyalrong (N) ŋi-sŋar, (NW) kəsŋor; Sunwar ŋor; Gurung ŋruh; Pattani gor gor-si; Apatani i-mi iŋ-ŋur, Tangkhul ngər; Mikir ing-ngar; Lushai hnar; Noesu zi-ŋgo ⁵⁵ (zi ‘sleep’). Perhaps also Chepang hŋrok-na?, Thulung and Khaling khor.	

a. This root has so far only been found in Abor-Miri-Dafla (Tani). See J. Sun 1993.

b. The first element of most of these forms (e.g. Lushai sà-, Bokar cə-) is the animal prefix derived from PTB *sya (see above 4.2.1). Many other TB languages of India and Nepal have similar-looking forms that are borrowings from Indo-Aryan (cf. Sanskrit ghoṭa, Nepali ghoṭā), including Tsangla (Motuo Monpa) kur⁵⁵ta⁵⁵, Deuri guri, Milang gure, Hill Miri guri, Gallong gure, Chang kuri, Lotha korrü, Sangtam kuri, Sema kuru, Dimasa gorai, Bodo goray. It is indeed possible that even the TB forms with the *sa- element are ultimately to be traced back to the Indo-Aryan etymon. Ao Chungli kor (above) might well be apocopated from a disyllabic IA prototype.

c. This root looks allofamically related to *s-na ≈ *s-na:r ‘nose’ (cf. Lushai hnaar ‘nose’), below 9.5. There is a similar Indo-Aryan etymon (cf. Nepali ghur-nu), but this resemblance appears accidental, probably due to the imitative nature of words for snoring.

(4) **-or*

‘peel / husk’ **ko:r* JAM 1972b (“TN and TB”):280
Lushai *kóor*; Tangkhul *kor*

(5) **-or* \approx **-war*

‘valley / pit; hole / cave’^a **kor* \approx **kwar* STC #349 and #350^b
WT *kor* ‘round, circular’; West Tib. *kor* ‘hollow in the ground, pit’; Lushai *kor* ‘small valley, ravine’; Garo *a-khol*, Dimasa *ha-khor* ‘cave’; Bodo *ha-khor* ‘hole, valley’ (*a* ~ *ha* ‘earth’).
**kwar* Lushai *khwar* ~ *khur* ‘hole, cavity’; Nung *duŋ-khər* ‘hole’.

a. This set is repeated from 9.2.1(4), above.

b. STC (p. 74) maintains that these forms represent two distinct roots, but they seem clearly to be co-allofams.

9.2.4 *Chinese comparanda to TB etyma in *-r*

There are a surprisingly large number of plausible Chinese comparanda to TB etyma with final **liquids*, with some 60 Chinese characters involved. Both **-r* and **-l* generally merged to *-n* in OC, with occasional survivals of the liquid in the shape of OC *-r* (in the reconstructive system of GSR).¹⁰

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese gloss</i>
‘bind / fasten / tether’ ^a	<i>*s-dar</i>	纏	<i>d’jan</i>	204c	‘bind / wind’
‘braid / plait / interweave’ ^b	<i>*byar</i> \approx <i>*pyar</i>	辮	<i>b’yan</i>	<i>AD</i> 734 ^c	‘braid / plait’
		編	<i>pian</i> \approx <i>b’jan</i>	246e	‘plait, weave / arrange in series’
‘fowl / chicken / quail’ ^d	<i>*ʔar</i>	鵪 ^e	<i>ʔan</i>	146g	‘name of a bird’
		鸚	<i>ʔan</i>	146i	‘name of a bird’
‘dance / sing’	<i>*gar</i>	歌	<i>kâ</i>	1p-r	‘sing / song’

9.2.4: Chinese comparanda to TB etyma in *-r

‘fire / burn / shine / white’	*pwa(:)r *hwa:r	燐	b’wâr ⌘ pwâr	195r	‘white’ ^f
		燐	b’iŵăn	195i	‘burn / roast’
		焚	b’iŵən	474a	‘burn / destroy’
		火	χwâr	353a-c	‘burn / fire’
		輝	χiŵər ⌘ g’iŵən	458k	‘flame / bright(ness)’
		輝	χiŵər	458-L	‘bright’
‘flow / pour / scatter’	*sywar ⌘ *sywa-n/t	散	sân	156a-b	‘disperse’
		撒	sât	AD #767	‘scatter, disperse / spread / distribute / let loose’
‘fly ₁ ’ (v.)	*pur ⌘ pir	飛	piŵər	580a	‘fly (v.)’
		翮	piŵən	471f	‘fly / soar’
		奮	piŵən	473a	‘spread wings / fly up’
‘fly ₂ ’ (v.)	*byer	翮	p’ian	246k	‘fly about / flutter’
‘gills / beak / mouth / face’	*mu:r	門	mwən	441a-c	‘gate / door’
		吻	miŵən	503o	‘corner of lips / shut the lips’
‘hail / sleet’	*ser	霰	sian	156d	‘graupel (soft hail) / sleet’
‘louse’	*s(y)ar	蝨	sĭĕn	506a	‘louse’
‘new’	*sar	新	sĭĕn	382k-m	‘new’
		鮮	sĭan	209a-c	‘fresh / new / fine / clear’
‘noise / hum; chat / babble’	*ʔur	嘔	ʔu	122i	‘vomit / babble / as a child’
‘sour’	*su:r ⌘ *swa:r	酸	swân	468e	‘sour’

10. See *STC*, notes 459-462, pp. 172-3.

‘spread / extend / sail’	<i>*ya:r</i>	延	d̪ian	203a	‘extend / continue / delay / stretch’
		筵	d̪ian	203b	‘mat’
		演	d̪ian	450k-l	‘flow out / extend’
		引	d̪iẽn	371g	‘draw the bow / pull, draw / extend / prolong’

a. Cf. WT *star-ba* ‘tie fast, fasten to (as sheep to a rope in a bivouac)’, WB *ta* ‘cling to’. See Gong 2000:29.

b. Cf. *GSTC* #37 (n. 22) and *STC* n. 460 (p. 173).

c. Not in *GSR* #219.

d. This TB/Chinese comparison is due to A. Schüssler (p.c., May 2001). As he observes, the Division II vocalism in this word (thought by most Sinologists to derive from OC medial **-r-*) occurs occasionally in words whose TB cognates have final **-r*.

e. These characters are glossed as ‘quail’ in Guoyu. A third variant of this character, as in Mandarin 鸪鶒 *ānchún* ‘quail’, is not to be found in *GSR* #614.

f. *Guangyun* glosses the meaning of this character as “white-haired appearance of the elderly”.

Another promising Chinese comparandum to a possible PTB etymon in **-ar* is 單 ‘single, simple; a unit’ OC *tǎn* (*GSR* #147a-d) / PTB **tay* ≠ **tan* ?≠? **twar*. See above 7.1(2).

9.3 Root-final **-l*

A nearly complete set of lateral-final rhymes is attested for PTB:

-il	-i:l		-ul	-u:l
-el	-e:l		---	-o:l
		-al	-a:l	

9.3.1 **-al*

PTB	WT	Bahing	Lp.	Jg.	WB	Lahu	Lu.	Meithei	Garó
<i>*-al</i>	-al	-al	-ol	-an	-an / -a / -ai	-a	-al	-al ~ -an	-al
<i>*-a:l</i>	-al			-an	-an / -a		-aal		

As with the corresponding rhotic rhyme **-ar* (above 9.2.1), WB shows variable reflexes of **-al*, sometimes dropping the lateral without trace,¹¹ but in several cases

11. This simple dropping of the lateral is also the typical development in the Loloish languages.

9.3.1: *-al

developing the nasal rhyme -an (see 7.1 above); in at least one root ('congeal') the WB reflex is -ai.

	<i>PTB</i>	<i>WB</i>	<i>Lahu</i>
'back / loins'	*s-ga:l	khâ	---
'frog'	*s-bal	phâ	pā
'clear / bright / pleasant'	*g-sal	sa	ša
'snow / ice'	*wal	---	vâ
'chew (cud, betel)'	*wal ɤ *yal	ya	---
'tired'	*bal	pân	---
'circular'	*wal	wân	---
'quarrel'	*ra:l	ran	---
'congeal'	*kal	khâi	---

Vowel length is established in the usual way for this rhyme, on the testimony mainly of Kuki-Chin and Naga languages like Lushai, Tiddim, and Tangkhul, *e.g.*:

	<i>PTB</i>	<i>Lushai</i>	<i>Tiddim</i>	<i>Tangkhul</i>
'forehead'	*d-pral	tsàl	tal	(khəwəy)
'filth / excrement'	*ba:l	bàal	ba:l	páy

Examples of etyma with this rhyme include:

(1) *-al

'arrow / bow'	*tal	<i>STC</i> :169; <i>ZMYC</i> #428
		Mikir <i>thal</i> ~ <i>thai</i> ; Lushai <i>thal</i> 'arrow'; Tiddim <i>thal</i> 'bow'; Sulong <i>me</i> ³³ <i>tak</i> ³³ ; ^a perhaps also Deori Chutiya <i>thal</i> 'bough' (because of the way branches bend down like bows?; <i>cf.</i> Benedict 1940 #72) ^b
'chew (cud, betel)'	*y(w)al	<i>JAM</i> 1997a (PSLTB):47
		Thulung Rai <i>ol</i> 'chew cud (cow)'; Kaman (Miju) <i>jal</i> ⁵⁵ ; Tamang (Risiangku) <i>njal</i> , (Taglung) <i>kjan</i> -ba (apparently from a prefixed variant *k-yal); perhaps also Bantawa <i>yo-khott</i> . Also WB <i>ya</i> 'make a quid of betel', ʔəya 'betel-quid'; Karenic (Pwo, Palaychi, Sgaw) <i>ya</i> 'betel cud' (prob. loans < Burmese)

‘clear’	*sal	STC:15; DL:1153 °
	WT gsal-ba ‘clear, distinct, bright’; Jg. sàñ ‘clean, pure’; Nung san ‘ <i>id.</i> ’; <i>cf.</i> also WB sa ‘clear, pleasant’, Lahu ša ‘easy, pleasant, fun; easily obtainable’; Akha sá ‘easy’	
‘cold / dry season’ ^d	*pral	STC:42
	Lushai ṭhal; Siyin <i>phal</i> -bi	
‘congeal’ ^e	*kal	STC:15
	Lushai khal; Tiddim xal; WB khâi	
‘forehead’	*d-pral	JAM
	WT dpral-ba; Sherpa ṭal-ā; Chepang cel ^f ; Kanauri <i>tal</i> -gõñ ‘crown of head’; Bunan phe-tar; Jg. kəthāñ ~ ləthāñ; Dulong mal ⁴⁴ ta ⁴⁴ ; Lushai/Lai/Khualsim tsal; Anal pàcàl; Lamgang patsèl; Moyon bA-cár; Tiddim tal; Thanphum tan-pa; Milang cal-ma ‘forehead band’; PNN (French 1983 *tʰə:l) > Nocte than ‘forehead’, Tangsa Moshang thal ‘face’	
‘frog’	*s-bal	STC:15; ZMYYC #150
	WT sbal-pa; Cuona Menba be: ¹³ pa ⁵³ ; WB phâ, bhâ; Lahu pā-te-nê?; Yi Xide ɔ ⁴⁴ pa ³³ ; Yi Dafang pu ⁵⁵ tsa ²¹ ; Yi Mile (Axi) a ³³ po ⁵⁵ ; Lisu o ⁵⁵ pa ⁵⁵ ; Naxi Lijiang pa ³³ tɕə ³³ ; Hani Caiyuan phɔ ³¹ nē ³³ ; Hani Dazhai xa ³¹ pha ³¹ ; Hani Shuikui xɔ ³¹ phɔ ³¹ ; Jinuo phɔ ³³ kɛ ⁵⁵ ; Achang phɔ ³¹ ; Zaiwa pɔ ²¹ kjek ⁵⁵ ; Langsu pA ³⁵ ; Nusu pa ⁵⁵ . This root also has a full set of Qiangic reflexes: Qiang Mawo dzu pi; Qiang Taoping dzua ³¹ pu ⁵⁵ ma ³³ ; Pumi Taoba pa ⁵⁵ diɛ ³³ ; Pumi Jinghua spa ⁵⁵ ; rGyalrong kha fpa; Muya mbo ³⁵ mba ³³ ; Queyu pe ³³ pa ⁵³ ; Guiqiong bi ⁵⁵ pũ ⁵³ ; Namuyi pa ³³ mi ⁵⁵ ; Shixing pɔ ⁵⁵ mi ³³ ; Xixia (Gong 1999) pie ¹	
‘hail’	*ryal	STC: 54
	Lushai rial; Thado giel; Lakher pərei; Rangkhól ril; Ao Naga rer ~ rər; Meithei lel; Mikir herei	
‘kidney / small of back’	*m-kal ∞ *s-gal	STC #12
	WT mkhal-ma ‘kidney’, sgal-pa ‘small of the back’; Lushai kal ‘kidneys’; Tiddim Chin kal ‘kidney’, xal ‘groin’; Jg. kàñ ‘put / be on the back’; WB khâ ‘loins’; Meithei nam-gal ~ nam-gan; Maring nam-gal; Garo dʒaŋ-gal ‘back’	
‘lip’ ^f	*d(y)al	

9.3.1: *-al

	Lushai <i>dal</i> ; Xixia (Gong 1999) <i>dar</i> ; Khaling <i>kwām-to-tar</i> ; Dimasa <i>khu-jeṛ</i> ; Jingpho <i>ñ-tēn</i> ; Qiang Mawo <i>ɣdzaːʳ</i> ; Tangkhul <i>mor-chai</i> ; Maram <i>ka-tei</i> .	
‘right / good’	*ʔal	JAM 1997a (PSLTB):42 Gallong <i>al-na</i> ; Miri <i>al</i> ; Sema <i>al-lo</i> ; Tangsa <i>a-hal</i>
‘round / circular’ ^g	*wal	STC #91 Jg. <i>wàn</i> ; WB <i>wân</i> ; Lushai <i>val</i>
‘snore’ ^h	*hal	JAM 1997a (PSLTB):48 WT <i>hal-ba</i> ‘pant, wheeze, snort’; Spiti <i>al</i> ‘snore’
‘take / keep’	*hyal	JAM 1997a (PSLTB):42 Chepang <i>ʔalʔ-sa</i> ; Mikir <i>en</i> ; Maring <i>yan-hei</i> ; Ao (Mongsen) <i>han</i> , (Chungli) <i>ang</i> ; Konyak <i>ang</i> ; Yacham-Tengsa <i>an</i>
‘tired’	*bal	STC #29; ZMYC #899 Bahing <i>bal</i> ; Jg. <i>bàn</i> ‘be at rest’ ≠ <i>bá</i> ‘tired’; WB <i>pân</i> ‘tired, weary’ ⁱ
‘village’ ^j	*dyaɭ ≠ *tyal	STC: 52 Lepcha <i>tyol</i> ; Bahing <i>dyaɭ</i> ; Dumi <i>del</i> ; Nachereng <i>tyal</i> ; Kulung <i>tel</i>

- For several other examples of Sulong final dental or palatal stops corresponding to final liquids elsewhere, see above 9.1.5.
- There is also a Chinese comparandum (below 9.3.4).
- DL*:1153 suggests an alternative etymology for the Lolo-Burmese forms, *s-la, in order to accommodate Dulong *la*⁵⁵.
- So far this root has been found only in Chin languages.
- This root probably ≠ *ka:ɾ ~ *ga:ɾ ‘solid / frozen’, above 9.2.1(2).
- This root is apparently distinct from *m-ts(y)ul ‘lip/beak’, below 9.3.2(4).
- In this root the w- functions as the syllable-initial, not a glide. There is a large cognate Chinese word-family, represented by at least eight separate characters (see below 9.3.4).
- There is a good Chinese comparandum (below 9.3.4). The root *s-ŋor ‘snore’ (above 9.2.3) is unrelated.
- Cf.* also Qiang Mawo *rba*, Qiang Taoping *χba*²⁴¹. rGyalrong *kəspəp* perhaps represents a separate root.
- This root seems confined to Himalayish.

(2) *-a:l

‘far’	*dzya:l	STC #229 Moshang <i>ədʒal</i> ; Jg. <i>tsān</i> ; Garo <i>tšel</i> ; Dimasa <i>gadʒain</i> (with unexplained -ŋ); Lushai <i>fa:l</i> ‘apart, isolated, detached’; Darang Deng <i>diɑ</i> ⁵⁵
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‘fight / quarrel / war’ ^a	<i>*g-ra:l</i> \approx <i>*ran</i> <i>STC</i> :71, 173,191
	WT <i>ral-gri</i> ‘sword’ (“war-knife”), <i>ḥgran-pa</i> ‘fight’; Lushai <i>raal</i> ‘war against, warrior’; Tiddim <i>ga:l</i> ‘battle, war, enemy’; Angami <i>te-hrə</i> ‘war’; WB <i>ran</i> ‘quarrel’
‘filth / excrement’	<i>*ba:l</i> JAM
	Lushai <i>bàal</i> ‘be or get dirty’; Tiddim <i>ba:l</i> ‘covered with mud’; Tangkhul <i>páy</i> ‘excrement’; Chokri <i>the²bwɿ⁵</i> ; Angami <i>the²buo⁴</i> ; Khezha <i>’è-bö</i> ; Rongmei <i>bó</i> ; Sema <i>ba¹</i> ; Damu <i>ʔe:-pa:</i> ; Apatani <i>i-pa?</i> ; <i>cf.</i> also Hayu <i>ex-pi</i> .

a. There is a good Chinese comparandum (below 9.3.4).

(3) **-wal*

Several languages have distinctive reflexes of the labialized version of this rhyme, either by retaining the semivowel directly (*e.g.* WB *-wan*, Lushai *-ual*), or by developing a back vowel (*e.g.* WT *-ol*, Jingpho *-on*). In the two available examples, Lahu shows a dual development: in ‘snow / frost’ (where the labial element is actually functioning as the root-initial in Loloish), Lahu has *-a*, indicating simple loss of the lateral; in ‘jackal / dhole’ and ‘slave’, on the other hand, Lahu has *-e*, implying an intermediate Proto-Loloish prototype **-an* (see 7.1(2) above).

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>
<i>*-wal</i>	<i>-ol</i>	<i>-on</i>	<i>-wan</i>	<i>-e / -a</i>	<i>-ual</i>

Examples:

‘hang down / sag’	<i>*dzywal</i> ^a <i>STC</i> #242
	WT <i>ḥdʒol-ba</i> ‘hang down (as cow’s udder, hair on yak’s belly, tails); trail, train, retinue’, <i>ḥdʒol-ḥdʒol</i> ‘paunch’; Lushai <i>fual</i> ‘sag, hang low; be loose or long (as a coat)’
‘jackal / dhole’ ^b	<i>*kywal</i> JAM 1985a (<i>GSTC</i>):#17
	PLB <i>*wan¹</i> > Lahu <i>vè</i> ‘dhole’ (<i>Cuon javanicus</i>); Jinuo (Gai 1986:67) <i>ø⁴</i> ‘jackal’ 豺狗; Akha <i>xà-yé</i> ‘wolf’; PNN (French 1983) <i>*C-khyual</i> > Wancho <i>šan</i> ‘wolf’; Konyak and Phom <i>šo</i> ‘ <i>id.</i> ’; Chang <i>šo</i> ‘wolf’, <i>šo</i> ‘wild dog’; Jg. <i>čəkhyōn</i> ‘fox, wolf, wild dog’; Nishing (Tani) <i>yal</i> (Jacquesson 1998:102.)
‘joint / wrist’ ^c	<i>*s-hwal</i> JAM 1997a (PSLTB):47

9.3.1: *-al

	Newar <i>səhəl</i> ‘joint’; Tangkhul <i>ā-won</i> ‘ <i>id.</i> ’; also perhaps Nung/Trung <i>ul</i> ‘hand’, <i>ur-phut</i> ‘elbow’, <i>ur-pha</i> ‘palm’ and Rawang <i>ur</i> ‘hand’ ^d	
‘mix / stir’	*ŋwal	Kulung <i>ŋal-u</i> ; Thulung <i>ŋol</i> ; Zaiwa <i>ŋio</i> ⁵⁵ .
‘slave / servant’ ^e	*gywal	<i>DL</i> :476 WB <i>kywan</i> ; Lahu <i>ḍ-cè</i> ; Yi Weishan <i>tɕy</i> ⁵⁵ ; Yi Wuding <i>phu²dze</i> ³³ ; Hani Lüchun <i>dze⁵⁵-ma</i> ³³ ; Jinuo <i>tʃhə⁴²kə⁴⁴mə</i> ³³ ; Naxi <i>tʂə²⁴u</i> ²¹ . Several Qiangic forms (<i>TBL</i> #183) appear to be cognate: Qiang Mawo <i>kuə¹-m</i> ; Queyu <i>kzye⁵⁵pu</i> ⁵⁵ ; Shixing <i>guə</i> ⁵³
‘snow / frost’	*s-p^wal	<i>JAM</i> 2000a (“*p-/w-”):#8; <i>ZMYC</i> #9; <i>TBL</i> #12 WT <i>ba-mo</i> (with loss of *-l); Amdo Tibetan (Xiahe, Zeku) <i>wal</i> ; Chepang <i>wer</i> ; Geman Deng <i>wal</i> ³⁵ , <i>wa</i> ³³ <i>tăuŋ</i> ³⁵ ; Dulong <i>wă² dzuŋ</i> ⁵⁵ ~ <i>wan⁵⁵ dzuŋ</i> ⁵⁵ ‘frost’, <i>tu³¹wăⁿ</i> ⁵³ ‘snow’; Anong <i>thi³¹ven</i> ⁵³ > <i>PQiangic</i> *s-pa > Pumi (Jinghua) <i>spy</i> ⁵⁵ , (Dayang) <i>ḥpí</i> , (Taoba) <i>pu</i> ⁵⁵ ; Qiang (Taoping) <i>χpa³¹thu</i> ³³ ; (Longxi) <i>pià-thò</i> ; (Mianchi) <i>pèi-thòu</i> ; rGyalrong (Zhuokeji/Suomo) <i>tɛi-jpa</i> , (Kiomkyo) <i>tɛy-va</i> ; Muya <i>vur</i> ³⁵ , <i>vɛ</i> ⁵³ ; Zhaba (TBL) 扎坝 <i>ve</i> ³³ <i>ɣə⁵⁵</i> f > <i>PLB</i> *wa ² > Hani <i>ḥo</i> ³¹ (Gao Huanian 1955); Hani Shuikui <i>xə</i> ³¹ ; Hani Caiyuan <i>ɔ</i> ³¹ ; Lahu <i>vâ-məy</i> ‘snow’, <i>vâ-šī</i> ‘hailstone’; Yi Nanjian <i>mu⁵⁵fu⁵⁵</i> ‘frost’, <i>va</i> ²¹ ‘snow’; Yi Xide <i>vo</i> ³³ ; Yi Dafang <i>vu</i> ³³ ; Yi Nanhua, Mojiang, and Mile <i>yo</i> ²¹ ; Lisu <i>ua</i> ³¹ ; Nusu <i>va</i> ⁵⁵ ; also perhaps Gazhuo <i>xoa</i> ⁵⁵

- An equivalent reconstruction would be *dźwal (see above 3.3).
- There is an excellent Chinese comparandum (below 9.3.4).
- This root is so far only sparsely attested in TB, but there is a promising Chinese comparandum meaning ‘wrist’ (below 9.3.4).
- These Nungish forms are isolated in TB in the sense of ‘hand’. See *JAM* 1985b:432.
- There is also a good Chinese comparandum (below 9.3.4).
- Cf.* also Sulong *kə³³zūh*⁵³, Ersu *zɿ*⁵⁵, Zhaba (TBL) 扎坝 *vzi*¹³, Shixing *dzyə*³⁵, Lüsu *zy*³⁵ (all cognate to each other, and perhaps related to the other Qiangic forms).

Several roots showing variation between *-a(:)l and other rhymes are presented elsewhere:

‘fire / shine’	*hwal ∞ *hwar	9.6 below
‘wash / bathe’	*m-syal ∞ *m-s(y)il	9.3.2 below
‘iron’	*sya:l ∞ *syir	9.2.2 above

9.3.2 *-il and *-ul

Both of these rhymes are fairly well attested, although there is much variation between them (especially in the Bodo-Garo group), and their reflexes are rather unstable in several languages.

(1) *-il

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lahu</i>	<i>Lushai</i>	<i>Lai</i>	<i>Garó</i>
*-il	-il	-in	-e / -i / -we ^a	-ɿ / -i	-il / -i	-il	-il / -ul

a. The examples of WB -we corresponding to Lai Chin -il are due to KVB. WB -we is also one of the principal reflexes of PTB *-ul (see below).

As usual with liquid-final rhymes, WB and the Loloish languages have unexplained multiple reflexes of *-il, implying that it merged with several other rhymes, including *-əy (‘wash’; ‘spit / water’), *-i (‘fat’; ‘worm’), and *-ul (‘fall [leaves]’; ‘choose’; ‘move /

9.3.2: *-il and *-ul

roll’). There are no attested cases of *-il > WB -in, although a nasal reflex is possible for *-ul (below).

	<i>PTB</i>	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>
‘wash’	*m-syil	*ts(y)əy ²	chê	chî
‘spit / water’	*m-tśril	*rəy ¹	re	g̃i
‘fat’	*tsil	*ts(y)i ¹	chi	---
‘worm’	*zril	*di ¹	ti	tì
	<i>PTB</i>	<i>Lai Chin</i>	<i>WB</i>	
‘fall (as leaves)’	*grwil	tril [t̥il]	krwe	
‘choose / be fastidious’	*s-ril	hril	rwê	
‘move / roll’ ^a	*ril ∅ *gril	ril	rwe’ ∅ hrwe’	
‘turn / corner’	*gil	kil	kwe’	

a. See the full etymology below (this section).

Examples:

‘choose’	*s-ril	KVB
	WB rwê ‘select, choose; be fastidious’; Lai Chin hril	
‘fall / cause to fall (as leaves)’ ^a	*grwil ∅ *krwil	KVB
	*grwil (v.i.)	Lai Chin tril [t̥il]; WB krwe
	*krwil (v.t.)	Lai Chin thril [t̥hil]; WB khrwe
‘fat / oil (n.)’ ^b	*tsil	STC:16,168; ZMYYC #397
	WT tshil ‘fat’; WB chi ‘oil’, Ꞥachi ‘fat’; Yi Xide tshɿ ³³ ‘animal fat’; Yi Nanjian t̥che ⁵⁵ ; Yi Mojiang tshɛ ²¹ ; Hani Dazhai tshi ⁵⁵ ; Hani Shuikui ʒy ³³ tshi ⁵⁵ ; Jinuo a ³³ tshu ³³ . This root also occurs in Baic: Bai (Dali) tsi ⁵⁵ , (Bijiang) t̥ser ⁵⁵ .	
‘gums’	*r-ni-l ∅ *s-ni-l	STC #3; TBL #138
	<i>Languages directly reflecting the *-l with a modern liquid or -n include:</i>	

WT *rnyil*, *so-rnyil* ^c ~ *snyil*; Lepcha *fo-nyel* ~ *fo-nyāl*; Kanauri *stil* ~ *til*; Chepang *nəl*; Tamang (Risiangku) *ñil*, (Taglung) *nil*; Thebor *nil*; Spiti *ñil*; Bunan and Pattani *ñil*; Kaman (Miju) *sūi-nāl*; Gallong *i-nir*, *i-ñur*; Tagin *i-nyior*; Bokar *ji-ñur*; Nusu (Central) *ṇə*³³; Kom Rem *hə-mənih* (the final “-h” probably represents glottal stop); Limbu *nen-dī*; Jg. (Assam dial.) *wa-nin*; Nocte *pa³hən²*; Maru *ṇan*³¹

*Several languages show a shift of the final *-l to -ŋ :*

Tsangla *sha-ni-ring*; Garo *wa-rin*; Tangkhul *ha¹niŋ²*; Ugong *ɲiŋ*; Lashi *ŋjəŋ*³¹

But many reflexes are open syllables, whether or not the language generally preserves final liquids:

Lushai *ha-hni*; Lakher *ha-hni*; Tiddim *ha¹ni¹*; Paangkhua *háa-ní* (Löffler), *maniit* (Weidert); Mikir *so-ni*; Meithei *ya-ri*; Dimasa *ha-rni*; Bodo *hatay go-ri*; Moyon *mΛ^onə*; Mru *tă^oni¹*; Rengma *a¹ha¹ni³*; Angami *u³me²nie¹*; Ergong *rni⁵³*; rGyalrong (NW) *tərne*; Queyu *ski⁵⁵ṇi⁵⁵*; Qiang Mawo *ṣə-zdi*; Ersu *ṣi⁵⁵ṇi⁵⁵wa⁵⁵za⁵⁵*; Muya *xuə⁵⁵ne⁵³*, *xu⁵⁵ŋge³⁵*; Guiqiong *hui⁵³ne⁵³*; Lüsü *fu³³ṇi⁵³*; Chang *ṇi¹*; Khamngan *həu²¹ñai¹²*; Liphō *sv²¹di³³*; Yi Xide *ni³⁴-l³³*; Lisu *si³¹ne³³ni³¹*; ^d Bola *ṇe⁵⁵*; Baima *sha⁵³ṇi³⁵*; Bai *ji⁵⁵ko⁵⁵*; Bwe Karen *θə-ŋmə ə-ni*

‘move / roll’ *s-ril ≈ *s-gril ^c

WT *ril-ba* ‘round; wrap up’, *sgril-ba* ‘wind, wrap round; roll’; Cuona Menba *ri¹³*, *riu³⁵* ‘roll’; Tsangla (Motuo Menba) *rin¹³*; Thulung *ril-* ‘roll out (as dough)’; Chepang *hil-sā*; Geman Deng (Kaman/Miju) *xə³¹lol⁵⁵*; Kokborok *ri*; Tangkhul *ruy*; Bokar *ru:* ‘roll about on the ground’; WB *rwe* ‘move from one’s place’ ≈ *hrwe* ‘move sthg’; ^f Lai Chin *ril* ‘roll’. Several forms apparently descend from the complex consonant group *s-gr-: WT *sgril-ba* (above); rGyalrong (Maerkang) *kətɕəl*; Lushai and Tiddim *zjal* ‘roll up’, Thado *zıl*

‘spit / spittle’ ^g *m-tsyil ≈ *STC* #231; JAM 1970 “GD” #32
*m-tsril

WT *mtśhil-ma*; Lushai *tśil*; Nung *thil* ‘spittle’, *thil thil* ‘to spit’ (cognate object construction); S. Khami *mətśe*; Lakher *pətsi*; Ao Naga *metse*; Mikir *iŋ-the*

9.3.2: *-il and *-ul

‘turn / corner’	*gil	KVB
	Lai Chin kil ‘corner’; WB kwe ‘bend around, be curved, turn a corner’, ʔəkwe ‘curve, corner’	
‘worm’	*zril	STC:15, 171; ZMYYC #166
	WT sril ‘silkworm’ ≠ srin-bu ‘insect, worm, vermin’; Thado til ‘earthworm’; Lushai and Lai Chin til ‘testicle’; ^h Guiqiong bu ⁵⁵ ti ⁵⁵ ; Ergong mŋa ¹ buw dʒi; Ersu ŋo ³³ nkhuə ⁵⁵ be ⁵⁵ dʒɿ ⁵⁵ ; Nusu la ⁵⁵ di ³¹ ɑ ³¹ ; Dulong pu ³¹ dǎŋ ⁵³ ; Darang Deng ta ³¹ dʒi ³⁵ ; the following forms are < PLB *di ¹ : WB ti; Lahu tì, pû-tì; Lisu bi-di; Yi Xide tsa ³³ dzu ³³ bu ²¹ di ³³ ; Yi Dafang bie ²¹ die ²¹ ; Yi Nanjian ɑ ⁵⁵ di ⁵⁵ li ⁵⁵ ; Yi Nanhua ʌ ³³ vu ³³ di ³³ li ³³ ; Yi Mile (Axi) pa ³³ ti ³³ ; Yi Mojiang bu ²¹ du ²¹ mo ²¹ ; Hani Caiyuan pi ³³ tx ⁵⁵ ; Hani Shuikui pi ³¹ ti ⁵⁵ ; Jinuo pu ³³ tu ³³ ; Langsu vɔ ³¹ tɕi ³¹	

- This is a simplex/causative pair in both languages.
- There are Chinese comparanda (below 9.3.4). This etymon is distinct from *tsow ‘be fat (of people or animals)’ (above 5.6.1), but it is sometimes difficult to distinguish the reflexes of these two roots in Loloish. Also distinct is *sa:w ‘fat; oil’ (above 5.6.2).
- The first syllable in this and most other cited compounds means ‘tooth’ (< *swa). This suggests that this widespread root for ‘gums’ derives from *r-ni ‘red’ (‘tooth its-redness’; STC n. 265). See below 9.5 for a general discussion of variation between final liquids and zero coda. There is a possible Chinese comparandum (below 9.3.4).
- The first two syllables of this form mean ‘tooth’ and ‘red’.
- Allofamically related roots are *s-ki:l ‘bind / twist / roll / angle’ and *ri:l ‘bowels / intestines’ (below).
- For the semantics, cf. Mandarin 滾 gǔn ‘roll; get away, beat it’ (滾出去 Gǔn chū qù! ‘Get out of here!’).
- STC (p. 15) identifies this root as the source of WB re ‘water’ (< PLB *rəy¹; cf. Lahu ġì, etc.); cf. English *one’s mouth waters*. A rather dubious Chinese comparandum purportedly meaning ‘spittle of a dragon’ is claimed in STC: 171.
- This semantic connection seems a bit strange, though various associational pathways might be suggested. STC (n. 121, p. 37) does not make these explicit. See also Benedict 1939:225 and JAM 2001f (“Areal semantics”).

(2) **-il* \approx **-yal*

‘wash / bathe’ **m/b-s(y)il* \approx **m/b-syal* STC #493

**m-s(y)il* WT *bsil-ba*; Jg. *śín, kə̀şín*; Lushai *sil*; Tangkhul *gerśil*; Thado *śil, kiśil*; Khami *məse*; Lakher *pə́si*; Mikir *in-thi*

**m-syal* WT *bśal-ba* ‘wash, clean by washing’; Rawang *thi zal* ‘bathe, wash’ (*thi* ‘water’)

(3) **-i:l*

As usual, evidence for length in this rhyme is to be found primarily in Kuki-Chin languages like Lushai:

‘bind / twist / roll / angle’^a **s-ki:l* STC #373

WT *skyil-ba* ‘to bend’, *ḥkhyil-ba* ‘wind, twist, roll’; Lepcha *kil* ‘a screw’; Dumi *sa:khil* ‘intestines’; ^b Jg. *kyìn* ‘be pliable, easily twisted’, *ṛəkyìn* ‘roll into a ball (as a turban)’, *gyìn* ‘fashion by rolling (as mud pellets)’; Lushai *ki:l* ‘corner, angle’

‘bowels / intestines’^c **ri:l*

Lushai *rīl*; Khualsim and Lai *ri:l*; Thado *gìl*; Tiddim *ṅgil, ṽil*; Xongsai *ṅgil*; Matupi *χri:l*; Awa Khumi *tăχri*; Zotung *ri:ṅ*; Mru *ria*; Kom Rem *kəri*; Lakher *ri-pi* ‘large intestine’, *ri-chi* ‘small intestine’; Tangkhul *kəri*, *ā-ri-rā*, *ā-kha-ri*; Khezha *keri*; Angami *u-rie*; Lotha *e-ru*; Simi *a-ki-ghi*; Sangtam *ghū*. Also perhaps Chamling *tho-ri* ‘bowels’; Taraon (Darang Deng) *ha:ri* ‘screw’.^d

a. This root is definitely allofamic with ‘move/roll’ **s-ril* \approx **s-gril* ‘move/roll’ (above), as well as with **ri:l* ‘bowels/intestines’ (next item).

b. For the semantics, see **ri:l* ‘bowels/intestines’, below.

c. This root is found throughout Kuki-Chin-Naga, and probably elsewhere. It seems certainly to be related both to **s-ril* \approx **s-gril* ‘move / roll’ and **s-ki:l* ‘bind / twist / roll / angle’ (above), the semantic connection being the convoluted appearance of the intestines.

d. The same semantic association between ‘intestine’ and ‘screw’ is found with a different etymon in Burmese: WB *ṛu* ‘intestine’, *wak-ṛu* ‘screw’ (lit. ‘pig intestine’). See “Conclusion”, Ch. 13.

9.3.2: *-il and *-ul

(4) *-ul

<i>PTB</i>	<i>WT</i>	<i>Jg.</i>	<i>WB</i>	<i>Lu.</i>	<i>Garô</i>	<i>Dim.</i>	<i>Mikir</i>
*-ul	-ul / -un	-un	-un / -we	-ul	-ol	-on	-ol / -oi
*-u:l	-ul	-un	-we	-u:l	-ol		-ul

WB again shows variation in its reflexes of this rhyme, sometimes developing -un (‘all / twenty’), sometimes -we ¹² (‘silver’; ‘snake’), and sometimes both (‘hair / fur’):

	<i>PTB</i>	<i>WB</i>
‘all / twenty’	*m-kul	ʔəkun ^a
‘silver’	*d-ŋul	ŋwe
‘snake’	*s-bru:l	mrwe
‘hair / fur’	*mul	mwê ^b ⌘ pâ-mûn ^c
‘sweat’	*s-krul ⌘ *s-ŋrul	khrwê ^d

a. ‘all; the whole’

b. ‘hair, fur’

c. ‘whiskers’

d. See above 3.6.5(1).

12. Via Inscriptional Burmese -uy.

Examples:

‘dust’ ^a	*r-dul ≠ *r-tul	STC:173; TBL #45
WT rdul; Pattani d ^h ul; rGyalrong (Maerkang) tɛ ndər, (Caodeng) t ^h ər-də; Nusu dui ³¹ ; Kokborok ha-druy. Perhaps also Bantawa dhu-mi-lo ‘dusty, misty’ and Zhaba (TBL) 扎坝 di ^{31/13}		
‘lips / beak’	*m-ts(y)ul	Benedict 1939:218; STC:158, 169
WT mtshu ‘lip; beak, bill (of birds)’ ≠ mtshul-pa ‘lower part of face, nose and mouth; muzzle (of animals); bill, beak’; Lepcha a-dül ‘lips’; Mikir in-tur ‘lips, bill (of a bird)’; Garo ku-tšil ‘lips’; WB hnut-si ‘bird’s bill; beak’; Nung nœ-sil ‘lips’ (WB hnut, Nung nœ ‘mouth’) ^b		
‘roll up / wrap’	*r-tul	STC:110, 147
WT thul-ba ‘roll, wind up’, thul-pa ‘dress made of animal skin’; Newari gwārā tul-a ‘roll over’; Anong rədul ‘roll, wrap, envelope’, hi-dul ‘legging’, hi-dul dul ‘wear gaiters’ (cognate object construction); Pwo and Sgaw Karen thu ‘roll up (as a mat or a cigar)’		
‘silver’ ^c	*d-ŋul	STC:15, 173; ZMYC #36
WT dŋul; Trung (Dulonghe) ŋül ⁵⁵ , (Nujiang) ŋuun ⁵⁵ ; Tsangla (Motuo) ŋoi ¹³ , (Tilang) ŋui, (Cuona) ŋy ³⁵ ; WB ŋwe; Achang ŋui ⁵⁵ , ŋoi ³¹ , ŋu ⁵⁵ ; Zaiwa ŋun ⁵¹ ; Maru (Langsu) ŋoi ³¹ ; Bola ŋø ⁵⁵ ; Leqi ŋə ³¹ ; Naxi (Yongning) ŋv ³³ ; Nusu ŋui ³⁵ a ⁵⁵ ; Konyak and Phom ŋgin, Nocte ŋgun; Wancho ŋgung; Bokar Lhoba ŋi; Damu ŋy; Tagin anyi; Milang un; Bai (Dali, Bijiang) ŋi ²¹ ; Tujia ŋo ⁵⁵ , ŋa ³³		
<i>There is also a full set of Qiangic cognates:</i>		
Qiang Mawo ŋuə zi; Qiang Taoping xŋu ⁵⁵ ; Pumi Taoba ŋō ⁵⁵ ; Pumi Jinghua ŋāu ⁵⁵ ; rGyalrong po-ŋi, pa-ŋei, po-ŋge, (Caodeng) ŋəl; Daofu ŋəl; Ergong zŋən; Muya ŋu ⁵³ ; Queyu ŋui ⁵⁵ ; Guiqiong wū ⁵³ ; Ersu ŋua ⁵⁵ ; Lusu ŋu ³⁵ ; Namuyi ŋu ⁵⁵ ; Shixing fū ⁵⁵ , jū ⁵³ ; Xixia ŋwo ²		
<i>A number of forms descend from a variant with labial nasal:</i> ^d		
*mul		
Balti Tibetan ŋmul; Pattani mul; Kanauri möl(h); Manang muuy; Tamang Risianaku mui; Gallong mur-ko adin; Phön (Megyaw) myaiŋ, (Samong) moiŋ		

9.3.2: *-il and *-ul

‘stump / tree / root’ ^e	*bul ≈ *pul <i>STC</i> :166
	Jg. phún ‘tree, bush, stalk, wood’; Moshang phu:l ‘tree’ (with secondary vowel length); Garo bol ‘tree’; Lushai bul ‘cause, beginning, the root, stump or foot (of tree), the lower end (of stick, post)’; Tiddim bul ‘bottom, base, foot’
‘sweat’	*s-krul ≈ *s-ŋrul JAM
	WT ŋul ; WB khwrê , Lh. kī (< PLB *ʔ-grwəy ²); Lakher mathlai ; Angami rūkhru ; Qiang (Mawo) χt̚sə , (Taoping) χt̚suə ⁵⁵ ; rGyalrong tə-ŋt̚sɛ . See above 3.6.5(1).
‘tend grazing animals’	*wul <i>STC</i> :83
	Lushai vul ‘keep or rear domestic animals’; Mikir vi ‘tend, graze (flocks)’
‘twenty / all’	*m-kul <i>STC</i> #397; JAM 1995b (“Numerals”):149-51
	Jg. khūn ; Garo khōl ≈ khal ; ^f Meithei kul ; Dimasa khon ; Mikir in-kol ≈ in-koi ‘twenty’, koi ‘all’; WT kun ‘all’; WB kun ‘come to an end / be used up’, ʔəkun ‘the whole’. This root is attested in dozens of Kuki-Chin and Naga languages, including Siyin kul ; Lai (Hakha) kul ≈ kwe ; Angami (Khonoma) meku ; Ao Mongsen mukyi ; Khoirao machi ; Lotha mekwi ; Meluri mukwe ; Nruanghmei ncui ; Pochury mke ; Tangkhul məku ; Yimchungru muku ; Zeme nkai . ^g

- This root is rather sparsely attested in TB, but there is a good Chinese comparandum (below 9.3.4).
- There is a good Chinese comparandum (below 9.3.4).
- There is a sterling Chinese cognate (below 9.3.4).
- This perhaps indicates an ancient loan relationship with Mon Khmer. Cf. e.g. Khmu? **kəmu:l** ‘silver’ (Suwilai 2002).
- There is a good Chinese comparandum (below 9.3.4).
- A number of other languages have forms which point to ***s-gal**, some of which mean ‘twenty’ (e.g. Sherpa **khal-jik**, Tamang **kha:l**; Khaling **kha:el**) and sometimes ‘load of a beast of burden’ (e.g. WT **khal**, **sgal**). This perhaps indicates an original meaning for this root like ‘a complete load; everything that can be placed on a beast of burden at one time.’ There is a good Chinese comparandum. See below 9.3.4.
- There is a Proto-Wa etymon ***kol** ‘ten’ (Diffloth 1980:151), perhaps an old loan from TB.

(5) *-u:l

‘rope’	*gru:l	KVB
	WB krûy; Lai Chin truul. See above 3.6.4.1(2).	
‘rub against / be worn down’	*nu:l	STC #365
	Lushai nuul ‘brush past, rub against’; Lai Chin hnúr ‘rub against’ (with short vowel and -r); Lakher hnao ‘id.’; Garo nol ‘rub, knead’; Jg. nùn ‘be worn, threadbare’, kənùn ~ mənùn ‘rub with the fingers’; WB nûn ‘be weak, exhausted from illness’	
‘snake’	*s-b-ru:l ^a	STC #447; ZMYC #152
<i>Himalayish</i>	WT sbrul; Thebor brul; Magar bul; Thulung blo	
<i>Kuki-Chin</i>	Mikir phurul ~ phurui; Lushai ruul; Maring pharul; Anal pùrùul; Paangkhua marúul; Puiro marun; N. Khami pəwi; Lakher pari; Tiddim gu:l; Thado gúl; S. Khami məgui; Meithei lil	
<i>Naga</i>	Ao per; Sema əpeyü; Tangkhul phərə; Lotha ndrū, nrw; Mao in-gho; Rongmei nrui; Rengma peri; Sangtam murrw; Yimchungru phuru; Yacham-Tengsa phalü; Tangkhul ru	
<i>Mirish</i>	Kaman (Geman Deng/Miju) juul ³⁵ ; Bengni bur-tar; Bokar Lhoba tabw; Sulong puh ⁵³	
<i>Nungish</i>	Trung bur ⁵³ ; Nusu (Bijiang) vɿa ⁵⁵	
<i>Lolo-Burmese</i>	WB mrwe; Achang (Longchuan) mɰui ⁵⁵ ; Maru mòì; Zaiwa ʔláj-mûi; Phön (Samong) moĩŋ; Proto-Loloish *wəy ¹ > Lahu vè; Gazhuo zɿ ²⁴ ; Jinuo ɣw ⁴² ; Naxi Lijiang ɰw ³¹	
<i>Karenic</i>	Sgaw ɣỳ; Pho ɣú; Palaychi rù; Pa-o ru	
<i>Qiangic</i>	Qiang Mawo bəs; Qiang Taoping bə ³¹ guə ²⁴¹ ; Pumi Taoba bə ³⁵ re ⁵³ ; Pumi Jinghua bə ¹³ ɰa ⁵⁵ ; rGyalrong kha-bre, kho-rei; Ergong mphɿ; Daofu mphri; Muya zo ⁵³ ; Queyu bru ⁵³ ; Guiqiong tɕu ⁵³ ; Ersu bə ³³ rɿ ⁵⁵ ; Namuyi bə ⁵³ ; Shixing ba ³³ ro ⁵⁵ ; Lüsu bu ³³ ɣw ³⁵ ; Xixia phio ²	
<i>Baic</i>	Dali and Jianchuan khv ³³ ; b Bijiang fv ³³	
<i>Unclassified</i>	Tujia wo ⁵³	

a. This root may be derived from a dissyllabic prototype *bəw-rul, where the first element is the etymon *bəw ‘insect/snake’ (above 5.3.1). Reflexes of this root appear in all TB branches, and there is a good Chinese comparandum, below 9.3.4.

b. These forms apparently reflect a velar prefix in Proto-Baic.

9.3.2: *-il and *-ul

(6) *-ul ≈ *-un

We must assume *-ul ≈ *-un variation in the following root to account for the -n reflexes in languages that preserve *-l as such (e.g. Lai, Lushai):

‘bulge / bend’	*gu:l	KVB
	Lai Chin kuul ‘hunchback’ ≈ kuun ‘bend’; WB kûn ‘rise, bulge, stoop’	
‘skin’	*wul ≈ *wun ^a	(JAM 1997a (PSLTB):43)
	Meithei ul, un-sa; Maring un, wun; Geman Deng ung; Kham ol-ko-ta; ^b PNN (French 1983) *wur (> Chang kho-(w)un, Nocte kho-wan, a-khuon); Lushai, Chinbok, and Kom Rem vun; Thado vún; Maring un, vun, wun; Tiddim sa-vun; Moyon vin; Lakher vo; rGyalrong wu-fan-dzi; Puiron mun (with unexplained nasal initial); Lotha o-fhu; Kaman (Miju) uŋ ³⁵ ; perhaps also Qiang Mawo ‘ue-pie.	

a. This reconstruction is revised from *ul (JAM 1997a:43).

b. But cf. Thakali ol-ko-ta ‘throat’ (below).

Many other TB words for ‘skin’ point to a prototype with stop initial, *pun ≈ *pin, e.g. Chepang pun; Dulong pun⁵⁵, aŋ³¹pin⁵³; Bokar Lhoba, Gallong, and Tagin a-pin, above 7.2(3). It is tempting to relate them all to the present root, in view of the widespread TB variational pattern *p- ≈ *w- (see JAM 2000a). Supporting this are the Lushai forms pil and vun, both meaning ‘skin’, attesting to the final lateral in the putative allofam with labial stop. If these relationships are valid, the word-family may be reconstructed by a pan-allofamic formula:

*	p	l
	u	
	i	
	w	n

(7) **-ul* ⇌ **-il*

‘dull / buttock / heel / rounded part’ ^a	* <i>r-tul</i> ⇌ * <i>r-til</i>	JAM 1994d, 2000b
	* <i>r-tul</i>	WT <i>rtul-po</i> ‘blunt, dull’; Abor-Miri ko- <i>dun</i> ‘buttock’; Meithei <i>məthun</i> ‘buttock’; Wancho <i>chi-dun</i> ‘heel’ (chi ‘foot’); Khözha <i>šú-dò</i> ; Lisu <i>khi</i> ²¹ <i>du</i> ²¹ ‘buttock’ (<i>khi</i> ²¹ ‘excrement’); Phunoi <i>pi</i> ³³ <i>tun</i> ¹¹ ‘heel’
	* <i>r-til</i>	Jingpho <i>šətīn</i> ‘buttock’, <i>ləthīn</i> ‘heel’
‘hair (body) / fur’ ^b	* <i>s-mul</i> ⇌ * <i>s-mil</i> ⇌ * <i>s-myal</i>	STC #2; ZMYYC #172
	* <i>s-mul</i>	Jg. <i>mūn</i> ‘body hair’, <i>n-mūn</i> ‘beard’; Lushai <i>hmul</i> ; Moshang <i>mul</i> ~ <i>kəmul</i> ; Dulong <i>aŋ</i> ³¹ <i>mūl</i> ⁵⁵ ; Geman Deng <i>bu</i> ³⁵ ; Bokar Adi <i>a-mu</i> ; Sulong <i>a</i> ³³ <i>mu</i> ³³ ; WB <i>mwê</i> ; Achang <i>a-mwe</i> ; Zaiwa <i>sō</i> ²¹ <i>mau</i> ⁵⁵ ; Lahu <i>mu</i> ; Yi Dafang <i>m(u)</i> ²¹ ; Yi Nanhua <i>mu</i> ³³ ; Yi Mile (Axi) <i>i</i> ³³ <i>mu</i> ³³ ; Yi Mojiang <i>nu</i> ³³ ; Lisu <i>e</i> ⁵⁵ <i>mu</i> ⁴⁴ ; Naxi (Lijiang) <i>fv</i> ³³ , (Yongning) <i>xv</i> ³³
	* <i>s-mil</i> ⇌ * <i>s-myal</i>	WT <i>smin-ma</i> ‘eyebrow’; Lepcha <i>myal</i> ⇌ <i>myel</i> ; Nung <i>mil</i> ; Anong <i>min</i> ⁵⁵ ; Garo <i>kimil</i> ; Dimasa <i>bikhi-mi</i> ; Mikir <i>aŋ-mi</i>
<i>There is also a set of Qiangic cognates that it would be premature to assign to either allofam, including:</i>		
Qiang Mawo <i>hu-pa</i> ; Qiang Taoping <i>qə</i> ³¹ <i>χmə</i> ⁵⁵ ; Pumi Taoba <i>mē</i> ⁵³ ; Pumi Jinghua <i>ma</i> ⁵⁵ ; rGyalrong ta <i>ɾɿ</i> ^E ; Ergong <i>wmə</i> <i>zɿ</i> <i>za</i> , <i>kuə</i> <i>zɿ</i> <i>mi</i> ; Muya <i>ɸ</i> ³⁵ <i>mo</i> ³³ ; Queyu <i>mu</i> ⁵³ ; Ersu <i>ma</i> ⁵⁵ ; Namuyi <i>hū</i> ³³ ; Shixing <i>ko</i> ³³ <i>m̥</i> ³⁵ ; Xixia <i>mjar</i> ¹		
‘poor’ ^c	* <i>d-bul</i> ⇌ * <i>d-bil</i>	STC: 173
		WT <i>dbul</i> ; Qiang Mawo <i>by</i>
‘sweet’	* <i>hul</i> ⇌ * <i>hil</i>	JAM 1997a (PSLTB):37
		Thulung <i>ol-ol</i> ; Milang <i>hil-ma</i>

a. There are good Chinese comparanda meaning both ‘dull’ and ‘buttock’ (below 9.3.4).

b. There are excellent Chinese comparanda reflecting each allofam (below 9.3.4).

c. This root is still poorly attested for TB, but there is a good Chinese comparandum that points rather to PST **-bil* (see 9.3.4 below).

9.3.3: *-el and *-ol

9.3.3 *-el and *-ol

(1) *-el

There are only a few etyma reconstructible with these rhymes:

‘count / read’ ^a	*wel	JAM 1997a (PSLTB):44; French 1983 Chepang wel; Tangsa valʔ; Nocte veʔ; Konyak é; Phom e; Chang wie ‘count’, we ‘read’ ^b
‘mix / stir’ ^c	*hwel	JAM 1997a (PSLTB):40 ^d Proto-Tamang *hwal; Dumi hɪl-nɪ; Khaling wāl-nyā; Thulung hil-s-, hir-; Tiddim hel; Tangkhul húy; Deuri u; Apatani hár
‘sleepy’	*myel	STC #197 Bahing myel ‘be sleepy’; Jg. myén ~ myè ‘fall into sleep or swoon; gradually lose consciousness’; Shixing miæ ³³ du ⁵⁵ ; WB myāñ ‘be sleepy, sleep’ ^e ; Langsu mjaun ³⁵ ; Leqi mjɔːŋ ³³

- So far this root has been found only in Chepang and Northern Naga.
- The notions of ‘count’ and ‘read’ are connected in many TB languages, via the conception of reading as counting pages; cf. Lahu ḡɔ ‘count; read’. This semantic association seems in fact to be widespread outside the SE Asian linguistic area as well, e.g. Russian čitatj ‘read’, čislitj ‘count, reckon’. See JAM 2001f.
- Several Loloish forms are cognate to each other, and perhaps related to this root: Yi Weishan ho³³; Naxi xo⁵⁵xo³³; Hani Shuikui xɿ³³; Lisu hɔ̃³⁵
- This root was assigned the non-canonical reconstruction *hwel in PSLTB.
- This is the only example of WB -añ < *-el. For more on the WB rhyme -añ, which has several better attested proveniences, see above 7.2(2,4).

(2) *-e:l ɹ *-i:l

‘goat’	*kye:l ɹ *kyi:l	STC #339
	*kye:l	Lushai keel ‘goat’; Tiddim gam-ke:l ‘wild goat’; Thado kēl-cà; Puiron kel ~ ken; Pattani chəgəl ‘wild goat’; Jili (Kachinish) təkhyen
	*kyi:l	WT skyin ‘wild mountain goat’; Newar cil -ā ‘goat’, cil- cā ‘kid’; Dumi tsan-gɪr; Nocte kien (Das Gupta 1971) ^a

- Perhaps also Kanauri ba-khōr ‘female goat’ and Tamang Sahu gyuh-sya ‘goat meat’.

(3) *-ol

‘fall’ *hol^a JAM 1997a (PSLTB):36
 Chepang ʔol-sa; Thulung als; Miri hol-nam ~ ho-nam; Gallong o -
 lo-nam; Tagin o -lu-nam; Bengni hu-lu; Apatani hu-i; Dafla hu-lu,
 ho-lu; Bokar Lhoba fio, ho:

‘overbearing /
 exploitative’ *grol KVB

Lai Chin trol ‘pass over; overtake; be overbearing’; WB krâw ‘take
 advantage of’

a. This root shows variation between -l and -Ø (zero final); see below 9.5.

(4) *-ol ≠ *-or

‘throat / gullet’ *ʔol ≠ JAM 1997a (PSLTB):43
 ʔor
 WT ul-mdud; Tamang ol-kon; Thakali Tukche ol-ko-ta; Bunan or-o;
 Pattani ol-long; Ergong o³³mdət⁵³; Muya o⁵⁵-ndy⁵⁵, u⁵⁵tʂho⁵³;
 Guiqiong wu⁵⁵tʂo⁵⁵; Lushai or ‘throat, gullet’; Meithei hun; Angami
 u-vo³³; a Mpi kho²wo⁴

a. The first (toneless) syllable of this Angami form is a general bodypart prefix, e.g. u-ru ‘bone’, u-mhi ‘eye’, u-se ‘liver’.

(5) *-o:l

‘wash / clean’ *gro:l KVB
 Lai Chin trool; WB chê-krâw

‘finish / loose /
 relax’^a *ʔo:l STC #111; Coblin 1986:136
 WT hol-hol ‘soft, loose, light, as the soil in spring’; Lushai o:l ‘have
 little to do’; Magar ol ‘finish’; Garo ol ‘lax, loose; relax’; Bokar
 or-pak ‘put (clothing) on loosely’; Apatani ar-he ‘loose’; Bai (Dell
 1981) io ‘relaxed, released’

a. There is an allofam with velar stop initial, *grol. See below 9.3.4.

These Loloish forms are cognate to each other, and perhaps to the forms above¹³:

Mpi ho¹ ‘loose’; Nusu (N) xo³⁵, (S) xue³¹; Yi Sani hɿ³³dlɿ¹¹; Lisu ɔ⁵⁵lɔ⁴⁴.

9.3.4: Chinese comparanda to TB etyma in *-l

9.3.4 Chinese comparanda to TB etyma in *-l

There are even more good Chinese comparanda to PTB roots in *-l than there are to roots in *-r.

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese gloss</i>
‘arrow / bow’	*tal	矢	śjər	560a-d	‘arrow’
‘between / interval’ ^a	*ka:l	間	kǎn	191a-c	‘crevice / interstice / interval / space between’
‘breed / bring up’ ^b	*srel	產	sǎn	194a	‘breed / bear / produce’
‘buttocks / dull’	*r-tul ✕ *r-til	尻	d’wən	429a	‘buttocks’
		臀	d’wən	429b-c	‘buttocks’
		殿	tiən	429d	‘rear of an army’
		沌	d’wən	427h	‘confused / stupid’
		鈍	d’wən	427i	‘dull’
		頓	twən	427j	‘worn / dull / spoiled’
‘charcoal / dust ₁ / ashes’	*tal ^c	炭	t’ân	151a	‘coal / charcoal / lime (potash)’
‘dust ₂ ’	*r-dul ✕ *r-tul	塵	d’jĕn ^d	374a	‘dust’
‘equal / line up / connect in a row’ ^e	*g-ral	連	*lĭan	213a	‘connect / unite / in a row / consecutively’
		聯	*lĭan	214a	‘join / bring together’
‘face’	*s-mel	面	mĭan	223a	‘ <i>id.</i> ’
‘fat / oil’	*tsil	脂	fiər	552g	‘fat / grease’
		胰	djər	!551 AD#186	‘fat over the stomach’

13. There are also Chinese comparanda (below 9.3.4).

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese gloss</i>
‘enemy / quarrel / war / strife; sword’	*g-ra:l ɤ *ran	戰	t͡ɕian	147r	‘battle / to fight’
‘finish / loose / relax’ f	*grol	暖 緩	ɣiŋwǎn g’wan	255j 255l	‘soft / mild’ ‘slack / loose / indulgent’
		援	giŋwan ~ giŋwǎn	255e	‘pull up / lay hold of / succor’
		完	g’wân	257m	‘to complete’
‘gums’	*r/s-ni-l	矧	ʃjən g	560i-j	‘base of tooth’
‘hair / fur’	*s-mul ɤ *s-mil	毛	mog	1137a-b	‘hair / fur / feathers’
		眉	mjər ~ mjəwər	567a	‘eyebrow’
‘instruct / explain / admonish’ h	*s-kul	訓	ɣiŋwən	422a	‘instruct / explain / admonish’
‘jackal / wild dog’	*kywal	犬	k’iŋwən	479a-d	‘dog’
‘joint / wrist’	*s-hwal	腕 ⁱ 擊	ʔwân ʔwân	260m 273b	‘wrist’ ‘wrist’
‘leave / depart / separate’ j	*bral ɤ *pral	離	lia	23f	‘leave / depart from / be dispersed / divide’
		披	p’ia	25j	‘divide’
‘load / burden’ k	*s-gal	荷	g’â	1o	‘lotus / carry / sustain’
‘lip’	*m-ts(y)ul	脣	ḍi’iŋwən	455u	‘lip’
‘poor’	*d-bul ɤ *d-bil	貧	b’jĕn	471v	‘poor’

9.3.4: Chinese comparanda to TB etyma in *-l

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese gloss</i>
‘round / enclosure’	*wal	圈	g’iwan	226k	‘enclosure for pigs’
		員	giwan	227a-b	‘circle / circumference / round / return’
		圓	giwan	227c	‘round’
		還	g’wan	256k-m	‘turn around / return’
		環	g’wan	256n	‘ring / encircle’
		纒	g’iwan	256q	‘tie around / encircle’
		院	giwan	257u	‘wall around courtyard’
		豕	g’wən	425a-b	‘pig-sty’
‘silver’	*d-ŋul	銀	ngiɛn	416k	‘silver’
‘slave’	*gywal	宦	g’wan	188a	‘servant / officer / official’
		臣	đjɛn	377a-f	‘slave / servant / subject / officer’
‘snake’ ¹	*s-bru:l	閩	mwən	441i	‘kind of snake / (loan for) certain tribes of the South’
‘snore’ ^m	*hal	鼾	χân	AD#296	‘snore’
‘spit’	*m-tsyil ≠ *m-tsyiril	痰	dž’rjər	!979	‘mucus / spittle / slime’ ⁿ
‘spread / extend / develop’ ^o	*r-dal	展	djan	203a	‘unfold / open / develop’
‘stump / tree / root’	*bul ≠ *pul	本	pwən	440a	‘root / trunk’

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese gloss</i>
‘throw away / cast / sow / toss’	*b^war ⚭ *h^war	播	pwâr	195p	‘spread out / sow / winnow / shake’
		簸	pwâ	25n	‘winnow’
‘wash’	*m/b-sil ⚭ *m-syal	洗	sĭən ~ sĭər	478j	‘wash’
‘worm’	*zril	蟥	dĭən	450j	‘earthworm’
		蚓	dĭĕn	371c	‘ <i>id.</i> ’
		蟪	dĭan	148p	‘ <i>id.</i> ’

- a. See above 3.6.4.1.
b. Cf WT **srel** ‘bring up, rear, nurse up’. See Coblin 1986:40 and Gong 2001:29.
c. Cf. WT **thal-ba** ‘dust, ashes, and similar substances’.
d. The Chinese form seems to descend from an allofam with front vowel, ***r-dil**.
e. Cf WT **gral** ‘row, series, class’. WT **gras** ‘class, order, series’ appears allofamically related, although Gong (2002:27) relates it to a different Chinese etymon; see below 10(10.6).
f. Cf WT **hgrol-ba** ‘become free; be liberated, released from’, **sgrol** ‘rescue, deliver, save’. There is an allofam with laryngeal initial, ***ʔol** ‘finish / loose / relax’, above 9.3.3(5). See Coblin 1986:136 and Gong 2001:29.
g. Coblin (1986:90) reconstructs the OC form as **hnjinx**.
h. Cf WT **skul-ba** ‘exhort, admonish; appoint, impose; rouse’. See Gong 2000:#13.
i. Also written 攬.
j. Cf. WT **hbral** ‘be separated, parted from’, **hphral** ‘separate, part (someone)’. See Gong 2001:23.
k. Cf. WT **s-gal** ‘load (of a beast of burden)’, **hgel-ba** ‘load; lay on a burden’, **bkal** (pf.), **dgal** (fut.), **k’ol** (imp.). See Gong 2000:48. This TB root seems to be allofam to ***m-kul** ‘all / twenty’; see above 9.3.2(4).
l. See above 9.3.2(5). For the gloss ‘kind of snake’, see Handel 1997.
m. This comparison was first made in Coblin 1986:135-6.
n. This gloss is from Mathews (1960):804. The source of Benedict’s gloss ‘spittle of dragon’ is not clear.
o. Cf. WT **rdal** ‘spread; extend; cover’. See Gong 2000:#21.

9.4 Long vowels before final liquids

There seems to be a particular affinity between liquid finals and preceding long vowels.

	<i>-r</i>	<i>-l</i>
	<i>-a:-</i>	
‘flower’	*ba:r	*dzya:l ‘far’
‘dance / leap / stride’	*ga:r	*g-ra:l ‘battle / war / enemy’
‘hang / impale’	*ta:r	*ba:l ‘filth / excrement’

9.4: Long vowels before final liquids

‘shine / white’	*hwa:r		
‘fowl’	*ha:r		
‘nose’	*s-na:r		
‘solid / frozen’	*ka:r ∅ *ga:r		
‘spread / extend / sail’	*ya:r		
<hr/>			
-i:-			
‘bowels / intestines’	*ri:l	*s-ki:l	‘bind/twist/roll/angle’
‘iron’	*s(y)i:r ∅ *sya:l		
<hr/>			
-u:-			
‘sour / acid’	*su:r ∅ *swa:r	*s-bru:l	‘snake’
‘wring/squeeze’	*tsyur	*nu:l	‘rub/wear down’
‘gills/beak/mouth/face’	*mu:r		
‘rainy season’	*zu:r		
<hr/>			
-e:-			
‘dry’	*he:r	*kye:l ^a	‘goat’
‘flat / thin’	*pe:r		
<hr/>			
-o:-			
‘peel / husk’	*ko:r	*ʔo:l	‘finish / loose / relax’

a. ∅ *kyi:l.

In syllables with liquid finals, the ratio of etyma with long vowels to the total number of reconstructible etyma seems impressionistically to be much higher than in syllables with nasal or stop finals. Some 25 such roots have been presented above, with all 5 nuclear vowels (see the preceding table).

The reason for this tendency toward vowel length is undoubtedly to be sought in the dual nature of liquids themselves. Liquids are *consonantal* enough to close a syllable, so that length contrasts are possible before them (just as they are before more occlusive consonants like nasals and stops). But liquids are also *vocalic* enough so that they can serve as a kind of prolongation of the preceding nuclear vowel, or induce such a prolongation.

9.5 Variation between final liquids and zero coda

A similar articulatory explanation may be invoked to account for the relatively large number of cases of allofamic alternation (both inter- and intra-lingual) between final liquids and open vowels. Since liquids are so vowel-like themselves, they can easily be amalgamated into the preceding vocalic nucleus, either forming a diphthong with it, lengthening it with the same quality, or disappearing entirely.¹⁴

Examples of alternations between final liquid and zero coda may be found with four of the five nuclear vowels.¹⁵

‘dance / leap / stride’	<i>*ga:r</i> ⌘ <i>*s-ga</i>	
	<i>*ga:r</i>	WT <i>gar</i> ‘a dance’; Jg. <i>gān</i> , <i>kəgān</i> , <i>khān</i> ‘leap, bound, canter’; Lushai <i>kar</i> ‘to step, pace, stride’; Garo <i>kaʔl</i> ‘play’
	<i>*s-ga</i>	rGyalrong <i>ta-rga</i> ; Jg. <i>kà</i> ‘leap’; WB <i>ka</i> ’; Lahu <i>qā</i> ‘traditional dance’, <i>qā-qhêʔ</i> ‘to dance’; Lisu <i>gwa</i> ³³ ‘to dance’
‘tired’	<i>*bal</i>	Jg. <i>bàn</i> ‘be at rest’ ⌘ <i>bá</i> ‘be tired’
‘flow / pour / scatter’	<i>*sywar</i> ⌘ <i>*sywa</i> (or <i>*śwar</i> ⌘ <i>*śwa</i>)	
	<i>*sywar</i>	WT <i>tšhor-ba</i> ‘flow out’; Lepcha <i>tšhor</i> ; Dimasa <i>di-sor</i> , <i>etc.</i>
	<i>*g/b-sywa</i>	WT <i>gso-ba</i> ~ <i>bso-ba</i> ‘pour out’; Jg. <i>džó</i> ~ <i>tšó</i> ‘pour out, cast, enamel, dye’
‘nose’	<i>*s-na</i> ⌘ <i>*s-na:r</i>	STC #101
	<i>*s-na</i>	WT <i>sna</i> ; WB <i>hna</i> , <i>etc.</i>
	<i>*s-na:r</i>	Lushai <i>hnaar</i>
‘gums’ ^a	<i>*r-ni-l</i> ⌘ <i>*s-ni-l</i>	
	<i>*r/s-nil</i>	WT <i>rnyil</i> ~ <i>snyil</i> ; Kanauri <i>stil</i> ; Chepang <i>nəl</i> , <i>etc.</i>
	<i>*r/s-ni</i>	Lushai <i>ha-hni</i> ; Dimasa <i>ha-rni</i> , <i>etc.</i>
‘sleepy’	<i>*myel</i>	Jg. <i>myén</i> ⌘ <i>myè</i>

14. Familiar examples include Old French *-al* > Mod. French “au” /o/. Many dialects of English (including RP British and Bostonian) have lost final *-r*, with compensatory lengthening of the preceding vowel. English words with final *-r* get borrowed into Japanese with long vowels, probably imitating British pronunciation (e.g. ‘car’ > Jse. *kaa*; ‘color’ > Jse. *karaa*; ‘bar’ > Jse. *baa*), whereas English words with final *-l* are rendered with *-ru* (‘ball’ > *booru*; ‘girl’ > *gyaaru*; ‘level’ > *reberu*).

9.6: A “spectacular” word-family with liquid finals

‘fall’ *ho ≈ *hol Miri *hol*-nam ~ *ho*-nam

a. This root may be a derivative of *r-ni ‘red’; see above 9.3.2.

Somewhat different are cases where a PTB final *liquid has already disappeared at the subgroup level, as in the several examples of PTB *-al > PLB *-a (cited above 9.3.1):

	PTB		PLB		WB	Lh.
‘frog’	*s-bal	>	*ʔ-ba ²	>	phâ	pâ
‘back / loins’	*m-kal	>	*ka ²	>	khâ	---
‘clear / bright / pleasant’	*g-sal	>	*sa ¹	>	sa	ša
‘snow / ice’	*wal	>	*wa ²	>	---	vâ
‘chew (cud / betel)’	*yal	>	*ya ¹	>	ya	---

9.6 A “spectacular” word-family with liquid finals ¹⁶

Three sets of forms presented as separate etyma in *STC* ¹⁷ have meanings like ‘fire / burn / shine / bright / light / white’, and similar phonological shapes (labial initials, labial glides, the nuclear vowel -a-, and various codas, including liquids). These are all to be combined into a single word-family of even greater scope, comprising variants with open, nasal-final, stop-final, and liquid-final rhymes, roughly distinguishable as follows:

‘fire / burn / kindle / roast’ *b-war ≈ *p-war ≈ *ʔur^a
 WT ḥbar-ba ‘burn, catch fire, sbor-ba ‘light, kindle’; Kanauri bar ‘burn’, Miri par ‘light (fire)’; Nung hwar ‘burn, kindle’; Chairel phal ‘fire’; Moshang var ‘id.’; Limbu oʔr-u, oʔ-ma ‘id.’; Mikir ar-nu ‘roast, bake, grill’; Garo waʔl; Dimasa wai; Tangsa (Yogli) wal; Yacham-Tengsa wa-si; Jingpho ʔwàn; Chang wan; Damu wun-pit-dung (all ‘fire’); Lai ur ‘light a fire’; Lushai uur ‘warm up (a house, food) / keep warm / smoke (meat) / scorch’; WB pa ‘emit radiance, shine’.

15. No cases of *-ul/*-ur ≈ *-u have yet been noted.

16. Versions of this word-family have already been presented in JAM 1997a (PSLTB):44-5, 48 and JAM 2000a “*p-/*w-”:144-6. There are several good Chinese comparanda (above 9.2.4, 9.3.4).

17. These are: *b(w)ar ≈ *p(w)ar ‘burn; fire’ (#220); *hwa-t ‘shine; light’ (#221); *pwar ‘white’ (pp. 172, 174).

‘white / yellow’	*b-wa WB <i>wa</i> ‘yellow’, <i>ʔəwa</i> ‘color, brightness’; Proto-Karen <i>*ʔ(b)wa</i> ‘white’ > Pa-o <i>bwà</i> ~ <i>ʔwà</i> , Bwe <i>əko ɔ́ú</i> ‘white-haired’ (<i>əko</i> ‘head’) ^b
‘white / yellow / bright / shine’ ^c	*hwaɾ ɤ *yar Lushai <i>vaar</i> ‘white’; Maring <i>war</i> ‘bright light’; Thakali <i>ur</i> ‘yellow’; Gurung (Ghachok) <i>ur-gya</i> ‘ <i>id.</i> ’; Magari <i>or-khe</i> ‘ <i>id.</i> ’; Chepang <i>yar-o</i> ‘ <i>id.</i> ’; Hayu <i>ho</i> ‘ <i>id.</i> ’; Khaling <i>ehr-nya</i> ‘shine’; Tangkhul <i>hor</i> ‘ <i>id.</i> ’; Ao (Chungli) <i>yar</i> ‘ <i>id.</i> ’; Bokar Adi <i>a-jen</i> ~ <i>a-en</i> ‘ <i>id.</i> ’ ^d
‘heat up / kindle / cook’	*hwa(:)l Thulung <i>hal</i> ɤ <i>ul</i> ‘heat slightly’, <i>wal</i> ‘boil lightly’; Lushai <i>hal</i> ‘burn fields’, <i>ʔalʔ</i> ‘to flame’, <i>haal</i> ‘light, ignite’; Tiddim <i>ha:l</i> ‘burn’; Limbu <i>haqr-</i> ‘burn, alight’
‘sweat’ ^e	*hwar ɤ *hyar Gallong <i>a-ur</i> , <i>a-ur</i> , <i>a-yur</i> ; Tagin <i>ha-yer</i> , <i>ha-cer</i> ; Miri <i>har</i> ; Bokar <i>ho-war</i> <i>len</i> ; Milang <i>hi:l-ma</i> ; Darang <i>ha:u</i> ; Mikir <i>ing-i</i> ; Anong <i>in</i> ⁵⁵ ; Lhoba <i>fioŋ-ŋar</i> (with assimilation to the final of the first syllable)
‘shine / light’	*hwa Bahing <i>hwa</i> ‘light’; Apatani <i>hú-tò</i> ‘light’ (n.); Chepang <i>haʔ-ʔo</i> ‘shine’; Kulung <i>ha-me</i> ‘shine’; Ntenyi <i>wu-ghu</i> ‘ <i>id.</i> ’
‘shine / light / burn’ ^f	*hwat WT <i>hɔd</i> ‘light, shine, brightness’, <i>nyi-hɔd</i> ‘sunlight’; Written Burmese <i>ne-at</i> ‘sunlight’; Thado <i>wat</i> ‘shine’; Damu <i>wat</i> ‘glimmer’; Limbu <i>o:tt-</i> , <i>o:ts-</i> ‘burn, give light, shine’; Dumi <i>hɪt-nɪ</i> ‘burn’; Bahing <i>hɔt-</i> ‘ <i>id.</i> ’; Chairel <i>id</i> ‘burn, catch fire’ ^g
‘shine / bright / light’	*hwan Limbu <i>ha:nd-</i> ‘light (lamp, cigarette)’; Tangkhul <i>han</i> ‘shine’; Lotha and Mao <i>won</i> ‘ <i>id.</i> ’; Milang <i>a-un</i> ‘bright, light’
‘burn / shine’	*hwam Chepang <i>hyumʔ-sa</i> ‘burn, scorch’; Lepcha <i>om</i> ‘shine’, <i>om-bo</i> ‘illuminating’, <i>a-om</i> ‘light, brightness’

9.6: A “spectacular” word-family with liquid finals

‘shine / bright / *hwaŋ
yellow’ WB wâŋ ‘bright yellow’; Tagin *ong* -ka-nam ‘shine’, hung ‘*id.*’;
Konyak *wang-ngai* ‘bright light’

- a. See above 9.2.2(5).
- b. Karenic cognates cited in *TBL* include: a³¹wā⁵⁵ ‘white’ (#1006), gābɔ³³ ‘bright’ (#1012), a³¹bɔ⁵⁵ ‘yellow’ (#1008).
- c. For similar alternation between pw- and hw-, cf. WB phwak Ɂ hwak ‘hide’.
- d. Perhaps also Yimchungru yin ‘kindle’.
- e. See JAM 1997a (PSLTB):48.
- f. This allofam has suffixal *-t (see below 11.3.1).
- g. Also perhaps Manang wɛ¹ ‘bright light’; Sangtam a-vi-sa ‘*id.*’

These relationships can be summarized in a “pan-allofamic formula” (PAF), as follows:

p/b			r
	w		l
		a	ɔ
	y		N
h			t

For the semantics, cf. Proto-Indo-European *bhel- “shine; flash; burn; shining white and various bright colors” > Eng. *black, blank, blanch, bleak, bald, bleach, blue, blaze, blind, blend, blond, blink, etc.*¹⁸

18. See *American Heritage Dictionary* (4th ed. 2000):2022.

Only about a dozen PTB etyma are reconstructible with root-final *-s.¹ Very few languages preserve final *-s as such, notably northern TB languages like Written Tibetan, Kanauri, Chepeng, and rGyalrong. Often final *-s disappears without trace, as in Garo, Meithei, and Tangkhul.² In Lushai and other Chin languages *-s > -ʔ (with the glottal stop written as “-h” in missionary-devised orthographies).³ In many other languages (*e.g.* Chinese, Jingpho,⁴ Nung, Lepcha, Miri, Mikir, Karenic,⁵ and sometimes Lolo-Burmese), final *-s > -t, merging with original *-t. The reflexes of *-s are sometimes conditioned by the preceding vowel (*e.g.*, PTB *-is > PLB *-it, but PTB *-us > PLB *-əw; see below).

The following PTB rhymes with *-s are attested:

-is	-us
-es	---
-as	

1. This root-final *-s is to be carefully distinguished in principle from suffixal *-s (below 11.4), though there are cases where this is difficult, *i.e.* roots which show variation between *-s and zero final (see the rhyme *-is, 10.2 below).

2. See JAM 1972b (“TN and comparative TB”):281. Similar developments are widespread elsewhere, *e.g.* in many dialects of Latin American Spanish, where -s > -h > Ø.

3. Many Chin verbs in “Form II” end in glottalized sonorants, which are likely descendants of an *-s suffix with subordinating function. See below 11.4.2.

4. Final -ʔ in Jingpho is from *-k, not from *-s. See above 8.2(1), etc.

5. In the original version of *STC*, it was claimed (p.146) that final *-s “appears to have been dropped” without trace in Karenic, but this was amended to “replacement by -t” on the basis of new evidence (n. 401, pp. 146-7). See also Benedict 1979:13-20 (“A note on the reconstruction of Karen final *-s”).

10.1: *-as

10.1 *-as

<i>PTB</i>	<i>WT</i>	<i>Kanauri</i>	<i>Lepcha</i>	<i>Jg./Nung</i>	<i>Lushai</i>	<i>Dimasa</i>
*-as	-as	-as	-ot	-at	-aʔ	-e

Some examples are as follows:

‘bear fruit / rice’ ^a	*b-ras	<i>STC</i> pp. 17, 123 WT ḥbras ‘rice’; Lushai raʔ ‘fruit, bear fruit’; Dimasa (Marrison 1967) bere ‘bear fruit’
‘bee / honey’	*was	<i>STC</i> , p.17 Kanauri wās ‘honey’; Lepcha vot ‘bee’; Vayu siŋ-wo ‘bee’
‘leaf’	*s-nas	JAM 1972b:281 Lushai hnàʔ ; Tangkhul a-na ; Khoirao a-na ; Maram a-no ; Maring na ; Tiddim Chin naʔ ; Sema a-ni-ka ; Zeme peneu ; Mzieme penei ; Proto-Tani (J. Sun 1993) nə > Apatani jà-nur ; Bengni na-nur ; Bokar a-nə ; Dafla na-ne ; Padam-Mising (Abor-Miri) an-nə , na-nə , Tagin a-nv , Taraon na :
‘possess / keep’	*ŋas	Chamling (W. Winter 1985) ngas-u ; Lai Falam (KVB) ŋaʔ
‘thick / solid’	*r-tas	<i>STC</i> #426 ^b WT ḥthas-pa ‘hard, solid’; Rawang (Nungish) that ‘thick’; Jg. thàt ‘thick’, ləthàt ‘coarse, rough’; Mikir ar-that ‘fat, thick, callous’; Wancho tat ‘thick’; Meithei ətha-ba ‘thick’; Lushai tśhaʔ ; Tiddim Chin saʔ ; Tangkhul śá
‘thing’ ^c	*r-dzas	Gong 2000:#23 WT rdzas ‘thing, matter, object’; WB ca ‘thing’.

a. For competing Chinese comparanda and a possible Austronesian connection for this root, see below §10.6.

b. This root was originally reconstructed as ***r-ta-t**, with suffixal ***-t** (see *STC* p. 102).

c. There is a Chinese comparandum in the *qùshēng* (see below 10.6 and 11.4.5(2)).

The -s appears certainly to be suffixal ⁶ in the following:

‘be / live / stay; rest / perch’	*g-na-s	STC #414
	*g-nas	WT gnas-pa ‘be, live, dwell, stay’
	*na	Kanauri <i>na-si</i> ‘rest’; Bahing <i>na-so</i> ‘ <i>id.</i> ’; PLB *na ² (DL:733) > WB <i>nâ</i> ‘cease motion to rest’; Lahu <i>nâ</i> ‘perch on, alight (of winged creatures)’
‘feed / food’ ^a	*dzya-s	JAM 1972b:281
		WT zas ≠ zan ‘food’; Lushai <i>fà?</i> ‘feed with the mouth’
‘hear’	*s-ta-s	STC #415
	*tas	WT <i>thos-pa</i> (with unexplained back vowel); Vayu <i>thas-tse</i> ; Miri <i>tat</i>
	*s-ta	Lepcha <i>thyo</i> ^b ; Tsangla <i>tha</i> ; Nung <i>tha</i>
‘rain’	*rwa-s	JAM 1972b:281; STC #443
	*rwas	Lushai <i>rwà?</i> (n.)
	*rwa	WB <i>rwa</i> (v.)

a. The underlying verb is *dzya ‘eat’, ubiquitous in TB; see above 5.2.

b. The Lepcha medial -y- points to the *s- prefix (above 4.2.1). Probably related, though with other suffixal elements, are Trung *than* and Newari *tal*.

6. See below 11.4.

10.2 *-is

<i>PTB</i>	<i>WT</i>	<i>Kan.</i>	<i>rGyal.</i>	<i>Lp.</i>	<i>Jg./Nung</i>	<i>Lu.</i>	<i>WB</i>	<i>Lahu</i>
*-is	-is	-is	-es	-ăť	-it	-iʔ	-ac	-i(ʔ) / -i(ʔ)

Sets with this rhyme generally have variants with open syllables:⁷

‘comb’	*k ^w i-s ^a	<i>STC</i> #480; ^b Benedict 1979 c; JAM 1986b ^d Lushai <i>khuiʔ</i> ; Digaro <i>se-kwi</i> ; Proto-Karen * <i>khwis</i> (> Pa-o <i>khút</i> , Pho <i>khwì</i> , Palaychi <i>khwèq</i> , Sgaw <i>khwí</i>); PLB *ʔ-g ^w əy ² ≠ *bri ² > WB <i>phî</i> ~ <i>bhî</i> ~ <i>phrî</i> ‘to comb, brush’; Lahu <i>pī</i> ‘to comb’, <i>pī-kâʔ</i> ‘a comb’
‘two’	*g-ni-s *g-nis *ʔ-nit *ni ^f	<i>STC</i> #4; <i>TSR</i> #160; JAM 1995b (“Numerals”):178-81 WT <i>gnyis</i> ; Kanauri <i>nis</i> ; rGyalrong <i>kěñěs</i> ; Lepcha <i>nyăt</i> ; Lushai <i>hniʔ</i> ; Tangkhul <i>khəni</i> ; Garo <i>gni</i> WB <i>hnac</i> ^e Jg. <i>nī</i> ; Lahu <i>nî</i> (< PLB *ni ²)
‘seven’	*s-ni-s *s-nis *ʔ-nit *si ² (PL)	<i>STC</i> #5; <i>TSR</i> #128; JAM 1995b (“Numerals”):197-201 Kanauri <i>stis</i> ~ <i>tis</i> ; rGyalrong <i>kěsněs</i> ; Jg. <i>sənit</i> ; Lushai <i>sariʔ</i> ; Tiddim <i>səgiʔ</i> ; Paite and Gangte <i>sagih</i> ; Lakher, Puiron, Kom Rem <i>sari</i> ; Garo <i>sni</i> ; Tangkhul <i>śini</i> ^g WB <i>khu’-hnac</i> ; Atsi <i>nʔyit</i> ; Maru <i>nʔat</i> Lahu <i>šī</i> ; Akha <i>shìq</i> ; Luquan <i>ši</i> ⁵⁵
‘wet’	*m-ti-s ^h *m-tis *m-ti	<i>STC</i> pp. 16, 26, 45 Kanauri <i>this</i> ‘wet’; Jg. <i>mədīt</i> ‘moisten sthg; wet, damp’; Lalo <i>tíq</i> ‘steep, soak’ Kanauri <i>ti</i> ‘water’; Jg. <i>mədī</i> ‘moist, damp, wet’; Lahu <i>dì</i> ‘moisten due to sexual excitement (of a woman), ejaculate (of a man)’

a. Cf. the section on *labiovelar initials, above 3.2(4).

b. Reconstructed as **kwi(y)* in *STC*, despite the final glottal stop in the Lushai reflex.

c. “Four forays into Karen linguistic history”.

d. “Labiovelar unit phonemes”.

e. Contra *STC* (n. 60, p.16), where the WB form is derived from **s-nik*.

f. The indubitable Chinese cognate 二 *njər* (*GSR* #564a-d) apparently descends from the open-syllable variant; see *STC* n.454, p. 169.

- g. Kanauri *st-* is the regular reflex of **s-n-* (see above 4.2.1). Lushai and other Chin languages have undergone rhotacization of the root initial to *-r-* (sometimes then occlusivizing to *-g-*). Lahu (and other Loloish languages) show preemption of the root-initial by the **s-* prefix. The numeral ‘seven’ seems to be a derivative of ‘two’, undoubtedly reflecting an ancient quinary system of calculation (as in modern Khmer).
- h. The underlying root is **t(w)i(y)* ‘water’ (see *STC* #55, #168), with several Chinese comparanda: 水 *śiwər* ‘water’ (*GSR* #576a-e); 涕 *djər* ‘nasal mucus’ (*GSR* #551f); 川 *fiwən* ‘stream/river’ (*GSR* #462a). The PTB nasal prefix is confirmed by the voiced Lahu initial (see above 4.3).

10.3 *-us

PTB	WT	Chepang	Lp.	Jg./Nung	Lushai	WB	Lahu
*-us	-us	-us	-ăť	-ut	-uʔ	-ui	-ɔ

There are two good examples:

‘bone’	<i>*g-rus</i>	<i>STC</i> #6
	<i>*g-rus</i>	WT <i>rus-pa</i> ; Lepcha <i>ăhrăt</i> ; Jg. <i>ñ-rút</i> ; Lushai <i>ruʔ</i> ; Tangkhul <i>rur</i> ; Proto-Karen <i>*krut</i> > Pa-o <i>tśhut</i> , Pwo <i>χwi</i> , Palaychi <i>ʔa-χi</i> , Sgaw <i>χi</i> ^a ; Nung <i>sərö</i>
	> <i>*s-rəw</i> ² (PLB)	Maru <i>səruk</i> , ^b WB <i>rûi</i> , Lahu <i>ɔ-ğô</i>
‘wet / dew’	<i>*hus</i>	<i>STC</i> p. 17
	WT <i>hus</i> ‘moisture’; Chepang <i>hus</i> ‘dew’; Lushai <i>huʔ</i> ‘wet’	

a. Cf. also Rungchengbung *sa-yu-ba*. There is an excellent Chinese cognate that reflects the velar prefix: 骨 *kwət* (*GSR* #486a).

b. PLB **-əw* regularly becomes Maru *-uk* (see above 5.3.1).

10.4 *-es

There is only one example of **-es* that has been discovered so far:

‘lip / beak’	<i>*s-nes</i>	<i>STC</i> p. 16
	rGyalrong <i>ăśnäs</i> ‘lip, beak’; Lushai <i>heʔ</i> ‘lower lip’; Tiddim <i>neʔ</i> ‘ <i>id.</i> ’	

7. See the discussion of root-final vs. suffixal **-s*, 11.4 below.

10.5: Dental stop plus suffixal *-s > WT -s

10.5 Dental stop plus suffixal *-s > WT -s

There are a couple of cases (‘knee’, ‘bile / gall’) where an original suffixal *-s seems to have displaced a root-final dental stop in WT, by a process which might be called “suffix postemption”. Suffixed -s appears after WT final velars and labials (orthographic -gs -ŋs -bs -ms), but not after dentals (there is no “-ds” or “-ns”). Thus some instances of WT -s are to be derived from earlier *-t-s :

‘knee’ ^a	*put-s	STC #7
	WT pus-mo, W. Tibetan pis-mo; Lepcha tuk-păt ; Jg. phùt ‘kneel’, ləphùt ‘knee’; Nung phaŋ-phit ‘knee’, ur-phut ‘elbow, ra-phut ‘shoulder’; Maru pat-lau ‘knee’; Phunoi phat tho khau ‘kneel’	
‘bile / gall’ ^b	*m-kri-t-s	STC #412
	*m-krit	> Garo kha-khit (kha ‘bitter’); Dimasa bikhlu
	*m-krits	> WT mkhris-pa; West Tibetan thigs-pa

a. See above 8.4(3). The Lolo-Burmese forms (Maru, Phunoi) point to final *-t rather than *-s, since in the one unambiguous example (‘bone’ above) the rhyme *-us > PLB *-əw, which in turn > Maru -uk.

b. The underlying root is *kri(y) ‘acid / sour’ (STC #413): Lepcha kri ‘bitter’; Jg. khrī ‘sour’; Dimasa khiri ‘id.’; Nung səhi ‘bile’; PLB *ʔ-grəy¹ ‘bile’ > WB sâñ-khre (sâñ ‘liver’), Lahu ð-kɛ .

10.6 Chinese comparanda to TB etyma in *-s

	PTB	OC	GSR	OC Gloss
‘bone’ ^a	*g-rus	骨 kwət	486a	<i>id.</i>
‘class / category’ ^b	*g-ras	類 liwəd	529a	‘class / category / similar / equal’
‘hungry / famine’ ^c	*b-kres	饑 kjər	547k	‘famine / esp. want of grain’
‘old’ ^d	*b-gres	耆 g’jər	552l	<i>id.</i>
‘rice’ ^e	*b-ras	糲 lâd ~ ljad ~ lâd	340g	‘coarse grain’
‘speak / word’ ^f	*grwas	話 g’wad	302o	‘speak / word’
‘thing’ ^g	*r-dzas	事 dz’jæg	971a-c	‘practice / serve / service / occupation / affair / sacrifice’
‘two’	*s-ni-s	二 njər	564a-d	‘ <i>id.</i> ’
‘wet’	*m-ti-s	水 śiwər	576a-e	‘water’
		涕 djər	551f	‘nasal mucus’
		川 t̪iwən	462a	‘stream / river’

a. See above §10.3.

b. Cf. WT gras ‘class, order; tribe’. For an allofamically related root, cf. *g-ral ‘equal / line up / connect / in a row’, above 9.3.4. See Gong 2001:27.

c. Cf. WT bkres ‘hungry; hunger’. See Gong 2001:25.

d. Cf. WT bgres ‘old’, WB krî ‘big; old, senior’. See Gong 2001:27.

e. Cf. WT hbras ‘rice’, Lushai ra? ‘fruit, bear fruit’ (above §10.1). An Austronesian connection has long been suggested for this root (cf. Malay b̄aras < Proto-Indonesian *b̄aya/s ‘husked rice’) although this etymology has been rejected by Benedict (1975:104), who prefers to relate the WT form to Chinese 飯 ‘cooked rice or millet’ (OC b’jwän; GSR #262i), on the grounds that the basic meaning of the TB etymon is ‘fruit / bear fruit’ (cf. WT hbras-bu ‘fruit; corn; grain’). See Gong 2001:23.

f. Cf. WT gros ‘speech, talk’. See Gong 2001:28.

g. Cf. WT rdzas ‘thing, matter, object’, WB ca ‘thing’. See Gong 2000:23.

 11.1 *Introduction*

TB suffixal morphology is an intricate topic, to which a full-length book could easily be devoted. This section will not deal with fully syllabic suffixes like WT -pa ~ -po, -ma ~ -mo; or with particles or postpositions with clear grammatical functions like Meithei -pə ‘nominalizer; relativizer; citation form of verbs’,¹ Newari -e ~ -ye, Lahu ve ‘*id.*’, which are best discussed in the general context of grammaticalization of root-morphemes.²

 11.1.1 *The trio of dental suffixes */-n -t -s/*

Three non-syllabic dental suffixes, */-n -t -s/, are so widespread that they may be reconstructed at the PTB or even the PST level.^{3/4} Yet they have been referred to as “particularly troublesome” (STC:98) because of their semantic elusiveness. Their functions overlap both inter- and intra-lingually, *e.g.*, all three of them can have nominalizing force in WT (intralingual variation); and all three may carry a causative/transitive meaning, but in different languages (interlingual variation).⁵ Sometimes their grammatical roles appear contradictory from a cross-linguistic viewpoint: *e.g.*, the *-s suffix in some languages has a causative/transitive (*i.e.*

 1. Chelliah 1997:155ff.

 2. See JAM 1985a *GSTC, passim*; 1991d (“Grammaticalization”).

3. -t and -n occur only after vowels, but -s could occur after stops and nasals as well. See the PTB syllable canon, above Ch. 2. In WT, however, suffixal -s did not occur after dentals, so that WT -s sometimes reflects PTB *-t-s or *-n-s; see the discussion of ‘knee’ and ‘bile’, above 10.5.

4. The pioneering work on these suffixes was brilliantly carried out by S.N. Wolfenden (1929:56ff.; 1936; 1937).

5. However, none of these dental suffixes were as consistently or productively used in this function as the causative prefix *s- (above 4.2.1).

11.1.1: The trio of dental suffixes */-n -t -s /

outer-directed) meaning; but in other languages it functions as a marker of inner-directed action, a kind of middle voice or stative meaning (below 11.4.3). In many specific cases the increment of meaning conveyed by one of these dental suffixes is quite idiosyncratic, with few if any parallel examples.

In view of their vagueness, sporadicity, and limited productivity, as well as their ability to change the form-classes of roots, these dental suffixes should be viewed as derivational rather than inflectional morphemes.

Morphophonemically it is not uncommon to find word families comprising an open-syllable root that could be followed by more than one dental suffix, either within a single language or cross-linguistically. For a single language, examples may be drawn from Written Tibetan:

<i>WT</i>					
dro ‘be warm’	≈	dron-mo ‘sthg warm’	≈	drod ‘warmth’	
blu ‘redeem; ransom’	≈	blud-po ‘ransom payment’	≈	blus-ma ‘id.’ ^a	
nu ‘suck’	≈	nud-pa ‘suckle an infant’	≈	snun-pa ‘id.’	

a. < *blu-t-s

Some cross-linguistic examples:

*na ≈ *nan ≈ *nat		‘ill / suffer / evil spirit’ ^a
*na	WB na ‘be sick, hurt’; Lahu nà ‘id.’; WT na-ba ‘id.’	
*nan	Lahu nê ‘illness producing spirit’; Chinese 難 (OC nân) ‘be in difficulty, suffer’	
*nat	WB nat ‘spirit’; WT nad ‘illness’; Lushai nat ‘ache, be in pain’	
*dzya ≈ *dzya-n ≈ *dzya-t ≈ *dzya-s ^b		‘eat / food / feed’
*dzya	WT (b)za-ba ‘eat’; Jg. šǎ; WB câ; Lahu câ ‘id.’; Pwo and Sgaw sha ‘food’	
*dzyan	WT zan ‘food’; Lepcha ăzom ‘food’; Chinese 餐 (OC ts’ân) ‘eat / food, meal’	
*dzyat	Lepcha zot ‘graze’; Jg. šât ‘rice to eat’	
*dzyas	Lushai faʔ ‘feed with the mouth’	
*ba ~ *pa ≈ *b/pan ≈ *b/pat		‘thin’
*b/pa	Jg. phà; WB pâ; Lahu pâ; Garo ba; Tiddim pa: (Form I) ^c	

*pan	Lushai pan; Tiddim pan ¹ ‘very thin’
*pat	Tiddim pat ‘be thin’ (Form II)
*g-tsyi ∅ *g-tsyin ∅ *g-tsyit	‘urine / urinate’
*g-tsyi	WT gci ‘urinate; Jg. dži ‘id.’
*g-tsyin	WT gcin ‘urine’
*g-tsyit	WT gcid-pa ‘urinate’; Jg. džit ‘urine’
*r-kəw ∅ *r-kun ∅ *r-kut	‘steal / thief’
*r-kəw	WT rku ‘steal’; Jg. ləgú ‘id.’; WB khûi; Lahu qhô
*r-kun	WT rkun-ma ‘thief’; Pa-o Karen təkhuŋ; Kanauri khun
*r-kut	Jg. ləgùt ‘thief’
*b-rəy ∅ *b-ris ∅ *rit ∅ *ri:n	‘draw / write’
*b-rəy	WT hbri-ba ‘draw, write’, ri-mo ‘drawing, marking’; WB rê ‘write, paint’
*b-ris	WT bris ‘picture’, ris ‘figure, form, design’
*rit	Jg. rīt ‘fix, as a boundary’, ʔərīt ‘boundary line’
*ri:n	Lushai riin ‘draw a line, scratch’
*yəw ∅ *yun ∅ *yut	‘leak / drip’
*yəw	WB yui ‘leak’; Tsangla yu ‘id.’; Meithei yu ‘id.’
*yun	Jg. yūn, kəyūn ‘leak’; Lushai and Hakha zun ‘excrement, urine’
*yut	Hakha zuθ ‘leak, drip, fall’

a. See JAM 1978a (VSTB):110.

b. This root is also well-attested with a velar suffix, *dzyak; see below 5.2.4(5).

c. For the Form I/Form II distinction in Chin verbs, see below 11.4.2.

Additional examples include ‘smoke’ and ‘join / bring together’, below 11.2.4(1,2).

11.1.2 Root-final vs. suffixal dental consonants

In etymologies, these dental suffixes present an eternal problem that is quite analogous to what one faces with prefixes. Just as it is necessary to distinguish as far as possible

11.1.3: Primary vs. secondary suffixes: Newar verb classes

between *prefix-plus-root-initial vs. *intrinsic initial consonant clusters (above 4.1.2, 4.5.1),⁶ so must we distinguish between root-final consonants and suffixes, *e.g.*:

*rus	‘bone’	vs.	*d-bu-s	‘center’
*mpat	‘vomit’	vs.	*s-ta-t	‘put / place’
*zan	‘strong’	vs.	*dzya-n	‘food’
*was	‘bee’	vs.	*g-na-s	‘be, stay; alight, perch’

11.1.3 Primary vs. secondary suffixes: Newar verb classes

The important Himalayish language Newar(i), spoken in the Kathmandu Valley of Nepal, is known for its elaborate system of stem-final consonants that it attaches to verb roots in certain conjugated forms. For Classical Newar (14th-19th cc.), Jørgensen (1936; 1941:47) distinguishes four classes of “primary verbs”, each consisting of a monosyllabic root with a final consonant: (1) verbs in -n; (2) verbs in -t; (3) verbs in an “unstable -l”; and (4) verbs in an “unchangeable” -l. Most of these stem augments are secondary with respect to the rest of TB,⁷ *e.g.*:

	<i>Nw.</i>	<i>PTB</i>
‘die’	sit-	*səy
‘give’	bil-	*bəy ^a
‘steal’	khul-	*r-kəw
‘graze’	džal-	*dzya ‘eat’ ^b
‘hear’	tal-	*ta-s

a. For modern Newar, Malla (1985:44) analyzes this stem as an underlying open syllable, bi-. Genetti (1994:98) shows that this root is to be reconstructed as Proto-Newar *bir- (*cf.* Dola-kha bir-).

b. Compare Lepcha zot ‘graze’, with suffixal *-t or *-s (both suffixes > Lp. -t).

Malla (1985:43-44) recognizes five distinct verb conjugations for Modern Newar: two with stem-final vowel, one with -n, one with -l, and one with stem-final -p, -t, or -k. Genetti (1994:92-100), on the basis of comparisons between the Kathmandu and Dolakha dialects, reconstructs four verb-classes for Proto-Newar, with stems ending in

6. See, *e.g.* PLB *krak^H ‘crossbow’ > Lahu khâ? vs. PLB *k-rak^H ‘chicken’ > Lahu ġâ?.

7. Some of these stop-final stems are in fact etymological, *e.g.* syat- ‘kill’ < PTB *g-sat (STC #58).

*/ -n -t -r -l /, which surface most clearly in the “past disjunct” forms. These four classes remain intact in Dolakha, but the Kathmandu paradigms show some innovations:

Proto-Newar	Dolakha	Kathmandu	Class	Examples		
				Dolakha	Kathmandu	
*-n	-n	-n	I	on-	wan-e	‘go’
*-t	-t	-ø ~ -t	II	syāt-	syā-ye	‘kill’
*-r	-r	-ø ~ -l	III	khōr-	kho-ye	‘cry’
*-l	-l	-l	IV	tul-	tul-e	‘roll’
---	---	-p -t -k	V	---	---	---

When comparative data is not taken into account, Kathmandu Classes II and III are analyzed as having stem-final vowels (as in Malla 1985).⁸ Class V, with stop finals, does not exist in Dolakha, is not mentioned in Jørgensen’s treatment of Classical Newar, and does not undergo morphophonemic alternations in the various forms of the paradigms. Genetti thus regards this class as a modern innovation in the Kathmandu dialect.

These stem-final suffixes are rather reminiscent of the sort of “stem augments” that one finds in Indo-European word-families.⁹

11.2 Suffixal *-n

A variety of functions for this suffix may be distinguished (*nominalizing, transitivity, collectivizing*), though few languages employ it with any great degree of productivity in any particular grammatical role.¹⁰

8. The stem final *-t and *-r can actually be deduced by internal reconstruction in these classes, by reanalyzing the Past Disjunct affix as simply -a, not -ta (Class II) or -la (Class III). Thus ‘kill’ (PD) Kath. syāt-a (not syā-ta) vs. ‘cry’ (PD) khol-a (not kho-la). See Genetti p. 98.

9. A good example is PIE *wer-, taken as the “conventional base of various Indo-European roots” meaning ‘turn/bend’, including: *wert- > *wreit- > Eng. *inward, vertex, wreath, wroth*; *wergh- > Eng. *wring, wrong, wrangle*; *werg- > Eng. *wrench, converge*; *wreik- > Eng. *wry, wriggle, wrist, wrestle*; *werb(h)- > Eng. *reverberate*, Old English *weorfan* ‘throw away’, German *werfen*; *werp- > Eng. *wrap, rhapsody*; *wrmi- > Eng. *worm*. See *The American Heritage Dictionary of the English Language*, 4th Edition, p. 2054.

10. In some cases all one can do is note the presence of a nasal suffix, without being able to assign it any meaning at all, e.g. ‘give’ PTB *bøy > WB pē, Mikir pi, etc., but WT sbyin. There are several miscellaneous examples where Trung (Nungish) has a final -ŋ where other TB languages have open syllables, including ‘give’ (Trung biŋ), but also ‘hear’ PTB *ta (Trung thaŋ), and ‘borrow / lend’ PTB *s-køy > WT skyi-ba, WB khyê, Lahu chî (but Trung skinŋ).

11.2.1: Nominalizing *-n

11.2.1 Nominalizing *-n

(1) Lepcha -m ~ -n

Lepcha has a nasal suffix (apparently unpredictable as to point of articulation, but usually labial) with nominalizing function.¹¹ It is usually reinforced pleonastically by the prefix *ǎ-* (< *ʔǎ-), which is itself historically a nominalizer (*cf.* above 4.2.2):

zo	‘eat’	ǎzom	‘food’
hru	‘be hot’	ǎhrum	‘hot’ ≠ ǎhrun ‘heat’
ya	‘know’	ǎyam	‘knowledge’
śi	‘be’	śim	‘being’
bu	‘carry’	ǎbun	‘vehicle’ ^a

- a. This etymon (reconstructed as *bǝw ‘carry on back or shoulders’ in *STC* #28) has several other reflexes with final -n, including Lushai *bun* ‘put on or wear (as ring, boots), encircle’ and Pwo Karen *phün* ~ *phən* ‘carry on back’. It is the same morpheme as *bǝw ‘wear’, set up as a separate root in *STC* #428. (*Cf.* French *porter* ‘carry; wear clothes’.) There is a Chinese comparandum 負 OC *bjǝg* ‘carry on the back’ (*GSR* #1000a).

In at least one case in Lepcha the nasal suffix has been generalized to the underlying verb:

‘shine / light’	*hwa-t	<i>STC</i> #221
	Bahing hwa; Lp. om ‘shine’, om-bo ‘illuminating’,	
	ǎ-om ‘brightness’ ^a	

- a. *Cf.* 9.6 above.

11. See *STC*:102.

(2) *Written Tibetan -n*¹²

Written Tibetan has a relatively large number of derived nominals with suffixal -n:

<i>WT Verb</i>		<i>Derived Noun</i>	
skyo	‘be weary; vexed’	skyon	‘fault; harm; defect’
rgyu	‘move; wander’	rgyun	‘flow; current; stream’
gtši	‘urinate’	gtšin	‘urine’
ñe	‘be near’	ñen	‘kinsman’
gda	‘be there’	gdan	‘seat; position; abode’
rdzu	‘lie; deceive’	rdzun	‘falsehood’
za	‘eat’	zan	‘food’

As in Lepcha, the WT nominalization is often reinforced pleonastically with another morpheme, in this case with a further suffix, fully syllabic -pa/-ma ~ -po/-mo:

<i>WT Verb</i>		<i>Derived Noun</i>	
rku	‘rob; steal’	rkun-ma	‘thief’
skyi	‘borrow’	skyin-pa	‘thing borrowed’
Ngro	‘go’	Ngron-po	‘guest’
rŋa	‘mow; cut; reap’	rŋan-pa	‘reward; hire; wages’
Ndu	‘come together’	Ndun-ma	‘council; advice’
Ndre	‘be mixed’	Ndren-ma	‘mixture’
Nphyo	‘roam about; gambol’	Nphyon-ma	‘prostitute’
bzo	‘to milk’	bzon-ma	‘milk cow’
śu	‘peel; strip off’	śun-pa	‘a peel’
dro	‘be warm’	dron-mo	‘sthg warm’ (≠ drod ‘warmth’)

12. Examples are from the excellent list in Beyer 1992:117. In all forms cited from Beyer, the prefix *a-chung* is transcribed with “N-”, instead of the symbol “h-” used elsewhere in this volume. For speculations on the phonetic nature of *a-chung*, see above 4.2.2.

11.2.2: Transitivity *-n

11.2.2 Transitivity *-n

This is a rare function for the nasal suffix, so far documented only for a few forms in Kanauri (see *STC*:102):

<i>Kanauri</i> (v.i.)	<i>Gloss</i>	<i>Kanauri</i> (v.t.)	<i>Gloss</i>
hu-śi ^a	‘learn’	hun	‘teach’
go-śi	‘be adulterous’	gon	‘commit adultery with smn’
PTB *r-kəw	‘steal’	khun	‘id.’

a. Kanauri -śi is a ‘middle voice’ suffix expressing inner-directed action or state; see below 11.4.3.

11.2.3 Collectivizing *-n

The most interesting function of suffixal *-n is after noun roots, where in a few cases it seems to have a *collective* or *pluralizing* meaning.¹³ Convincing examples are relatively few, but they are to be found in Chinese as well as in TB, with occasional good correspondences between them (see 11.2.4 below).

‘palm / sole’	*p ^w a-n	<i>STC</i> #418; JAM 2000a (“*p-/w-”) #16
	*p ^w a	Nung ur-pha; WB bhəwâ; Garo džak-pha ‘palm’, dža-pha ‘sole’
	*p ^w an	Jg. ləphàn ^a
‘garlic / onion’	*swa-n	JAM 1985a <i>GSTC</i> , pp. 10-11
	*swa	Lahu šū-qō ‘leek’, šū-phu ‘onion’, šū-phu-nù ‘garlic’ ^b
	*swan	WB Krak-swān ‘onion’

a. The -n in Jingpho is “possibly with dual force” here (*STC* n. 284). Although this is not suggested in *STC*, it is possible that the source of this “collectivizing” suffix is actually the numeral ‘two’ *g-ni-s (above Ch. 10). There is a Jingpho numeral nī (used in composition), as well as a collectivizing suffix of the same shape (Hanson 1906:467-8; Dai *et al.* 1983:593).

b. Lahu -u is the regular reflex of *wa, with several parallel examples (‘cattle’; ‘handspan’; ‘tooth’; see above 5.2.2). PLB *-an becomes Lahu -e (e.g. ‘louse’; ‘slave’; ‘hawk’; see above 7.1(2)). There is a solid Chinese cognate with final -n (below). The function of the -n in this root might have been to differentiate multi-cloved garlic from unibulbate onions. Note, incidentally, that the English word *onion* is itself etymologically related to *one* : < French *oignon* < Lat. *ūniō(n)*- ‘unity, union; a kind of large pearl, a rustic Roman name for a single onion’ (*OED*).

13. See *STC*, n. 284, pp. 99-100; n. 428, pp. 157-8.

This suffix is also postulated in several animal names, with the semantic implication that they are species perceived to appear in large groups:¹⁴

‘crow’	*ka-n	STC pp. 99-100
	*ka	WT <i>kha</i> -tha; Jg. ù- <i>khā</i> ; Rawang thaŋ- <i>kha</i>
	*kan	WB kyî- <i>kân</i> ^a
‘crab’	*d-ka:y ≈ *d-kan ^b	STC #51
	*d-ka:y	Lp. tǎhi; Mikir tsehe; Tangkhul khai ‘fish’, khai-reu ‘crab’; Lushai ai ~ chakai ‘crab’
	*d-kan	Jg. tǎkhán

a. The unaspirated WB initial actually points to a prototype with *voiced initial, *gan. The voicing possibly arose because the initial of the second element in the compound is in intervocalic position.

b. There are other several other etyma which display -ay ≈ -an variation; see JAM 1985a *GSTC* pp.46-7, 64-6; also JAM 1995a “Palatal suffixes”; see below 11.6.

Written Tibetan has a pair of collective circumfixes, comprising prefixal s- and a suffix which is either -n or -d (= /t/), which is found in a very few words denoting kinship groups, functioning to expand the range of reference of the source noun (Beyer 1992:119):

phu	‘elder brother’	spun	‘siblings’
		span-spun	‘brothers; relatives’
tsha	‘grandchild; nephew’	khu-tshan	‘uncle and nephew’
		pha-tshan	‘cousins on the father’s side’ ^a
khu	‘uncle’	skud-po	‘brother-in-law; father-in-law’
pha	‘father’	pha-spad	‘father and children’
ma	‘mother’	ma-smad	‘mother and children’

a. The s- prefix does not appear in these forms because of their sibilant initial.

14. The most convincing examples of this category are ‘goose’ and ‘rat/rabbit’, presented below (11.2.4) because the evidence comes mainly from Chinese.

11.2.4: Traces of suffixal *-n in Chinese

This kinship suffix is reflected sporadically elsewhere in TB, not necessarily with a “collective” meaning, *e.g.*:

‘mother’	*ma-n	Kanauri mann
‘child’	*tsa-n	Dhimial tsan
‘child’	*za-n	Lepcha ăzon ‘grandchild’
‘grandmother’	*bwa-n	WB khaŋ-pwân ‘spouse’ (khaŋ ‘grandfather’)

11.2.4 Traces of suffixal *-n in Chinese¹⁵

The most interesting cases of the *-n suffix in Chinese involve noun roots where the suffix can be said to contribute a collective or vaguely plural meaning. These include several animal names and kinship terms:

‘dog’	*k ^w əy-n	STC #159; JAM 1985a <i>GSTC</i> #17
	*k ^w əy	WT khyi; Chepang kwi; Jg. gùì; WB khwê; Lahu phî; Lushai ui; Karen thwì; Chinese 狗 (OC ku; <i>GSR</i> #108d) ‘dog’
	*k ^w əyn	Chinese 犬 (OC k’iwən; <i>GSR</i> #479a-d) ‘dog’ ^a
‘female’	*pwi(y)-n	STC #171
	*pwi(y)	Lushai -pui ‘feminine affix’; Jg. wī ~ yī ‘ <i>id.</i> ’, śəwī ~ śəyī ‘female’
	*pwi(y)n	Chinese 牝 (OC b’jən ~ b’jər; <i>GSR</i> #566i-j) ‘female of animals’ ^b
‘flesh / meat / animal’	*sya-n	STC #181
	*sya	WT śa ‘flesh, meat’, śa-ba ‘hart, stag’; WB sâ; Lahu šā ‘game animal; meat, flesh’; Ch. 獸 (OC śiôg; <i>GSR</i> #1100a-f) ‘animal’
	*syān	Jg. šàn ‘flesh, meat; deer’; Chinese 身 (OC śjēn; <i>GSR</i> #386a-c) ‘body’ ^c
‘garlic / onion’ ^d	*swa-n	JAM 1985a <i>GSTC</i> , pp. 10-11
	*swa	Lahu šū

15. See *STC*:154-60.

	*swan	WB <i>krak-swan</i> ‘onion’; Chinese 蒜 (OC <i>swân</i> ; <i>GSR</i> #175b) ‘garlic’
‘goose’	*ŋa-n	<i>STC</i> pp. 99, 155, 191
	*ŋa	Chinese 鵞 OC <i>ŋâ</i> (<i>GSR</i> #2p) ‘domestic goose’
	*ŋan	Chinese 雁 OC <i>ŋan</i> (<i>GSR</i> #186c) ‘wild goose’; ^e WB <i>ŋân</i>
‘grass’	*r-tswa-n	<i>STC</i> pp. 49, 158
	*r-tswa	WT <i>rtswa</i> ; perhaps also Chinese 草 ‘grass, plants, herbs’ (OC <i>ts’ôg</i> ; <i>GSR</i> #1049b-c)
	*r-tswan	Chinese 荐 ‘grass, herb’ (OC <i>dz’iæn</i> ~ <i>dz’wæn</i> ; <i>GSR</i> #432b)
‘man / person’	*r-mi-n	<i>STC</i> pp. 107, 158
	*r-mi(y)	WT <i>mi</i> ; rGyalrong <i>tərmi</i> ; Kanauri <i>mi</i> ; Magar <i>bhərmi</i> ; Digaro <i>nəme</i> ; Lushai <i>mi</i>
	*min	Chinese 民 (OC <i>mjĕn</i> ~ <i>mjæn</i> ; <i>GSR</i> #457a-b) ‘people’
‘rat / rabbit’	*b-yəw-n	<i>STC</i> #93
	*b-yəw	Jg. <i>yú</i> ‘rat’; ^f WT <i>byiu</i> ‘alpine hare’
	*b-yəwn	Jg. <i>yūn</i> ‘rat’; WB <i>yun</i> ‘rabbit’; Chinese 兔 (OC <i>ts’iŋwən</i> ; <i>GSR</i> #468s) ‘hare’

- Perhaps the suffixed Chinese form originally referred to wild dogs, which run in packs; 𤝵 PTB **kywal* ‘wild dog; dhole’ > PLB **wan*¹.
- Although this is not suggested in *STC*, the meaning here is possibly collective: ‘females in general, regardless of species; femaledom’.
- The whole body is apparently “flesh viewed collectively”. For an alternative etymology, see JAM 2000c (“PLB Fable”) where the Chinese form is compared to PTB **sin* ‘body; owner; agentive nominalizer’ > Lahu 𑜋-𑜊𑜃𑜫 (-*phâ*) ‘body; self’ and Lai Chin *sin* ‘possessive particle’. See above 7.2(2).
- In *STC* (p. 190) this root is related rather implausibly to **swa:r* ‘sour’; see above 9.2.2.
- The original collective force of the Chinese suffix is plausible given that wild geese typically appear in large groups during migration, etc.
- Jingpho shows intralingual variation between the plain and suffixed forms. WB and Chinese both reflect the suffixed allofam. Rats and rabbits are both species notorious for their fecundity.

There are also three good Chinese examples of the collective suffix with kinship terms:

‘grandchild’	*syu(w)-n	<i>STC</i> p. 158
	*syu(w)	Jg. 𑜉𑜂𑜫; Mikir and Meithei <i>su</i> ; Bodo <i>sou</i> , Dimasa <i>su</i>
	*syu(w)n	Chinese 孫 (OC <i>swən</i> ; <i>GSR</i> #434a-c)

11.2.4: Traces of suffixal *-n in Chinese

‘older brother / senior male relative’	*gəw-n ⋈ *kəw-n	<i>STC</i> #255
	*g/kəw	WB <i>ac-kui</i> ‘older brother’; WT <i>khu-bo</i> ‘uncle’; Ao Naga <i>o-khu</i> ‘uncle, father-in-law’; Jg. <i>gû</i> ~ <i>kû</i> ‘father-in-law’; Meithei <i>i-ku</i> ‘ <i>id.</i> ’
	*g/kəwn	Chinese 昆 (OC <i>kwən</i> ; <i>GSR</i> #417a-b) ‘older brother’
‘children / relatives’	*tsa-n	<i>STC</i> pp. 27,158
	*tsa	WT <i>btsa-ba</i> ‘bear children’, <i>tsha-bo</i> ‘nephew’, <i>tsha-mo</i> ‘niece’; Bahing <i>tša-tša</i> ‘grandson’; Maru and Atsi <i>tso</i> ‘child’; Chinese 子 (OC <i>tsjəg</i> ; <i>GSR</i> #964a-j) ‘child’
	*tsan	Dhimal <i>tšan</i> ‘son’; Chinese 親 (OC <i>ts’jǝn</i> ; <i>GSR</i> #382o-p) ‘parents, relatives’; ^a <i>cf.</i> also the WT collective kinterms cited above: <i>khu-tshan</i> ‘uncle and nephew’, <i>pha-tshan</i> ‘cousins on the father’s side’, <i>gnyen-tshan</i> ‘kindred, relations’

a. For an alternative etymology for this Chinese form, see below 12.6.1(2).

Other manifestations of the *-n suffix appear sporadically in Chinese with both noun and verb roots; most of the post-nominal cases are also susceptible of a “collective” interpretation:

(1) *With noun roots*

‘heaven’	*m-ka-n	<i>STC</i> p. 157
	*m-ka	WT <i>mkha</i> ‘heaven, the heavens’, <i>nam-mkha</i> ‘heaven, sky’
	*m-kan ^a	Magar <i>nam-khan</i> ‘sun’; Chinese 天 (OC <i>t’ien</i> ; <i>GSR</i> #361a-c) ‘heaven’ ⋈ 祆 (OC <i>χien</i> ; <i>AD</i> 996 [not in <i>GSR</i> #361]); <i>cf.</i> also 乾 (OC <i>g’jan</i> ; <i>GSR</i> #140c) ‘heaven, heavenly’
‘monkey’	*g-woy-n	<i>STC</i> #314
	*g-woy	Jingpho <i>wōi</i> ^b <i>Kadu kwe</i> ; Nung <i>əwe</i> ; Moshang <i>vi-sil</i> ; Shangge <i>yok-vi</i>
	*g-woyn	Chinese 猿 (OC <i>giwǎn</i> ; <i>GSR</i> #256c)
‘net’	*kwa-n ⋈ *gwa-n	<i>STC</i> #158; p. 158
	*kwa	Chinese 罟 (OC <i>kwo</i> ; <i>GSR</i> #41d) ‘net’

	*kwan ∞ *gwan	WT <i>rkon</i> -pa ~ <i>skon</i> -pa ‘fowler’s net’; Lepcha <i>kun</i> ‘sort of fishnet’; Jg. <i>sùm-gòn</i> ; Nung <i>gun</i> ; WB <i>kwan</i> ‘casting net’; Maru <i>gùm</i>
‘smoke’	*kəw-n/t ^c *kəw *kəwn	<i>STC</i> #256; p. 159 Bunan <i>khu</i> ; Limbu <i>me-khu</i> ; Abor <i>mui-kū</i> ; WB <i>mî-khûi</i> ; Lahu <i>mû-qhâ</i> ; ^d Garo <i>wal-ku</i> ; Jg. <i>khú</i> ‘be smoky’ Sunwar <i>kun</i> ; Newar <i>kın</i> ; Chinese 熏 (OC <i>χi̯wən</i> ; <i>GSR</i> #461a-c) ‘to smoke, to steam; aflame’
‘water / river’	*twəy-n *twəy *twəyn	<i>STC</i> #168; p. 158 Lushai <i>tui</i> ‘water / egg’; WB <i>thwê</i> ‘spit’, <i>tam-thwê</i> ‘saliva’; Chinese 水 (OC <i>śi̯wər</i> ; <i>GSR</i> #576a-e) ‘water’ Chinese 川 (OC <i>fi̯wən</i> ; <i>GSR</i> #462a) ‘stream, river’ ^e

- a. A collective interpretation is also possible here; cf. plural expressions for the sky in other languages, e.g. Eng. *the heavens*; French *les cieux*; Hebrew *shamayim* ‘sky, the heavens’ (morphologically dual).
b. *STC* cites an alternant “we”, but I have been unable to confirm this in other sources.
c. Jg. *ʔwàn-khùt* ‘smoke’ reflects a stopped allofam **kəwt*. This word family may thus be included in the collection of morphophonemic triplets, above 11.1.1. See below 11.3.1.
d. The first element in these forms means ‘fire’ (except for Lahu, where it means ‘sky’).
e. A river is a collectivity of waters, i.e. a confluence of tributaries. See above 10.6.

(2) *With verb roots*

‘bitter / liver’ ^a	*b-ka-n *ka *kan	<i>STC</i> #8; p. 158 WT <i>kha</i> ; Jg. <i>khá</i> ; WB <i>khâ</i> ; Lahu <i>qhâ</i> ; Lushai <i>kha</i> ; Chinese 苦 (OC <i>k’o</i> ; <i>GSR</i> #49u) ‘bitter’; Garo <i>kha</i> ‘bitter’, <i>bi-kha</i> ~ <i>bəkha</i> ‘liver’ Chinese 肝 (OC <i>kân</i> ; <i>GSR</i> #139L) ‘liver’
‘blush / red’	*n(y)a-n *nya *nyan	<i>STC</i> p. 159 Pa-o Karen <i>ńa</i> ‘red’ Chinese 赧 (OC <i>nan</i> ; <i>GSR</i> #216b) ‘blush’ ^b
‘eat / food / feed’ ^c	*dzya-n *dzya *dzyan	<i>STC</i> #66; p. 159 WT (b)za-ba ‘eat’; Jg. <i>śá</i> ; WB <i>câ</i> ; Lahu <i>câ</i> ‘ <i>id.</i> ’; Pwo/Sgaw <i>sha</i> ‘food’ WT <i>zan</i> ‘food’; Lepcha <i>žom</i> ‘food’; Chinese 餐 (OC <i>ts’ân</i>) ‘eat / food, meal’. See above 11.1.1.

11.2.4: Traces of suffixal *-n in Chinese

‘far’	*g-wəy-n	STC:61; DL:1337
	*wəy ² (PLB)	WB wê; Lahu vî; Maru wa
	*gwəy (Qiangic)	Qiang (Mawo) <i>guə’χe</i> ; Qiang (Taoping) <i>χua</i> ³³ ; Muya <i>qhuv</i> ⁵⁵ <i>re</i> ⁵³ ; Queyu <i>kua</i> ⁵⁵ <i>kua</i> ⁵³ ; Shixing <i>qhua</i> ⁵⁵ [ZMYYC #817]
	*gwəyn	Chinese 遠 <i>giwǎn</i> [GSR #256f-g]
‘ill / suffer’	*na-n	STC #80; p. 159
	*na	WB na ‘be sick, hurt’; Lahu <i>nà</i> ‘ <i>id.</i> ’; WT <i>na-ba</i> ‘ <i>id.</i> ’
	*nan	Lahu <i>nê</i> ‘illness producing spirit’; Chinese 難 (OC <i>nân</i>) ‘be in difficulty, suffer’. See above 11.1.1.
‘join / bring together’ ^d	*d/tu-t ≠ *d/tu-n	STC #421; p. 159
	*du ≠ *tu	WT <i>hdu-ba</i> ‘assemble, meet, join’, <i>hthu-ba</i> ‘gather, collect’
	*dun	Chinese 屯 (OC <i>d’wən</i> ; GSR #427a-c) ‘accumulate, bring together’, ^e and 純 (OC <i>d’wən</i> ; GSR #427n-o) ‘tie together, envelop’
	*dut ≠ *tut	WT <i>sdud-pa</i> ‘put together, unite’; Jg. <i>tút</i> ‘be joined, bound together’
‘red’	*t(y)a-n	STC pp. 17-18, 159
	*t(y)a	WB <i>ta ~ tya</i> ‘very red, flaming red’; Chinese 朱 (OC <i>tju</i> ; GSR #128a-c) ‘red’
	*t(y)an	Tiddim Chin <i>tshan ~ san</i> ‘red’; Lushai <i>śen</i> ; Chinese 丹 (OC <i>tân</i> ; GSR #150a-b) ‘red, vermilion; cinnabar’, 緋 (OC <i>tsjĕn</i> ; GSR #378g) ‘pale red’, and 緝 (OC <i>ts’iĕn</i> ; GSR #812t) ‘dark red’
‘thick’	*t/dow-n ^f	STC #319; JAM 1994d
	*t/dow	Jg. <i>dāu</i> ; WB <i>thu</i> ; Lahu <i>thu</i>
	*t/don	Chepeng <i>dun</i> ‘thick’; Abor-Miri <i>ko-dun</i> ‘buttock’; Wancho <i>chi-dun</i> ‘heel’; Chinese 敦 (OC <i>twən</i> ; GSR #464p-q) ‘solid, thick’ and 𪔐 (OC <i>tjwən ~ d’uən</i> ; GSR #427k) ‘thick (as darkness)’
‘wear / put on’	*g/kwa-n	STC #160

*g/kwa	WT bgo-ba ‘put on clothes’; Nung g(w)a ‘to dress’; Lisu gwa ‘ <i>id.</i> ’
*g/kwan	WT gon-pa ‘put on clothes, clothing’, skon-pa ‘dress smn’; Jg. khòn ‘wear (as bracelets)’; Garo gan ‘wear, dress’; Mikir kan ‘clothes, finery’; PKaren *kwan ‘put on (lower garment)’; Chinese 冠 (OC kwân ; <i>GSR</i> #160a) ‘cap; put on cap’

- a. In this word family, the suffix looks like a nominalizer. The semantic connection is via the ‘gall bladder’.
- b. The modern colloquial Mandarin expression is 臉紅 *liǎn hóng*, lit. ‘face is red’.
- c. There is also an allofam with velar suffix; see below 11.5.
- d. Since this word family has stop-final allofams, it should also be included in the collection of morphophonemic triplets, above 11.1.1.
- e. Peter Boodberg has suggested that the ancient graphic interchange between this character and 七 ‘seven’ might imply a Chinese cognate to the isolated WT form **bdun** ‘seven’ (p.c. to Benedict; see Benedict 1939:219). For a discussion of this mysterious etymon see 1995b (“Numerals”):202.
- f. There is also an allofam with final **-k**, ***tu:k** (*STC* #356). As shown in JAM 1994d, the semantic range of this word-family extends into the concept *dull* (as opposed to *sharp*; cf. Chinese 鈍 (OC **d’wən**; *GSR* #427i) ‘dull’, and from there to rounded body-parts like *buttocks* and *heel*; cf. Chinese 屍臀 (OC **d’wən**; *GSR* #429a-c) ‘buttocks’, and 殿 (OC **tiən**; *GSR* #429d) ‘rear of an army’.

11.3 Suffixal ***-t**

Like ***-n**, suffixal ***-t** has been employed in a variety of derivational roles in the various TB languages and Chinese, although no language uses it with very high productivity in any particular function. In many “miscellaneous” cases the grammatical or semantic contribution of the suffix resists classification.

An example of a highly specialized use of a dental stop suffix has been noted above (11.2.3) for Written Tibetan: along with **s.....n**, **s.....d** is used in a few nominal compounds as a collective circumfix in kinship terms (Beyer 1992:119):

pha	‘father’	pha-spad	‘father and children’
ma	‘mother’	ma-smad	‘mother and children’
khu	‘uncle’	skud-po	‘brother-in-law; father-in-law’

The nasal version of this circumfix is probably more original, given the relatively widespread use of **-n** as a collective suffix elsewhere in ST.

11.3.1: Nominalizing *-t

11.3.1 Nominalizing *-t

Suffixal -t occurs as a nominalizer of a few important verb-roots in Jingpho, and with somewhat higher frequency in Written Tibetan.

(1) Jingpho

Jingpho has an interesting set of four parallel examples of verbs under the high tone / ˈ / which have derived nouns with suffixal -t under the low tone / ˌ /:¹⁶

<i>PTB</i>	<i>Jg. Verb</i>	<i>Jg. Noun</i>
*dzya-t	šá ‘eat’	šàt ‘food/rice’
*kəw-t	khú ‘smoky’	ʔwàn-khùt ^a ‘smoke’
*r-kəw-t	ləgú ‘steal’	ləgùt ‘thief’
*tsyi-t	tší ~ dží ^b ‘urinate’	džìt ‘urine’

a. Cf. also Tangkhul Naga khut ‘smoke’.

b. This verb is mistranscribed džíʔ, with a final glottal stop, in *STC* (n. 190, p. 59), ostensibly on the basis of new data from LaRaw Maran; but see Dai *et al.*, 1983:348.

In other tonally parallel pairs the semantic relationship between the open and suffixed forms is different:

*tsow-t	džú ‘thorn; prick with a thorn’	džùt ‘be pierced’ (v.i.) šədžùt ‘pierce’ (v.t.)
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Here the open form can function either as a noun or a verb, while the suffixed form is an intransitive verb, which can be made transitive or causative by adding the productive prefix šə- (above 4.2.1). See below 11.3.3.

*s-ta-t	dá ‘put, place’	dàt ‘id.’ ^a
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a. Hkauri dialect.

Here the meaning of both forms is verbal, and the difference is merely one of dialect. In the cognate word-family in WT, however, the open syllable is nominal, while the stop-finalled allofam is a derived verb: *sta-gon* ‘preparation, arrangement’; *stad-pa* ‘put on, lay on’.

16. See JAM 1978a (*VSTB*):26-7.

A different pattern of Jg. tonal alternation is displayed by the following pair:

*s-ləy-t	lī	‘heavy’	lít	‘a load’
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(2) *Written Tibetan*

Beyer (1992:117) lists a number of WT nouns derived from verbs via the orthographic suffix “-d”, in most cases reinforced by a following “pleonastic” nominalizing suffix -pa/-ma ~ -po/-mo :

<i>Verb</i>		<i>Derived noun</i>	
dro	‘become warm’	drod	‘warmth’ (≠ dron-mo ‘warm’)
na	‘be ill’	nad	‘illness’
sñe	‘lean against’	sñed	‘crupper’
mtśhi	‘speak’	mtśhid	‘conversation’
tsha	‘be hot’	tshad-pa	‘heat’
ldži	‘be heavy’	ldžid-pa	‘weight’
rga	‘be old’	rgad-po	‘old man’
rke	‘be lean’	rked-po	‘waist’
bro	‘taste; smell; savor’	brod-pa	‘joy’
rtse	‘play’	rtsed-mo	‘game; sport; toy’
ŋu	‘weep’	ŋud-mo	‘a sob’
gdu	‘love’	gdud-pa	‘longing; desire’
lu	‘cough’	lud-pa	‘phlegm’

Sometimes there are noun doublets with and without -d, with no obvious underlying source verb:

du-pa	≠ dud-pa	‘smoke’
rtsa-ba	≠ rtsad	‘root’

In a few WT word families there are morphophonemic triplets comprising an open syllable, a form with suffixed “-d”, and one with final -s. The allofams with -s are plausibly interpreted as deriving from doubly suffixed forms (< *-t-s), since the consonant

11.3.1: Nominalizing *-t

sequence “-ds” does not occur in WT; *i.e.* the PTB final combination *-t-s had already been reduced to -s by the WT period.¹⁷

‘look’	*l-ta	WT lta ‘look’
	*l-ta-t	WT ltad-mo ‘sight; scene; spectacle’
	*l-ta-t-s	WT ltas ‘miraculous sign; omen’
	*l-tat	
	*l-tats	

‘ransom’	*blu	WT blu ‘redeem; ransom’
	*blu-t	WT blud-po ‘ransom payment’
	*blu-t-s	WT blus-ma ‘ <i>id.</i> ’
	*blut	
	*bluts	

‘laugh’	*rya	WT gža-ba ‘to sport, joke, play’; Digaro mərə; Aka (Hruso) ra
	*rya-t	WT bžad-pa ~ gžad-pa ‘laugh, smile’; Thebor rot; Bunan sred; Magar ret; Khaling ret; Nung it
	*rya-t-s ^a	WT gžas ‘play, joke’; Bahing ris ~ rit ‘laugh’; Nachereng hres
	*ryat	
	*ryats	

a. See below 11.3.5.

In one word family, WT preserves only a form with final -s, with the direct evidence for the corresponding open syllable and dentally suffixed form provided by other languages:

‘gall / bitter / sour’	*krəy	Lepcha kri ‘bitter’; Jg. khrī ‘acid, sour’; Dimasa khiri ‘sour’; WB sâñ-khre ‘gall / bile’ (sâñ ‘liver’); Lahu ð-kɛ ‘ <i>id.</i> ’
	*kri-t	
	*m-kri-t-s	
	*krəy	
	*krit	Garó kha-khit ‘bile’
	*m-krits	WT mkhris-pa ‘bile’; W. Tib. ʈhigs-pa ‘ <i>id.</i> ’

17. The combinations “-bs” and “-gs”, on the other hand, are frequent in WT. (The same distribution holds for the homorganic nasals before -s, *i.e.* -ms and -ŋs are common in WT, but -ns does not occur.) The PTB syllable canon given above (Ch. 2) allows for suffixal -s after postvocalic stops and nasals.

11.3.2 Verbalizing *-t

Only rarely is suffixal -t to be found in the contrary capacity, *i.e.* as a verbalizer of nominal roots. Two examples have already been mentioned (above 11.3.1), one from Jingpho and one from WT:

<i>Jg.</i>	džú	‘thorn’	≈	džùt	‘be pierced’
<i>WT</i>	sta-gon	‘preparation, arrangement’	≈	stad-pa	‘put on, lay on’

Hakha Chin is among the very few TB languages that uses such a verbalizing suffix with any frequency, in the form of the interdental fricative -θ (< *-t) :¹⁸

əfa	‘child’	fa:θ	‘to breed’
əbu	‘nest’	bu:θ	‘build a nest; group together, swarm’
əɔ:l	‘food’	rɔ:θ	‘grow food’
əva:	‘husband’	əva:θ	‘take a man as husband’

11.3.3 Transitive/causative *-t

A third type of derivation performed by suffixal -t is to convert intransitive or stative verbs into transitive or causative ones. In this function, -t seems rather more widespread than -n (above 11.2.2).

(1) Bahing-Vayu

On the basis of limited data (see *STC* p. 101), a transitive/causative suffix of the shape -t ≈ -to seems to be fairly productive in Bahing-Vayu:

<i>Bahing</i>	ri-so	‘laugh’	ri-to	‘laugh at’
<i>Vayu</i>	khu	‘steal’	khut	‘cause to steal’
	muś(-tše)	‘sit’	muś-to	‘seat smn’
			mut	‘cause to seat’ (double causative)

Modern data on Hayu (= Vayu) reveals that the -to suffix is only one of several morphophonemically complex transitive/causative formations in the language

18. The Hakha data cited in *STC* p. 102 have been corrected by KVB.

11.3.3: Transitive/causative *-t

(Michailovsky 1988:99 *ff.*), though it does remain conspicuous in that function. Thus in the sentence

mi	kun-ha	dzi-to
he	meat-ERG	stinks him up
‘The smell of meat bothers him’,		

“the use of the suffix *-to* seems to identify the verb as transitive, even if there is no opposition with [another transitive suffix *-ko*] on the same root” (Michailovsky, *op. cit.*:139).

(2) *Jingpho*

Jingpho has scattered examples of a causative or directive suffix *-t*:

mədī	‘moist, wet’	mədīt	‘moisten; wet sthg’
mənī	‘laugh’	mənīt	‘laugh at’

Since both **-t* and **-s* > Jg. *-t* (see above Ch. 10), it is possible that these causative alloforms reflect suffixal **-s* rather than **-t*, even though causative **-s* is otherwise attested only in Himalayish and Chin languages (below 11.4.4). The best evidence for **-s* here is the set ‘moist / wet’ (above Ch. 10).

(3) *Written Tibetan*

Suffixal “*-d*” is frequently encountered in WT verbal paradigms, as the marker of the present (*i.e.* imperfective) stem of certain transitive verbs. Since there are several cases where related pairs of transitive and intransitive verbs are distinguished only by this suffix, this makes it look as if *-d* is a transitive/causative morpheme (Beyer 1992:176):

<i>Intransitives</i>		<i>Transitives</i>	
Ndzu	‘enters’	Ndzud	‘inserts’
Ngye	‘be divided’	Ngyed	‘divides’
Nbye	‘be separated’	Nbyed	‘open sthg; separate sthg.’
skye	‘be born’	skyed	‘produces’
rgyu	‘moves’	rgyud	‘transmits’
nu	‘suck’	nud	‘suckle an infant’ ^a

a. Also snun-pa ‘*id.*’

This suffixal **-d** is known to Tibetan grammarians as the “present stem **da-drag**”, which a deeper analysis shows to be a tense/aspect marker rather than a transitivizer or causativizer. See 11.3.4 below (next section).

11.3.4 *WT da drag* (“strong *d*”): a present stem suffix

The only syllable-final consonant sequences occurring in most Classical Tibetan texts have **-s** as their second member / **-ms -ŋs -bs -gs** /. In a certain number of early texts, however, the spellings / **-nd -rd -ld** / are found, with the final dental stop called *da drag*,¹⁹ i.e. “strong *d*”. In his penetrating internal reconstruction of the WT verb system, Beyer (1992:175ff.) distinguishes between *past-stem da-drag* and *present stem da-drag*, hypothesizing that the underlying morphemes involved were two tense/aspect markers, ***-s** for the past stem and ***-d** for the present stem, which both underwent morphophonemic changes according to the particular final of the verb root, such that they only contrasted after roots ending in a vowel:

		<i>After Vowels</i>	<i>After Acute Cons.</i>	<i>After Grave Cons.</i>
<i>Past</i>	*-s	> -s	> -d > Ø	> -s
<i>Present</i>	*-d	> -d	> -d > Ø	> -s

(1) *Past-stem da-drag*

According to this analysis, the underlying (“Proto-Tibetan”) past stem suffix ***-s** remained **-s** after vowels and grave (labial or velar) finals, and became **-d** after acute (dental) finals. During the 8th century the **-d** allomorph disappeared, leaving only the **-s** allomorph after vowels or grave finals. In some manuscripts the **-d** is preserved sporadically after acute finals: e.g. **gyurd** ‘became’ (ult. < ***gyur-s**), **btsald** ‘acquired’ (< ***bstal-s**). This usage was artificially continued by the Tibetan grammarians, who used **-d** to distinguish the past from the future stem in verbs with non-grave finals where the future form was marked by the prefix **b-** (see above 4.4.3), e.g. **bsgyur** ‘will translate’ vs. **bsgyurd** (< ***bsgyur** < ***bsgyur-s** ‘translated’).

(2) *Present-stem da-drag*

Here the underlying present stem suffix is assumed to have been ***-d**, which remained **-d** after vowels or acute finals, and became **-s** after grave finals. But even before the

19. See Przyluski and Lalou 1933 (“Le *da drag* tibétain”) and Beyer 1992:175-6.

11.3.5: Suffixal -t in verb forms with no obvious function

earliest written texts, the -d allomorph had disappeared after acute finals, leaving the -d allomorph only after vowels, and the -s allomorph after grave finals, e.g. *Ntshod* ‘cooks’ (<√TSHO), *Nbyed* ‘makes open’ (< √PYE), etc.; vs. *Ngugs* ‘bends’ (< √GUG), *Ndžibs* ‘sucks’ (< √DžIB), etc. It is noteworthy that this -d occurs only in the present stem of transitive verbs that also have the *a-chung* prefix (transcribed variously as ’, ɸ, fi, or N-), and not the g- prefix.²⁰

11.3.5 Suffixal -t in verb forms with no obvious function

Intralingual variation as well as comparative evidence reveal many cases of verbal word-families with allomorphs including both open syllables and forms with final -t, indicating that the -t is suffixal and not part of the root. Often, however, it is not clear what increment of meaning this suffix provides. The base verbs may be either transitive or intransitive, though transitive examples appear more numerous.

(1) With transitive verbs

	PTB	STC
‘bite / chew’	*g-wa-t	#424
	*g-wa	Jg. gəwá; WB wâ
	*g-wat	Bodo wat ~ ot; Dimasa wai
‘comb / rake’	*m-si-t	#466
	*m-si	Jg. pəsí ‘a comb; a rake’; Nung əsi; Ao Naga məsə; Mikir iŋthi
	*m-sit	Jg. məsīt ‘to comb, to rake; a rake, a harrow’
‘get / obtain’	*r-ney-t	#294 ^a
	*r-ney	Bahing ne, Lushai nei
	*r-neyt	WT rnyed-pa
‘join / bring together’	*d/tu-t ^b	#421
	*d/tu	WT ɸdu-ba ‘assemble, meet, join’, ɸthu-ba ‘gather, collect’; Nung thu ‘join (as a stream)’
	*d/tut	WT sdud-pa ‘put together, unite’; Jg. tút ‘be joined, bound together’; Nung dəthut ‘join, unite’

20. The *a-chung* cannot occur before s-, r- or n-, as in the last three examples in the list in 11.3.3(3) above. See the discussion of *a-chung*, above 4.2.2(4).

			Suffixes
‘lose / disappear’	*ma-t ^c		#425
	*ma	Magar hma ‘be lost, lose’; Gurung hma ‘ <i>id.</i> ’; Chang màu ‘lose’ ^d	
	*mat	Magar hmat ‘be lost, lose’; Garo mat ‘be spent’; Jg. màt ‘be lost, have disappeared’	
‘put / place’	*s-ta-t		#19
	*s-ta	WB thâ; Lahu tâ; Jg. dá ‘put, place’; WT sta-gon ‘arrangement’	
	*s-tat	WT stad-pa ‘put on, lay on’; Jg. (Hkauri dial.) dât ‘put, place’	
‘scoop up’	*r-ko-t		#420
	*r-ko	WT rko-ba ‘dig out, engrave’	
	*r-kot	WT rkod-pa ‘ <i>id.</i> ’; Jg. gót ‘be scooped out’, ləgót ~ šəgót ‘scoop up’	
‘stop up / plug up’	*tsəw-t		#422
	*tsəw	WB chui ‘stop up’, ʔəchui ‘stopper, plug’; Nung sü ‘to cork’, aŋsü ‘a cork’	
	*tsəwt	Jg. tsút ‘stop, plug, cork (as a bottle)’, mətsút ‘to stop, cork; a stopper’	
‘wash’	*krəw-t		#117
	*krəw	WT ʔkhru-ba; WB khyûi; Dimasa gru	
	*krəwt	WT ʔkhrud-pa; Jg. khrût	
‘wound / injure’	*r-ma-t		#446
	*r-ma	WT rma ‘wound’, rma-ba ‘to wound’; Jg. n-mà ~ nùm-mà ‘wound, scar’; Tangkhul khəma; Tiddim ma ‘sharp edge of knife; to wound’; Lai hmaa (Form I) ‘have a wound’, hmaa ‘a wound’	
	*r-mat	Garo mat ‘to wound’; Dimasa bu-mai; Jg. màt ~ tsəmat ‘nettle’ (“the wounder”), Nung rəmat, Garo gil-mat; Dimasa ger-ma ‘ <i>id.</i> ’; Lai hmaat (Form II) ‘have a wound’	

a. There are two typos in the *English-TB Index* of *STC* (pp. 214, 217), where the reference to this root is given as “#249”.

b. There is also an allofam with -n, attested in Chinese; see above 11.2.4(2).

c. Jg. má? ‘be exhausted, spent’ (cited incompletely as “ma” in *STC* #425) actually points to an allofam *mak.

11.3.5: Suffixal -t in verb forms with no obvious function

d. For this Chang reflex -au < *-a, see above 5.2.1.

There is an etymon where final -d in a WT verb can be shown to be suffixal on the basis of a Chinese comparandum:

	<i>PTB</i>	<i>STC</i>
‘curse / revile’	*mwa-t	p. 189
	*d-mwat	WT dmod-pa
	*mwa	Chinese 罵 mǎ (<i>GSR</i> #40h)

(2) *With intransitive verbs* ²¹

	<i>PTB</i>	<i>STC</i>
‘awed / startled’	*ti-t	p. 99
	*ti	WB thi ‘fear; stand in awe of’ (v.i.)
	*tit	WB thit ‘startle; be frightened’ (v.i.)
‘cough’	*səw-t	#423
	*səw	Magar su; Garo and Dimasa gusu
	*səwt	WT sud-pa
‘fall’	*k/gla-t ^a	#123
	*kla ≈ *gla	WB kya ‘fall’, khya ‘let fall, drop’; Lahu qa ‘fall, of dew, frost, snow, hail, leaves’; ^b Lepcha klo; Mikir klo
	*klat	Jg. khrət ‘fall’, džəkhərət ‘drop, throw down’
‘fear’	*kri-t	#416
	*kri	WT khri-le-ba; Lushai tri (Form I); Kokborok kiri; Limbu kir-
	*krit	Jg. khrīt ‘be afraid’, džəkhərīt ‘frighten, scare’; Limbu kit-, ki:s-; Garo an-skīt ‘quail, shudder’; Lushai trit (Form II)
‘hot / hurt’ ^c	*tsa-t	#62
	*tsa	WT tsha ‘hot, illness’; WB cha ‘hungry’; Lahu cha ‘hot’; Garo sa ‘be sick, ache’; Dimasa sa ‘ache’, sa-ba ‘hot (of chillies)’; Lushai śa ‘hot’; Mikir so ‘hot, excessive; be ill, sore’

Suffixes			
	<i>PTB</i>		<i>STC</i>
	*tsat	WT tshad-pa ‘heat; fever’; Lushai śat ‘hot’; Pumi Dayang tsé ^d	
‘laugh’ ^e	*rya-t		#202
	*rya	WT gža-ba ‘to sport, joke, play’; Digaro mərə; Aka (Hruso) ra; PLB *ray ¹ > WB ray; Lahu ġì	
	*ryat	WT bžad-pa ~ gžad-pa ‘laugh, smile’, gžas (perhaps < *g-žad-s; see above 11.3.1); Thebor rot; Bunan sred; Magar ret; Bahing rit ~ ris; Khaling ret; Nachereng hres; Nung it	
‘light / brightness’ ^f	*hwa-t		#221
	*hwa	Bahing hwa ‘light’	
	*hwat	WT ɬod ‘light, shine, brightness’, nyi-ɬod ‘sunlight’; WB ne-at ‘id.’; Thado wat ‘shine’	

- a. Both a velar and a palatal suffix are also attested with this root; see below 11.5, 11.6, and JAM 1995a (Pal. suf.):46-7.
- b. Lahu ce ‘fall from a height’ reflects the variant with palatal suffix *gla-y. See above 5.5.2(1b).
- c. See above 11.3.1, and the Chinese comparandum with -t, below 11.3.6.
- d. Final -ɛ seems to be the regular Dayang reflex of *-at : e.g. ‘vomit’ *n-pat > Pumi Dayang ɬphé; ‘kill’ *sat > syě.
- e. For the Lolo-Burmese vocalism, see JAM 1985a *GSTC*:6, 59, and above 5.5.2(1b). WT gžas, as well as the Bahing and Nachereng forms, point to an allofam with the -s suffix.
- f. See above 9.6.

11.3.6 Traces of suffixal *-t in Chinese²²

Suffixal *-t is not as well exemplified in Chinese as the *-n suffix, though several clear cases have been uncovered.

The *-t suffix is attested for both Chinese and TB in at least three verb roots discussed above (11.3.5):

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese Gloss</i>
‘dig out’	*r-g/ko-t ^a	掘	g’iɰwət	496s	‘dig out (earth)’
		堀	k’wət	496p	‘dig in the ground / underground’

21. One intransitive verb once regarded as illustrating suffixal *-t has been reanalyzed as having root-final *-s : ‘thick’, formerly *r-ta-t (#426), is now reconstructed as *r-tas, based on WT ɬthas ‘hard, solid’ and Lushai tśha? ‘thick’ (see *STC*, n.291, and above, Ch. 10).

22. See *STC*, pp. 154-60.

11.3.6: Traces of suffixal *-t in Chinese

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese Gloss</i>
‘hot’	*tsa-t	疾	dz’jət	494a-c	‘sickness / pain’
‘laugh’	*rya-t	啞	d’iet	413m	‘laugh’

- a. The alternation in initial voicing is also attested both in WT and in Chinese. This ST word-family also has a nasal-final allofam, PKaren *ko-n > Pwo khən, Pa-o khu, Palaychi fo, Sgaw khu.

The final dental stop also seems suffixal in two Chinese kinship terms (see the similar use of *-n, above 11.2.4):

‘grandchild / nephew’	*b-ləy	姪	d’iet	413op	‘nephew, niece’
‘nephew / descendant’	*m-tu ɤ *m-du	出	t̪iwət	496a-e	‘nephew’ ^a

- a. The Chinese gloss is from 爾雅 *Erh Ya*; see Benedict 1942b.

In four interesting cases, PTB etyma with the open-syllable rhyme *-əy have solid Chinese comparanda with final -t :

	<i>PTB</i>		<i>OC</i>	<i>GSR</i>	<i>Chinese Gloss</i>
‘blood’	*s-hywəy	血	χiwet	410a-c	‘blood’
‘earth / mud’	*mləy	泥 涅	niər niet	563d 404j	‘mud / mire’ ‘black sediment in muddy water / clay / mud’
‘juice / paint’	*r-tsəy	漆	ts’jět	401b	‘varnish’
‘sun / day’	*nəy	日 睨	ńjět nian ^a	404a-d 1250e	‘sun / day’ ‘sunlight’

- a. OC reconstruction guessed at in *GSR*; Middle Chinese is nien-.

Since there is no plausible semantic increment contributed by the Chinese suffix, an explanation might be sought in phonetic terms. It seems possible that the final -t in these words is purely “extrusional”, *i.e.* an originally subphonemic consonantal offglide from the high front vocalic nucleus. A close analogy is to be found in Maru (Burmish), where the regular reflex of PLB *-əy is -it, while PLB -əw regularly becomes Maru -uk (see above 5.3.1, 5.3.2).²³ Unlike the Maru phenomenon, however, this Chinese development

23. For a similar extrusional account of the tendency for PST/PTB *p- to develop into *w- via an intermediate phone [p^w], see JAM 2000a.

is sporadic, and counterexamples are readily found, *e.g.* ‘die’ PTB *səy, but OC sɿər, not **sɿət.

For allofamic alternations in OC between homorganic final stops and nasals, which may plausibly be imputed to the assimilatory influence of suffixes, see below 12.5.4.

11.4 Suffixal *-s

Only a handful of TB languages preserve *-s as a sibilant, whether root-finally or suffixally. Foremost among these conservative languages is Written Tibetan, but *-s is also preserved as such in West Himalayish languages (Kanauri, Bunan, Manchad, Tinan); languages of Nepal like Magar, Chepang, and Bantawa; and some Qiangic languages (Qiang, rGyalrong).

It is often difficult to distinguish final *-s from *-t. In a number of languages (*e.g.* Jingpho, Lepcha, Chinese) the reflexes of both have merged to -t, in both root-final and suffixal position.²⁴ In the following two examples, the *-s is root-final in ‘bone’, but suffixal in ‘know’:

PTB		
‘bone’	*g-rus	WT rus-pa; Lepcha ährät; Jg. ñ-rút; Lushai ruʔ; Chinese 骨 OC *kwət (GSR #486a) ^a
‘know’	*syey-s	WT śes-pa, Hayu ses-tsé; but WB si’ ‘know’, Jg. šì ‘news’; Chinese 悉 MC sɿət (GSR #1257e) ‘all, completely; exhaust’; (AD #782) ‘thoroughly know; perfectly understand; ^b fully, minutely, all, altogether’

a. See above Ch. 10.

b. As observed in *STC* (n. 429, p. 159), ‘know / understand’ is probably the more basic meaning, since the graph has *heart* as signific. RSC points out that the original meaning of this graph, according to 說文 *Shuo Wen*, is ‘track an animal’, thence ‘make inductions from evidence; think logically’ (Duan Yucai 1815:050.210; cf. 采 050.110).

In Chin languages (*e.g.* Lushai, Lai), final *-s has developed into -ʔ (written with “-h” in their orthographies), both root-finally and suffixally. As a suffix, this Chin -ʔ frequently appears in “Form II” of verb roots, where it seems to have a subordinating function (below 11.4.2).

24. As noted above (11.3.1), both suffixes could occur sequentially after the same root, in the order *-t-s, with this sequence realized as simple -s in WT, *e.g.* ‘bile / gall’ *m-kri-t-s > WT mkhris-pa.

11.4.1: Nominalizing/locative *-s

Tonogenetic effects have been imputed to suffixal *-s, both in Chinese and in Lolo-Burmese, and even in Vietnamese (below 11.4.5).

No single overall meaning may be assigned to the *-s suffix, since it plays several different derivational roles in the languages which preserve it, functioning variously as a nominalizer, subordinator, marker of stativity, or a causativizer.

11.4.1 Nominalizing/locative *-s

In a number of roots, suffixal *-s serves as a nominalizer in Qiang (LaPolla and Huang 1997:29):

nə	‘sleep’	nəs	‘bed’
guə	‘wear’	guəs	‘clothing’ (< PTB *gwa-s)
dzə	‘eat’	dzəs	‘grain’ ^a

- a. There is a similar morphosemantic relationship between Lahu câ ‘eat’ (< PLB Tone *2) and cà ‘paddy; rice in the field’ (< Tone *1), although this is a counterargument to the claim that it was PLB tone *2 that ultimately derived from final **-s. See below 11.4.5. Cf. also WT za ‘eat’, zas ≠ zan ‘food’ (below).

These cases are to be distinguished from those where Qiang final -s (like several other consonants) is merely a “pseudo-suffix” resulting from the fusion of the second syllable of a compound onto the final of the first syllable (see below 11.7).

Written Tibetan is a stronghold of nominalizing suffixal *-s. A few examples are given in *STC* (e.g. ḥbri-ba ‘draw / write’ > bris ‘picture’, ris ‘figure / form / design’), and many more are to be found in Beyer (1992:118):

<i>Verb</i>		<i>Derived Noun</i>	
skyab	‘protect’	skyabs	‘protection’
skyem	‘be thirsty’	skyems	‘beverage; beer; libation’
khru	‘bathe’	khruś	‘bath’
graŋ	‘count’	graŋs	‘number’
Ngro	‘go’	Ngros	‘motion; travel’ (≠ Ngron-po guest’)
rdže	‘to change; shift’	rdžes	‘track; trace’
lta	‘look’	ltas	‘omen; sign; prodigy’
Ndom	‘come together’	Ndoms	‘genitals’

<i>Verb</i>		<i>Derived Noun</i>	
spu	‘decorate’	spus	‘beauty’
spo	‘to change; shift’	spos	‘incense’
phyug	‘be rich’	phyugs	‘cattle’
Nbo	‘swell up’	Nbos	‘boil; tumor; swelling’
sbug	‘pierce’	sbugs	‘hole’
rtsi	‘count; calculate’	rtsis	‘counting; numeration; astrology’
rdzoŋ	‘dismiss; expedite’	rdzoŋs	‘act of escorting; fee for safe conduct; dowry’
gža	‘make jokes; play games’	gžas	‘joke; game’
za	‘eat’	zas	‘food’ (≠ zan ‘food’)
zab	‘deep’	zabs	‘depth’
log	‘return; turn around’	logs	‘side; direction; region’
śoŋ	‘remove; empty; carry away’	śoŋs	‘pit; excavation; valley’
bśo	‘pour out’	bśos	‘food offering to the gods’
srub	‘stir; rake; rub’	srubs	‘cleft; slit; rent; wound’
slob	‘learn; teach’	slobs	‘exercise; practice; experience’

Sometimes the derived nominal is reinforced pleonastically by a further, fully syllabic suffix:

rga	‘be old’	rgas-ka	‘old age’
Ndre	‘be mixed’	Ndres-ma	‘mixture; medley’
btsa	‘bear; bring forth’	btsas-ma	‘harvest’
rdzu	‘lie; deceive’	rdzus-ma	‘something counterfeit’
lhe	‘twist; braid’	lhes-ma	‘a braid; wickerwork; twisted pastry’

11.4.2: Subordinating -ʔ (< *-s) in Chin Form II verbs

Beyer (*ibid.*) points out that these are distinct from nominalizations with -pa of past tense stems which have an inflectional suffix -s (these seem to function rather like English past participles, active or passive):

skye	‘be born’	skyes-pa	‘man; male person’ ^a
grag	‘cry; shout’	grags-pa	‘fame’ (“that which has been shouted”)
tšhib	‘ride’	tšhibs-pa	‘horse’ (“that which has been ridden”)
spro	‘go out; spread; incline to’	spros-ba	‘business; activity’ (“that which has been spread abroad”)

a. Perhaps the meaning is ‘one that has been born with good enough karma to be a male’.

Beyer, following W. Simon 1940, theorizes that this suffix might derive from Proto-Tibetan *sa ‘place’ (*cf.* Chinese 所 OC *sjə* GSR #91a-c, Mand. *suǒ*), *e.g.* *nag* ‘be black’ > **nag-sa* ‘dark place’ > WT *nags* ‘forest’. This seems especially plausible since there are also examples where -s derives nouns from other nouns:

dbu	‘head’	dbus	‘center; middle’ < * <i>dbu-sa</i> ‘head-place’
khunḡ	‘hole; pit’	khunḡs	‘a mine’ < * <i>khunḡ-sa</i> ‘hole-place’
ŋo	‘face’	ŋos	‘direction; surface’ < * <i>ŋo-sa</i> ‘face-place’
nye-žo	‘mishap’	nyes-pa	‘calamity, punishment’ (above 5.4.1)

Nominalizing *-s may also have left traces in Chinese in the shape of *qùshēng* (“departing-tone”) alloforms of words in other tones. See below 11.4.5.

11.4.2 Subordinating -ʔ (< *-s) in Chin Form II verbs

The Chin languages (Lushai, Lai, Tiddim, *etc.*) are notable for their characteristic verbal morphology, in which most verbs have two allomorphs (so-called Form I and Form II), with a complex distribution determined by a number of syntactic factors. In Lai, *e.g.*, Form I is required in main clauses with intransitive verbs, or with transitive verbs if the clause is negative, interrogative, or imperative; while Form II appears in subordinate clauses, as well as in main clauses with transitive verbs which are affirmative and declarative (*i.e.* non-negative, non-interrogative, and non-imperative). The two forms

display several different patterns of morphophonemic relationship which are predictable to some extent from the final segment of the Form I allomorph, as in Lai:²⁵

	Form I	Form II
(a) <i>If Form I ends in -ʔ, the verb is invariant in Form II:</i>		
‘want, like’	duʔ	duʔ
‘detest’	fiʔ	fiʔ
(b) <i>If Form I ends in an oral stop /-p -t -k/, Form II ends in -ʔ:</i>		
‘enter’	luut	luʔ
‘ache’	faak	faʔ
(c) <i>If Form I ends in a liquid or nasal other than -ŋ, Form II ends in the corresponding glottalized sonorant:^a</i>		
‘surround’	zeel	zeʔl
‘turn, twist’	mer	meʔr
‘deride’	zoom	zoʔm
‘throw’	hlon	hloʔn
(d) <i>If Form I ends in -ŋ, there are two possibilities for Form II. In about 20% of the cases, Form II has glottalized -ʔŋ, following the general rule; usually, however, Form II has the non-glottalized alveolar nasal -n:</i>		
(d1) ‘tip over’	buŋ	buʔŋ
‘be burning’ (v.i.)	kaŋ	kaʔŋ
(d2) ‘crow’	khuaŋ	khuan
‘be strong’	ʈhoon	ʈhoon
‘be sticky’	baŋ	ban
‘borrow’	hlaaŋ	hlaan

11.4.2: Subordinating -ʔ (< *-s) in Chin Form II verbs

	<i>Form I</i>	<i>Form II</i>
(e)	<i>If Form I ends in a diphthong, a glottal stop is inserted before the last mora of the diphthong in Form II:</i>	
‘make war’	dau	daʔu
‘be muddy’	noi	noʔi
‘provoke’	haau	haʔu
(f)	<i>If Form I ends with an open (automatically long) vowel, Form II ends with a stop, unpredictably either -ʔ, -k, or -t (apparently never -p), often with shortening of the vowel:</i>	
(f1) ‘die’	thii	thiʔ
(f2) ‘urge, push’	hnee	hneek
(f3) ‘be sick’	zoo	zoot
‘come’	raa	rat
(g)	<i>Some verbs have I/II variants that differ only in tone:^b</i>	
‘say’	tshìm	tshím
‘be short’	niàm	niám

a. Synchronically it is immaterial whether the glottal stop is written either before or after the sonorant, since the glottalization is really a prosody which affects the whole rhyme of the syllable.

b. This class requires further investigation.

Most of these morphophonemic relationships (all except *f2* and *f3*) can be accounted for by positing a Proto-Chin glottal stop suffix -ʔ, that perhaps functioned as some sort of subordinator. In the case of verbs which already ended in -ʔ, this suffix was otiose, hence the invariant class (*a*). This Proto-Chin suffix is plausibly derived from an earlier PTB suffixal *-s, in view of the fact that syllable-final *-s typically becomes -ʔ in Chin languages (above Ch. 10). This would also explain the change from velar to dental nasal in Form II of class (*d2*), via assimilation to the dental *-s suffix: *-ŋ-s > -ns > -n. This assimilation must have been sporadic, since it did not occur in all cases.

This Form II suffix (basically a subordinator) is diachronically distinct from the -ʔ causative/transitive suffix also found in Lai (below 11.4.4).

25. See Melnik 1997, Patent 1997, KVB 2001.

11.4.3 Sibilant stative suffixes

There is scattered evidence in Himalayish languages for a sibilant suffix that carried a stative, inner-directed, or “middle” meaning.²⁶ There are a number of WT intransitive verbs (*e.g.* verbs of perception or cognition) that have an -s suffix in their present stem, a couple of which have exact cognates in Hayu (= Vayu):

	<i>PTB</i>	<i>WT</i>	<i>Hayu</i>	<i>WB</i>	<i>Lahu</i>
‘know’	*syey-s	śes-pa	ses-tśe	si’	šī
‘hear’ a	*ta-s	thos-pa	thas-tśe	---	---
‘dwell / stay’	*g-na-s	gnas-pa	---	nâ	nâ

a. This root could take other suffixes as well: Trung (Nungish) *than*, Newari *tal*. (Other examples of Trung secondary -ŋ are ‘borrow/lend’ (*s-kəy > WT *skyi-ba*, WB *khyê*, Lahu *chî*; but Trung *skin*) and ‘give’ *bəy > Trung *biŋ*.)

In Vayu, a palatal sibilant suffix -ś has been recorded for some adjectives (*i.e.* stative verbs) and reflexives: *liš-tśe* ‘be heavy’ (< *s-ləy); *siś-tśe* ‘kill oneself / kill for oneself’.

A similar adjectival/stative suffix is well attested in Kanauri,²⁷ *e.g.* *tśis* ‘rotten’; *tshōs* ‘fat’ (< PTB *tsow-s);²⁸ *kyōs* ‘drunk’; *liss* ‘cold’; *thiss* ‘wet’²⁹ (< *m-ti-s). Other West Himalayish languages have suffixal -s (or -z) after some action verbs, mostly intransitives, *e.g.*:

• <i>Bunan</i>	hoangs ‘come out’, <i>Tinan voas</i> ‘ <i>id.</i> ’ (< PTB *hwan, <i>STC</i> #218)
• <i>Manchad</i>	braŋz ‘sit’
• <i>Tinan</i>	sams ‘think’ (<i>cf.</i> WT <i>sems-pa</i>), <i>bragz</i> ‘put together’ (v.t.)
• <i>Bunan</i>	bris ~ briz ‘write’ (< PTB *b-rəy; <i>cf.</i> WT <i>hbri-ba</i> ‘write’ ≠ (b)ris ‘picture, figure’, where the -s functions as a nominalizer, above 11.4.1)

26. For a general study of “middle voice” marking in TB, see LaPolla 1996. For an account of the “middle voice” in Lai Chin, see Smith 1998.

27. Sometimes written “-ss” in the transcription of Bailey 1911.

28. Recently uncovered data indicate that the final -s found in the etymon in Himalayish languages may have had a nominalizing rather than a stativizing function: *tsow-s ‘fat / omentum (fat around the intestines)’; Zhangzhung *tshas* ‘fat’; *Bunan tshos* ‘omentum’; *Pattani tshò* ‘fat’; *tsho-so* ‘omentum’; *Kanauri tshōs* ‘fat, oil, grease’ (note the nominal rather than adjectival gloss; also probably *Chepeng ʔənʔ-chewʔ* ‘omentum’. See JAM 2001b:#40.

29. The underlying root is *ti(y) ‘water’. See above Ch. 10.

11.4.4: Causative -s in Kiranti and -ʔ (< *-s) in Chin

After several transitive verbs Magar (Central Nepal) has suffixal -s, with no obvious function: *khus* ‘steal’ (< PTB *r-kəw); *ɲos* ‘look for, search’; *khus* ‘take up’ (cf. WB *khû*).

Possibly related to the non-syllabic stative *-s suffix is a fully syllabic suffix -sí ≠ -so in Himalayish and Nungish, with a similar range of intransitive, reflexive, reciprocal, or stative meanings:

• <i>Bahing</i>	-so	ri-so ‘laugh’; phi-so ‘dress oneself’; yon-so ‘be melted’
• <i>Kanauri</i>	-sí	za-sí ‘be eaten’; krap-sí ‘cry together’; ton-sí ‘strike oneself, strike one another’; go-sí ‘commit adultery with’; hu-sí ‘learn’
• <i>Nung</i>	-sí	it-sí ‘laugh’; khuŋ-sí ‘awaken’; ɲim-sí ‘stoop’

11.4.4 Causative -s in Kiranti and -ʔ (< *-s) in Chin

In contradistinction to the “inner-directed” functions just described, the Kiranti languages provide sporadic evidence for an “outer-directed” causative suffix -s, that occasionally participates in paradigms along with applicative forms with a -t suffix (see above 11.3.3), as in Bantawa (Ebert 2000:5):

i-	‘laugh’	is	‘make laugh’	itt-	‘laugh at’
par-	‘shout’	pays-	‘make shout’	patt-	‘shout at’

Independent of the Form I/Form II distinction, some Lai Chin verbs have a Form III with final glottalization that carries a causative, transitive, or benefactive meaning (KVB 2001:8):

	<i>Form I</i>	<i>Form II</i>	<i>Form III</i>	
‘drink’	dɪŋ	dín	dinʔ	‘give to drink’
‘cook’	tshwàŋ	tshwán	tshwanʔ	‘cook for someone’
‘be full’	tlɪŋ	tlín	tlinʔ	‘fill something’
‘say’	tshìm	tshím	tshimʔ	‘tell someone’
‘sweet’	thlùm	thlúm	thlumʔ	‘sweeten’

These Form III causative forms are invariant with respect to the Form I/Form II distinction. In fact they clearly represent a more recent or “younger” level of suffixation, since the glottal stop is superimposed on the Form II allomorphs (cf. the first three examples with final dentals, above). Only verbs which do not develop a glottal stop in Form II (i.e. classes *d2* and *g*, above) are eligible to receive the causative suffix -ʔ.

More common as a causative mechanism in Lai is aspiration of the initial consonant. Both the simplicia and the causatives may have the Form I / Form II distinction:

	<i>Simplicia</i>			<i>Causatives</i>	
	<i>Form I</i>	<i>Form II</i>		<i>Form I</i>	<i>Form II</i>
‘be burning’	káaŋ	kaŋʔ	‘burn sthg’	kháaŋ	khaŋʔ
‘disappear’	lów	lowʔ	‘erase’	hlów	hlowʔ
‘be split’	tsat	tsaʔ	‘split sthg’	tshat	tshaʔ
‘descend’	trùm	trúm	‘put down’	thrúm	thrumʔ

Many other TB languages (including WB and Kiranti³⁰) also have morphological causative formations with aspirated initials, and the comparative evidence strongly suggests that the source of the aspiration is the causative *prefix* *s- (above 4.2.1), which is much better attested in TB as a whole than the causative suffix *-s.

In sum, Lai Chin displays traces of three distinct (though doubtless historically related) functions of affixal *s- and *-s : (1) causatives with aspirated initials, from the PTB *s- prefix; (2) Form II stems of verbs that point to a -ʔ suffix ultimately from PTB suffixal *-s; (3) causatives with a final -ʔ suffix superadded to Form II stems of verbs, also descending ultimately from suffixal *-s.³¹

There are two pairs of verbs in WB with homorganic final dental nasal and stop, with the latter carrying a causative/transitive meaning. It is possible that these forms with final -t reflects an earlier causative suffix *-s:

pân	‘go round’	pat	‘wind around; encircle’
pwân	‘be rubbed off’	pwat	‘rub, grind; lathe’

30. Kiranti languages with this type of causative include Hayu (e.g. bok- ‘be born’ / phok- ‘give birth’), Thulung (e.g. get- ‘come up’ / khet- ‘bring up’), and Limbu (e.g. te:ks- ‘be torn’ / the:ks ‘tear sthg’). See Ebert, *loc. cit.*

31. By far the most productive type of causative formation in Lai, however, is via the suffix -ter, grammaticalized from a PTB verb meaning ‘give’ (see above 9.2.3).

11.4.5: Tonogenetic effects of initial and final *s

Finally, as noted above (11.3.3), Jingpho also has a couple of simplex/causative verb-pairs where the causative member has final -t, though it is hard to say whether this reflects *-t or *-s, since both finals have merged to Jg. -t (above Ch. 10):

mədī	‘moist, wet’	mədīt	‘moisten; wet sthg’
mənī	‘laugh’	mənīt	‘laugh at’

11.4.5 *Tonogenetic effects of initial and final *s*

There is widespread agreement that s, along with h and ʔ, is one of the most tonogenetically potent of consonants, although there is no obvious phonetic explanation for why this should be so.³² This tonogenetic power can make itself felt either in syllable-onset or -offset position.

(1) *Initial *s-*

In syllable onsets, s- sometimes behaves tonogenetically like ʔ-, but sometimes quite differently, perhaps partly depending on whether the s- is functioning as the root-initial or as a prefix. Both possibilities may be illustrated in Lolo-Burmese:

- Etyma under PLB Tone *2 usually develop into the Lahu tone ⁵⁴, written “ ^ ”; however, if the syllable initial was a PLB *preglottalized stop or if the initial has become a Lahu voiceless fricative, the Lahu tone becomes ¹¹, written “ - ”.³³ Here all the voiceless fricatives (including f- and h-) behave tonally like Lahu š-/s-, and all these fricatives behave just like the proto-glottalized stops.
- In stopped syllables, prefixal *s- before nasals triggers Lahu high-stopped tone / ^ʔ /, but the *ʔ- prefix before nasals gives high-rising tone / ´ /, e.g. PLB *s-myak^H ‘eye’ > Lh. mēʔ; PLB *ʔ-mak^L ‘son-in-law’ > Lh. má, with most other Loloish languages showing similarly divergent tonal developments.³⁴

The very last point made in *STC* (p. 197) is an attempt to explain a set of tonally irregular TB/Chinese comparanda by invoking the special tonogenetic effect of sibilant

32. For an early expression of puzzlement on this score see JAM 1970 (“Glottal dissimilation”):43, where it is pointed out that the nature of the phonetic relationship between s and h, as well as that between h and ʔ, is relatively clear, but that the close tonogenetic relationship between s and ʔ is more difficult to understand. See “The glottogenic prefixes *s- and *ʔ-”, above 4.2.

33. See Burling 1967; JAM 1979 (“Quo vadimus?”). See above 3.3 for the historical origins of the Lahu voiceless fricatives.

34. See JAM 1972a (*TSR*):24.

initials, which supposedly caused PST etyma under Tone *B to acquire Chinese Tone *A, with at least one case (‘die’) where this correspondence is reversed. The assumption here is that the “PTB” tones faithfully reflect the original PST situation, while Chinese has innovated (see JAM 1999a:24-5):

TABLE 22. *TB / Chinese tonal correspondences after sibilant initials*

PTB *B / Chinese *A				
	<i>PTB</i>		<i>OC</i>	<i>GSR</i>
‘bitter’	*sin ^B (as in *m-sin ‘liver’)	辛	sĭĕn ^A	382a-f
‘body’	*śa-n ^B ‘flesh; meat’ (Jg. śàn)	身	śĭĕn ^A	386a-c
‘fish’	*s-ŋya ^B	魚	ŋjo ^A	79a-c
‘older sister’	*sru(w) ^B	婁	sriju ^A	133e
‘sour’	*swar ^B	酸	swân ^A	468e
‘tree’	*siŋ ^B	薪	sĭĕn ^A ‘firewood’	382n
‘year’	*s-ni:ŋ ^B	年	nien ^A	364a-c
PTB *A / Chinese *B				
‘die’	*səy ^A	死	sĭər ^B	558a-c

(2) *Final *-s*

Syllable-final -s can also have multiple tonogenetic effects, probably because it may change either into -h (as, e.g. in Latin American Spanish), or into -ʔ (as in Chin languages). According to the classic theory of Haudricourt (1954b), these two laryngeals are supposed to have opposite tonogenetic effects, with -h leading to a low or falling tone and -ʔ favoring the development of a high or rising tone.³⁵

It has long been felt that the Chinese 去聲 *qùshēng* or “departing tone” (often called “Tone C”) is less “basic” than the others, particularly because of the large number of word-families where it alternates with words in other tones.³⁶ Benedict considered the

35. Haudricourt (1954b) explains the evolution of the 6-tone system of Vietnamese as a two-stage process. In the first stage (ca. 6th c. A.D.), this previously atonal Mon-Khmer language developed three tones due to the loss of final -h (< Proto-Mon-Khmer *-s) and final -ʔ, which led respectively to a falling and a rising tone, both contrasting with a third tone deriving from syllables with other finals. In the second stage (ca. 12th c.) each of these three tones split due to a loss of the voicing contrast in initial position.

36. The morphological functions of the *qùshēng* in these word-families are arranged into eight categories in Downer 1959, including nominalization, verbalization, causativization, and adverbialization. Schüssler 1985 and Mei 1989 attempt to establish a single more abstract function underlying all of these, characterized as “inversion of attention flow” or “change of direction”. See LaPolla 2001:5-6.

11.4.5: Tonogenetic effects of initial and final *s

qùshēng to be a “sandhi tone replacing either of the two basic tones in close juncture”, and did not derive it from any segmental entity (*STC*, pp. 194-5). Several other scholars do posit a segmental origin for this tone, namely suffixal *-s.³⁷ These views are not necessarily mutually exclusive, since the putative sibilant suffix could well have triggered the “junctural” effect on the tone.

One small piece of evidence for the reality of the OC *-s suffix is the etymon for ‘lung’, one allofam of which is reconstructed as PTB *p-wap.³⁸ The obvious Chinese comparandum is 肺 (*GSR* #501g) OC p’i-wǎd / MC p’i-woi-, a *qùshēng* word (> Mand. fèi) like four of the five other characters in *GSR* #501. Karlgren reconstructs all five with OC *-d since the remaining character 市 in the same phonetic series (501a) is a stopped syllable ending in *-t. If the final consonant was really *-p at the PST level, it is possible that the shift to dental articulation in Chinese was due to assimilation to the putative *-s suffix: *-p-s > *-t-s > OC -s > MC *qùshēng*. See below 12.6.3(1).

It has been suggested in passing that the origin of Proto-Lolo-Burmese Tone *2 might have been suffixal *-s.³⁹ Several arguments might be offered in support:

- The Modern Burmese tone which descends from PLB *2 is often characterized by breathy phonation. Furthermore, the Burmese writing system usually indicates this tone by a pair of vertical dots “:”, which descend from the Sanskrit graph known as *visarga* that represented a laryngeal sound usually transcribed as “ḥ”. It might be deduced that the hypothetical original *-s had changed to a laryngeal spirant by the time the Indic script was adapted to write Burmese. This spirant then disappeared as a consonantal coda, leaving its trace in the shape of a breathy tone.

37. Cf. e.g. Haudricourt 1954a, Pulleyblank 1973. Generally those who seek a segmental origin for the *qùshēng* also want to derive 上聲 *shǎngshēng* (“rising tone”) from suffixal -ʔ. The 平聲 *píngshēng* (“level tone”), more than twice as frequent lexically as the other two put together, is then regarded as a sort of default tone assumed by syllables with neither the *-s nor the *-ʔ suffix. For Benedict, however, both the *píngshēng* and *shǎngshēng* are basic, and are to be reconstructed at the PST level.

38. See the discussion in JAM 1978a (*VSTB*):113-119.

39. See Pulleyblank 1963; Haudricourt 1975:342.

- There are several examples of PLB Tone *2 etyma which correspond to forms elsewhere in TB with final *-s, either root-final ('bone', 'two', 'seven') or suffixal ('rest / stay', 'head', 'know', 'quotative'):

	<i>PTB</i>	<i>WT</i>	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>
'bone'	*rus	rus-pa	*rəw ²	rûi	ḡô
'two'	*g-nis	gnyis	*ʔ-nit ɤ *ni ²	hnac	nî
'seven'	*s-nis	stis (Kanauri)	*ʔ-nit ɤ *ši ²	khu'-hnac	ṣî
'rest / alight on'	*g-na-s	gnas	*na ²	nâ	nâ
'head'	*d-bu-s	dbu ɤ dbus	*ʔu ²	ʔû	û ɤ ú
'know' ^a	*syey-s	śes-pa	*sey ^{2/3}	si'	ṣî
'quotative particle' ^b	*dzyay-s	ćes	*džay ^{2/1}	--	cê

a. The WB form represents a variant under Tone *3, but Loloish is unanimous in reflecting Tone *2.

b. The WT form is glossed 'so, thus; in ancient literature regularly placed after words or thoughts that are literally quoted' (Jäschke:142). Akha djé 'quotative' reflects PLB Tone *1. Tonal instability is frequent in functors, however. See JAM 1985 (*GSTC*) #104, where this root was first reconstructed.

- Benedict (1979, Part III) reconstructs eight Proto-Karen etyma with final *-s, on the basis of correspondences between Pa-o -t and -i in other dialects (Sgaw, Pho, Palay-chi).⁴⁰ Seven of these sets have Lolo-Burmese cognates, and all seven are under PLB Tone *2 :⁴¹

	<i>Proto-Karen</i>	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>
'carry' ^a	*ʔbūs	*bəw ²	pûi	pû
'comb'	*khwis	*ʔ-g ^w i(y) ²	phî	pî
'bone'	*khrus	*rəw ²	rûi	ḡô
'four'	*lis	*b-ləy ²	lê	ô
'five'	*ŋas	*ŋa ²	ŋâ	ŋâ
'seven'	*hnəs	*ʔ-nit ɤ *ši ²	khu'-hnac	ṣî
'nine'	*ʔkus	*gəw ²	kûi	qô

a. 'carry (by headstrap or on the back)'

40. See also *STC* n. 401, p. 147.

41. Cf. JAM's note 20 in Benedict 1979:28.

11.4.5: Tonogenetic effects of initial and final *-s

Striking as this is, four out of these seven examples are numerals, and there is a strong tendency for numerals to influence each other's form.⁴² In fact, all the Loloish numerals from 1-9 (except for 'six' and 'eight', which come from PLB stopped syllables) are under Tone *2, *e.g.* Lahu *tê* 'one', *nî* 'two', *šē* 'three', *ô* 'four', *ŋâ* 'five'... *šī* 'seven'...*qô* 'nine'.⁴³

The major problem with this theory is the approximately equal lexical frequency of PLB Tones *1 and *2.⁴⁴ In view of the rarity of TB etyma with root-final *-s, it can only be assumed that the putative sibilant that underlay Tone *2 was a suffix. If so, what could have been the meaning of this suffix, and why should approximately half of the words in the lexicon have carried it?

The sibilant suffix theory will hardly do as a general tonogenetic explanation for PLB Tone *2. On the other hand, it is perfectly possible to assume that the few PTB words in root-final or suffixal *-s joined the pre-existing Lolo-Burmese tone-class we call *2.⁴⁵

There are at least four views on the status of tones at the PST or PTB level:

- (1) There were no phonemic tone contrasts at the proto-level, but merely syllables with certain final consonants that had tonogenetic potential, *i.e.* *-s (often > -h) and *-ʔ.
- (2) There were no tone contrasts as such at the proto-level, but rather a two- or three-way phonational opposition among clear (modal), breathy, and perhaps creaky voice (Weidert 1987).
- (3) A two-way tone contrast existed already at the PST and PTB levels, later supplemented by a third tone that originally appeared in sandhi contexts but was later generalized to perform various morphological functions (see *STC* pp. 193-7 and Benedict 1972b).

42. See the discussion of "prefix runs" in TB numerals in JAM 1995b:211-33.

43. As noted above, Tone *2 > Lahu / ˊ / ¹¹ after sibilant or *glottalized initials, and to / ˆ / ⁵³ otherwise.

44. Benedict would derive these LB tones directly from the two "basic" tones he reconstructs for PST and PTB.

45. For this same conclusion see JAM 1982a "Sprachgefühl", n. 34, p. 45.

- (4) A language family with monosyllabic morphemes is particularly “tone-prone”, so that certain universal tonogenetic principles have led independently to the development of tone systems in the various branches of the family at different historical periods. Once established, tonal contrasts are highly diffusible, even to unrelated languages in the same linguistic area.^a

a. See JAM 1991c, 1999a, 2001c.

11.5 Velar suffix

Even more elusive semantically than the suffixes already discussed is a sporadically attested velar suffix **-k* that occurs mostly after verb roots. Mention of this suffix is sneaked into *STC* here and there,⁴⁶ where it is regarded as confined to Kuki-Chin-Naga. While this suffix is perhaps particularly frequent in KCN,⁴⁷ it seems much more widespread, and can even be found in Chinese (see below: ‘eat’, ‘fall’, ‘belong’). At least a dozen etyma show traces of this mysterious **-k*, which some might prefer to call a “formative” rather than a suffix. (Several of these roots are attested with other suffixes as well.)

‘back / after’	PTB <i>*s-nuŋ/k</i>	
	<i>*s-nu(-k)</i>	Lai Chin ^a <i>hnuu</i> ‘after; back’ ≠ <i>hnuuk</i> (Form I) / <i>hnuʔ</i> (Form II) ‘drag after’ ^b
	<i>*s-nuŋ</i>	WB <i>hnâuŋ</i> ‘be after’, <i>ʔəhnauŋ</i> ‘back (of a knife)’; Lushai <i>hnun</i> ‘the back’; Mikir <i>ənuŋ</i> ‘back’ (<i>STC</i> #354)
	<i>*ʔ-nok</i> (PLB)	WB <i>nauk</i> , Lahu <i>qhəʔ-nɔ́</i> (<i>TSR</i> #155; see JAM’s note 233 in <i>STC</i> p. 76)
‘belong; trust / depend; accept / take’ ^c	PST <i>*m-dz(y)u-k</i>	
	<i>*m-dz(y)u</i>	Lahu <i>cû</i> ‘prefer; adopt as one’s own; accept; put one’s trust in; have recourse to; depend upon’ (perhaps ≠ Lahu <i>yù</i> ‘take’ ^d); Akha <i>djù</i> ‘listen to, adhere to’; Jg. <i>chyù</i> , <i>məchyù</i> ‘cling to, depend upon’

46. See *STC*, n. 289 (p. 101).

47. In the Chin languages the *-k* suffix seems to occur mostly in Form II of verbs, e.g. Tiddim *ne:* (I) / *ne:k* (II) ‘eat or drink; consume’. See morphophonemic Class *f*2 of Lai verbs, above 11.4.2.

11.5: Velar suffix

	*dzyuk	Chinese 屬 OC *ḍjuk ɤ̃ t̪juk (<i>GSR</i> #1224s) ‘be joined to, attached to; belong to, be of the category of’
‘come out / bring out’	PTB *s-pro-k	<i>STC</i> #248 and n. 190
	*pro	WT ḥphro-ba ‘proceed, issue, emanate from’, spro-ba ‘make go out, disperse’
	*prok	Jg. próʔ ‘bring out, come out’, šəpróʔ ‘bring out, exhume, contribute’
‘eat / food’	PST *dzya-k ^e	
	*dzya	WT za-ba; Bahing d̪za; Jg. šá; WB câ; Lahu câ; Garo t̪sha
	*dzyak	Chepang jeʔ, Nocte t̪shaʔ, Tangsa chaʔ ~ saʔ, Konyak hak, Garo caʔ-a, Bodo/Mече jaʔ, Chiru sak, Kom Rem sàak, Yimchungru dzuʔ, Mikir kət̪sōʔ, Ao a-t̪siʔ ‘eat’; Meithei čáak ‘food’; Chinese 食 OC *ḍjak ‘eat / food / feed’ (<i>GSR</i> #921a-c)
‘fall’	PST *gla-k ɤ̃ *kla-k ^f	
	*gla ɤ̃ *kla	Lepcha klo; Mikir klo; WB kyaʔ ‘fall’, khyaʔ ‘let fall, drop’
	*glak ɤ̃ *klak	Lushai tlaak ‘fall (v.i.), thlaak ‘let fall’ (causative); Chinese 落 OC *glāk (<i>GSR</i> #766q)
‘give’	PTB *bəy-k ^g	
	*bəy	Dumi bi; Miri bi; Dhimal pi; WB pê; Lahu p̪î; Mikir pi
	*bəyk	Lahu p̪èʔ; Akha b̪iʔ; Chepang b̪əyʔ; Limbu piʔ-ma; Caodeng (rGyalrong) k̪ə-nbiʔ; Lushai pe:k; Thado péʔ; Tiddim pia (I) / piak (II)
‘heart’	PTB *s-ni-k/ŋ ^h	
	*s-ni	Lahu ni-ma; Akha nui-ma
	*s-nik	WB hnac-lûm
‘horn’ ⁱ	PTB *krəw-k	<i>STC</i> #37
	*krəw	WB khruɪ; Lahu kho
	*krəwk	Chinese 角 (OC k̪uk; <i>GSR</i> #1225a-c).

‘laugh’ j	PTB *m-nwi-k	
	*m-nwi(y)	Jg. mənī; Bodo and Dimasa mini; Lushai nui; Lakher pəhnei; Yacham-Tengsa manü; Angami nyü; Tujia ŋie ⁵³ ; Manang ji:
	*m-nwik	Meithei nok; Mikir iŋnek; Phunoi ʔ ⁵⁵ -ji ⁵⁵ ; Pho Karen (Bassein) nīʔ; Tiddim nui (I) / nuiʔ (II); Kanauri hon-nigh, wan-nigh ^k
‘meat / flesh’	PST *s-nya-k	
	*s-nya	Proto-Karen *hña > (Luce 1986) Sgaw ta ⁶ ñā ⁴ , Pho (Delta) s’əya ⁴ , Pa-o ya ¹ ; (Jones 1961) ¹ Sgaw (Bassein) ñà, Pho (Bassein) jà, Pa-o já.
	*s-nyak	Chinese 肉 (OC ńjôk; GSR #1033a-b)
‘neck / neck-shaped’	PTB *s-ke-k	
	*s-ke	WT ske ‘neck, throat’
	*s-kek	Jg. kéʔ ‘to be or make neck-shaped’
‘soft / boiled’	PTB *pryo-k	
	*pryo	WB prau ~ pyau ‘quite ripe, very soft’, pyau’ ~ prau’ ‘soft, tender, lax’, phrâu ‘parboil’
	*pryok	Jg. pyóʔ ‘boiled and soft; tender’, šəpyóʔ ‘to boil’
‘swallow (v.)’	*mlyəw-k	
	*mlyəw	WB myui (Insc. Bs. mlyui); Atsi myûi; Maru ^m myúk; Kanauri myũ; Tangkhul Naga khəməyuy
	*mlyəwk	Jg. məyùʔ ‘throat; to swallow’; Ak. (ILH) myòq ‘swallow’
‘two’	PTB *g/s-ni-s	
	*g-ni	Garó gni; Jg. nī; Lahu nî
	*g-ni-s	WT gnyis; Kanauri nis; rGyalrong kěñěs
	*s-nik	Bahing nik-si; Lushai hniʔ; WB hnac; ⁿ Akha nyìq

a. Lai reflects both the open and the velar-suffixed allofams.

b. P.c., KVB.

c. This etymon was reconstructed in JAM 1989c “A new ST root *d-yu-k”. See also DL:469.

11.6: Palatal suffixes

- d. Also probably belonging to the same etymon is Lahu *cû* ‘loose, slack; not taut, sagging’; cf. English *depend* < Lat. *pendere* ‘to hang’.
- e. This root is also attested with all three of the “trio of dental suffixes” /-t, -s, -n/; see above 11.1.1.
- f. This root could also take the -t suffix (cf. Jg. *khàt*), as well as the palatal suffix -y (see below 11.6).
- g. Contra *STC*:101, 149, 205, 214, the velar-suffixed version of this root is not confined to Kuki-Naga. Several languages also show a nasal suffix, e.g. WT *sbyin*; Tamang *pin*; Trung *bin*.
- h. The best attested alloform of this root has a final nasal: WT *snyin*; Kanauri *stin*; Limbu *niŋ-wa*; Mikir *niŋ*; Nung *əniŋ*; Bisu *nuŋ-ba*; Garo *təniŋ* ‘brains’.
- i. See above 5.3.1 and Gong 2001:25.
- j. Also attested with this root is suffixal -t (Jg. *mənìt*; Tamang Risiangku *net*; Tangkhul Naga *nu*, *nuut*), as well as a liquid suffix (Newari *nil*-; Bokar Lhoba *ŋir*; Tagin *nyar-nam*; Hill Miri *ŋir-nam*; Tsangla *ŋar*).
- k. This final consonant, written “-g” in Bailey 1911:4, is characterized as “an aspirated sonant, attributed to Indo-Aryan influence”.
- l. Some forms cited by Jones have final -ʔ or -q (e.g. Sgaw (Moulmein) *ñáʔ*, Palaychi *záq*), but these final “laryngeal” elements seem to be secondary effects of the high tone; see Burling 1969.
- m. Maru -uk is the regular reflex of the open rhyme *-əw (see above 5.3.1). See *STC* #153 and *DL*:1007.
- n. This WB form could equally well be derived from *-s-nit, and there are good arguments for so reconstructing it. See above 8.3(2).

In one root for which suffixal -k is claimed in *STC*, the final velar seems rather to be part of the root:

<p>‘descend’^a PTB *s/ʔ-yuk Lushai <i>zúk</i> ‘verbal affix indicating motion downwards’; Jg. <i>ʔyúʔ</i> ‘descend’, <i>šəyúʔ</i> (causative) ‘let down’</p>
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a. The inaccurately transcribed Jingpho form cited by *STC* (p. 101) from early sources is *yu*, which is compared to Bahing *yu* and Vayu *yu* (v.i.) / *yut* (v.t.), to justify setting up an open-syllable root **yu(w)*; cf. also Limbu *ju*. There is a possible allofamic relationship between **s-yuk* and PLB **zak*^L ‘descend’ (*TSR* #121) > WB *sak*, Lahu *yàʔ*; if this is valid, it would be a case of the rare vocalic alternation -a- ⇔ -u- (below 12.3.1). Other examples of this alternation include ‘fragrant’ **b-suŋ* ⇔ **b-saŋ* (*STC* #405) and perhaps ‘grass’ **m-rak* ⇔ **m-lyak* (*STC* #149) ⇔ **mruk* (*TSR* #138).

11.6 Palatal suffixes

In JAM 1995a (“ST palatal suffixes revisited”) it is claimed that three distinct etyma, once fully syllabic, have all been grammaticalized and reduced phonetically to a palatal offglide in various ST languages at different times:⁴⁸

	Full form	Reduced form
(1) <i>Transitive motion / motion away from the deictic center</i>	* <i>ʔay</i>	*-i or *-y
(2) <i>Diminutive</i>	* <i>ya</i>	*-i or *-y
(3) <i>Nominalizer / subordinator</i>	* <i>way</i>	*-i or *-y

11.6.1 Motion away from the deictic center ⁴⁹

Here the fused morpheme is deemed to be PTB *ʔay ‘go’, attested in several branches of TB (see *GSTC* #128):

<i>Loloish</i>	Lahu e ‘verb particle indicating motion away from the center of interest’; Akha i ⁵⁵ ‘go down’; Hani, Pijo, Khatu jí; Lisu ye ⁴ ‘go’, Phunoi ʔé, Bisu ʔé, Mpi je ⁵ ‘go (south or west)’
<i>Himalayish</i>	Bunan e ‘go’, Chitkuli and Manchat i- (prefix) ‘go and V; V away’
<i>Kamarupan</i>	[Barish] Garo -e ‘go and V’; [Naga] Lotha yi ‘go’; [Abor-Miri-Dafla] Milang yi-ma

Motion verbs which seem to have incorporated this suffix include:

‘fall’	*gla-y ⌘ *kla-y ^a	<i>GSTC</i> #125; “Pal. suff.” #2
	*gla ⌘ *kla	Lepcha klo; Mikir klo; WB kya ‘fall’, khya ‘let fall, drop’
	*glay ⌘ *klay	Lahu ce ‘fall from a height’; Luquan Lolo ts’e ³³ ‘fall down’; Boro gəgláy ‘fall; lie down’ (simplex) ⌘ kəkláy ‘to fell’ (causative) ⌘ klay ‘V downward (e.g. za-klay ‘eat from top to bottom’, kam-klay ‘burn down’, bar-klay ‘jump down’ (Lahu ce may also be used as an auxiliary in this way, e.g. bôʔ ce ve ‘fell by shooting’, bà ce ve ‘throw down’); also perhaps Mikir (Grüssner 1978) ingjùý ‘fall off, drop off (hair, leaves), V + jùý ‘V away’ (e.g. kát-jùý ‘wegrennen’, arphlúng-jùý ‘wegjagen’)
‘throw’	*ba ⌘ *ba:y	<i>GSTC</i> #147; “Pal. suff.” #3
	*ba	Lahu bà (< PLB *mba ¹) ‘throw; throw away; divorce (a spouse)’; (as auxiliary verb) ‘discard by V’ ing’, e.g. šîʔ bà ve ‘wipe away’

48. The existence of these suffixes was first suspected in JAM 1985a (*GSTC*), where several cases of *-a ⌘ *-ay allofamic variation were noted.

49. JAM 1995a:45-50.

11.6.2: Emergent quality in stative verbs

	*ba:y	WB pay ‘put aside, put away; reject; tare or tret’; Jingpho kəbài ≠ gəbài throw’; Lushai paih ‘throw / fling away; strike out, cancel, annul, discard, subtract’; Tiddim Chin pa:i ‘throw away’ (Form I) / paiʔ (Form II); Kokborok səbi ‘throw’
‘go / stride’	*s-ka-y ≠ *m-ka-y	“Pal. suff.” #4
	*ka	‘open; spread (as the legs when walking)’ (STC #469)
	*m-ka	Lahu gə ‘reach, arrive’
	*s-ka-y	Lahu qay ‘go’; Chinese 開 ‘open’ OC *k’ər (GSR #541a), *khəj (Baxter) ^b
‘come’ ^c	*la-y	GSTC #185; “Pal. Suff.” #5
	*la	WB la, Lahu là, Akha lá, Phunoi lá, Bisu lá, Mpi lo ⁵
	*lay	Mikir (Grüssner) lè ‘arrive, reach’

a. Suffixes -t and -k are also attested with this root (above 11.3.5, 11.5).

b. Henceforth referred to by his initials “WHB”.

c. Chinese 來 OC *ləg (GSR #944a), *C-rə-k (WHB) may not be cognate.

11.6.2 Emergent quality in stative verbs ⁵⁰

This suffix could apparently also appear after stative/adjectival verbs to express a kind of “figurative motion”, *i.e.* the progressively greater realization of a state.⁵¹ (This is one of the functions of the Lahu directional particle e (< *ʔay), as in chu e ve ‘get fat; continue to get fat; go on getting fat; get fat from now on’.)⁵²

‘big’	*ta-y	STC #298; GSTC #68; “Pal. Suff.” #6
	*ta	Abor-Miri ta; Chinese 大 OC *t’âd ~ *d’âd (GSR #317a-c) ^{a/b}

50. See JAM 1995a:53-57.

51. As pointed out in JAM 1995a (pp. 55-7, 84-5), words with the WB rhyme -ai have stative (or even ‘emergent stative’) meanings with much greater than chance frequency.

	*tay	WT mthe-bo ‘thumb’; Nung the ‘big, large, great’; Mikir thè, kethè ‘ <i>id.</i> ’; WB tay ‘very’; Tangkhul Naga kətay ‘be extra’, khəmətay ‘increase, multiply’, akətay ‘remnant’; PNN (W. French 1983) *-tay > <i>e.g.</i> Wancho a-tai ‘far’, tai-hu ‘many’
‘red’ ^c	*t(y)a ɤ *t(y)an ^d ɤ *t(s)a:y *t(y)a: *t(y)an *t(s)a:y	STC pp. 17-8, <i>etc.</i> ; GSTC #150; “Pal. Suff.” #7 WB ta, tya ‘flaming red, very red’ Lushai sén, Tiddim san, tshan Lushai tai ‘rosy, ruddy, red’; Lakher sai ‘rosy, ruddy, red, crimson’, sai-law ‘scarlet’
‘easy’	*lwa(:-y) *la *lwa:y	STC #302; “Pal. Suff.” #9 Dulong la ⁵⁵ WB lwai; Jg. lòi ~ lwè

- The monophthongal Mandarin pronunciation dà is irregular (compare the diphthongal Mand. pronunciations (tài) of the synonymous allofams with the same OC reconstructed rhymes, 太 (GSR #317d-e) and 泰 (GSR #316a).
- Baxter suggests another pair of Chinese comparanda that show *-a ɤ *-ay variation in his system: 諸 OC (WHB) *tā (cf. *tājo GSR #45p) ‘many; all; plural for eminent persons’ ɤ 多 OC (WHB) *tāj (cf. *tā GSR #3a-c) ‘much, many’.
- On the Chinese side, STC (pp. 169, 188) suggests comparing TB *t(y)a to 朱 OC *tju [GSR #128a-c] : [WHB] *tō, though Baxter characterizes this as an “odd correspondence”, and proposes as a more likely cognate 紫 OC *tsjār ‘purple’ [GSR #358j] : [WHB] *tsēj, which could perhaps derive from an earlier *tsāj?
- This word-family illustrates the *-an ɤ *-ay alternation, above 7.1(2), below 12.4. There is good evidence for the nasal-finalled allofam in Chinese: 丹 OC *tān ‘red; vermilion; cinnabar’ GSR #150a-b]. STC suggests (p. 159) further affiliations with two other forms with front vowels: 緡 OC *tsjēn ‘pale red’ (GSR #378g) and 緡 OC *ts’iən ‘dark red’ (GSR #812t). Baxter considers it possible that these last two items are related to each other, but feels they are quite unrelated to 丹.

11.6.3 Diminutives⁵³

It is something of a sound-symbolic universal for high front vowels to be associated with smallness (*cf.* Eng. *teeny-weeny*, *eensie-weensie*, *etc.*), and the best exemplified function of a PTB/PST palatal suffix may perhaps be interpreted as a diminutive one. The

52. See GL:319.

53. See JAM 1995a:57-73.

11.6.3: Diminutives

palatal element here might be a reduction of a widely attested morpheme meaning ‘child; little one’, PST/PTB *ya ɤ *za ɤ *tsa ɤ *dza. Examples given in JAM 1995a include:

‘bee’	*k/gwa-y *k/gwa *k/gwa:y ^a	<i>STC</i> #157; <i>GSTC</i> #76; “Pal. Suff.” #10 Nung kha; Dulong <i>khwa</i> ³¹ me ⁵³ ; Lakher əkha WB kwâi; PTamang *gway (> Thakali koy); Lushai khuai ~ khoy; Tangkhul khui; Angami (Khonoma) makwi, (Kohima) mepfi; PNN *C-guay
‘cheek’	*ba-y *ba *bay	“Pal. Suff.” #11 ^b PLB *ba ² (> WB pâ; Lahu pâ) Pa-o Karen báí; Dulong kəbai
‘jaw / chin’	*m-ka-y ɤ *s-ka *m-ka ɤ *s-ka *m-kay ^c	<i>STC</i> #470; “Pal. Suff.” #12 Jg. nìŋ- <i>khá</i> ; Nung məkha; Dimasa khu- <i>sga</i> Dulong mu ³¹ <i>kai</i> ⁵⁵ ; Jg. ñ-khá-ñ- <i>khái</i> (Hanson 1906:492)
‘fontanelle’ ^d	*ra-y ɤ *wa-y *ra ɤ *wa *ray ɤ *way	“Pal. Suff.” #13 Lahu ú- <i>gâ</i> (ú ‘head’); Tamang Risiangku wa ² Meithei ləway; Tangkhul ā-lap- <i>rai</i> ~ ā-rap- <i>rai</i>
‘rice’	*ma-y *ma *may ^e	<i>STC</i> p. 65, etc.; <i>GSTC</i> #57; “Pal. Suff.” #14 Tangkhul ma (Bhat 1969:33); Dulong tś(h)u ³¹ <i>ma</i> ⁵⁵ ; Luoba a- <i>mə</i> Garó mi; Dimasa mai; Pwo and Pho Karen me; Chinese 米 OC <i>miər</i> (<i>GSR</i> #598a-c): *mij? (WHB)
‘arrow’ ^{f/g}	*b/m-la ɤ *g-la-y *b-la *g-la-y	<i>STC</i> #449; “Pal. Suff.” #15 Bahing bla; Dimasa bala; Tangkhul məla; WT mda and Jg. (Hkauri dial.) niŋ- <i>da</i> represent a delateralized version of the same root (they are treated as a separate etymon in <i>STC</i> (n. 313); WB hmrâ; Akha káq- <i>mjà</i> ; Kha Li (S. Lolo) ka- <i>m̥la</i> Lahu <i>khá-ce</i> , ð- <i>ce</i>
‘sand’	*z(l)a-y *sa	<i>GSTC</i> #159; “Pal. Suff.” #16 WT sa ‘earth’

*z(l)ay

WB *sâi*, *səlâi*; Jg. *zài-brù* ‘sand’, *zài-brôn* ‘coarse sand; gravel’, *zài-ni* ‘fine sand; dust’^h

- a. Also reflecting the palatal element is Chinese 蝶 OC *klwâr (GSR #351a-b): *k(r)ōj? (WHB) ‘species of small wasp’. The appearance of this putative diminutive morpheme in a word for ‘bee’ is paralleled in Romance (Fr. *abeille*, Sp. *abeja* < Spoken Latin *apicula*, diminutive of *apis* ‘bee’).
- b. Dimples are cute, which is perhaps what motivates the suffix with this root.
- c. The suffix with this root seems confined to the Jingpho-Nung group.
- d. A bodypart found only in babies is an excellent candidate for a diminutive suffix.
- e. The diminutive suffix here could have been motivated by the granularity of rice (see ‘sand’, below), or by the positive affect which rice inspires, or perhaps to distinguish rice from another cereal with larger grains. Cf. Mandarin *dà-mài* ‘barley’ (lit. “big cereal”) vs. *xiǎo-mài* ‘wheat’ (“small cereal”); also Japanese *oo-mugi* ‘barley’ vs. *ko-mugi* ‘wheat’ (*oo* ‘big’, *ko* ‘small’).
- f. The arrow is child to the bow (see JAM 1991e). The first element in the Lahu, Akha, and Kha Li form means ‘crossbow’ < PLB *krak (TSR #9). The Lahu reflex is homophonous with that of the similarly reconstructed etymon ‘fall’ (above 11.6.1).
- g. Still another possible variant of this root, with velar suffix, is represented by 𪔐 ‘shoot with arrow and string attached’ (OC *djək*; GSR #918a-b). See STC:176,188; Gong 2001:30. The latter source also suggests an allofamic connection with Chinese 射 ‘shoot with bow; archer’ (OC *ṭjǎg*; GSR #807a).
- h. Lahu *ṣē-ṣī* is probably a loan < Burmese, since native Tone *2 syllables with voiceless fricative initials acquire Lahu very-low tone / ˨˩˩/. Phunoi *khi-sǎi*, Bisu *sǎj*, and Mpi *nʰsi*⁵ are probably loans < Tai (cf. Siamese *saaj* < PTai *zaay; the word is written with an initial indicating PTai *dr-, but this is held to be spurious by Li Fang-Kuei (1997:161-2). If the monophthongal WT form meaning ‘earth’ is indeed cognate to Chinese 沙 ‘sand’ (OC *sa* [GSR #16a-c] / *srāj [WHB]), as suggested in STC p. 188, it is possible that this is an old loan from ST into Tai.

For another possible example, see ‘tongue’ *m-slay ≈ *s-lyā (below, 12.2.6).

11.6.4 Abstract functorial⁵⁴

The remaining etyma where a palatal suffix may be posited almost all have an abstract grammatical meaning (particles, pronouns, deictics).⁵⁵ In at least some of these cases, the palatal element may provisionally be assigned to a highly abstract nominalizer/subordinator that ultimately derives from the PST/PTB copula *-way ≈ *-ray.⁵⁶

‘1 st person	*ŋa-y ^a	STC #406, 285; “Pal. Suff.” #24; JAM 1994b
pronoun’	*ŋa	WT <i>ŋa</i> ; Nung <i>ŋa</i> ; WB <i>ŋa</i> ; Lahu <i>ŋà</i>
	*ŋay	Jg. <i>ŋāi</i> ‘I / me’ ^b ; Lushai <i>ngei</i> ‘self’; Meithei <i>ei</i>

54. See JAM 1995a:73-77.

55. One example in the miscellaneous category is the verb ‘laugh’, reconstructed *rya-t in STC #202 (> WT *g̃za-ba* ‘to joke’ ≈ *b̃zad-pa* ~ *g̃zad-pa* ‘laugh, smile’, Aka (Hruso) *ra*, etc.) but WB *rai*, with a palatal diphthong, perhaps requiring the positing of an allofam *r(y)a-y. See above 5.5.2(1b).

11.6.4: Abstract functorial

‘question particles’ ^c	*la-y	<i>GSTC</i> #131; “Pal. Suff.” #21
	*la	PLB *la ² (> WB lâ ‘yes/no question particle’; Lahu lâ ‘ <i>id.</i> ’; Newari lā ‘ <i>id.</i> ’; Meithei la ~ lə ‘ <i>id.</i> ’)
	*lay	PLB *lay ^{2/3} > WB lê ‘substance question particle’ (< Tone *2); Lahu le ‘ <i>id.</i> ’ (< Tone *3) [the tonal discrepancy is not unusual for functors]; Kokborok (Barish group) lay ~ khlay; Newari le ‘content question particle’ (Malla 1985:65)
‘inchoative particle’ ^d	*sa-y	<i>GSTC</i> #154; “Pal. Suff.” #22
	*sa	Lahu šā ‘particle indicating intended action of the 1 st person’
	*say	Lahu šē ‘particle indicating that an action has not yet occurred or been carried through to its conclusion, or that an action must be performed as a prerequisite for some further action’; WB sê ‘still / yet’; Akha á-shì ‘ <i>id.</i> ’
‘which / like / deictic’ ^e	*ka-y ∼ *kaŋ	“Pal. Suff.” #23
	*ka	Lahu qhà ‘which?; what?; what kind of?’
	*kay	Lahu qhe ‘like; thus; so’, qhà-qhe ~ qhò-qhe ‘how?’
	*kaŋ	Lahu qhò ‘where?’, qhò ve ‘what kind of?’, qhò-thâ? ‘when?’, qhò-qhe ‘how?’; WT gaŋ ‘who?; which?; what?’ (see Benedict 1984)
‘what’	*ba-y ∼ *ma-y	“Pal. Suff.” #25
	*ba ∼ *ma	WB bha (< *m-ba); Lahu à-ma, à-thò?-ma; Dimasa ba-ra ‘where?’, ba-khali ‘when?’; Bodo ma ‘interrogative’
	*bay ∼ *may	WB bhai-hma ‘where?’, bhai-lok ‘how much?’, bhai-su ‘who?’, bhai-kui ‘whither?’; Garo mai ‘interrogative’
‘negative’ ^f	*ma-y	“Pal. Suff.” #26
	*ma	PTB *ma ‘negative adverb’ (attested throughout TB)

56. See JAM 1985a, “God and the ST copula.”

*may

WB mai' 'be wanting, not full'

- Other apparent allofams are represented by Garo aŋ and Lushai (and other Chin) ka.
- This Jg. pronoun may well be the source of the aberrant Jg. numeral ləŋâi 'one' (see JAM 1994e); cf. also WT ŋed 'I, we (elegant)', with dental suffix. Chinese has had at least two different 1st person pronominal forms since early times, perhaps once differentiated syntactically, one of which has a final palatal in Baxter's system: 我 OC *ngo (GSR #58f-i) / *ŋā (WHB) ≠ 吾 OC *ngâ (GSR #2a-g) / ŋāj? (WHB).
- Chinese 與 or 歟 'final (yes/no or rhetorical) interrogative particle' is reconstructed as OC zjo in GSR #89b-d and 89e, but as lā in WHB's system.
- The LB vowel correspondences are irregular (WB -e < *-əy, Lahu -e < *-ay, Akha -i < *-ey); the Lahu form is perhaps a loan from Burmese. There may also be contamination from Tai (cf. Siamese sǎa, with similar grammatical functions). A likely Chinese comparandum is 纔 (now usually written 才), Mandarin cái < OC *dz'æg (GSR #943): *dzā (WHB) 'prerequisite action'.
- A possible Chinese cognate to the palatal allofam is 豈 'how' OC *k'jər (GSR #548a) / *khǎj? (WHB).
- Chinese has a pair of comparanda reflecting both variants in Baxter's OC system: 無 'not have' OC mjwo (GSR #103a): *mā (WHB) ≠ 靡 'there is no; without' OC *mia (GSR #17h) / *māj? (WHB).

11.7 Pseudo-suffixes

Occasionally a language is found to display final consonants which are lacking in cognates from other languages, but which do not represent real suffixes. Perhaps the best example is furnished by Maru (= Langsu; Burmish group), where the regular reflexes of the rhymes *-əw and *-əy are -uk and -it, respectively (see above 5.3.1, 5.3.2).

Secondary final consonants of another type are characteristic of the northern dialects of Qiang (e.g. Mawo), which have a tendency to drop the vowel of the final element of compounds, leading to secondary monosyllables with (sometimes typologically strange) final consonants:⁵⁷

	<i>Southern Qiang</i>	<i>Northern Qiang</i>
'earth'	zuə ³¹ -pə ³³	zəp
'seed'	zuə ³¹ -za ²³¹	tʃhaz
'last year'	ŋi ³¹ -pə ³³	nəp
'day after tomorrow'	sy ⁵⁵ -dy ³¹	syt
'decaliter'	que ⁵⁵ -te ⁵⁵	quat
'fifteen'	χa ³¹ -ŋa ³³	haŋ
'lay aside'	kuə ³¹ -χty ³³	kuəxɿ
'ear of grain'	χti ⁵⁵ -qə ³³	stiaq
'grandson'	zɿ ³¹ -tsuə ³³	zətʃ
'head'	qə ³³ -po ⁵⁵ -tɿɿ ³³	qəpatɿ ^a

11.7: Pseudo-suffixes

- a. As the last example shows, the same process can operate on trisyllabic compounds, creating secondary disyllables in N.Qiang.

So pervasive is this tendency that it is even applied to Chinese loanwords, *e.g.*:

‘table’ ^a	tʂue ⁵⁵ tʂɿ ³³	tʂus
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- a. Cf. 桌子 Mand. *zhuōzi*.

These pseudo-suffixes are to be contrasted with a genuine suffixal -s in Qiang that has nominalizing function (above 11.4.1).

57. See Sun Hongkai 1981; Benedict 1983b:113; LaPolla and Huang 1997:8-9.

Allofamic Variation in Rhymes

Although attempts have been made to posit a quasi-regular “ablaut” system for PTB/PST,¹ one must agree with Benedict that “generally speaking, TB vowel gradation is sporadic and irregular, and can hardly be compared with that found in Indo-European” (*STC*:69). Least convincing are suggestions of systematic vocalic alternations in open syllables, *e.g.* Miller’s claim of morphosemantic relationships among such unrelated forms as WB *ni* ‘red’, *na* ‘ill’, and *nu* ‘leprous’.²

More plausible are extrapolations of the undeniable ablaut patterns in WT verbs to the PTB period or even earlier. We have seen (above 4.4.3) that four basic WT conjugational types may be set up according to the various patternings of the affixes (prefixes *h-*, *g-*, *b-*, and the *-s* suffix) that appear in the principal parts of the verb.³ Cross-cutting these affixal patterns are two vocalic alternations that may occur when the vowel of the perfect and future forms is *-a-*: the imperative always has *-o-*, while the present often has either *-e-* or *-o-*. Comparative evidence indicates that in these cases it is the vowel of the perfect/future which is basic (see ‘kill’, below):

1. See Shafer 1940/1941; Miller 1956, 1958; Pulleyblank 1965.

2. Miller 1956. See the “rejection” of Miller’s approach to PTB reconstruction in JAM 1975a, and JAM 1978a (*VSTB*):45-7.

3. The maximum number of forms in the paradigm of a WT transitive verb is four: the present, perfect, future, and imperative.

CHAPTER 12: Allofamic Variation in Rhymes

TYPE A: invariant -a- except for the imperative

	<i>Present</i>	<i>Perfect</i>	<i>Future</i>	<i>Imperative</i>
	-a-	-a-	-a-	-o-
‘throw into the mouth’	ḥgam-pa	gams, bgams	bgam	goms
‘descend’	ḥbab-pa	bab(s)	---	ḥbobs

TYPE B: -o- in the present

	<i>Present</i>	<i>Perfect</i>	<i>Future</i>	<i>Imperative</i>
	-o-	-a-	-a-	-o-
‘kill’ ^a	gsod-pa	bsad	bsad, gsad	sod
‘put / place’	ḥdžog-pa	bžag	gžag	žog

TYPE C: -e- in the present

	<i>Present</i>	<i>Perfect</i>	<i>Future</i>	<i>Imperative</i>
	-e-	-a-	-a-	-o-
‘fill’	ḥgeŋs-pa	bkaŋ	dgaŋ	khoŋ
‘throw’	ḥdebs-pa	btab	gtab	thob

- a. There is no doubt that the basic PTB/PST vowel in this root was *-a- colored rather than *-o- colored: cf. WB sat, Jg. sàt, Nung sat, Lushai that, Mikir that (STC #58), as well as OC sāt 殺 (GSR #319d).

Benedict considers these alternations to be phonological rather than morphological in nature, and takes them as evidence for reconstructing a 7-vowel system for PST/PTB closed syllables:⁴

-i-		-u-
-e-	-ə-	-o-
	-a-	-â-

According to this scheme, WT verbs of TYPE A reflect PST medial *-a-, while TYPE B points rather to PST *-â- (presumably a low back vowel), and TYPE C descends from PST *-ə-.

4. See STC, n. 344 (p. 126) and the notes to pp. 179-193.

Whatever one may think of this analysis,⁵ it seems clear that these alternational patterns are peculiar to Tibetan dialects, and cannot be related to any broader “ablaut system” that can be reconstructed for PTB, or *a fortiori* for PST.

Although the search for “regular” or “paradigmatic” or “highly grammaticalized” patterns of PST/PTB rhyme variation seems doomed to failure, it is certainly true that there are a number of sporadic inter- and intra-linguistic variational patterns which have multiple examples, ranging from a few to a considerable number.⁶ Many of these have already been discussed in passing above.⁷ In the following sections we briefly summarize these and other important subtypes.

12.1 *-u- ⇔ *-i-

The best exemplified variational pattern in TB/ST rhymes is between the high vowels -i- and -u- in closed syllables,⁸ especially in the environment of a labial initial or final consonant.⁹ Since it occurs in Chinese as well as in many TB languages, it must be assigned to the ST stage itself. It seems to be a purely phonological phenomenon, devoid of grammatical significance.

5. I personally feel it is more ingenious than convincing. It is certainly much less substantiated than the Indo-European notion of different “laryngeals” conditioning the development of the basic PIE vowel *-e to -o or -a in the various forms of the IE verb.

6. See JAM 1978a (*VSTB*):39-45.

7. See, e.g. §§5.5.3-5.5.6; 5.6.3-5.6.4, 7.2, 8.3-8.4.

8. A superficially similar phenomenon in open syllables occurs in such Lahu pairs as ṇâ-ku ⇔ ṇâ-kwi ‘dried fish’; but these are to be explained in terms of a palatal diminutive suffix that deprives the preceding -u- of syllabicity (see JAM 1995a:58-9, as well as 5.8 and 11.6 above). There are also faint traces of such an alternation in Pumi Dayang, e.g. 3d3ũ ~ 3d3wĩ ‘exchange’.

9. See Wolfenden 1929:114-5; *STC*:56, 80-4, 181-2; *VSTB*:41-3. Although the evidence is less clear, final liquids also seem to favor such variation (see below).

12.1: *-u- ⇔ *-i-

(1) *Variation or merger within a single language or subgroup*

(a) *Tibetan*

Many words within WT and/or in different Tibetan dialects show -u- ⇔ -i- variation after labial initials:

phug-pa	⇔	phig-pa	‘bore a hole’
ḥbug(s)-pa	⇔	ḥbig(s)-pa	‘id.’
sbud-pa	⇔	sbid-pa	‘bellows’
ḥbib(s)-pa	⇔	ḥbub(s)-pa	‘be turned over / upside down’ ^a
smyug-ma	⇔	smyig-ma	‘cane / bamboo / reed pen’
pus-mo	⇔	pis-mo	‘knee’ ^b

a. See *TSR* #192, and above §8.4(4a).

b. This root also shows front/back variation in Chinese (see §3, below).

This variation is also occasionally found before WT labial finals as well: *śub-pa* ⇔ *śib-pa* ‘whisper’. The Chinese comparandum points to the variant with front vowel: 耳 *ts’jəp* ~ *tsjəp*. See above 8.3(3c).

(b) *Bodo-Garo*

Although Garo has some -i- ⇔ -u- alternation (e.g. ‘name’ **r-min* > Garo *min* (v.) ⇔ *bumuŋ* (n.); ‘forest’ **b-liŋ* > Garo *buruŋ* ⇔ *brin* (*STC* #378), it usually merges such rhymes in favor of *-i-. In Dimasa the front/back variation is even more pronounced, with the

Hills dialect frequently having -i- while the Plains dialect has -u- (often with loss of the final consonant):

	<i>PTB</i>	<i>STC#</i>	<i>Dimasa</i>
‘bark (as dog)’	*priŋ	377 ^a	biriŋ ≈ buruŋ
‘brain / marrow’	*r-kliŋ	126	bithlim ≈ buthluŋ
‘conceal / bury’	*b/pip	376	bib ≈ bup ‘conceal oneself, hide’; phip ≈ phup ‘bury’
‘dive / sink / drown’ ^b	*lip	375	lip ≈ lup ‘dive’; gilip ≈ gulup ‘drown’
‘ripen’	*s-min	432	min ≈ mun
‘snuff up / sip’	*s-rup	384	surup ‘sip, lap, smoke’ ≈ sirip ‘gargle’
‘wrap / cover / wear’	*pun	385	phin ≈ phun

a. *STC* (n. 245) suggests that Chang Naga lăŋ might be related to this root, though this seems unlikely in view of Lahu lə < *laŋ (*DL*:1404). Two separate roots are to be reconstructed, *priŋ and *laŋ. Many other forms deriving from *laŋ are found in *ZMYC* #783, including: Namuyi lu³³lu⁵⁵; Yi Nanjian and Nanhua lu³³; Lisu lo⁵⁵; Naxi lv³¹, lua¹³; Jinuo ʔo³³; Anong luŋ⁵⁵; Nusu lə³⁵. Cf. also Lalo ʔlw (SB 1998). See above 7.2(4).

b. Cf. also Jg. phūn-líp ‘dive’; Garo tsi-rip ‘id.’, srip ‘sink’; but Bodo thrup ‘sink’.

As several of these examples show, dissyllabic forms with these rhymes exhibit vowel harmony, either having -i- in both syllables (bithlim, sirip, gilip, biriŋ), or -u- in both syllables (buthluŋ, surup, gulup, buruŋ).¹⁰

10. For similar traces of vowel harmony in Chokri Naga, see above 4.1.3.

12.1: *-u- ≠ *-i-

In the following examples, Garo has -i-, regardless of whether the majority of TB languages reflect *-i- or *-u- : ¹¹

WHERE GENERAL PTB HAS *-i- :				
	<i>PTB</i>	<i>STC#</i>	<i>Garo</i>	<i>Dimasa</i>
‘bowels’	*p ^w ik	35	bibik	bubu
‘eye’	*mik	402	mik	mu
‘fill’	*pliŋ	142	---	phuluŋ
‘name’	*r-min	83	miŋ (v.) ≠ bumuŋ (n.)	bumu ≠ bumuŋ
‘ripen’	*s-min	432	min	min ≠ mun
‘shrimp / scorpion’	*s-di:k	56	na-tik	na-thu
WHERE GENERAL PTB HAS *-u- :				
	<i>PTB</i>	<i>STC#</i>	<i>Garo</i>	<i>Dimasa</i>
‘hair (body)’	*g-mul	2	kimil	sao-khimi
‘overflow / flood’	*brup ≠ *prup	151	brip	---
‘scrape / scratch’	*ku(:)t	383	kit	khu

(c) *Nungish*

Nung prefers -i- to -u- in closed syllables, especially in cases where front ≠ back alternation is otherwise attested:

	<i>PTB</i>	<i>STC#</i>	<i>Nung</i>
‘hair (body)’	*mul ≠ *mil	2	mil
‘horn’	*ruŋ	85	riŋ
‘mouthful’	*ʔu:m	108	im
‘pillow’	*m-kum	482	məkhim
‘warm’	*lum ≠ *lim	381	lim

11. Note that several of the above examples (‘shrimp/scorpion’, ‘brain/marrow’, ‘scrape/scratch’) are not in the environment of a labial consonant.

(d) *Lolo-Burmese*

While WB keeps the two rhymes **-im* and **-um* quite distinct, they have merged in several Loloish languages, including Lahu and Akha, which reflect both of them by *-ε* and syllabic *-m*, respectively:

	<i>PLB</i>	<i>WB</i>	<i>Lahu</i>	<i>Akha</i>
‘three’	<i>*sum</i> ²	<i>sûm</i>	šē	s̄m ~ s̄m
‘use’	<i>*zum</i> ²	<i>sûm</i>	yê	z̄m
‘warm’	<i>*lum</i> ¹	<i>lum</i>	lê	l̄m
‘house’	<i>*yim</i> ¹	<i>ʔim</i>	yê	ñ̄m
‘cloud’	<i>*dim</i> ¹	<i>tim</i>	---	d̄m
‘low’	<i>*ʔ-nim</i> ^{1/3}	<i>nim</i> , <i>hnim</i> ≠ <i>nim</i> ’, <i>hnim</i> ’	nè	---

WB shows *-um* ≠ *-im* variation in the following root:

‘meet’	<i>*g/krum</i> ≠ <i>*g/krim</i> ^a	JAM 1974, #270; LaPolla 1987, #171
<i>*g/krum</i>	Thulung Rai <i>groom</i> ; Jg. <i>khúm</i> ; Dulong (Nujiang) <i>tu³¹xrum⁵³</i> ; WB <i>krum</i> ; Motuo Menba <i>rum</i> (with prefixization of the initial)	
<i>*g/krim</i>	WB <i>krim</i>	

Lolo-Burmese shows **-up* ≠ **-ip* variation in the following roots, which should probably be set up with **-up* at the PTB level on the testimony of Jingpho:

‘wrap up’	<i>*tup</i> ≠ <i>*tip</i> ^b	TSR #23
<i>*tup</i>	Jg. <i>thúp</i> ‘wrap, bundle up’; WB <i>tup</i> ‘tie together’, <i>thup</i> ‘wrap up’; Akha <i>tóq</i> ‘wrap around and tie’; Hani <i>to³³</i> ; Woni <i>t’u⁵⁵</i>	
<i>*tip</i>	Lahu <i>thî?</i> ; Lisu (Fraser) <i>htē²</i> ; Akha <i>ʔóq</i> ‘fold up, make a small package’	
‘wring / crumple’	<i>*(t)syup</i> ≠ <i>*(t)syip</i> ^c	TSR #66; ZMYYC #554; TBL #1533

***(t)syup** Jg. tšùp ‘close, as the hands when catching a ball; gather, as the mouth of a sack’, šùp ‘wring, squeeze out’; WB **chup** ‘clench the fist’, Atsi (Zaiwa) tsʔup ‘*id.*’; Langsu (Maru) tʃap⁵⁵; Akha tsúq ‘sink the claws into, as eagle to chicken’; also perhaps Bai Jianchuan tsue³³, tsui⁴⁴; Tujia tɕiu⁵³

***(t)syip** Lahu chî? ‘crumple, clench, squeeze into a ball’

- a. Note the internal variation in WB.
 b. Note the internal variation in Akha. This etymon also shows final stop ⇔ nasal variation; see below 12.5.1.
 c. Possibly related is a similar root with liquid final **tsyir ⇔ *tsyur* ‘wring / squeeze’ (STC #188); see above 9.2.2.

(2) *Variation across TB subgroups*

(a) *Before labial consonants*¹²

‘beat / strike’	*d/tup ⇔ *d/tip	STC #399
	*d/tup	Bahing tyup; Sunwar tup; Jg. dùp, mədùp
	*d/tip	Bahing tōp, tip; ^a Nung dip, əthip; Mikir dip-dip ‘beat (heart, pulse)’, thip ‘beat (as drum)’
‘conceal / bury’	*b/pup ⇔ *b/pip ^b	STC #376
	*b/pup	Bodo phop ~ fop ‘bury’
	*b/pip	WT byib-pa ‘cover, wrap up, conceal’; Mikir pip ‘bury’
‘dusk; dark’	*rum ⇔ *rim	STC #401
	*rum	WT rum ‘darkness, obscurity’; perhaps also WB hrûm ‘lose, be defeated’
	*rim	Jg. rîm ‘be dusk, dark’, nîng-rîm ~ ñ-rîm ‘evening’; Nung rim-rim wɛ ‘twilight’
‘house’	*k-yum ⇔ *k-yim ^c	STC #53
	*k-yum	Lepcha khyum; Miri əkum; Namsang hum; Meithei yum
	*k-yim	WT khyim; WB ?im; Vayu kim ~ kem; Mru kim; Mikir hem; Limbu him; Lushai and Lai Chin ?in

‘set (of the sun)’ ^d	*g(l)um \approx *g(l)im	---
	*gum PLB *gum ¹ > Lahu qè ^e , Yi Nanjian yu ⁵⁵ , Lisu go ³³ ze ⁴⁴ , Naxi (Lijiang and Yongning) gv ³¹ , Hani Caiyuan (Biyue) kɔ ³³ , Hani Shuikui (Haoni) kɔ ³³ ji ⁵⁵ Baic *gum > Jianchuan ɣo ⁴² [ZMYYC], yu ²¹ [TBL]; Dali o ⁴²	
	*gim Proto-Kiranti *gim (Michailovsky 1989) > Dumi gi:m, Thulung gam Qiangic *gim > Qiang (Mawo) a qe [ZMYYC], a qa [TBL]; Shixing mie ³³ yi ⁵⁵ [ZMYYC], gĩ [TBL]; Namuyi mi ³³ qæ ⁵³ (cf. ŋi ⁵⁵ mi ⁵⁵ ‘sun’)	
	*glim \approx *glum Forms with affricates or clusters that might point to an earlier *cluster include: Nungish *glim \approx *glum > Anong Nu dzim ⁵⁵ , Dulong glom ⁵³ Lolo-Burmese *glum or *gyum > Yi Weishan ze ⁵⁵ ; Yi Nanhua dzo ³³ ; Yi Wuding dɣ ¹¹ ; Sani tɣ ³³ ; Jinuo kro ³³ [TBL], kɿa ³⁵ [ZMYYC] Qiangic *glim or *glum ^f > Daofu (Ergong) nə ndzo, Queyu pu ⁵⁵ tɕha ¹³ , Lusu ne ³³ tɕu ⁵³ , Pumi (Taoba) nə ³⁵ dzɛ ³⁵ , Pumi (Jinghua) nə ¹³ dzie ⁵⁵ , Ersu tɕho ⁵⁵	
‘sink / suppress’	*s-nu(:)p \approx *s-ni(:)p ^g	STC #400; TSR #159; DL:766-7
	*s-nu(:)p WT nub-pa ‘sink, set (e.g. sun), decay’, snub-pa ‘cause to perish, suppress’; Lepcha nũp ‘be covered with water’	
	*s-ni(:)p Jg. nìp ‘shade, cast a shadow’; Nung nəm-nip-lam ‘west’ (“sun-sink-side”), Bahing nip ‘compress’; WB nip ‘be kept down’, hnip ‘crush, oppress’; Lahu ní ‘squeeze, press’	
‘sleep’	*s-yup \approx *s-yip	STC #114; TSR #180
	*s-yup Jg. ʔyúp; Miri yup	

12. See above 8.3(3b), 8.4(4a).

	*s-yip	WT yib-pa ‘hide oneself’; Jg. (y)íp ‘cover, conceal (information)’ ^h ; Tsangla (y)ip ‘sleep’; Bunan ib; Bahing ip; Nung ip; Ao Naga yip; Abor ip; WB ʔip ‘sleep’, sip ‘put to sleep’; Lahu yɪʔ ‘sleep’, í ‘put to sleep’; Rawang (Mutwang) yɪp ‘sleep’, səyɪp ‘put to sleep’; Zahao Chin ʔit ~ ʔiʔ
‘suck / breast / milk’	PTB *dzyo:p > *dzyup / *tsyup ≠ *dzyip / *tsyip [≠ *dzyut ≠ *dzyuk ≠ *dzyəw ≠ *dzyow]	
	*tsyup ≠ *dzyup	Lahu chòʔ ‘suck’ (< PLB *C-tšup) ≠ PLB *ʔ-dzyup > Lahu cú ‘milk’; Atsi suʔ-cʔup, Maru cʔap, Achang tšop ⁵⁵ , Akha cúq, Hani Mojiang tʃhɿ ³¹ , Jinuo tʃhu ⁵⁵ (all ‘suck’). Extra-LB cognates with back vowels include: Mikir in-jùp; rGyalrong scçup; Bokar Luoba bjuŋ tɕop.
	*tsyip ≠ *dzyip	WT ɣdžibs-pa ‘suck’; Cuona Menba dzip ³⁵ pa ⁵³ , Lusu tchi ³¹ ; Geman Deng jip ⁵⁵ ; Lisu tʃhi ³¹ ; Naxi tchi ⁵⁵ ; Bai Jianchuan tɕi ³³

- a. Note the language-internal variation in Bahing.
b. Dimasa shows internal variation: bib ~ bub ‘conceal oneself’, phip ~ phup ‘bury’.
c. Intralingual variation is shown by Magar im ~ yum and Nung kyim ~ tsim ~ tsum.
d. See above 7.2(1) and JAM 2000d (“3 TB word families”). Most of the supporting forms for this etymology are to be found in ZMYC #752 and TBL #1512.
e. The Lahu form could come from either *-im or *-um, though the other Loloish reflexes seem to point to a PLB *back vowel.
f. The Daoфу, Lusu, and Pumi first syllables mean ‘sun’ (< PTB *nəy).
g. There is another allofam *s-nyap, with medial *-ya- (below 12.2.1).
h. Note the internal variation in Jingpho.

(b) Before liquids ¹³

‘dull / buttock / heel / rounded part’ ^a	*r-tul ≠ *r-til *r-tul *r-til	JAM 1994d, 2000b WT rtul-po ‘blunt, dull’; Abor-Miri ko-dun ‘buttock’; Meithei məthun ‘buttock’; Wancho chi-dun ‘heel’ (chi ‘foot’); Khözha ʃú-dò; Lisu khi ²¹ du ²¹ ‘buttock’ (khi ²¹ ‘excrement’); Phunoi pi ³³ tun ¹¹ ‘heel’ Jingpho šətīn ‘buttock’, ləthīn ‘heel’
‘fly (v.)’	*pur ≠ *pir ^b	STC #398

	*pur	WT ḥphur-ba
	*pir	Central Tibetan ḥphir-ba; Garo bil; Dimasa bir
‘hair (body)’	*s-mul ⌘ *s-mil ^c	STC #2
	*s-mul	Lushai hmul; Moshang kəmul
	*s-mil	Mikir aŋ- <i>mi</i> ; Nung mil; Garo kimil
‘skin’	*p^wul ⌘ *p^wil ^d	JAM 1997a (PSLTB):43
	*pul	Chepang pun; Dulong pūn ⁵⁵ ^e
	*pil	Lushai pil; Dulong aŋ ³¹ <i>pin</i> ⁵³ ; Bokar Lhoba, Gallong, and Tagin a-pin
	*wul	Meithei ul, <i>un</i> -sa; Maring un, wun; Geman Deng ung; Kham ol-ko-ta; PNN (French 1983) <i>*wur</i> (> Chang kho-(w) <i>un</i> , Nocte kho- <i>wan</i> , a- <i>khuon</i> ; Lushai, Chinbok, and Kom Rem vun; Thado vún; Maring un, vun, wun; Tiddim sa- <i>vun</i> ; Lakher vo; rGyalrong <i>wu-fan-dži</i> ; Puiron mun (with unexplained nasal initial); Lotha o- <i>fhu</i> ; Kaman (Miju) uŋ ³⁵ ; perhaps also Qiang Mawo ‘ue-piɛ.
	*wil	Moyon vin
‘sweet’	*hul ⌘ *hil	JAM 1997a (PSLTB):37
	*hul	Thulung ol-ol
	*hil	Milang <i>hil</i> -ma
‘wash’	*hur ⌘ *hir ^f	JAM 1997a (PSLTB):38
	*hur	Thulung hur- ‘wash hair / head’; Kulung hur-su; Dimasa hu; Zeme hui; Apatani <i>har</i> -su; Miri <i>hūr</i> - kak-na; Bengni/Bokar <i>hūr</i>
	*hir	Newar hir-, hi(l)- ‘wash clothes’

a. There are good Chinese comparanda meaning both ‘dull’ and ‘buttock’ (below §3).

b. Note the internal variation in Tibetan. Chinese has good comparanda for both allofams (see below). There is evidence for a related root **byer* (see above 9.2.2, 9.2.3(1)). There is a similar Proto-Mon-Khmer root **par* (> e.g. Kmhmu? *par*); cf. TB forms like Nung əphər ‘shake (as a cloth)’, khoŋ-*phər* ‘moth’.

13. See 9.2.2 and 9.3.2 above. Three of the following examples (‘fly’, ‘hair’, ‘skin’) also have labial initials, which might also favor this variation. Cf. also the liquid-finalled ‘dust’ and ‘poor’ (below §3), which show vocalic variation between TB and Chinese.

12.1: *-u- ⇔ *-i-

- c. This root also displays *-i- ⇔ *-ya- variation; see below 12.2.1. There are excellent Chinese comparanda for both TB allofams (below §3).
- d. See above 7.2(3), 9.3.2. This reconstruction is revised from *ul (JAM 1997a:43). We must also assume *-ul ⇔ *-un variation in this root to account for the -n reflexes in languages that preserve *-l as such (*e.g.* Lushai).
- e. Note the internal variation in Dulong and Lushai.
- f. This set is perhaps related to *hus ‘wet / moisture’, above 10(10.3).

(c) Elsewhere

Four examples have been found before dental stops, two in *TSR*¹⁴, one in *GSTC*, and one in *VSTB*:

‘wipe / sweep’	*sut ⇔ *sit	<i>TSR</i> #120
	*sut	Jingpho kətsút; WB sut
	*sit ^a	Lahu šîʔ; Akha síq; Sani sz̥ ⁴⁴ ; Lisu (Fraser) si ² ; Nasu sɿʔ ³²
‘tear / rip’ ^b	*m-džut ^L ⇔ *m-džit ^L (PLB)	<i>TSR</i> #110
	*m-džut ^L	WB cut ‘be torn’, chut ‘tear, sever sthg’
	*m-džit ^L	Atsi cheʔ; Lahu jìʔ; Sani tci ⁴⁴ ; Lisu (Fraser) chĩ ²
‘copula / be the case’	*s-rut ⇔ *s-ri:-t	<i>GSTC</i> (JAM 1985a):19
	*s-rut	WB hut
	*s-ri:-t	WT srid-pa ‘existence’; Lahu hêʔ ‘be the case’; WB hri’ ‘be, be there’
‘lungs / exhale’ ^c	*tsut ⇔ *(t)si-t ^d	<i>TSR</i> #56, #119; <i>VSTB</i> :119-21; <i>DL</i> :163, 557; <i>ZMYC</i> #274; <i>TBL</i> #143
	*tsut	WB chut; Atsi tsʔut; Hayu jot; Lakher pa- <i>chao</i>
	*tsəy ² (PLB)	Lahu ð- <i>chî-phôʔ</i> ; Sani tshì, Lalo <i>tshì-fw</i>
	*(t)sit	Axi tsɿ ⁴⁴ -pu ²² ; Lisu (Fraser) sī ³ ‘whistle’; WT sid-pa ‘ <i>id.</i> ’; Garo raŋ-sit ‘breathe, exhale’

a. Possibly related directly to this allofam is Proto-Tani *tit (> Bokar Lhoba *tít-kak* ‘wipe, erase’, Abor-Miri tit, Bengni *tít-kyak* ‘wipe off’). See J. Sun 1993.

b. Possibly related is PLB *m-dzi:t^L ⇔ *m-tsi:t^H (*TSR* #88) ‘split off’. Another resemblant form is *dzik (> Lushai and Lai tsik ‘split, cut’) ⇔ *dziŋ ‘split, mince’ (> WB câñ ‘mince, cut, chop’).

c. See above 8.3(2) and 8.4(3a).

14. The rhyme alternation in these roots is not recognized in *TSR*.

- d. For initial fricative \approx affricate variation, see above 3.3. More cognates are to be found in *ZMYC* #274 and *TBL* #143, including many Qiangic forms which are so far difficult to assign to a particular proto-allofam, e.g. rGyal-rong *tərtshos*, Pumi Taoba *tshø*³⁵, Ergong *z̥tshe*, Muya *tshu*⁵³, Ersu *tshu*⁵⁵, Shixing *tsho*⁵⁵, Namuyi *ntshu*³³ *phu*⁵⁵ (cf. Lahu *ḡ-chî-phôḡ*).

There is also an apparent case of **-u-* \approx **-i-* variation before a final velar:

	<i>PTB</i>	<i>*tuk</i> \approx <i>*tik</i>
'frog'	<i>*tuk</i>	PTani <i>*tuk</i> (> e.g. Apatani <i>ta-tuʔ</i> , Bengni & Bokar <i>ta-tuk</i> , Gallong <i>tatik</i> , Pailibo <i>tik</i> , ^a Milang <i>pu-duk</i>); Dulong <i>du</i> ⁵⁵ <i>ɿ</i> ⁵³
	<i>*tik</i>	Tamang (Sahu) <i>kal-tek-tek</i> , Chepang <i>tik</i> ; Pumi <i>pə</i> ⁵⁵ <i>de</i> ⁵⁵ ; Proto-Karen (Jones 1961) <i>dìG</i> ; Lahu <i>pā-té-něʔ</i> ; Jinuo <i>pho</i> ⁴⁴ <i>the</i> ³³ <i>le</i> ³³ (these latter two forms < PLB <i>*ʔ-dik</i> ^L or <i>*ʔ-dek</i> ^L)

- a. The Gallong and Pailibo forms indicate that *-u-* \approx *-i-* variation occurs within Tani as well. RSC points out the similarity of these forms to PTB **s-dik* 'scorpion', another 'verminous / venomous' species. See 8.3(1) above. The first syllables of the Milang, Pumi, Lahu, and Jinuo forms are < **s-bal* 'frog', above 9.3.1(1).

(3) Involving Chinese

A number of roots show this type of vocalic variation internally within Chinese, or as between Chinese and TB. In the most interesting cases, both Chinese and TB show this variation, implying that it may be imputed all the way back to the PST stage.¹⁵

(a) Where PTB has **-u-* and Chinese has **-i-*

'block / pillow'	PTB <i>*m-kum</i> (<i>STC</i> #482), but Nung <i>məkhim</i>	
	Proto-Chinese <i>*k(y)im</i>	枕 OC <i>t̪s̪əm</i> (<i>GSR</i> #656g) 'pillow; use as a pillow'
'dust'	WT <i>rdul</i> (<i>STC</i> :173)	
	Proto-Chinese <i>*d'il</i>	塵 OC <i>d'j̥ən</i> (<i>GSR</i> #374a) 'dust'
'poor'	PTB <i>*d-bul</i> > WT <i>dbul</i> (<i>STC</i> , <i>ibid.</i>), Qiang Mawo <i>bɿ</i>	
	Proto-Chinese <i>*b'il</i>	貧 OC <i>b'j̥ən</i> (<i>GSR</i> #471v) 'poor'

15. See *STC*, nn. 460, 461, 464, 474, 476, 477, 479.

12.1: *-u- ʌ *-i-

(b) *Where TB has -i- and Chinese shows *-u- ʌ *-i- variation*

‘writing brush’ ^a	WT pir	‘writing brush, pencil’ (STC p. 178)
	Proto-Chinese *blit	筆 OC pl̥iət or pl̥iət (GSR #502d) ‘writing brush’
	Proto-Chinese *blut	律 OC *b-liwət (GSR #502c) ‘pitch-pipe’
		聿 OC *b̥i-wət (GSR #502a) ‘writing stylus, pencil’

a. Benedict surmises that this might be a loan from Austro-Tai into ST; cf. PAT *bulut ‘body hair, fur, fibre’ (STC:178).

(c) *Where PTB has *-u- ʌ *-i- variation and Chinese has *-u-*

‘buttocks / dull’ ^a	PTB *r-tul ʌ *r-til (above §2b)
	Proto-Chinese *dul
	尻 OC d’wən (GSR #429a) ‘buttocks’
	臀 OC d’wən (GSR #429c) ‘buttocks’
	殿 OC tiən (GSR #429d) ‘rear of an army’
	沌 OC d’wən (GSR #427h) ‘confused, stupid’
	鈍 OC d’wən (GSR #427i) ‘dull’
	頓 OC twən (GSR #427j) ‘worn, dull, spoiled’

‘house’ ^b	PTB *k-yum ʌ *k-yim (STC #53)
	Proto-Chinese *kyum
	宮 OC k̥iŋ (GSR #1006a-d)
	‘dwelling-house; palace, apartment; temple’

a. See above 9.3.4.

b. See above 7.2(1b).

(d) Where PTB and Chinese both show *-u- ɤ *-i- variation

'hair (body) / eyebrow'	PTB *mul ɤ *mil ^a (STC #2)	
	Proto-Chinese *mur	毛 OC mog (GSR #1137a-b) 'hair; fur, feathers'
	Proto-Chinese *mir	眉 OC mǐər ~ mǐwər (GSR #567a-c) 'eyebrow'
'enter / sink'	PTB *nu:p ɤ *ni:p (STC pp. 84, 181)	
	Proto-Chinese *nu:p	納 OC nǎp (GSR #695h) 'bring in'
		內 OC nwǎb (GSR #695e-g) 'interior, inside; enter'
	Proto-Chinese *n(y)ip	入 OC nǐǎp (GSR #695a-d) 'enter, bring in'
'fly (v.)'	PTB *pur ɤ *pir [see §2b above]	
	Proto-Chinese *pur	翮 OC pǐwǎn (GSR #471f) 'fly, soar'
		奮 OC pǐwǎn (GSR #473a) 'spread wings, fly up'
	Proto-Chinese *pir	飛 OC pǐwər (GSR #580a) 'fly'
'knee'	PTB *put (STC #7); WT pus-mo ɤ pis-mo (see §1a, above)	
	Proto-Chinese *put	市 OC pǐwǎt (GSR #501a-b) (Mand. fū) 'knee covers'
	Proto-Chinese *pit	鞞 OC pǐǎt (GSR #407m) (Mand. bì) 'knee cover'

a. See §2b above; also 9.3.2.

12.2: Other alternations involving front vowels in closed syllables

12.2 Other alternations involving front vowels in closed syllables ¹⁶

12.2.1 *-i- ⇌ *-ya-

‘alive / green / raw’	*s-riŋ ⇌ *s-ryan	STC #404
	*s-riŋ	Manchati sriŋ ‘alive’; Lushai hriŋ ‘fresh, green’; Mikir reŋ ‘live’; Jg. tsīŋ ‘grass’, <i>etc.</i>
	*s-r(y)aŋ	WB hraŋ ‘alive’; Garo thaŋ ‘live’, gathaŋ ‘green’; Dimasa gathaŋ ‘alive; green, unripe’
‘drip / drop’ ^a	*g-t(y)ik ⇌ *m-dz(y)ak	TSR #82
	*g-tik	WT gtig-pa, thigs-pa
	*m-dz(y)ak	WT ḥdzags/ḥtshag; Tamang syak-pa; rGyalrong nthək; Ersu ntho ⁵⁵ ; Naxi ndə ³³ ; WB cak; Lahu jāʔ; Luquan Lolo nts'aʔ ²²
‘eight’ ^b	*-ryat ⇌ *-rit	STC #163; TSR #171; GSTC #41
	*b-r-gyat ⇌ *b-g-ryat ^c	WT brgyad; Thulung yet; Jg. mətsát; Garo tšhet; Lushai riat
	*ʔ-rit (PLB)	WB hrac; Lahu hí
‘eye’	*s-mik ⇌ *s-myak	STC #402; TSR #145
	*s-mik	WT mig; Limbu mik; Jg. myiʔ; Garo mik; Lushai mit; Meithei mit; Mikir mek, <i>etc.</i>
	*s-myak	rGyalrong təmńak; WB myak; Lahu mēʔ-šī; Akha myáq, <i>etc.</i>
‘hair’ ^d	*s-mil ⇌ *s-myal ⇌	STC #2
	*s-mul	
‘iron’ ^e	*syi:r ⇌ *sya:l	STC #372
	*syi:r	Dhimal śir; Dimasa śer; Lushai thi:r; Garo sil
	*sya:l	(Kiranti) Bahing sya:l; Sangpang syel ~ sel; Dumi sel; also Darang (Taraon) sai ⁵³ .
‘marrow’	*r-klīŋ ⇌ *r-kl(y)aŋ	STC #126 and n. 128

16. See above 5.5.3-5.5.6; also 8.2(1b) and 8.3(1b).

	*r-kliŋ *r-kl(y)aŋ	Mikir ar-kleŋ; Lushai thliŋ WB <i>khraŋ</i> -chi; Lahu ð-cə-pɔ (< PLB *ʔ-glaŋ ^l)
‘one / only’ ^f	*g-t(y)ik ≈ *tyak *g-t(y)ik *tyak	STC:84, 94, etc.; TSR #’s 31, 48, 70 WT gtsig ‘one’; WB tac ‘id.’; Akha tìq ‘id.’; Lahu tí ‘only’ (< PLB *ʔ-dik ^L), a-cí ‘a little bit’ (< PLB *ʔ-gyik); WB kyac ‘be diminutive, smaller than ordinary’ Bumthang t(h)ek; Cuona Monpa t'eʔ ⁵⁴ ; Bai tia
‘pheasant’ ^g	*s-rik ≈ *s-ryak *s-rik *s-ryak	STC #403 Jg. ù-riʔ; WB rac; Garo do- <i>grik</i> (< *g-rik); Lushai va- <i>hrit</i> WT sreg-pa; West Tib. śrag-pa; Lepcha <i>kəhryak-fo</i>
‘pinch / squeeze; press / oppress’	*s-nip ≈ *s-nyap ^h *s-nip *s/r-nyap	STC p. 84 and #192; TSR #159, #147 Bahing nip ‘compress, express’; WB nip ‘be kept down’, hnip ‘crush, put down, oppress’; Jg. nìp ‘set (of the sun), grow dark, cast a shadow, be dim’; Nung nəm nip lam ‘west’ (“sun-sink-path”) WT rnyap-pa ‘seize or snatch together’; Jg. nyàp ‘squeeze, extort’; WB ñap ‘be squeezed’, hñap ‘pinch, squeeze; blacksmith’s tongs’; Lahu nôʔ ‘pinch, squeeze’, khí-nôʔ ‘shoes’ (“foot-pinchers”), mé-nôʔ ‘scissors’
‘very / real / certain’	*tik ≈ *t(y)ak *tik	STC p.52 WT tig-tig ‘certainly’; Mikir ʔəthik ‘just’

12.2.1: *-i- ⇌ *-ya-

	*t(y)ak	WT <i>thag-pa</i> ‘be sure, decided, certain’; WB <i>tak-tak</i> ~ <i>tyak-tyak</i> ‘very’; Lushai <i>tak</i> ‘very real, exact’; Tiddim <i>tak</i> ‘be right, correct; rightside’; Lahu <i>dàʔ</i> ‘good’ (< * <i>mdak</i>) ⇌ <i>qha-dèʔ</i> ‘well’ (< * <i>mdyak</i>) ⇌ <i>tèʔ</i> ‘quotative particle’ (< * <i>dyak</i> ; <i>i.e.</i> “that is really what was said”)
‘wash / bathe’	*m/b-sil ⇌ *m/b-syal *m-s(y)il *m-syal	<i>STC</i> #493 WT <i>bsil-ba</i> ; Jg. <i>śín</i> , <i>kəšîn</i> ; Lushai <i>sil</i> ; Tangkhul <i>gerśil</i> ; Thado <i>śil</i> , <i>kiśil</i> ; Khami <i>məse</i> ; Lakher <i>pəśi</i> ; Mikir <i>iŋ-thi</i> WT <i>bśal-ba</i> ‘wash, clean by washing’; Rawang <i>thi zal</i> ‘bathe’ (<i>thi</i> ‘water’)
‘wear clothes’ ⁱ	*wit ⇌ *w(y)at *wit *w(y)at	<i>STC</i> p. 24; <i>TSR</i> #181 Lahu <i>vəʔ</i> ‘wear’ ⇌ <i>fí</i> ‘dress smn’; Ahi <i>viʔ</i> ⁴⁴ ; Luquan <i>i</i> ⁵⁵ ; Naxi <i>vi</i> ⁵⁵ WB <i>wat</i> ; Zaiwa <i>vut</i> ; Rawang <i>nuŋ-wat</i> ‘wear’; rGyalrong <i>tewyet</i> ‘clothes’

- For the Chinese comparanda of this etymon, see above 8.2(1e), 8.3(1e).
- See above 8.2(2).
- Many other allofams of this etymon are reconstructed at various subgroup levels of TB in JAM 1995b (“Numerals”; see Index, p. 236).
- See above 12.1(2b) for the *-u- ⇌ *-i- variation in this root. The Lepcha doublet *ă-myāl* ⇌ *ă-myel* possibly reflects -i- ⇌ *-ya- variation as well: *ă-myāl* < **s-mal* ⇌ *ă-myel* < **s-myāl*. For Lepcha medial -y- as a reflex of PTB **s-*, see above 4.2.1.
- See above 9.2.2.
- This complex word family is discussed in more detail in JAM 1995b (“Numerals”):128-30.
- Lh. *γəʔ* ‘silver pheasant [*Lophura nycthemera*]’, ‘bartailed pheasant [*Syrnaticus humiae*]’ apparently derives from PLB **rwak*^L, thus establishing -y- ⇌ -w- variation in this root as well. See *DL*:1141.
- There is still another allofam, **s-nup* (above 12.1(2a), and perhaps also **s-nyit*, above 8.3(3b). For the Chinese comparanda to this etymon, see above 8.2(3e) and 8.3(3c).
- For some further, more speculative connections of this root, see above 8.2(2b).

12.2.2 *-i- ✕ *-ye-

‘fly’	*pur ✕ *pir ✕✕ *byer ^a	
	*pur ✕ *pir	STC #398 (see above 12.1)
	*byer	Bahing byer; Abor-Miri ber

a. STC (n. 249) claims that these are distinct roots, but they certainly seem allofamically related.

12.2.3 *-ya- ✕ *-e-

‘low’	*s-nem ✕ *nyam	STC #348 and p. 85
	*s-nem	Jg. nèm; Nung ənem ‘low’, śənem ‘make low’; WB nim ^a ; Lahu nè
	*s-nyam	Lushai hniam

a. The creaky tone of this WB form indirectly reflects the *s- prefix; see above 4.2.

12.2.4 *-i(y) ✕ *-ey; *-i(y) ✕ *-əy¹⁷

There are several cases of alternation between *-ey and short *-i or long *-əy (= *-iy). In any case the reflexes of *-i and *-ey are identical (*i.e.* -i) for many languages, including WT, WB, Jingpho, and Lahu.

‘penis’ ^a	*m-ley ✕ *m-li	STC #262; GSTC #49
	*m-ley	WT mdže
	*m-li	Kanauri kut-li, Bahing bli, Garo ri-gaŋ, Dimasa li
‘aunt’ ^b	*ney ✕ *ni(y)	STC #316
	*ney	WT ʔəne, Tsangla ənye, Kanauri əne
	*ni(y)	Lushai ni, Garo ma-ni, Mikir ni
‘earth’	*m-ley ✕ *m-ləy	STC #152; GSTC #152 ^c
	*m-ley	Lushai lěi, Tangkhul ɲərəy, Lahu m̀i
	*m-ləy	Muya (Qiangic) məli, WB mre, Hpun (Samong) təmli, Mikir mili ✕ meli ‘sandbank’
‘tiger’	*d-kəy ✕ *d-key	STC:116; GSTC #52

17. See above 5.5.4, much of which is repeated here for ease of reference.

12.2.5: *-i(y) ≈ *-ay

*d-key	Mikir <i>teke</i> , Lakher <i>tśakei</i> , Proto-Kiranti *key-ba ‘tiger’, Miri <i>si-ke</i> ‘species of civet’
*d-kəy	WB <i>khye-sac</i> ‘leopard cat’

- a. WB *lî* and Lahu *nî* (with preemption by the prefix and assimilation of the prefix to the original root-initial) could descend from either variant. Jg. *mənè* ~ *məné?* (with similar assimilation of the initial to the prefix) seems to reflect neither of these allofams, but could descend from PTB *m-le (see above 5.4).
- b. Jg. *nî* could descend from either variant.
- c. *STC* does not recognize the variant in *-ey. By coincidence these sets are numbered the same in *STC* and *GSTC*!

12.2.5 *-i(y) ≈ *-ay ¹⁸

‘left’	*r-bi(y) ≈ *b(w)ay ^a	<i>STC</i> #47 and p. 68; <i>GSTC</i> #'s 80 and 124
	*r-bi(y)	Mikir <i>arvi</i>
	*b ^w ay	WB <i>bhai</i> ‘left’ ≈ <i>lak-wâi</i> ‘left hand’, Jg. <i>pāi</i> , Lushai <i>vei</i> , <i>etc.</i>
‘ten’ ^b	*ts(y)i(y) ≈ *tsyay	<i>STC</i> #408; <i>GSTC</i> #'s 2 and 73
	*ts(y)i(y)	Jg. (t)śī, Garo <i>tśi</i> , Dimasa <i>dźi</i> , <i>etc.</i>
	*tsyay	WB <i>ʔəchai</i> , Lahu <i>chi</i>
‘copula’	*way ≈ *ray	Alongside the basic copular morpheme *way ≈ *ray (<i>GSTC</i>) is a group of others with *-i or *-əy vocalism: *rəy, *s-ri, *s-rin, *s-rit (JAM 1985a: 63-4)

- a. The -ε vowel in the Lahu reflex *lâʔ-mē* ‘left hand’ is irregular, as in ‘tail’ (below 12.2.6); the Lahu initial is also irregular in this complex etymon.
- b. For more discussion see JAM 1995b (“Numerals”), §3.22, pp. 134-5.

12.2.6 *-ey ≈ *-ay ¹⁹

‘bamboo strip (for tying)’	*ʔ-nay ^{1/2} ≈ *ʔ-ney	<i>GSTC</i> #130
	*ʔ-ney	WB <i>hnî</i> ; Proto-Karen *ñai ‘fiber’ (Mazaudon 1984); Proto-Tamang <i>hnāi</i> (<i>ibid.</i>)
	*ʔ-nay ^{1/2}	Lahu <i>vâ-ne</i> (<i>vâ</i> ‘bamboo’) [< PLB Tone *1]; Akha <i>á-nè</i> [< *2]; Bisu <i>né-phò</i>
‘bridge / ladder’ ^a	*s-lay ≈ *s-leý	<i>GSTC</i> #133 and n.78

18. See above 5.5.5.

	*s-ley	Lushai lei; Tiddim lèi; Lakher <i>hlei-ri</i>
	*s-lay	Chepang hlayʔ; Tangkhul śay ‘small bridge’, śay-ron ‘ladder’
‘buy / barter’ ^b	*b-rey ≠ *r-ley ≠≠ *g/m-lay	<i>STC</i> #’s 283, 293; <i>GSTC</i> #54 <i>Cf. e.g.</i> Jg. mərī ‘buy’ ≠ gəlái ‘exchange / barter’
‘near’	*s-ney ≠ *s-na:y *ney *s-na:y	<i>STC</i> :68; <i>GSTC</i> #55 Jg. nì, WB nî Lushai hnai, Lahu nê
‘pass / exceed’	*s-lay ≠ *s-ley *s-ley *s-lay	<i>STC</i> #301; <i>GSTC</i> #58 Lakher hlei ‘more than others’. Jg. lài ≠ śəlài, Dimasa lai, Mikir le, Lushai lei ≠ hlei, Tiddim lai, Lakher lai-pa ‘leftovers’
‘rice / paddy’ ^c	*may ≠ *mey	<i>STC</i> :65, 192; <i>GSTC</i> #57 <i>Cf. e.g.</i> Dimasa mai, Garo mi ~ me- (in comp.)
‘tail’	*r-may ≠ *r-mi or *r-mey ^d *r-mey *r-may	<i>STC</i> #282; <i>GSTC</i> #72 WB ʔəmri, Akha dō-mì Jg. n-mài
‘tongue’ ^e	*s-ley ≠ *s-lay ≠ *s-l(y)a *m/s-lay *-ley *s-lya	<i>STC</i> #281; <i>GSTC</i> #56 WT Itse, Jg. lài (couplet form), Dimasa salai, Lushai lei, Mikir de Tiddim Chin lei, Jg. śiŋ-li (another couplet form); PNN *C-ley) > Yogli li, Wancho le, Konyak yi, Phom yei WB hlya, Lahu <i>ha-tē</i> .

a. There is also an excellent Chinese comparandum, 梯 OC *tjər (*GSR* #591), Mand. tī.

b. Contra *STC* (n. 205, p.64) this root certainly seems allofamically related to *g/m-lay ‘change/exchange’ (*STC* #283). Benedict claims that *b-rey ≠ *r-ley is a loan from Austro-Tai [PAT *(m)baŋi]. See above 5.5.2(1).

19. See above 5.5.3, repeated here for ease of reference.

12.2.7: *-ey ʷ *-eŋ

- c. The rhyme of this etymon (attested mostly in Bodo-Garo) is not reconstructed with certainty in *STC*: “*m[a/e]y”. There is also evidence for a monophthongal allofam *ma. See JAM 1995a “Palatal suffixes”, and above 11.6.
- d. Lushai *mei* is consistent with either reconstruction; Mikir has a doublet: *arme* ʷ -mí. French (1983) reconstructs PNN *C-me:y. The Lahu reflex *mē(-tu)* is not regular for either proto-rhyme (see also ‘left’, above 12.2.5).
- e. This highly variable root displays both *-ey ʷ *-ay and *ay ʷ *a variation. For the latter, see above 11.6 (“Palatal suffixes”), where this root is not presented.

12.2.7 *-ey ʷ *-eŋ ²⁰

STC (pp. 79, 171, 183) sets up a PTB root *sre[ŋ] ‘squirrel / weasel’, on the basis of WT *sre-mon* ‘weasel’, Mikir *iŋ-ren* ‘mongoose’, and WB *hrañ* ‘squirrel’.²¹ Several additional forms cited in *GSTC* #151 point to a variant in *-ey (Lushai *hlěi* ‘squirrel’, Abor-Miri *lī-po*, Tangkhul Naga *saŋ-ri*, *khəɾəy*, *ci-reŋ*), leading to a pan-allofamic formula like *s-leŋ ʷ *s-leŋ ʷ ʷ *s-reŋ ʷ *s-reŋ.²²

20. See above 5.5.6.

21. *STC* sets up the nasal-finalled allofam with *-ŋ, even though *-n seems equally likely, probably because the putative Chinese cognate, 狽 / 鼬 OC *srjǝŋ ‘weasel’ (*GSR* #812t-u) has -ŋ.

22. This alternation between final semivowel and nasal is similar to the much better attested *-ay ʷ *-an, below 12.4.

12.3 Other alternations involving back vowels

12.3.1 *-u- ⇌ *-a- and *-o- ⇌ *-a-

‘descend’	*s/?-yuk ⇌ *zak	STC p. 30 and n. 289; TSR #121
	*s/?-yuk	Jg. ?yú? (Maran), ju? ⁵⁵ (Dai <i>et al.</i>) ^a ‘descend’, šəyú? ‘let down’ (causative); Lushai zuk ‘verbal affix indicating downward motion’
	*zak ^L (PLB)	WB sak; Lahu yà?; Sani ze? ²² ; Hani za? ²¹ , <i>etc.</i>
‘grass / weeds’	*mruk ⇌ *mrak	STC #149, #363 ^b ; TSR #138; DL:1006
	*mruk	Lahu mù?; Akha mòq; Lisu mù?, Lalo mùq, <i>etc.</i>
	*mrak	WT ɦdžag-ma ^c ; Kanauri myag; WB mrak
‘smell / scent / fragrant’ ^d	*suŋ ⇌ *saŋ	STC #405
	*suŋ	WT bsuŋ ‘smell, fragrance’; Jg. sūŋ ‘scent, odor, smell’
	*saŋ	WB sâŋ ‘emit a pleasant odor’

- a. This Jingpho form was inadequately recorded as “yu” in the sources used in STC, leading Benedict to reconstruct two separate roots, *yu(w) and *zak. See above 11.5.
- b. STC #363, note 238 attributes PLB *muk ‘weeds, grass’ to me (although I have no recollection of such a reconstruction!), relating this etymon to words meaning ‘detritus/dust’ (< PTB *mu:k) rather than to ‘grass/weeds’. See above 8.4(1b).
- c. This WT form led Benedict to revise his PTB reconstruction to *m-lyak (STC, n. 142).
- d. A Chinese comparandum (suggested by RSC, 2002) is the etymon represented by 皂 (鄰) OC ɣiǎŋ ‘fragrance of grain’ (GSR #714ab,m) and 香 OC ɣiǎŋ ‘fragrance’ (AD 142, GSR #717a).

There is also one good example of *-o- ⇌ *-a- variation: ‘fear’ *k/grak ⇌ *k/grok. See above 8.2(1e).

12.3.2 *-u- ⇌ *-wa- and *-o- ⇌ *-wa-

Parallel to the *-i- ⇌ *-ya- variation discussed above (12.2.1), a few roots exhibit an alternation of the type *-u- ⇌ *-wa. In three etyma originally reconstructed with medial *-u- (‘horn’, ‘neck’, ‘sour / acid’), Lepcha has a reflex in -o- or -ó- (where the acute accent

12.3.2: *-u- ⇌ *-wa- and *-o- ⇌ *-wa-

indicates a long vowel). Since the usual Lepcha reflex of medial *-u- is -a- (above 7.2(5), 8.4(1c)), Benedict later revised the rhymes of these etyma to *-wa- (*STC*, n. 231):

	<i>STC</i>	<i>PTB-1</i>	<i>PTB-2</i>	<i>Lepcha</i>
‘horn / corner’ ^a	#85	*ruŋ	*rwaŋ	ǎróŋ
‘neck’	#393	*tuk	*twak	tűk-tok
‘sour / acid’	#42	*skyu:r ⇌ *su:r	*s-kywa:r ⇌ *swa:r	tśor

a. There is also an open-syllable allofam *rwa, which shows a similar *-u ⇌ *-a alternation in WT grwa ⇌ gru ‘angle, corner’; rwa ⇌ ru ‘horn’ (*STC*, p. 113).

Several allofamically related roots, showing both *-u- ⇌ *-wa- and *-i- ⇌ *-ya- variation, are reconstructed in JAM 1997a (“Laryngeals”):²³

‘heat up / burn’	*hul ⇌ *hwal	Thulung hal ~ ul ‘heat slightly’, wal ‘boil lightly’, <i>etc.</i>
‘sweat’	*hur ⇌ *hwar ⇌ *hir ⇌ *hyar	
	*hur	Gallong a-ur, a-ur, a-yur; Darang ha:-u
	*hwar	Miri har; Bokar ho-war len; Lhoba fioŋ-ŋar (with assimilation to the final of the first syllable)
	*hir	Milang hi:l-ma; Mikir ing-i; Anong in ⁵⁵
	*hyar	Tagin ha-cer, ha-yer

We have also noted an example of *-o- ⇌ *-a- variation: ‘outer covering’ *r-kwa(:)k ⇌ *kok; see above 8.6(1).

23. These roots are actually part of an even larger word-family with meanings related to ‘heat’ (*op. cit.*, pp. 44-46). See above 9.6.

12.3.3 *-ow ≈ *-aw²⁴

There are several roots where Jg. has -au corresponding to WB (and Lahu) -u, pointing to proto-variation between *-aw and *-ow:

		STC#	Jg.	WB	Lahu
‘cross over’	*gow ≈ *gaw	318	gāu	kû	---
‘thick’	*tow ≈ *taw	319	dāu	thu	thu
‘pine / fir’	*row ≈ *raw	320	mərāu	thân-rû	---

12.3.4 *-ow ≈ *-u(w)²⁵

There are also a few roots where variation must be posited between *-ow and the diphthong reconstructed as *-əw or *-uw (above 5.3.1; STC p. 69):

	General TB	STC#	Dimasa ^a	Lushai
‘thorn’	*tsow	276	busu < *tsu(w)	---
‘steal’	*r-kəw	33	khau < *kow	---
‘hammer’	*tow	317	---	tu-bau? < *tu(w)

a. Dimasa regularly has -u < *-u or *-əw, and -au < *-ow.

12.4 *-ay ≈ *-an²⁶

Several cases of *-an ≈ *-ay variation in TB/ST word families have been identified:²⁷

‘crab’	*d-k(y)ay ≈ *d-k(y)an	STC #51; GSTC #'s 4, 59
	*d-k(y)ay	Tangkhol Naga <i>khai-reu</i> ; Khoirao <i>tśəyay</i> ; Khami <i>təai</i> ; Lushai <i>ai</i> ; Lahu <i>á-cè-gu</i> ~ <i>á-ci-ku</i>
	*d-k(y)an ^a	Jingpho <i>tśəkhán</i> ; PNorthern Naga (French 1983:469) * <i>gra:n</i> > Wancho <i>san</i> , Chang <i>hin</i>

24. See above 5.6.3.

25. See above 5.6.4.

26. See above 7.1(2).

12.5: Variation between homorganic final nasals and stops

‘red’	$*t(y)a \approx *t(y)an \approx *t(s)a:y$ ^b	<i>STC</i> :17-18, <i>etc.</i> ; <i>GSTC</i> #150; Pal. suff. #7.
	$*t(y)a$	WB <i>ta</i> , <i>tya</i> ‘flaming red’
	$*t(y)an$ ^c	Lushai <i>śen</i> , Tiddim <i>san</i> \approx <i>tśhan</i>
	$*t(s)a:y$	Lushai <i>tâi</i> ‘rosy, ruddy, red’; Lakher <i>sai</i> ‘ <i>id.</i> ’, <i>sai-law</i> ‘scarlet’.
‘single / one / whole / only’	PST $*day \approx *dan$	<i>GSTC</i> #148; Pal. suff. #27
	$*day$	Jg. <i>tâi</i> ; Boro <i>otay</i> ; Lakher <i>dei</i> ; Lahu <i>tê</i>
	$*dan$	Chinese 單 OC $*tân$ ‘single, simple’ (<i>GSR</i> #147a-d)
‘war / strife’	$*g-ra:l \approx *g-ran \approx *ray$	<i>STC</i> :15, 71, 173, 191; <i>GSTC</i> #149
	$*g-ra:l$	WT <i>ral-gri</i> ‘sword’ (“war-knife”); Lushai <i>raal</i> ‘war against, warrior’; Tiddim <i>ga:l</i> ‘battle, war, enemy’; Angami <i>te-hrə</i> ‘war’; Kaman Mishmi <i>krau</i> ⁵⁵ ‘quarrel’
	$*g-ran$ ^d	WT <i>hgran-pa</i> ‘fight’; WB <i>ran</i> ‘quarrel’
	$*ray$	Tangkhul <i>rai</i> ‘war, battle, feud’; <i>rai-kapiṇa</i> ‘warrior’, <i>rai-mi</i> ‘soldier’

- a. It is possible that the -n represents the “collective suffix”, as suggested in *STC* (n. 184, p. 99); see above 11.2.3.
b. This complex etymon displays both $*-a \approx *-ay$ (see above 11.6) and $*-an \approx *-ay$ variation
c. Several Chinese comparanda support the nasal-final allofam, including 丹 OC $*tân$ (*GSR* #150a-b) ‘red; vermilion; cinnabar’.
d. There is a good Chinese comparandum in $*-n$ (above 9.3.4).

12.5 Variation between homorganic final nasals and stops

This is perhaps the most important variational pattern in TB/ST word families.²⁸ Stop \approx nasal variation in syllable-final position occurs both internally in Chinese and individual TB languages, as well as cross-linguistically among TB languages, or between TB and Chinese.²⁹

27. See *GSTC* (JAM 1985a:46-9; 64-6) and “Pal. suffixes” (JAM 1995a:54-5; 78-82).

28. Many examples have been given above in connection with particular rhymes, some of which are repeated in this section for ease of reference. See Courant 1903; Karlgren 1933; Wolfenden 1937; *STC* p. 156; JAM 1978a (*VSTB*):23-25.

Some of this stop \approx nasal interplay may be dismissed as low-level syntagmatic assimilatory effects, *e.g.*: ‘poker / stick for stirring fire’ PTB *yok > WT yog-po ‘poker’, skyogs ‘ladle’; WB yauk-ma’ ~ yaun-ma’ ‘pudding stick’ (where the latter variant shows assimilation to the nasal initial of the suffix).³⁰ Such assimilations are especially frequent in the verb paradigms of “pronominalized” languages, *e.g.* Bahing bap-to ‘scratch’, but bam-so ‘scratch oneself’; Thulung sen-mu ‘to kill’, sen-na ‘you kill him’, but set-to ‘I killed him’; rem-mu ‘to look’, but rep-to ‘I looked at him’.³¹

More interesting are alternations that cannot be explained away in assimilatory terms. These variations occur at all three positions of articulation, although the cases before velar finals are by far the most numerous. This is perhaps not surprising, given that velars are the most common final consonants in TB/ST in general.

12.5.1 Nasal/stop variation with final labials

‘draw / scoop water’	*kam \approx *ka:p	STC #336; TSR #39; VSTB: 108-9
	*kam	Lahu qho ‘draw water’ (< PLB *kam ¹).
	*ka:p	PLB *C-kap ^L (> WB khap, Akha xòq, Lisu hkaw ⁶ ‘draw water’; Lahu qhò? ‘cupped, concave’); Garo ko; Dimasa khau
‘wrap up’	*tum \approx *tup ^a	TSR #23
	*tum	WT hthum ‘cover over, wrap up, envelop’; WB thum ‘tie in a knot’
	*tup	Jg. thúp ‘wrap, bundle up’; WB tup ‘tie together’, thup ‘wrap up’; Akha tóq ‘wrap around and tie’; Hani toʔ ³³ ; Woni t'u ⁵⁵
‘needle’	*k-ram \approx *k-rap	STC #52; TSR #191
	*k-ram	Chinese 針 OC t̪jəm (GSR #671o)
	*k-rap	WT khab; rGyalrong tekyep; Trung ʔuop; Pumi Dayang qhǒ; Namuyi ɲo ³³ ; PLB *rap ^L \approx *k-rap ^H (> WB ʔap; Lahu ʔò?; Akha à-ʔòq, Sani ʔʔ ²² ; Bisu kjāw, Hani ko ³³ , Lisu wɔʔ ²)

29. Frequently, though not always, Chinese attests to the variant with final nasal, while TB languages (especially those in the Lolo-Burmese group) have the final stop.

30. See STC:14.

31. These Thulung examples are from Lahaussais 2002.

12.5.2: Nasal/stop variation with final dentals

‘swell up / be swollen / stout / calf of leg’	*bwap ⌘ *s-bwam	<i>STC</i> #172; <i>TSR</i> #92
	*s-bwam	WT sbom-pa ‘thick, stout’; Jg. bōm ‘to swell’, bòm ‘round and chubby’; WB phwam ‘plump’, Lushai puam ‘swollen; to swell’
	*bwap	Jingpho bòp-lé-lé , bòp , ləbòp ‘calf of leg’; Lahu phò? ‘swell up’ < PLB *C-pwap^L

a. This root also shows -u- ⌘ -i- variation; see above 12.1(1d).

12.5.2 Nasal/stop variation with final dentals

‘braid / plait / interweave’	*p/ban ⌘ *p/bat	<i>GSTC</i> #'s 31, 37 ^a
	*pan ⌘ *ban	WB pân ‘go around the end of a thing’, phan ‘shuffle cards’; Lahu phê ‘to braid’; Lushai phăn ‘knit, crochet; net’; Tiddim phan ‘weave, plait’; Garo pan? ‘wind into a ring’; Boro phan ‘twist’; Chinese 辦 OC b’ian (not in <i>GSR</i> #219) ‘braid, plait’ and 編 OC pian ‘ <i>id.</i> ’ ⌘ b’ian ‘arrange in series’ (<i>GSR</i> #246e)
	*pat ⌘ *bat	Mpi phe? ¹ < PLB *C-pat^L ; Dulong blat ⁵⁵ ‘braid’ (<i>ZMYC</i> #655) ^b ; WB pat ‘wind around, encircle’; Jg. bàt ‘wind around’
‘cut / slice / castrate’	*mwan ⌘ *mwat	
	*mwan	Jg. mōn ‘cut fine; castrate (hog)’, mòn ‘cut, slice (as tobacco) into fine particles’; Shixing m̥i ⁵⁵ βe ⁵⁵ ‘castrate’; Yi Nanjian mu ²¹ ; Jinuo m̥e ⁴⁴ ; Bai (Dali) mio ³⁵ , (Jianchuan) miε ⁵⁵
	*mwat	Jg. mòt ‘shave, cut, slice (as tobacco leaves or the like)’
‘fart’	*pyen ⌘ *pyet	JAM
	*pyen	WT phyen , h̥phyen
	*pyet	Jg. phyèt

‘load / burden / transport’	<p>*wan ⌘ *wat</p> <p>*wan</p> <p>*wat</p>	<p><i>GSTC</i> #38</p> <p>WT <i>ḥon</i> ‘bring’; WB <i>wan</i> ‘load; PNN (French 1983:459) *w̄on ‘bring, take’ > Chang <i>o-on</i>, <i>u-wan</i> ‘load, burden’</p> <p>Tangkhu (Bhat 1969) <i>wot</i>, (Pettigrew 1918) <i>ot</i> ‘thing; work, subject, substance, service; load’, <i>ot kaphei</i> ‘unload’ (<i>kaphei</i> ‘dismantle’)</p>
‘pour / spill; sow broadcast’ ^c	<p>*sywan ⌘ *sywat</p> <p>> *swan^{1/2} (PLB)</p> <p>> *swat^H (PLB)</p>	<p><i>GSTC</i> #40</p> <p>WB <i>swan</i> ‘pour out, spill, shed’ ⌘ <i>swân</i> ‘pour upon, cast by pouring liquid into a mold’; Lahu <i>šē</i> ‘pour; sow broadcast’; Akha <i>sē</i> ‘sow seeds’, <i>sjē</i> ‘pour’; Mpi <i>se</i>¹ ‘sow broadcast, scatter seed’</p> <p>Lahu <i>šē?</i> ‘pour, spill’; Akha <i>sjéq</i>; Sani <i>xv</i>⁴⁴; Bisu <i>šēt</i></p>
‘rub off / grind’	<p>*pwan ⌘ *pwat^d</p> <p>*pwan</p> <p>*pwat</p>	<p>WB <i>pwân</i> ‘be rubbed off, abraded’</p> <p>WB <i>pwat</i> ‘rub, grind, churn; lathe’</p>
‘run / dance / kick’	<p>*gan ⌘ *k(y)at</p> <p>*gan</p> <p>*k(y)at</p>	<p><i>TSR</i> #18; <i>GSTC</i> #39</p> <p>WB <i>kan</i> ‘kick, kick back, rebound’</p> <p>Akha <i>tjéq</i> ‘run’; Lisu <i>hchye</i>²; Sani <i>ce</i>⁴⁴; Bodo <i>khat</i>; Garo <i>kat</i>; Mikir <i>kát</i>; Jg. <i>gàt</i> ‘run’, <i>kəgàt</i> ‘flee’, <i>khàt</i> ~ <i>ləkhàt</i> ‘kick (as a horse)’, <i>khàt-khàt</i> ‘show the heels, hurry’; Lahu <i>qā-qhê?</i> ‘dance’</p>
‘extinguish / shut / blink’	<p>*s-mi:n ⌘ *s-mi:t</p> <p>*s-mi:n</p>	<p><i>STC</i> #374</p> <p>WB <i>hmîn</i> ‘have the eyes shut’</p>

12.5.3: Nasal/stop variation with final velars

	*s-mi:t	WT med-pa ‘not exist’; Mikir met , Lushai timit, Garo kimit ‘extinguish’; WB hmit ‘shut the eye, blink’; Lahu mē? ‘shut abruptly (as the mouth or eyes); wink, blink; go on and off rapidly, flicker’ (DL:1008); Akha míq ‘be extinguished’, myáq míq ‘close the eyes’; Chinese 滅 OC m̥jat (GSR #294b) ‘drown; extinguish, destroy’
‘spirit / illness-causing demon’ ^e	*nan ⚬ *nat *nan *nat	TSR #136; VSTB:110-111, 254-5; GSTC #36 Lahu nê, Sani ni ⁵⁵ , Lisu ni ⁵ ‘spirit’; Ch. 難 OC nân (GSR #152d-f) ‘be in difficulty, suffer’ Jg. nát; WB nat; Akha nēq ‘spirit’; WT nad ‘illness’; Lushai nat ‘ache, be in pain’
‘untie / loosen’ ^f	*pyin ⚬ *pyit *pyin *pyit	Nung phyit ‘to loose, untie’ Nung phyin ‘id.’

- These two sets in *GSTC* should be combined into a single etymon.
- The -l- in this form is unexplained.
- Limbu has a complex set of related forms reflecting alternations among final -r, -n, -t, -s, and open syllable: -ser- ~ -set- ‘scatter, be split, go in separate directions’ ⚬ send- ~ sen- ‘split up, disperse, break up’ ⚬ -ses- ~ -se- ‘scatter, spill, sow’. This set should actually be reconstructed with *-r at the PTB level (see above 9.2.1).
- Perhaps the stopped allofam reflects a trace of the old causative *-s suffix; see above 11.4.4.
- Both the -t and the -n in this etymon may be suffixal, ultimately deriving from *na ‘ill; pain’ (STC #80) > WB na, Lahu nà. We would then have a tripartite word family of the shape *na ⚬ *nan ⚬ *nat. See above 11.1.1.
- An open-syllable allofam should be set up for Lolo-Burmese: PLB *prəy¹ > WB phre, Lahu phɿ, Akha phý (DL :917).

12.5.3 Nasal/stop variation with final velars³²

‘back / behind’	*s-nuŋ ⚬ *s-nuk *s-nuŋ	STC #354; TSR #155 WB hnâuŋ ‘be after’, ʔəhnauŋ ‘back of a knife’; Lushai hnuŋ ‘the back’, hnuŋ-a ‘after, behind’; Mikir ənuŋ ‘back’.
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	*s-nuk	WB <i>nauk</i> ‘space behind, past time’; Lahu <i>qhòʔ-nɔ́</i> ‘back (of body), space behind, later time’
‘cold’	*m-glaŋ ≈ *m/?-glak *m-glaŋ	<i>STC</i> #120 and n. 124; <i>TSR</i> #99 WT <i>graŋ-ba</i> ; Trung <i>glaŋ</i> ; Lepcha <i>hyán</i> ; Lushai <i>ʔaŋ-tho:m</i> ; Mikir <i>niŋ-kreŋ</i> ‘winter’, <i>paŋ-kleŋ</i> ‘freeze, congeal’; Lahu <i>gò</i> ; Chinese 涼 OC <i>gliang</i> (<i>GSR</i> #755 <i>l</i>)
	*m/?-glak	WT <i>khyag(s)-pa</i> ; Lahu <i>kâʔ</i> ; Atsi <i>kyoʔ</i> ; Maru <i>kyòʔ</i> ; Akha <i>gáq</i>
‘dream’	*r/s-maŋ ≈ *r/s-mak *r/s-maŋ	<i>STC</i> #82; <i>TSR</i> #144 WT <i>rmaŋ</i> ; Jg. <i>ʔyúp-māŋ</i> ; Nung <i>ip-maŋ</i> ; Trung <i>mləŋ</i> ; Lushai <i>mán</i> ; Garo <i>džú-maŋ</i> ; WB <i>hmaŋ-ca-saŋ</i> ‘walk in one’s sleep’; Chinese 夢 OC <i>mǐŋ</i> (<i>GSR</i> #902a-b)
	*r/s-mak	WB <i>ʔip-mak</i> ; Lahu <i>yìʔ-mâʔ</i> ; Akha <i>máq</i>
‘eagle / vulture / bird of prey’ ^a	*g-laŋ ≈ *g-lak *g-laŋ	<i>STC</i> #333 Garo <i>do-reŋ</i> ‘falcon’, Bodo <i>dau-leŋ-a</i> ‘eagle’, Dimasa <i>dau-liŋ</i> ‘kite’ (<i>dau</i> ‘bird’); Chinese 鷹 OC <i>ʔiəŋ</i> ‘eagle, falcon’ (<i>GSR</i> #890c)
	*g-lak	WT <i>glag</i> ‘eagle, vulture’; perhaps also Chinese 雛 OC <i>glâk</i> ‘kind of bird’ (<i>GSR</i> #766q)
‘good / beautiful’ ^b	*l(y)aŋ ≈ *l(y)ak *l(y)aŋ	JAM 1990b (“Dinguist’s dilemma”) Chinese 良 OC <i>liəŋ</i> ‘good’ (<i>GSR</i> #735a-d) ^c
	*l(y)ak	WT <i>lags-pa</i> ~ <i>legs-pa</i> ‘good; elegant; beautiful’ and <i>yag-po</i> ~ <i>ɣdʒag-po</i> ‘good’; Chinese 易 ‘at ease, well ordered’ OC <i>djěk</i> (<i>GSR</i> #850a)
‘heart / mind’	*s-niŋ ≈ *s-nik	<i>STC</i> #367; <i>TSR</i> #146

32. For **-ak* ≈ **-aŋ* see above 7.1; for **-uŋ* ≈ **-uk* see above 7.2(5), 8.4(1).

12.5.3: Nasal/stop variation with final velars

	*s-niŋ	WT snyiŋ; Kanauri stiŋ; Limbu niŋ-wa; Lushai niŋ; Garo təniŋ; Bisu nʉŋ-ba
	*s-nik	WB hnac; Zaiwa <i>nik</i> ⁵⁵ -lum ²¹ ; Luquan niʔ ²² ; Lahu <i>ni</i> -ma (< PLB *ʔ-ni ³)
'ink / black'	PST *s-maŋ ≈ *s-mak (> PTB *s-nak)	STC p. 155; TSR #142
	*s-maŋ	WB maŋ, hmaŋ 'ink'; Seke (Tekang) mraŋ 'black', (Chuksang) mlāŋ ' <i>id.</i> '; Sahu (Western Tamang) mlāŋ ' <i>id.</i> '; Risiangku mlaŋ-mlaŋ ' <i>id.</i> ' (see Honda 2002) ^d
	*s-mak	Chinese 墨 OC mək 'ink' (GSR #904c) and 黑 OC xmək 'black' (GSR #904a-b)
	*s-nak	WT nag-po 'black', snag 'ink'; WB nak 'black'; Lahu nâʔ; Akha náq
'maggot'	*s-luŋ ≈ *s-luk	TSR #186
	*s-luŋ	Lushai lǔŋ
	*s-luk	WB lauk; Zaiwa luʔ; Maru lòk; Sani hlu ⁴⁴ ; Hani <i>hlu</i> ³³ -t'u ³² ; Akha <i>lúq</i> -tàn (all 'maggot'); Lahu pù- <i>lú</i> -qā 'butterfly'
'noun prefix'	*ʔaŋ- ≈ *ʔak-	GD #71; VSTB:28, 238 ^e
	*ʔaŋ	Mikir ang- (e.g. ang-hap 'uvula', ang-mi 'body hair', ang-ru 'rust', ang-kur 'root'); Bisu ʔaŋ- (e.g., ʔaŋ-gàw 'bone', ʔaŋ-sà 'breath', ʔaŋ-dà 'dawn', ʔaŋ-ʔu 'egg'); Phunoi ʔã ⁵⁵ - (e.g. ʔã ⁵⁵ -hmot ³³ 'body hair', ʔã ⁵⁵ -jau ¹¹ 'bone', ʔã ⁵⁵ -do ¹¹ 'brain'); Sangkong aŋ ³³ - (e.g. aŋ ³³ -mbaŋ ⁵⁵ 'body', aŋ ³³ -tu ³¹ 'head', aŋ ³³ -tsham ⁵⁵ 'hair of head', aŋ ³³ -ndo ³¹ 'brain'; Lahu ð- (e.g. ð-šē 'liver', ð-mē 'name', ð-šī 'fruit / round object', ð-u 'egg')
	*ʔak	Lahu á- (e.g. á-lêʔ 'salt', á-chèʔ 'goat', á-thâ 'jew's harp', á-bôʔ 'blanket', á-phê 'cucumber')

‘overcast / foggy / sullen’	<p>*mu:ŋ ≈ *r-mu:k</p> <p>*mu:ŋ</p> <p>*r/s-mu:k</p>	<p><i>STC</i> #363, #357^f</p> <p>Lepcha so-<i>muŋ</i> ‘cloudy weather’; Jg. <i>mũŋ</i> ‘cloudy; sullen, sulky’; WB <i>hmuŋ</i> ‘dull, downcast’, <i>hmũŋ</i> ‘very dark’.</p> <p>WT <i>rmugs-pa</i>, <i>smug-pa</i> ‘fog’; Lepcha <i>muk</i> ‘foggy, misty’, <i>muk-muk</i> ‘dullness, darkness’; WB <i>muik</i> ‘dark, ignorant’; Lushai <i>mu:k</i> ‘dull (color)’; Jg. <i>mú?</i> ‘thunder, cloudy’; Angami Naga <i>hmuu-tsa</i> ‘fog’</p>
‘sheep / yak’	<p>PST *yaŋ ≈ *g-yak</p> <p>*yaŋ</p> <p>*g-yak</p>	<p>JAM</p> <p>Chinese 羊 OC <i>zjaŋ</i> (<i>GSR</i> #732a) (Mand. <i>yáng</i>); rGyalrong <i>kəjo</i>; Ersu <i>tshi⁵⁵jo⁵⁵</i>; Namuyi <i>jo⁵⁵tsh¹³⁵</i>; Yi Xide <i>tsh¹⁵⁵zo³³</i>; Naxi Lijiang <i>tshu⁵⁵zu³¹</i>; Lahu <i>yò</i>; Lalo <i>á-ʒú</i>; Bai (Dali) <i>jou²¹</i>, (Jianchuan) <i>jō²¹</i>; Tujia <i>zo³⁵</i> (all ‘sheep’)</p> <p>WT <i>gyag</i> ‘yak’</p>
‘sit’	<p>*m-d/tu:ŋ ≈ *m-duk</p> <p>*m-d/tu:ŋ</p> <p>*m-duk</p>	<p><i>STC</i> #361; <i>ZMYC</i> #574</p> <p>Jg. <i>dũŋ</i>; WB <i>thuŋ</i>; Naxi Lijiang <i>ndzu³¹</i>; Hani Dazhai <i>dzo⁵⁵</i>; Bokar Adi <i>duŋ</i>; Sulong <i>toŋ³³</i>; Namuyi <i>ndzu⁵⁵</i>; Shixing <i>dzũ⁵⁵</i></p> <p>WT <i>hɖug</i></p>
‘speak’	<p>*s-br(w)aŋ ≈ *br(w)ak</p> <p>*s-br(w)aŋ</p> <p>*br(w)ak</p>	<p><i>STC</i>:42, 118</p> <p>WT <i>smraŋ</i> ‘word, speech’, <i>smra-ba</i> ‘speak, talk’</p> <p>WB <i>mrwak</i> ≈ <i>prwak</i>; Lushai <i>biak</i>; Lakher <i>bi</i></p>
‘step on’	<p>PLB *s-naŋ ≈ *s-nak</p> <p>*s-naŋ</p> <p>*s-nak</p>	<p><i>TSR</i> #149</p> <p>PLB *<i>naŋ</i>² (> WB <i>nân</i>; Zaiwa <i>nán</i>; Akha <i>nò</i>); Lai Chin <i>neʔ-(h)naŋ</i> ‘footsteps’ (< *<i>s-naŋ</i>)</p> <p>PLB *<i>s-nak</i>^H > Lahu <i>nâ?</i></p>
‘stone’	<p>*r-luŋ ≈ *k-luk</p>	<p><i>STC</i> #88; <i>TSR</i> #190; <i>ZMYC</i> #42</p>

12.5.3: Nasal/stop variation with final velars

	*r-luŋ	Bahing luŋ; Lepcha lăŋ; Jingpho ñ-lùŋ; Magari hlŋ; Lushai luŋ; Garo roŋ; Dimasa loŋ; Mikir ar-loŋ; Qiang Mawo ɬlu; Idu ɑ ³¹ laŋ ⁵⁵ ; Bokar Adi ʉ-luŋ; Akha lō, Hani (Gao 1955) hlu ²¹
	*k-luk	WB kyauk ‘stone’ (klauk in Inscriptions), mi’-kyauk ‘flint’ (“fire-stone”); Lahu mɨ-jəʔ ‘flint’ (à-mɨ ‘fire’); Lashi lūk; Langsu lauk ³¹ tsan ³¹
‘thunder / dragon’	*m-bruŋ ≈ *m-bruk	Gong 2001:24
	*m-bruŋ	Chinese 龍 ‘dragon’ (OC ljuŋ; <i>GSR</i> #1193a-e).
	*m-bruk	WT ḥbrug ‘thunder; dragon’
‘valley / river’	*klu(:)ŋ ≈ *k(l)uk	<i>STC</i> #127; Gong 2001:30
	*klu:ŋ	WT klŋ ‘river’, luŋ-pa ‘valley’; WB khyauŋ ‘valley’, khyâuŋ ‘stream’
	*k(l)uk	WB khyauk ‘chasm, gulf, abyss’; Chinese 谷 ‘valley’ (OC kuk ~ giuk; <i>GSR</i> #1202a-c). ^g
‘wood / tree’	*siŋ ≈ *sik	<i>STC</i> #233; <i>TSR</i> #118
	*siŋ	WT śiŋ; Bahing siŋ; Lushai thŋ; Mikir then; Bisu tsuŋ; Sgaw Karen ʰe; Chinese 薪 OC siĕŋ ‘firewood’ (<i>GSR</i> #382n)
	*sik	WB sac; Atsi sik; Lahu šŋ; Nasu si ³²
‘year’	*s-niŋ ≈ *s-nik	<i>STC</i> #368
	*s-niŋ	WT na-niŋ ‘last year’; Tsangla niŋ ‘year’; Jg. nīŋ; Mikir niŋ; Chinese 年 OC nien (<i>GSR</i> #364a-c)
	*s-nik	WB ʔəhnac

- a. This etymon is apparently an old loan into TB from a Mon-Khmer prototype with final velar nasal.
- b. See above 3.4.2(4c) and 8.2(1e).
- c. Gong 2001:29 relates this Chinese form rather to WT draŋ-po ‘straight, right, sincere, honest’.
- d. The medial liquids in these Tamangic forms are unexplained, perhaps reflecting an alternant with a liquid prefix, *r-maŋ.
- e. Cf. also my note 335 in *STC*:121. For more details, see above 4.2.2(2).

f. Two separate roots, *mu:ŋ (#363) and *r/s-mu:k (#357) are set up in *STC*, though they are explicitly recognized as doublets (p. 78).

g. For an alternative Chinese comparandum see above 7.2(5).

12.5.4 Internal nasal/stop variation in Chinese

Alternations between final nasals and stops in Chinese etyma and word-families have been observed for a century. Sometimes the same character has a double reading, but often different characters are used for each reading. Sometimes there is considerable semantic repartition between the variants, but there are also cases where the two variants are roughly synonymous. Among the OC examples cited by M. Courant (1903) are the following:³³

		GSR	OC
<i>With labial finals</i>			
‘grasp’	攄	616g (攢)	ʔjam ʔiap
<i>With dental finals</i>			
‘decide (legal), adjudicate’	讞	252i; AD153	ngjan ʔngjat
‘luxuriant’	苑	260d	ʔiwǎn ʔiwət
‘say, speak’	云	460a	giwən
	曰	304a	giwăt
‘scatter, pour’	散	156a	sân
	撒	AD767	sât
<i>With velar finals</i>			
‘plunder, rob’	掠	755k	gliǎŋ ʔgliǎk
‘wide’	廣	707h	k’wân
	廓	774g	k’wâk

Another example with velar finals, pointed out by Gong (2001:27-8):³⁴

‘go to meet, receive’	迎	699d	ŋǎŋ
‘go against; go to meet, receive’	逆	788c	ŋǎk

33. Cited in *STC*:156.

34. The TB relatives of this root have final nasals, WB ɲaŋ ‘contradict, deny’; Nung ɲeŋ ‘deny’; Lushai ɬaŋ ‘id.’ See *STC* #155.

12.6: Heterorganic final consonant reflexes

Similar alternations occur synchronically in Cantonese.³⁵ Bauer & Benedict (1997:92-94) list 25 such pairs of verbs, 15 with labial finals, 8 with velars, but only two with dentals,³⁶ *e.g.*:

<i>With labial finals</i>					
təm	𦨭	‘let fall, drop’	təp	揸	‘fall, drop down’
khi:m	拈	‘pinch, nip’	ki:p	挾	‘pinch, squeeze together’
ni:m	拈	‘pick up w/ fingers’	ni:p	捻	‘pinch, twist w/ fingers’
				鑷	‘forceps, pincers; to nip, pinch’
tsa:m	𦨭	‘blink, wink’	tsa:p	眨	‘ <i>id.</i> ’
<i>With dental finals</i>					
fu:n	寬	‘be wide’	fu:t	闊	‘ <i>id.</i> ’
sa:n	散	‘disperse, spread’	sa:t	撒	‘scatter, sow, spill’ ^a
<i>With velar finals</i>					
tœ:ŋ	啄	‘peck (of birds)’	tœ:k	啄	‘peck, preen’
kwɔ:ŋ	廣	‘expand, spread’	kwɔ:k	擴	‘enlarge, extend’
neŋ	掙	‘carry in hand’	nek	搦	‘ <i>id.</i> ’
tshoŋ	匆	‘be hurried, hasty’	tshok	促	‘be hurried, urgent’

a. See above 12.5.2.

12.6 Heterorganic final consonant reflexes

A number of TB/ST word families include reflexes with final consonants at different positions of articulation, with all three mathematically possible variations attested: dental \times velar, labial \times velar, labial \times dental.³⁷ These heterorganic reflexes are almost always secondary and regularly conditioned in a particular language. Occasionally, however, no conditioning is apparent and the variation cannot be explained.

35. See *VSTB*:24.

36. Tone marks are omitted.

37. See *VSTB*: 29-33 and 238-9.

12.6.1 Final *velars > final dentals

(1) *-ik > -it³⁸

In Lushai and other Chin languages, the PTB rhyme *-ik is usually fronted to -it:³⁹

	<i>PTB</i>	<i>Lushai</i>
‘eye’	*s-mik	mit
‘pheasant’	*s-rik	va-hrit
‘scorpion’	*s-di:k	ti:t

There is, however, a counterexample:

‘louse’	*sr(y)ik	hrik ^a
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- a. L. Löffler (p.c. 1975) claims that dentalization only occurs when the nuclear vowel is preceded by -y-, i.e. that only *-yVk acquires Lushai -t. While this accounts for the retention of the velar in ‘louse’, as well as for the Lushai secondary dental in ‘sweep’ (PTB *pyak > Lu. phiat [STC #174]), it requires an unjustified assumption of pre-Lushai prototypes *s-myak and *s-ryak for ‘eye’ and ‘pheasant’ (see above 12.2.1), and does not explain the dental in ‘scorpion’.

In several good examples, TB *-ik corresponds to a final dental in OC, although the velar seems to represent the original ST articulation:

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>		<i>OC</i>	<i>GSR</i>	<i>Ch. Gloss</i>
‘fear’	*lik ^a	p. 175	---	慄	liět	403d	<i>id.</i>
‘joint’	*tsik	64	45	節	tsiet	399e-f	‘knot; joint’
‘louse’	*s-r(y)ik or *ś-rik	pp. 165, 170	---	蟲	śriēt ^b	506a	<i>id.</i>

- a. Cf. WT ḥdžigs-pa ‘be afraid; fear, dread; fearful’. STC had previously compared the OC form to WT žed-pa ‘fear, be afraid’.

- b. This reconstruction is revised in STC from GSR šriēt.

As mentioned in 8.4(3) above, the root *(d)z(y)u:k ‘pierce / plant / erect’ (which underlies forms like WT ḥdzugs, WB cuik, Lahu jûʔ, Lushai fuk) has several allofamic

38. Similar to this assimilatory change after high front vowel are the regular developments of PTB */-ik -it -ek -et / and */-iŋ -in -eŋ -en / to the WB palatal rhymes -ac and -aŋ, above 7.4, 8.3(1,2).

39. See STC:14.

12.6.1: Final *velars > final dentals

reflexes that point to final *-ut: WT ɰdzud-pa ‘put, lay’, ɰtshud ‘be put into’; Jingpho dʒút ‘be pierced’, šədʒút ‘pierce’.

In two other etyma, either TB or Chinese shows internal *-k ≈ *-t variation. In ‘tie / bind’, TB varies while OC has -t; in ‘lick / tongue’, OC varies while TB has -k.

	<i>PTB</i>	<i>STC</i>	<i>TSR</i>	<i>OC</i>	<i>GSR</i>	<i>Ch. Gloss</i>
‘lick / tongue’	*s/m-lyak	211	179	舌 ɖʰiat 臄 gʰiok	288a 803h	‘tongue’ ‘tongue’ ^a
‘tie / bind’	*k/gyit ≈ *kik ^b	484	---	結 kiet	393p	‘tie, knot’

a. The gloss given in *GSR* is ‘palate, interior of the mouth’, but this seems to be spurious (see Karlgren’s comment on #776a).

b. Cf WT ɰkhyig-pa ‘bind’ (< *kik) ≈ Jg. kyít ‘gird, girdle’, gyít ‘tie, bind’, šɰ-kyít ‘girdle’. WB kyac ‘twist hard and tight’ could reflect either *-it or *-ik, but Lahu chɰ? ‘tie, knot’ points specifically to PLB *-ik. See above 8.3(1a).

(2) *-iŋ > -in

In Lushai, *-iŋ, unlike its stopped counterpart *-ik, retains the velar articulation:

	<i>PTB</i>	<i>Lushai</i>	<i>STC#</i>
‘name’	*r-miŋ	hmiŋ	83
‘fresh / green’	*s-riŋ	hriŋ	404
‘wood / tree’	*siŋ	thiŋ	233

Lushai has, however, developed a dental from the rhyme *-yim (below 12.6.3).

There are two good examples of ST/TB *-iŋ > Old Chinese *-in. Both TB roots also happen to show homorganic nasal ≈ stop alternation (see above 12.5.3).

‘wood / tree’	PTB *siŋ	<i>STC</i> #233; <i>TSR</i> #118 WT ɰiŋ; Bahing ɰiŋ; Lushai thiŋ; Mikir then; Bisu tsùŋ; Sgaw Karen ʰe Chinese 薪 OC sǐĕn ‘firewood’ (<i>GSR</i> #382n)
‘year’	PTB *s-niŋ	<i>STC</i> #368 WT na-niŋ ‘last year’; Tsangla niŋ ‘year’; Jg. nŋ; Mikir niŋ Chinese 年 OC *nien ‘harvest; year’ (<i>GSR</i> #364a-c)

Another possible example is the following: ‘relatives / ancestors’ PTB *dziŋ (not in *STC*) > WB cañ ‘place in a continuous row’, ꞑcañ ‘succession, order, always’, phûi-cañ-baŋ-chak ‘line of ancestors’; Lai Chin (KVB) tsiŋ-la ‘line of ancestors’; Chinese 親 (OC ts’iĕn ‘parents, relatives’; *GSR* #382o-p).⁴⁰

In the following etymon both TB and OC show final velar ɤ dental alternation:

	<i>PTB</i>	<i>STC</i>	<i>OC</i>	<i>GSR</i>	<i>Ch. Gloss</i>
‘name; order / command’	*r-miŋ ɤ	#83; p. 180	名 mĭĕŋ	826a-c	‘name’
	*mi:n ^a		命 mĭĕŋ ~ mĭăŋ	762a-b	‘order / command / name / designation’

a. Cf. WB min’ ‘speak authoritatively, command’, prob. ɤ mrañ ‘find fault with, scold’ (see Gong 2001:24). See above 7.5(5,6).

(3) *Tripartite variation involving final velars and dentals*

‘pierce / plant / erect / thorn’ ^a	PTB *tsow ɤ	*(d)z(y)u:k ɤ *dz(y)ut		
	*tsow	Kanauri tso; Lepcha džú; Jg. džú; WB chû; Lahu í-chû (all ‘thorn’) ^b		
		* (d)z(y)u:k	WT ɣdzugs-pa ~ zug-pa ‘prick; set into’, ɣdzug ‘enter / put into’; WB cuik ‘erect / set upright / plant’; Lahu jû? ‘pierce / stab’	
		*dz(y)ut	WT ɣdzud-pa ‘put, lay into’, ɣtshud ‘be put into’; Jg. džút ‘be pierced’, šədzút ‘cause to pierce’	

a. See *VSTB*:32; *STC* #276. See above 5.6.1, 8.4(3).

b. WT mtshon ‘any pointed or cutting instrument / forefinger’ (with suffixal -n) is perhaps related. See *STC* n.200.

40. According to the etymology provided in *STC*, this Chinese form is to be attributed to the root *tsa ‘child’ plus the collectivizing suffix *-n. See above 11.2.4.

12.6.2: Final labials ⇌ final velars (gravity alternations)

12.6.2 Final labials ⇌ final velars (gravity alternations)

(1) Where the directionality is clear

In the Lianghe dialect of Achang (Burmish group), PLB final *labials seem regularly to have become velars, a development which did not occur in other Achang dialects (Longchuan, Luxi):⁴¹

	<i>PLB</i>	<i>Longchuan</i>	<i>Luxi</i>	<i>Lianghe</i>
‘bridge’	*dzam ¹	tšam ⁵⁵	tsam ²¹	tšyaŋ ⁵⁵
‘stand’	*ʔ-rap ^L	zap ⁵⁵	liap ²¹	zɯk ⁵⁵

(2) Variation with no obvious conditioning

In one PTB root (not in *STC*) there is unexplained variation between a final labial and velar stop:⁴²

‘early morning’	*m-nak ⇌ *m-nap	<i>TSR</i> #131
	*m-nak	WB mənak; Lahu tē nàʔ ‘early’, mû-nàʔ ‘morning’; Lisu náʔ; Bisu ʔaŋ-dà
	*m-nap	Jg. mənàp; Ao Naga tənap; Mikir mənəp ~ pənəp

(3) Where there is -m / -ŋ variation between TB and Chinese

There are at least five etyma where final labial ⇌ velar nasal variation occurs in TB and/or Chinese, although each case is somewhat different from the others:

41. See JAM 1991c (“Jiburish revisited”):94-95.

42. Cf. also *m/ku:k ‘angle / knee’ (> e.g. WT khug, khugs), but Lushai khu:p. See above 8.4(1c).

- PTB *-m corresponds to OC -ŋ after a back vowel

‘bee / wasp’ PTB *plyum

Thulung plium; Nusu pɿæ⁵³; Proto-Karen (Solnit 2002) *pr̥ium^{A1} > Pa-o phrùm, Kayah Li plū, Kayaw phrý, Blimaw phlú, Pho phlèn, Sgaw phló

Chinese 蜂 OC p’iung, MC p’iwong (GSR #1192s)

‘house’ PTB *k-yum (≠ *k-yim) STC #53

WT khyim; Miri əkum; Meithei yum; WB ʔim; Lahu yè

Chinese 宮 ‘dwelling-house; palace, apartment; temple’ OC k̥iōŋ (GSR #1006a-d)

- TB shows -m ≠ -ŋ variation; OC has -ŋ

‘use’ PTB *zum ≠ *zuŋ

Jingpho súŋ (v.), ʔəsúŋ (n.); ≠ PLB *zum² > WB sũm, Lh. yê; Anong dzom³¹ a

Chinese 用 OC d̥iung (GSR #1185a-e)

a. Many other cognates that probably reflect a final labial are to be found in ZMYC #679, though their eroded finals make it difficult to be sure, e.g.: (Qiangic) Ersu zi⁵⁵, Namuyi zy⁵⁵; Shixing tsɿ⁵⁵; (Loloish) Yi Xide zi³³, Yi Nanjian zy²¹, Yi Nanhua zu²¹, Yi Mile zi²¹, Lisu ze³¹; (Baic) Dali zv³¹. Jianchuan Bai jō⁴² is probably a loan < Chinese.

- TB has -ŋ; OC -m > MC -ŋ

‘wind (n.)’ PTB *buŋ

Jg. m̥-būŋ; Dulong nãm⁵³ bũŋ⁵³; Geman Deng bauŋ³⁵

Chinese 風 OC p̥iũm > MC p̥iũŋ > Mand. fēng (GSR #625h)

- TB has -m; OC -m > MC -ŋ

‘bear (n.)’ PTB *d-wam (STC #461)

WT dom; rGyalrong twõm; Bahing wam; Lushai sa-vom

Chinese 熊 OC g̥iũm > MC j̥iũŋ > Mand. xiōng (GSR #674a-b)

- No TB cognates, but OC -m > MC -ŋ

12.6.3: Final labials ≠ final dentals

Several words with both labial initials and labial finals in OC dissimilated the second labial to a velar by the MC stage, *e.g.*:

		<i>OC</i>	<i>MC</i>	<i>Mand.</i>	<i>GSR#</i>
‘luxuriant / bushy’	茈	b’ũm	b’ung	péng	625g
‘phoenix’	鳳	b’jũm	bjũng	fèng	625j-m

If it were not for the TB cognates, ‘wind’ would also belong in this category. ‘Bee’ (above) has an original OC -ŋ, which remained as such in MC.

12.6.3 Final labials ≠ final dentals

(1) With phonological conditioning

- *-am > Jingpho -en

In four etyma (two of them with medial -y-), Jingpho reflects PTB *-am by -en:⁴³

	<i>PTB</i>	<i>WB</i>	<i>Jingpho</i>
‘breath / voice’ ^a	*sam	ʔəsam	nìŋsén ~ n-sén
‘fly (v.)’ ^b	*byam	pyam	pyên
‘rough / coarse’	*gram	krâm	grèn
‘snow / ice; cold’	*kyam	khyâm	khyên

a. Cf. Chinese 心 OC sɿm (*GSR* #663a-b). WT shows a similar -am ≠ -em variation in this root: sem(s) ‘soul, mind, spirit’, sems-pa ‘think’ vs. bsam ‘fut. of sems-pa’, bsams ‘perf. of sems-pa’, bsam-pa ‘thought, imagination, fancy’.

b. Cf. also Lahu pò, Ahi thö, Nyi tlö, rGyalrong kabyam, and many other cognates in *ZMYC* #782 and *TBL* #1318.

43. See above 7.1(1) and *STC*:51.

- *-am > Lushai (and other Chin) -in

	<i>PTB</i>	<i>Lushai</i>
	‘drink’ *ʔam ^a	in

a. Cf. also Bawm in; Hakha im ~ lim; Mru yem; Chinese 飲 OC ʔiəm (GSR #654). See above 7.5(1).

- *-yim / *-yip > Lushai -in / -it

	<i>PTB</i> ^a	<i>Lushai</i>
	‘house’ *k-yim ≈ *k-yum	in
	‘sleep’ *yip ≈ *yup	it

a. For the *-i- ≈ *-u- variation in the following etyma, see above 12.5.1.

- Where a PTB etymon in *-p corresponds to an Old Chinese word with final dental

‘lungs’	PTB *s-wap ≈ *r-wap ≈ *p-wap	(see <i>VSTB</i> :113-119)
	Chinese 肺 OC pʔiwǎd, MC pʔiwai- (<i>qùshēng</i>), Mand. fèi (GSR #501g)	

The final dental in Old Chinese perhaps arose by assimilation to the Proto-Chinese suffix *-s that has been hypothesized as the source of MC *qùshēng* (departing tone), supposing a schematic development like *p-wap-s > pwat-s > kwas > pwài (*qùshēng*).⁴⁴ A simpler explanation would be that the final labial has dissimilated from the labial initial, a tendency noted above (12.6.2) in etyma like ‘wind’, ‘luxuriant’, ‘phoenix’.

(2) Unexplained -t ≈ -p variation

There are a handful of examples of variation between -t and -p, especially after a high front vowel, e.g.:

‘bag / sack’	*ʔip ≈ *ʔit ^a	WB ʔit; Lushai, Lai ʔip
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- a. The WB rhyme motivates the reconstruction of a long vowel; see above 8.2(2). For a similar case, but where the final -t is clearly secondary, cf. Lai Chin ʔit ‘sleep’ < PTB *s-yip.

44. See above 11.4.5(2).

12.6.3: Final labials ≠ final dentals

In a couple of words, Jingpho shows synchronic variation between -t and -p, or a final -p where a -t would be expected by the comparative evidence:

‘tongue’	Jg. ṣ̌iŋ-lèt ≠ ṣ̌iŋ-lèp
‘horse-leech’	*m-li:t (STC #396) (> Lepcha hlet-bu, Lushai hli:t, Mikir iŋlit, Ao Naga melet), but Jg. líp ‘sp. of horse-leech’.

One cannot very well end a book with the word “horse-leech”, and so a few concluding philosophical remarks seem appropriate. Perhaps the best way to organize this discussion is in terms of a set of adjectives with the *-ive* suffix.

13.1 Cumulative

In linguistics as in other disciplines, it is a constant temptation to try to overthrow the work of one’s predecessors, so that one’s own research will appear to be the *fons et origo* of the truth.¹ This tendency has been especially characteristic of generative grammar, where “theories of language” have a built-in planned obsolescence, with each new theory claiming to invalidate all previous ones.

Historical linguists are hardly exempt from this primal urge for revolutionary novelty — the desire to be different just for the sake of being different. This can take many forms, some of them trivial and innocuous, like replacing a phonetic symbol in a previous reconstruction by a new but equivalent one; or changing the name of a subgroup of a language family.² More serious is the itch to carve out totally novel subgroupings,³ a process rather similar to the decennial gerrymandering of congressional districts in the

1. I have referred to this phenomenon in Freudian terms as “patricidal” (keynote address at the Summer Institute of the Linguistic Society of America, Ann Arbor 1973).

2. Hence the proliferation of alternate names even for well-established subgroups like Lolo-Burmese (Burmese-Lolo, Yi-Burmese, Burmese-Yi, Burmese-Yipho, Yi-Myanmar, Myanmar-Yipho, etc.). T. Shintani has recently (2002) proposed the euphonious neologism “Brakaloungic” for Karenic.

3. I have called this “neosubgroupitis” (JAM 2000b “On Sino-Bodic”). Trying to establish higher-order combinations of TB subgroups is premature at best. Even Indo-Europeanists are still unable to do so unequivocally for their much better documented family. See the discussion in JAM 1978a (*VSTB*):1-12.

13.1: Cumulative

House of Representatives. At an extreme level we find “megalocomparative” proposals of genetic relationship that turn received notions upside down (*e.g.* Sino-Mayan, Sino-Caucasian, Sino-Austronesian, Japanese-Dravidian), and which can lead the unwary down fruitless paths, obscuring the differences among cognates, borrowings, and chance resemblances.⁴

Perpetual revolution gets to be fatiguing after a while.⁵ Surely it is preferable to build on the past rather than to repudiate it. Historical linguistics is a cumulative enterprise. Thanks to the foundation laid by pioneering scholars, especially Paul K. Benedict, a solid body of TB/ST etymological knowledge has been accumulated, in terms of which new etymologies must be evaluated. No longer can one get away with reconstructing whatever one pleases, no matter how typologically bizarre or *ad hoc* or mechanistic the reconstruction might be.⁶

There is a dialectical relationship between synchronic data and sound laws. The “laws” are derived by inference from the data in the first place, but once proto-forms are reconstructed, they can be used to guide us in our hunt for cognates in languages not yet examined (even if they have undergone semantic change). Almost every TB/ST etymology so far proposed presents problems and complications — irregularities — in some language or other, which is par for the course even in the much better known Indo-European family. Part of our task is to indicate where the exceptions, problems, and irregularities lie, in the hope that they can ultimately be explained.

The concept of “regularity” itself is by no means simple, nor does it mean the same thing to different scholars.⁷ The Nostraticist or Sino-Mayanist can convince himself that his fantastical comparisons are “perfectly regular”. Given sufficient semantic latitude and proto-forms that are complex enough, one can formulate “sound laws” in such a way that they appear exceptionless. Paradigmatically one can multiply the number of proto-phonemes. If you reconstruct 35 proto-vowels, any anomalous vowel correspondence can be regarded as “regularly reflecting” a separate proto-vowel.

4. See JAM 1990a (“On megalocomparison”). Megalocomparison has the apparent advantage of non-falsifiability, since, as Haudricourt has observed, one can never prove that any two languages are not related. But non-falsifiable hypotheses are not scientific. When presented with alternative non-falsifiable proposals it is impossible to choose among them.

5. As Leon Trotsky found to his cost in 1940.

6. Those who lack what I have called “Proto-Sprachgefühl” (JAM 1982a) can produce reconstructions bristling with strange symbols but devoid of any phonetic or typological plausibility; see *e.g.* Sedláček 1970; Weidert 1975, 1979, 1981, 1987; Peiros & Starostin 1996.

7. See JAM 1992 (“Following the marrow”) and 1994a (“Regularity and variation”).

Syntagmatically, if you reconstruct etyma like *mrgsla, and the monstrous proto-cluster *mrgsl- occurs only in a single etymon, any set of reflexes in the daughter languages can be said to be “regular”.⁸

As the alternative to such “proto-form stuffing”, one must have recourse to proto-variation, though in a controlled and constrained way. Not everything may be said to vary with everything else.⁹ This *Handbook* places special emphasis on variational patterns in TB/ST, and attempts to classify them according to how well attested they are.¹⁰ As I put it 30 years ago, “We must steer an Aristotelian middle path between a dangerous speculativeness and a stodgy insensitivity to the workings of variational phenomena in language history.”¹¹

The time-depth of PST is perhaps 6000 years B.P., about at the limits of the comparative method. We can hardly afford to insist on “perfect regularity”, though we must never settle for a roseate Greenbergian haze.¹²

13.2 Self-corrective

A few of our etyma are only set up provisionally, and some individual forms are assigned only tentatively to a certain etymon. It must be admitted that a lot of guesswork is involved in etymologizing material from hundreds of languages and dialects at once, without having established the “sound laws” in advance. The problems are especially acute when comparing phonologically depleted languages with those having richer syllable canons. When there is a partial phonological similarity between distinct etyma with the same meaning (e.g. *sem and *sak ‘mind / breath’; *mur and *muk ‘mouth’; *s-may and *s-mel ‘face’; *s-r(y)ik and *s(y)ar ‘louse’), it is not easy to decide by simple inspection to which etymon we should assign a phonologically slight form in a daughter language (e.g. so ‘mind’, mo ‘mouth’, hme ‘face’).¹³

8. This is actually the proto-form offered in Weidert 1981:25 for an etymon meaning ‘spirit, ghost, shadow’ (reconstructed as *m-hla in *STC* #475). As I have observed, “It is always possible and sometimes necessary to invent an *ad hoc* explanation for an anomalous case. It is even true that some such *ad hoc* ‘solutions’ are more plausible than others. The only harm is in deluding oneself that an explanation which covers only a single case establishes a ‘regularity’.” (JAM 1982a:22).

9. This issue is the major theme of JAM 1978a (*VSTB*).

10. Note the large percentage of PTB roots for which proto-variation is posited in the *Index of Proto-Forms*, below.

11. JAM 1972b (“Tangkhul Naga and comparative TB”):282.

12. See Greenberg 1987, and my review of it (JAM 1990a).

13. See JAM 1994a (“Regularity and variation”):54-55.

13.2: Self-corrective

There are all too many ways in which one can make etymological mistakes. A rough taxonomy of errors would have to include the following:

- *Treating a loanword as native*

I was at first delighted when I ran across the Jingpho form **wéʔ-wū** ‘screw’, since its first syllable looked like an excellent match with Lahu **ḁ-vèʔ** ‘*id.*’, for which I then had no etymology. Could this be a precious example of the rare PTB rhyme **-ek*?¹⁴ But the screw is hardly an artifact of any great antiquity, and it would be *prima facie* implausible that a root with such a meaning would have existed in PTB. The truth quickly became apparent. The modern Burmese form for ‘screw’, **wéʔ-ʔu** (WB **wak-ʔu**), the obvious source from which both Jingpho and Lahu borrowed these words, means literally “pig-intestine”. The semantic association is the squiggly corkscrew-like appearance of a pig’s small intestine.¹⁵ This etymology is also interesting from the viewpoint of distinguishing native vs. borrowed co-allofams. The usual, native words for ‘pig’ in Jingpho and Lahu are **wàʔ** and **vàʔ**, respectively; but the doublets borrowed from Burmese have front vowels, as in spoken Burmese. Unless a native speaker of Jingpho knows Burmese, s/he is unlikely to realize that the first syllable of **wéʔ-wū** means ‘pig’, especially since this syllable is in the high-stopped tone, while ‘pig’ is low-stopped. The native Lahu speaker is even less likely to recognize the source of **ḁ-vèʔ**, since the morpheme for ‘intestine’ has been completely dropped from the original Burmese compound,¹⁶ rather like the way our word *camera* (< Lat. ‘room; chamber; vaulted enclosure’) is a shortening of the old compound *camera obscura* (“dark chamber”).¹⁷

- *Combining reflexes of unrelated roots*

When two forms bearing a semantic resemblance in a phonologically depleted language differ only in tone, it is tempting to try to relate them. I once entertained the possibility that such pairs of Lahu forms as **phu** ‘silver, money’ / **phû** ‘price, cost’ and **mu** ‘high, tall’ / **mû** ‘sky’ were co-allofams, though they can easily be shown to descend from quite separate etyma: **phu** < PTB **plu* (STC p. 89) / **phû** < PTB **pəw* (STC #41); **mu** < PTB **mraŋ* (STC p. 43) / **mû** < PTB **r-məw* (STC #488).¹⁸

14. See above, 8.4(1).

15. See the photographs of a pig being butchered in a Lahu village in JAM 1978a, between pp. 168 and 169. This same semantic association is to be found with the root **ri:l*, above 9.3.2(3).

16. The Lahu cognate to WB **ʔu** ‘intestine’ is **γù** (usually in the compound **ḁ-γù-têʔ**).

17. There is a difference in detail between the two cases, however: the deleted ‘intestine’ is the head of the compound “pig-intestine”, but the deleted *obscura* is the modifier in the collocation “dark-chamber”.

18. See JAM 1973b (GL:29); such speculations were debunked in the 2nd Printing (1982) of *GL*, p. 675.

-
- *Failure to recognize that separately reconstructed etyma are really co-allofams*

An opposite type of error is to overlook the etymological identity between sets of forms, assigning them to separate etyma when they are really co-allofams. Thus *STC* sets up two independent PTB roots, both with the shape *dyam, one meaning ‘full; fill’ (*STC* #226) and the other glossed as ‘straight’ (*STC* #227). Yet it can be shown that the latter root also means ‘flat’, and that all reflexes of #226 and #227 may be subsumed under a single etymon, with the underlying idea being “perfection in a certain dimension”.¹⁹ Similarly, I was slow to recognize that two roots I had set up separately, PLB *dzay² ‘cattle; domestic animal’ (*GSTC* #129) and Kamarupan *tsay ‘elephant; cattle’ (*GSTC* #143) are really one and the same.²⁰

- *Double-dipping*

This embarrassing situation occurs when an author inadvertently assigns the same form in a daughter language to two different etyma, perhaps within the pages of the same book, but more likely in separate articles.²¹ At different times I have compared Chinese 唇 ‘lip’ (OC ḍi̯wən) to both PTB *dyał (above 9.2.1) and *m-ts(y)ul, finally deciding in favor of the latter (above 9.22(4), 9.2.4). It is perfectly legitimate to change one’s mind, as long as one explains why. The best course is to present the alternative etymologies together, inviting the reader to choose between them.

- *Misanalyses of compounds*

A vast number of words in TB languages are di- or tri-syllabic compounds, a fact which greatly complicates the task of etymologization.²² Many traps lie in wait for the analyst, leading to potential errors of several kinds, all of which I have been guilty of at one time or another:

19. See JAM 1988a:4-9, and above 3.4.2(c), 7.5(6).

20. I have argued that a third root set up in *GSTC* (#106), *(t)say ⌘ *(d)zay ‘temperament / aptitude / talent’, is also related, the common notion being ‘property (either material or intellectual)’. See JAM 1985a:44-45; 1988a:10-13; and above 5.5.2(1b), 5.5.2(2).

21. The computer can be very useful in deciding between alternative etymologies. Once “sound-laws” have been formulated, computer checking can test whether a particular reconstruction follows the laws, identifying inconsistencies in the reflexes of the same proto-element in a given language. Such a methodology has been applied to the Tamangic languages, using the “reconstruction engine” developed by J.B. Lowe at STEDT in collaboration with Martine Mazaudon and Boyd Michailovsky during their sojourns at Berkeley as visiting scholars (1987-89, 1990-91).

22. See JAM 1978a (*VSTB*):58-72.

13.2: Self-corrective

(a) *Wrong segmentation*

This can happen when a form in an inadequately transcribed source is not syllabified. The Pochury and Sangtam forms for ‘star’, transcribed as **awutsi** and **chinghi**, respectively, in the little glossaries compiled by the *Nagaland Bhasha Parishad*,²³ should be segmented as **a-wu-tsi** and **ching-hi**, and not as **a-wut-si** and **chi-nghi**, as I imprudently did in JAM 1980:21.

(b) *Misunderstanding the meaning of a constituent*

A special case of this problem is mistaking an affix for a root, especially likely to occur when no grammatical description exists for a language. Several Naga languages have dissyllabic forms for ‘moon’ with similar final syllables, *e.g.* Chang **litnyu**, Konyak **linnyu**, Phom **linnyü**, Sangtam **chonü**, Liangmai **chahiu**. Yet these final elements do not constitute a new root meaning ‘moon’, as I had originally guessed; rather they represent an abstract formative, ultimately grammaticalized from a root ***n(y)u** ‘mother’, that occurs in nouns from all sorts of semantic fields (*e.g.* Chang **chinyu** ‘center’, **henyu** ‘ladder’, **lamnyu** ‘road’, **pinyu** ‘snake’).²⁴

(c) *Choosing the wrong syllable of a compound for an etymology*

This can happen when two different syllables of a compound are phonologically similar, especially if one is dealing with a poorly known language with depleted final consonants, *e.g.* Guiqiong Ganzi **tʃhə⁵⁵ sō⁵⁵** and Ersu **ʃɿ⁵⁵ ji⁵⁵** ‘otter’. Which syllables are to be ascribed to PTB ***sram** ?²⁵

(d) *Semantic leaps*

Deciding how much semantic latitude to allow among putative cognates is definitely an art rather than a science. Here as elsewhere a middle-of-the-road approach is necessary, neither overly conservative nor too wildly speculative. As a positive example of a promising new etymology involving a semantic leap, we may offer ***m-t(s)i** ‘salt / yeast’.²⁶ Phonologically the reflexes correspond perfectly well. On the other hand, the semantic association between ‘salt’ and ‘yeast’ has yet to be attested elsewhere, even

23. *Hindi Pochury English Dictionary* (1972); *Hindi Sangtam English Dictionary* (1973). Kohima: Linguistic Circle of Nagaland.

24. See JAM (“Stars, moon, spirits”)1980:35; for the suffixal use of morphemes meaning ‘mother’, see JAM 1991e.

25. See above 7.1(1).

26. Above 3.3.1.

though it has great initial plausibility. Both are efficacious substances that have dramatic effects on the taste of food or drink; their lack renders the food or drink insipid.²⁷

* * *

Although I feel that we are entering a new era of etymological responsibility in TB/ST studies — the bar has been raised, as it were — I am not suggesting that we turn our field into a “tough neighborhood” like that of the Indo-Europeanists. In particular I hope we can avoid the “*Gotcha!*” attitude,²⁸ whereby if a single error, real or fancied, is found in an article or book, the whole work is impugned. This attitude is encapsulated in the dreadful maxim *Falsum in uno, falsum in omnibus*.²⁹

Historical linguists cannot afford to be too thin-skinned, as long as criticism is fair, constructive, and proportionate. As I have said in print, “I ask nothing better than to be corrected.”³⁰ Or again, “We can take comfort from our mistakes. Reconstruction of a proto-lexicon is a piecemeal process. It is hardly surprising that we stumble along from one half-truth to another, as we try to trace the [phonological and] semantic interconnections among our reconstructed etyma. We should not be discouraged if we barge off down blind alleys occasionally, or if the solution to one problem raises as many questions as it answers.”³¹

After all, a computerized etymological enterprise by its very nature is eminently revisable.

13.3 *Desiderative*

I am acutely aware of the incompleteness of this *Handbook*. As noted in the Preface, we still have a long way to go before comparative/historical TB/ST studies are as advanced as they deserve to be. Despite the quickening pace of research, our knowledge

27. Yeast is used for brewing liquor rather than for baking bread in East and SE Asia.

28. Non-American readers might need a word of explanation here: “Gotcha” is an attempt to render the colloquial pronunciation of “(I’ve) got you (now)!” a triumphant phrase used by someone who feels he has won an argument.

29. “If one thing is wrong, it’s all wrong.” This was the approach of Miller’s (1974) bitter review of *STC*, in which he tried to kill the *Conspectus* just as it was born. In my “rejection” of his “Conspectus inspection” I characterized his strategy as follows: (a) make some criticism of a particular point, no matter how trivial, irrelevant or obfuscatory; (b) claim that *tout se tient*, and that the entire work stands or falls on the point in question; (c) beat the point elaborately to death; (d) avoid any substantive comments by pleading lack of space (JAM 1975a:157).

30. JAM 1985b (“Out on a limb”):422.

31. JAM 1988a:13.

13.3: Desiderative

of the various branches of this multifarious family remains highly uneven. With a few important exceptions,³² reliable reconstructions at the subgroup level are not yet available, so that “teleo-reconstruction” has to be resorted to.³³ Many more roots remain to be reconstructed at all taxonomic levels of the family.

Much remains to be done on the Chinese side as well, and we seem destined for a period of flux until the dust settles and competing reconstructions have sorted themselves out.

A large lacuna in this *Handbook* is the lack of a systematic treatment of tone. This is not because the topic does not interest me, but rather because it merits a book-length treatment by itself. We are only just coming to appreciate the richness and variety of TB tone systems as more and more data become available.³⁴ The big questions are still open, especially the key issue of monogenesis vs. polygenesis: Can we reconstruct a single tonal system at the PTB level? At the PST level? If so, was this original system primarily phonational or melodic? Or are tonogenesis and tonoexodus cyclical processes, with tones having arisen repeatedly and independently in the various branches of TB, so that even if there was an “original” system, it can no longer be recovered?

All in all, it is hard not to be optimistic about the future of TB/ST linguistics, as fieldwork opportunities increase and new generations of talented researchers enter the discipline. Eventually it seems inevitable that scholars throughout the world will share their information more and more, granting mutual access to their databases for the common good. On the other hand, too many TB languages are endangered, and may well disappear before they have been adequately recorded.

In any case, “the reconstruction of PTB is a noble enterprise, where a spirit of competitive territoriality is out of place. We should pool our knowledge and encourage each other to venture outside of our specialized niches, so that we begin to appreciate the full range of TB languages...”³⁵

32. These bright spots include Proto-Karen (Haudricourt, Jones, Solnit), PNN (French), Proto-Tani (J. Sun), Proto-Tamangic (Mazaudon), Proto-Kiranti (Michailovsky), Proto-Central Chin (VanBik), Proto-Lolo-Burmese (Burling, Matisoff, Bradley). See the References.

33. See Benedict 1973.

34. For a rough typology of TB tone systems, see JAM 1999a. Weidert (1987) is an attempt to reduce all TB tone systems to a single proto-phonational contrast among clear, breathy, and creaky voice qualities, but is marred by an over-formalistic and disorganized presentation which renders it virtually incomprehensible. See the review by JAM (1994c).

35. JAM 1982a:41.

A Concise Introduction to Old Chinese Phonology

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A.1 Overview

Although modern scholarship on reconstructing the pronunciation of Old Chinese (OC) has been ongoing since the early part of this century, there is still no general consensus among experts in the field on a “correct” system of reconstruction. This has resulted in an unfortunate situation for the comparative Tibeto-Burmanist, who is faced with a variety of competing, and often mutually incompatible, reconstructions for OC,¹ each of which claims to best explain the Chinese textual evidence while still admitting ignorance of the solutions to a number of long-standing problems.²

Indeed, one of the goals of the *STEDT* project is, through comparison with solidly reconstructed Tibeto-Burman protoforms, to bring new evidence to bear on the problem of OC reconstruction, hopefully resolving the question of which system is “best”, and then helping to refine that system.

1. As an example of the differences among these systems, consider the word 水 *shuǐ* ‘water’, which is reconstructed *śi₁wər, *hwrjidx, *h(l)jujʔ by Karlgren, Li, and Baxter, respectively.

2. For example, the question of exactly which initial consonant clusters existed in Old Chinese, and for which words they should be reconstructed, remains to a certain degree intractable in all reconstruction systems proposed so far.

This discussion is intended first to be a general introduction to issues and methodology in the reconstruction of Old Chinese, aimed at the historical linguist with little knowledge of Chinese or the Chinese philological tradition. Work in historical Chinese philology involves a number of ancient textual sources and a good deal of specialized and arcane nomenclature, which can be a daunting barrier to the non-specialist. To help crack this code, a glossary of commonly encountered Chinese terms is included in §10 below.

The general and introductory nature of this discussion will necessitate a certain degree of over-simplification, and the skirting of some complexities. An attempt will be made not to get bogged down in details within the main text. Further discussion is provided in the footnotes.

The discussion will focus on the reconstruction systems of Li Fang-Kuei and William H. Baxter, with some additional comparisons with the earlier reconstruction of Bernhard Karlgren.

A.2 What is Old Chinese?

Old Chinese is generally considered to be the Chinese language as spoken in the first half of the first millennium BC, and reflected in the rhyming patterns of the *Shi Jing* [*Book of Songs* or *Book of Odes*] and in the phonetic elements of early Chinese characters.³ It is the earliest reconstructable stage of Chinese.⁴ Internal reconstruction of Old Chinese, combined with Tibeto-Burman evidence, has led some scholars to speculate on the nature of an earlier stage of the language, which is referred to as Proto-Chinese.⁵ According to the most commonly held view of the Sino-Tibetan family, Proto-Chinese may be considered the sister language of Proto-Tibeto-Burman [PTB]; both are descended from a common ancestor, Proto-Sino-Tibetan [PST].⁶

Looking in the other direction, Old Chinese is generally considered to have two descendants: Proto-Min and Middle Chinese. The modern Min dialects (spoken primarily in China's Fujian Province) are descended from Proto-Min; all the other modern Chinese

3. Within the body of this Appendix, *pinyin* transcriptions of Chinese terms will be given in italics without tone marks. A complete transcription with tone marks, as well as Chinese characters, may be found in the appended glossary.

4. There is considerable variation in the dates assigned to Old Chinese by different scholars. The nature of the textual data does not currently permit a more narrow periodization.

5. See, for example, Bodman 1980.

6. Most Chinese scholars in the field consider the Tai and Miao-Yao groups also to be descended from PST.

dialects are descended from Middle Chinese. Middle Chinese is the Chinese literary language as spoken in the sixth through tenth centuries AD.⁷

Karlgren employed the terms Archaic Chinese and Ancient Chinese for what are now generally referred to as Old Chinese and Middle Chinese, respectively. Although his terms still appear in the literature, we will here use the latter designations, and often abbreviate them as OC and MC respectively.

A.3 How is Old Chinese reconstructed?

There are three primary sources of data for the reconstruction of Old Chinese:

- The rhymes in the classic work of poetry known as the *Shi Jing* [*Book of Songs*]. This compilation contains poems dating from the 8th through 5th centuries BC.
- The phonetic elements of Chinese characters created during the Old Chinese period.
- The reconstruction of Middle Chinese, which is presumed to be a direct descendant of Old Chinese.

Most of the 305 poems of the *Shi Jing* have identifiable rhyme schemes. Based on these rhymes, scholars have classified the approximately 2000 distinct rhyming characters into “rhyme groups” (also called “rhyme categories”), the number of such groups presumably reflecting the number of distinct vowel-plus-coda combinations of Old Chinese.

The phonetic elements of Chinese characters allow them to be grouped into “phonetic series”. A phonetic series consists of one basic character, and one or more other characters which employ that basic character as a phonetic element. For example, the characters 方 妨 芳 放 房 are members of a single phonetic series.⁸ It is postulated that (1) words in the same phonetic series are in the same rhyme group and (2) the initial consonants of words in the same phonetic series share place of articulation. Both of these assumptions are based on the observation of recurring patterns. They have generally proven consistent with

7. Because textual evidence used in the reconstruction of Middle Chinese spans several centuries, Middle Chinese may be further classified into Early Middle Chinese (approximately sixth century) and Late Middle Chinese (approximately tenth century). There is considerable controversy over the nature of Middle Chinese and its relationship to medieval and modern Chinese dialects. The assumption that all Chinese dialects aside from Min can be traced directly to Middle Chinese is now viewed with increasing skepticism.

8. The modern Mandarin pronunciations and meanings of these characters are *fāng* ‘square’, *fāng* ‘hinder’, *fāng* ‘fragrant’, *fàng* ‘release’, *fáng* ‘house, room’, respectively.

other internal and external evidence for the reconstruction of Old Chinese and remain valuable working hypotheses. The phonetic element (or “phonetic”) thus provides a general indication of the pronunciation of the word.

The *Shi Jing* and phonetic series data are thus complementary. The *Shi Jing* provides a phonological framework for Old Chinese rhymes. The phonetic series allow almost every character in Chinese to be classified within this framework,⁹ and further provide some information about Old Chinese initials.

The resulting phonological structure of Old Chinese can be filled in with phonetic values by comparison with reconstructed Middle Chinese.¹⁰

The interpretation of all three data sources — the rhyming patterns of the *Shi Jing*, the phonetic elements found in early Chinese characters, and reconstructed Middle Chinese — is fraught with methodological difficulties and inherent ambiguities. This is one reason why no single OC reconstruction scheme has enjoyed universal support.¹¹

A.4 The OC reconstruction of Bernhard Karlgren

Karlgren’s reconstruction of what he called “Archaic Chinese” was the first serious, systematic attempt by a modern linguist to apply the methodology of historical linguistics to the unique textual legacy of Chinese. Building on his earlier reconstruction of “Ancient Chinese” (Middle Chinese), Karlgren used the data and methodology described above to

9. The vast majority of Chinese characters either contain a phonetic component or serve as a phonetic component in other characters. There remain some characters, however, which are difficult to classify within this framework.

10. In practice, this process is quite complex and the results are incomplete. Among the problems are, first, that determining the number of rhyme groups reflected in the *Shi Jing* is not straightforward. The process is complicated by irregular rhymes, variable rhyme schemes, and uncertainties regarding corruption or revision of the received text. Second, for a number of characters it is not apparent which element, if any, is the phonetic. Third, there is no way to determine the number of distinct initial consonants, or to determine with certainty which words should be reconstructed with cluster initials. Fourth, there remain disagreements over the nature and reconstruction of Middle Chinese. Fifth, the nature and extent of dialectal variation in Old Chinese is largely unknown.

11. One may well ask why Old Chinese is not reconstructed according to the comparative method. The answer is that we have insufficient data to do so. The large number of modern Chinese “dialects” (many of which are in fact mutually unintelligible languages) reflect a complex history of migration and contact, not only with each other but also with non-Chinese languages. This history is still barely understood. Moreover, data has not yet been collected for a sufficient number of dialects to permit rigorous comparison. For now, then, work on early stages of the language must rely primarily on textual analysis. It should be apparent at this point that what are generally termed “reconstructions” of Old Chinese and Middle Chinese are in fact not reconstructions in the normal technical sense of the term. Rather, they are complex, but nevertheless incomplete, structured sets of inferences about the phonological properties of spoken forms presumed to underlie the textual evidence from those periods.

reconstruct OC.¹² His results were eventually codified in *GSR* (1957), which lists thousands of Chinese characters grouped by phonetic series, and provides for each of Karlgren's Old Chinese and Middle Chinese reconstructions, as well as glosses and early citations.

While Karlgren's Old Chinese reconstruction is now considered to be significantly flawed, *GSR* remains the most accessible work on Old Chinese, particularly for those outside the field of Chinese historical linguistics. Furthermore, the unique number assigned to each character in *GSR* has become a *de facto* standard for identifying Chinese characters.¹³ Karlgren's reconstruction is provided here not as a serious object of comparison with Tibeto-Burman, but as a convenience to the reader who might already be familiar with *GSR*, and to facilitate comparison with works on Tibeto-Burman and Sino-Tibetan (such as Benedict's *Conspectus*) which make use of Karlgren's reconstructions.

12. Traditionally, reconstructed Middle Chinese forms are cited without a preceding asterisk. The question of whether or not a historical form is "attested" is a tricky one in Chinese, since the writing system provides early attestations without accurate phonological information. Because Middle Chinese reconstructions are based in part on the so-called "rhyme tables" of the Song dynasty, which list words in a grid pattern where one axis represents the initial consonant and the other the quality of the vowel, MC forms are traditionally considered to be attested, while Old Chinese forms are not.

13. Even characters not in *GSR* are often identified by their presumed *GSR* phonetic series, *e.g.* "would be in *GSR* #732" or "not in *GSR* #732". There is unfortunately no standard method for providing unique *GSR*-type numbers to characters which are not actually found in *GSR*.

Karlgren's reconstruction is now recognized to have the following problems:

- Karlgren further subdivided the rhyme groups of the *Shi Jing* in ways that are now considered incorrect; they were based on a mistaken discovery of patterns which do not in fact exist. (See the discussion of final consonants, below.)
- Karlgren reconstructed different vowels for words in the same rhyme group, often employing a bewildering array of diacritical marks to do so. He presumed that vowels needed only to be similar, not identical, in order to rhyme.
- Karlgren was unaware of, or ignored, a number of important Middle Chinese distinctions (such as the *chongniu* phenomenon),^{a} which his Old Chinese reconstruction failed to account for.
- Karlgren reconstructed a four-way manner distinction for Old Chinese obstruents.
- Karlgren projected many initial consonants of Middle Chinese back onto Old Chinese essentially unchanged, without taking patterns of complementary distribution sufficiently into account.

^{a} See the glossary entry for *chongniu*, below §10.

These criticisms are in no way meant to detract from the magnitude of Karlgren's contributions. His work was seminal, and without it later advances in the field would not have been possible. Indeed many of the "problems" listed above were unavoidable given the state of the field when Karlgren carried out his ground-breaking research.

A.5 The OC reconstruction of Li Fang-Kuei

Li's system revolutionized the field when it was published in 1971, and has remained extremely influential to this day.¹⁴ It synthesized a number of conceptual breakthroughs that had been proposed by Li and others in the field (such as Yakhontov and Pulleyblank) in previous decades. Although it is not a complete reconstruction (in that a reconstructed form is not given for the entire Old Chinese lexicon), Li's examples are so numerous, and his methodology and phonological system are laid out so clearly, that it is a relatively simple matter to determine the reconstruction of any particular word according to Li's system.¹⁵

14. Li 1976 was an important revision of Li 1971. Li 1980 combines the 1971 and 1976 publications in a single volume.

15. For instance, Schuessler 1987 contains complete reconstructions according to Li's system, as well as Schuessler's own modification thereof.

The most important features of Li's reconstruction are as follows:

- Four simple vowels (*i *u *ə *a) and three diphthongs (*iə *ia *ua). {a}
- Medial elements *-r-, *-j-, and *-rj- accounting for the vowel distinctions found in Middle Chinese, while permitting the reconstruction of just one Old Chinese vowel per rhyme group. These same medial elements also account for the derivation of several series of Middle Chinese initials.
- A labiovelar series (*kw-, *gw-, etc.), appearing in both initial and final position. {b}
- No medial *-w-. {c}
- No open syllables. Words which developed as open syllables in Middle Chinese are reconstructed with voiced consonant codas (*-b, *-d, *-g, *-gw) in order to explain their affiliations in rhymes and phonetic series with checked syllables ending in *-p, *-t, *-k, *-kw. {d}

{a} This reconstruction shares similarities with, and may have been inspired by Li's work on, Tai. See Li 1977.

{b} As final consonants, these could be interpreted as a rounded off-glide followed by a velar stop, *i.e.* *-wk, *-wg, etc.

{c} This is based on Tung T'ung-ho's (1948) discovery that Middle Chinese contrasts between syllables without medial -w- (so-called *kaikou* words) and vowels with medial -w- (so-called *hekou* words) occur mostly with velar initials. MC medial -w- after velars can be explained as the result of re-analysis of OC *labiovelar initials as plain velar initials followed by a labial glide. Only in descendants of OC words with *dental finals is there a *kaikou/hekou* contrast in Middle Chinese, and for these words Li does in fact reconstruct *-u- as the first element of a diphthong.

{d} In fact, Li was careful to state that the phonetic nature of this contrasting series of final consonants was uncertain. But as a result of his use of symbols normally representing voiced stops to write this series, their reconstruction as voiced consonants is now widely accepted by Li's followers.

Li made no use of Tibeto-Burman evidence in reconstructing Old Chinese. A number of scholars have since used Li's system in comparison with Tibeto-Burman, and some continue to use it today with modifications. Among these scholars are Gong Hwang-cherng, W. South Coblin, and Axel Schüssler.¹⁶ Each uses his own particular revision of Li. The most common revisions involve changes in the distribution and effects of the medial elements, revised initial consonant clusters, and the reversal of Li's initial *l- and *r-.

A.6 *The reconstruction of William H. Baxter*

Baxter's system, which incorporates many of the ideas of his teacher Nicholas C. Bodman, is relatively recent (1992) and is still being evaluated by the academic

16. See Gong 1990, 1994, 1995, 1997, 2000; Coblin 1986 ; Schüssler 1987.

community. It has, however, already received considerable acclaim for its systematicity, methodological rigor, and careful use of all types of available evidence, and has increasingly been adopted as the reconstruction of choice by Western sinologists. In some respects it is fundamentally different from Li's system, and as such represents a major challenge to it. Features in which it differs from Li's system include:

- A six-vowel system (*i *i̯ *u *e *a *o), which is predicated on further subdivisions of some of the traditional rhyme groups.
- No final voiced consonants. Instead, open syllables are reconstructed, some of which have off-glides *-j, *-w.
- Middle Chinese departing tone (*qusheng*) words have two distinct origins in OC, *-Vs and *-Cs. {a}

{a} See the glossary (§10 below) for a discussion of the Chinese tonal system.

Baxter has recently proposed some revisions to his system which may be of considerable import for Sino-Tibetan comparison.¹⁷ The most significant is the elimination of medial *-j- from his OC reconstruction and its replacement with a vowel length distinction.¹⁸ All syllables previously reconstructed with *-j- are now reconstructed with short vowels, while the others are reconstructed with long vowels. This brings Baxter's system closer to the similar system proposed by Starostin.¹⁹

A.7 Comparison of Li's and Baxter's systems

Let us compare and contrast the reconstructions of Li and Baxter, starting with the syllable canons and then proceeding to a comparison of each position in the syllable.

17. For a summary of these revisions, see Baxter and Sagart 1998.

18. Other changes include the largely orthographic change of *i̯ to *ə, and the revision of final *-n in some words to final *-r.

19. See Starostin 1989.

A.7.1 Syllable structure

In both reconstruction systems, the abstract syllable may be expressed as **IMVE-T** :

- **I** *initial* a simple consonant, a consonant cluster, or a glide
- **M** *medial* one of *-r-, *-j-, or *-rj-
- **V** *vowel*
- **E** *ending* a consonant or, in Baxter's system, a glide
- **T** *tone*

Here the word “tone” is used only in a loose sense: in Li's system, tone is indicated by an arbitrary orthographic convention, and in Baxter's system this slot is occupied by a post-final consonant which led to the development of tonal contrasts in Middle Chinese.²⁰ A slightly more concrete representation of the syllable in both systems would look like this:

<i>Li</i>	<i>Baxter</i>
Ci(r)(j)VCf-(x/h)	Ci(r)(j)V(Cf)-(ʔ/s)

While the overall syllable structure is strikingly similar in the two systems, there are significant differences in the values that can fill each slot, especially the vowel and final consonant slots.

A.7.2 Initial consonants

In both systems, the initial may be simple or clustered. The simple consonant inventories are similar in both systems:

20. Li declines to speculate on the phonetic nature of the “tonal” distinction, leaving open the possibility that it involved either a segmental element or a tonal/prosodic feature.

Li Fang-Kuei

p	t	ts	k	kw	·	·w
ph	th	tsh	kh	khw		
b	d	dz	g	gw		
	s		h	hw		
m	n		ng	ngw		
hm	hn		hng	hngw		
	l, r					
	hl					

The raised dot <·> represents a glottal stop /ʔ/; the digraph <ng> represents a velar nasal /ŋ/, and <w> is not a separate segment but part of a digraph indicating a labio-velar or labio-laryngeal consonant.

Baxter

p	t	ts	k	k ^w	ʔ	ʔ ^w
ph	th	tsh	kh	k ^w h		
b	d	dz	g	g ^w		
	s		x			
	z		ɸ			
m	n		ng	ng ^w		
hm	hn		hng	hng ^w		
w	l, r	j				
hw	hl, hr	hj				

The digraph <ng> represents a velar nasal /ŋ/. Initials preceded by <h>, such as ***hm** and ***hj** represent voiceless resonants.

Baxter uses capitalized versions of his initials when they develop irregularly into Middle Chinese, or when their phonetic nature is uncertain.²¹

21. Example include: (1) ***L**-, a voiced counterpart of ***hl**- which is nonetheless distinct in its MC reflexes from ***l**-; (2) ***K**-, ***KH**-, etc., representing velars which unexpectedly palatalize before back vowels; (3) ***C**-, an unspecified (but probably voiced) stop occurring in clusters like ***C-r**-; (4) ***S**- for a pre-initial which behaves differently in clusters from ordinary pre-initial ***s**-; etc.

In the following discussion we will use the cover symbols P, T, TS, K(W), H(W) to indicate consonant classes by place of articulation.

Both systems reconstruct a three-way manner distinction for stops, a two-way manner distinction for resonants, and five distinct places of articulation.²²

The two systems also agree on the basic principle used to reconstruct cluster initials: a consonant cluster is reconstructed whenever the MC initial of two words in the same phonetic series differ in their place of articulation.²³

While certain alternations in phonetic series between MC initials are well represented, a significant number of these series have alternations that are rare and difficult to reconcile by reconstructing cluster initials.²⁴ The two systems differ not only in their specific reconstructions, but also in which alternations they consider to be irregular and thus not requiring a cluster reconstruction. Neither system claims to have fully solved the problem of initial clusters, and this is one area where Tibeto-Burman comparison should be of significant help. To illustrate the variety of approaches that may be taken, we can compare the proposed reconstructions for two phonetic series according to the reconstruction systems of Karlgren, Li, Gong Hwang-cherng (a revision of Li), and Baxter.²⁵

	<i>Karlgren</i>	<i>Li</i>	<i>Gong</i>	<i>Baxter</i>	<i>MC reflex</i>
聿 <i>yù</i> ‘thereupon’	*b _ɿ -	*brj-	*l-	*rj-	ji-
筆 <i>bǐ</i> ‘pencil’	*p _ɿ -	*pj-	*pl-	*prj-	pj-
律 <i>lù</i> ‘law, rule’	*bl _ɿ -	*blj-	*rj-	*b-rj-	lj-

TABLE 1. Reconstruction of initials for GSR #502 {a}

22. The development of the OC voiceless nasals in Middle Chinese is as follows:

OC *hm-, *hng-, *hngw- > MC x-

OC *hn- > MC th-

They are reconstructed for OC words whose Middle Chinese reflexes have the initials indicated in the chart above but which are in phonetic series with words having ordinary nasal initials. For example, 黑 *hēi* ‘black’ (MC x-) and 墨 *mò* ‘ink’ (MC m-) are in the same phonetic series. By reconstructing OC initials *hm- and *m- respectively, we can explain the use of 黑 as phonetic in 墨 and also illuminate the etymological relationship between the words. Moreover, there appear to be regular correspondences between some OC voiceless nasals and Tibetan prefix s-. See Mei Tsu-lin 1989.

23. This principle follows from the assumption that the initial consonants of words with the same phonetic must share the same place of articulation. For example, consider the words 京 *jīng* ‘capital’ and 涼 *liáng* ‘cool, cold’. In Middle Chinese the former has initial k- and the latter has initial l-, yet at the time of Old Chinese 京 was used as phonetic in 涼. This suggests that an old Chinese velar cluster initial be reconstructed for 涼 *liáng* ‘cool, cold’. (Compare Written Tibetan *grang-ba* ‘cold, cool’.)

24. Alternation between MC stop initials and l- is probably the most common (see the previous note). A list of problematic phonetic series may be found in Tung (1948:42).

Appendix A

{a} In Karlgren's system, simple voiced initials *b-, *d-, *g-, *z- drop without a trace. (Karlgren reconstructed MC voiced initials as aspirated *bh-, *dh-, etc. He derives these from OC voiced aspirates. This left him free to reconstruct unaspirated voiced initials for OC, which dropped out in MC.) In Li's system, *b- drops before *-rj-, so he is able to reconstruct labials for all three words. Since Gong posits that medial *-l- palatalizes to MC -j- (parallel with initial *l- > ji-), he can reconstruct 羊 *yù* and 筆 *bǐ* with laterals, but is forced to reconstruct 律 *lù* with *r-. Note that Baxter's system looks neatest here (all three have *r and the initial of the phonetic 羊 is contained within the cluster initials of the other characters), but he has to posit two degrees of clustering: *pr- versus *b-r- (the latter contrasting with *br- > b-).

	<i>Karlgren</i>	<i>Li</i>	<i>Gong</i>	<i>Baxter</i>	<i>MC reflex</i>
羊 <i>yáng</i> 'sheep'	*zĭ-	*r-	*l-	*(l)j-	ji-
姜 <i>jiāng</i> [clan]	-- {a}	*kj-	*kl-	*k(l)j-	kj-
羌 <i>qiāng</i> [clan]	--	*khj-	*khl-	*kh(l)j-	khj-
祥 <i>xiáng</i> 'lucky'	*dzĭ-	*rj-	*lj-	*z(l)j-	zj-

TABLE 2. Reconstruction of initials for some characters in GSR #732 {b}

{a} Note that two of the characters here are not listed in *GSR* #732; Karlgren thus sidestepped the problem of accounting for velar initials in this phonetic series. In order to account for the velar initial in these, Tung (1948:31-32) later proposed reconstructing an initial *gd- or *gz- for 羊.

{b} For MC ji-, Baxter (1992) reconstructs *lj- when MC ji- alternates in phonetic series with MC d-, ś-, l- etc. (as 悅, p. 197); *r- when MC ji- alternates with MC l- (as 隼, p. 200); and *j- when MC ji- shows no alternation (p. 202). None of the three cases holds here because of the alternation with velars. Baxter appears to have suggested the possible presence of *l in these forms only to account for the phonetic series.

A chart summarizing the development of OC initials is included in the Tables of Equivalences, §9 below.

A.7.3 Medials

As noted above, both systems reconstruct medials *-r-, *-j-, and *-rj-. Medial *-r- is reconstructed for those words which develop so-called “second division” rhymes in Middle Chinese, accounting for a particular class of MC vowels.²⁶ At the same time, it accounts for the development of MC retroflex initials from OC dentals. Medials *-j- and *-rj- are reconstructed for so-called “third division” MC rhymes, which are characterized by a palatalizing medial -j-; they account also for MC palatal initials. The distribution and function of the compound medial *-rj- is different, however, in the two systems. In the chart below the roman numerals I, II, III, IV are used to represent the Middle Chinese

25. In both series all the words are MC third division. I have included medial elements in the charts since they are important conditioning factors for the development of initials. Note that Karlgren's *-ĭ- is equivalent to *-j-.

26. There is by no means universal agreement on the nature of this “second division” vocalism. See the glossary (§A.10) for an explanation of *division*.

divisions, with III-3 and III-4 used to indicate *chongniu* division 3 and *chongniu* division 4 rhymes respectively.²⁷

<i>Li</i>		<i>Baxter</i>	
*Pj-	> P- III	*Pj-	> P- III-4
(*Prj-	> P- III)	*Prj-	> P- III-3
*Tj-	> Tś- III	*Tj-	> Tś- III
*Trj-	> ʈ- III	*Trj-	> ʈ- III
*TSj-	> TS- III	*TSj-	> TS- III
*TSrj-	> TṢ- III	*TSrj-	> TṢ- III
*K(W)j-	> K- III	*K(W)j-	> K- III-4, Tś- III
*K(W)rj-	> Tś- III {a}	*K(W)rj-	> K- III-3
*H(W)j-	> H- III	*H(W)j-	> H- III-4, Tś- III
*H(W)rj-	> Tś- III	*H(W)rj-	> H- III-3

TABLE 3. Development of OC initials under the influence of medials

{a}Li's original reconstruction did not have combinations *Prj-, *K(W)rj-, *H(W)rj-. In a 1976 revision of his system, however, he proposed that the words in Middle Chinese with palatal affricate initials Tś- in phonetic series with velar- or laryngeal-initial words be reconstructed with *K(W)rj- or *H(W)rj-. (In his original system they had been reconstructed as clusters *sKj-.) In this same work he acknowledged that *Prj- should also be possible, but found no direct evidence for it. The system presented here incorporates Li's 1976 revisions.

In both systems, *-rj- after dental initials conditions the development of Middle Chinese retroflexes. In Li's system, *-rj- also palatalizes velar and laryngeal initials in Middle Chinese.²⁸ But in Baxter's system, *-rj- conditions the *chongniu* split.²⁹

We should note, however, that more recent revisions of Li's system by scholars such as Gong Hwang-cherng have followed Baxter in adopting the “*-rj- hypothesis” to account for MC *chongniu* distinctions.³⁰ It is fair to say then that as used by linguists today, the Li and Baxter reconstruction systems are nearly the same in their treatment of Old Chinese initials and medials.³¹

27. For an explanation of *chongniu*, see §A.10 below.

28. In Baxter's system, this palatalization is determined by the frontness of the main vowel. There are a significant number of exceptions which remain unaccounted for.

29. This idea was first proposed by Pulleyblank (1962). In Li's system, the *chongniu* split is conditioned by a *-jV-, *-jiV- distinction. For a discussion of the *chongniu* problem, see the glossary.

30. See e.g. Gong 1997.

A.7.4 Vowels

Both systems represent a significant reduction in vowel inventory from Karlgren's. This reduction was made possible by the reconstruction of the medial element *-r-, which conditions many vowel splits and accounts for some of the complexity of the Middle Chinese vowel system. Li's vowel system has four simple vowels and three diphthongs, while Baxter's is a six-vowel system:

<i>Li</i>			<i>Baxter</i>		
i		u	i	ɨ	u
	ə		e		o
	a			a	
ia	iə	ua			

TABLE 4. Comparison of the Li and Baxter vowel systems

Baxter's *i is equivalent to Li's *ə in many, but not all, cases. The main difference between the systems lies (a) in Baxter's reconstruction of *e and *o, which very roughly correspond to Li's *iə *ia and *ua; and (b) in the wider distribution in Baxter's system of *i and *u, which are quite restricted in Li. This involves more than just two differing phonetic interpretations of the same phonological distinctions. Baxter's six-vowel system is predicated on an analysis of the *Shi Jing* which proposes more rhyme groups than does the traditional analysis which Li follows.³²

All occurrences of *iə and *ia in Li are reconstructed as *e by Baxter, and all occurrences of *ua in Li are reconstructed by Baxter as *o.³³ Baxter claims that these reconstructions are all supported by *Shi Jing* rhyming patterns. In Baxter's system there are additional splits of traditional rhyme groups (as with words ending in bilabials) which

31. Here we are considering *-l- to be, properly speaking, an element of a cluster initial and not a medial. Similarly, we consider Li's onglide *-u- to be part of the vowel, and not a medial element. The question of whether medial *-j- should be reconstructed at all for Old Chinese remains hotly debated. Baxter himself has removed *-j- altogether from his system.

32. Thus, for example, where Li argues that rhymes *-an, *-ian, and *-uan are all in the *Shi Jing* 元 *Yuan* rhyme group, Baxter would reconstruct these as *-an, *-en, and *-on and place them in distinct rhyme groups. In either case the development into Middle Chinese is similar, but Baxter is making an additional argument that these three endings did not in fact rhyme, while Li says that they do. Baxter's statistical analysis claims to show that the traditional *Yuan* rhyme category should in fact be split into three, *i.e.* that the rhymes between them are best considered irregular.

33. In the first case, the difference is due to conflicting interpretations of the nature of 4th division vowels in Middle Chinese; in the second case, Baxter follows Yakhontov's proposal on the breaking of *o to ua.

do not correspond to Li's diphthongs; here Baxter's arguments rely more on appeals to symmetry and a handful of Tibetan and Burmese cognates. (See the chart of rhymes below.)

While Li's four-vowel and Baxter's six-vowel system may appear quite similar, especially if we simply "rewrite" Li's diphthongs as simple vowels, they in fact have quite different ramifications for the reconstruction of the Proto-Sino-Tibetan vowel system.

A.7.5 *Final Consonants and Tones*

One of the most salient differences between the two systems is Li's reconstruction of a series of final voiced stops (*-d, *-g, *-gw) where Baxter reconstructs open syllables.

Karlgren was the first to reconstruct final voiced stops in some syllables. He was trying to account for the relationships he observed in rhyming and phonetic series between Middle Chinese final voiceless stops (-p, -t, -k) and Middle Chinese open syllables, especially in the departing tone. His solution was to reconstruct a corresponding voiced final series *-b, *-d, *-g, which was lost before the MC period.³⁴ Karlgren reconstructed these endings for those departing tone words which showed connections with final voiceless stops (*i.e.* entering tone words), and then for those level and rising tone words which in turn showed connections with those departing tone words.

Later scholars such as Tung T'ung-ho demonstrated the arbitrariness of Karlgren's dividing lines between those sets of syllables to be reconstructed with voiced endings and those to be left open, and resolved the problem by reconstructing voiced endings for nearly *all* MC open syllables. This is the policy that Li followed, with minor modifications.³⁵ Despite Li's explicit statement that his *-b, *-d, *-g are merely convenient symbols, whose exact phonetic nature has not been determined, this reconstruction has been taken at face value by others in the field.

Criticisms of this reconstruction have ranged from universalist arguments (languages without open syllables are excessively rare) to comparative arguments (TB cognates show no evidence of final stops in many of these morphemes) to internal methodological arguments (rhyming and phonetic series connections between level and rising tone words on the one hand and entering tone words on the other are in fact quite rare).

34. Voiced final *-b merged with *-d early in the Old Chinese period. In Baxter's reconstruction, this change would be described as *-ps > *-ts. Note the symmetry in the development of Karlgren's consonantal system: OC voiced stops were lost in both initial and final position.

35. Such as the addition of *-r, so that in his system all OC syllables are closed.

Before discussing Baxter's approach to this problem, it will be helpful first to discuss the problem of tone in Old Chinese. We have no direct evidence that there were phonemic tonal contrasts in Old Chinese. Ever since Haudricourt (1954) demonstrated that Vietnamese tones had their origin in post-vocalic consonants, scholars have sought to find equivalent tonogenetic segments in Chinese. Li Fang-Kuei took an agnostic attitude toward the phonetic nature of tonal contrasts in Old Chinese, but he marked the distinctions by appending the symbol -x to rising tone words and -h to falling tone words. The latter symbol was meant to be reminiscent of the putative Vietnamese development *-s > *-h > /falling tone/.

A number of scholars, such as Pulleyblank, had long argued based on Chinese transliterations of foreign words and other evidence that Chinese falling tone did in fact have its origin in an Old Chinese post-final *-s. Glottalization, or a post-final glottal, was also proposed to account for the development of the rising tone.

Given the hypothesis that post-final *-s accounted for the development of Middle Chinese departing tone, an immediate corollary was that departing tone words could have had their Old Chinese origin either in *-Vs syllables or in *-VCs syllables. Baxter argues that those MC departing tone words which show affiliations (in rhymes or phonetic series) with final stop consonants (*i.e.* entering tone syllables) can be reconstructed *-VCs, while those which show affiliations with level and rising tone words can be reconstructed *-Vs.

Phrased more concretely, some words which Li reconstructed *-ag would be *-aks in Baxter's system, while others would be *-as. The later development *-Cs > *-s led to the merger of these two syllable types.

Baxter's solution would appear to satisfy all the criticisms directed against Li's reconstruction of final voiced stops. His Old Chinese has open syllables and is therefore not typologically bizarre; it has only one series of final stops, like most TB languages; it matches TB cognates more closely; it still accounts for the connections found in rhyming and phonetic series; and it accounts for tonogenesis.

However, there is one phenomenon in Old Chinese which Li's reconstruction seems to explain better than Baxter's, namely morphological alternations between open syllables and nasal-ending or stop-ending syllables. There are many such alternations; two typical examples are 亡 *wáng* 'not have; perish' and 無 *wú* 'not have'; and 往 *wǎng* 'go' and 于 *yú* 'go'. Here one member of each pair ends in *-ng; in Li's system the other member ends in *-g, but in Baxter's is an open syllable.³⁶

The following table shows the vowels and final consonants of each system, and indicates which combinations occur.

-Ø	-k, -g, -ng	-kw, -gw	-t, -d, -n	-r	-p, -m
--	a	a	a, ua	a, ua	a
--	ə	ə	ə	--	ə
--	u	--	--	--	--
--	i	--	i	--	--

TABLE 5. OC rhymes according to Li Fang-Kuei

Note: *iə and *ia occur in the same environments as *ə and *a respectively. *ua occurs only before dentals, as shown.

-Ø	-k, -ng	-w, -wk	-t, -n	-j	-p, -m
a	a	a	a	a	a
i	i	--	i	i	i
u	u	--	u	u	u
--	--	i	i	i	i
e	e	e	e	(e)	e
o	o	--	o	o	o

TABLE 6. OC rhymes according to Baxter

A chart comparing these reconstruction systems organized by traditional rhyme group is included in §A.9.

A.7.6 Summary

On the face of it, Baxter's OC reconstruction, in terms of phonological system and syllable canon, appears more similar to Proto-Tibeto-Burman, as well as to many individual Tibeto-Burman languages (such as Written Tibetan), than does Li Fang-Kuei's. But it is fair to say that it still remains to be seen whether this superficial similarity reflects a deeper concordance; that is to say, whether or not Baxter's system provides better correspondences to Tibeto-Burman than does Li's. Again, this is one area where *STEDT* will be able to provide some answers.

36. This type of alternation is most common with velar finals. One possible way out of this problem is to propose a number of Old Chinese suffixes with still unclear morphological function, like *-ng, *-k, etc.; but this proposal itself raises a number of other difficult problems.

A.8 Methodological Considerations

Given the hypothesis that Chinese and Tibeto-Burman make up the two main branches of the Sino-Tibetan family, it is an uncontroversial proposition that reconstructed OC and reconstructed PTB should be compared to arrive at a reconstruction of their ancestor, Proto-Sino-Tibetan. But it could be argued that using Tibeto-Burman forms to aid in the reconstruction of Old Chinese is methodologically unsound--a violation of the principles of the comparative method.

In theory, of course, the comparative method involves first the comparison of closely related languages to reconstruct their ancestor languages, then the comparison of these reconstructed “meso-level” languages to reconstruct still more distant ancestor languages, and so on, until the limits of the method are exhausted and the earliest proto-language is reconstructed.

It must be stressed, however, that Old Chinese is not a reconstruction arrived at by the comparative method. It is, in fact, a hypothetical linguistic construct derived through textual analysis. It is therefore not so different in kind from a “reconstructed” Old Tibetan based on analysis of Written Tibetan forms and on comparison with modern Tibetan dialects. Because Chinese, unlike Tibetan, was not written in an alphabetic script, the process of “reconstruction” for Old Chinese is much more challenging and complex, and the number of unresolved problems is greater. But some of the problems surrounding Old Chinese will be familiar to anyone who has worked on historical linguistic problems through the medium of ancient texts: What is the relationship between the preserved texts and spoken form(s) of speech? What sort of linguistic information is omitted, obscured, or misrepresented due to the nature of the writing system or to archaisms preserved within it? How can we decide between competing interpretations of particular symbols or combinations of symbols?

The comparative method itself has nothing to say about how we approach problems such as these. It is common practice to make use of all sorts of philological and linguistic evidence in the “reconstruction” of linguistic systems underlying received texts, including evidence from related languages. If reconstructed Proto-Tibeto-Burman, or cognate forms in Tibeto-Burman languages, can shed light on the correct interpretation of Old Chinese textual sources, there is no methodological injunction against their use.

Barring the future discovery of a cache of texts from the Old Chinese period, we have only a fixed supply of textual evidence for the reconstruction of Old Chinese. Progress in OC reconstruction over the past century has stemmed from ever more insightful and

systematic analyses of the existing pool of data. Indeed, this process is continuing, as scholars in the last decade have advanced a number of hypotheses about Old Chinese derivational morphology.³⁷ But there is a limit to what can be achieved this way. If additional progress is to be made, comparative Tibeto-Burman evidence, both phonological and morphological, is essential.

If Tibeto-Burman data is used judiciously, and work on Old Chinese progresses, then the resulting OC reconstruction should more and more closely model real speech forms underlying the early Chinese texts. This revised reconstruction can then be compared with Proto-Tibeto-Burman in order to apply the comparative method to the task of reconstructing Proto-Sino-Tibetan.³⁸

For these reasons, in addition to the principal task of reconstructing Proto-Tibeto-Burman, the STEDT project should be able to make significant contributions to the reconstruction of Old Chinese as well as to the reconstruction of Proto-Sino-Tibetan.

A.9 Tables of Equivalences

A.9.1 Initials

The following are charts of Middle Chinese initials, showing their Old Chinese origins in the systems of Karlgren (1957), Li (1971,1976), Gong (1990,1994) and Baxter (1992).

37. See for example Sagart 1999. Work on Old Chinese morphology is based on re-examining word family alternations in Chinese—alternations that have been recognized for some time—using the more sophisticated tools afforded by recent OC reconstruction systems like that of Baxter. While still in the early stages, this work suggests that Chinese had a rich derivational morphology, perhaps involving prefixes, suffixes, infixes, and ablaut.

38. This begs the question of whether the working hypothesis that Chinese and Tibeto-Burman form two coordinate branches of the Sino-Tibetan family tree is correct. This question, like the many other questions pertaining to the subgrouping of Tibeto-Burman, can only be answered in the process of carrying out the work of Sino-Tibetan reconstruction.

Appendix A

A.9.1.1 Labials

MC {a}	Karlgren	Li	Gong	Baxter
幫 p-	p	p	p, pl {b}	p
滂 ph-	ph	ph	ph, phl	ph
並 b-	bh	b	b, bl	b
明 m-	m	m	m, ml	m, Np

{a} Traditionally, each Middle Chinese initial is named by a Chinese character which has that initial. These characters are listed along with the MC reconstruction.

{b} When *-l- appears as a medial element in Gong, it palatalizes to MC -j-, yielding a third division word.

A.9.1.2 Dental Stops

MC	Karlgren	Li	Gong	Baxter
端 t-	t	t		t, k-l, (p-l)
透 th-	th	th, hn, hl		th, hn, hl, hr, kh-l, (ph-l)
定 d-	dh	d		d, l, g-l, (b-l)
泥 n-	n	n		n, Nt

來 l-	l, gl	l, gl, bl	r, (grj, drj, brj) {a}	g-r, b-r, C-r {b}
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{a} *grj-, *drj-, *brj- > lj- is from Gong 1990; In light of the general system of OC clusters presented in Gong 1994b, these developments need to be revised as follows: *grj- > gj- (part of the general rule *K-rj- > K-j-), presumably *brj- > bj- (as part of the general rule *P-rj- > P-j-), although he offers no examples), and (although no explicit mention is made of it) *drj- > dj-.

{b} Baxter (1992) argues that MC l- is always derived from an OC cluster with -r- (p. 199-200). The initial consonant is represented by *C- when its identity cannot be determined from *xiesheng* contacts or TB cognates. Note that *b-r- and *g-r- (and *C-r-), which become MC l-, are distinct from *gr- and *br-, which become MC g- and b- (second division). Note also Baxter's use of *k-l- > t- as opposed to **kl- > *kr- > k. The exact phonetic nature of the difference is not specified.

A.9.1.3 *Supradental (Retroflex) Stops*

MC	Karlgren	Li		Baxter
知 t̥-	tE, {a} tj	tr		tr
徹 th-	thE, thj	thr, hnr, hlj		trh, hnr, hlr, hrj
澄 ɖ-	dhE, dhj	dr		dr, lr
娘 ŋ-	nE, nj	nr		nr, Ntr

{a} I have used the arbitrary symbol E to represent any second-division vowel in Karlgren's OC system; or, to be more precise, any vowel which conditioned the development of MC second division rhymes. (Karlgren does not posit a medial element of any sort to account for the development of MC second division rhymes; he uses distinct OC vowels to account for it.) Thus *t̥- followed by a second division vowel became MC t̥- (written t̥- in Karlgren).

A.9.1.4 *Dental Affricates*

MC	Karlgren	Li	Gong	Baxter
精 ts-	ts	ts		ts, St {a}
清 tsh-	tsh	tsh, sth		tsh, sr, sn, Sth
從 dz-	dzh	dz, sd, sg		dz, Sd
心 s-	s	s, st, sm, sn, sk, sk ^w		s, sl, snj, sm, snj, snj ^w , sw, {b} sp, sk
邪 z-	dz	rj, sgj, sg ^w j	sl, lj {c}	z, {d} zl, znj, zm, znj, znj ^w , zw, zp, zk

{a} Baxter writes *S- for his "metathesizing s" which behaves differently from ordinary *s- and had a different origin. Thus *St̥- > ts-, but *st̥- > s- (although examples of the latter are extremely rare, p. 228). The phonetic difference between *S- and *s- is not clear.

{b} *sw- appears to be a cluster of pre-initial *s- and initial *w-, rather than a rounded dental sibilant *s^w-.

{c} Gong 1990 has *sl-. In Gong 1994b there are a few characters listed with *lj- > zj-. It is unclear whether Gong intended to revise all earlier instances of *sl- to *lj-.

{d} Baxter is not convinced of the existence of OC *z-, and suspects it should be reconstructed as *fis-, at least in some cases, although he uses *z- for orthographic convenience. See pp. 198, 224.

Appendix A

A.9.1.5 Supradental (Retroflex) Affricates

MC	Karlgren	Li		Baxter
照 ㄓ- tsʰ-	tsE, tsj	tsr		tsr, Str
穿 ㄓ- tʃh-	tʃhE, tʃhj	tʃhr		tʃhr, Sthr
床 ㄓ- dʒ-	dʒhE, dʒhj	dʒr		dʒr, Sdr
審 ㄓ- ʃ-	sE, sj	sr, smr, snr, sl, sml, snl		srj
(俟 ㄓ-)				zr

A.9.1.6 Palatal Affricates

MC	Karlgren	Li	Gong	Baxter
照 ㄓ- tsʰ-	t̪	tj, krj {a}	tj, plj, klj	tj, kj {b}
穿 ㄓ- tʃh-	t̪h	thj, khrij	thj, phlj, khlj	thj, khj
床 ㄓ- dʒ-	d̪h	dj, grj	dj, blj, glj	dj, gj
日 ㄓ- {c}	n̪	nj, ɲrj	nj, mlj, ɲlj	nj, ɲj {d}
審 ㄓ- ʃ-	ś	snj, hnj, sthj, hrj	snj, hnj, hlj {e}	hnj, hlj, hj, {f} hɲj, stj
禪 ㄓ- ʒ-	d̪	dj, grj		Lj {g}

{a} Reconstructions listed here and in Li 1976 as *Krij- (where *K represents any velar initial) were reconstructed as *sKj- in Li 1971.

{b} According to Baxter, the series *Kj- became MC Tʃ- only before front vowels (there are exceptions). Otherwise *Kj- > K- (pp. 210-212). In his notation, Baxter writes capitalized velars (e.g. *KH-) in exceptional cases where such velars palatalized despite being followed by a back vowel.

{c} Li, following Karlgren, reconstructs MC ㄓ- for this initial; n̪- would be a more natural representation.

{d} *ɲj- > n̪- before front vowels only. See p. 212.

{e} Note that Gong's *hlj- can be interpreted either as a cluster of *h- and *-l- (parallel in development to the other velar cluster *Klj-) or as a single voiceless lateral initial (parallel in development to *hnj- and identical to Baxter's *hlj-).

{f} *hj- is a "default" reconstruction when *xiesheng* evidence does not point to contacts with *n- or *-l- (pp. 202-3).

{g} Baxter uses *Lj- to represent some sort of voiced counterpart to *hlj- > ʃj-. This is a notational device only; Baxter speculates that *Lj- might represent *fhlj- > *fisj- > ʒj-, or that it simply represents *lj- with dialectal variation in development (p. 198). More recently, Baxter has proposed replacing *L- with *ml-.

A.9.1.7 Velars

MC	Karlgren	Li		Baxter
見 k-	k	k, k ^w		k, k ^w
溪 kh-	kh	kh, kh ^w		kh, k ^w h
群 g-	ghj	gj, g ^w ji {a}		gj, g ^w
疑 ŋ-	ŋ	ŋ, ŋ ^w		ŋ, ŋ ^w , Nk
曉 x-	x, xm	h, h ^w , hm, hŋ, hŋ ^w		x, h ^w , {b} hŋ, hŋ ^w , hm
匣 ɣ-	gh	g, g ^w		g, fi, w

{a}Note that in Li's system MC g-, ɣ-, and j- are all reflexes of *g-. Li considers these three MC initials to be in complementary distribution, with j- appearing mostly in *hekou* words and g- appearing mostly in *kaikou* words.

{b}It's not clear why Baxter reconstructs the rounded counterpart to *x- as *h^w- rather than *x^w-.

A.9.1.8 Laryngeals and Zero Initial

MC	Karlgren	Li	Gong	Baxter
影 ʔ-	ʔ	ʔ, ʔ ^w		ʔ, ʔ ^w
喻 三 j-	g	g ^w j	g ^w rj	wj, {a} fi
喻 四 ji-	d, z, (b, g)	r, grj, brj	l	r, lj, j {b}

{a}Only before front vowels. Otherwise, *wj- > ɣ- (p. 217).

{b}*j- is a "default" reconstruction when *xiesheng* evidence does not point to contacts with *r- or *lj- (pp. 202-3).

A.9.2 Rhymes

The following are charts of Old Chinese rhymes in the systems of Li (1971) and Baxter (1992), showing their relationships to the traditional rhyme groups. This chart is adapted from Baxter (1992:562-4):

A.9.2.1 Acute codas

Rhyme group	真 Zhēn	文 Wén
Baxter	*-in	*-in *-un
Li	*-in	*-ən

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<i>Rhyme group</i>	元 <i>Yuán</i>
<i>Baxter</i>	*-en
<i>Li</i>	*-an

<i>Rhyme group</i>	質 <i>Zhì</i>	物 <i>Wù</i>
<i>Baxter</i>	*-it	*-it *-ut
<i>Li</i>	*-it	*-ət

<i>Rhyme group</i>	月 <i>Yuè</i> / 祭 <i>Jì</i>
<i>Baxter</i>	*-et
<i>Li</i>	*-at / *-ad

<i>Rhyme group</i>	脂 <i>Zhī</i>	微 <i>Wēi</i>
<i>Baxter</i>	*-ij	*-ij *-uj
<i>Li</i>	*-id	*-əd

<i>Rhyme group</i>	歌 <i>Gē</i>
<i>Baxter</i>	(*-ej)
<i>Li</i>	*-ar

A.9.2.2 Back and zero codas

<i>Rhyme group</i>	之 <i>Zhī</i>	幽 <i>Yōu</i>
<i>Baxter</i>	*-i	*-u *-iw
<i>Li</i>	*-əg	*-əgw

<i>Rhyme group</i>	支 <i>Zhī</i> [佳 <i>Jiā</i>]	魚 <i>Yú</i>	侯 <i>Hóu</i>
<i>Baxter</i>	*-e	*-a	*-o
<i>Li</i>	*-ig	*-ag	*-ug

<i>Rhyme group</i>	職 <i>Zhí</i>	覺 <i>Jué</i>
<i>Baxter</i>	*-ik	*-uk *-iwk
<i>Li</i>	*-ək	*-əkw

<i>Rhyme group</i>	錫 <i>Xī</i>	鐸 <i>Duó</i>	屋 <i>Wū</i>
<i>Baxter</i>	*-ek	*-ak	*-ok
<i>Li</i>	*-ik	*-ak	*-uk

<i>Rhyme group</i>	蒸 <i>Zhēng</i>	冬 <i>Dōng</i> [中 <i>Zhōng</i>]
<i>Baxter</i>	*-ing	*-ung
<i>Li</i>	*-əng	*-əngw

<i>Rhyme group</i>	耕 <i>Gēng</i>	陽 <i>Yáng</i>	東 <i>Dōng</i>
<i>Baxter</i>	*-eng	*-ang	*-ong
<i>Li</i>	*-ing	*-ang	*-ung

<i>Rhyme group</i>	宵 <i>Xiāo</i>	
<i>Baxter</i>	*-ew	*-aw
<i>Li</i>	*-agw	

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<i>Rhyme group</i>	藥 <i>Yào</i>
<i>Baxter</i>	*-ewk *-awk
<i>Li</i>	*-akw

A.9.2.3 Bilabial codas

<i>Rhyme group</i>	侵 <i>Qīn</i>
<i>Baxter</i>	*-im
<i>Li</i>	*-əm

<i>Rhyme group</i>	談 <i>Tán</i>
<i>Baxter</i>	*-em
<i>Li</i>	*-am

<i>Rhyme group</i>	緝 <i>Qī</i>
<i>Baxter</i>	*-ip
<i>Li</i>	*-əp

<i>Rhyme group</i>	盍 <i>Hé</i> [葉 <i>Yè</i>]
<i>Baxter</i>	*-ep
<i>Li</i>	*-ap

A.10 Glossary of Sinological Terms

This glossary attempt to provide brief, simple descriptions of Chinese and English terminology often encountered in works on Old Chinese reconstruction. Terms are arranged by topic. For each term, the full *pinyin* transcription (with tone) is provided,

along with the Chinese characters and a working English translation, followed by a one-paragraph definition. In the interest of brevity, generalizations are sometimes made, and there are no doubt points on which certain scholars would disagree with my interpretations. Page numbers for further reading are listed for Baxter 1992 (B) and Norman 1988 (N).

A.10.1 Basic terms

Shànggǔ Hànyǔ / Shànggǔ yīn 上古漢語 上古音

Old Chinese / Old Chinese phonology

The Chinese language spoken in the first half of the first millenium BC, as reflected in the rhyming patterns of the *Shi Jing* and in the *phonetic* elements of early Chinese characters. Called ‘Archaic Chinese’ by Karlgren and other Western scholars. ‘Old Chinese’ is a newer term intended to better reflect the sense of the Chinese. It is considered the earliest reconstructible stage of Chinese.

Zhōnggǔ Hànyǔ / Zhōnggǔ yīn 中古漢語 中古音

Middle Chinese / Middle Chinese phonology

The Chinese literary standard spoken roughly from the 6th to the 11th centuries. It may be further subdivided into Early Middle Chinese (reflected in the early *rhyme books* like the *Qie Yun*) and Late Middle Chinese (reflected in the *rhyme tables* such as the *Yun Jing*). Called ‘Ancient Chinese’ by Karlgren and other Western scholars. The phonological systems of most modern dialects can be correlated with Middle Chinese.

A.10.2 Terms related to the reconstruction of Old Chinese

Shī Jīng 詩經

Book of Songs

A compilation of lyric poetry whose works are thought to date from the 8th to 5th centuries BC. The received version contains the lyrics to 305 poems, and is said to have been compiled by Confucius. With approximately 2000 rhyming words, it is the primary source of information on the phonological structure of the vowels and finals of Old Chinese. The Old Chinese *rhyme categories* are determined by analysis of the *Shi Jing*. (N:42-3)

xiéshēng 諧聲

phonetic series

This term refers to a set of Chinese characters (or to the words written with those characters) which all share the same *phonetic*; it also includes the character which is itself

that phonetic. For example, the characters 方 妨 芳 放 房 are members of one *xiesheng* series (the latter four use the first as phonetic). More loosely, any character which contains a phonetic may be referred to as a *xiesheng* character (a ‘phonetic compound’). Two characters which are in the same phonetic series are sometimes said to show ‘*xiesheng* contact’. It is generally assumed that, at the time of the creation of a character, the words in a phonetic series had the same main vowel and ending, and shared the place of articulation of the initial. (B:11-12, N:43-44)

yùnbù 韻部

rhyme group or rhyme category (of Old Chinese)

Based on the rhyming patterns of the *Shi Jing*, the words of Old Chinese are divided into rhyme categories. All the words within a single category may rhyme freely. Because of difficulties in the interpretation of the *Shi Jing* rhyme patterns, there is disagreement over the number and nature of the OC rhyme categories. The traditional rhyme categories are those established by the Qing Dynasty philologists, and which still serve as the basis for scholarship today. Each of these categories is named with one of the words included in it. For a list of the traditional categories, see the table of rhymes included in §A.9.2.

A.10.3 *Terms related to the reconstruction of Middle Chinese*

yùnshū 韻書

rhyme book

Rhyme books began appearing in the sixth century AD; the earliest surviving one is the *Qie Yun*. Rhyme books are dictionaries which group characters according to their rhymes. Each rhyme is named with one of the characters contained in it. Within each rhyme, homophonous characters are subgrouped together, and their pronunciation is indicated according to the *fanqie* spelling system. (B:33-35)

Qiè Yùn 切韻

Segmenting Rhymes

A *rhyme book* dated 601 AD which is the primary source of information on the phonological system of Early *Middle Chinese*. (B:35-8, N:24-8)

Guǎng Yùn 廣韻

Expanded Rhymes

An enlarged revision of the *Qie Yun* dating to 1007 AD. Because it is a much more convenient reference work to use than the *Qie Yun*, and because it represents essentially the same phonological system as the *Qie Yun*, it is the *rhyme book* most often

used and cited. (B:38-40)

fǎnqiè 反切

turning and cutting

A system employed in the *rhyme books* for indicating the pronunciation of Chinese characters. A character is spelled with two other characters, the first of which indicates the initial and the second of which indicates the final (including tone). By combining the initial of the first character with the final of the second, the correct pronunciation is achieved. (B:33, N:27)

yùntú 韻圖

rhyme table

Rhyme tables appear in the Late *Middle Chinese* period, but are useful for interpreting data in the *Qie Yun* and thus for reconstructing Early Middle Chinese. The most commonly referenced is the *Yun Jing*. In the rhyme tables, characters are laid out in tables indicating their phonological properties. (B:41-42, N:28-34)

Yùn Jing 韻鏡

Mirror of Rhymes

A *rhyme table* dating to no later than the 12th century, but probably representing an earlier tradition. (B:42-3). The *Yun Jing* lays out characters on a grid-like pattern. Each column represents a distinct *initial* consonant, and the rows represent different *rhymes*, *tones*, and *divisions* (*i.e.* characteristics of the *final*). Each grid is also labeled as *hekou* or *kaikou*. The *Yun Jing* thus provide a complete phonological framework for Middle Chinese.

děng 等

division

This is a complex and difficult term, which in different contexts may have different meanings. It refers primarily to the way that Chinese characters are laid out in the *rhyme tables* (such as the *Yun Jing*). Under each tone, there are four rows in the grids of the *Yun Jing*, each corresponding to a division. These divisions are generally thought to relate to the quality of the vowel: first division vowels are back, second division vowels are front (but not high), third division vowels contain a palatal medial glide, and fourth division vowels are high and front.

The four divisions may be labeled by a roman numeral (I, II, III, or IV). The adjective ‘nth-division’ may refer to a particular character (indicating its placement in the rhyme tables), or to an entire *rhyme* (indicating the nature of the vowel of that rhyme). This can lead to a sometimes confusing situation wherein a third-division word (so

identified by virtue of belonging to a third-division rhyme, *i.e.* one reconstructed by Karlgren with a palatal glide), is also a fourth-division word (by virtue of being placed in the fourth row in the rhyme tables). I would propose using a roman numeral to indicate division in the broad sense (the division of the rhyme as a whole), followed (if necessary) by an arabic numeral to indicate in which row of the rhyme tables the character appears. Thus the so-called ‘third division *chongniu*’ words could be abbreviated as III-3, while ‘fourth-division *chongniu*’ words would be abbreviated III-4.

Further complicating the issue is the fact that the term ‘division’ is often used loosely (and inaccurately) to refer to words or rhymes of earlier or later stages of Chinese which developed into or from particular divisions of Middle Chinese. For example, Old Chinese words with medial *-r- are sometimes referred to as “second division” because they developed second-division vocalism in Middle Chinese. Finally, the term may be used to refer to particular series of consonants. (For example, the palatal affricates of Middle Chinese occur only with third-division words, so they may be referred to as “third-division initials”). (B:42-3, N:32)

chóngniǔ 重紐

doublets

A phenomenon found in the *rhyme tables* where some words in a given *rhyme* with a given *initial* are placed in the third division, while other words with the same initial and rhyme are placed in the fourth division. The distinction is usually thought to be located in the *medial*, but the exact phonetic nature of the distinction is highly disputed. Karlgren did not take these doublets into account in his reconstruction. In Li Fang-Kuei’s revision of Karlgren’s MC reconstruction, the distinction is indicated orthographically by medial -j- vs. medial -ji-. (B:75-81)

yùn 韻

rhyme (of Middle Chinese, or of any rhyme book)

The Middle Chinese equivalent of Old Chinese *rhyme categories*, rhymes are groupings of words which may rhyme freely. They have the same rhyme (*i.e.* main vowel plus ending) and serve as the main organizational unit in the *rhyme books*. See also the entry for *yun* below.

A.10.4 *Terms related to the Chinese syllable and Chinese characters*

shēngmǔ 聲母

initial

The initial consonant of a Chinese syllable. In Old Chinese, this may be a consonant cluster.

yùnmǔ 韻母

final

The part of the Chinese syllable consisting of the medial, main vowel, and ending (that is, everything but the initial and tone). The initial and final together make up a complete syllable.

jièyīn 介音

medial

The on-glide of a Chinese syllable.

yùn 韻

rhyme

The part of a Chinese syllable consisting of the main vowel and ending, and sometimes the tone, *i.e.* that portion of the syllable which determines its rhyming properties. See also the entry for *yun* on the previous page.

yùnwěi 韻尾

ending

The part of a Chinese syllable which follows the main vowel. It may be a consonant or an off-glide.

shēngdiào 聲調

tone

Middle Chinese had four distinct lexical tones. While their exact contours are not known, their traditional names (which date to the Early Middle Chinese period) give a good indication of their general properties. (Note that the four tones of modern Mandarin do not correspond isomorphically to the four tones of Middle Chinese.) The level, rising, and departing tones occur with open syllables and syllables with nasal endings; the entering tone occurs with syllables with final stop endings.

<i>píngshēng</i>	平聲	level tone
<i>shǎngshēng</i>	上聲	rising tone
<i>qùshēng</i>	去聲	departing tone
<i>rùshēng</i>	入聲	entering tone

kāikǒu 開口

unrounded, *i.e.* lacking medial -w-

In the *rhyme tables*, this refers to syllables which do not contain a rounded *medial* ele-

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ment -w-. The term is often used more generally to refer either to (a) syllables lacking a rounded medial element at any stage of Chinese; (b) syllables which are ancestral to MC syllables lacking such an element.

hékǒu 合口

rounded, *i.e.* containing medial -w-

In the *rhyme tables*, this refers to syllables which contain a rounded *medial* element -w- (or sometimes a rounded main vowel). The term is often used more generally to refer either to (a) syllables having a rounded medial element at any stage of Chinese; (b) syllables which are ancestral to MC syllables with such an element.

shēngfú 聲符

phonetic/phonophoric

The component of a Chinese character which, because it is itself a character—or a modification of a character—used to write another Chinese word, gives an approximate indication of the pronunciation of the character. (For example, the phonetic of the character 芳 *fāng* ‘fragrant’ is 方 *fāng* ‘square’.) The vast majority of Chinese characters are phonetic compounds containing such an element. These characters make up *phonetic series*.

yìfú 義符

signific

The non-*phonetic* component of a *xiesheng* character. The role of the signific can be thought of as distinguishing near-homophonous words by giving a rough indication of the semantic category of the word being written. The signific often, but not always, corresponds to the “radical”, *i.e.* the component of the character used for classification purposes (as in dictionaries and indices). For example, the signific of the character 坊 *fāng* ‘place’ is 土 *tǔ* ‘earth’.

Karlgren's Transcriptional Conventions

By *Richard S. Cook* and *Zev J. Handel*

Elements of 高本漢 Bernhard Karlgren's (1889-1978) *Archaic* and *Ancient Chinese* transcriptions are compared to [IPA] in the following tables. (Archaic = 上古 = Old Chinese = OC; Ancient = 中古 = Middle Chinese = MC.)

TABLE 1. Full vowels

i	[i]			u	[u]
e	[e]	ö	[ø]	ô	[o]
ä	[ɛ]	ə	[ə]	o	[ɔ]
ɛ	[æ]	ɐ	[ɐ]	ǎ	[ɔ̃]
a	[a]			â	[ɑ]

TABLE 2. Short [ɿ] [ʮ] and non-syllabic [ɿ̚] vowels

ɿ	[ɿ]	ě	[ě]	ɛ̄	[ɛ̄]	ǎ̄	[ǎ̄]	ə̄	[ə̄]
ũ	[ũ]	ȫ	[ȫ]	ô̄	[ô̄]	ǎ̄̄	[ǎ̄̄]	â̄	[â̄]

TABLE 3. Consonant symbols

• [ʔ]	γ [ɣ]	ń [ɲ]	ḑ [d̪]
’ [h]	j [j]	ś [ɕ]	ş [ʃ]
ng [ŋ]	ṭ [ʈ]	ź [ʒ]	ẓ [z̥]
χ [x]	ḏ [d̥]	ṭ [t̪]	O [Ø]

TABLE 4. Tone marks (following MC syllable “x”)

x 平聲 “even tone”	x: 上聲 “rising tone”	x- 去聲 “falling tone”
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NOTES: Karlsgren made use of Johan August Lundell’s (1879) Swedish dialect alphabet (1915:227-228) • “j-” (initial) and “-j-” (rhyme onglide “yod”) are distinct in MC “j̄-” • *over-breve* and *under-dot* are both used to indicate short *syllabic* vowels • *under-breve* indicates a short *non-syllabic* vowel (as in IPA) • both “a” and “a” in *GSR* are [a] (“a” is *italic* “a”) • likewise, both “e” and “e” are [e] • on “ô” vs. “o”: “something like French *tôt* as against *tonne*, Germ. *so* as against *Sonne*” (K. 1954: 346[136]; cf. 1940:38); “o as in Germ. *Sommer*; ô as in French *beau*” (1957:4) • “e as in Engl. *but*” ([e], more central than cardinal [ʌ]) • “ä as in Germ. *bär*” • “ε” is “a still more open, slack ä sound (Engl. *man*)” (1957:4) • “palatals” (“predorsum against the alveoli”, 1957:3) are pre-palatals, i.e. *alveolo-palatals* (“curly-tails”) • *under-dot* marks both components of the *affricate* (stop and fricative) as *retroflex* in *AD* • *GSR*’s *italic Greek gamma* is IPA *gamma* • K’s diacritic for aspiration is “’” (not “‘”) • the diacritic for *glottal stop* is a full-width superscript dot (above x-height) • *zero initial* (“smooth vocalic ingress”) written “O” (1957:3), is unmarked in reconstructions • “ö” [ø] ≈ [ö] occurs only in transitional (OC > MC) forms, for *centralized* “o” and “ô” (cf. 1940:38) • Mandarin: “ü” [y]; “ê” [ɤ]; “i” for *apical vowels* [ɿ, ʅ] ≈ [ʒ̥, ʒ̥] • other symbols (for tones, Cantonese, Japanese) appear in *AD*.

SELECTED SOURCES: Lundell (1879), Karlsgren (1915 *Études*, 1923 *AD*, 1940 *GS*, 1954 *Compendium*, 1957 *GSR*), Li Fang-Kuei (1971), Norman (1988), CHOU Fa-kao (1984), YU Nae-wing (1985, 2000), Baxter (1992), Pullum & Ladusaw (1996), Ulving (1997), Pan (2000).

• *PROTO-SYLLABLES*

This is an index arranged by proto-root-syllables, where all etyma with roots that reconstruct with the same phonological shape are grouped together. Any affixes reconstructed for a given etymon are disregarded for the purposes of this grouping. Prefixes or suffixes are separated from their roots by hyphens, *e.g.* *m-kum, *na-n. See, for example, the list of roots under the proto-syllable *wa:

- *wa
 - *b-wa ‘white/yellow’
 - *g-wa-t ‘bite/chew’
 - *k-wa ‘satiated’
 - *r-wa ꝵ *g-wa ‘village’
 - *r-wa ꝵ *s-wa ꝵ *g-wa ‘rain’
 - *r-wa ‘bamboo’
 - *s-wa ‘go’
 - *wa ‘bird/feather’
 - *wa ‘man/father/husband/person’
 - *wa ‘trap’
 - *wa-y ꝵ *ra-y ‘fontanelle’
 - *wa² ‘bamboo’ (PLB)
 - *wa² ‘snow/frost/ice/hail’ (PLB)
 - Cf.* p^wa ‘man/husband/father/person’
 - Cf.* *m-g^wya² ‘chew’ (PLB)
 - Cf.* *p^wa ‘bamboo’
 - Cf.* *ra-y ꝵ *wa-y ‘fontanelle’
 - Cf.* *swa (or *s-wa) ‘tooth’
 - Cf.* *wal ‘snow/frost/ice/hail’
-

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- *ALPHABETICAL ORDER*

No forms are reconstructed with initial vowel, but there are a number of etyma which reconstruct with *glottal stop plus vowel. The order of consonants in this *Index* is as follows:

ʔ, b, d, dz, dzy, g, h, k, l, m, n, ŋ, p, r, s, sy, t, ts, tsy, w, y, z, zy.

The fricative initials /dz dzy sy ts tsy zy/ are considered to be unit proto-phonemes. On the other hand the palatalized dentals /ty/ and /dy/ are treated as clusters, so that etyma with these initials are to be found under /t/ and /d/, respectively. This leads to the anomaly of ty- preceding ts- in the alphabetical order.

The order of proto-vowels is: a, e, ə, i, o, u. Long vowels are alphabetized after the corresponding short ones.

For the purpose of alphabetization, parentheses are ignored; thus “t(y)a” is treated the same as “tya”. (For the meaning of these parentheses, see “Variation / Allofamy”, below.)

- *GLOSSES*

Multiple English translations are frequently offered to show the full semantic scope of the etymon. These alternative glosses are separated by slashes, with no attempt to indicate the relative semantic distance among the subsenses, *e.g.*:

*g-ra:l ⌘ *g-ran ⌘ *ray ‘enemy / fight / quarrel / strife / sword / war’

All glosses that appear in this *Index* are listed in alphabetical order in the *Index of Proto-Glosses*, below.

- *LEVELS OF RECONSTRUCTION*

Unless otherwise marked, reconstructed forms are to be interpreted as PTB. A number of reconstructions at lower taxonomic levels are also included and labelled as such, provided that they are specifically mentioned in the text. These are mostly Proto-Lolo-Burmese, but also include occasional forms set up for other groups, *e.g.* Proto-Northern Naga, Proto-Chin, Proto-Karenic. Tones are provided for the PLB reconstructions.

- *VARIATION / ALLOFAMY*

As in Indo-European, a large number of roots show variation in their phonological shape, i.e. etyma frequently have more than one allofam. As explained in the text, the

types of variation “permissible” within ST/TB word families are quite different from what is encountered in IE.

Sometimes a head entry in this *Index* is itself an allofamic group. In these cases, all etyma under the head entry are claimed to show the same variational pattern, *e.g.*:

*granj ⌘ *kranj
 *granj ⌘ *kranj ‘measure/count’
 *granj ⌘ *kranj ‘strong/firm/tight/distended’

Care is taken to include all root-variants that are mentioned in the text, with mutual cross-references -- unless the variants are very close to each other in the alphabetical order, when multiple listings would be tedious.

No attempt is made in this *Index* to show the chronological depth of the observed variation, i.e. whether it may be imputed all the way back to PST or PTB, or whether it is only the effect of an innovation at a subgroup level. For such clarifications (when it is possible to give them), the text should be consulted.

This *Index* uses four types of notation to indicate variation:

- (a) Separate alternative reconstructions, connected by the allofam-sign ⌘ :

*grum ⌘ *krum

- (b) A single reconstruction with alternating elements separated by slashes:

*gyit/k (= *gyit ⌘ *gyik)
 *m/s-nam (= *m-nam ⌘ *s-nam)

- (c) When two allofams are attested, one with and one without a given element, parentheses may enclose the optional material:

*t(y)a (= *ta ⌘ *tya)
 *(t)sa:y (= *tsa:y ⌘ *sa:y)

As mentioned above, parentheses are ignored for the purposes of alphabetization; thus *t(y)a and *tya would appear under the same proto-syllable.

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(d) In cases where it is not possible to choose between slightly different reconstructions on the basis of the available data, the alternative possibilities are separated by the word *or*:

*ʔa:r <i>or</i> *ha:r	‘fowl/chicken/quail’
*s-wam <i>or</i> *hwam	‘dare’
*sram <i>or</i> *s-ram	‘otter’

Many roots display more than one type of variation:

*r/s-ŋ(y)a	‘borrow/lend’
*kla-k/y/t \approx *gla-k/y/t	‘fall’

If clarity does not suffer, sometimes the index offers a pan-allofamic formula that does not appear as such in the text, *e.g.* *d-k^wəy-n ‘dog’, where the text only has *d-k^wəy or *k^wəy-n.

The choice of notation in an individual case is an esthetic one, with clarity the foremost consideration. Conventionally we avoid beginning a reconstruction with alternative root-initial consonants separated by slashes (*e.g.* not **k/grum, but *krum \approx *grum), since this would complicate the alphabetical order of proto-syllables. Similarly we avoid indicating vocalic alternations by slashes, since this would be hard to interpret (*e.g.* not **gru/im, but *grum \approx *grim).

In cases of multiple types of variation within the same etymon it would usually be quite confusing to indicate each type by slashes. Although a root with the four allofams *krum \approx *grum \approx *krim \approx *grim could theoretically be notated as *k/gu/im, it is far preferable to use cross-references:

*krum \approx *krim
Cf. *grum \approx *grim .

When there is alternation between a short vowel and the corresponding long vowel followed by a consonant, parenthesized notation is avoided in favor of the allofam sign. Thus, *kwa \approx *kwa:y is used instead of **kwa(:y). This avoids putting the vowel-length symbol inside parentheses.

Alternation or uncertainty between a long and a short high vowel is shown by parenthesized notation: *-i(y), *-u(w). This is merely for convenience, since long high vowels in the text are reconstructed with schwa-plus-semivowel: *-əy, *-əw. For the

equivalence between *-iy and *-əy, and between *-uw and *-əw, see 5.3.1 and 5.3.2, above.

• *CROSS-REFERENCES*

Pains have been taken to provide liberal cross-references. These are of two basic types, semantic and phonological:

- (a) references to other roots with similar meaning (where no phonological/etymological relationship is implied), *e.g.*:

*m/s-twa ‘spit/spittle’
Cf. *m/s-tu:k ‘spit/spew’

- (b) references to co-allofams within the same word-family, *e.g.*:

*p^wul ∞ *p^wil ‘skin’
Cf. *ʔul, *wul ∞ *wun ‘skin’
Cf. *pun ∞ *pin ‘skin’

The text will have to be consulted when it is not clear which type of cross-reference is intended.

Occasionally the user will have to go through several cross-references in order to locate all the allofams of an etymon, *e.g.*:

*krim:	<i>Cf.</i> *grim ∞ *krim ‘meet’
*grim ∞ *krim:	<i>Cf.</i> *grum ∞ *krum ‘meet’
*grum ∞ *krum:	<i>Cf.</i> *grim ∞ *krim ‘meet’
*krum:	<i>Cf.</i> *grum ∞ *krum ‘meet’

*ʔ

*ʔa ≈ *ga

*ʔ-ga² (PLB) ‘mute/dumb/
stupid’ {57, 165}

*m-ʔa ‘mute/dumb/stupid’
{57, 176}

*ʔal

*ʔal ‘right (correct)/good’
{406}

*ʔam

*ʔam ‘eat/drink’ {298,
533}

*ʔaŋ- ≈ *ʔak-

*ʔaŋ- ≈ *ʔak- ‘noun pre-
fix’ {522}

*ʔap ≈ *ga:p

*ʔap ≈ *ga:p ‘needle’
{57}

*ʔap ≈ *ga:p ‘shoot’ {57,
137, 340}

Cf. *kap ‘needle’

Cf. *k-rap ≈ *k-ram
‘needle’

*ʔa:r

*ʔa:r or *ha:r ‘fowl/chick-
en/quail’ {58, 385, 386,
392, 401, 426}

*ʔaw

*ʔaw ‘vomit’ {227}

*ʔa:w

*ʔa:w ‘shout’ {225}

*ʔay

*ʔay ‘go/directional parti-
cle/transitive motion’
{209, 482, 483}

Cf. *yay ≈ *ʔay ‘mother/
grandmother/maternal
aunt’

*ʔew

*ʔew ‘lean back’ {231}

*ʔik

*ʔik ‘elder brother’ {344}

*ʔik ‘strangle’ {344, 348}

*ʔu²-(y)ik^L (PLB) ‘elder
sibling’ {86, 154}

Cf. *ʔ-wyik^L (PLB) ‘elder
sibling’

*ʔiŋ

*ʔiŋ ‘bear (endure)/suffer’
{281}

*ʔip ≈ *ʔi:t

*ʔip ≈ *ʔi:t ‘bag/sack’
{533}

*ʔit

*ʔit ‘one’ {352}

*ʔok

*ʔok ‘below/under’ {377}

*ʔo:l

*ʔo:l ‘finish/loose/relax’
{421, 426}

*ʔol

*ʔol ‘throat/gullet’ {58,
421}

*ʔon

*ʔon ‘nauseated/vomit’
{292}

*ʔu

*ʔu ‘egg/sit on eggs’ {199}

*ʔu² (PLB) ‘head’ {477}

*ʔu³ (PLB) ‘egg/sit on
eggs’ {180}

Cf. *d-bu ‘head’

*ʔuk ≈ *kuk

*ʔuk ≈ *kuk ‘crooked/
bent/knee/angle/return/
back’ {57}

Cf. *gu(:)k ≈ *m-ku(:)k
‘crooked/bent/knee/angle’

Cf. *kuk ‘return/year’

*ʔul

*ʔul ‘hand’ {58}

*ʔul ‘skin’ {58}

Cf. *p^wul ≈ *p^wil ‘skin’

*ʔu:m

*ʔu:m ‘mouthful’ {496}

*m-ʔu:m ‘hold in the
mouth’ {276, 308}

*ʔum ≈ *kum

*ʔum ≈ *kum ‘block/pil-
low’ {57}

*ʔup ≈ *gup

*ʔup ≈ *gup ‘hatch/cover’
{57, 369}

*ʔur

*ʔur ‘make noise/hum/chat/
babble’ {385, 396, 402}

Cf. *kur ≈ *ʔur ‘hand’

*ʔu:r

*ʔu:r ‘fire/burn/kindle/
roast’ {428}

Cf. *b-war ≈ *p-war
‘fire/burn/kindle/roast’

*ʔut

*ʔut ‘swaggering/noisy’
{364}

*b

*ba

*ʔ-ba¹ (PLB) ‘patch’ {163}

*ʔ-ba² (PLB) ‘civet cat’
{163}

*ʔ-ba² (PLB) ‘frog’ {74,
113, 428}

*ba ‘carry on back’ {24}

*ba ‘thin’ {24, 162, 169,
440}

- *ba-y* ‘cheek’ {486}
**ba-y* ‘what’ {488}
**ba²* (PLB) ‘cheek’ {163}
**ba²* (PLB) ‘nearby place/vicinity’ {163}
**ba²* (PLB) ‘thin’ {19}
**m-ba* ‘shine/bright’ {123, 163}
**m-ba* ‘wave (in water)’ {174}
**m-ba^{2/3}* (PLB) ‘tail’ {123}
*Cf. *p^wa* ‘patch/sew’
**ba* ≈ **ba:y*
**s/m-ba* ≈ **s/m-ba:y* ‘throw’ {170, 231, 483}
**bak*
**ʔ-bak^L* (PLB) ‘side’ {113}
**ba:k*
**bark* ‘bat’ {325, 326}
**bal*
**bal* ‘tired’ {386, 404, 406, 427}
**s-bal* ‘frog’ {404, 405, 428}
*Cf. *ʔ-ba²* (PLB) ‘frog’
**ba:l*
**ba:l* ‘filth/excrement’ {385, 404, 407, 425}
**ban/t* ≈ **pan/t*
**ban/t* ≈ **pan/t* ‘braid/plait/interweave’ {260, 518}
**ban/t* ≈ **pan/t* ‘thin’ {440}
**banj*
**d-banj* ‘strength’ {140}
**l-banj* ≈ **m-banj* ‘deaf’ {267}
**m-banj¹* (PLB) ‘lazy/tired of’ {265}
**s-banj* ‘dung’ {264}
**bap*
**m-bap* ‘fall over’ {336}
**bar*
**bar* ‘bloom/flower’ {384, 386, 387, 392, 425}
**bat*
**bat* ‘smell/odor’ {330}
**bat* ‘wind around’ {330}
**bay*
**bay* ‘repeat/practice’ {208, 220}
*Cf. *pay* ≈ **bay* ‘encircled/ringed/striped’
**ba:y*
*Cf. *pa:y* ≈ **ba:y* ‘lame/limp/askew’
**be*
**be* ‘bean/legume’ {203}
**be* ≈ **pe*
**be-s* ≈ **pe-s* ‘break off a piece’ {204}
**baw*
**ʔ-baw²* (PLB) ‘grandfather’ {183}
**baw* ‘carry on back’ {178, 199}
**baw* ‘insect/vermin/bug/snake’ {130, 139, 148, 154, 178, 184}
**baw²* (PLB) ‘carry on back’ {183, 477}
**baw²* (PLB) ‘insect/vermin/bug/snake’ {19, 183}
*Cf. *paw* ‘grandfather’
**bəy*
**bəy-k* ‘give’ {132, 200, 442, 480}
**bəy²* (PLB) ‘give’ {19}
**s-bəy-n* ‘give’ {191}
**bi*
**bi¹* (PLB) ‘anvil’ {187}
**bik*
**ʔ-bik^L* (PLB) ‘mosquito’ {344}
**bip* ≈ **pip* ≈ **bup* ≈ **pup*
**b/pip* ≈ **b/pup* ‘conceal/hide (v.)/bury’ {352, 354, 370, 495, 498}
**bi(y)*
**r-bi(y)* ‘left’ {219, 510}
**ble*
**ble* ‘slip’ {203}
**blen*
**m-blen* ‘pus/boil (n.)’ {291}
**m-blen¹* (PLB) ‘pus’ {69, 74, 124}
**blen* ≈ **plen*
**blen* ≈ **plen* ‘straight(en)’ {281, 292}
*Cf. *plen* ‘flat surface/plank’
**bliŋ*
**bliŋ* ‘string/thread/cord’ {307}
**bliŋ* ≈ **pliŋ*
**ʔ-bliŋ¹* (PLB) ‘full/plenty’ {74}
**bliŋ* ≈ **pliŋ* ‘full/fill’ {281, 282, 296, 307, 496}
**blu*
**ʔ-blu¹* (PLB) ‘porcupine’ {74, 113, 180, 241}
**blu-t-s* ‘ransom’ {456}
**s-blu* ‘porcupine’ {74, 184}

***blum**
***blum**² (PLB) ‘taro’ {273}

***bok**
***bok** ‘white’ {378}

***bop**
***bop** ‘calf of leg’ {381}
Cf. ***bwap** \approx ***bwam**
 ‘calf of leg’
Cf. ***bwap** \approx ***bwam**
 ‘swell up’

***boy**
***boy** ‘cowlick’ {228}

***bral** \approx ***pral**
***bral** \approx ***pral** ‘leave/de-
 part/separate’ {423}

***bran**
***ʔ-bran**³ (PLB) ‘spread
 wide’ {260}
***bran** ‘convalesce’ {258,
 386}
***bran** ‘ring (for finger)’
 {69}

***braŋ**
***braŋ** ‘give birth’ {264}
***s-braŋ** ‘fly (n.)/bee’
 {302}

***brat** \approx ***prat**
***brat** \approx ***prat** ‘cut apart/
 cut open’ {334}
***C-prat**^L \approx ***ʔ-brat**^L
 (PLB) ‘cut apart/cut into’
 {330}

***bray**
***bray** ‘effaced’ {209}
***bray**² (PLB) ‘flaring’
 {209}

***brəy**
***m-brəy**¹ (PLB) ‘tears’
 {124}

***broŋ**
***broŋ** ‘wild yak/buffalo’
 {294}

***bruk**
***bruk** ‘piebald/speckled’
 {363}

***bru:l**
Cf. ***s-b-ru:l** ‘snake’

***brum**
***s-brum** ‘pregnant’ {308}

***bruŋ** \approx ***bruk**
***m-bruŋ** \approx ***m-bruk**
 ‘thunder/dragon’ {524}

***brup** \approx ***prup**
***brup** \approx ***prup** ‘overflow/
 flood’ {134, 369, 496}

***br(w)aŋ** \approx ***br(w)ak**
***s-br(w)aŋ** \approx ***br(w)ak**
 ‘speak’ {523}

***bu**
***d-bu-s** ‘head/center’
 {140, 198, 442, 477}
***s-bu** ‘bud/open’ {184}
Cf. ***ʔu**² (PLB) ‘head’

***bul** \approx ***bil**
***d-bul** \approx ***d-bil** ‘poor’
 {419, 423}

***bul** \approx ***pul**
***bul** \approx ***pul** ‘stump/tree/
 root’ {416, 424}

***bun**
***bun**¹ (PLB) ‘finish’ {249,
 279}

***buŋ**
***buŋ** ‘wind (n.)’ {531}

***bup**
***m-bup** ‘rot/spotted/write’
 {369}
Cf. ***b/pip** \approx ***b/pup**

‘conceal/hide (v.)/bury’

***bwa**
***bwa-n** ‘grandmother’
 {448}

***b^waŋ** \approx ***p^waŋ**
***b^waŋ** \approx ***p^waŋ** ‘uncle/el-
 der brother/senior male
 relative’ {269, 303}

***bwap** \approx ***bwam**
***bwap** \approx ***s-bwam**
 ‘swell up/be swollen/stout/
 calf of leg’ {252, 341,
 518}
Cf. ***pwap** \approx ***pwam**
 ‘swell up’

***b^war**
***b^war** ‘spindle’ {61}

***b^war** \approx ***h^war**
***b^war** \approx ***h^war** ‘throw
 (away)/divorce (a spouse)’
 {55, 394, 425}

***b^war** \approx ***p^war**
***b^war** \approx ***p^war** ‘fire’
 {305}
Cf. ***b-war** \approx ***p-war**
 ‘fire’
Cf. ***pwa(:)r** ‘fire’

***b^wat**
***b^wat** ‘flower’ {61}
Cf. ***b/s-wat** ‘flower’

***b^way**
***b^way** *or* ***b(w)ay** ‘left
 side/lefthand’ {61, 211,
 214, 219, 510}
Cf. ***pa:y** \approx ***ba:y** ‘lame/
 askew’

***bwəy**
***bwəy** ‘bamboo rat’ {196}

***bya**
***bya** ‘bee/bird’ {63, 68,

- 169, 171}
**bya*² (PLB) ‘bee’ {19, 34, 63}
**byam*
**byam* ‘fly (v.)/run’ {68, 118, 252, 257, 532}
**byam*¹ (PLB) ‘fly (v.)’ {19, 34, 74, 255}
**byar* \approx **pyar*
**byar* \approx **pyar* ‘affix/sew/plait/braid’ {390, 401}
**byer*
**byer* ‘fly (v.)’ {399, 402, 509}
**b(y)et*
**b(y)et* ‘vulva/vagina’ {375}
**byon*
**byon* ‘go/come’ {291}

*d

- *da*
**ʔ-da*¹ (PLB) ‘bow’ {163}
**ʔ-da*² (PLB) ‘put/place’ {113}
**da*¹ (PLB) ‘stick (n.)’ {163}
**m-da* ‘arrow’ {50}
**m-da*¹ (PLB) ‘fern/bracken’ {163, 164}
*Cf. *b-la* ‘arrow’
**da* \approx **ta*
**da* \approx **ta* ‘negative imperative’ {162, 172}
**dak*
**dak*^L (PLB) ‘cockspur/hoof’ {317}
**m-dak*^L (PLB) ‘mutually/

- reciprocal action’ {318, 320}
**dal*
**r-dal* ‘spread/extend/develop’ {424}
**dam*
*Cf. *g-tam* \approx **g-dam* ‘talk/speak’
**dan*
**dan* ‘cut’ {258, 259}
**m-dan* ‘crossbow’ {301, 310}
**dan* \approx **day*
**dan* \approx **day* ‘single/one/whole/only’ {262, 516}
**dan*
**dan*² (PLB) ‘speech/language’ {19}
**m-dan*^{1/2} (PLB) ‘think/feel an emotion’ {266}
**dan* \approx **don*
**m-dan* \approx **m-don* ‘peacock/partridge/pheasant’ {129, 294}
**m-dan*¹ \approx **m-don*¹ (PLB) ‘drink’ {123}
**dan* \approx **tan*
**dan* \approx **tan* ‘tense/tight’ {267}
**dap*
*Cf. *trap* \approx **drap* ‘fireplace’
**dar*
**s-dar* ‘bind/fasten/tether’ {401}
**dat*
**dat*^L (PLB) ‘alive’ {330}
**daw*
**daw* ‘risk/defy/hostile’

- {225}
**daw or *dow*
**daw or *dow* ‘bird’ {226, 227}
**day*
**day* ‘do/make’ {208}
**day* ‘shallow’ {209}
**day* ‘this/that’ {207}
**m-day*³ (PLB) ‘zone/expansion of territory’ {211}
*Cf. *m/s-ta:y* ‘belt/zone/waist’
**da:y*
**da:y* ‘dew’ {210}
**day* \approx **dan*
**day* \approx **dan* ‘single/one/whole/only’ {262, 516}
**da:y* \approx **ta:y*
**da:y* \approx **ta:y* ‘pound/crush’ {210}
**dek*
**r/g-dek* ‘kick’ {372}
**tek*^H (PLB) ‘kick’ {315}
**dey*
**m-dey*¹ (PLB) ‘lump/hunk/slab’ {206}
**di*
**di*¹ (PLB) ‘worm’ {188}
**dik*
**ʔ-dik*^L (PLB) ‘one/only’ {346}
*Cf. *t(y)ak* \approx **t(y)ik* ‘one/only’
**di:k*
**s-di:k* ‘scorpion/crab/shrimp’ {345, 496, 503, 527}
**dim*
**dim* ‘shallow’ {271}

diŋ*diŋ* ‘top/summit’ {307}**m-diŋ*¹ \approx **ʔ-diŋ*¹ (PLB)

‘settled/come to rest’

{123, 308}

**m/s-diŋ* ‘settled/fix/es-
tablish’ {307}**dip* \approx **tip***dip* \approx **tip* ‘beat/strike’
{498}**dit***ʔ-dit*^L (PLB) ‘whistle/trill’
{349}**do***do* ‘be related (as kin)’
{204}**doŋ* \approx **daŋ***m-doŋ* \approx **daŋ* ‘peacock/
partridge/pheasant’ {129,
294}**m-doŋ*¹ \approx **m-daŋ*¹
(PLB) ‘drink’ {123}**dow**Cf. *tow* \approx **dow* ‘ham-
mer’*Cf. *tow-n* \approx **dow-n*
‘thick’**dow* *or* **daw***dow* *or* **daw* ‘bird’
{226, 227}**doy***doy* ‘younger sibling’
{221, 228}**du***du*¹ (PLB) ‘irrealis parti-
cle’ {180}*Cf. *dut* ‘tie/knot’*Cf. *m-tu* \approx **m-du*
‘nephew/descendant’*Cf. *tu* \approx **s/m-du* ‘dig’*Cf. *tu-n/t* \approx **du-n/t*‘join/bring together/tie/
knot’**duk***ʔ-duk*^L (PLB) ‘burn/kin-
dle’ {315}**duk* ‘burn/kindle’ {331,
362}**g-duk* ‘daytime/noon’
{363}**duk* \approx **tuk***duk* \approx **tuk* ‘poison’
{357, 363}**dul* \approx **tul***r-dul* \approx **r-tul* ‘dust’
{415, 422}**duŋ***duŋ* ‘wing’ {285}**duŋ*¹ (PLB) ‘wing’ {19}**m-duŋ* ‘sword/spear’
{284}**m/r-duŋ* ‘mountain/hill-
ock’ {285, 310}**r-duŋ* ‘beat/strike’ {309,
363}**du:ŋ***du:ŋ* ‘post/column’ {287}**duŋ* \approx **tu:ŋ***duŋ* \approx **tu:ŋ* ‘long/length’
{288}**duŋ/k* \approx **tuŋ/k***m-duŋ/k* \approx **m-tuŋ/k*
‘sit’ {288, 523}**dup* \approx **tup***dup* \approx **tup* ‘beat/strike’
{498}**dut***s-dut* ‘tie/knot/conclude/
finish’ {368}*Cf. *tu-n/t* \approx **du-n/t*‘join/bring together/tie/
knot’**dwan* \approx **twan***dwan* \approx **twan* ‘wrinkle/
shrink’ {258}**dwa:ŋ***dwa:ŋ* ‘hole/cave/pit/well
(for water)’ {269}**dwaŋ*² (PLB) ‘well (for
water)’ {249}**dway***dway* ‘put together/be
even with/come up to’
{214}**dway* \approx **nway***dway* \approx **nway* ‘hang
from/cling to/creeper’
{214}**dyak***dyak* ‘hand/arm’ {65}*Cf. *g-l(y)ak* ‘hand/arm’**d(y)ak***m-d(y)ak* ‘good’ {51}*Cf. *l(y)ak* \approx **l(y)aŋ*
‘good/beautiful’**d(y)al***d(y)al* ‘lip’ {405}**dyal* \approx **tyal***dyal* \approx **tyal* ‘village’
{65, 406}**dyam* \approx **tyam***dyam* \approx **tyam* ‘straight/
flat/full’ {51, 65, 307}**dyuŋ***dyuŋ* ‘insect/bug’ {310}

*dz

***dzak**

**ʔ-dzak^L* (PLB) ‘join’
{315}

**s-dzak* ‘join’ {317}

***dzam**

**m-dzam* ‘bridge’ {251,
257}

**m-dzam¹* (PLB) ‘bridge’
{19, 253, 254, 530}

***dza:n**

**ʔ-dzan¹* (PLB) ‘arrow’
{260}

**(la)-dza:n* ‘arrow’ {260}

***dzar**

**dzar* ‘sister (of a man)’
{34, 385, 388, 391}

***dzas**

**r-dzas* ‘thing’ {432, 437}

***dzay**

**dzay* ‘cattle/livestock/do-
mestic animal’ {209}

***(d)za:y \approx *(t)say**

**(d)za:y \approx *(t)say* ‘tal-
ent/aptitude/tempera-
mant’ {210, 221}

***dzəw**

**m-dzəw²* (PLB) ‘ruler/
lord/emperor’ {123}

***dzəy**

**ʔ-dzəy¹* (PLB) ‘send on
an errand/causative’ {199}

**ʔ-dzəy²* (PLB) ‘cough’
{189}

**dzəy* ‘seed’ {31, 190}

**dzəy²* (PLB) ‘sap’ {189}

**m-dzəy¹* (PLB) ‘liquor’
{19, 189}

***dzi**

**ʔ-dzi²* (PLB) ‘dew’ {187}

***dzik**

*Cf. *dz(y)ik \approx *ts(y)ik*
‘drip/drop (n.)’

*Cf. *tsik* ‘joint’

***dzik \approx *dziŋ**

**dzik \approx *dziŋ* ‘split/
mince’ {31, 502}

***(d)zil**

**(d)zil* ‘dew’ {188}

***dzim**

**g-dzim* ‘sleep’ {305}

***dzin**

**dzin* ‘exhaust/come to an
end’ {306}

***dziŋ**

**dziŋ* ‘plant (n.)/tree’
{281}

**dziŋ* ‘relatives/ancestors’
{31, 529}

***(d)zi:t \approx *(t)si:t**

**(d)zi:t \approx *(t)si:t* ‘split’
{350}

**m-dzi:t^L \approx *m-tsi:t^H*
(PLB) ‘split’ {502}

***dzoŋ**

**dzoŋ* ‘wait/watch for’
{31, 294}

***dzum \approx *tsum**

**dzum \approx *tsum* ‘pair’
{272}

***dzwan**

**dzwan* ‘hawk/kite (bird of
prey)’ {63, 258, 301}

**dzwan¹* (PLB) ‘hawk/kite
(bird of prey)’ {30, 259}

***dzwan**

**dzwan* ‘lofty/elevated’

{269}

*dzy

***dzya**

**dža¹* (PLB) ‘rice’ {19, 30,
163}

**dža²* (PLB) ‘eat’ {19, 30}

**dzya* ‘eat/food/feed’ {34,
162, 165, 166, 169, 172,
251, 440, 442}

**dzya* ‘rice’ {168}

**dzya-n* ‘blush/red’ {451}

**dzya-n/k* ‘eat/food/feed’
{177, 440, 442, 480}

**dzya-s* ‘eat/food/feed’
{433, 440}

**dzya-t* ‘eat/food/feed’
{440, 454}

**m-dzya* ‘edge/side’
{169}

**they* ‘eat’ {205}

***dz(y)ak \approx *ts(y)ak**

**m-dz(y)ak* ‘drip/drop
(n.)’ {324, 506}

**m-tsak \approx *t(s)ik* ‘drip/
drop (n.)’ {327}

**m-tsak^H* (PLB) ‘drip/
drop (n.)’ {329}

*Cf. *dz(y)ik \approx *ts(y)ik*
‘drip/drop (n.)’

***dzya:l**

**dzya:l* ‘far’ {66, 406,
425}

***dzyan**

**džan¹* (PLB) ‘haze/fog’
{260}

**jan* ‘haze/fog’ {260}

***dzyan \approx *tsyan**

**ʔ-džan³ \approx *ʔ-tšan³*
(PLB) ‘stretch out’ {260}

**dzyaŋ*

**m-dzyaŋ* ‘be there/have’
{267}

**dz(y)ay*

**džay*² (PLB) ‘play’ {30}
**džay*^{2/1} (PLB) ‘quotative
particle’ {477}
**dz(y)ay-s* ‘quotative par-
ticle’ {208, 477}

**dz(y)əw*

**dz(y)əw* ‘suck/kiss/
breast/milk’ {382}
*Cf. *dzyup* \approx **dzyip*
‘suck/kiss/breast/milk’

**dz(y)ik* \approx **ts(y)ik*

**dzik*^L (PLB) ‘drop (n.)’
{30}
**g-t(y)ik* ‘drip/drop (n.)’
{324, 506}
**tsik* ‘drip/drop (n.)’ {327}

**dz(y)im*

**džim*² (PLB) ‘raw’ {19}
**dz(y)im* ‘raw/green’ {19}
**dz(y)im* ‘sweet/deli-
cious’ {34, 66, 271}

**dzyi:p*

**dzyi:p* ‘shut/close (v.)/
close together’ {31, 353}

**dzyon*

**dzyon* ‘ride (an animal)’
{34, 66, 291}

**dz(y)o:p* \approx **ts(y)o:p*

**dz(y)o:p* \approx **ts(y)o:p*
‘suck/kiss/breast/milk’
{31, 371, 382}
*Cf. *dzyup* \approx **dzyip*
‘suck’

**dzyow*

**dzyow* ‘suck/kiss/breast/
milk’ {382}

*Cf. *dzyup* \approx **dzyip*
‘suck’

**dz(y)u*

**m-dz(y)u-k* ‘belong/
trust/depend/accept/take’
{479}

**dzyuk*

**dzyuk* ‘suck/kiss/breast/
milk’ {382}
**dzyuk* ‘vulva/vagina’
{66}

*Cf. *dzyup* \approx **dzyip*

‘suck/kiss/breast/milk’

*Cf. *dzyut* ‘suck’

*Cf. *gyuk*^L \approx **džuk*^L
(PLB) ‘waist’

*Cf. *tšuk*^L (PLB) ‘suck’

**(d)z(y)u(:)k*

**m-(d)z(y)u(:)k* ‘pierce/
plant (v.)/erect/thorn’ {31,
362, 529}

*Cf. *dz(y)ut* ‘pierce/plant
(v.)/erect/thorn’

**dzyup* \approx **dzyip*

**dzyup* \approx **dzyip* ‘suck/
kiss/breast/milk’ {382,
500}

**C-tšup*^L (PLB) ‘suck/
kiss/breast/milk’ {316}

*Cf. *dz(y)o:p* \approx

**ts(y)o:p* ‘suck’

*Cf. *dzyuk* ‘suck/kiss/
breast/milk’

*Cf. *dzyut* ‘suck’

**dzyut*

**dzyut* ‘suck/kiss/breast/
milk’ {382}

*Cf. *dzyup* \approx **dzyip*
‘suck’

**dz(y)ut*

**dz(y)ut* ‘pierce/plant (v.)/

erect/thorn’ {529}

*Cf. *(d)z(y)u(:)k* ‘plant
(v.)’

**dzyut* \approx **dzyit*

**dzyut* \approx **dzyit* ‘tear/rip’
{365}

**m-džut*^L \approx **m-džit*^L
(PLB) ‘tear/rip’ {502}

**dzywal*

**dzywal* ‘hang down/sag’
{31, 66, 84, 407}

**dzyway*

**džway*¹ (PLB) ‘tooth/
tusk’ {30}
**m-dzyway* ‘tooth/tusk’
{212}

g*ga*

**m-ga* ‘spin/card fibers’
{266}

**m-ga*² (PLB) ‘want/think/
love’ {163}

**m-ga*³ (PLB) ‘help’
{163}

**r-ga* ‘old’ {127, 129}

*Cf. *gair* \approx **s-ga* ‘dance/
sing/leap/stride’

**gak*

**ʔ-gak*^L (PLB) ‘branch’
{113, 325}

**m-gak*^L (PLB) ‘striped’
{120}

*Cf. *ka:k* (PLB) ‘branch’

**gal*

**s-gal* ‘load/burden’ {416,
423}

*Cf. *m-kul* ‘twenty’

**ga:l* \approx **kal*

**s-ga:l* \approx **m-kal* ‘kidney/
small of back/loins’ {404,
405, 428}

**gam*

**gam* ‘put into mouth/seize
with mouth/jaw/molar’
{299}
**m-gam* ‘ladder/ramp’
{250}

**gan*

**gan* ‘run/dance/kick’
{519}
*Cf. *ga:r* \approx **ga* ‘dance/
sing/leap/stride’

**gaŋ*

**ʔ-gaŋ*¹ (PLB) ‘roast/toast/
burn/be dry’ {268}
**s-gaŋ* ‘hill/ridge/moun-
tain’ {266, 303}
*Cf. *kaŋ*¹ (PLB) ‘hill/high
ground’

**ga:p*

*Cf. *ʔap* \approx **ga:p* ‘needle’

**ga:p* \approx **ʔap*

**ga:p* \approx **ʔap* ‘shoot’ {57,
137, 340}

**gar*

**gar* ‘leave/abandon’
{390}

**ga:r* \approx **ga*

**ga:r* \approx **s-ga* ‘dance/sing/
leap/stride’ {392, 401,
425, 427}
*Cf. *gan* ‘run/dance/kick’

**ga:r* \approx **ka:r*

**ga:r* \approx **ka:r* ‘solid/fro-
zen’ {392, 426}

**gaw*

**gaw* ‘call’ {225, 226}

*Cf. *gow* \approx **gaw* ‘cross
over’

**gay* \approx **kay*

**gay* \approx **kay* ‘plant (v.)’
{209}

**gəw*

**gəw-n* \approx **kəw-n* ‘elder
brother/senior male rela-
tive’ {450}
**gəw*² (PLB) ‘nine’ {182,
477}

*Cf. *d/s-kəw* ‘nine’

**gil*

**gil* ‘turn/corner’ {410,
412}

**gip*

**gip* ‘ten’ {353}

**gla*

**ʔ-gla*² (PLB) ‘between/
have a space between/in-
terval’ {71, 163}

**gla* ‘musk deer’ {176}

**gla*² (PLB) ‘hear/listen’
{19, 72, 163}

*Cf. *ka:l* ‘between/inter-
val’

*Cf. *kla-k/y/t* \approx **gla-k/*
y/t ‘fall’

**glak*

*Cf. *klak* \approx **glak* ‘cook/
boil (v.)’

**glan*

**glan* ‘repair/mend’ {301}

**glaŋ*

**ʔ-glaŋ*¹ (PLB) ‘marrow/
brain’ {265, 507}
**glaŋ* ‘eagle/vulture/fal-
con/bird of prey’ {23, 75}
**glaŋ* ‘elephant’ {302}
**glaŋ* ‘willow/poplar’

{304}

**glaŋ* \approx **glak* \approx **graŋ*

**ʔ-klak*^H \approx **m-klak*^H
(PLB) ‘cold’ {72}

**glaŋ* ‘cold/freeze’ {262,
325, 521}

**graŋ* ‘cold/freeze’ {262,
302}

**m-glaŋ*¹ (PLB) ‘cold/
freeze’ {72}

**m/ʔ-glak* ‘cold/freeze’
{325, 521}

**glaŋ* \approx **klaŋ*

**glaŋ* \approx **klaŋ* ‘word/lan-
guage/speech/sound’
{267}

**glay*

**glay* ‘wide/apart’ {221}

**gle:k*

**gle:k* ‘thunderbolt/light-
ning’ {373}

**g(l)im* \approx **g(l)um*

**gim*¹ (PLB) ‘set (of the
sun)’ {249}

**g(l)im* \approx **g(l)um* ‘set
(of the sun)’ {274, 499}

**glin*

**glin* ‘land’ {280}

**glin* ‘tube/flute’ {280}

**glun*

**m-glun* ‘kidney’ {73,
125, 198}

**glwak*

**glwak* ‘shine/flash’ {328}

**go*

*Cf. *r-ko-t* \approx **r-go-t* ‘dig
out/scoop up’

**gow* \approx **gaw*

**gow* \approx **gaw* ‘cross over’
{224, 226, 515}

gra*gra* ‘long (time)’ {175}**gra* ‘stranger/guest/enemy’ {173}**grak***grak* ‘cord/tie/bind’ {327}*Cf. *k/grok* \approx **k/grak* ‘fear’**gram***gram* ‘net’ {299}**gram* ‘rough/coarse’ {252, 532}**gran***gran* ‘deny’ {81}**gran* ‘provide (food)’ {303}**gran* \approx **kran***gran* \approx **kran* ‘measure/count’ {303}**gran* \approx **kran* ‘strong/firm/tight/distended’ {267, 303}**gray***ʔ-gray*¹ (PLB) ‘insert/put into’ {212}**gray***gray* ‘scatter/sow (seeds)/disperse’ {211}**gray* ‘star’ {212}**gres***b-gres* ‘old’ {437}**grəy***ʔ-grəy*¹ (PLB) ‘star’ {23}**grəy* ‘copper’ {189}**grəy*² (PLB) ‘copper’ {19}**s-grəy*¹ (PLB) ‘melt’ {190}**s/m-grəy* ‘melt’ {189}**gril**Cf. *s-ril* \approx **s-gril*

‘move/roll’

grim*grim* ‘hasten’ {305}**s-grim* ‘catch/hold fast’ {305}**grim* \approx **krim***grim* \approx **krim* ‘meet’ {497}*Cf. *grum* \approx **krum* ‘meet’**grip***ʔ-grip*^L (PLB) ‘bug/ant/insect (lac)/cochineal’ {316, 376}*Cf. *s-krep* ‘bug/ant/insect (lac)/cochineal’**grok***grok* ‘ravine/gulf’ {378}*Cf. *k/grok* \approx **k/grak* ‘fear’**grol***grol* ‘finish/loose/relax’ {423}**grol* ‘overbearing/exploitative’ {421}**gro:l***gro:l* ‘wash/clean’ {421}**groy***groy* ‘crow (v.)/howl’ {228}**grum***s-grum* ‘contracted/stunted/dwarfish’ {272}**grum* \approx **krum***grum* \approx **krum* ‘meet’ {497}*Cf. *grim* \approx **krim* ‘meet’**grun***grun* ‘horn’ {145}*Cf. *g-run* ‘horn’**grup* \approx **drup***grup* \approx **ʔ-grup* \approx **ʔ-drup* ‘sew’ {141}**grwa***grwa* ‘birch’ {175}**grwa* ‘taro/potato’ {173}**s-grwa* ‘feather’ {172}**grwak***grwak* ‘friend/assist’ {327}**grwas***grwas* ‘speak/word’ {437}**grwat***grwat* ‘belly/stomach/intestines’ {334}**grwat* ‘travel/go through’ {335}**grwəy***ʔ-grwəy*² (PLB) ‘sweat’ {82, 195}*Cf. *s-krul* \approx **s-ŋrul* ‘sweat’**grwil* \approx **krwil***grwil* \approx **krwil* ‘fall (as leaves)/cause to fall’ {410}**gryum***gryum* ‘salt’ {308}**gu***m-gu*^{1/3} (PLB) ‘prepare/practice/rehearse’ {180}**gu* \approx **ku***gu* \approx **ku* ‘owl’ {199}**gu(:)k* \approx **ku(:)k***gu(:)k* \approx **m-ku(:)k*

- ‘crooked/bent/knee/angle’ {124, 141, 357, 358, 362}
**guk^L* (PLB) ‘crooked/bent/knee/angle’ {315}
- *gu:l*
**gu:l* ‘bulge/bend’ {418}
- *gum* \approx **kum*
**gum* \approx **kum* ‘die/kill’ {308}
- *guŋ*
**guŋ* ‘body’ {309}
**guŋ¹* (PLB) ‘body’ {19}
- *gu:ŋ*
**r-gu:ŋ* ‘edge/shin’ {127, 287}
- *guŋ* \approx **kuŋ*
**guŋ* \approx **kuŋ* ‘hollow/empty’ {285, 310}
**guŋ²* \approx **kuŋ²* (PLB) ‘hollow/empty’ {285}
- *gup* \approx **ɭup*
*Cf. *ɭup* \approx **gup* ‘hatch/cover’
- *gwa*
**gwa* ‘fox’ {167, 173}
- *gwa* \approx **kwa*
**gwa-n* \approx **kwa-n* ‘net (casting)’ {177, 258, 280, 450}
**gwa-n* \approx **kwa-n* ‘wear/put on/clothe’ {168, 172, 177, 259, 333, 334, 452}
**gwa²* (PLB) ‘wear’ {25}
*Cf. *kwa* \approx **gwa* \approx **k/gwa:y* ‘bee (dammer)’
*Cf. *s-g-w(y)a-n/t* ‘wear/clothe’
- *gwap* \approx **krap*
**m-gwap^L* \approx **C-krap^L* (PLB) ‘munch/bite down on’ {338}
- *g^wəy*
**ɭ-g^wəy²* (PLB) ‘comb’ {25}
*Cf. *k^wi* ‘comb’
- *gwi(y)*
**m-gwi(y)* ‘elephant’ {200}
- *g^wya*
**m-g^wya^{1/2}* (PLB) ‘trumpet’ {26}
**m-g^wya²* (PLB) ‘chew’ {26, 85}
*Cf. *g-wa-t* ‘bite/chew’
- *gya*
**b-r-gya* ‘hundred’ {129, 162, 165, 168, 251}
- *gyan* \approx **kyan*
**ɭ-gyan¹* \approx **ɭ-kyan¹* (PLB) ‘filter/strain’ {248, 260}
- *gyaŋ*
**ɭ-gyaŋ¹* (PLB) ‘spin’ {266}
**m/ɭ-gyaŋ^{1/3}* (PLB) ‘practice/train’ {265}
- *gyap*
**gyap* ‘narrow/crowded’ {338, 342}
**gyap^L* (PLB) ‘narrow’ {315}
- *gyar* \approx **hyar*
**gyar* \approx **hyar* ‘run/ride/go by vehicle’ {58, 65, 391}
- *gyat*
**gyat* ‘hero’ {335}
- *gyat* \approx **ryat*
**b-r-gyat* \approx **b-g-ryat* ‘eight’ {149, 151, 331, 334, 352, 506}
*Cf. *ɭ-rit^L* (PLB) ‘eight’
- *gyəy*
**gyəy²* (PLB) ‘parrot’ {189}
- *gyi* \approx **dzyi*
**gyi* \approx **dzyi* ‘ride (horse)’ {188, 200}
- *gyik*
**ɭ-gyik* ‘little bit’ {346}
*Cf. *t(y)ak* \approx **t(y)ik* ‘one/only’
- *gyiŋ*
**ɭ-gyiŋ²* (PLB) ‘narrow/constricted’ {282}
- *g(y)ip*
**g(y)ip* ‘ten’ {198, 352, 356}
- *g(y)it/k* \approx **k(y)it/k*
**g(y)it/k* \approx **k(y)it/k* ‘tie/bind’ {345, 347, 528, 344}
- *gyoŋ*
**s-gyoŋ* ‘guard/tend grazing animals’ {294}
- *gyuay*
**C-gyuay* ‘comb’ {26}
- *gyuk* \approx **dzyuk*
**gyuk* ‘waist’ {357}
**gyuk^L* \approx **džuk^L* (PLB) ‘waist’ {72, 358}
- *g(y)wal* \approx **k(y)wal*
**g(y)wal* \approx **k(y)wal* ‘slave/servant’ {261, 408, 424}
**gywan¹* (PLB) ‘slave’ {248, 261}

h**ha** ⌘ ***ka**

***ha** ⌘ ***r-ka** ‘earth/ground/
soil’ {57, 127}

***ha(:)k** ⌘ ***kak**

***ha(:)k** ⌘ ***kak** ‘gag/
choke’ {57, 325}

***hal**

***hal** ‘snore’ {406, 424}

***haŋ**

***haŋ**² (PLB) ‘cooked rice/
food to eat with rice’
{264}

Cf. ***h(y)an** ‘curry/vegeta-
ble dish’

***ha:ŋ**

***ha:ŋ** ‘black’ {268}

***hap**

***hap** ‘bite/snap at/mouth-
ful’ {58, 335, 341}

***har**

***har** ‘phlegm’ {391}

***har**

***har** *or* ***ʔar** ‘fowl/chick-
en/quail’ {58, 385, 386,
392, 401, 426}

***hary**

***hary** ‘lie/deceive/dissem-
ble’ {210}

***hary** ‘mango’ {210}

Cf. ***h(w)ary** ‘flurried/
dazed/foolish’

***he:r**

***he:r-s** ‘dry’ {400, 426}

***hew**

***m-hew** ‘spoiled/wasted’
{231}

***hi:l**

Cf. ***ki:l** ⌘ ***hi:l** ‘bind/
twist/roll/angle’

***hir** ⌘ ***hur**

Cf. ***hur** ⌘ ***hir** ‘wash’

***hla**

***hla**³ (PLB) ‘spirit’ {56}

***m-hla** ‘god/soul/beauti-
ful’ {162, 172}

***ho** ⌘ ***hol**

***ho** ⌘ ***hol** ‘fall’ {58, 421,
428}

***hor**

***hor** ‘distribute’ {58, 400}

***hrew**

***hrew** ‘burrow’ {231}

***hu**

***hu** ‘rear (offspring)/raise
(to maturity)/nourish’
{58}

***hu** ⌘ ***kəw**

***hu** ⌘ ***r-kəw** ‘steal’ {57}

***hul** ⌘ ***hil**

***hul** ⌘ ***hil** ‘sweet’ {58,
419, 501}

***hul** ⌘ ***hwa(:)l**

***hul** ⌘ ***hwa(:)l** ‘heat up/
burn’ {58, 429, 514}

***hur** ⌘ ***hir**

***hur** ⌘ ***hir** ‘wash’ {397,
501}

***hur** ⌘ ***hir** ⌘ ***hyar** ⌘

***hwar**

***hur** ⌘ ***hir** ⌘ ***hyar** ⌘
***hwar** ‘sweat’ {399, 429,
514}

***hus**

***hus** ‘wet/dew’ {435}

***hwa**

***hwa-t** ‘light/brightness/
shine’ {334, 429, 444,
463}

***hwal**

***s-hwal** ‘joint/wrist’ {407,
423}

***hwa(:)l**

Cf. ***hul** ⌘ ***hwa(:)l** ‘heat
up/burn’

***hwal** ⌘ ***hwar**

***hwal** ⌘ ***hwar** ‘fire/
shine’ {409}

***hwam**

***hwam** ‘burn/shine’ {429}

Cf. ***s-wam** *or* ***hwam**
‘dare’

***hwan** ⌘ ***hwat**

***hwan/t** ‘shine/bright/
light’ {429}

***hwaŋ**

***hwaŋ** ‘come/enter’ {269}

***hwaŋ** ‘encircle/fence’
{269}

***hwaŋ** ‘shine/bright/yel-
low’ {430}

***hwar**

***hwar** ‘hawk’ {393}

Cf. ***hur** ⌘ ***hir** ⌘ ***hyar**
⌘ ***hwar** ‘sweat’

***hwa:r**

***hwa:r** ‘fire/burn/shine/
white’ {385, 402, 426}

Cf. ***pwa:r**

***h^war**

Cf. ***b^war** ⌘ ***h^war** ‘throw
(away)/divorce’

***hwa:r** ⌘ ***yar**

***hwa:r** ⌘ ***yar** ‘white/yel-
low/bright/shine’ {429}

***hwa:y**

***hwa:y** ‘wither/fade’
{214}

***h(w)a:y**

***h(w)a:y** ‘flurried/dazed/
foolish’ {214}

***hway** \approx ***kwa(:)y**

***hway** \approx ***kwa(:)y** ‘hide
(v.)/conceal/shun’ {57,
213}

***hwel**

***hwel** ‘mix/stir’ {420}

***hya**

***hya** ‘swidden/field
(mountain)’ {171}
***hya¹** (PLB) ‘swidden/
field (mountain)’ {56}

***hyak**

***hyak** ‘back’ {65}
***hyak** ‘scratch’ {65, 323}

***hyal**

***hyal** ‘take/keep’ {65,
406}

***hyam**

***hyam** ‘mat’ {65}
***hyam** ‘salty’ {299}

***h(y)an**

***h(y)an** ‘curry/vegetable
dish’ {65}
Cf. ***han²** (PLB) ‘cooked
rice/food to eat with rice’

***hyar**

Cf. ***gyar** \approx ***hyar** ‘run/
ride/go by vehicle’

***hyar** \approx ***hwar**

Cf. ***hur** \approx ***hir** \approx ***hyar**
 \approx ***hwar** ‘sweat’

***hyen**

***hyen** ‘hear/listen/look/

see’ {65}

***hyop** \approx ***hyom**

***hyop** \approx ***hyom** ‘jump’
{65}

***hyu** \approx ***huy**

***hyu** \approx ***huy** ‘whistle’
{65}

***hywəy**

***s-hywəy** ‘blood’ {66, 85,
102, 194, 201, 230, 464}

k**ka**

***b-ka-n** ‘bitter/liver’ {20,
24, 162, 164, 167, 170,
172, 176, 451}

***ka** ‘span/divaricate’ {24}

***ka** ‘word/speech/lan-
guage’ {174}

***ka-n** ‘crow (n.)’ {447}

***ka-y** ‘which/like/deictic’
{488}

***ka¹** (PLB) ‘all’ {163}

***ka¹** (PLB) ‘grain of rice’
{163}

***ka²** (PLB) ‘back/loins’
{428}

***ka³** (PLB) ‘sow (seeds)’
{163}

***m-ka** ‘open/opening/
mouth/door’ {21, 125,
170, 173}

***m-ka-n** ‘heavens/sky/
sun’ {177, 450}

***m/s-ka-y** ‘go/stride’
{484}

***s-ka** \approx ***m-ka-y** ‘jaw/
chin’ {24, 170, 486}

Cf. ***ha** \approx ***r-ka** ‘earth/
ground/soil’

***kak**

***kak** ‘expensive/at its
peak’ {317, 328}

***kak^H** (PLB) ‘village’
{319}

***m-kak** (PLB) ‘crawl /
creep’ {120}

Cf. ***ha(:)k** \approx ***kak** ‘gag/
choke’

***ka:k**

***ka:k** ‘phlegm’ {325}

***s-ka:k** ‘fork/branch’
{325}

Cf. ***ʔ-gak^L** (PLB)
‘branch’

***kal**

***kal** ‘congeal’ {404, 405}

Cf. ***kar** \approx ***gar** ‘solid/
frozen’

Cf. ***ka²** (PLB) ‘back/
loins’

Cf. ***s-ga:l** \approx ***m-kal**
‘kidney/small of back/
loins’

***ka:l**

***ka:l** ‘between/interval’
{422}

Cf. ***ʔ-gla²** (PLB) ‘be-
tween’

***kam**

Cf. ***ka:p** \approx ***kam** ‘draw
water/scoop water/con-
cave’

***ka(:)m**

***r-ka(:)m** ‘edge/bank/
precipice/lip/mouth’ {127,
251, 298}

***kan**

***kan** ‘dry up’ {258, 259}

Cf. ***m-ka-n** ‘heavens/
sky/sun’

***kaŋ**

***kaŋ** ‘father/grandfather’
{302}

***kaŋ** ‘which/like/deictic’
{488}

***kaŋ**¹ (PLB) ‘hill/high
ground’ {265}

***kaŋ**² (PLB) ‘spread/
stretch out’ {266}

***m-kaŋ** ‘spider’ {266}

Cf. ***s-gaŋ** ‘hill/ridge/
mountain’

***ka(:)ŋ**

***ka(:)ŋ** ‘roast/toast/burn/be
dry’ {268}

***kaŋ** \approx ***keŋ**

***r-kaŋ** \approx ***keŋ** ‘leg/foot/
stem/stalk’ {283, 293,
311}

***kaŋ** \approx ***waŋ**

***kaŋ** \approx ***waŋ** ‘spider/spin’
{57}

Cf. ***p^waŋ** ‘spin/spindle’

***kap**

***kap** ‘fork/crotch/groin’
{336, 340, 341}

***kap** ‘needle’ {198, 251,
342}

Cf. ***ʔap** \approx ***ga:p** ‘needle’

Cf. ***k-rap** \approx ***k-ram**
‘needle’

***ka:p** \approx ***kam**

***ka:p** \approx ***kam** ‘draw wa-
ter/scoop water/concave’
{341, 517}

***kar**

***kar** ‘lead (metal)/bronze’
{390}

***s-kar** ‘star’ {386, 387,
391}

***ka:r** \approx ***ga:r**

***ka:r** \approx ***ga:r** ‘solid/fro-
zen’ {392, 426}

Cf. ***kal** ‘congeal’

***kaw**

***kaw** ‘basket’ {225}

***ka:w**

***ka:w** ‘grasshopper’ {226}

***ka:y**

***ka:y** ‘pull/drag/lead (v.)’
{210}

***kay** \approx ***gay**

***kay** \approx ***gay** ‘plant (v.)’
{209}

***ke**

***s-ke-k** ‘neck/
neck-shaped’ {204, 481}

***keŋ**

Cf. ***kaŋ** \approx ***keŋ** ‘leg/
foot/stem/stalk’

***ket**

***C-ket^L** (PLB) ‘break off a
piece/notch/chip’ {315,
375}

***kew**

***d-kew** ‘scratch’ {231}

***key** \approx ***kəy**

***d-key** \approx ***d-kəy** ‘tiger’
{139, 141, 217, 219, 510}

***kəw**

***d/s-kəw** ‘nine’ {139, 140,
149, 178, 184, 199}

***kəw-n/t** ‘smoke’ {178,
184, 199, 451, 454}

***kəw²** (PLB) ‘smoke’
{182}

***s-kəw** ‘body/corpse’
{198}

Cf. ***gəw²** (PLB) ‘nine’

***kəw** \approx ***kun** \approx ***kut**

***kəw²** (PLB) ‘steal’ {182}

***r-kəw** \approx ***r-kun** \approx
***r-kut** ‘steal/thief’ {127,
129, 178, 184, 198, 227,
441, 442, 454, 515}

***kəw-n**

Cf. ***gəw-n** \approx ***kəw-n**
‘elder brother/senior male
relative’

***kəy**

***d-kəy** ‘deer (barking)’
{139, 189}

***s-kəy** ‘borrow/lend’ {191,
443}

Cf. ***key** \approx ***kəy** ‘tiger’

***ki:l** \approx ***hi:l**

***hi:l** ‘bind/twist/roll/angle’
{57}

***s-ki:l** ‘bind/twist/roll/an-
gle’ {412, 413, 426}

***kla** \approx ***gla**

***kla-k/y/t** \approx ***gla-k/y/t**
‘fall’ {34, 70, 165, 209,
231, 374, 462, 480, 483}

***klak** \approx ***glak**

***ʔ-klak^H** \approx ***glak^H** (PLB)
‘graze (forage)’ {63, 317}

***glak** ‘cooked’ {70}

***klak** ‘cook/boil (v.)’ {70}

***s-glak** ‘cook/boil (v.)’
{63, 128, 317}

***klaŋ**

Cf. ***glaŋ** \approx ***klaŋ** ‘word/
language/speech/sound’

***klaw**

***klaw** ‘dig out/weed (v.)’
{23, 225}

***kləy**

***kləy** ‘excrement’ {21,

189, 201}

klin** ≈ ***kl(y)aŋ**r-klin** ≈ ***r-kl(y)aŋ**

‘marrow/brain’ {128, 282, 283, 495, 507}

Cf. ***ʔ-glaŋ¹** (PLB) ‘marrow/brain’***klum*****s-klum** ‘sweet’ {275}***klu(:)ŋ** ≈ ***k(l)uk*****klu(:)ŋ** ≈ ***k(l)uk** ‘valley/river’ {287, 524}***klup*****klup** ‘cover/wrap’ {369}***kl(y)aŋ***Cf.* ***r-klin** ≈ ***r-kl(y)aŋ** ‘marrow/brain’***klyoŋ*****klyoŋ** ‘stream/river/valley’ {294}***ko** ≈ ***go*****r-ko-t** ≈ ***r-go-t** ‘dig out/scoop up’ {127, 129, 380, 461, 463}***kok** ≈ ***kwa(:)k*****ʔ-guk^L** (PLB) ‘outer covering/bark (n.)/rind/skin’ {378}***kok** ‘outer covering/bark (n.)/rind/skin’ {378, 514}***r-kwa(:)k** ‘outer covering’ {328, 514}***kor*****kor** ‘horse’ {385, 400}***ko:r*****ko:r** ‘peel/husk’ {385, 401, 426}***kor** ≈ ***kwar*****kor** ≈ ***kwar** ‘hole/pit/

valley/cave’ {395, 401}

koy**koy** ‘bend/curved’ {228}***kra*****s-kra** ‘hair (head)’ {102}***krak*****krak^H** (PLB) ‘crossbow’ {61, 146}***m-krak** ‘scratch/rake (v.)’ {318}*Cf.* ***k/grok** ≈ ***k/grak** ‘fear’***kram*****kram** ‘fence/garden’ {22, 299}***kram¹** (PLB) ‘fence/garden’ {253}***kraŋ*****kraŋ** ‘mosquito/firefly’ {262}*Cf.* ***graŋ** ≈ ***kraŋ** ‘measure/count’*Cf.* ***graŋ** ≈ ***kraŋ** ‘strong/firm/tight/distended’***krap*****krap** ‘shell/shield’ {342}***krap** ‘weep’ {137, 336, 339, 342}*Cf.* ***m-gwap^L** ≈***C-krap^L** (PLB) ‘munch/bite down on’***krep*****s-krep** ‘bug/ant/insect (lac)/cochineal’ {376}*Cf.* ***ʔ-grip^L** (PLB) ‘bug/ant/lac insect/cochineal’***kres*****b-kres** ‘hungry/famine’ {437}***kret*****m-kret** ‘scratch/scrape’ {375}***krəw*****krəw** ‘thread/string/plait’ {199}***krəw-k** ‘horn’ {23, 75, 184, 480}***krəw-t** ‘wash’ {461}***krəw¹** (PLB) ‘horn’ {72, 182}***k(r)əw*****m-k(r)əw** ‘dove’ {125, 134, 199}***m-krəw²** (PLB) ‘dove’ {16}***krəy*****krəy** ≈ ***m-kri(y)-t-s** ‘gall/bile/sour’ {22, 118, 189, 193, 436, 456}***krəy** ‘foot/footstool’ {22, 71, 189, 200, 201}***krəy** ‘moon/moonlight’ {189}***kri*****kri-t** ‘fear’ {462}***krim*****krim** ‘custom/prohibition’ {305}***krim** ‘threaten/terrify’ {271}*Cf.* ***grim** ≈ ***krim** ‘meet’***krin*****krin²** (PLB) ‘bowl/dish/cup’ {278}***kri:n***Cf.* ***kyi:n** ≈ ***kri:n** ‘time/occasion’***kriŋ*****kriŋ** ‘thread/string’ {23}

**kriŋ*¹ (PLB) ‘thread/string’ {282}
**kri:t*
**kri:t* ‘grind’ {69, 350}
**kri(y)*
**kri(y)* ‘fear’ {193}
*Cf. *krəy* \approx
**m-kri(y)-t-s* ‘gall/bile/sour’
**krok* \approx **grok* \approx **k/grak*
**k/grok* \approx **k/grak* ‘fear/frighten’ {327, 377, 513}
**kroy*
**kroy* ‘borrow/debt’ {229}
**kroy* ‘shellfish’ {228}
**kroy* ‘surround’ {229}
**k(r)u* \approx **g(r)u*
**k(r)u-t* \approx **g(r)u-t*
‘hand’ {365}
**kruk*
**d-kruk* ‘six’ {23, 71}
**kruk* ‘pen/corral’ {357}
**kruk* ‘rouse/awaken/disturb’ {363}
**krul* \approx **ŋrul*
**s-krul* \approx **s-ŋrul* ‘sweat’ {83, 102, 129, 414}
*Cf. *ʔ-grwəy*² (PLB) ‘sweat’
**krum*
*Cf. *grum* \approx **krum*
‘meet’
**kruŋ*
**kruŋ* ‘born/give birth/alive/green’ {285, 288}
**kru:ŋ*
**kru:ŋ* ‘cage’ {287}
**krwap*
**krwap* ‘rustle’ {82, 338}

**krwəy*
**ʔ-grwəy*² (PLB) ‘sweat’ {82}
**krwəy* ‘son-in-law/daughter-in-law’ {22, 69, 82, 194, 200}
*Cf. *krul* \approx **ŋrul* ‘sweat’
**krwil*
*Cf. *grwil* \approx **krwil* ‘fall (as leaves)/cause to fall’
**krwi(y)*
**krwi(y)* ‘sew’ {82}
**ku*
*Cf. *gu* \approx **ku* ‘owl’
**kuk*
**kuk* ‘basket/pouch’ {356, 359, 361}
**kuk* ‘return/year’ {357, 358}
**kuk* ‘wear on head’ {357}
**m-kuk* ‘collide/butt against’ {357}
*Cf. *ʔuk* \approx **kuk* ‘crooked/bent/knee/angle/return/back’
**ku:k*
**ku:k* ‘shear/strip/pare’ {359, 361}
**ku:k* ‘weep/wail’ {363}
*Cf. *gu(:)k* \approx **m-ku(:)k*
‘crooked/bent/knee/angle’
**kul*
**m-kul* ‘twenty/all’ {24, 119, 384, 385, 388, 414, 416, 425}
**s-kul* ‘instruct/explain/admonish’ {423}
*Cf. *s-gal* ‘load/burden’
**kum*
*Cf. *gum* \approx **kum* ‘die/kill’

**ku(:)m*
**ku(:)m* ‘arched/vaulted/convex/concave’ {276}
**kum* \approx **kim*
**m-kum* \approx **m-kim*
‘block/pillow’ {125, 147, 198, 272, 275, 308, 496, 503}
**m-kum*² (PLB) ‘block/pillow’ {124, 249}
*Cf. *ʔum* \approx **kum* ‘block/pillow’
**kun*
**kun* ‘all’ {278}
*Cf. *m-kul* ‘twenty/all’
*Cf. *r-kəw* \approx **r-kun* \approx
**r-kut* ‘steal/thief’
*Cf. *r-kəw-n/t* ‘steal/thief’
**kuŋ*
*Cf. *guŋ* \approx **kuŋ* ‘hollow/hole/empty’
**ku:ŋ*
**ku:ŋ* ‘tree/branch/stem’ {287, 310}
**kur* \approx **ʔur*
**kur* \approx **ʔur* ‘hand’ {396}
**kut*
*Cf. *r-kəw* \approx **r-kun* \approx
**r-kut* ‘steal/thief’
**ku(:)t*
**ku(:)t* ‘scrape/carve/scratch’ {364, 496}
**ku(w)*
**ku(w)* ‘mouth’ {198}
**kwa*
**kwa* ‘hoof’ {170}
**s-kwa* ‘nine’ {24}
*Cf. *d/s-kəw* ‘nine’
*Cf. *gwa-n* \approx **kwa-n*

- ‘net (casting)’
**kwa* \approx **gwa* \approx **k/gwa:y*
**kwa* \approx **gwa* \approx **k/gwa:y* ‘bee (dammer)’
 {23, 213, 217, 486}
**kwak*
**kwak* ‘bowl’ {321}
**kwak^H* (PLB) ‘bowl’
 {321}
**kwa(:)k*
*Cf. *kok* \approx **kwa(:)k*
 ‘outer covering/bark (n.)/
 rind/skin’
**kwar*
*Cf. *kor* \approx **kwar* ‘hole/
 pit/valley/cave’
**kwa(:)y*
*Cf. *hway* \approx **kwa(:)y*
 ‘hide (v.)/conceal/shun’
**k(w)a:y*
**k(w)a:y* ‘hang’ {214}
**k^wəy*
**d-k^wəy-n* ‘dog’ {20, 23,
 24, 62, 96, 141, 196, 201,
 448}
**k^wəy* ‘nest’ {196}
**k^wəy¹* (PLB) ‘nest’ {25}
**k^wəy²* (PLB) ‘dog’ {25,
 62}
**k^wi*
**ʔ-g^wəy²* \approx **ʔ-g^wi²* (PLB)
 ‘comb’ {196, 477}
**k^wi-s* ‘comb’ {434}
**kyak*
**ʔ-kyak^H* (PLB) ‘rope/
 cord/navel’ {318, 319}
**kyam*
**kyam* ‘snow/ice/cold’
 {252, 532}
- *kyan*
*Cf. *ʔ-gyan¹* \approx **ʔ-kyan¹*
 (PLB) ‘filter/strain’
**k(y)an*
**k(y)an¹* (PLB) ‘object to’
 {260}
**kyaŋ*
**kyaŋ* ‘ginger’ {302}
**kyaŋ²* (PLB) ‘intimate/
 friend’ {265}
**r-kyan* ‘single’ {264}
**kyap*
**kyap^H* (PLB) ‘stick into/
 insert’ {337}
**k(y)at*
**k(y)at* ‘run/dance/kick’
 {519}
**k(y)a:y* \approx **k(y)an*
**d-k(y)a:y* \approx **d-k(y)an*
 ‘crab’ {139, 210, 212, 217,
 220, 262, 515}
**kye:l* \approx **kyi:l*
**kye:l* \approx **kyi:l* ‘goat’
 {388, 420, 426}
**kyen*
**m-kyen* ‘know’ {291,
 311}
**kyeŋ*
**kyeŋ* ‘red/blushing’ {292,
 311}
**kyəw*
**kyəw* ‘sweet’ {185}
**kyəw¹* (PLB) ‘sweet’
 {182}
**kyi*
**kyi^{1/2}* (PLB) ‘lift up/raise’
 {188}
**kyi:l*
*Cf. *kye:l* \approx **kyi:l* ‘goat’
- *kyim* \approx **kyum*
*Cf. *yim* \approx **yum* ‘house’
**kyi:n*
**kyi:n* ‘weigh’ {277}
**kyi:n¹* (PLB) ‘weigh’ {27,
 249}
**kyi:n* \approx **kri:n*
**kyi:n* \approx **kri:n* ‘time/oc-
 casion’ {277}
**kyi:n¹* \approx **kri:n¹* (PLB)
 ‘time’ {249}
**kyit*
**kyit* ‘burn/scorch’ {349}
**m-kyit* ‘move’ {349}
**k(y)it/k*
*Cf. *g(y)it/k* \approx **k(y)it/k*
 ‘tie/bind’
**kyu:r* \approx **kywa:r*
**s-kyu:r* \approx **s-kwyar*
 ‘sour/be acid’ {85, 384,
 398, 402, 426, 449, 475,
 514}
*Cf. *sur* \approx **swar*
**kywal*
**kywal* ‘jackal/wolf/dhole/
 wild dog’ {261, 407, 423,
 449}
**wan¹* (PLB) ‘jackal/wolf/
 dhole/wild dog’ {261}
*Cf. *g(y)wal* \approx
**k(y)wal* ‘slave/servant’
**kywan*
**kywan^{1/2/3}* (PLB) ‘sharp-
 en’ {260}
**kywəy*
**kywəy* ‘yam’ {66, 195}

1**la**

- *ʔ-la² (PLB) ‘trousers’ {56, 112, 163}
 *b-la ‘cotton’ {130, 251}
 *g-la ‘pay/give for’ {173}
 *g/b/m-la-y ‘arrow’ {50, 80, 133, 145, 165, 486}
 *k-la ‘tiger’ {70, 173, 393}
 *k-la² (PLB) ‘tiger’ {138}
 *la ‘salt’ {173}
 *la-y ‘come/arrive’ {165, 172, 220, 231, 484}
 *la-y ‘question particle’ {209, 231, 488}
 *la² (PLB) ‘question particle’ {163}
 *s-la ‘leaf/tea’ {48}
 *s-la ‘trousers’ {29, 165, 169, 172}
 *s/ʔ-la³ (PLB) ‘moon/month’ {39, 164}
 *s/ʔ-la³ (PLB) ‘soul/spirit’ {39, 164}
 *s/g-la ‘moon/month’ {34, 52, 134, 162, 165, 168, 172}
Cf. *m-da ‘arrow’
Cf. *m-hla ‘god/soul/beautiful’

***lak**

- *ʔ-lak^L (PLB) ‘youth (youngster)’ {53}
 *g-lak ‘hand’ {319}
Cf. *g-lan̄ ≈ *g-lak ‘eagle/vulture/falcon/bird of prey’
Cf. *g-l(y)ak ‘hand/arm’

***lam**

- *lam ‘road’ {47, 48, 250}
 *s-lam ‘womb/placenta’

{250}

***la(:)m**

- *la(:)m ‘fathom’ {48, 251, 298}
 *s-lam^{1/2} (PLB) ‘fathom’ {249, 253, 254}

***lan̄**

- *ʔ-lan̄¹ (PLB) ‘wait’ {112, 266}
 *lan̄ ‘bark (as dog)’ {495}
 *lan̄ ‘lift/raise’ {303}
 *lan̄¹ (PLB) ‘lightweight’ {265}
 *lan̄¹ (PLB) ‘river/valley’ {266}

***lan̄ ≈ *lak**

- *g-lan̄ ≈ *g-lak ‘eagle/vulture/falcon/bird of prey’ {263, 393, 521}

***lap**

- *ʔ-lap^L (PLB) ‘dry in sun’ {112, 337}
 *lap ‘leaf’ {336, 342}
 *lap^L (PLB) ‘enter’ {337}
 *s-lap^H (PLB) ‘split apart/split open’ {337}

***la:p**

- *b-la:p ‘forget’ {132, 340}

***lay**

- *lay ‘leaf/paper’ {209}

***la:y**

- *la:y ‘dig up’ {210}

***lay ≈ *ley**

- *g/m/s-lay ≈ *r-ley ‘change/exchange/buy/barter’ {49, 208, 216, 217, 511}
 *m/s-lay ≈ *s-ley ‘tongue’ {48, 102, 119, 124, 141, 208, 215, 217,

487, 511}

- *s-lay ≈ *ley ‘pass/exceed’ {208, 216, 511}

- *s-lay ≈ *s-ləy ‘bridge/ladder’ {216, 220, 511}
Cf. *s-l(y)a ‘tongue’

***la:y ≈ *tay**

- *la:y ≈ *s-tay ‘navel/middle/center’ {52, 102, 208, 210, 217}

***lep**

- *lep ‘butterfly’ {377}
 *s-lep ‘slice/pare off’ {376}

***lep ≈ *lyap**

- *lep ≈ *lyap ‘thin/flat/flat object’ {51, 339, 377}

***ley**

- *m-ley ≈ *m-li ‘penis’ {47, 49, 153, 219, 509}
Cf. *lay ≈ *ley
Cf. *m/s-lay ≈ *s-ley ‘tongue’

***ley ≈ *ləy**

- *m-ley ≈ *m-ləy ‘earth/ground/soil/mud/country’ {48, 71, 81, 191, 201, 218, 464, 509}

***ley/η ≈ *rey/η**

- *s-ley/η ≈ *s-rey/η ‘squirrel/weasel’ {77, 292, 296, 311, 512}

***ləy**

- *b-ləy ‘four’ {48, 50, 69, 130, 147, 149, 153, 192, 200}
 *b-ləy ‘run’ {189}
 *b-ləy² (PLB) ‘run’ {213}
 *b/ʔ-ləy² (PLB) ‘four’ {56, 477}
 *b/m-ləy ‘grandchild/

- nephew' {71, 80, 133, 192, 201, 464}
**d/s-ləy* 'bow/slingshot' {48, 50, 140, 192}
**g-ləy* 'wind (n.)' {50, 134, 192, 194, 247}
**m-ləy* 'boat' {192}
**s-ləy* 'flea' {48, 50, 69, 192}
**s/?-ləy*¹ (PLB) 'wind (n.)' {39}
*Cf. *m-le-y* \approx **m-ləy* 'earth/ground/soil/mud/country'
- *ləy* \approx **rəy*
**s-ləy-t* \approx **s-rəy-t* 'heavy' {49, 50, 192, 201, 455, 471}
- *li*
**g-li* 'armpit/tickle' {186}
*Cf. *m-le-y* \approx **m-li* 'penis'
- *lik*
**lik* 'fear' {527}
**r-lik* 'penis/testicles' {344, 374}
*Cf. *liŋ*² \approx **lik*^L (PLB) 'python'
- *lim*
*Cf. *s-lum* \approx **s-lim* 'warm/make warm'
- *liŋ*
**b-liŋ* 'forest/field' {130, 280, 282, 494}
**m-liŋ* 'neck' {280, 296, 307}
**m-liŋ*¹ (PLB) 'neck' {39}
- *liŋ* \approx **lik*
**liŋ*² \approx **lik*^L (PLB) 'python' {281}
- *lip*
**lip* 'conceal/hide (v.) / bury' {495}
**lip*^L (PLB) 'roll (n.) / curled object' {353}
**s-lip* 'scale (of fish or reptile)' {353}
- *lip* \approx **lup*
**lip* \approx **lup* 'sink into / dive' {354, 370}
- *lirt*
**m-lirt* 'horse-leech' {134, 350, 352, 534}
- *lon*
**m-lon* 'boat' {294}
**s-lon*¹ (PLB) 'loris' {285}
- *low*
**low* 'field' {48, 226}
**low* 'long' {224}
- *lu*
**?-lu*³ (PLB) 'fry' {112, 180}
- *luk*
**luk* 'custom/manner' {363}
**luk* 'enough' {357}
**luk* 'sheep' {363}
*Cf. *r-luŋ* \approx **k-luk* 'stone'
- *luk* \approx **luŋ*
**s-luk* \approx **s-luŋ* 'maggot' {522}
- *lum* \approx **lim*
**s-lum* \approx **lim* 'warm / make warm' {272}
**s-lum* \approx **s-lim* 'warm / make warm' {272, 275, 496}
- *luŋ*
**m-luŋ* 'mind/heart/liver' {141}
- *luŋ* \approx **luk*
**r-luŋ* \approx **k-luk* 'stone' {47, 50, 70, 127, 128, 288, 523}
**s-luŋ* \approx **s-luk* 'maggot' {522}
- *lup*
*Cf. *lip* \approx **lup* 'sink into / dive'
- *lwan*
**lwan* 'bore/pierce' {258, 280, 386}
- *lwap*
**s-lwap* 'practice/learn' {342}
- *lwat*
**g/s-lwat* 'free/release / loose/relax' {70, 82, 84, 136, 332, 334}
**k-lwat*^H (PLB) 'release' {315}
- *lwa(:)y*
**lwa(:)y* 'easy' {213, 485}
- *lwa:y*
**lwa:y* 'buffalo' {213}
- *lway* \approx **rway*
**s/?-lway* \approx **s/?-rway* 'divert/push aside' {214}
- *lwi(y)*
**lwi(y)* 'flow/stream/river' {197}
- *l(y)a*
**s-l(y)a* 'tongue' {50, 165, 171, 215, 487, 511}
*Cf. *m/s-lay* \approx **s-le-y* 'tongue'

lyak**m-lyak** ‘grass’ {80, 482}***m/s-lyak** ‘lick/tongue/eat (of animals)/feed (animals)’ {23, 48, 80, 81, 92, 124, 137, 153, 323, 327, 528}***l(y)ak*****g-lak^L** (PLB) ‘hand/arm’ {53, 319}***g-l(y)ak** ‘hand/arm’ {51, 65, 129, 130, 134, 148, 317, 327}*Cf.* ***d-yak** ‘hand/arm’*Cf.* ***g-yak** ‘armpit/tickle/cubit’***l(y)ak ≈ *l(y)aŋ*****l(y)ak ≈ *l(y)aŋ** ‘good/beautiful’ {327, 51, 327, 521}*Cf.* ***d(y)ak** ‘good/beautiful’***lyam*****s-lyam** ‘tongue/flare’ {299}***lyan*****lyan** ‘wait’ {266}*Cf.* ***laŋ¹** (PLB) ‘wait’***l(y)aŋ***Cf.* ***l(y)ak ≈ *l(y)aŋ** ‘good/beautiful’***lyap*****s-lyap** ‘glitter/flash/lightning’ {338}*Cf.* ***lep ≈ *lyap** ‘thin/flat/flat object’***m*****ma*****ma-n** ‘mother/feminine suffix’ {175, 448}***ma-t** ‘exhausted/spent’ {334}***ma-t** ‘join/bring together’ {461}***ma-y** ‘negative’ {172, 488}***ma-y** ‘rice/paddy’ {231}***ma-y** ‘what’ {488}***ma²** (PLB) ‘not’ {38}***-ma³** (PLB) ‘noun suffix’ {38}***r-ma-t** ‘wound/injured’ {81, 127, 334, 461}***s/?-ma^{1/2}** (PLB) ‘teach’ {38, 113, 163, 241}***ma ≈ *mey*****ma-y ≈ *mey** ‘rice/paddy’ {216, 217, 221, 231, 486, 511}***mak*****d-mak** ‘war/soldier’ {99, 318}***mak^L** (PLB) ‘soldier’ {35}***s-mak^H** (PLB) ‘dream’ {37, 117}***ma:k*****?-mak^L** (PLB) ‘son-in-law’ {37, 474}***s-ma:k** ‘son-in-law’ {233, 325}***man*****s-man** ‘medicine’ {37}***maŋ*****maŋ** ‘big/elder (brother or uncle)’ {264, 302}***s-maŋ** ‘corpse’ {265}***maŋ ≈ *mak*****r/s-maŋ ≈ *mak** ‘dream’ {268, 302, 310, 325, 521}***s-mak^H** (PLB) ‘dream’ {37, 117}***s-maŋ ≈ *s-mak** ‘black/ink/deep’ {317, 522}*Cf.* ***s-nak** ‘black/ink/deep’***ma:y*****ma:y** ‘good/well’ {132, 207, 210}***ma:y** ‘pumpkin’ {210}***s-ma:y** ‘face’ {210, 537}***may ≈ *mey ≈ *mi*****r-may** ‘tail’ {81, 106, 127, 208, 216, 217, 221, 511}***r-mey** ‘tail’ {216, 511}***r-mi** ‘tail’ {216}***mel*****s-mel** ‘face’ {422, 537}***men*****r-men** ‘mole (blemish)/wen’ {81, 290, 296}***mey*****mey** ‘fire’ {141, 205, 206, 217}***s/?-mey²** (PLB) ‘fire’ {39}*Cf.* ***ma ≈ *mey** ‘rice/paddy’*Cf.* ***may ≈ *mey ≈ *mi** ‘tail’***məw*****?-məw¹** (PLB) ‘body hair’ {40, 100}***?-məw¹** (PLB) ‘mushroom’ {183}

- *g/s-məw* ‘mushroom’
 {134, 184}
**məw* ‘eagle/hawk’ {185}
**məw*² (PLB) ‘sky/heav-
 ens’ {183}
**məw*²-ts(y)a¹ (PLB)
 ‘sunlight’ {30}
**r-məw* ‘sky/heavens/
 clouds’ {81, 129, 184}
*Cf. *mul* ⌘ **mil* ⌘
**myal* ‘body hair’
*Cf. *tsa-t* ‘hot/hurt/pain/
 ill’
- *mi*
**mi* ‘female/girl’ {187}
**mi*^{2/3} (PLB) ‘female/girl’
 {38, 187}
**r-mi(y)-n* ‘man/person’
 {81, 88, 118, 201, 449}
**s/ʔ-mi*¹ (PLB) ‘catch/
 overtake’ {37}
*Cf. *may* ⌘ **mey* ⌘ **mi*
 ‘tail’
- *mik* ⌘ **myak*
**s-mik* ⌘ **s-myak* ‘eye’
 {40, 63, 66, 99, 141, 319,
 324, 327, 346, 347, 371,
 496, 506, 527}
**s-myak*^H (PLB) ‘eye’
 {35, 39, 63, 100, 315, 474}
- *mil*
*Cf. *mul* ⌘ **mil* ⌘
**myal* ‘hair (body)’
- *min*
**s-min* ‘ripe/sweet/deli-
 cious’ {277, 296, 495,
 496}
**s/ʔ-min*¹ (PLB) ‘ripe/
 sweet/delicious’ {39}
- *mi:n*
**mi:n* ‘name (v.)/order/
 command’ {306, 307,
 529}
*Cf. *r/s-min* ‘name (n.)’
- *mi:n* ⌘ **mi:t*
**mi:t*^L (PLB) ‘blink/shut
 abruptly’ {315}
**s-mi:n* ⌘ **s-mi:t* ‘extin-
 guish/shut/blink’ {350,
 352, 519}
- *min*
**ʔ-min*^{1/3} (PLB) ‘name’
 {248}
**r/s-min* ‘name/order/
 command’ {81, 127, 280,
 296, 298, 307, 496, 528,
 529}
*Cf. *mi:n* ‘name (v.)’
- *mi:t*
*Cf. *s-mi:n* ⌘ **s-mi:t*
 ‘extinguish/shut/blink’
- *mlyəw*
**mlyəw-k* ‘swallow (v.)’
 {81, 84}
- *mow*
**mow* ‘woman/female rel-
 ative’ {223, 227}
**mow* ‘work/move’ {224}
- *moy*
**moy* ‘beautiful/perfectly’
 {220, 228}
**r-moy* ‘bud/blossoming’
 {81, 228}
- *mra* ⌘ **mya*
**mra* ⌘ **mya* ‘much/
 many’ {80, 169}
**mra*² (PLB) ‘many’ {39,
 164}
- *mrak*
**mrak* ‘cut/tear’ {80}
*Cf. *mruk* ⌘ **mrak*
 ‘grass/weeds’
- *mraŋ*
**ʔ-mraŋ*³ (PLB) ‘high’
 {82, 249}
**mraŋ* ‘see/look toward’
 {37, 80, 267, 303}
**mraŋ*² (PLB) ‘horse’ {82,
 249}
**s-mraŋ*¹ (PLB) ‘show’
 {268}
*Cf. *k-m-raŋ* ⌘ **s-raŋ*
 ‘horse’
- *mriŋ*
**mriŋ* ‘sound/noise’ {307}
- *mruk*
**mruk* ‘monkey’ {80, 145}
*Cf. *myuk* ‘monkey’
- *mruk* ⌘ **mrak*
**mruk* ⌘ **mrak* ‘grass/
 weeds’ {80, 482, 513}
- *mu*
**ʔ-mu*² (PLB) ‘brood/incu-
 bate’ {112, 180}
**ʔ-mu*² (PLB) ‘soot/acrid
 (smoke)’ {112, 180}
- *muk*
**muk* ‘mouth’ {537}
- *mu:k*
**mu:k* ‘cubit/armlength’
 {359, 361}
**mu:k* ‘detritus/dust’ {359,
 513}
**mu:k* ‘weeds’ {360}
*Cf. *mu:ŋ* ⌘ **r/s-mu:k*
 ‘overcast/foggy/dark/sul-
 len’
- *mul*
**mul* ‘silver’ {415}
*Cf. *d-ŋul* ‘silver’
- *mul* ⌘ **mil* ⌘ **myal*
**g-mul* ‘hair (body)’ {496}

**s-mul* \approx **s-mil* \approx
**s-myal* ‘hair (body)/fur/
 feather’ {83, 384, 386,
 388, 414, 419, 423, 496,
 501, 505, 506, 508}

**mu:m*

**mu:m* ‘bud’ {276}

**mun*

**ʔ-mun*^{1/3} (PLB) ‘powder’
 {249, 279}

**s-mun* ‘dark’ {309, 310}

**mu:ŋ* \approx **mu:k*

**mu:ŋ* \approx **r/s-mu:k*
 ‘overcast/foggy/dark/sul-
 len’ {81, 127, 289, 309,
 310, 359, 360, 523}

*Cf. *s-mun* ‘dark’

**mu:r*

**mu:r* ‘mouth/face/gills/
 beak’ {397, 402, 426,
 537}

**mut*

**s-mut* ‘blow’ {99, 364}

**s-mut*^H (PLB) ‘blow’
 {37, 315}

**mwa*

**mwa-t* ‘curse/revile’
 {176, 462}

**mwan* \approx **mwat*

**mwan* \approx **mwat* ‘cut/
 slice/castrate’ {518}

**mwat*

**mwat*^L (PLB) ‘hungry’
 {37, 38}

**mwat*^L (PLB) ‘star/moon’
 {332}

*Cf. *s-ŋ*^w(y)a-t ‘star/
 moon’

*Cf. *mwan* \approx **mwat*
 ‘cut/slice’

**mwat* \approx **ŋ(w)at*

**mwat*^L \approx **ŋ(w)at*^L
 (PLB) ‘hungry’ {332}

**mwəy*

**mwəy* ‘fine/delicate’
 {201}

**r/s-mwəy* ‘sleep’ {195,
 200}

**s-mwəy* ‘spindle/twirl’
 {195}

**mya*

*Cf. *mra* \approx **mya* ‘much/
 many’

**myak*

**s-myak* ‘vanish/get lost’
 {322}

*Cf. *s-mik* \approx **s-myak*
 ‘eye’

**myal*

*Cf. *mul* \approx **mil* \approx
**myal* ‘hair (body)’

**myan*

**ʔ-myan*^{1/3} ‘long (time)’
 {265}

**myel*

**myel* ‘sleepy’ {420, 427}

**m(y)ik*

**s-m(y)ik* ‘bamboo
 sprout’ {344, 348}

**myuk*

**myuk*^L (PLB) ‘monkey’
 {37, 39, 96}

**s-myuk*^H (PLB) ‘mon-
 key’ {39}

**n*

**na*

**ʔ-na*¹ (PLB) ‘good/per-

missible’ {163}

**ʔ-na*² (PLB) ‘ear’ {40,
 100, 112}

**g-na-s* ‘be/live/stay/rest/
 alight/perch’ {433, 442,
 471, 477}

**m-na* ‘mother’ {173}

**na-n* \approx **na-t* ‘ill/suffer/
 hurt/evil spirit’ {38, 162,
 168, 333, 335, 440, 452,
 520}

**na-ŋ* ‘2nd person pro-
 noun’ {2, 177, 264}

**na*¹ (PLB) ‘ear/listen’
 {38}

**na*² (PLB) ‘be/live/stay/
 rest/perch’ {477}

**r/g-na* ‘ear/hear/listen’
 {129, 134, 162, 165, 168,
 172, 176}

**s-na* ‘crossbow’ {172}

*Cf. *naŋ*¹ (PLB) ‘2nd per-
 son pronoun’

*Cf. *s-na* \approx **s-na:r*
 ‘nose’

**na* \approx **na:r*

**s-na* \approx **s-na:r* ‘nose’
 {102, 103, 162, 165, 172,
 386, 426, 427}

**nak*

**ʔ-nak*^L (PLB) ‘deep’ {37,
 38, 39, 40, 100, 112, 117,
 128, 242}

**s-nak* ‘black/ink/deep’
 {317, 326, 522}

**s-nak*^H (PLB) ‘black’
 {39, 117, 242, 319}

*Cf. *s-man* \approx **s-mak*
 ‘black/ink/deep’

**nak* \approx **naŋ*

**s-nak* \approx **s-naŋ* ‘step on’
 {523}

***nak** \approx ***nap**

***m-nak** \approx ***m-nap** ‘early morning’ {129, 326, 530}

***nam**

***ʔ-nam**¹ (PLB) ‘side/rib’ {40, 100, 112}

***m/s-nam** ‘smell’ {103, 119, 250, 251}

***nam**^{1/2/3} (PLB) ‘smell’ {253}

***s-nam** ‘daughter-in-law’ {104, 251}

***s-nam** ‘good’ {104}

***s-nam** ‘sesame’ {250}

***s-nam**¹ (PLB) ‘ear (grain)’ {253, 254}

***s/ʔ-nam**² (PLB) ‘sesame’ {38, 253}

***naŋ**

***naŋ**¹ (PLB) ‘2nd person pronoun’ {2, 37, 249}

***s-naŋ** ‘follow/repeat’ {263, 302}

Cf. ***na-ŋ** ‘2nd person pronoun’

Cf. ***s-nak** \approx ***s-naŋ** ‘step on’

***na:ŋ**

***s-na:ŋ** ‘heavy/thick (of liquids)/viscous’ {302}

***nap**

***ʔ-nap**^L (PLB) ‘snot’ {99, 112}

***s-nap** ‘enter’ {104}

***s-nap** ‘snot’ {37, 102, 336}

Cf. ***m-nak** \approx ***m-nap** ‘early morning’

***na:r**

Cf. ***s-na** \approx ***s-na:r** ‘nose’

***nas**

***s-nas** ‘leaf’ {432}

***na:w**

***na:w** ‘younger sibling’ {225, 226}

***nay**

***nay** ‘languid/leisurely’ {209}

***na:y**

***m-na:y** ‘twist/knead’ {210}

***s-na:y** ‘pus’ {210}

***nay** \approx ***ney**

***ʔ-nay**^{1/2} (PLB) ‘bamboo strip (for tying)’ {216, 510}

***ʔney** ‘bamboo strip (for tying)’ {216, 510}

***na:y** \approx ***ney**

***s-na:y** \approx ***s-ney** ‘near’ {215, 220, 511}

***ne:k**

***ne:k** ‘sticky’ {374}

***nem** \approx ***nyam**

***s-nem** \approx ***s-nyam** ‘low/soft’ {248, 290, 299, 509}

***nes**

***s-nes** ‘lip/beak’ {435}

***ney**

***ney** ‘hair (head)’ {206}

***ney** ‘look/try to’ {206}

***r-ney-t** ‘get/have/obtain’ {206, 217, 460}

Cf. ***s-na:y** \approx ***s-ney** ‘near’

***ney** \approx ***ni(y)**

***ney** \approx ***ni(y)** ‘aunt’ {193, 218, 509}

***nəw**

***nəw** ‘breast/milk’ {198}

***s-nəw**² (PLB) ‘awake(n)/conscious’ {182}

***s-nəw**² (PLB) ‘wither’ {182}

***nəy**

***nəy** ‘sun/day’ {191, 201, 464}

***ni**

***ʔ-nit** \approx ***ši**² (PLB) ‘seven’ {477}

***ʔ-nit** \approx ***ni**² (PLB) ‘two’ {351, 477}

***ʔ-ni**¹ (PLB) ‘red’ {40, 100}

***ʔ-ni**³ (PLB) ‘heart/mind/brain’ {347}

***g/s-ni-s** ‘two’ {135, 149, 241, 351, 352, 434, 477, 481}

***r-ni** ‘red’ {412, 428}

***r/s-ni-l** ‘gums’ {48, 103, 241, 410, 423, 427}

***s-ni-s** ‘seven’ {44, 103, 149, 153, 351, 352, 434, 477}

Cf. ***s-niŋ** \approx ***s-nik** ‘heart/mind/brain’

***nil**

***r/s-nil** ‘gums’ {241, 427}

Cf. ***r/s-ni-l** ‘gums’

***niŋ**

***niŋ** ‘way/method/custom’ {281}

***niŋ** \approx ***nik**

***s-niŋ** \approx ***s-nik** ‘heart/mind/brain’ {39, 102, 103, 283, 347, 480, 521}

***s-ni(:)ŋ** \approx ***s-nik** ‘year’ {282, 283, 475, 524, 528}

Cf. ***ʔ-ni**³ (PLB) ‘heart/

mind/brain'	{417, 426}	<i>*nyap</i>
<i>*nip</i> \approx <i>*nyap</i> \approx <i>*nup</i>	<i>*nuŋ</i> \approx <i>*nuk</i>	<i>Cf. *nip</i> \approx <i>*nyap</i> \approx
<i>*ʔ-nip^L</i> (PLB) 'press'	<i>*s-nuŋ</i> \approx <i>*s-nuk</i> 'back/	<i>*nup</i> 'pinch/squeeze'
{112}	behind/after' {102, 286,	<i>*nye</i>
<i>*s-ni(:)p</i> \approx <i>*r/s-nyap</i> \approx	289, 479, 520}	<i>*nye-s</i> 'punish' {203, 291}
<i>*s-nu(:)p</i> 'pinch/	<i>*nup</i>	<i>*nyen</i>
squeeze/press/oppress/	<i>Cf. *s-ni(:)p</i> \approx <i>*r/</i>	<i>*s-nyen</i> 'hurt/oppress'
sink into/submerge/enter'	<i>s-nyap</i> \approx <i>*s-nu(:)p</i>	{204, 290, 296}
{339, 342, 355, 356, 370,	'pinch/squeeze'	<i>*nyey</i>
499, 505, 507}	<i>*nwa</i>	<i>*nyey</i> 'younger sibling'
<i>*nis</i>	<i>*nwa²</i> (PLB) 'cattle' {38,	{206}
<i>Cf. *g/s-ni-s</i> 'two'	40}	<i>*n(y)ik</i> \approx <i>*n(y)ek</i>
<i>Cf. *s-ni-s</i> 'seven'	<i>Cf. *ŋwa</i> 'cattle'	<i>*s-n(y)ik</i> \approx <i>*s-n(y)ek</i>
<i>*ni(y)</i>	<i>*nway</i>	'filth(y)/excrement' {36,
<i>Cf. *ney</i> \approx <i>*ni(y)</i> 'aunt'	<i>*s/ʔ-n(w)ay</i> 'cohesive/	346}
<i>*not</i> \approx <i>*nut</i>	elastic' {214}	<i>*nyit</i>
<i>*s-not</i> \approx <i>*s-nut</i> 'womb/	<i>*m-n(w)ay</i> 'yam' {215,	<i>*s-nyit</i> 'squeeze' {349,
mouth/vessel' {381}	217}	355}
<i>*now</i>	<i>Cf. *dway</i> \approx <i>*nway</i>	<i>*nyi:t</i>
<i>*now</i> 'tender/soft' {223,	'hang from/cling to/creep-	<i>*g/r-nyi:t</i> 'sleep/nod' {36,
224}	er'	350}
<i>*now²</i> (PLB) 'tender/soft'	<i>*nwi(y)</i>	<i>*n(y)u</i>
{38}	<i>*m-nwi(y)-k</i> 'laugh'	<i>*n(y)u</i> 'mother' {540}
<i>*nu</i>	{117, 119, 197, 481}	<i>*nyuŋ</i>
<i>*ʔ/s-nu¹</i> (PLB) 'awn (of	<i>*nya</i>	<i>*s-nyuŋ</i> 'sad/ill/achy/
grain)/panicle' {180}	<i>*nya</i> 'woman' {173}	tired' {284}
<i>Cf. *n(y)u</i> 'mother'	<i>*n(y)a-n</i> 'blush/red' {177,	
<i>*nuk</i>	451}	
<i>*ʔ-nuk^L</i> (PLB) 'back'	<i>*s-nya-k</i> 'meat/flesh'	
{315}	{481}	
<i>*s-nuk</i> 'bean' {356}	<i>*nyak</i>	
<i>*s-nuk</i> 'brain' {357}	<i>*ʔ-nyak^L</i> (PLB) 'sticky'	
<i>*s-nuk^H</i> (PLB) 'bean' {39,	{374}	
40, 100, 315}	<i>*s-nyak</i> 'pulverize/shatter/	
<i>*s-nuk^H</i> (PLB) 'brain'	diminutive' {323}	
{39}	<i>*s-nyak</i> 'wet' {323, 374}	
<i>Cf. *s-nuŋ</i> \approx <i>*s-nuk</i>	<i>*nyam</i>	
'back/behind/after'	<i>*s-nyam</i> 'think' {299}	
<i>*nu:l</i>	<i>Cf. *s-nem</i> \approx <i>*s-nyam</i>	
<i>*nu:l</i> 'rub/wear down'	'low/soft'	

**ŋ*

<i>*ŋa</i>
<i>*d-ŋa</i> 'tooth' {175}
<i>*l/b-ŋa</i> 'five' {130, 149,
162, 165, 166, 167, 170,
173, 251}
<i>*ŋa-n</i> 'goose' {177, 259,
449}
<i>*ŋa-y</i> '1st person pronoun/
self' {1, 38, 162, 165, 167,
173, 174, 208, 231, 487}

- *ŋa*² (PLB) ‘fish’ {38, 40}
**ŋa*² (PLB) ‘five’ {477}
**s/ʔ-ŋa*² (PLB) ‘borrow/lend’ {38, 40}
*Cf. *s-ŋya* ‘fish’
**ŋak*
**ʔ-ŋak*^L (PLB) ‘open wide’ {117, 242}
**s-ŋak* ‘bird’ {317, 319}
**s-ŋak* ‘plantain/banana’ {318}
**s-ŋak*^H (PLB) ‘plantain/banana’ {242}
**ŋar*
**s-ŋar* ‘frost’ {390}
**ŋas*
**ŋas* ‘possess/keep’ {432}
**ŋaw*
**r-ŋaw* ‘roast/fry’ {127, 128, 227}
**ŋa:w*
**ŋa:w* ‘ape’ {227}
**ŋay*
**ŋay* ‘small/inferior/offspring’ {209}
**ŋəw*
**ŋəw* ‘weep’ {185}
**ŋəw*¹ (PLB) ‘weep’ {182}
**ŋor*
**s-ŋor* ‘snore’ {400}
**ŋow*
**s-ŋow* ‘blue/green’ {223}
**ŋoy*
**ŋoy* ‘gentle/quiet’ {229}
**ŋra*
**ŋra* ‘meet’ {81}
**ŋraŋ*
**ŋraŋ* ‘contradict/deny’ {81}

- *ŋrəw*
**ŋrəw* ‘dark/faded/withered’ {184}
**ŋul*
**d-ŋul* ‘silver’ {83, 414, 415, 424}
*Cf. *mul* ‘silver’
**ŋwa*
**d-ŋwa* ‘goat’ {23}
**ŋwa* ‘cattle’ {63, 167, 170, 176}
*Cf. *nwa*² (PLB) ‘cattle’
**ŋwal*
**ŋwal* ‘mix/stir’ {408}
**ŋ(w)at*
*Cf. *mwat*^L \approx **ŋ(w)at*^L ‘hungry’
**ŋ^w(y)a*
**s-ŋ^w(y)a-t* ‘star/moon’ {24, 26, 85, 332, 335}
**ŋya*
**s-ŋya* ‘fish’ {162, 165, 167, 169, 172, 475}
*Cf. *ŋa*² (PLB) ‘fish’
**ŋ(y)a*
**r/s-ŋ(y)a* ‘borrow/lend’ {162, 168}

*p

- *pa*
**pa* ‘search for/seek’ {24}
**pak*
**ʔ-pak*^H (PLB) ‘collapse’ {113}
**r-pak* ‘leaf’ {48, 317}
**pan* \approx **pat*
*Cf. *ban/t* \approx **pan/t* ‘braid/plait/interweave’

- Cf. *ban/t* \approx **pan/t* ‘thin’
**pap*
**m-pap*^H (PLB) ‘blanket’ {337}
**par*
**par* ‘trade/buy/sell’ {391}
**pat*
**m-pat* ‘vomit’ {330, 335, 442}
**pat* (PLB) ‘flail/flap’ {330}
**C-pat*^L (PLB) ‘vomit’ {315}
**pay*
**pay* ‘come/go’ {209}
**r-pay* ‘spleen’ {208, 221}
*Cf. *ʔ-pray*¹ (PLB) ‘spleen’
**pa:y*
**pa:y* ‘conceive/pregnant’ {210}
**pay* \approx **bay*
**pay* \approx **bay* ‘encircled/ringed/striped’ {208}
**pa:y* \approx **ba:y*
**pa:y* \approx **ba:y* ‘lame/limp/askew’ {210, 221}
*Cf. *b^way* ‘left side/left-hand’
**pe*
*Cf. *be-s* \approx **pe-s* ‘break off a piece’
**pe:r*
**pe:r* ‘flat/thin’ {386, 400, 426}
**pey*
**pey* ‘leg’ {205}
**pəw*
**pəw* ‘grandfather’ {178}

- *pəw* ‘price’ {184}
**pəw*² (PLB) ‘price’ {183}
Cf. **ʔ-bəw*² (PLB) ‘grand-father’
- *pəy*
**ʔ-pəy* ‘grandmother’ {191, 201}
**pəy*² (PLB) ‘rot/disintegrate’ {189}
- *pip*
Cf. **b/pip* \approx **b/pup* ‘conceal/hide (v.)/bury’
- *pir*
Cf. **pur* \approx **pir* ‘fly (v.)’
- *plen*
**plen* ‘flat surface/plank’ {281, 292, 296}
Cf. **blen* \approx **plen* ‘straight(en)’
- *plin* \approx **blin*
Cf. **blin* \approx **plin* ‘full/fill’
- *plon*
**plon* ‘burn’ {294}
**plon* ‘run/flee’ {294}
- *plu*
**plu* ‘white/silver/money’ {71, 184}
**plu*¹ (PLB) ‘white/silver/money’ {74, 180}
- *plyum*
**plyum* ‘bee/wasp’ {531}
- *po*
**d-po* ‘shield’ {204}
- *pok*
**s-pok* ‘time/occasion’ {379}
- *pop*
**pop* ‘hole/crack’ {381}
- *pral*
**d-pral* ‘forehead’ {404, 405}
**pral* ‘cold/dry season’ {405}
Cf. **bral* \approx **pral* ‘leave/depart/separate’
- *pran*
**pran* ‘loud/bright’ {303}
- *prat*
Cf. **brat* \approx **prat* ‘cut apart/cut open’
- *pray*
**ʔ-pray*¹ (PLB) ‘spleen’ {73}
Cf. **r-pay* ‘spleen’
- *pret*
**C-pret*^L (PLB) ‘be/be able’ {374, 376}
- *prəy*
**prəy*¹ (PLB) ‘untie’ {73}
- *pri*
**pri* ‘comb’ {26}
Cf. **ʔ-gʷəy*² ‘comb’
- *prin*
**prin* ‘bark (as dog)’ {280, 495}
- *prin* \approx **pyin*
**prin*^{1/2} \approx **pyin*^{1/2} (PLB) ‘release/send forth’ {282}
- *pro*
**pro* ‘delight’ {204}
**s-pro-k* ‘come out/ emerge/bring out’ {204, 480}
- *p(r)ok*
**p(r)ok* ‘jump’ {378}
- *prup*
Cf. **brup* \approx **prup* ‘over-
- flow/flood’
- *prut*
**prut* ‘boil (v.)’ {364}
- *pru(w)*
**pru(w)* ‘womb’ {199}
- *pryo*
**pryo-k* ‘soft/boiled’ {205, 481}
- *pu*
**pu* ‘male/father/grandfather’ {24}
**pu*² (PLB) ‘pumpkin/gourd’ {180}
- *puk*
**m-puk* ‘shoot’ {357}
**m-pök*^H (PLB) ‘shoot’ {315}
- *pu:k*
**pu:k* ‘belly/cave’ {358, 359, 360, 362}
- *pul*
Cf. **bul* \approx **pul* ‘stump/tree/root’
- *pun*
**pun* ‘wrap/cover/wear’ {495}
- *pun* \approx **pin*
**pun* \approx **pin* ‘skin’ {418}
Cf. **p^wul* \approx **p^wil* ‘skin’
- *pup*
**m-pup* ‘satiated’ {369}
**m-pup* ‘turn over/search for/seek’ {337, 369}
Cf. **b/pip* \approx **b/pup* ‘conceal/hide (v.)/bury’
Cf. **pyap* ‘turn over’
- *pur* \approx **pir*
**pur* \approx **pir* ‘fly (v.)’ {385, 397, 402, 501, 505, 509}

**pur* \approx **pwar*

**pur* \approx **pwar* ‘butterfly’
{398}

**put*

**put* ‘burn/raze’ {364}
**put-s* ‘knee’ {364, 368,
436, 505}

**p^wa*

**g-p^wa* \approx **r-p^wa* ‘bam-
boo’ {61, 62, 134, 162,
175, 305, 387}
**k/s-p^wa* ‘hoof’ {61}
**p^wa* ‘man/father/husband/
person’ {165, 166, 170,
172, 173, 175}
**p^wa* ‘patch/sew’ {61}
**p^wa-n* ‘palm/sole’ {173,
175, 446}
**r-p^wa* ‘axe’ {61, 127, 171,
172}
*Cf. *ʔ-ba¹* (PLB) ‘patch’
*Cf. *wa* ‘bamboo’
*Cf. *wa* ‘man/father/hus-
band/person’

**p^wa* \approx **b^wa*

**p^wa* \approx **b^wa* ‘grandmoth-
er’ {174}

**pwak*

**pwak* ‘half’ {321}

**p^wak*

**p^wak* ‘pig’ {61, 62, 96,
147, 318, 319, 328}
**p^wak^L* (PLB) ‘pig’ {319}
**r-p^wak* ‘palm/sole’ {61}
**s-p^wak* ‘hide (v.)’ {61,
317, 321}
**wak^L* (PLB) ‘pig’ {62}
*Cf. *s-wak* ‘hide (v.)’
*Cf. *wak* ‘pig’

**p^wal*

**s-p^wal* ‘snow/ice/frost/

hail’ {172, 408}

*Cf. *wal* ‘snow/ice/frost/
hail’

**p^wam*

**p^wam* ‘belly’ {47, 61}

**pwam* \approx **pwap*

**m-pwam^{2/3}* (PLB)
‘swollen/plump’ {249}
**C-pwap^L* (PLB) ‘swell
up’ {315}
*Cf. *bwap* \approx **bwam*
‘swell up’

**pwan* \approx **pwat*

**pwan* \approx **pwat* ‘rub off/
grind’ {519}

**pwan*

**pwan³* (PLB) ‘open’
{249}

**p^wan*

**p^wan* ‘spin/spindle’ {61,
266, 269, 303}
*Cf. *b^wan* \approx **p^wan* ‘un-
cle/elder brother/senior
male relative’
*Cf. *kan* \approx **wan* ‘spider/
spin’
*Cf. *wan²* (PLB) ‘spin/
spindle’

**pwar*

*Cf. *pur* \approx **pwar* ‘butter-
fly’

**pwa(:)r*

**pwa(:)r* ‘fire/burn/shine/
white’ {402}
*Cf. *b^war* \approx **p^war* ‘fire’
*Cf. *hwar* ‘fire/burn/
shine/white’

**pwat*

*Cf. *pwan* \approx **pwat* ‘rub
off/grind’

**p^wat*

**k-r-p^wat* ‘leech’ {61, 83,
94, 129, 138, 141, 151,
332}
*Cf. *k-r-wat^L* (PLB)
‘leech’

**pway*

**pway* ‘husk/chaff’ {23,
213, 217}
**pway²* (PLB) ‘husk/
chaff’ {25}

**pwəy*

**pwəy¹* (PLB) ‘gray/pale’
{213}

**p^wik*

**p^wik* ‘intestines/stomach’
{47, 344, 496}
*Cf. *ʔ-wik^L* (PLB) ‘stom-
ach’

**pwi(y)-n*

**pwi(y)-n* ‘female (human
or animal)’ {197, 201,
448}

**p^wu*

**p^wu* ‘intestines’ {198}

**p^wul* \approx **p^wil*

**p^wul* \approx **p^wil* ‘skin’ {280,
501}
*Cf. *ʔul*, \approx **wul* \approx **wun*
‘skin’
*Cf. *pun* \approx **pin* ‘skin’

**p^wum*

**p^wum* ‘lay eggs/hatch/in-
cubate’ {57}

**pyak*

**pyak* (PLB) ‘fold up/turn
up’ {323}
**s-pyak* ‘destroyed/ruined’
{323}

- *pyaŋ**
***pyaŋ**^{1/2} (PLB) ‘clear
 away/disentangle’ {264}
- *pyap**
***pyap**^H (PLB) ‘turn over’
 {337}
Cf. ***pup** ‘turn over’
- *pyar**
Cf. ***byar** \approx ***pyar** ‘affix/
 sew/plait/braid’
- *pyen** \approx ***pyet**
***pyen** \approx ***pyet** ‘fart’
 {518}
- *pyin** \approx ***pyit**
***pyin** \approx ***pyit** ‘untie/loos-
 en’ {520}
- *py(w)ak**
***py(w)ak** ‘sweep/broom’
 {66, 85, 128, 323, 527}

*r

- *ra**
***ʔ-ra**¹ (PLB) ‘winnow’
 {163}
***d-ra-t** ‘cut’ {145}
***g-ra** ‘fishbone/spine’
 {173}
***g-ra**² (PLB) ‘buckwheat’
 {163}
***k-ra** ‘strength/win’ {170}
***ra** ‘humans (classifier)’
 {170}
***ra-y** \approx ***wa-y** ‘fontane-
 lle’ {486}
***ra**² (PLB) ‘fontanelle’
 {163}
***ra**² (PLB) ‘humans (classi-
 fier)’ {43}
***ra**³ (PLB) ‘get/obtain’

- {41, 42, 43, 163}
***s-ra** ‘place’ {78, 173}
***s/m-ra-ŋ** ‘horse’ {177}
Cf. ***g-ya** \approx ***g-ra** ‘right-
 hand/right side’
Cf. ***mraŋ** ‘horse’
- *rak**
***ʔ-rak**^L (PLB) ‘rock/stone’
 {319}
***b-rak** ‘rock/stone’ {318}
***k-rak** ‘fowl/chicken’
 {317, 319, 327}
***k-rak**^H (PLB) ‘fowl/
 chicken’ {53, 61, 138,
 146}
***k-rak**^H (PLB) ‘gather to-
 gether, scoop together’
 {319}
***rak**^L (PLB) ‘weave/drive/
 chase’ {41, 42, 43, 61,
 146, 315, 319}
Cf. ***t(r)ak** ‘weave’

- *ral**
***g-ral** ‘equal/line up/con-
 nect in a row’ {422}
- *ra:l** \approx ***ran** \approx ***ray**
***g-ra:l** \approx ***g-ran** \approx ***ray**
 ‘enemy/fight/quarrel/
 strife/sword/war’ {44, 48,
 261, 387, 388, 404, 407,
 423, 425, 516}

- *ram**
***g-ram** ‘indigo’ {299}
***ram** ‘forest/jungle/field/
 country’ {299}
***s-ram** ‘otter’ {102, 191}
Cf. ***k-rap** \approx ***k-ram**
 ‘needle’
Cf. ***sram** ‘otter’

- *ran**
Cf. ***g-ra:l** \approx ***g-ran** \approx
***ray** ‘enemy/quarrel/war/

strife/sword’

- *raŋ**
***b-raŋ** \approx ***g-raŋ** ‘chest/
 breast’ {146}
***b-raŋ** \approx ***s-raŋ** ‘morn-
 ing’ {263}
***k-m-raŋ** \approx ***s-raŋ**
 ‘horse’ {80, 102, 121,
 267}
***m-raŋ** ‘high/long’ {80,
 267}
***raŋ**² (PLB) ‘green vegeta-
 ble/cabbage/mustard’
 {265}
Cf. ***mraŋ** ‘high’
Cf. ***s-rin** \approx ***s-r(y)aŋ**
 ‘alive/green/raw/give
 birth/be born’
- *raŋ** \approx ***waŋ**
***raŋ**² \approx ***waŋ**² (PLB)
 ‘earring’ {265}

- *rap**
***ʔ-rap**^L (PLB) ‘stand’ {35,
 56, 315, 339, 530}
***g-rap** ‘fireplace’ {336}
Cf. ***g-r(y)ap** ‘stand’
Cf. ***trap** \approx ***drap** ‘fire-
 place’

- *rap**
***s-ra:p** ‘graze/almost hit/
 passing close’ {340}

- *rap** \approx ***ram**
***k-rap** \approx ***k-ram** ‘needle’
 {336, 517}
***k-rap**^H (PLB) ‘needle’
 {337}
Cf. ***ʔap** \approx ***ga:p** ‘needle’
Cf. ***kap** ‘needle’

- *ras**
***b-ras** ‘bear fruit/rice’
 {432, 437}

- *g-ras** ‘class/category’ {437}
- *raw**
***raw** ‘withered/residue/corpse’ {225}
Cf. ***row** \bowtie ***raw** ‘pine/fir’
- *ray**
***b-ray-t** ‘fear’ {132, 207}
***g-ray** ‘god’ {48, 209, 212}
***ray** ‘things/stuff (n.)’ {209, 212}
***s-ray** ‘pluralizer’ {209, 212}
Cf. ***g-ra:l** \bowtie ***g-ran** \bowtie ***ray** ‘enemy/quarrel/war/strife/sword’
Cf. ***r(y)ay** \bowtie ***r(y)a** ‘laugh’
- *ray** \bowtie ***way**
***ray** \bowtie ***way** ‘copula/nominalizer/subordinator’ {35, 47, 209, 221, 482, 510}
- *ray** \bowtie ***yay** \bowtie ***way**
***s-ray** \bowtie ***s-yay** \bowtie ***s-way** ‘bold/heroic’ {209}
- *ren**
***s-ren** ‘equal/line up/connect in a row’ {291, 296, 311}
- *rey**
***b-rey** ‘buy/barter’ {49, 132, 205, 216, 511}
***rey** ‘cane/rattan/rope’ {48, 206, 217, 218}
***rey** ‘language/speech’ {205}
- *rey/ŋ**
Cf. ***s-leŋ/ŋ** \bowtie ***s-rey/ŋ** ‘squirrel/weasel’
- *rəw**
***rəw²** (PLB) ‘bone’ {35, 42, 43, 477}
Cf. ***s/m/g-rus** ‘bone’
- *rəy**
***m-k-rəy¹** (PLB) ‘skin/outer covering’ {189}
***rəy** ‘water’ {250}
***rəy¹** (PLB) ‘water’ {42, 43, 189, 213}
Cf. ***s-ləy-t** \bowtie ***s-rəy-t** ‘heavy’
- *rəy** \bowtie ***ris** \bowtie ***rit**
***b-rəy** \bowtie ***b-ris** \bowtie ***rit** \bowtie ***ri:n** ‘draw/write/count’ {132, 441}
***rəy^{1/3}** (PLB) ‘write/count’ {43}
Cf. ***r-tsyəy** ‘count/number’
- *ri**
***ri** ‘gleet/purulent discharge/rot’ {145, 186}
Cf. ***d-ri(y)** ‘filth/stench’
- *rik**
Cf. ***s-r(y)ik** ‘louse’
- *rik** \bowtie ***ryak**
***s-rik** \bowtie ***s-ryak** ‘pheasant/partridge’ {78, 324, 328, 343, 346, 347, 371, 507, 527}
- *ril**
***s-ril** ‘choose/be fastidious’ {410}
- *ri:l**
***ri:l** ‘belly/stomach/intestines’ {44, 385, 387, 412, 413, 426}
- *ril** \bowtie ***gril**
***s-ril** \bowtie ***s-gril** ‘move/roll’ {410, 411}
- *rim**
***b-rim** ‘distribute’ {305}
Cf. ***rum** \bowtie ***rim** ‘dark/shade/dusk’
- *ri(:)m**
***ri(:)m** ‘cane/rattan’ {43, 271}
- *rin**
***d-rin** ‘compassion/love’ {306}
- *ri:n**
Cf. ***b-rəy** \bowtie ***b-ris** \bowtie ***rit** \bowtie ***ri:n** ‘draw/write’
- *riŋ**
***b-riŋ** ‘bark (as dog)’ {132}
***riŋ** ‘sun/sunshine’ {281}
***s-riŋ** ‘long’ {280, 282, 296}
- *riŋ** \bowtie ***r(y)aŋ**
***s-riŋ** \bowtie ***s-r(y)aŋ** ‘alive/green/raw/give birth/be born’ {29, 78, 282, 283, 307, 506, 528}
- *rip**
***g/s-rip** ‘shade/shadow’ {353}
- *ris**
Cf. ***b-rəy** \bowtie ***b-ris** \bowtie ***rit** \bowtie ***ri:n** ‘draw/write/count’
- *rit**
***ʔ-rit^L** (PLB) ‘eight’ {56, 151, 315, 351, 506}
Cf. ***b-rəy** \bowtie ***b-ris** \bowtie ***rit** \bowtie ***ri:n** ‘draw/write’

- Cf.* ***b-r-gyat** ∞
***b-g-ryat** ‘eight’
- *ri:t**
***ri:t** ‘reap’ {350}
***ri:t^L** (PLB) ‘reap’ {41, 42, 43}
- *ri(y)**
***d-ri(y)** ‘dirt/filth/ordure/stench’ {145, 193}
***k-ri(y)²** (PLB) ‘big’ {190}
***s-ri(y)-t** ‘copula/be/existence’ {186, 350, 502}
Cf. ***ray** ∞ ***way** ‘copula’
Cf. ***ri** ‘gleet/purulent discharge/rot’
Cf. ***s-rut** ‘copula/be the case’
- *roŋ**
***k-roŋ¹** (PLB) ‘cat/wildcat’ {138}
***s/k-roŋ** ‘cat/wildcat’ {294}
- *row**
***s-row** ‘nit’ {224}
- *row** ∞ ***raw**
***row** ∞ ***raw** ‘pine/fir’ {224, 226, 515}
- *ru**
***ru** ‘crazy’ {181}
***ru²** (PLB) ‘crazy’ {180}
***s-ru²** (PLB) ‘squirrel (flying)’ {180}
- *ruk**
***d-k-ruk** ‘six’ {44, 140, 145, 148, 149, 357, 360, 361, 363}
***k-ruk^H** (PLB) ‘pick up’ {96}
***m-ruk** ‘monkey’ {145}
***s-g-ruk** ‘pick up’ {357}
- Cf.* ***mruk** ‘monkey’
- *ru:k**
***m-ruk** ‘steal’ {80}
Cf. ***r-kəw** ∞ ***r-kun** ∞
***r-kut** ‘steal/thief’
- *ru:l**
***s-b/m-ru:l** ‘snake’ {43, 44, 80, 81, 83, 134, 151, 235, 385, 387, 388, 414, 417, 424, 426}
Cf. ***m-r-wəy¹** (PLB) ‘snake’
- *rum**
***d-rum** ‘long for/pine for’ {141, 272}
- *rum** ∞ ***rim**
***rum** ∞ ***rim** ‘dark/shade/dusk’ {273, 308, 498}
- *ruŋ**
***g-ruŋ** ‘horn/corner’ {145, 496, 514}
***rwa(ŋ)** ‘horn/corner’ {514}
Cf. ***gruŋ** ‘horn’
- *rup**
***d/g-rup** ‘sew’ {369}
***s-rup** ‘snuff up/sip’ {369, 495}
- *rus**
***s/m/g-rus** ‘bone’ {44, 48, 102, 387, 435, 437, 442, 465, 477}
Cf. ***rəw²** (PLB) ‘bone’
- *rut**
***b-rut** ‘mischievous/rowdy/hooligan’ {364}
***s-rut** ‘copula/be the case’ {502}
Cf. ***s-ri(y)-t** ‘copula/be the case’
- *rwa**
***rwa-s** ‘rain’ {44, 387, 433}
Cf. ***ruŋ** ‘horn/corner’
- *rwak**
***g/p-rwak** ‘ant’ {94, 139, 321}
***p-rwak^H** (PLB) ‘ant’ {154, 321}
***rwak** ‘leaf’ {321}
***rwak^L** (PLB) ‘pheasant’ {508}
- *rwa(ŋ)**
Cf. ***ruŋ** ‘horn/corner’
- *rwat**
***rwat** ‘stiff/tough’ {332}
- *rway**
Cf. ***s/?-lway** ∞ ***s/?-rway** ‘divert/push aside’
- *rwəy**
***s-rwəy** ‘slant/slope’ {195}
***s-rwəy¹** (PLB) ‘gold/yellow’ {191}
- *rwi(y)**
***s-rwi(y)** ‘cane/rattan/rope’ {197, 218}
- *r(y)a**
***s-r(y)a** ‘yam/potato’ {78, 173}
- *r(y)ak**
***s-r(y)ak** ‘a full day/spend the night’ {77, 323, 328}
***s-r(y)ak** ‘ashamed’ {29, 46, 78, 317, 326}
***s-ryak** ‘grease/oil’ {323, 327}
Cf. ***g-yak** ‘ashamed’
Cf. ***s-rik** ∞ ***s-ryak**

‘pheasant/partridge’

***ryal**

***ryal** ‘hail’ {405}

***ryam**

***s-ryam** ‘sharp’ {77, 299}

***r(y)aŋ**

Cf. ***s-rin** \approx ***s-r(y)aŋ**

‘alive/green/raw/give
birth/be born’

***r(y)ap**

***ʔ-rap^L** (PLB) ‘stand’ {35}

***g-r(y)ap** ‘stand’ {136,
342, 48, 339}

***ryat**

Cf. ***gyat** \approx ***ryat** ‘eight’

***r(y)ay \approx *r(y)a**

***ray¹** (PLB) ‘laugh’ {42,
41, 42, 43}

***r(y)ay \approx *r(y)a-t(s)**
‘laugh’ {12, 170, 172, 208,
212, 334, 456, 463, 464,
487}

***r(y)ik**

***s-r(y)ik** ‘louse’ {29, 78,
102, 153, 344, 347, 527,
537}

***ryum**

***g-ryum** ‘salt’ {134, 272,
275}

***ryut**

***s-ryut** ‘inferior/fallen/
worse’ {364}

S**sa**

***r-sa** ‘vein/sinew’ {127,
128, 129, 162, 166}

***sa** ‘earth/ground/soil/

sand’ {176}

***sa-y** ‘inchoative particle’
{488}

***sa¹** (PLB) ‘clear/bright/
pleasant’ {428}

Cf. ***sal** ‘clear/bright/
pleasant’

Cf. ***z(l)a-y** ‘sand’

***sak**

***m-sak** ‘itch’ {317}

***r-sak** ‘breath(e)/life’
{144, 233, 317, 326, 537}

***sak** ‘rough’ {318}

***C-sak^L** (PLB) ‘breath(e)/
life’ {181}

***sal**

***g-sal** ‘clear/bright/pleas-
ant’ {404, 405, 428}

***sam**

Cf. ***tsam** \approx ***sam** ‘hair
(head)’

***sam \approx *sem**

***m-sam** ‘breath/voice’
{252, 532}

***sem-s** ‘soul/mind/heart/
spirit/breath’ {311, 537}

***san**

***san^{1/2}** (PLB) ‘louse’
{261}

Cf. ***s(y)ar** ‘louse’

***saŋ**

***r-saŋ** ‘lizard’ {127}

Cf. ***b-suŋ** \approx ***b-saŋ**
‘smell/scent/fragrant’

***sap**

***sap** ‘wedge’ {336, 342}

***sap^H** (PLB) ‘rub/stroke’
{337}

***sar**

***g-sar** ‘new/fresh’ {385,

386, 387, 391}

***sar** ‘new’ {402}

Cf. ***s(y)ar** ‘louse’

***sat**

***g/b-sat** ‘kill’ {12, 31, 136,
330, 335}

***sa:w**

***sa:w** ‘fat/grease/oil’ {32,
56, 225, 226, 227}

***sa:y**

Cf. ***(t)sa:y** \approx ***(d)za:y**
‘talent/aptitude/tempera-
ment’

Cf. ***tsa:y** \approx ***sa:y** ‘rust/
dross/stain/excrement’

Cf. ***tsa:y** \approx ***sa:y** ‘scoop/
dip out’

***sep**

***sep** ‘scale (of fish or rep-
tile)’ {353, 376}

***sep^H** (PLB) ‘scale (of fish
or reptile)’ {316}

***ser**

***ser** ‘hail/sleet’ {399, 402}

***sey**

***b-sey** ‘rhinoceros’ {220}

***sey** ‘fruit/rose/round ob-
ject’ {31, 33, 129, 206}

***səw**

***səw-t** ‘cough’ {199, 462}

***səw^{1/2}** (PLB) ‘testicles/
virility’ {182}

***səy**

***səy** ‘die’ {32, 34, 189,
194, 201, 442, 475}

***səy¹** (PLB) ‘die’ {27}

***sik**

***g-sik** ‘new’ {144, 344}

***sik** ‘pinch/twist’ {344}

Cf. ***siŋ** \approx ***sik** ‘tree/

wood'

***sil**
*Cf. *m/b-s(y)il* \approx **m/b-syal* 'wash/bathe'

***sin**
**m-sin* 'liver/bitter' {31, 33, 34, 56, 64, 119, 124, 134, 141, 154, 277, 291, 296, 306, 475}
**sin* 'body/owner/agentive nominalizer' {278, 306, 449}
**sin*¹ \approx **tsin*¹ (PLB) 'liver/bitter' {31}

***siŋ** \approx **sik*
**sik*^H (PLB) 'tree' {315}
**siŋ* \approx **sik* 'tree/wood' {32, 33, 34, 282, 283, 347, 475, 524, 528}

***sip**
**C-sip*^L (PLB) 'thirsty' {353}

***sit**
**sit* 'whistle' {349}
*Cf. *sut* \approx **sit* 'wipe/sweep'

***si(y)**
**m-si-t* 'comb/rake (v.)' {460}
**m-si(y)* 'comb/rake (v.)' {193}

***sow**
**m-sow* 'arise/awake(n)' {56, 117, 223}

***soy**
**soy* 'graze/almost hit/passing close' {228}

***sram**
**sram* or **s-ram* 'otter' {69, 77, 102, 150, 250,

257}
**sram*¹ (PLB) 'otter' {255}

***srel**
**srel* 'breed/bring up' {422}

***sriŋ**
**sriŋ* 'sister/matrilineal lineage' {77, 307}

***sru(w)**
**sru(w)* 'aunt/elder sister' {77, 198, 475}

***su**
**su*¹ (PLB) 'who/remote 3rd person pronoun' {3, 180}
**su*² (PLB) 'resemble' {180, 199}

***sum**
**g-sum* 'three' {32, 33, 56, 135, 149, 272, 275, 308}

***suŋ** \approx **saŋ*
**b-suŋ* \approx **b-saŋ* 'smell/scent/fragrant' {288, 482, 513}

***sur** \approx **swar*
**sur* \approx **swar* 'sour/be acid' {85, 384, 398, 402, 426, 449, 475, 514}
*Cf. *kyur* \approx **kywar*

***sut** \approx **sit*
**sut* \approx **sit* 'wipe/sweep' {366, 502}
**sut*^H \approx **sit*^H (PLB) 'wipe/sweep' {315, 502}

***suy**
**suy* 'marrow' {230}

***swa**
**swa* and **s-wa* 'tooth' {27, 166, 167, 171, 172}

**swa-n* 'onion/garlic' {177, 301, 446, 448}

***swan**
*Cf. *sywar* \approx **sywa-n/t* 'flow/pour'

***swat**
**swat* 'stick into' {332}
*Cf. *sywar* \approx **sywa-n/t* 'flow/pour'

**sy*

***sya**
**sya-n* 'animal/body/flesh/meat' {32, 88, 102, 118, 139, 140, 150, 162, 165, 169, 172, 177, 278, 448, 475}
**C-ša*¹ (PLB) 'easy/cheap' {36}

***syal**
*Cf. *m/b-s(y)il* \approx **m/b-syal* 'wash/bathe'

***sya:l** \approx **syi:r*
**sya:l* \approx **syi:r* 'iron' {395, 409, 426, 506}

***syam**
**syam* 'iron' {255, 257}

***syaŋ**
**g/b-syaŋ* 'excrement/rust/blight' {36}

***s(y)ar**
**s(y)ar* 'louse' {390, 402, 537}
**syar* 'rise/east' {391}
*Cf. *san*^{1/2} (PLB) 'louse'

***syay**
**syay* 'noisy/agitated' {209}

**syen*

Cf. **m-(t)syen* ‘nail/
claw’

**syey*

**šey*^{2/3} (PLB) ‘know’
{477}

**syey-s* ‘know’ {205, 206,
217, 465, 471, 477}

**s(y)il* \approx **syal*

**m/b-s(y)il* \approx **m/
b-syal* ‘wash/bathe’
{409, 410, 413, 425, 508}

**syim*

**syim* ‘dark-colored’
{271}

**syim* ‘sweep’ {305}

**syip* \approx **syup*

**syip* \approx **syup* ‘whisper’
{356}

**syir*

Cf. **syar:l* \approx **syir* ‘iron’

**syow*

**syow* ‘rat’ {228}

**syup*

Cf. **syip* \approx **syup* ‘whis-
per’

**syu(w)*

**syu(w)-n* ‘grandchild’
{199, 449}

**sywar* \approx **sywa-n/t*

**g/b-sywa* ‘flow/pour’
{427}

**swan*^{1/2} \approx **swat*^H
(PLB) ‘flow/pour’ {261,
519}

**sywar* \approx **sywa-n/t*
‘flow/pour/scatter/spill/
sow broadcast’ {66, 84,
386, 394, 402, 427}

**sywəy*

**sywəy* ‘rub/scrape/shave’
{66, 85, 195}

t*ta*

**l-ta-t-s* ‘look’ {456}

**s-ta* ‘knife/axe/sword’
{162}

**s-ta-s* ‘hear’ {433, 442,
443, 471}

**s-ta-t* ‘put/place’ {162,
172, 250, 442, 454, 461}

**ta* ‘box/cabinet’ {170}

**ta-y* ‘big’ {231, 484}

**ta*² (PLB) ‘jewsharp’
{163}

**ta*² (PLB) ‘time/when’
{163}

Cf. **ʔ-da*² (PLB) ‘put/
place’

Cf. **da* \approx **ta* ‘negative
imperative’

Cf. **t(y)a-n* ‘red’

**ta* \approx **twa*

**s-ta* \approx **m-twa* ‘hammer’
{170}

**tak*

**l-tak* ‘ascend/lift/raise/
top’ {317, 326}

**tak* ‘sharp’ {318}

**tak*^H (PLB) ‘sharp’ {319}

Cf. **t(y)ak* \approx **t(y)ik*
‘one/only’

Cf. **t(y)ak* \approx **t(y)ik*
‘very/real/certain’

**tal*

**tal* ‘arrow/bow’ {387, 404,
422}

**tal* ‘charcoal/dust/ashes’

{422}

**tam*

**tam* ‘carry on shoulder’
{298}

**tam* \approx **dam*

**g-tam* \approx **g-dam* ‘talk/
speak’ {299}

**tan*

**tan* ‘dry’ {258, 301}

**tan*² (PLB) ‘straight/up-
right’ {260}

Cf. **tay* \approx **tan* ‘single/
one/whole/only’

**taŋ*

**taŋ* ‘pine’ {264}

Cf. **daŋ* \approx **taŋ* ‘tense/
tight’

**tap*

**ʔ-tap*^H (PLB) ‘scoop with
both hands’ {336, 337}

**g/l-tap* ‘fold/layer’ {336,
341}

**m-tap*^H (PLB) ‘pack into/
put into’ {337}

**tap*^H (PLB) ‘layer’ {315}

Cf. **trap* \approx **drap* ‘fire-
place’

**ta:p*

**ta:p* ‘capable/fit/beauti-
ful’ {340}

**ta:r*

**ta:r* ‘hang/impale’ {392,
425}

**tas*

**r-tas* ‘thick/solid/coarse’
{127, 128, 129, 432}

**tay*

**tay* ‘big’ {207, 220, 231}

**tay* ‘self’ {208}

Cf. **la:y* \approx **s-tay* ‘navel/

- middle/center'
- *ta:y**
***m-ta:y** 'retaliate/grudge (bear a)' {210}
***m/s-ta:y** 'belt/zone/waist' {210, 220}
***ta:y** 'sting/scold' {210}
Cf. ***da:y** \approx ***ta:y** 'pound/crush'
- *tay** \approx ***tan**
***tay** \approx ***tan** 'single/one/whole/only' {262}
- *ter**
***s-ter** 'give/causative' {399}
- *ti**
***ti-t** 'awed/startled' {462}
Cf. ***ti(y)** 'water'
Cf. ***t(w)i(y)**
- *tik**
***g-t(y)ik** 'drip/drop (n.)' {506}
Cf. ***dz(y)ik** \approx ***ts(y)ik**, \approx ***dz(y)ak** \approx ***ts(y)ak** 'drip/drop (n.)'
Cf. ***tuk** \approx ***tik** 'frog'
Cf. ***t(y)ak** \approx ***t(y)ik** 'one/only'
Cf. ***t(y)ak** \approx ***t(y)ik** 'very/real/certain'
- *til**
Cf. ***r-tul** \approx ***r-til** 'dull/buttock/heel/rounded part'
Cf. ***ts(y)il** \approx ***til** 'spit/spittle/saliva'
- *tip**
Cf. ***dip** \approx ***tip** 'beat/strike'
- *tip** \approx ***tup** \approx ***tum**
***tip** \approx ***tup** \approx ***tum** 'wrap up'
- up' {354, 370, 497, 517}
- *to**
***m-to** 'high' {204}
- *ton**
***s-ton** 'thousand' {294}
- *tow**
***m-tow** 'fly (n.)' {226}
- *tow** \approx ***dow**
***tow** \approx ***dow** 'hammer' {224, 227, 515}
***tow-n** \approx ***dow-n** 'thick' {181, 222, 224, 226, 228, 452, 515}
- *toy**
***toy** 'younger sibling' {221, 228}
- *toy or *tway**
***toy or *tway** 'propitiate/appease' {229}
- *t(r)ak**
***tak** \approx ***dak** 'weave' {318, 328, 374}
Cf. ***rak** 'weave'
- *trap** \approx ***drap**
***g-rap** 'fireplace' {336}
***g-tap** \approx ***g-dap** 'fireplace' {336, 339}
- *tu**
***s-tu** 'vagina/vulva' {247}
- *tu** \approx ***du**
***m-tu** \approx ***m-du** 'nephew/descendant' {184, 200, 464}
***tu** \approx ***s/m-du** 'dig' {23, 178, 184}
***tu-n/t** \approx ***du-n/t** 'join/bring together/tie/knot' {367, 452, 460}
- *tuk**
***m-tök^H** (PLB) 'cut by a blow' {363}
***m-tuk^H** (PLB) 'peck/strike/hook onto' {358}
***r-tuk** 'strike' {363}
***tuk** 'cut/knock' {357}
Cf. ***duk** \approx ***tuk** 'poison'
- *tuk**
***m/s-tu:k** 'spit/spew' {117, 359, 360}
***tu:k** 'deep/thick' {359, 360, 361}
Cf. ***m/s-twa** 'spit/spittle/saliva'
- *tuk** \approx ***tik**
***tuk** \approx ***tik** 'frog' {503}
- *tuk** \approx ***twak**
***tuk** \approx ***twak** 'neck' {357, 359, 361, 514}
- *tul**
***r-tul** 'roll up/wrap' {127, 129, 415}
Cf. ***r-dul** \approx ***r-tul** 'dust'
- *tul** \approx ***til**
***r-tul** \approx ***r-til** 'dull/buttock/heel/rounded part' {419, 422, 500, 504}
- *tum**
***tum¹** (PLB) 'numb/befuddled' {273}
Cf. ***tip** \approx ***tup** \approx ***tum** 'wrap up'
- *tuŋ**
***tuŋ¹** (PLB) 'set (a trap)/cock (a weapon)' {285}
- *tu:ŋ**
***tu:ŋ** 'inside/middle' {287, 310}

**tun* \approx **tuk*

Cf. **m-dun/k* \approx **m-tun/k* ‘sit’

**tup*

Cf. **dup* \approx **tup* ‘beat/strike’

Cf. **tip* \approx **tup* \approx **tum* ‘wrap up’

**tur*

**tur* ‘tremble/shake/pulse’ {396}

**twa*

**m-twa* ‘handspan’ {64, 167, 171}

**m/s-twa* ‘spit/spittle/saliva’ {173, 174}

Cf. **m/s-tu:k* ‘spit/spew’

Cf. **s-ta* \approx **m-twa* ‘hammer’

**twak*

**ʔ-twak^H* (PLB) ‘come out/go out/merge’ {62, 315}

**s-twak* ‘come out/go out/merge’ {62, 321}

Cf. **tuk* \approx **twak* ‘neck’

**twan*

Cf. **dwan* \approx **twan* ‘wrinkle/shrink’

**tway* or **toy*

**tway* or **toy* ‘propitiate/appease’ {229}

**t(w)i(y)*

**m-ti-s* ‘wet/soak’ {434, 351}

**ti(y)* ‘water’ {193, 194, 471}

**twəy* ‘flow/suppurate’ {194}

**twəy* \approx **dwəy* ‘water/egg/spit’ {195}

**twəy-n* ‘water/river’

{451}

**twi(y)* ‘sweet’ {197}

**t(y)a*

**t(y)a-n* ‘red’ {177, 262, 452, 485, 516}

Cf. **t(s)a:y* ‘red’

**tyak*

**tyak* ‘bear (endure)/suffer’ {323}

**t(y)ak* \approx **t(y)ik*

**tyak* \approx **g-t(y)ik* ‘one/only’ {346, 347, 507}

**t(y)ak* \approx **t(y)ik* ‘very/real/certain’ {65, 324, 507, 508}

**tyam*

Cf. **dyam* \approx **tyam* ‘straight/flat/full’

**tyan*

**s-tyan* ‘upper part/rise/raise’ {304}

**tyan* ‘black/dark’ {65}

**t(y)ik*

Cf. **dz(y)ik* \approx **ts(y)ik* ‘drip/drop (n.)’

Cf. **t(y)ak* \approx **t(y)ik* ‘one/only’

ts*tsa*

**m-tsa* ‘sparrow’ {168}

**tsa* ‘salt’ {31, 162, 165, 168, 172, 174}

**tsa-t* ‘hot/hurt/pain/ill’ {32, 177, 462, 464}

**ts(y)a¹* (PLB) ‘hot/ill’ {30}

**tsa* \approx **za*

**tsa-n* \approx **za-n* ‘child/son/relatives’ {27, 31, 33, 34, 154, 162, 165, 169, 171, 172, 176, 188, 448, 450}

**za²* (PLB) ‘child’ {28}

**za²-mi^{2/3}* (PLB) ‘daughter’ {28}

**tsak*

Cf. **dz(y)ak* \approx **ts(y)ak* ‘drip/drop (n.)’

**tsam* \approx **sam*

**tsam* \approx **sam* ‘hair (head)’ {31, 32, 250, 299}

**tsan*

**b-tsan* ‘strong/firm’ {260}

Cf. **zan* ‘strong/firm’

**tsaŋ*

**tsaŋ¹* (PLB) ‘person/human being’ {265}

**tsap*

**tsap* ‘repay’ {336, 342}

**tsap^H* (PLB) ‘stick into/inser’ {337}

**tsat*

**tsat* ‘bite down on’ {330}

**t(s)a:y*

**r-tsa:y* ‘vegetable’ {221}

**t(s)a:y* ‘red’ {516, 262}

Cf. **t(y)a* ‘red’

**t(s)a:y*

Cf. **t(s)a:y* \approx **t(s)a:y* ‘talent/aptitude/temperament’

**tsa:y* \approx **sa:y*

**tsa:y* \approx **sa:y* ‘rust/dross/stain/excrement’ {210}

**tsa:y* \approx **sa:y* ‘scoop/dip out’ {210}

***tsəy**

- *r-tsəy** ‘medicine/juice/
paint’ {189, 201, 464}
***tsəy²** (PLB) ‘lung/exhale’
 {502}
***tsəy²** (PLB) ‘wash’ {30,
 189}
Cf. ***(t)si-t** ≠ ***tsut** ‘lung/
 exhale’
Cf. ***tsu(w)-t** ≠ ***tsəy**
 ‘stop up/plug up’

***t(s)i**

- *m-t(s)i** ‘salt/yeast’ {34,
 540}

***tsik**

- *ʔ-dzik^L** (PLB) ‘joint’ {27,
 315}
***m-(t)sik** ‘burn/angry’
 {348, 344}
***m-tsik** ‘itch’ {344}
***tsik** ‘joint’ {31, 32, 241,
 343, 344, 347, 527}
Cf. ***dz(y)ik** ≠ ***ts(y)ik**
 ‘drip/drop (n.)’

***tsil**

- *tsil** ‘fat/grease/oil’ {410,
 422}

***(t)sin**

- *m-(t)sin** ‘nail/claw’
 {291}
Cf. ***m-(t)syen** ‘nail/
 claw’
Cf. ***sin¹** ≠ ***tsin¹** (PLB)
 ‘liver/bitter’

***tsi:t**

- *tsi:t** ‘goat’ {350}
***C-tšit^L** (PLB) ‘goat’
 {315}

***(t)sit**

- Cf.* ***(d)zi:t** ≠ ***(t)sit**
 ‘split’

***(t)si-t** ≠ ***tsut**

- *tsəy²** (PLB) ‘lung/exhale’
 {502}
***(t)sit** ‘lung/exhale’ {502,
 367}
***tsi-wap** ‘lung’ {367}
Cf. ***tsywap** ‘lung’
Cf. ***wap** ‘soft/spongy’

***tson**

- *b-tson** ‘onion’ {311}

***tsot**

- *tsot** ‘deer (sambar)/ante-
 lope’ {380}

***tsow**

- *tsow-s** ‘fat/omentum’
 {222, 224, 412, 471}
***tsow-t** ‘thorn/pierce/plant
 (v.)/erect’ {30, 222, 223,
 224, 227, 454, 515, 529}

***tsum**

- *tšrum** ‘mortar’ {79}
***t(s)um** ≠ ***(t)sum** ‘mor-
 tar’ {31, 32, 275}

***tsu(w)** ≠ ***tsəy**

- *tsəw-t** ‘stop up/plug up’
 {461}
***tsu(w)-t** ≠ ***tsəy** ‘stop
 up/plug up’ {367}

***tswa**

- *r-tswa-n** ‘grass’ {177,
 449}

***tswəy**

- *tswəy** ‘rot/pus’ {194}

***tsy**

***tsyak**

- *l-tsyak** ‘iron/iron instru-
 ment’ {317}

- *tsyak** ‘red/blood/gold’
 {323, 328}

***ts(y)ak**

- Cf.* ***dz(y)ak** ≠ ***ts(y)ak**
 ‘drip/drop (n.)’

***tsyan**

- Cf.* ***dzyan** ≠ ***tsyan**
 ‘stretch out’

***tsyap**

- *ts(y)ap** ‘chop’ {336}
***tsyap** ‘join/connect’ {336,
 341}

***tsyar**

- *tsyar** ‘sunshine’ {391}

***tsyat**

- *tsyat** ‘break/cut’ {330,
 334}

***tsyary**

- *r-tsyary** ‘play’ {210}

***tsyen** ≠ ***syen**

- *m-(t)syen** ‘nail/claw’
 {29, 278, 290, 296}

***tsyəw**

- *tšəw²** (PLB) ‘widow’
 {182}
***tsyəw** ‘hand’ {199}

***tsyəy**

- *r-tšrəy** ‘count/number’
 {79}
***r-tsyəy** ‘count/number’
 {43, 80, 200}
Cf. ***b-rəy** ≠ ***b-ris** ≠
***rit** ≠ ***ri:n** ‘draw/write/
 count’

***ts(y)i** ≠ ***zəy**

- *g-ts(y)i-t/n** ‘urine’ {31,
 187, 194, 454, 441}
***m-(d)zyəy²** (PLB)
 ‘urine’ {27, 189}
***zəy** ‘urine’ {31}

**ts(y)ik*

*Cf. *dz(y)ik* \approx **ts(y)ik*
'drip/drop (n.)'

**ts(y)il* \approx **til*

**m-ts(y)il* \approx **m-tsril*
'spit/spittle/saliva' {79,
80, 119, 124, 410, 411,
424}

**tsyip*

*Cf. *dzyup* \approx **dzyip*
'suck/kiss/breast/milk'

**tsyip* \approx **tsyup*

**(t)syip* \approx **(t)syup*
'wring/crumple' {371,
498}

**tsyir* \approx **tsyu:r*

**tsyir* \approx **tsyu:r* 'wring/
squeeze' {397, 426, 498}

**ts(y)i(y)* \approx **tsyay*

**tsay*¹ (PLB) 'ten' {30, 31}
**ts(y)i(y)* \approx **tsyay* 'ten'
{208, 212, 219, 510}

**ts(y)o:p*

*Cf. *dzyup* \approx **dzyip*
'suck'

**tsyow*

**tsyow* 'boil (v.)/cook/
bake' {34, 223, 224, 227}

**tsyuk*

**tšuk*^L (PLB) 'suck/kiss/
breast/milk' {30}
**tsyuk* 'steep' {357}

**ts(y)ul*

**m-ts(y)ul* 'lip/beak'
{415, 423}

**tsyup* \approx **tsyip*

**tsyup* \approx **tsyip* 'suck/
kiss/breast/milk' {500}
*Cf. *dzyup* \approx **dzyip*
'suck/kiss/breast/milk'

**tsywap*

**tsi-wap* 'lung' {86}
**tsywap* 'lung' {66, 338}
*Cf. *wap* 'soft/spongy'

**tsywar*

**tsywar* 'cut/chop' {66,
84, 393}

**tsywat*

**ʔ-tšwat*^H (PLB) 'pluck'
{332}

W*wa*

**b-wa* 'white/yellow'
{429}
**g-wa-t* 'bite/chew' {460}
**hwa* 'bamboo' {305}
**k-wa* 'satiated' {171}
**r-wa* \approx **g-wa* 'village'
{127, 134}
**r-wa* \approx **s-wa* \approx **g-wa*
'rain' {127, 128, 162, 171,
173}

**r-wa* 'bamboo' {44}

**s-wa* 'go' {173}

**wa* 'bird/feather' {165}

**wa* 'man/father/husband/
person' {250}

**wa* 'trap' {163}

**wa-y* \approx **ra-y* 'fontane-
lle' {486}

**wa*² (PLB) 'bamboo' {62}

**wa*² (PLB) 'snow/frost/
ice/hail' {46, 171, 428}

*Cf. *m-g^wya*² (PLB)
'chew'

*Cf. *p^wa* 'bamboo'

*Cf. *p^wa* 'man/husband/fa-
ther/person'

*Cf. *ra-y* \approx **wa-y* 'fon-
tanelle'

*Cf. *swa and *s-wa*

'tooth'

*Cf. *wal* 'snow/frost/ice/
hail'

**wak*

**ʔ-wak*^L (PLB) 'hide (v.)'
{62}

**k-r-wak*^H (PLB) 'rat'
{138}

**r-wak* 'rat' {151, 321}

**s-wak* 'hide (v.)' {62}

**wak*^L (PLB) 'pig' {62}

*Cf. *p^wak* 'pig'

*Cf. *s-p^wak* 'hide (v.)'

**wal*

**wal* 'round/circular/enclo-
sure' {404, 406, 424}

**wal* 'snow/frost/ice/hail'
{387, 404, 428}

*Cf. *p^wal* 'snow/ice/frost/
hail'

*Cf. *wa*² (PLB) 'snow/
frost/ice/hail'

*Cf. *yal* \approx **wal* 'chew
(cud, betel)'

**wam*

**d-wam* 'bear (n.)' {139,
140, 252, 299, 531}

**d-wam*^{1/2} (PLB) 'bear
(n.)' {253}

**p-wam*² (PLB) 'belly/
stomach' {46, 253}

**s-wam or *hwam*
'dare' {55, 252, 298}

**wam*³ (PLB) 'dare' {253}

**wan*

**g-wan* 'hand/wrist' {301}

**wan*¹ (PLB) 'jackal/wolf/
dhole/wild dog' {261,
449}

*Cf. *kywal* 'jackal/wolf/
dhole/wild dog'

*wan ≈ *wat

*wan ≈ *wat ‘load/burden/transport’ {519}

*waŋ

*waŋ² (PLB) ‘spin/spindle’ {269}

Cf. *kaŋ ≈ *waŋ ‘spider/spin’

Cf. *p^waŋ ‘spin/spindle’

*wap

*p-wap ‘lung’ {342, 476, 533}

*r/s-wap ‘lung’ {533}

Cf. *tsi-wap, and

*tsyap, and *tsywap ‘lung’

*war

*b-war ≈ *p-war ‘fire/burn/kindle/roast’ {428}

Cf. *ʔur ‘fire/burn/shine/white’

Cf. *pwa(:)r ‘fire/burn/shine/white’

*was

*was ‘bee/honey’ {432, 442}

*wat

*ʔ-wat^L (PLB) ‘clothe’ {331}

*b/s-wat ‘flower’ {332}

*k-r-wat^L (PLB) ‘leech’ {83, 138}

*s-wat^H (PLB) ‘bloom/flower’ {36}

*wat^L (PLB) ‘wear’ {331}

Cf. *b^wat ‘flower’

Cf. *k-r-p^wat ‘leech’

Cf. *wya ‘wear’

*way

*s-r-way ‘lead (v.)/tend/watch/guard’ {209}

Cf. *ray ≈ *way ‘copula/nominalizer/subordinator’

Cf. *s-ray ≈ *s-yay ≈ *s-way ‘bold/heroic’

*way

*ŋ-(w)ay ‘love/make love’ {210, 217, 220}

*way ‘whirl/brandish/wave (v.)’ {210}

*wel

*wel ‘count/read’ {420}

*wəy

*g-wəy-n ‘far’ {452}

*m-r-wəy¹ (PLB) ‘snake’ {83}

*wəy² (PLB) ‘far’ {195}

Cf. *s-b/m-ru:l ‘snake’

*wik

*ʔ-wik^L (PLB) ‘stomach’ {47, 344}

*wik ‘tusk/fang/canine tooth’ {344}

Cf. *p^wik ‘stomach’

*woy

*b-woy ‘monkey’ {229}

*d/g-woy-n ‘monkey’ {24, 450}

*woy ‘fart’ {229}

*wu

*wu ‘howl/grumble’ {178}

*wu¹ (PLB) ‘intestines’ {180}

*wul

*wul ‘tend grazing animals’ {384, 416}

*wul ≈ *wun

*wul ≈ *wun ‘skin’

{418}

Cf. *p^wul ≈ *p^wil ‘skin’

*wya

Cf. *wat^L (PLB) ‘wear’

*w(y)a

*s-g-w(y)a-n/t ‘wear/clothe’ {334, 335}

*w(y)a-t ≈ *wit ‘wear/clothe’ {333, 508}

Cf. *gwa-n ≈ *kwa-n ‘wear/put on/clothe’

*wyik

*ʔ-wyik^L (PLB) ‘elder sibling’ {36, 86, 97, 345}

Cf. *ʔik ‘elder sibling’

*y

*ya

*ʔ-ya² (PLB) ‘antelope’ {163}

*g-ya ‘itch’ {136}

*ya ‘diminutive’ {482}

*ya ‘night’ {165}

Cf. *yal ≈ *wal ‘chew (cud, betel)’

*ya ≈ *ra

*g-ya ≈ *g-ra ‘righthand/right side’ {29, 46, 96, 134, 165, 169, 176}

*yak

*ʔ-gyak^H (PLB) ‘cubit’ {51}

*d-yak ‘hand/arm’ {51, 65}

*g-yak ‘armpit/tickle/cubit’ {51, 317, 326, 329}

*g-yak ‘ashamed’ {46, 95, 136, 317, 326}

Cf. *g-lak ‘hand/arm’

Cf. *yaŋ ≈ *g-yak ‘sheep/yak’

**yal* ⌘ **wal*

**yal* ⌘ **wal* ‘chew (cud, betel)’ {404, 428}

Cf. **ya*¹ (PLB) ‘chew (cud, betel)’

**ya:ŋ*

**r-ya:ŋ* ‘lightweight’ {127, 128, 263, 268}

**yaŋ* ⌘ **yak*

**g-yak* ‘sheep/yak’ {523}

**yaŋ* ‘sheep/yak’ {29, 523}

**ya:p*

**g-ya:p* ‘fan/paddle/wave (v.)’ {45, 137, 339, 340}

**yar*

**yar* ‘beard/moustache’ {390}

Cf. **hwar* ⌘ **yar* ‘white/yellow/bright/shine’

**yair*

**yair* ‘other/outside’ {392}

**yair* ‘spread/extend/sail’ {393, 403, 426}

**yay*

Cf. **s-ray* ⌘ **s-yay* ⌘ **s-way* ‘bold/heroic’

**yay* ⌘ **?ay*

**yay* ⌘ **?ay* ‘mother/grandmother/maternal aunt’ {208}

**yen*

**m-?yen* ‘saliva/spittle’ {115}

**yəw*

**b-yəw-n* ‘rat/rabbit/hare’ {45, 130, 182, 185, 199, 449}

**sya-yəw* ‘rat’ {228}

**yəw* ‘liquor’ {45, 199}

**yəw*² (PLB) ‘seed’ {35}

**yu-n* ⌘ **yu-t* ‘leak/drip’ {441}

**yəy*

**s-yəy*² (PLB) ‘grass’ {189}

**yik*

Cf. **?u²-(y)ik*^L (PLB) ‘elder sibling’

Cf. **?w-yik*^L (PLB) ‘elder sibling’

**yim* ⌘ **yum*

**k-yim* ⌘ **k-yum* ‘house’ {21, 35, 273, 498, 504, 531, 533}

**yip* ⌘ **yup*

**s/?-yip*^L (PLB) ‘put to sleep’ {315}

**s-yip* ⌘ **s-yup* ‘sleep/put to sleep/conceal/hide (v.)’ {56, 153, 192, 354, 369, 370, 499, 500, 533}

**yip*^L ⌘ **yup*^L (PLB) ‘sleep’ {27, 35, 315}

**yit*

**yit* ‘drunk’ {349}

**yok*

**s-k-yok* ‘poker/pudding stick/ladle’ {295, 517}

**yu*

**yu* ‘take’ {184}

**yu*¹ (PLB) ‘take’ {35, 180}

**yuk*

**d-yuk* ‘deer (sambar)’ {139, 357, 359}

**m-yuk* ‘monkey’ {357}

**s/?-yuk* ‘descend’ {318, 482, 513}

Cf. **zak* ‘descend’

**yun*

**m-yun* ‘finger’ {141, 285}

**yuy* ⌘ **ywi*

**m/s-yuy* ‘follow’ {229}

**ywi* ‘follow’ {63}

**ywar*

**ywar* ‘sell/buy’ {63, 386, 388, 393}

Z*za* ⌘ **tsa*

**za-n* ⌘ **tsa-n* ‘child/son/relatives’ {27, 31, 33, 34, 162, 165, 169, 171, 172, 176, 188, 448, 450}

**za*² (PLB) ‘child’ {28}

**za*²-*mi*^{2/3} (PLB) ‘daughter’ {28}

**zak*

**zak* ‘descend’ {317, 482, 513}

**zak*^L (PLB) ‘descend’ {28}

Cf. **s/?-yuk* ‘descend’

**zan*

**zan* ‘strong/firm’ {442}

**zan*¹ (PLB) ‘strong/firm’ {28, 260}

Cf. **tsan* ‘strong/firm’

**zaŋ*

**zaŋ*² (PLB) ‘3rd person pronoun’ {3, 28}

**za:y*

Cf. **(t)sa:y* ⌘ **(d)za:y* ‘talent/aptitude/temperament’

**zəy*

**ʔ-zəy*^{1/2} (PLB) ‘little/
small/tiny’ {191}

**zəy*² (PLB) ‘barley’
{189}

**z(y)əy* ‘little/small/tiny’
{66, 191}

*Cf. *ts(y)i ʷ *zəy* ‘urine’

**zik*

**g-zik* ‘leopard’ {343,
344}

**zik*^L (PLB) ‘leopard’ {28}

**zim*

**zim* ‘collect/gather’ {27}

**z(l)a*

**z(l)a-y* ‘sand’ {486}

*Cf. *sa* ‘sand’

**zlum*

**zlum* ‘round’ {78, 272}

**zril*

**zril* ‘worm’ {78, 79, 188,
388, 410, 412, 425}

*Cf. *di*¹ (PLB) ‘worm’

**zryaŋ ʷ *ryaŋ*

**zryaŋ ʷ *ryaŋ* ‘uncle/a
superior’ {66, 79, 303}

**zum ʷ *zuŋ*

**zum*² (PLB) ‘use’ {28}

**z(y)um ʷ *zuŋ* ‘use’
{34, 66, 276, 531}

**zu:r*

**zu:r* ‘rainy season’ {397,
426}

zy*z(y)aŋ*

**z(y)aŋ*² (PLB) ‘excre-
ment/rust/blight’ {36}

**zya:w ʷ *zyu(w)*

**zya:w ʷ *zyu(w)* ‘rot/
decay/digest’ {35, 66,
227}

Index of Proto-Root-Syllables

This *Index of Proto-Root-Syllables*, computer-generated by Richard Cook on the basis of the *Index of Proto-Forms*, is divided into two parts. The first, *Proto-Finals by Proto-Initial*, is a list of all initials and the finals with which they occur. The second, *Proto-Roots by Proto-Final*, is a list of all finals, and the proto-root-syllables in which they occur. In these lists, the number in curly brackets indicates the frequency of occurrence.

These lists were created by expanding each proto-form containing optional elements into a list of all possible permutations. For example, in the formula $*(d)z(y)u(:)k$ ‘suck’ there are three optional elements, yielding a total of eight (2^3) syllables in the syllable canon:

*zuk
*zu:k
*zyuk
*zyu:k
*dzuk
*dzu:k
*dzyuk
*dzyu:k

In addition, the *medial on-* and *off-glides* have been given special treatment, so that, e.g., *dzyu:k appears under both *-yu:k and *-u:k.

Index of Proto-Root-Syllables

<i>Proto-Finals by Proto-Initial</i>			
*ʔ-	{29}	*-a, *-ak, *-al, *-am, *-aŋ, *-ap, *-a:r, *-aw, *-a:w, *-ay, *-ew, *-ik, *-iŋ, *-ip, *-it, *-i:t, *-ok, *-ol, *-o:l, *-on, *-u, *-uk, *-ul, *-um, *-u:m, *-up, *-ur, *-u:r, *-ut.	*dzy- {23} *-a, *-ak, *-a:l, *-an, *-aŋ, *-ay, *-əw, *-ik, *-im, *-ip, *-i:p, *-it, *-i, *-on, *-o:p, *-ow, *-u, *-uk, *-u:k, *-up, *-ut, *-wal, *-way.
*b-	{65}	*-a, *-ak, *-a:k, *-al, *-a:l, *-an, *-aŋ, *-ap, *-a:r, *-at, *-ay, *-a:y, *-e, *-et, *-əw, *-əy, *-ik, *-il, *-ip, *-iy, *-i, *-le, *-len, *-leŋ, *-liŋ, *-lu, *-lum, *-ok, *-op, *-oy, *-rak, *-ral, *-ran, *-raŋ, *-rat, *-ray, *-rəy, *-roŋ, *-ruk, *-ru:l, *-rum, *-ruŋ, *-rup, *-rwak, *-rwaŋ, *-u, *-ul, *-un, *-uŋ, *-up, *-wa, *-wam, *- ^w aŋ, *-wap, *- ^w ar, *- ^w at, *- ^w ay, *- ^w a, *-wəy, *-ya, *-yam, *-yar, *-yer, *-yet, *-yon.	*g- {89} *-a, *-ak, *-al, *-a:l, *-am, *-an, *-aŋ, *-a:p, *-ar, *-ar, *-aw, *-ay, *-əw, *-ik, *-il, *-im, *-ip, *-it, *-la, *-lak, *-lan, *-laŋ, *-lay, *-le:k, *-lim, *-liŋ, *-lum, *-lun, *-lwak, *-o, *-ow, *-ra, *-rak, *-ram, *-raŋ, *-ray, *-ra:y, *-res, *-rəy, *-ril, *-rim, *-rip, *-rok, *-rol, *-ro:l, *-roy, *-ru, *-rum, *-ruŋ, *-rup, *-rwak, *-rwas, *-rwat, *-rwa, *-rwəy, *-rwil, *-ryum, *-u, *-uk, *-u:k, *-u:l, *-um, *-uŋ, *-u:ŋ, *-up, *-wa, *-wal, *-wap, *-wa:y, *- ^w əy, *-wiy, *-wi, *- ^w ya, *-ya, *-yan, *-yaŋ, *-yap, *-yar, *-yat, *-yəy, *-yi, *-yik, *-yiŋ, *-yip, *-yit, *-yoŋ, *-yuay, *-yuk, *-ywal.
*d-	{41}	*-a, *-ak, *-al, *-am, *-an, *-aŋ, *-ap, *-ar, *-at, *-aw, *-ay, *-a:y, *-ek, *-ey, *-ik, *-i:k, *-im, *-iŋ, *-ip, *-it, *-i, *-o, *-oŋ, *-ow, *-oy, *-rap, *-rup, *-u, *-uk, *-ul, *-uŋ, *-u:ŋ, *-up, *-ut, *-wan, *-wa:ŋ, *-way, *-yak, *-yal, *-yam, *-yuŋ.	*h- {49} *-a, *-ak, *-a:k, *-al, *-an, *-aŋ, *-a:ŋ, *-ap, *-ar, *-ar, *-a:y, *-e:r, *-ew, *-il, *-i:l, *-ir, *-la, *-o, *-ol, *-or, *-rew, *-u, *-ul, *-ur, *-us, *-uy, *-wa, *-wal, *-wa:l, *-wam, *-wan, *-waŋ, *-war, *- ^w ar, *-war, *-wat, *-wa:y, *-wel, *-ya, *-yak, *-yal, *-yam, *-yan, *-yar, *-yen, *-yom, *-yop, *-yu,
*dz-	{25}	*-ak, *-am, *-a:n, *-ar, *-as, *-ay, *-a:y, *-əw, *-əy, *-ik, *-il, *-im, *-in, *-iŋ, *-i:t, *-i, *-oŋ, *-o:p, *-u, *-uk, *-u:k, *-um, *-ut, *-wan, *-waŋ.	

INDEX II

		*-ywəy.				*-yaŋ, *-yap.
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			*n-	{50}	*-a, *-ak, *-am, *-aŋ, *-a:ŋ, *-ap, *-a:r, *-as, *-a:w, *-ay, *-a:y, *-ek, *-e:k, *-em, *-es, *-ey, *-əw, *-əy, *-ik, *-il, *-iŋ, *-ip, *-is, *-iy, *-i, *-ot, *-ow, *-u, *-uk, *-u:l, *-uŋ, *-up, *-ut, *-wa, *-way, *-wiy, *-wi, *-ya, *-yak, *-yam, *-yap, *-ye, *-yek, *-yen, *-yey, *-yik, *-yit, *-yi:t, *-yu, *-yuŋ.	
			*ŋ-	{23}	*-a, *-ak, *-ar, *-as, *-at, *-aw, *-a:w, *-ay, *-əw, *-or, *-ow, *-oy, *-ra, *-raŋ, *-rəw, *-rul, *-ul, *-wa, *-wal, *-wat, *- ^w a, *- ^w ya, *-ya.	
			*p-	{81}	*-a, *-ak, *-an, *-ap, *-ar, *-at, *-ay, *-a:y, *-e, *-e:r, *-ey, *-əw, *-əy, *-in, *-ip, *-ir, *-leŋ, *-liŋ, *-loŋ, *-lu, *-lyum, *-o, *-ok, *-op, *-ral, *-raŋ, *-rat, *-ray, *-ret, *-rəy, *-ri, *-riŋ, *-ro, *-rok, *-ru, *-rup, *-rut, *-ruw, *-ryo, *-u, *-uk, *-u:k, *-ul, *-un, *-up, *-ur, *-ut, *-wak,	
*l-	{38}	*-a, *-ak, *-am, *-a:m, *-aŋ, *-ap, *-a:p, *-ay, *-a:y, *-eŋ, *-ep, *-ey, *-əy, *-ik, *-im, *-iŋ, *-ip, *-i:t, *-i, *-oŋ, *-ow, *-u, *-uk, *-um, *-uŋ, *-up, *-wan, *-wap, *-wat, *-way, *-wa:y, *-wiy, *-wi, *-ya, *-yak, *-yam,				

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			tsy-	{24}	<p>-ak, *-an, *-ap, *-ar, *-at, *-a:y, *-en, *-əw, *-əy, *-ik, *-il, *-ip, *-ir, *-iy, *-i, *-o:p, *-ow, *-uk, *-ul, *-up, *-ur, *-wap, *-war, *-wat.</p>
			w-	{21}	<p>-a, *-ak, *-al, *-am, *-an, *-aŋ, *-ap, *-ar, *-as, *-at, *-ay, *-a:y, *-el, *-əy, *-ik, *-oy, *-u, *-ul, *-un, *-ya, *-yik.</p>
s-	{43}	<p>-a, *-ak, *-al, *-am, *-an, *-aŋ, *-ap, *-ar, *-at, *-a:w, *-a:y, *-em, *-ep, *-er, *-ey, *-əw, *-əy, *-ik, *-il, *-in, *-iŋ, *-ip, *-it, *-i:t, *-iy, *-i, *-ow, *-oy, *-ram, *-rel, *-riŋ, *-ru, *-ruw, *-u, *-um, *-uŋ, *-ur, *-ut, *-uy, *-wa, *-wan, *-wa:r, *-wat.</p>	*y-	{25}	<p>*-a, *-ak, *-al, *-aŋ, *-a:ŋ, *-a:p, *-ar, *-a:r, *-ay, *-en, *-əw, *-əy, *-ik, *-im, *-ip, *-it, *-ok, *-u, *-uk, *-um, *-uŋ, *-up, *-uy, *-war, *-wi.</p>
			z-	{19}	<p>-a, *-ak, *-an, *-aŋ, *-a:y, *-əy, *-ik, *-il, *-im, *-i:t, *-la, *-lum, *-ril, *-ryaŋ, *-uk, *-u:k, *-um, *-uŋ, *-ur.</p>
sy-	{20}	<p>-a, *-al, *-a:l, *-am, *-aŋ, *-ar, *-ay, *-en, *-ey, *-il, *-im, *-ip, *-ir, *-ow, *-u, *-up, *-uw, *-wa, *-war, *-wəy.</p>	*zy-	{5}	<p>*-aŋ, *-u, *-uk, *-u:k, *-uw.</p>
t-	{45}	<p>-a, *-ak, *-al, *-am, *-an, *-aŋ, *-ap, *-a:p, *-a:r,</p>			

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Proto-Roots by Proto-Final

Proto-Roots by Proto-Final					
*-a	{53}	*ʔa, *ba, *bwa, *b ^w a, *bya, *da, *dzya, *ga, *gla, *gra, *gwa, *gya, *ha, *hla, *hwa, *hya, *ka, *kla, *kra, *kwa, *la, *lya, *ma, *mra, *mwa, *mya, *na, *nwa, *nya, *ŋa, *ŋra, *ŋwa, *ŋ ^w a, *ŋya, *pa, *p ^w a, *ra, *rwa, *rya, *sa, *swa, *sya, *sywa, *ta, *twa, *tya, *tsa, *tswa, *wa, *wya, *ya, *za, *zla.			*kyam, *lam, *lyam, *nam, *nyam, *pwam, *p ^w am, *ram, *ryam, *sam, *sram, *syam, *tam, *tyam, *tsam, *wam.
			*-a:m	{2}	*ka:m, *la:m.
			*-an	{28}	*ban, *bran, *dan, *dwan, *dzwan, *dzyan, *gan, *glan, *gyan, *han, *hwan, *hyan, *kan, *kyan, *lwan, *man, *mwan, *pan, *pwan, *ran, *san, *swan, *tan, *twan, *tsan, *tsyan, *wan, *zan.
*-ak	{42}	*ʔak, *bak, *brak, *dak, *dyak, *dzak, *dzyak, *gak, *glak, *grak, *hak, *hyak, *kak, *klak, *krak, *kwak, *kyak, *lak, *lyak, *mak, *mrak, *myak, *nak, *nyak, *ŋak, *pak, *pwak, *p ^w ak, *pyak, *rak, *rwak, *ryak, *sak, *tak, *trak, *twak, *tyak, *tsak, *tsyak, *wak, *yak, *zak.			
			*-a:n	{1}	*dza:n.
			*-aŋ	{40}	*ʔaŋ, *baŋ, *braŋ, *b ^w aŋ, *daŋ, *dzwaŋ, *dzyaŋ, *gaŋ, *glaŋ, *graŋ, *gyaŋ, *haŋ, *hwaŋ, *kaŋ, *klaŋ, *kraŋ, *kyan, *laŋ, *lyaŋ, *maŋ, *mraŋ, *myaŋ, *naŋ, *ŋraŋ, *praŋ, *pwaŋ, *p ^w aŋ, *pyaŋ, *raŋ, *rwaŋ, *ryaŋ, *saŋ, *syaŋ, *taŋ, *tyaŋ, *tsaŋ, *waŋ, *yaŋ, *zaŋ, *zyaŋ.
*-a:k	{5}	*ba:k, *ha:k, *ka:k, *kwa:k, *ma:k.			
*-al	{25}	*ʔal, *bal, *bral, *dal, *dyal, *dzywal, *gal, *gwal, *hal, *hwal, *hyal, *kal, *kwal, *myal, *ŋwal, *pral, *p ^w al, *ral, *ryal, *sal, *syal, *tal, *tyal, *wal, *yal.			
			*-a:ŋ	{5}	*dwa:ŋ, *ha:ŋ, *ka:ŋ, *na:ŋ, *ya:ŋ.
			*-ap	{28}	*ʔap, *bap, *bwap, *dap, *drap, *gwap, *gyap, *hap, *kap, *krap, *kyap, *lap, *lwap, *lyap, *nap, *nyap, *pap, *pwap, *pyap, *rap, *ryap, *sap, *tap, *trap, *tsap, *tsyap, *tsywap, *wap.
*-a:l	{7}	*ba:l, *dzya:l, *ga:l, *hwa:l, *ka:l, *ra:l, *sya:l.			
*-am	{28}	*ʔam, *bwam, *byam, *dam, *dyam, *dzam, *gam, *gram, *hwam, *hyam, *kam, *kram,			
			*-a:p	{6}	*ga:p, *ka:p, *la:p, *ra:p, *ta:p, *ya:p.

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*-ar	{25}	*b ^w ar, *byar, *dar, *dzar, *gar, *gyar, *har, *hwar, *h ^w ar, *hyar, *kar, *kwar, *ɲar, *par, *pwar, *p ^w ar, *pyar, *sar, *syar, *sywar, *tsyar, *tsywar, *war, *yar, *ywar.	*-ek	{3}	*dek, *nek, *nyek.
			*-e:k	{2}	*gle:k, *ne:k.
			*-el	{5}	*hwel, *mel, *myel, *srel, *wel.
			*-e:l	{1}	*kye:l.
			*-em	{2}	*nem, *sem.
*-ar	{11}	*ʔar, *bar, *gar, *har, *hwar, *kar, *nar, *pwar, *swar, *tar, *yar.	*-en	{10}	*blen, *hyen, *kyen, *men, *nyen, *pyen, *ren, *syen, *tsyen, *yen.
*-as	{6}	*dzas, *nas, *ɲas, *ras, *tas, *was.	*-eŋ	{6}	*bleŋ, *keŋ, *kyeŋ, *leŋ, *pleŋ, *reŋ.
*-at	{24}	*bat, *brat, *b ^w at, *dat, *gyat, *hwat, *kat, *kyat, *lwat, *mwat, *ɲat, *ɲwat, *pat, *prat, *pwat, *p ^w at, *rwat, *ryat, *sat, *swat, *tsat, *tsyat, *tsywat, *wat.	*-ep	{3}	*krep, *lep, *sep.
			*-er	{3}	*byer, *ser, *ter.
			*-e:r	{2}	*he:r, *pe:r.
			*-es	{3}	*gres, *kres, *nes.
			*-et	{6}	*bet, *byet, *ket, *kret, *pret, *pyet.
*-aw	{7}	*ʔaw, *daw, *gaw, *kaw, *klaw, *ɲaw, *raw.	*-ew	{4}	*ʔew, *hew, *hrew, *kew.
*-a:w	{5}	*ʔa:w, *ka:w, *na:w, *ɲa:w, *sa:w.	*-ey	{10}	*dey, *key, *ley, *mey, *ney, *nyey, *pey, *rey, *sey, *syey.
*-ay	{30}	*ʔay, *bay, *bray, *b ^w ay, *day, *dway, *dzay, *dzyay, *dzyway, *gay, *glay, *gray, *kay, *kway, *lay, *lway, *may, *nay, *nway, *ɲay, *pay, *pray, *ray, *rway, *ryay, *syay, *tay, *tway, *way, *yay.	*-əw	{16}	*bəw, *dzəw, *dzyəw, *gəw, *kəw, *krəw, *kyəw, *məw, *nəw, *ɲəw, *ɲrəw, *pəw, *rəw, *səw, *tsyəw, *yəw.
*-a:y	{22}	*ba:y, *da:y, *dzay, *gray, *gway, *ha:y, *hway, *ka:y, *kway, *kya:y, *la:y, *lway, *ma:y, *na:y, *pa:y, *pway, *sa:y, *ta:y, *tsay, *tsya:y, *wa:y, *za:y.	*-əy	{27}	*bəy, *brəy, *bwəy, *dzəy, *grəy, *g ^w əy, *gyəy, *kəy, *kləy, *krəy, *k ^w əy, *ləy, *mway, *nəy, *pəy, *prəy, *pwəy, *rəy, *rwəy, *səy, *sywəy, *tsəy, *tswəy, *tsyəy, *wəy, *yəy, *zəy.
*-e	{5}	*be, *ble, *ke, *nye, *pe.	*-ik	{26}	*ʔik, *bik, *dik, *dzik, *dzyik, *gik, *gyik, *kik,

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		*kyik, *lik, *mik, *myik, *nik, *nyik, *p ^w ik, *rik, *ryik, *sik, *tik, *tyik, *tsik, *tsyik, *wik, *wyik, *yik, *zik.				*mit, *nyit, *rit, *sit, *tsit, *zit.
*-ik	{1}	*di:k.		*-iy	{14}	*biy, *gwiy, *kriy, *lwiy, *niy, *nwiy, *pwiy, *riy, *rwiy, *siy, *tiy, *twiy, *tsiy, *tsyiy.
*-il	{16}	*bil, *dzil, *gil, *gril, *hil, *mil, *nil, *p ^w il, *ril, *sil, *syil, *til, *tsil, *tsyil, *zil, *zril.		*-i	{24}	*bi, *di, *dzi, *dzyi, *gwi, *gyi, *kri, *k ^w i, *kyi, *li, *lwi, *mi, *ni, *nwi, *pri, *pwi, *ri, *rwi, *si, *ti, *twi, *tsi, *tsyi, *ywi.
*-il	{4}	*hi:l, *ki:l, *kyi:l, *ri:l.				
*-im	{14}	*dim, *dzim, *dzyim, *gim, *glim, *grim, *kim, *krim, *kyim, *lim, *rim, *syim, *yim, *zim.		*-la	{5}	*gla, *hla, *kla, *la, *zla.
				*-lak	{3}	*glak, *klak, *lak.
				*-lam	{1}	*lam.
*-im	{1}	*ri:m.		*-la:m	{1}	*la:m.
*-in	{8}	*dzin, *krin, *min, *pin, *pyin, *rin, *sin, *tsin.		*-lan	{1}	*glan.
				*-laŋ	{3}	*glaŋ, *klaŋ, *laŋ.
*-in	{4}	*kri:n, *kyi:n, *mi:n, *ri:n.		*-lap	{1}	*lap.
*-iŋ	{17}	*ʔiŋ, *bliŋ, *diŋ, *dziŋ, *gliŋ, *gyiŋ, *kriŋ, *liŋ, *miŋ, *mriŋ, *niŋ, *pliŋ, *priŋ, *pyiŋ, *riŋ, *siŋ, *sriŋ.		*-la:p	{1}	*la:p.
				*-law	{1}	*klaw.
				*-lay	{2}	*glay, *lay.
				*-la:y	{1}	*la:y.
*-ip	{16}	*ʔip, *bip, *dip, *dzyip, *gip, *grip, *gyip, *lip, *nip, *pip, *rip, *sip, *syip, *tip, *tsyip, *yip.		*-le	{1}	*ble.
				*-le:k	{1}	*gle:k.
				*-len	{1}	*blen.
*-ip	{1}	*dzyi:p.		*-leŋ	{3}	*bleŋ, *leŋ, *pleŋ.
*-ir	{3}	*hir, *pir, *tsyir.		*-lep	{1}	*lep.
*-iir	{1}	*syiir.		*-ley	{1}	*ley.
*-is	{2}	*nis, *ris.		*-ləy	{2}	*kləy, *ləy.
*-it	{12}	*ʔit, *dit, *dzyit, *git, *gyit, *kit, *kyit, *nyit, *pyit, *rit, *sit, *yit.		*-li	{1}	*li.
				*-lik	{1}	*lik.
*-it	{10}	*ʔit, *dzi:t, *kri:t, *li:t,		*-lim	{2}	*glim, *lim.

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*-liŋ {4}	*bliŋ, *gliŋ, *liŋ, *pliŋ.	*-or {3}	*hor, *kor, *ŋor.
*-lip {1}	*lip.	*-o:r {1}	*ko:r.
*-li:t {1}	*li:t.	*-ot {2}	*not, *tsot.
*-loŋ {2}	*loŋ, *ploŋ.	*-ow {13}	*dow, *dzyow, *gow, *low, *mow, *now, *ŋow, *row, *sow, *syow, *tow, *tsow, *tsyow.
*-low {1}	*low.		
*-lu {3}	*blu, *lu, *plu.	*-oy {10}	*boy, *doy, *groy, *koy, *kroy, *moy, *ŋoy, *soy, *toy, *woy.
*-luk {2}	*kluk, *luk.		
*-lum {5}	*blum, *glum, *klum, *lum, *zlum.	*-ra {5}	*gra, *kra, *mra, *ŋra, *ra.
*-lun {1}	*glun.	*-rak {6}	*brak, *grak, *krak, *mrak, *rak, *trak.
*-luŋ {2}	*klun, *luŋ.		
*-lu:ŋ {1}	*klu:ŋ.	*-ral {3}	*bral, *pral, *ral.
*-lup {2}	*klup, *lup.	*-ra:l {1}	*ra:l.
*-lwak {1}	*glwak.	*-ram {4}	*gram, *kram, *ram, *sram.
*-lyan {1}	*klyan.		
*-lyəw {1}	*mlyəw.	*-ran {2}	*bran, *ran.
*-lyon {1}	*klyon.	*-raŋ {7}	*bran, *graŋ, *kraŋ, *mraŋ, *ŋraŋ, *praŋ, *raŋ.
*-lyum {1}	*plyum.		
*-o {7}	*do, *go, *ho, *ko, *po, *pro, *to.	*-rap {4}	*drap, *krap, *rap, *trap.
*-ok {7}	*ʔok, *bok, *grok, *krok, *pok, *prok, *yok.	*-ra:p {1}	*ra:p.
*-ol {3}	*ʔol, *grol, *hol.	*-ras {1}	*ras.
*-o:l {2}	*ʔo:l, *gro:l.	*-rat {2}	*brat, *prat.
*-om {1}	*hyom.	*-raw {1}	*raw.
*-on {3}	*ʔon, *byon, *dzyon.	*-ray {4}	*bray, *gray, *pray, *ray.
*-oŋ {9}	*broŋ, *doŋ, *dzoŋ, *gyoŋ, *loŋ, *ploŋ, *roŋ, *toŋ, *tsoŋ.	*-ra:y {1}	*gra:y.
*-op {3}	*bop, *hyop, *pop.	*-rel {1}	*srel.
*-o:p {4}	*dzo:p, *dzyo:p, *tso:p, *tsyop.	*-ren {1}	*ren.
		*-reŋ {1}	*reŋ.
		*-rep {1}	*krep.
		*-res {2}	*gres, *kres.

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*-ret {2}	*kret, *pret.	*-ruk {1}	*ruk.
*-rew {1}	*hrew.	*-rul {2}	*krul, *ŋrul.
*-rey {1}	*rey.	*-ru:l {2}	*bru:l, *ru:l.
*-rəw {3}	*krəw, *ŋrəw, *rəw.	*-rum {4}	*brum, *grum, *krum, *rum.
*-rəy {5}	*brəy, *grəy, *krəy, *prəy, *rəy.	*-ruŋ {4}	*bruŋ, *gruŋ, *kruŋ, *ruŋ.
*-ri {3}	*kri, *pri, *ri.	*-ru:ŋ {1}	*kru:ŋ.
*-rik {1}	*rik.	*-rup {5}	*brup, *drup, *grup, *prup, *rup.
*-ril {3}	*gril, *ril, *zril.	*-rus {1}	*rus.
*-ri:l {1}	*ri:l.	*-rut {2}	*prut, *rut.
*-rim {3}	*grim, *krim, *rim.	*-ruw {2}	*pruw, *sruw.
*-ri:m {1}	*ri:m.	*-rwak {2}	*brwak, *grwak.
*-rin {2}	*krin, *rin.	*-rwaŋ {1}	*brwaŋ.
*-ri:n {2}	*kri:n, *ri:n.	*-rwap {1}	*krwap.
*-riŋ {5}	*kriŋ, *mriŋ, *priŋ, *riŋ, *siŋ.	*-rwas {1}	*grwas.
*-rip {2}	*grip, *rip.	*-rwat {1}	*grwat.
*-ris {1}	*ris.	*-rwa {1}	*grwa.
*-rit {1}	*rit.	*-rwəy {2}	*grwəy, *krwəy.
*-ri:t {2}	*kri:t, *ri:t.	*-rwil {2}	*grwil, *krwil.
*-riy {2}	*kriy, *riy.	*-rwiy {1}	*krwiy.
*-ro {1}	*pro.	*-rwi {1}	*krwi.
*-rok {3}	*grok, *krok, *prok.	*-ryan {1}	*zryan.
*-rol {1}	*grol.	*-ryo {1}	*pryo.
*-ro:l {1}	*gro:l.	*-ryum {1}	*gryum.
*-roŋ {2}	*broŋ, *roŋ.	*-u {29}	*ʔu, *blu, *bu, *du, *dzu, *dzyu, *gru, *gu, *hu, *hyu, *kru, *ku, *lu, *mu, *nu, *nyu, *plu, *pru, *pu, *p ^w u, *ru, *sru, *su, *syu, *tu, *tsu, *wu, *yu, *zyu.
*-row {1}	*row.		
*-roy {2}	*groy, *kroy.		
*-ru {5}	*gru, *kru, *pru, *ru, *sru.		
*-ruk {4}	*bruk, *kruk, *mruk, *ruk.	*-uay {1}	*gyuay.

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*-uk {22}	*ʔuk, *bruk, *duk, *dzuk, *dzyuk, *guk, *gyuk, *kluk, *kruk, *kuk, *luk, *mruk, *muk, *myuk, *nuk, *puk, *ruk, *tuk, *tsyuk, *yuk, *zuk, *zyuk.	*-us {2}	*tsyu:r, *zu:r. *hus, *rus.
*-u:k {10}	*dzu:k, *dzyu:k, *gu:k, *ku:k, *mu:k, *pu:k, *ru:k, *tu:k, *zu:k, *zyu:k.	*-ut {12}	*ʔut, *dut, *dzut, *dzyut, *kut, *mut, *nut, *prut, *put, *rut, *ryut, *sut.
*-ul {15}	*ʔul, *bul, *dul, *hul, *krul, *kul, *mul, *ŋrul, *ŋul, *pul, *p ^w ul, *tul, *tsul, *tsyul, *wul.	*-u:t {1}	*ku:t.
*-u:l {4}	*bru:l, *gu:l, *nu:l, *ru:l.	*-uw {6}	*kuw, *pruw, *sruw, *syuw, *tsuw, *zyuw.
*-um {21}	*ʔum, *blum, *brum, *dzum, *glum, *grum, *gum, *klum, *krum, *kum, *kyum, *lum, *p ^w um, *rum, *ryum, *sum, *tum, *tsum, *yum, *zlum, *zum.	*-uy {3}	*huy, *suy, *yuy.
*-u:m {3}	*ʔu:m, *ku:m, *mu:m.	*-wa {14}	*bwa, *grwa, *gwa, *hwa, *kwa, *mwa, *nwa, *ŋwa, *rwa, *swa, *sywa, *twa, *tswa, *wa.
*-un {6}	*bun, *glun, *kun, *mun, *pun, *wun.	*-wak {9}	*brwak, *glwak, *grwak, *kwak, *pwak, *pywak, *rwak, *twak, *wak.
*-uŋ {17}	*bruŋ, *buŋ, *duŋ, *dyuŋ, *gruŋ, *guŋ, *kluŋ, *kruŋ, *kuŋ, *luŋ, *nuŋ, *nyuŋ, *ruŋ, *suŋ, *tuŋ, *yuŋ, *zuŋ.	*-^wak {1}	*p ^w ak.
*-u:ŋ {7}	*du:ŋ, *gu:ŋ, *klu:ŋ, *kru:ŋ, *ku:ŋ, *mu:ŋ, *tu:ŋ.	*-wa:k {1}	*kwak.
*-up {18}	*ʔup, *brup, *bup, *drup, *dup, *dzyup, *grup, *gup, *klup, *lup, *nup, *prup, *pup, *rup, *syup, *tup, *tsyup, *yup.	*-wal {8}	*dzywal, *gwal, *gywal, *hwal, *kwal, *kywal, *ŋwal, *wal.
*-ur {5}	*ʔur, *hur, *kur, *pur, *tur.	*-^wal {1}	*p ^w al.
*-u:r {6}	*ʔu:r, *kyu:r, *mu:r, *su:r,	*-wa:l {1}	*hwa:l.
		*-wam {4}	*bwam, *hwam, *pwam, *wam.
		*-^wam {1}	*p ^w am.
		*-wan {10}	*dwan, *dzwan, *hwan, *kywan, *lwan, *mwan, *pwan, *swan, *twan, *wan.
		*-waŋ {6}	*brwaŋ, *dzwaŋ, *hwaŋ, *pwaŋ, *rwaŋ, *waŋ.
		*-^waŋ {2}	*b ^w aŋ, *p ^w aŋ.
		*-wa:ŋ {1}	*dwa:ŋ.

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*-wap {7}	*bwap, *gwap, *krwap, *lwap, *pwap, *tsywap, *wap.	*-wi {8}	*gwi, *krwi, *lwi, *nwi, *pwi, *rwi, *twi, *ywi.
*-war {7}	*hwar, *kwar, *pwar, *sywar, *tsywar, *war, *ywar.	*-wi {1}	*k ^{wi} .
*- ^w ar {3}	*b ^w ar, *h ^w ar, *p ^w ar.	*-woy {1}	*woy.
*-war {4}	*hwar, *kywar, *pwar, *swar.	*-wu {1}	*wu.
*-was {2}	*grwas, *was.	*-wul {1}	*wul.
*-wat {10}	*grwat, *hwat, *lwat, *mwat, *ŋwat, *pwat, *rwat, *swat, *tsywat, *wat.	*-wul {1}	*p ^{wul} .
*- ^w at {2}	*b ^w at, *p ^w at.	*-wum {1}	*p ^{wum} .
*-way {8}	*dway, *dzyway, *kway, *lway, *nway, *rway, *tway, *way.	*-wun {1}	*wun.
*- ^w ay {1}	*b ^w ay.	*-wu {1}	*p ^{wu} .
*-way {6}	*gway, *hway, *kway, *lway, *pway, *way.	*- ^w ya {2}	*g ^{wya} , *ŋ ^{wya} .
*- ^w a {3}	*b ^w a, *ŋ ^w a, *p ^w a.	*-ya {15}	*bya, *dzya, *g ^{wya} , *gya, *hya, *lya, *mya, *nya, *ŋ ^{wya} , *ŋya, *rya, *sya, *tya, *wya, *ya.
*-wel {2}	*hwel, *wel.	*-yak {12}	*dyak, *dzyak, *hyak, *kyak, *lyak, *myak, *nyak, *pyak, *ryak, *tyak, *tsyak, *yak.
*-wəy {11}	*bwəy, *grwəy, *hywəy, *krwəy, *kywəy, *mwəy, *pwəy, *rwəy, *sywəy, *tswəy, *wəy.	*-yal {7}	*dya, *hya, *mya, *rya, *sya, *tya, *ya.
*- ^w əy {2}	*g ^{wəy} , *k ^{wəy} .	*-yal {2}	*dzya, *sya.
*-wik {1}	*wik.	*-yam {9}	*byam, *dyam, *hyam, *kyam, *lyam, *nyam, *ryam, *syam, *tyam.
*- ^w ik {1}	*p ^{wik} .	*-yan {5}	*dzyan, *gyan, *hyan, *kyan, *tsyan.
*-wil {2}	*grwil, *krwil.	*-yan {13}	*dzyan, *gyan, *klyan, *kyan, *lyan, *myan, *pyan, *ryan, *syan, *tyan, *yan, *zyan,
*- ^w il {1}	*p ^{wil} .		*zyan.
*-wiy {7}	*gwiy, *krwiy, *lwiy, *nwiy, *pwiy, *rwiy, *twiy.	*-yaŋ {1}	*yaŋ.
		*-yap {7}	*gyap, *kyap, *lyap, *nyap, *pyap, *ryap,

Index of Proto-Root-Syllables

	*tsyap.	*-yi:n {1}	*kyi:n.
*-ya:p {1}	*ya:p.	*-yiŋ {2}	*gyiŋ, *pyiŋ.
*-yar {7}	*byar, *gyar, *hyar, *pyar, *syar, *tsyar, *yar.	*-yip {5}	*dzyip, *gyip, *syip, *tsyip, *yip.
*-yar: {1}	*ya:r.	*-yi:p {1}	*dzyi:p.
*-yat {4}	*gyat, *kyat, *ryat, *tsyat.	*-yir {1}	*tsyir.
*-yay {4}	*dzyay, *ryay, *syay, *yay.	*-yir: {1}	*syir:.
*-yay: {2}	*kya:y, *tsya:y.	*-yit {6}	*dzyit, *gyit, *kyit, *nyit, *pyit, *yit.
*-ye {1}	*nye.	*-yit: {1}	*nyit:.
*-yek {1}	*nyek.	*-yiy {1}	*tsyiy.
*-yel {1}	*myel.	*-yo {1}	*pryo.
*-ye:l {1}	*kye:l.	*-yok {1}	*yok.
*-yen {7}	*hyen, *kyen, *nyen, *pyen, *syen, *tsyen, *yen.	*-yom {1}	*hyom.
*-yeŋ {1}	*kyeŋ.	*-yon {2}	*byon, *dzyon.
*-yer {1}	*byer.	*-yoŋ {2}	*gyoŋ, *klyoŋ.
*-yet {2}	*byet, *pyet.	*-yop {1}	*hyop.
*-yey {2}	*nyey, *syey.	*-yo:p {2}	*dzyo:p, *tsyo:p.
*-yəw {5}	*dzyəw, *kyəw, *mlyəw, *tsyəw, *yəw.	*-yow {3}	*dzyow, *syow, *tsyow.
*-yəy {3}	*gyəy, *tsyəy, *yəy.	*-yu {6}	*dzyu, *hyu, *nyu, *syu, *yu, *zyu.
*-yi {4}	*dzyi, *gyi, *kyi, *tsyi.	*-yuay {1}	*gyuay.
*-yik {10}	*dzyik, *gyik, *kyik, *myik, *nyik, *ryik, *tyik, *tsyik, *wyik, *yik.	*-yuk {6}	*dzyuk, *gyuk, *myuk, *tsyuk, *yuk, *zyuk.
*-yil {2}	*syil, *tsyil.	*-yuk: {2}	*dzyu:k, *zyu:k.
*-yi:l {1}	*kyi:l.	*-yul {1}	*tsyul.
*-yim {4}	*dzyim, *kyim, *syim, *yim.	*-yum {5}	*gryum, *kyum, *plyum, *ryum, *yum.
*-yin {1}	*pyin.	*-yuŋ {3}	*dyuŋ, *nyuŋ, *yuŋ.
		*-yup {4}	*dzyup, *syup, *tsyup, *yup.
		*-yu:r {2}	*kyu:r, *tsyu:r.

INDEX II

*-yut {2}	*dzyut, *ryut.
*-yuw {2}	*syuw, *zyuw.
*-yuy {1}	*yuy.
*-ywak {1}	*pywak.
*-ywal {2}	*gywal, *kywal.
*-ywan {1}	*kywan.
*-ywa:r {1}	*kywa:r.
*-ywəy {2}	*hywəy, *kywəy.

This *Index* contains an alphabetical list of brief English glosses, referring the reader to the points in the text where the etyma with those meanings are discussed. The etyma are presented according to their proto-root-syllables, with the associated affixes stripped off. This *Index* does not indicate the level of the reconstruction (PTB, PLB, *etc.*). For full semantic and phonological details connected with each etymon, the reader is requested to consult the *Index of Proto-Forms*, as well as the body of the text itself.

In the *Index of Proto-Forms*, most of the etyma are glossed with multiple English equivalents, separated by slashes, in order to give a precise notion of their semantic range, *e.g.* *g-na-s ‘be/live/stay/rest/alight/perch’. In this *Index of Proto-Glosses*, each of these alternative glosses is listed separately as a head-entry, without cross-references to the others. Occasionally, when the alternatives occur close to each other in the alphabetical order, this leads to a bit of redundancy, *e.g.* *shade* and *shadow*; *one* and *only*; *swell up* and *swollen*; *drip* and *drop*.

When an English gloss contains several words, such that the keyword does not come first (*e.g.* *flying squirrel*; *be at its peak*; *spend the night*), parentheses are resorted to: *squirrel (flying)*; *peak (be at its)*; *night (spend the)*. Parentheses are also used to clarify an ambiguous English gloss, or to indicate its part of speech. Thus we have sequences of entries like “the three *bear*’s”:

bear (endure)

bear (n.)

bear fruit

#

1ST PERSON PRONOUN

⇒ ***ŋa** {1, 38, 162, 165,
167, 173, 174, 208, 231,
487}.

2ND PERSON PRONOUN

⇒ ***na** {2, 177, 264};
***nan** {2, 37, 249}.

3RD PERSON PR. (remote)

⇒ ***su** {3, 180}.

3RD PERSON PRONOUN

⇒ ***zan** {3, 28}.

A

ABANDON

⇒ ***gar** {390}.

ABLE

⇒ ***pret** {374, 376}.

ACCEPT

⇒ ***dz(y)u** {479}.

ACHY

⇒ ***nyun** {284}.

ACID (v.)

⇒ ***kyu:r** ≠ ***kywar**
{85, 384, 398, 402, 426,
449, 475, 514}; ***su:r** ≠
***swar** {85, 384, 398,
402, 426, 449, 475, 514}.

ACRID (smoke)

⇒ ***mu** {112, 180}.

ADMONISH

⇒ ***kul** {423}.

AFFIX

⇒ ***byar** ≠ ***pyar** {390,
401}.

AFTER

⇒ ***nuk** ≠ ***nun** {102,
286, 289, 479, 520}.

AGENTIVE NOMINALIZER

⇒ ***sin** {278, 306, 449}.

AGITATED

⇒ ***syay** {209}.

ALIGHT

⇒ ***na** {433, 442, 471,
477}.

ALIVE

⇒ ***dat** {330}; ***kruŋ**
{285, 288}; ***r(y)aŋ** ≠
***riŋ** {29, 78, 282, 283,
307, 506, 528}.

ALL

⇒ ***ka** {163}; ***kul** {24,
119, 384, 385, 388, 414,
416, 425}; ***kun** {278}.

ALMOST HIT

⇒ ***ra:p** {340}; ***soy**
{228}.

ANCESTORS

⇒ ***dziŋ** {31, 529}.

ANGLE

⇒ ***gu(:)k** ≠ ***ku(:)k**
{124, 141, 315, 357, 358,
362}; ***hi:l** ≠ ***ki:l** {57,
412, 413, 426}; ***kuk** ≠
***ʔuk** {57}.

ANGRY

⇒ ***tsik** {344, 348}.

ANIMAL

⇒ ***sya** {32, 88, 102, 118,
139, 140, 150, 162, 165,
169, 172, 177, 278, 448,
475}.

ANIMAL (domestic)

⇒ ***dzay** {209}.

ANT

⇒ ***grip** {316, 376};
***krep** {376}; ***rwak**
{94, 139, 154, 321}.

ANTELOPE

⇒ ***tsot** {380}; ***ya**
{163}.

ANVIL

⇒ ***bi** {187}.

APART

⇒ ***glay** {221}.

APE

⇒ ***ŋa:w** {227}.

APPEASE

⇒ ***toy** or ***tway** {229}.

APTITUDE

⇒ *(**d**)**za:y** ≠ *(**t**)**sa:y**
{210, 221}.

ARCHED

⇒ ***ku(:)m** {276}.

ARISE

⇒ ***sow** {56, 117, 223}.

ARM

⇒ ***dyak** {65}; ***l(y)ak**
{51, 53, 65, 129, 130, 134,
148, 317, 319, 327}; ***yak**
{51, 65}.

ARMLength

⇒ ***mu:k** {359, 361}.

ARMPIT

⇒ ***li** {186}; ***yak** {51,
317, 326, 329}.

ARRIVE

⇒ ***la** {165, 172, 220, 231,
484}.

ARROW

⇒ ***da** {50}; ***dza:n**
{260}; ***la** {50, 80, 133,

145, 165, 486}; *tal {387, 404, 422}.

ASCEND

⇒ *tak {317, 326}.

ASHAMED

⇒ *r(y)ak {29, 46, 78, 317, 326}; *yak {46, 95, 136, 317, 326}.

ASHES

⇒ *tal {422}.

ASKEW

⇒ *bary ꝫ *pary {210, 221}.

ASSIST

⇒ *grwak {327}.

AUNT

⇒ *ney ꝫ *ni(y) {193, 218, 509}; *sru(w) {77, 198, 475}.

AUNT (maternal)

⇒ *yay ꝫ *ʔay {208}.

AWAKE

⇒ *kruk {363}; *nəw {182}; *sow {56, 117, 223}.

AWED

⇒ *ti {462}.

AWN (of grain)

⇒ *nu {180}.

AXE

⇒ *p^wa {61, 127, 171, 172}; *ta {162}.

B

BABBLE

⇒ *ʔur {385, 396, 402}.

BACK

⇒ *hyak {65}; *ka {428}; *kuk ꝫ *ʔuk {57}; *nuk {315}; *nuk ꝫ *nuŋ {102, 286, 289, 479, 520}.

BACK (small of)

⇒ *gaɪ ꝫ *kal {404, 405, 428}.

BAG

⇒ *ʔip ꝫ *ʔit {533}.

BAKE

⇒ *tsyow {34, 223, 224, 227}.

BAMBOO

⇒ *p^wa {61, 62, 134, 162, 175, 305, 387}; *wa {44, 62, 305}.

BAMBOO SPROUT

⇒ *m(y)ik {344, 348}.

BAMBOO STRIP (for tying)

⇒ *nay ꝫ *ney {216, 510}.

BANANA

⇒ *ŋak {242, 318}.

BANK

⇒ *ka(:)m {127, 251, 298}.

BARK (as dog)

⇒ *laŋ {495}; *prin {280, 495}; *riŋ {132}.

BARK (n.)

⇒ *kok ꝫ *kwa(:)k {378, 514}.

BARLEY

⇒ *zəy {189}.

BARTER

⇒ *lay ꝫ *ley {49, 208, 216, 217, 511}; *rey {49,

132, 205, 216, 511}.

BASKET

⇒ *kaw {225}; *kuk {356, 359, 361}.

BAT

⇒ *ba:k {325, 326}.

BATHE

⇒ *s(y)il ꝫ *syal {409, 410, 413, 425, 508}.

BE

⇒ *na {433, 442, 471, 477}; *pret {374, 376}; *ri(y) {186, 350, 502}.

BE THE CASE

⇒ *rut {502}.

BE THERE

⇒ *dzyaŋ {267}.

BEAK

⇒ *mu:r {397, 402, 426, 537}; *nes {435}; *ts(y)ul {415, 423}.

BEAN

⇒ *be {203}; *nuk {39, 40, 100, 315, 356}.

BEAR (endure)

⇒ *tyak {323}; *ʔiŋ {281}.

BEAR (n.)

⇒ *wam {139, 140, 252, 253, 299, 531}.

BEAR FRUIT

⇒ *ras {432, 437}.

BEARD

⇒ *yar {390}.

BEAT

⇒ *dip ꝫ *tip {498}; *dup ꝫ *tup {498}; *duŋ {309, 363}.

BEAUTIFUL

⇒ *hla {162, 172};
 *l(y)ak ≠ *l(y)aŋ {51,
 327, 521}; *moy {220,
 228}; *ta:p {340}.

BEE

⇒ *braŋ {302}; *bya
 {19, 34, 63, 68, 169, 171};
 *plyum {531}; *was
 {432, 442}.

BEE (dammer)

⇒ *gwa ≠ *k/gwa:y ≠
 *kwa {23, 213, 217,
 486}.

BEFUDDLED

⇒ *tum {273}.

BEHIND

⇒ *nuk ≠ *nuŋ {102,
 286, 289, 479, 520}.

BELLY

⇒ *grwat {334}; *pu:k
 ≠ bu:k {358, 359, 360,
 362}; *p^wam {47, 61};
 *ri:l {44, 385, 387, 412,
 413, 426}; *wam {46,
 253}.

BELONG

⇒ *dz(y)u {479}.

BELOW

⇒ *ʔok {377}.

BELT

⇒ *ta:y {210, 220}.

BEND

⇒ *gu:l {418}; *koy
 {228}.

BENT

⇒ *gu(:)k ≠ *ku(:)k
 {124, 141, 315, 357, 358,
 362}; *kuk ≠ *ʔuk {57}.

BETWEEN

⇒ *gla {71, 163}; *ka:l
 {422}.

BETWEEN (have a space)

⇒ *gla {71, 163}.

BIG

⇒ *maŋ {264, 302};
 *ri(y) {190}; *ta {231,
 484}; *tay {207, 220,
 231}.

BILE

⇒ *krəy {22, 118, 189,
 193, 436, 456}.

BIND

⇒ *dar {401}; *g(y)it/k
 ≠ *k(y)it/k {344, 345,
 347, 528}; *grak {327};
 *hi:l ≠ *ki:l {57, 412,
 413, 426}.

BIRCH

⇒ *grwa {175}.

BIRD

⇒ *bya {63, 68, 169,
 171}; *daw or *dow
 {226, 227}; *wa {165};
 *ŋak {317, 319}.

BIRD OF PREY

⇒ *glaŋ {23, 75}; *lak
 ≠ *laŋ {263, 393, 521}.

BITE

⇒ *gwap ≠ *krap
 {338}; *hap {58, 335,
 341}; *tsat {330}; *wa
 {460}.

BITTER

⇒ *ka {20, 24, 162, 164,
 167, 170, 172, 176, 451};
 *sin {31, 33, 34, 56, 64,
 119, 124, 134, 141, 154,
 277, 291, 296, 306, 475}.

BLACK

⇒ *ha:ŋ {268}; *mak ≠
 *maŋ {317, 522}; *nak
 {39, 117, 242, 317, 319,
 326, 522}; *tyaŋ {65}.

BLANKET

⇒ *pap {337}.

BLIGHT

⇒ *syaŋ {36}; *z(y)aŋ
 {36}.

BLINK

⇒ *mi:n ≠ *mit {315,
 350, 352, 519}.

BLOCK

⇒ *kim ≠ *kum {124,
 125, 147, 198, 249, 272,
 275, 308, 496, 503};
 *kum ≠ *ʔum {57}.

BLOOD

⇒ *hywəy {66, 85, 102,
 194, 201, 230, 464};
 *tsyak {323, 328}.

BLOOM

⇒ *ba:r {384, 386, 387,
 392, 425}; *wat {36}.

BLOSSOMING

⇒ *moy {81, 228}.

BLOW

⇒ *mut {37, 99, 315,
 364}.

BLUE

⇒ *ŋow {223}.

BLUSH

⇒ *dzya {451}; *nya
 {177, 451}.

BLUSHING

⇒ *kyeŋ {292, 311}.

BOAT

⇒ *loŋ {294}; *ləy

- {192}.
- BODY**
 ⇒ *guŋ {19, 309}; *kəw {198}; *sin {278, 306, 449}; *sya {32, 88, 102, 118, 139, 140, 150, 162, 165, 169, 172, 177, 278, 448, 475}.
- BOIL (n.)**
 ⇒ *blen {291}.
- BOIL (v.)**
 ⇒ *glak ʔ *klak {63, 70, 128, 317}; *prut {364}; *tsyow {34, 223, 224, 227}.
- BOILED**
 ⇒ *pryo {205, 481}.
- BOLD**
 ⇒ *ray ʔ *way ʔ *yay {209}.
- BONE**
 ⇒ *rus {44, 48, 102, 387, 435, 437, 442, 465, 477}; *rəw {35, 42, 43, 477}.
- BORE**
 ⇒ *lwan {258, 280, 386}.
- BORN**
 ⇒ *kruŋ {285, 288}; *r(y)aŋ ʔ *riŋ {29, 78, 282, 283, 307, 506, 528}.
- BORROW**
 ⇒ *kroy {229}; *kəy {191, 443}; *ŋ(y)a {162, 168}; *ŋa {38, 40}.
- BOW**
 ⇒ *da {163}; *ləy {48, 50, 140, 192}; *tal {387, 404, 422}.
- BOWL**
 ⇒ *krin {278}; *kwak {321}.
- BOX**
 ⇒ *ta {170}.
- BRACKEN**
 ⇒ *da {163, 164}.
- BRAID**
 ⇒ *ban/t ʔ *pan/t {260, 518}; *byar ʔ *pyar {390, 401}.
- BRAIN**
 ⇒ *glan {265, 507}; *kl(y)aŋ ʔ *kliŋ {128, 282, 283, 495, 507}; *ni {347}; *nik ʔ *niŋ {39, 102, 103, 283, 347, 480, 521}; *nuk {39, 357}.
- BRANCH**
 ⇒ *gak {113, 325}; *ka:k {325}; *ku:ŋ {287, 310}.
- BRANDISH**
 ⇒ *wary {210}.
- BREAK**
 ⇒ *tsyat {330, 334}.
- BREAK OFF A PIECE**
 ⇒ *be ʔ *pe {204}; *ket {315, 375}.
- BREAST**
 ⇒ *dz(y)o:p ʔ *ts(y)o:p {31, 371, 382}; *dz(y)əw {382}; *dzyip ʔ *dzyup {316, 382, 500}; *dzyow {382}; *dzyuk {382}; *dzyut {382}; *nəw {198}; *raŋ {146}; *tsyip ʔ *tsyup {500}; *tsyuk {30}.
- BREATH**
 ⇒ *sam ʔ *sem {252, 311, 532, 537}.
- BREATH(e)**
 ⇒ *sak {144, 181, 233, 317, 326, 537}.
- BREED**
 ⇒ *srel {422}.
- BRIDGE**
 ⇒ *dzam {19, 251, 253, 254, 257, 530}; *lay ʔ *ley {216, 220, 511}.
- BRIGHT**
 ⇒ *ba {123, 163}; *hwan ʔ *hwaŋ {429}; *hwaŋ {430}; *hwar ʔ *yar {429}; *pran {303}; *sa {428}; *sal {404, 405, 428}.
- BRIGHTNESS**
 ⇒ *hwa {334, 429, 444, 463}.
- BRING OUT**
 ⇒ *pro {204, 480}.
- BRING TOGETHER**
 ⇒ *du ʔ *tu {367, 452, 460}; *ma {461}.
- BRING UP**
 ⇒ *srel {422}.
- BRONZE**
 ⇒ *kar {390}.
- BROOD**
 ⇒ *mu {112, 180}.
- BROOM**
 ⇒ *py(w)ak {66, 85, 128, 323, 527}.
- BUCKWHEAT**
 ⇒ *ra {163}.

BUD

⇒ *bu {184}; *moy {81, 228}; *mu:m {276}.

BUFFALO

⇒ *broŋ {294}; *lwa:y {213}.

BUG

⇒ *bəw {19, 130, 139, 148, 154, 178, 183, 184}; *dyuŋ {310}; *grip {316, 376}; *krep {376}.

BULGE

⇒ *gu:l {418}.

BURDEN

⇒ *gal {416, 423}; *wan ✕ *wat {519}.

BURN

⇒ *duk {315, 331, 362}; *gaŋ {268}; *hul ✕ *hwa(:)l {58, 429, 514}; *hwam {429}; *hwar {385, 402, 426}; *ka(:)ŋ {268}; *kyit {349}; *ploŋ {294}; *put {364}; *pwa(:)r {402}; *tsik {344, 348}; *war {428}; *ʔur {428}.

BURROW

⇒ *hrew {231}.

BURY

⇒ *bip ✕ *bup ✕ *pip ✕ *pup {352, 354, 370, 495, 498}; *lip {495}.

BUTT AGAINST

⇒ *kuk {357}.

BUTTERFLY

⇒ *lep {377}; *pur ✕ *pwar {398}.

BUTTOCK

⇒ *til ✕ *tul {419, 422,

500, 504}.

BUY

⇒ *lay ✕ *ley {49, 208, 216, 217, 511}; *par {391}; *rey {49, 132, 205, 216, 511}; *ywar {63, 386, 388, 393}.

C

CABBAGE

⇒ *raŋ {265}.

CABINET

⇒ *ta {170}.

CAGE

⇒ *kru:ŋ {287}.

CALF OF LEG

⇒ *bop {381}; *bwam ✕ *bwap {252, 341, 518}.

CALL

⇒ *gaw {225, 226}.

CANE

⇒ *rey {48, 206, 217, 218}; *ri(:)m {43, 271}; *rwi(y) {197, 218}.

CANINE TOOTH

⇒ *wik {344}.

CAPABLE

⇒ *ta:p {340}.

CARD FIBERS

⇒ *ga {266}.

CARRY (on back)

⇒ *ba {24}; *bəw {178, 183, 199, 477}.

CARRY (on shoulder)

⇒ *tam {298}.

CARVE

⇒ *ku(:)t {364, 496}.

CASTRATE

⇒ *mwan ✕ *mwat {518}.

CAT

⇒ *roŋ {138, 294}.

CATCH

⇒ *grim {305}; *mi {37}.

CATEGORY

⇒ *ras {437}.

CATTLE

⇒ *dzay {209}; *nwa {38, 40}; *ŋwa {63, 167, 170, 176}.

CAUSATIVE

⇒ *dzəy {199}; *ter {399}.

CAVE

⇒ *dwa:ŋ {269}; *kor ✕ *kwar {395, 401}; *pu:k ✕ bu:k {358, 359, 360, 362}.

CENTER

⇒ *bu {140, 198, 442, 477}; *la:y ✕ *tay {52, 102, 208, 210, 217}.

CERTAIN

⇒ *t(y)ak ✕ *t(y)ik {65, 324, 507, 508}.

CHAFF

⇒ *pway {23, 25, 213, 217}.

CHANGE

⇒ *lay ✕ *ley {49, 208, 216, 217, 511}.

CHARCOAL

⇒ *tal {422}.

CHASE

⇒ ***rak** {41, 42, 43, 61, 146, 315, 319}.

CHAT

⇒ ***ʔur** {385, 396, 402}.

CHEAP

⇒ ***sya** {36}.

CHEEK

⇒ ***ba** {163, 486}.

CHEST

⇒ ***raŋ** {146}.

CHEW

⇒ ***g^wya** {26, 85}; ***wa** {460}.

CHEW (*cud, betel*)

⇒ ***wal** ⌘ ***yal** {404, 428}.

CHICKEN

⇒ ***ha:r** {58, 385, 386, 392, 401, 426}; ***rak** {53, 61, 138, 146, 317, 319, 327}; ***ʔa:r** {58, 385, 386, 392, 401, 426}.

CHILD

⇒ ***tsa** ⌘ ***za** {27, 28, 31, 33, 34, 154, 162, 165, 169, 171, 172, 176, 188, 448, 450}.

CHIN

⇒ ***ka** {24, 170, 486}.

CHIP

⇒ ***ket** {315, 375}.

CHOKE

⇒ ***ha(:)k** ⌘ ***kak** {57, 325}.

CHOOSE

⇒ ***ril** {410}.

CHOP

⇒ ***tsyap** {336};
***tsywar** {66, 84, 393}.

CIRCULAR

⇒ ***wal** {404, 406, 424}.

CIVET CAT

⇒ ***ba** {163}.

CLASS

⇒ ***ras** {437}.

CLAW

⇒ ***(t)sin** {291}; ***syen** ⌘ ***tsyen** {29, 278, 290, 296}.

CLEAN

⇒ ***gro:l** {421}.

CLEAR

⇒ ***sa** {428}; ***sal** {404, 405, 428}.

CLEAR AWAY

⇒ ***pyaŋ** {264}.

CLING TO

⇒ ***dway** ⌘ ***nway** {214}.

CLOSE (v.)

⇒ ***dzyi:p** {31, 353}.

CLOSE TOGETHER

⇒ ***dzyi:p** {31, 353}.

CLOTHE

⇒ ***gwa** ⌘ ***kwa** {168, 172, 177, 259, 333, 334, 452}; ***w(y)a** {333, 334, 335, 508}; ***wat** {331}.

CLOUDS

⇒ ***məw** {81, 129, 184}.

COARSE

⇒ ***gram** {252, 532};
***tas** {127, 128, 129, 432}.

COCHINEAL

⇒ ***grip** {316, 376};
***krep** {376}.

COCK (*a weapon*)

⇒ ***tuŋ** {285}.

COCKSPUR

⇒ ***dak** {317}.

COHESIVE

⇒ ***nway** {214}.

COLD

⇒ ***glak** ⌘ ***glan** ⌘ ***graŋ** {72, 262, 302, 325, 521}; ***kyam** {252, 532};
***pral** {405}.

COLLAPSE

⇒ ***pak** {113}.

COLLECT

⇒ ***zim** {27}.

COLLIDE

⇒ ***kuk** {357}.

COLUMN

⇒ ***du:ŋ** {287}.

COMB

⇒ ***gyuay** {26}; ***g^wəy** {25}; ***k^wi** {196, 434, 477}; ***pri** {26}; ***si(y)** {193, 460}.

COME

⇒ ***byon** {291}; ***hwaŋ** {269}; ***la** {165, 172, 220, 231, 484}; ***pay** {209}.

COME OUT

⇒ ***pro** {204, 480};
***twak** {62, 315, 321}.

COME UP TO

⇒ ***dway** {214}.

COMMAND

⇒ ***miŋ** {81, 127, 280, 296, 298, 307, 496, 528, 529}; ***mi:n** {306, 307, 529}.

COMPASSION

⇒ ***rin** {306}.

CONCAVE

⇒ ***kam** ✕ ***ka:p** {341, 517}; ***ku(:)m** {276}.

CONCEAL

⇒ ***bip** ✕ ***bup** ✕ ***pip** ✕ ***pup** {352, 354, 370, 495, 498}; ***hway** ✕ ***kwa(:)y** {57, 213}; ***lip** {495}; ***yip** ✕ ***yup** {56, 153, 192, 354, 369, 370, 499, 500, 533}.

CONCEIVE

⇒ ***pary** {210}.

CONCLUDE

⇒ ***dut** {368}.

CONGEAL

⇒ ***kal** {404, 405}.

CONNECT

⇒ ***tsyap** {336, 341}.

CONNECT IN A ROW

⇒ ***ral** {422}; ***ren** {291, 296, 311}.

CONSCIOUS

⇒ ***nəw** {182}.

CONSTRICTED

⇒ ***gyiŋ** {282}.

CONTRACTED

⇒ ***grum** {272}.

CONTRADICT

⇒ ***ŋraŋ** {81}.

CONVALESCENCE

⇒ ***bran** {258, 386}.

CONVEX

⇒ ***ku(:)m** {276}.

COOK

⇒ ***glak** ✕ ***klak** {63, 70, 128, 317}; ***tsyow** {34, 223, 224, 227}.

COOKED

⇒ ***glak** ✕ ***klak** {70}.

COPPER

⇒ ***grəy** {19, 189}.

COPULA

⇒ ***ray** ✕ ***way** {35, 47, 209, 221, 482, 510}; ***ri(y)** {186, 350, 502}; ***rut** {502}.

CORD

⇒ ***bliŋ** {307}; ***grak** {327}; ***kyak** {318, 319}.

CORNER

⇒ ***gil** {410, 412}; ***ruŋ** ✕ **rwa(ŋ)** {145, 496, 514}.

CORPSE

⇒ ***kəw** {198}; ***maŋ** {265}; ***raw** {225}.

CORRAL

⇒ ***kruk** {357}.

COTTON

⇒ ***la** {130, 251}.

COUGH

⇒ ***dzəy** {189}; ***səw** {199, 462}.

COUNT

⇒ ***graŋ** ✕ ***kraŋ** {303}; ***ris** ✕ ***rit** ✕ ***rəy** ✕ **ri:n** {43, 132, 441};

***tsyəy** {43, 79, 80, 200}; ***wel** {420}.

COUNTRY

⇒ ***ley** ✕ ***ləy** {48, 71, 81, 191, 201, 218, 464, 509}; ***ram** {299}.

COVER

⇒ ***gup** ✕ ***ʔup** {57, 369}; ***klup** {369}; ***pun** {495}.

COWLICK

⇒ ***boy** {228}.

CRAB

⇒ ***di:k** {345, 496, 503, 527}; ***k(y)an** ✕ ***k(y)ay** {139, 210, 212, 217, 220, 262, 515}.

CRACK

⇒ ***pop** {381}.

CRAWL

⇒ ***kak** {120}.

CRAZY

⇒ ***ru** {180, 181}.

CREEP

⇒ ***kak** {120}.

CREEPER

⇒ ***dway** ✕ ***nway** {214}.

CROOKED

⇒ ***gu(:)k** ✕ ***ku(:)k** {124, 141, 315, 357, 358, 362}; ***kuk** ✕ ***ʔuk** {57}.

CROSS OVER

⇒ ***gaw** ✕ ***gow** {224, 226, 515}.

CROSSBOW

⇒ ***dan** {301, 310}; ***krak** {61, 146}; ***na** {172}.

CROTCH

⇒ *kap {336, 340, 341}.

CROW (*n.*)

⇒ *ka {447}.

CROW (*v.*)

⇒ *groy {228}.

CROWDED

⇒ *gyap {338, 342}.

CRUMPLE

⇒ *tsyip ꝥ *tsyup {371, 498}.

CRUSH

⇒ *da:y ꝥ *ta:y {210}.

CUBIT

⇒ *mu:k {359, 361};
*yak {51, 317, 326, 329}.

CUP

⇒ *krin {278}.

CURLED OBJECT

⇒ *lip {353}.

CURRY

⇒ *h(y)an {65}.

CURSE

⇒ *mwa {176, 462}.

CURVED

⇒ *koy {228}.

CUSTOM

⇒ *krim {305}; *luk {363}; *niŋ {281}.

CUT

⇒ *brat ꝥ *prat {330, 334}; *dan {258, 259};
*mrak {80}; *mwan ꝥ
*mwat {518}; *ra {145};
*tsyat {330, 334};
*tsywar {66, 84, 393};
*tuk {357, 363}.

D

DANCE

⇒ *ga ꝥ *ga:r {392, 401, 425, 427}; *gan {519};
*k(y)at {519}.

DARE

⇒ *wam {55, 252, 253, 298}.

DARK

⇒ *mun {309, 310};
*mu:k ꝥ *mu:ŋ {81, 127, 289, 309, 310, 359, 360, 523}; *rim ꝥ *rum {273, 308, 498}; *tyaŋ {65}; *ŋrəw {184}.

DARK-COLORED

⇒ *syim {271}.

DAUGHTER

⇒ *tsa ꝥ *za {28}.

DAUGHTER-IN-LAW

⇒ *krwəy {22, 69, 82, 194, 200}; *nam {104, 251}.

DAY

⇒ *nəy {191, 201, 464}.

DAY (*a full*)

⇒ *r(y)ak {77, 323, 328}.

DAYTIME

⇒ *duk {363}.

DAZED

⇒ *h(w)a:y {214}.

DEAF

⇒ *baŋ {267}.

DEBT

⇒ *kroy {229}.

DECAY

⇒ *zya:w ꝥ *zyu(w) {35, 66, 227}.

DECEIVE

⇒ *ha:y {210}.

DEEP

⇒ *mak ꝥ *maŋ {317, 522}; *nak {37, 38, 39, 40, 100, 112, 117, 128, 242, 317, 326, 522}; *tu:k {359, 360, 361}.

DEER (*barking*)

⇒ *kəy {139, 189}.

DEER (*musk*)

⇒ *gla {176}.

DEER (*sambar*)

⇒ *tsot {380}; *yuk {139, 357, 359}.

DEFY

⇒ *daw {225}.

DEICTIC

⇒ *ka {488}; *kaŋ {488}.

DELICATE

⇒ *mwəy {201}.

DELICIOUS

⇒ *dz(y)im {34, 66, 271}; *min {39, 277, 296, 495, 496}.

DELIGHT

⇒ *pro {204}.

DENY

⇒ *graŋ {81}; *ŋraŋ {81}.

DEPART

⇒ *bral ꝥ *pral {423}.

DEPEND

⇒ *dz(y)u {479}.

DESCEND

⇒ ***yuk** {318, 482, 513};
***zak** {28, 317, 482, 513}.

DESCENDANT

⇒ ***du** ✕ ***tu** {184, 200, 464}.

DESTROYED

⇒ ***pyak** {323}.

DETRITUS

⇒ ***mu:k** {359, 513}.

DEVELOP

⇒ ***dal** {424}.

DEW

⇒ ***(d)zil** {188}; ***da:y** {210}; ***dzi** {187}; ***hus** {435}.

DHOLE

⇒ ***kywal** {261, 407, 423, 449}; ***wan** {261, 449}.

DIE

⇒ ***gum** ✕ ***kum** {308};
***səy** {27, 32, 34, 189, 194, 201, 442, 475}.

DIG

⇒ ***du** ✕ ***tu** {23, 178, 184}.

DIG OUT

⇒ ***go** ✕ ***ko** {127, 129, 380, 461, 463}; ***klaw** {23, 225}.

DIG UP

⇒ ***la:y** {210}.

DIGEST

⇒ ***zya:w** ✕ ***zyu(w)** {35, 66, 227}.

DIMINUTIVE

⇒ ***nyak** {323}; ***ya** {482}.

DIP OUT

⇒ ***sa:y** ✕ ***tsa:y** {210}.

DIRECTIONAL PARTICLE

⇒ ***ʔay** {209, 482, 483}.

DIRT

⇒ ***ri(y)** {145, 193}.

DISENTANGLE

⇒ ***pyaŋ** {264}.

DISH

⇒ ***krin** {278}.

DISINTEGRATE

⇒ ***pəy** {189}.

DISPERSE

⇒ ***gray** {211}.

DISSEMBLE

⇒ ***ha:y** {210}.

DISTENDED

⇒ ***graŋ** ✕ ***kraŋ** {267, 303}.

DISTRIBUTE

⇒ ***hor** {58, 400}; ***rim** {305}.

DISTURB

⇒ ***kruk** {363}.

DIVARICATE

⇒ ***ka** {24}.

DIVE

⇒ ***lip** ✕ ***lup** {354, 370}.

DIVERT

⇒ ***lway** ✕ ***rway** {214}.

DIVORCE (a spouse)

⇒ ***b^war** ✕ ***h^war** {55, 394, 425}.

DO

⇒ ***day** {208}.

DOG

⇒ ***k^wəy** {20, 23, 24, 25, 62, 96, 141, 196, 201, 448}.

DOOR

⇒ ***ka** {21, 125, 170, 173}.

DOVE

⇒ ***k(r)əw** {16, 125, 134, 199}.

DRAG

⇒ ***ka:y** {210}.

DRAGON

⇒ ***bruk** ✕ ***bruŋ** {524}.

DRAW

⇒ ***ris** ✕ ***rit** ✕ ***rəy** ✕ **rin** {132, 441}.

DRAW WATER

⇒ ***kam** ✕ ***ka:p** {341, 517}.

DREAM

⇒ ***mak** {37, 117};
***mak** ✕ ***maŋ** {37, 117, 268, 302, 310, 325, 521}.

DRINK

⇒ ***daŋ** ✕ ***doŋ** {123};
***ʔam** {298, 533}.

DRIP

⇒ ***dz(y)ak** ✕ ***ts(y)ak** {324, 327, 329, 506};
***dz(y)ik** ✕ ***ts(y)ik** {324, 327, 506}; ***tik** {506}; ***yəw** {441}.

DRIVE

⇒ ***rak** {41, 42, 43, 61, 146, 315, 319}.

DROP (n.)

⇒ ***dz(y)ak** ✕ ***ts(y)ak** {324, 327, 329, 506};

***dz(y)ik** ✕ ***ts(y)ik**
{30, 324, 327, 506}; ***tik**
{506}.

DROSS

⇒ ***sa:y** ✕ ***tsa:y** {210}.

DRUNK

⇒ ***yit** {349}.

DRY

⇒ ***gaŋ** {268}; ***he:r**
{400, 426}; ***ka(:)ŋ**
{268}; ***tan** {258, 301}.

DRY IN SUN

⇒ ***lap** {112, 337}.

DRY SEASON

⇒ ***pral** {405}.

DRY UP

⇒ ***kan** {258, 259}.

DULL

⇒ ***til** ✕ ***tul** {419, 422,
500, 504}.

DUMB

⇒ ***ga** ✕ ***ʔa** {57, 165,
176}.

DUSK

⇒ ***rim** ✕ ***rum** {273,
308, 498}.

DUST

⇒ ***dul** ✕ ***tul** {415,
422}; ***mu:k** {359, 513};
***tal** {422}.

DWARFISH

⇒ ***grum** {272}.

E

EAGLE

⇒ ***glan** {23, 75}; ***lak**
✕ ***lan** {263, 393, 521};

***məw** {185}.

EAR

⇒ ***na** {38, 40, 100, 112,
129, 134, 162, 165, 168,
172, 176}.

EAR (grain)

⇒ ***nam** {253, 254}.

EARLY MORNING

⇒ ***nak** ✕ ***nap** {129,
326, 530}.

EARRING

⇒ ***raŋ** ✕ ***waŋ** {265}.

EARTH

⇒ ***ha** ✕ ***ka** {57, 127};
***ley** ✕ ***ləy** {48, 71, 81,
191, 201, 218, 464, 509};
***sa** {176}.

EAST

⇒ ***s(y)ar** {391}.

EASY

⇒ ***lwa(:)y** {213, 485};
***sya** {36}.

EAT

⇒ ***dzya** {19, 30, 34, 162,
165, 166, 169, 172, 177,
205, 251, 433, 440, 442,
454, 480}; ***ʔam** {298,
533}.

EAT (of animals)

⇒ ***lyak** {23, 48, 80, 81,
92, 124, 137, 153, 323,
327, 528}.

EDGE

⇒ ***dzya** {169}; ***gu:ŋ**
{127, 287}; ***ka(:)m**
{127, 251, 298}.

EFFACED

⇒ ***bray** {209}.

EGG

⇒ ***t(w)i(y)** {195}; ***ʔu**
{180, 199}.

EIGHT

⇒ ***gyat** ✕ ***ryat** {149,
151, 331, 334, 352, 506};
***rit** {56, 151, 315, 351,
506}.

ELASTIC

⇒ ***nway** {214}.

ELDER (brother or uncle)

⇒ ***maŋ** {264, 302}.

ELDER BROTHER

⇒ ***b^waŋ** ✕ ***p^waŋ** {269,
303}; ***gəw** {450}; ***ʔik**
{344}.

ELDER SIBLING

⇒ ***wyik** {36, 86, 97,
345}; ***ʔik** {86, 154}.

ELDER SISTER

⇒ ***sru(w)** {77, 198,
475}.

ELEPHANT

⇒ ***glan** {302}; ***gwi(y)**
{200}.

ELEVATED

⇒ ***dzwan** {269}.

EMERGE

⇒ ***pro** {204, 480};
***twak** {62, 315, 321}.

EMPEROR

⇒ ***dzəw** {123}.

EMPTY

⇒ ***guŋ** ✕ ***kuŋ** {285,
310}.

ENCIRCLE

⇒ ***hwaŋ** {269}.

ENCIRCLED

⇒ *bay ꝱ *pay {208}.

ENCLOSURE

⇒ *wal {404, 406, 424}.

END (come to an)

⇒ *dzin {306}.

ENEMY

⇒ *gra {173}; *ran ꝱ
*ray ꝱ *rail {44, 48,
261, 387, 388, 404, 407,
423, 425, 516}.

ENOUGH

⇒ *luk {357}.

ENTER

⇒ *hwaŋ {269}; *lap
{337}; *nap {104}; *nip
ꝱ *nup ꝱ *nyap {339,
342, 355, 356, 370, 499,
505, 507}.

EQUAL

⇒ *ral {422}; *ren {291,
296, 311}.

ERECT

⇒ *(d)z(y)u(:)k {31,
362, 529}; *dz(y)ut
{529}; *tsow {30, 222,
223, 224, 227, 454, 515,
529}.

ESTABLISH

⇒ *diŋ {307}.

EVEN WITH

⇒ *dway {214}.

EXCEED

⇒ *lay ꝱ *ley {208, 216,
511}.

EXCHANGE

⇒ *lay ꝱ *ley {49, 208,
216, 217, 511}.

EXCREMENT

⇒ *baŋ {264}; *ba:l
{385, 404, 407, 425};
*kləy {21, 189, 201};
*n(y)ek ꝱ *n(y)ik {36,
346}; *sa:y ꝱ *tsa:y
{210}; *syaŋ {36};
*z(y)aŋ {36}.

EXHALE

⇒ *(t)si-t ꝱ *tsut {367,
502}; *tsəy {502}.

EXHAUST

⇒ *dzin {306}.

EXHAUSTED

⇒ *ma {334}.

EXISTENCE

⇒ *ri(y) {186, 350, 502}.

EXPANSE OF TERRITORY

⇒ *day {211}.

EXPENSIVE

⇒ *kak {317, 328}.

EXPLAIN

⇒ *kul {423}.

EXPLOITATIVE

⇒ *grol {421}.

EXTEND

⇒ *dal {424}; *yarr
{393, 403, 426}.

EXTINGUISH

⇒ *mi:n ꝱ *mit {350,
352, 519}.

EYE

⇒ *mik ꝱ *myak {35,
39, 40, 63, 66, 99, 100,
141, 315, 319, 324, 327,
346, 347, 371, 474, 496,
506, 527}.

F

FACE

⇒ *ma:y {210, 537};
*mel {422, 537}; *mu:r
{397, 402, 426, 537}.

FADE

⇒ *hwa:y {214}.

FADED

⇒ *ŋrəw {184}.

FALCON

⇒ *glaŋ {23, 75}; *lak
ꝱ *laŋ {263, 393, 521}.

FALL

⇒ *gla ꝱ *kla {34, 70,
165, 209, 231, 374, 462,
480, 483}; *grwil ꝱ
*krwil {410}; *ho ꝱ
*hol {58, 421, 428}.

FALL (cause to)

⇒ *grwil ꝱ *krwil
{410}.

FALL OVER

⇒ *bap {336}.

FALLEN

⇒ *ryut {364}.

FAMINE

⇒ *kres {437}.

FAN

⇒ *ya:p {45, 137, 339,
340}.

FANG

⇒ *wik {344}.

FAR

⇒ *dzya:l {66, 406,
425}; *wəy {195, 452}.

FART

⇒ *pyen ꝱ *pyet {518};

- *woy** {229}.
- FASTEN*
⇒ ***dar** {401}.
- FASTIDIOUS*
⇒ ***ril** {410}.
- FAT*
⇒ ***sa:w** {32, 56, 225, 226, 227}; ***tsil** {410, 422}; ***tsow** {222, 224, 412, 471}.
- FATHER*
⇒ ***kanj** {302}; ***pu** {24}; ***p^wa** {165, 166, 170, 172, 173, 175}; ***wa** {250}.
- FATHOM*
⇒ ***la(:)m** {48, 249, 251, 253, 254, 298}.
- FEAR*
⇒ ***grok** ⌘ ***k/grak** ⌘ ***krok** {327, 377, 513}; ***kri** {462}; ***kri(y)** {193}; ***lik** {527}; ***ray** {132, 207}.
- FEATHER*
⇒ ***grwa** {172}; ***mil** ⌘ ***mul** ⌘ ***myal** {83, 384, 386, 388, 414, 419, 423, 496, 501, 505, 506, 508}; ***wa** {165}.
- FEED*
⇒ ***dzya** {34, 162, 165, 166, 169, 172, 177, 251, 433, 440, 442, 454, 480}.
- FEED (animals)*
⇒ ***lyak** {23, 48, 80, 81, 92, 124, 137, 153, 323, 327, 528}.
- FEEL AN EMOTION*
⇒ ***daŋ** {266}.
- FEMALE*
⇒ ***mi** {38, 187}.
- FEMALE (human or animal)*
⇒ ***pwi(y)-n** {197, 201, 448}.
- FEMALE RELATIVE*
⇒ ***mow** {223, 227}.
- FEMININE SUFFIX*
⇒ ***ma** {175, 448}.
- FENCE*
⇒ ***hwaŋ** {269}; ***kram** {22, 253, 299}.
- FERN*
⇒ ***da** {163, 164}.
- FIELD*
⇒ ***liŋ** {130, 280, 282, 494}; ***low** {48, 226}; ***ram** {299}.
- FIELD (mountain)*
⇒ ***hya** {56, 171}.
- FIGHT*
⇒ ***ran** ⌘ ***ray** ⌘ ***ra:l** {44, 48, 261, 387, 388, 404, 407, 423, 425, 516}.
- FILL*
⇒ ***bliŋ** ⌘ ***pliŋ** {281, 282, 296, 307, 496}.
- FILTER*
⇒ ***gyan** ⌘ ***kyan** {248, 260}.
- FILTH*
⇒ ***ba:l** {385, 404, 407, 425}; ***ri(y)** {145, 193}.
- FILTH(y)*
⇒ ***n(y)ek** ⌘ ***n(y)ik** {36, 346}.
- FINE*
⇒ ***mwəy** {201}.
- FINGER*
⇒ ***yuj** {141, 285}.
- FINISH*
⇒ ***bun** {249, 279}; ***dut** {368}; ***grol** {423}; ***ʔo:l** {421, 426}.
- FIR*
⇒ ***raw** ⌘ ***row** {224, 226, 515}.
- FIRE*
⇒ ***b^war** ⌘ ***p^war** {305}; ***hwal** ⌘ ***hwar** {409}; ***hwar** {385, 402, 426}; ***mey** {39, 141, 205, 206, 217}; ***pwa(:)r** {402}; ***war** {428}; ***ʔur** {428}.
- FIREFLY*
⇒ ***kraŋ** {262}.
- FIREPLACE*
⇒ ***drap** ⌘ ***trap** {336, 339}; ***rap** {336}.
- FIRM*
⇒ ***graŋ** ⌘ ***kraŋ** {267, 303}; ***tsan** {260}; ***zan** {28, 260, 442}.
- FISH*
⇒ ***ŋa** {38, 40}; ***ŋya** {162, 165, 167, 169, 172, 475}.
- FISHBONE*
⇒ ***ra** {173}.
- FIT*
⇒ ***ta:p** {340}.
- FIVE*
⇒ ***ŋa** {130, 149, 162, 165, 166, 167, 170, 173, 251, 477}.

<i>FIX</i>	{66, 84, 261, 386, 394, 402, 427, 519}; *t(w)i(y) {194}.	433, 440, 442, 454, 480}.
⇒ *din {307}.		
<i>FLAIL</i>		<i>FOOD TO EAT WITH RICE</i>
⇒ *pat {330}.	<i>FLOWER</i>	⇒ *han {264}.
<i>FLAME</i>	⇒ *bair {384, 386, 387, 392, 425}; *b ^w at {61}; *wat {36, 332}.	<i>FOOLISH</i>
⇒ *lyam {299}.		⇒ *h(w)a:y {214}.
<i>FLAP</i>	<i>FLURRIED</i>	<i>FOOT</i>
⇒ *pat {330}.	⇒ *h(w)a:y {214}.	⇒ *kan ꝥ *ken {283, 293, 311}; *krøy {22, 71, 189, 200, 201}.
<i>FLARING</i>	<i>FLUTE</i>	<i>FOOTSTOOL</i>
⇒ *bray {209}.	⇒ *glin {280}.	⇒ *krøy {22, 71, 189, 200, 201}.
<i>FLASH</i>	<i>FLY (n.)</i>	<i>FOREHEAD</i>
⇒ *glwak {328}; *lyap {338}.	⇒ *bran {302}; *tow {226}.	⇒ *pral {404, 405}.
<i>FLAT</i>	<i>FLY (v.)</i>	<i>FOREST</i>
⇒ *dyam ꝥ *tyam {51, 65, 307}; *lep ꝥ *lyap {51, 339, 377}; *peir {386, 400, 426}.	⇒ *byam {19, 34, 68, 74, 118, 252, 255, 257, 532}; *byer {399, 402, 509}; *pir ꝥ *pur {385, 397, 402, 501, 505, 509}.	⇒ *lin {130, 280, 282, 494}; *ram {299}.
<i>FLAT OBJECT</i>	<i>FOG</i>	<i>FORGET</i>
⇒ *lep ꝥ *lyap {51, 339, 377}.	⇒ *dzyan {260}.	⇒ *lap {132, 340}.
<i>FLAT SURFACE</i>	<i>FOGGY</i>	<i>FORK</i>
⇒ *plen {281, 292, 296}.	⇒ *mu:k ꝥ *mu:ŋ {81, 127, 289, 309, 310, 359, 360, 523}.	⇒ *kap {336, 340, 341}; *ka:k {325}.
<i>FLEA</i>	<i>FOLD</i>	<i>FOUR</i>
⇒ *ləy {48, 50, 69, 192}.	⇒ *tap {336, 341}.	⇒ *ləy {48, 50, 56, 69, 130, 147, 149, 153, 192, 200, 477}.
<i>FLEE</i>	<i>FOLD UP</i>	<i>FOWL</i>
⇒ *plonj {294}.	⇒ *pyak {323}.	⇒ *har {58, 385, 386, 392, 401, 426}; *rak {53, 61, 138, 146, 317, 319, 327}; *ʔar {58, 385, 386, 392, 401, 426}.
<i>FLESH</i>	<i>FOLLOW</i>	<i>FOX</i>
⇒ *nya {481}; *sya {32, 88, 102, 118, 139, 140, 150, 162, 165, 169, 172, 177, 278, 448, 475}.	⇒ *nan {263, 302}; *yuy ꝥ *ywi {63, 229}.	⇒ *gwa {167, 173}.
<i>FLOOD</i>	<i>FONTANELLE</i>	<i>FRAGRANT</i>
⇒ *brup ꝥ *prup {134, 369, 496}.	⇒ *ra {163, 486}; *wa {486}.	⇒ *san ꝥ *sun {288, 482, 513}.
<i>FLOW</i>	<i>FOOD</i>	
⇒ *lwi(y) {197}; *sywa-n/t ꝥ *sywar	⇒ *dzya {34, 162, 165, 166, 169, 172, 177, 251,	

FREE

⇒ *lwat {70, 82, 84, 136, 332, 334}.

FREEZE

⇒ *glak ꜛ *glaŋ ꜛ
*grəŋ {72, 262, 302, 325, 521}.

FRESH

⇒ *sar {385, 386, 387, 391}.

FRIEND

⇒ *grwak {327}; *kyaŋ {265}.

FRIGHTEN

⇒ *grok ꜛ *k/grak ꜛ
*krok {327, 377, 513}.

FROG

⇒ *ba {74, 113, 428};
*bal {404, 405, 428};
*tik ꜛ *tuk {503}.

FROST

⇒ *p^wal {172, 408}; *wa {46, 171, 428}; *wal {387, 404, 428}; *ŋar {390}.

FROZEN

⇒ *ga:r ꜛ *ka:r {392, 426}.

FRUIT

⇒ *sey {31, 33, 129, 206}.

FRY

⇒ *lu {112, 180}; *ŋaw {127, 128, 227}.

FULL

⇒ *bliŋ ꜛ *pliŋ {74, 281, 282, 296, 307, 496};
*dyam ꜛ *tyam {51, 65, 307}.

FUR

⇒ *mil ꜛ *mul ꜛ
*myal {83, 384, 386, 388, 414, 419, 423, 496, 501, 505, 506, 508}.

G

GAG

⇒ *ha(:)k ꜛ *kak {57, 325}.

GALL

⇒ *krəy {22, 118, 189, 193, 436, 456}.

GARDEN

⇒ *kram {22, 253, 299}.

GARLIC

⇒ *swa {177, 301, 446, 448}.

GATHER

⇒ *zim {27}.

GATHER TOGETHER, SCOOP TOGETHER

⇒ *rak {319}.

GENTLE

⇒ *ŋoy {229}.

GET

⇒ *ney {206, 217, 460};
*ra {41, 42, 43, 163}.

GILLS

⇒ *mu:r {397, 402, 426, 537}.

GINGER

⇒ *kyaŋ {302}.

GIRL

⇒ *mi {38, 187}.

GIVE

⇒ *bəy {19, 132, 191,

200, 442, 480}; *ter {399}.

GIVE BIRTH

⇒ *braŋ {264}; *kruŋ {285, 288}; *r(y)aŋ ꜛ
*riŋ {29, 78, 282, 283, 307, 506, 528}.

GIVE FOR

⇒ *la {173}.

GLEET

⇒ *ri {145, 186}.

GLITTER

⇒ *lyap {338}.

GO

⇒ *byon {291}; *ka {484}; *pay {209}; *wa {173}; *ʔay {209, 482, 483}.

GO BY VEHICLE

⇒ *gyar ꜛ *hyar {58, 65, 391}.

GO OUT

⇒ *twak {62, 315, 321}.

GO THROUGH

⇒ *grwat {335}.

GOAT

⇒ *kye:l ꜛ *kyi:l {388, 420, 426}; *tsi:t {315, 350}; *ŋwa {23}.

GOD

⇒ *hla {162, 172}; *ray {48, 209, 212}.

GOLD

⇒ *rwəy {191}; *tsyak {323, 328}.

GOOD

⇒ *d(y)ak {51};
*l(y)ak ꜛ *l(y)aŋ {51, 327, 521}; *ma:y {132,

207, 210}; *na {163};
*nam {104}; *ʔal {406}.

GOOSE

⇒ *ŋa {177, 259, 449}.

GOURD

⇒ *pu {180}.

GRAIN OF RICE

⇒ *ka {163}.

GRANDCHILD

⇒ *ləy {71, 80, 133, 192,
201, 464}; *syu(w)
{199, 449}.

GRANDFATHER

⇒ *bəw {183}; *kaŋ
{302}; *pu {24}; *pəw
{178}.

GRANDMOTHER

⇒ *bwa {448}; *b^wa ɤ
*p^wa {174}; *pəy {191,
201}; *yay ɤ *ʔay
{208}.

GRASS

⇒ *lyak {80, 482};
*mrak ɤ *mruk {80,
482, 513}; *tswa {177,
449}; *yəy {189}.

GRASSHOPPER

⇒ *ka:w {226}.

GRAY

⇒ *pwəy {213}.

GRAZE

⇒ *rap {340}; *soy
{228}.

GRAZE (forage)

⇒ *glak ɤ *klak {63,
317}.

GREASE

⇒ *r(y)ak {323, 327};
*sa:w {32, 56, 225, 226,

227}; *tsil {410, 422}.

GREEN

⇒ *dz(y)im {19};
*kruŋ {285, 288};
*r(y)aŋ ɤ *riŋ {29, 78,
282, 283, 307, 506, 528};
*ŋow {223}.

GRIND

⇒ *kri:t {69, 350};
*pwan ɤ *pwat {519}.

GROIN

⇒ *kap {336, 340, 341}.

GROUND

⇒ *ha ɤ *ka {57, 127};
*ley ɤ *ləy {48, 71, 81,
191, 201, 218, 464, 509};
*sa {176}.

GRUDGE (bear a)

⇒ *ta:y {210}.

GRUMBLE

⇒ *wu {178}.

GUARD

⇒ *gyoŋ {294}; *way
{209}.

GUEST

⇒ *gra {173}.

GULF

⇒ *grok {378}.

GULLET

⇒ *ʔol ɤ ʔor {58, 421}.

GUMS

⇒ *ni {48, 103, 241, 410,
423, 427}; *nil {241,
427}.

H

HAIL

⇒ *p^wal {172, 408};
*ryal {405}; *ser {399,
402}; *wa {46, 171,
428}; *wal {387, 404,
428}.

HAIR (body)

⇒ *mil ɤ *mul ɤ
*myal {83, 384, 386,
388, 414, 419, 423, 496,
501, 505, 506, 508};
*məw {40, 100}.

HAIR (head)

⇒ *kra {102}; *ney
{206}; *sam ɤ *tsam
{31, 32, 250, 299}.

HALF

⇒ *pwak {321}.

HAMMER

⇒ *dow ɤ *tow {224,
227, 515}; *ta ɤ *twa
{170}.

HAND

⇒ *dyak {65}; *g(r)u ɤ
*k(r)u {365}; *kur ɤ
*ʔur {396}; *l(y)ak {51,
53, 65, 129, 130, 134, 148,
317, 319, 327}; *lak
{319}; *tsyəw {199};
*wan {301}; *yak {51,
65}; *ʔul {58}.

HANDSPAN

⇒ *twa {64, 167, 171}.

HANG

⇒ *k(w)a:y {214}; *ta:r
{392, 425}.

HANG DOWN

⇒ *dzywal {31, 66, 84,

407}.

HANG FROM
⇒ *dway ✕ *nway {214}.

HARE
⇒ *yəw {45, 130, 182, 185, 199, 449}.

HASTEN
⇒ *grim {305}.

HATCH
⇒ *gup ✕ *ɿup {57, 369}; *p^wum {57}.

HAVE
⇒ *dzyaŋ {267}; *ney {206, 217, 460}.

HAWK
⇒ *dzwan {30, 63, 258, 259, 301}; *hwar {393}; *məw {185}.

HAZE
⇒ *dzyan {260}.

HEAD
⇒ *bu {140, 198, 442, 477}; *ɿu {477}.

HEAR
⇒ *gla {19, 72, 163}; *hyen {65}; *na {129, 134, 162, 165, 168, 172, 176}; *ta {433, 442, 443, 471}.

HEART
⇒ *luŋ {141}; *ni {347}; *nik ✕ *niŋ {39, 102, 103, 283, 347, 480, 521}; *sam ✕ *sem {311, 537}.

HEAT UP
⇒ *hul ✕ *hwa(:)l {58, 429, 514}.

HEAVENS
⇒ *ka {177, 450}; *məw {81, 129, 183, 184}.

HEAVY
⇒ *ləy ✕ *rəy {49, 50, 192, 201, 455, 471}; *na:ŋ {302}.

HEEL
⇒ *til ✕ *tul {419, 422, 500, 504}.

HELP
⇒ *ga {163}.

HERO
⇒ *gyat {335}.

HEROIC
⇒ *ray ✕ *way ✕ *yay {209}.

HIDE (v.)
⇒ *bip ✕ *bup ✕ *pip ✕ *pup {352, 354, 370, 495, 498}; *hway ✕ *kwa(:)y {57, 213}; *lip {495}; *p^wak {61, 317, 321}; *wak {62}; *yip ✕ *yup {56, 153, 192, 354, 369, 370, 499, 500, 533}.

HIGH
⇒ *mraŋ {82, 249}; *raŋ {80, 267}; *to {204}.

HILL
⇒ *gaŋ {266, 303}; *kaŋ {265}.

HILLOCK
⇒ *duŋ {285, 310}.

HOLD FAST
⇒ *grim {305}.

HOLE
⇒ *dwa:ŋ {269}; *guŋ ✕ *kuŋ {285, 310}; *kor ✕ *kwar {395, 401}; *pop {381}.

HOLLOW
⇒ *guŋ ✕ *kuŋ {285, 310}.

HONEY
⇒ *was {432, 442}.

HOOF
⇒ *dak {317}; *kwa {170}; *p^wa {61}.

HOOK ONTO
⇒ *tuk {358}.

HOOLIGAN
⇒ *rut {364}.

HORN
⇒ *gruŋ {145}; *krəw {23, 72, 75, 182, 184, 480}; *ruŋ ✕ rwa(ŋ) {145, 496, 514}.

HORSE
⇒ *kor {385, 400}; *mraŋ {82, 249}; *ra {177}; *raŋ {80, 102, 121, 267}.

HOSTILE
⇒ *daw {225}.

HOT
⇒ *tsa {30, 32, 177, 462, 464}.

HOUSE
⇒ *yim ✕ *yum {21, 35, 273, 498, 504, 531, 533}.

HOWL
⇒ *groy {228}; *wu {178}.

HUM

⇒ *ʔur {385, 396, 402}.

HUMAN BEING

⇒ *tsaŋ {265}.

HUMANS (classifier)

⇒ *ra {43, 170}.

HUNDRED

⇒ *gya {129, 162, 165, 168, 251}.

HUNGRY

⇒ *kres {437}; *mwat {37, 38}; *mwat ⌘ *ŋ(w)at {332}.

HUNK

⇒ *dey {206}.

HURT

⇒ *na {38, 162, 168, 333, 335, 440, 452, 520}; *nyen {204, 290, 296}; *tsa {32, 177, 462, 464}.

HUSBAND

⇒ *p^wa {165, 166, 170, 172, 173, 175}; *wa {250}.

HUSK

⇒ *koir {385, 401, 426}; *pway {23, 25, 213, 217}.

I

ICE

⇒ *kyam {252, 532}; *p^wal {172, 408}; *wa {46, 171, 428}; *wal {387, 404, 428}.

ILL

⇒ *na {38, 162, 168, 333, 335, 440, 452, 520};

*nyuŋ {284}; *tsa {30, 32, 177, 462, 464}.

IMPALE

⇒ *ta:r {392, 425}.

INCHOATIVE PARTICLE

⇒ *sa {488}.

INCUBATE

⇒ *mu {112, 180}; *p^wum {57}.

INDIGO

⇒ *ram {299}.

INFERIOR

⇒ *ryut {364}; *ŋay {209}.

INJURED

⇒ *ma {81, 127, 334, 461}.

INK

⇒ *mak ⌘ *maŋ {317, 522}; *nak {317, 326, 522}.

INSECT

⇒ *bəw {19, 130, 139, 148, 154, 178, 183, 184}; *dyuŋ {310}.

INSECT (lac)

⇒ *grip {316, 376}; *krep {376}.

INSERT

⇒ *gray {212}; *kyap {337}; *tsap {337}.

INSIDE

⇒ *tu:ŋ {287, 310}.

INSTRUCT

⇒ *kul {423}.

INTERVAL

⇒ *gla {71, 163}; *ka:l {422}.

INTERWEAVE

⇒ *ban/t ⌘ *pan/t {260, 518}.

INTESTINES

⇒ *grwat {334}; *p^wik {47, 344, 496}; *p^wu {198}; *ri:l {44, 385, 387, 412, 413, 426}; *wu {180}.

INTIMATE

⇒ *kyaŋ {265}.

IRON

⇒ *syam {255, 257}; *syai:l ⌘ *syi:r {395, 409, 426, 506}; *tsyak {317}.

IRON INSTRUMENT

⇒ *tsyak {317}.

IRREALIS PARTICLE

⇒ *du {180}.

ITCH

⇒ *sak {317}; *tsik {344}; *ya {136}.

J

JACKAL

⇒ *kywal {261, 407, 423, 449}; *wan {261, 449}.

JAW

⇒ *gam {299}; *ka {24, 170, 486}.

JEW SHARP

⇒ *ta {163}.

JOIN

⇒ *du ⌘ *tu {367, 452, 460}; *dzak {315, 317}; *ma {461}; *tsyap

{336, 341}.

JOINT

⇒ *hwal {407, 423};
*tsik {27, 31, 32, 241,
315, 343, 344, 347, 527}.

JUICE

⇒ *tsəy {189, 201, 464}.

JUMP

⇒ *hyom ꜛ *hyop
{65}; *p(r)ok {378}.

JUNGLE

⇒ *ram {299}.

K

KEEP

⇒ *hyal {65, 406}; *ŋas
{432}.

KICK

⇒ *dek {315, 372}; *gan
{519}; *k(y)at {519}.

KIDNEY

⇒ *ga:l ꜛ *kal {404,
405, 428}; *glun {73,
125, 198}.

KILL

⇒ *gum ꜛ *kum {308};
*sat {12, 31, 136, 330,
335}.

KINDLE

⇒ *duk {315, 331, 362};
*war {428}; *ʔur
{428}.

KISS

⇒ *dz(y)o:p ꜛ
*ts(y)o:p {31, 371, 382};
*dz(y)əw {382};
*dzyip ꜛ *dzyup {316,
382, 500}; *dzyow

{382}; *dzyuk {382};
*dzyut {382}; *tsyip ꜛ
*tsyup {500}; *tsyuk
{30}.

KITE (bird of prey)

⇒ *dzwan {30, 63, 258,
259, 301}.

KNEAD

⇒ *na:y {210}.

KNEE

⇒ *gu(:)k ꜛ *ku(:)k
{124, 141, 315, 357, 358,
362}; *kuk ꜛ *ʔuk {57};
*put {364, 368, 436,
505}.

KNIFE

⇒ *ta {162}.

KNOCK

⇒ *tuk {357}.

KNOT

⇒ *du ꜛ *tu {367, 452,
460}; *dut {368}.

KNOW

⇒ *kyen {291, 311};
*syey {205, 206, 217,
465, 471, 477}.

L

LADDER

⇒ *gam {250}; *lay ꜛ
*ley {216, 220, 511}.

LADLE

⇒ *yok {295, 517}.

LAME

⇒ *ba:y ꜛ *pa:y {210,
221}.

LAND

⇒ *glin {280}.

LANGUAGE

⇒ *daŋ {19}; *glaŋ ꜛ
*klaŋ {267}; *ka {174};
*rey {205}.

LANGUID

⇒ *nay {209}.

LAUGH

⇒ *nwi(y) {117, 119,
197, 481}; *r(y)a ꜛ
*r(y)ay {12, 41, 42, 43,
170, 172, 208, 212, 334,
456, 463, 464, 487}.

LAY EGGS

⇒ *p^wum {57}.

LAYER

⇒ *tap {315, 336, 341}.

LAZY

⇒ *baŋ {265}.

LEAD (metal)

⇒ *kar {390}.

LEAD (v.)

⇒ *ka:y {210}; *way
{209}.

LEAF

⇒ *la {48}; *lap {336,
342}; *lay {209}; *nas
{432}; *pak {48, 317};
*rwak {321}.

LEAK

⇒ *yəw {441}.

LEAN BACK

⇒ *ʔew {231}.

LEAP

⇒ *ga ꜛ *ga:r {392, 401,
425, 427}.

LEARN

⇒ *lwap {342}.

LEAVE

⇒ *bral ꝥ *pral {423};
*gar {390}.

LEECH

⇒ *p^wat {61, 83, 94, 129,
138, 141, 151, 332}; *wat
{83, 138}.

LEECH (horse-leech)

⇒ *lirt {134, 350, 352,
534}.

LEFT

⇒ *bi(y) {219, 510};
*b^way {61, 211, 214, 219,
510}.

LEG

⇒ *kaŋ ꝥ *keŋ {283,
293, 311}; *pey {205}.

LEGUME

⇒ *be {203}.

LEISURELY

⇒ *nay {209}.

LEND

⇒ *kəy {191, 443};
*ŋ(y)a {162, 168}; *ŋa
{38, 40}.

LENGTH

⇒ *duŋ ꝥ *tu:ŋ {288}.

LEOPARD

⇒ *zik {28, 343, 344}.

LICK

⇒ *lyak {23, 48, 80, 81,
92, 124, 137, 153, 323,
327, 528}.

LIE (deceive)

⇒ *hay {210}.

LIFE

⇒ *sak {144, 181, 233,
317, 326, 537}.

LIFT

⇒ *kyi {188}; *laŋ
{303}; *tak {317, 326}.

LIGHT

⇒ *hwa {334, 429, 444,
463}; *hwan ꝥ *hwat
{429}.

LIGHTNING

⇒ *gle:k {373}; *lyap
{338}.

LIGHTWEIGHT

⇒ *laŋ {265}; *yaŋ
{127, 128, 263, 268}.

LIKE (similar)

⇒ *ka {488}; *kaŋ
{488}.

LIMP

⇒ *ba:y ꝥ *pa:y {210,
221}.

LINE UP

⇒ *ral {422}; *ren {291,
296, 311}.

LIP

⇒ *d(y)al {405};
*ka(:)m {127, 251, 298};
*nes {435}; *ts(y)ul
{415, 423}.

LIQUOR

⇒ *dzəy {19, 189};
*yəw {45, 199}.

LISTEN

⇒ *gla {19, 72, 163};
*hyen {65}; *na {38,
129, 134, 162, 165, 168,
172, 176}.

LITTLE

⇒ *zəy {66, 191}.

LITTLE BIT

⇒ *gyik {346}.

LIVE

⇒ *na {433, 442, 471,
477}.

LIVER

⇒ *ka {20, 24, 162, 164,
167, 170, 172, 176, 451};
*luŋ {141}; *sin {31, 33,
34, 56, 64, 119, 124, 134,
141, 154, 277, 291, 296,
306, 475}.

LIVESTOCK

⇒ *dzay {209}.

LIZARD

⇒ *saŋ {127}.

LOAD

⇒ *gal {416, 423}; *wan
ꝥ *wat {519}.

LOFTY

⇒ *dzwan {269}.

LOINS

⇒ *ga:l ꝥ *kal {404,
405, 428}; *ka {428}.

LONG

⇒ *duŋ ꝥ *tu:ŋ {288};
*low {224}; *raŋ {80,
267}; *riŋ {280, 282,
296}.

LONG (time)

⇒ *gra {175}; *myaŋ
{265}.

LONG FOR

⇒ *rum {141, 272}.

LOOK

⇒ *hyen {65}; *ney
{206}; *ta {456}.

LOOK TOWARD

⇒ ***mraŋ** {37, 80, 267, 303}.

LOOSE

⇒ ***grol** {423}; ***lwat** {70, 82, 84, 136, 332, 334}; ***ʔo:l** {421, 426}.

LOOSEN

⇒ ***pyin** ⌘ ***pyit** {520}.

LORD

⇒ ***dzəw** {123}.

LORIS

⇒ ***lon** {285}.

LOST (*get*)

⇒ ***myak** {322}.

LOUD

⇒ ***praŋ** {303}.

LOUSE

⇒ ***r(y)ik** {29, 78, 102, 153, 344, 347, 527, 537};
***s(y)ar** {390, 402, 537};
***san** {261}.

LOVE

⇒ ***ga** {163}; ***rin** {306};
***way** {210, 217, 220}.

LOVE (*make*)

⇒ ***way** {210, 217, 220}.

LOW

⇒ ***nem** ⌘ ***nyam** {248, 290, 299, 509}.

LUMP

⇒ ***dey** {206}.

LUNG

⇒ ***(t)si-t** ⌘ ***tsut** {367, 502}; ***tsywap** {66, 86, 338}; ***tsəy** {502};
***wap** {342, 476, 533}.

M

MAGGOT

⇒ ***luk** ⌘ ***luŋ** {522}.

MAKE

⇒ ***day** {208}.

MALE

⇒ ***pu** {24}.

MAN

⇒ ***mi** {81, 88, 118, 201, 449}; ***p^wa** {165, 166, 170, 172, 173, 175}; ***wa** {250}.

MANGO

⇒ ***həy** {210}.

MANNER

⇒ ***luk** {363}.

MANY

⇒ ***mra** ⌘ ***mya** {39, 80, 164, 169}.

MARROW

⇒ ***gləŋ** {265, 507};
***kl(y)əŋ** ⌘ ***klin** {128, 282, 283, 495, 507}; ***suy** {230}.

MAT

⇒ ***hyam** {65}.

MATRILINEAL LINEAGE

⇒ ***sriŋ** {77, 307}.

MEASURE

⇒ ***graŋ** ⌘ ***kraŋ** {303}.

MEAT

⇒ ***nya** {481}; ***sya** {32, 88, 102, 118, 139, 140, 150, 162, 165, 169, 172, 177, 278, 448, 475}.

MEDICINE

⇒ ***man** {37}; ***tsəy**

{189, 201, 464}.

MEET

⇒ ***grim** ⌘ ***krim** {497}; ***grum** ⌘ ***krum** {497}; ***ŋra** {81}.

MELT

⇒ ***grəy** {189, 190}.

MEND

⇒ ***glan** {301}.

METHOD

⇒ ***niŋ** {281}.

MIDDLE

⇒ ***ləy** ⌘ ***tay** {52, 102, 208, 210, 217}; ***tuŋ** {287, 310}.

MILK

⇒ ***dz(y)o:p** ⌘ ***ts(y)o:p** {31, 371, 382};
***dz(y)əw** {382};
***dzyip** ⌘ ***dzyup** {316, 382, 500}; ***dzyow** {382}; ***dzyuk** {382};
***dzyut** {382}; ***nəw** {198}; ***tsyip** ⌘ ***tsyup** {500}; ***tsyuk** {30}.

MINCE

⇒ ***dzik** ⌘ ***dziŋ** {31, 502}.

MIND

⇒ ***luŋ** {141}; ***ni** {347};
***nik** ⌘ ***niŋ** {39, 102, 103, 283, 347, 480, 521};
***sam** ⌘ ***sem** {311, 537}.

MISCHIEVOUS

⇒ ***rut** {364}.

MIX

⇒ ***hwel** {420}; ***ŋwal** {408}.

MOLAR

⇒ *gam {299}.

MOLE (*blemish*)

⇒ *men {81, 290, 296}.

MONEY

⇒ *plu {71, 74, 180, 184}.

MONKEY

⇒ *mruk {80, 145};
*myuk {37, 39, 96};
*ruk {145}; *woy {24, 229, 450}; *yuk {357}.

MONTH

⇒ *la {34, 39, 52, 134, 162, 164, 165, 168, 172}.

MOON

⇒ *krəy {189}; *la {34, 39, 52, 134, 162, 164, 165, 168, 172}; *mwat {332};
*ŋ^w(y)a {24, 26, 85, 332, 335}.

MOONLIGHT

⇒ *krəy {189}.

MORNING

⇒ *raŋ {263}.

MORTAR

⇒ *tsum {31, 32, 79, 275}.

MOSQUITO

⇒ *bik {344}; *kraŋ {262}.

MOTHER

⇒ *ma {175, 448};
*n(y)u {540}; *na {173}; *yay ≠ *ʔay {208}.

MOUNTAIN

⇒ *duŋ {285, 310};
*gaŋ {266, 303}.

MOUSTACHE

⇒ *yar {390}.

MOUTH

⇒ *ka {21, 125, 170, 173}; *ka(:)m {127, 251, 298}; *ku(w) {198};
*muk {537}; *mu:r {397, 402, 426, 537};
*not ≠ *nut {381}.MOUTH (*hold in the*)

⇒ *ʔu:m {276, 308}.

MOUTH (*seize with*)

⇒ *gam {299}.

MOUTHFUL

⇒ *hap {58, 335, 341};
*ʔu:m {496}.

MOVE

⇒ *gril ≠ *ril {410, 411}; *kyit {349};
*mow {224}.

MUCH

⇒ *mra ≠ *mya {80, 169}.

MUD

⇒ *ley ≠ *ləy {48, 71, 81, 191, 201, 218, 464, 509}.

MUNCH

⇒ *gwap ≠ *krap {338}.

MUSHROOM

⇒ *məw {134, 183, 184}.

MUSTARD

⇒ *raŋ {265}.

MUTE

⇒ *ga ≠ *ʔa {57, 165, 176}.

MUTUALLY

⇒ *dak {318, 320}.

N

NAIL

⇒ *(t)sin {291}; *syen ≠ *tsyen {29, 278, 290, 296}.

NAME

⇒ *miŋ {81, 127, 248, 280, 296, 298, 307, 496, 528, 529}.

NAME (v.)

⇒ *mi:n {306, 307, 529}.

NARROW

⇒ *gyap {315, 338, 342};
*gyiŋ {282}.

NAUSEATED

⇒ *ʔon {292}.

NAVEL

⇒ *kyak {318, 319};
*lay ≠ *tay {52, 102, 208, 210, 217}.

NEAR

⇒ *na:y ≠ *ney {215, 220, 511}.

NEARBY PLACE

⇒ *ba {163}.

NECK

⇒ *ke {204, 481}; *liŋ {39, 280, 296, 307}; *tuk ≠ *twak {357, 359, 361, 514}.

NEEDLE

⇒ *ga:p ≠ *ʔap {57};
*kap {198, 251, 342};
*ram ≠ *rap {336, 337, 517}.

NEGATIVE

⇒ *ma {172, 488}.

NEGATIVE IMPERATIVE

⇒ *da ɤ *ta {162, 172}.

NEPHEW

⇒ *du ɤ *tu {184, 200, 464}; *ləy {71, 80, 133, 192, 201, 464}.

NEST

⇒ *k^wəy {25, 196}.

NET

⇒ *gram {299}.

NET (casting)

⇒ *gwa ɤ *kwa {177, 258, 280, 450}.

NEW

⇒ *sar {385, 386, 387, 391, 402}; *sik {144, 344}.

NIGHT

⇒ *ya {165}.

NIGHT (spend the)

⇒ *r(y)ak {77, 323, 328}.

NINE

⇒ *gəw {182, 477}; *kwa {24}; *kəw {139, 140, 149, 178, 184, 199}.

NIT

⇒ *row {224}.

NOD

⇒ *nyit {36, 350}.

NOISE

⇒ *mriŋ {307}.

NOISE (make)

⇒ *ʔur {385, 396, 402}.

NOISY

⇒ *syay {209}; *ʔut {364}.

NOMINALIZER

⇒ *ray ɤ *way {35, 47, 209, 221, 482, 510}.

NOON

⇒ *duk {363}.

NOSE

⇒ *na ɤ *nair {102, 103, 162, 165, 172, 386, 426, 427}.

NOT

⇒ *ma {38}.

NOTCH

⇒ *ket {315, 375}.

NOUN PREFIX

⇒ *ʔak- ɤ *ʔaŋ- {522}.

NOUN SUFFIX

⇒ *ma {38}.

NOURISH

⇒ *hu {58}.

NUMB

⇒ *tum {273}.

NUMBER

⇒ *tsyəy {43, 79, 80, 200}.

O

OBJECT TO

⇒ *k(y)an {260}.

OBTAIN

⇒ *ney {206, 217, 460}; *ra {41, 42, 43, 163}.

OCCASION

⇒ *kri:n ɤ *kyi:n {277}; *pok {379}.

ODOR

⇒ *bat {330}.

OFFSPRING

⇒ *ŋay {209}.

OIL

⇒ *r(y)ak {323, 327}; *sa:w {32, 56, 225, 226, 227}; *tsil {410, 422}.

OLD

⇒ *ga {127, 129}; *gres {437}.

OMENTUM

⇒ *tsow {222, 224, 412, 471}.

ONE

⇒ *dan ɤ *day {262, 516}; *dik {346}; *t(y)ak ɤ *t(y)ik {346, 347, 507}; *tan ɤ *tay {262}; *ʔit {352}.

ONION

⇒ *swa {177, 301, 446, 448}; *tsoŋ {311}.

ONLY

⇒ *dan ɤ *day {262, 516}; *dik {346}; *t(y)ak ɤ *t(y)ik {346, 347, 507}; *tan ɤ *tay {262}.

OPEN

⇒ *bu {184}; *ka {21, 125, 170, 173}; *pwaŋ {249}.

OPEN WIDE

⇒ *ŋak {117, 242}.

OPENING

⇒ *ka {21, 125, 170, 173}.

OPPRESS

⇒ *nip ɤ *nup ɤ *nyap {339, 342, 355, 356, 370, 499, 505, 507};

*nyen {204, 290, 296}.

ORDER

⇒ *min {81, 127, 280, 296, 298, 307, 496, 528, 529}; *min {306, 307, 529}.

ORDURE

⇒ *ri(y) {145, 193}.

OTHER

⇒ *yar {392}.

OTTER

⇒ *ram {102, 191};
*sram {69, 77, 102, 150, 250, 255, 257}.

OUTER COVERING

⇒ *kok ꝥ *kwa(:)k {328, 378, 514}; *røy {189}.

OUTSIDE

⇒ *yar {392}.

OVERBEARING

⇒ *grol {421}.

OVERCAST

⇒ *mu:k ꝥ *mu:ŋ {81, 127, 289, 309, 310, 359, 360, 523}.

OVERFLOW

⇒ *brup ꝥ *prup {134, 369, 496}.

OVERTAKE

⇒ *mi {37}.

OWL

⇒ *gu ꝥ *ku {199}.

OWNER

⇒ *sin {278, 306, 449}.

P

PACK INTO

⇒ *tap {337}.

PADDLE

⇒ *ya:p {45, 137, 339, 340}.

PADDY

⇒ *ma {231}; *ma ꝥ *mey {216, 217, 221, 231, 486, 511}.

PAIN

⇒ *tsa {32, 177, 462, 464}.

PAINT

⇒ *tsəy {189, 201, 464}.

PAIR

⇒ *dzum ꝥ *tsum {272}.

PALE

⇒ *pwəy {213}.

PALM

⇒ *p^wa {173, 175, 446};
*p^wak {61}.

PANICLE

⇒ *nu {180}.

PAPER

⇒ *lay {209}.

PARE

⇒ *ku:k {359, 361};
*lep {376}.

PARROT

⇒ *gyəy {189}.

PARTRIDGE

⇒ *daŋ ꝥ *doŋ {129, 294}; *rik ꝥ *ryak {78, 324, 328, 343, 346, 347, 371, 507, 527}.

PASS

⇒ *lay ꝥ *ley {208, 216, 511}.

PASSING CLOSE

⇒ *ra:p {340}; *soy {228}.

PATCH

⇒ *ba {163}; *p^wa {61}.

PAY

⇒ *la {173}.

PEACOCK

⇒ *daŋ ꝥ *doŋ {129, 294}.

PEAK (be at its)

⇒ *kak {317, 328}.

PECK

⇒ *tuk {358}.

PEEL

⇒ *ko:r {385, 401, 426}.

PEN

⇒ *kruk {357}.

PENIS

⇒ *ley {47, 49, 153, 219, 509}; *lik {344, 374}.

PERCH

⇒ *na {433, 442, 471, 477}.

PERFECTLY

⇒ *moy {220, 228}.

PERMISSIBLE

⇒ *na {163}.

PERSON

⇒ *mi {81, 88, 118, 201, 449}; *p^wa {165, 166, 170, 172, 173, 175};
*tsaŋ {265}; *wa {250}.

PHEASANT

⇒ *daŋ ꝥ *doŋ {129,

294}; *rik ʔ *ryak {78, 324, 328, 343, 346, 347, 371, 507, 527}; *rwak {508}.	PLACE ⇒ *da {113}; *ra {78, 173}; *ta {162, 172, 250, 442, 454, 461}.	{249}.
PHLEGM ⇒ *har {391}; *ka:k {325}.	PLACENTA ⇒ *lam {250}.	PLURALIZER ⇒ *ray {209, 212}.
PICK UP ⇒ *ruk {96, 357}.	PLAIT ⇒ *ban/t ʔ *pan/t {260, 518}; *byar ʔ *pyar {390, 401}; *krəw {199}.	POISON ⇒ *duk ʔ *tuk {357, 363}.
PIEBALD ⇒ *bruk {363}.	PLANK ⇒ *plen {281, 292, 296}.	POKER ⇒ *yok {295, 517}.
PIERCE ⇒ *(d)z(y)u(:)k {31, 362, 529}; *dz(y)ut {529}; *lwan {258, 280, 386}; *tsow {30, 222, 223, 224, 227, 454, 515, 529}.	PLANT (n.) ⇒ *dziŋ {281}.	POOR ⇒ *bil ʔ *bul {419, 423}.
PIG ⇒ *p ^w ak {61, 62, 96, 147, 318, 319, 328}; *wak {62}.	PLANT (v.) ⇒ *(d)z(y)u(:)k {31, 362, 529}; *dz(y)ut {529}; *gay ʔ *kay {209}; *tsow {30, 222, 223, 224, 227, 454, 515, 529}.	POPLAR ⇒ *glaŋ {304}.
PILLOW ⇒ *kim ʔ *kum {124, 125, 147, 198, 249, 272, 275, 308, 496, 503}; *kum ʔ *ʔum {57}.	PLANTAIN ⇒ *ŋak {242, 318}.	PORCUPINE ⇒ *blu {74, 113, 180, 184, 241}.
PINCH ⇒ *nip ʔ *nup ʔ *nyap {339, 342, 355, 356, 370, 499, 505, 507}; *sik {344}.	PLAY ⇒ *dz(y)ay {30}; *tsya:y {210}.	POSSESS ⇒ *ŋas {432}.
PINE ⇒ *raw ʔ *row {224, 226, 515}; *taŋ {264}.	PLEASANT ⇒ *sa {428}; *sal {404, 405, 428}.	POST ⇒ *du:ŋ {287}.
PINE FOR ⇒ *rum {141, 272}.	PLENTY ⇒ *bliŋ ʔ *pliŋ {74}.	POTATO ⇒ *grwa {173}; *r(y)a {78, 173}.
PIT ⇒ *dwa:ŋ {269}; *kor ʔ *kwar {395, 401}.	PLUCK ⇒ *tsywat {332}.	POUCH ⇒ *kuk {356, 359, 361}.
	PLUG UP ⇒ *tsu(w) ʔ *tsəy {367, 461}.	POUND ⇒ *da:y ʔ *ta:y {210}.
	PLUMP ⇒ *pwam ʔ *pwap {249}.	POUR ⇒ *sywa-n/t ʔ *sywar {66, 84, 261, 386, 394, 402, 427, 519}.
		POWDER ⇒ *mun {249, 279}.
		PRACTICE ⇒ *bay {208, 220}; *gu {180}; *gyaŋ {265}; *lwap {342}.

PRECIPICE

⇒ ***ka(:)m** {127, 251, 298}.

PREGNANT

⇒ ***brum** {308}; ***pa:y** {210}.

PREPARE

⇒ ***gu** {180}.

PRESS

⇒ ***nip** ✕ ***nup** ✕
***nyap** {112, 339, 342, 355, 356, 370, 499, 505, 507}.

PRICE

⇒ ***pəw** {183, 184}.

PROHIBITION

⇒ ***krim** {305}.

PROPITIATE

⇒ ***toy** or ***tway** {229}.

PROVIDE (*food*)

⇒ ***graŋ** {303}.

PUDDING STICK

⇒ ***yok** {295, 517}.

PULL

⇒ ***ka:y** {210}.

PULSE

⇒ ***tur** {396}.

PULVERIZE

⇒ ***nyak** {323}.

PUMPKIN

⇒ ***ma:y** {210}; ***pu** {180}.

PUNISH

⇒ ***nye** {203, 291}.

PURULENT DISCHARGE

⇒ ***ri** {145, 186}.

PUS

⇒ ***blen** {69, 74, 124, 291}; ***nary** {210};
***tswəy** {194}.

PUSH ASIDE

⇒ ***lway** ✕ ***rway** {214}.

PUT

⇒ ***da** {113}; ***ta** {162, 172, 250, 442, 454, 461}.

PUT INTO

⇒ ***gray** {212}; ***tap** {337}.

PUT INTO MOUTH

⇒ ***gam** {299}.

PUT ON

⇒ ***gwa** ✕ ***kwa** {168, 172, 177, 259, 333, 334, 452}.

PUT TOGETHER

⇒ ***dway** {214}.

PYTHON

⇒ ***lik** ✕ ***liŋ** {281}.

Q

QUAIL

⇒ ***hair** {58, 385, 386, 392, 401, 426}; ***ʔair** {58, 385, 386, 392, 401, 426}.

QUARREL

⇒ ***ran** ✕ ***ray** ✕ ***ra:l** {44, 48, 261, 387, 388, 404, 407, 423, 425, 516}.

QUESTION PARTICLE

⇒ ***la** {163, 209, 231, 488}.

QUIET

⇒ ***ŋoy** {229}.

QUOTATIVE PARTICLE

⇒ ***dz(y)ay** {208, 477}.

R

RABBIT

⇒ ***yəw** {45, 130, 182, 185, 199, 449}.

RAIN

⇒ ***rwa** {44, 387, 433};
***wa** {127, 128, 162, 171, 173}.

RAINY SEASON

⇒ ***zur** {397, 426}.

RAISE

⇒ ***kyi** {188}; ***laŋ** {303}; ***tak** {317, 326};
***tyaŋ** {304}.

RAISE (*to maturity*)

⇒ ***hu** {58}.

RAKE (*v.*)

⇒ ***krak** {318}; ***si(y)** {193, 460}.

RAMP

⇒ ***gam** {250}.

RANSOM

⇒ ***blu** {456}.

RAT

⇒ ***syow** {228}; ***wak** {138, 151, 321}; ***yəw** {45, 130, 182, 185, 199, 228, 449}.

RAT (*bamboo*)

⇒ ***bwəy** {196}.

RATTAN

⇒ ***rey** {48, 206, 217,

- 218}; *ri(:)m {43, 271};
*rwi(y) {197, 218}.
- RAVINE*
⇒ *grok {378}.
- RAW*
⇒ *dz(y)im {19};
*r(y)an̄ ✕ *rin̄ {29, 78,
282, 283, 307, 506, 528}.
- RAZE*
⇒ *put {364}.
- READ*
⇒ *wel {420}.
- REAL*
⇒ *t(y)ak ✕ *t(y)ik
{65, 324, 507, 508}.
- REAP*
⇒ *rit̄ {41, 42, 43, 350}.
- REAR (offspring)*
⇒ *hu {58}.
- RECIPROCAL ACTION*
⇒ *dak {318, 320}.
- RED*
⇒ *dzya {451}; *kyen̄
{292, 311}; *ni {40, 100,
412, 428}; *nya {177,
451}; *t(s)a:y {262,
516}; *t(y)a {177, 262,
452, 485, 516}; *tsyak
{323, 328}.
- REHEARSE*
⇒ *gu {180}.
- RELATED (as kin)*
⇒ *do {204}.
- RELATIVE (senior male)*
⇒ *b^wan̄ ✕ *p^wan̄ {269,
303}; *gəw {450}.
- RELATIVES*
⇒ *dziŋ {31, 529}; *tsa
- ✕ *za {27, 31, 33, 34,
154, 162, 165, 169, 171,
172, 176, 188, 448, 450}.
- RELAX*
⇒ *grol {423}; *lwat
{70, 82, 84, 136, 332,
334}; *ʔo:l {421, 426}.
- RELEASE*
⇒ *lwat {70, 82, 84, 136,
315, 332, 334}; *prin̄ ✕
*pyin̄ {282}.
- REPAIR*
⇒ *glan {301}.
- REPAY*
⇒ *tsap {336, 342}.
- REPEAT*
⇒ *bay {208, 220}; *nan̄
{263, 302}.
- RESEMBLE*
⇒ *su {180, 199}.
- RESIDUE*
⇒ *raw {225}.
- REST*
⇒ *na {433, 442, 471,
477}.
- REST (come to)*
⇒ *din̄ {123, 308}.
- RETALIATE*
⇒ *ta:y {210}.
- RETURN*
⇒ *kuk {357, 358};
*kuk ✕ *ʔuk {57}.
- REVILE*
⇒ *mwa {176, 462}.
- RHINOCEROS*
⇒ *sey {220}.
- RIB*
⇒ *nam {40, 100, 112}.
- RICE*
⇒ *dzya {19, 30, 163,
168}; *ma {231}; *ma
✕ *mey {216, 217, 221,
231, 486, 511}; *ras
{432, 437}.
- RICE (cooked)*
⇒ *han̄ {264}.
- RIDE (an animal)*
⇒ *dzyi ✕ *gyi {188,
200}; *dzyon {34, 66,
291}.
- RIDE (vehicle)*
⇒ *gyar ✕ *hyar {58,
65, 391}.
- RIDGE*
⇒ *gan̄ {266, 303}.
- RIGHT (correct)*
⇒ *ʔal {406}.
- RIGHT (side)*
⇒ *ra ✕ *ya {29, 46, 96,
134, 165, 169, 176}.
- RIND*
⇒ *kok ✕ *kwa(:)k
{378, 514}.
- RING (for finger)*
⇒ *bran̄ {69}.
- RINGED*
⇒ *bay ✕ *pay {208}.
- RIP*
⇒ *dzyit ✕ *dzyut
{365, 502}.
- RIPE*
⇒ *min̄ {39, 277, 296,
495, 496}.
- RISE*
⇒ *s(y)ar {391}; *tyan̄
{304}.

RISK

⇒ *daw {225}.

RIVER

⇒ *k(l)uk ɤ *klu(:)ŋ
{287, 524}; *klyoŋ
{294}; *laŋ {266};
*lwi(y) {197};
*t(w)i(y) {451}.

ROAD

⇒ *lam {47, 48, 250}.

ROAST

⇒ *gaŋ {268}; *ka(:)ŋ
{268}; *war {428};
*ŋaw {127, 128, 227};
*ʔur {428}.

ROCK

⇒ *rak {318, 319}.

ROLL

⇒ *gril ɤ *ril {410,
411}; *hi:l ɤ *ki:l {57,
412, 413, 426}.

ROLL (n.)

⇒ *lip {353}.

ROLL UP

⇒ *tul {127, 129, 415}.

ROOT

⇒ *bul ɤ *pul {416,
424}.

ROPE

⇒ *kyak {318, 319};
*rey {48, 206, 217, 218};
*rwi(y) {197, 218}.

ROSE

⇒ *sey {31, 33, 129,
206}.

ROT

⇒ *bup {369}; *pəy
{189}; *ri {145, 186};
*tswəy {194}; *zya:wɤ *zyu(w) {35, 66,
227}.

ROUGH

⇒ *gram {252, 532};
*sak {318}.

ROUND

⇒ *wal {404, 406, 424};
*zlum {78, 272}.

ROUND OBJECT

⇒ *sey {31, 33, 129,
206}.

ROUNDED PART

⇒ *til ɤ *tul {419, 422,
500, 504}.

ROUSE

⇒ *kruk {363}.

ROWDY

⇒ *rut {364}.

RUB

⇒ *nu:l {417, 426}; *sap
{337}; *sywəy {66, 85,
195}.

RUB OFF

⇒ *pwan ɤ *pwat
{519}.

RUINED

⇒ *pyak {323}.

RULER

⇒ *dzəw {123}.

RUN

⇒ *byam {68, 118, 252,
257, 532}; *gan {519};
*gyar ɤ *hyar {58, 65,
391}; *k(y)at {519};
*ləy {189, 213}; *ploŋ
{294}.

RUST

⇒ *sa:y ɤ *tsa:y {210};
*syaŋ {36}; *z(y)aŋ

{36}.

RUSTLE

⇒ *krwap {82, 338}.

S

SACK

⇒ *ʔip ɤ *ʔit {533}.

SAD

⇒ *nyuŋ {284}.

SAG

⇒ *dzywal {31, 66, 84,
407}.

SAIL

⇒ *ya:r {393, 403, 426}.

SALIVA

⇒ *til ɤ *ts(y)il {79, 80,
119, 124, 410, 411, 424};
*twa {173, 174}; *yen
{115}.

SALT

⇒ *gryum {308}; *la
{173}; *ryum {134, 272,
275}; *t(s)i {34, 540};
*tsa {31, 162, 165, 168,
172, 174}.

SALTY

⇒ *hyam {299}.

SAND

⇒ *sa {176}; *z(l)a
{486}.

SAP

⇒ *dzəy {189}.

SATIATED

⇒ *pup {369}; *wa
{171}.

SCALE (of fish or reptile)

⇒ *lip {353}; *sep {316,

353, 376}.	SEE	SEW
SCATTER	⇒ *hyen {65}; *mraŋ {37, 80, 267, 303}.	⇒ *byar ɤ *pyar {390, 401}; *drup ɤ *grup {141}; *krwi(y) {82}; *p ^w a {61}; *rup {369}.
⇒ *gray {211};	SEED	SHADE
*sywa-n/t ɤ *sywar {66, 84, 386, 394, 402, 427}.	⇒ *dzəy {31, 190};	⇒ *rim ɤ *rum {273, 308, 498}; *rip {353}.
SCENT	*yəw {35}.	SHADOW
⇒ *saŋ ɤ *suŋ {288, 482, 513}.	SEEK	⇒ *rip {353}.
SCOLD	⇒ *pa {24}; *pup {337, 369}.	SHAKE
⇒ *ta:y {210}.	SELF	⇒ *tur {396}.
SCOOP	⇒ *tay {208}; *ŋa {1, 38, 162, 165, 167, 173, 174, 208, 231, 487}.	SHALLOW
⇒ *sa:y ɤ *tsa:y {210}.	SELL	⇒ *day {209}; *dim {271}.
SCOOP UP	⇒ *par {391}; *ywar {63, 386, 388, 393}.	SHARP
⇒ *go ɤ *ko {127, 129, 380, 461, 463}.	SEND FORTH	⇒ *ryam {77, 299}; *tak {318, 319}.
SCOOP WATER	⇒ *prin ɤ *pyin {282}.	SHARPEN
⇒ *kam ɤ *ka:p {341, 517}.	SEND ON AN ERRAND	⇒ *kywan {260}.
SCOOP WITH BOTH HANDS	⇒ *dzəy {199}.	SHATTER
⇒ *tap {336, 337}.	SEPARATE	⇒ *nyak {323}.
SCORCH	⇒ *bral ɤ *pral {423}.	SHAVE
⇒ *kyit {349}.	SERVANT	⇒ *sywəy {66, 85, 195}.
SCORPION	⇒ *g(y)wal ɤ *k(y)wal {261, 408, 424}.	SHEAR
⇒ *di:k {345, 496, 503, 527}.	SESAME	⇒ *ku:k {359, 361}.
SCRAPE	⇒ *nam {38, 250, 253}.	SHEEP
⇒ *kret {375}; *ku(:)t {364, 496}; *sywəy {66, 85, 195}.	SET (a trap)	⇒ *luk {363}; *yak ɤ *yaŋ {29, 523}.
SCRATCH	⇒ *tuŋ {285}.	SHELL
⇒ *hyak {65, 323}; *kew {231}; *krak {318}; *kret {375}; *ku(:)t {364, 496}.	SET (of the sun)	⇒ *krap {342}.
SEARCH FOR	⇒ *g(l)im ɤ *g(l)um {249, 274, 499}.	SHELLFISH
⇒ *pa {24}; *pup {337, 369}.	SETTLED	⇒ *kroy {228}.
	⇒ *din {123, 307, 308}.	SHIELD
	SEVEN	⇒ *krap {342}; *po {204}.
	⇒ *ni {44, 103, 149, 153, 351, 352, 434, 477}.	SHIN
		⇒ *gu:ŋ {127, 287}.

SHINE

⇒ *ba {123, 163};
 *glwak {328}; *hwa
 {334, 429, 444, 463};
 *hwal ✕ *hwar {409};
 *hwam {429}; *hwan
 ✕ *hwat {429}; *hwan
 {430}; *hwar {385, 402,
 426}; *hwar ✕ *yar
 {429}; *pwa(:)r {402}.

SHOOT

⇒ *ga:p ✕ *ʔap {57,
 137, 340}; *puk {315,
 357}.

SHOUT

⇒ *ʔa:w {225}.

SHOW

⇒ *mraŋ {268}.

SHRIMP

⇒ *di:k {345, 496, 503,
 527}.

SHRINK

⇒ *dwan ✕ *twan
 {258}.

SHUN

⇒ *hway ✕ *kwa(:)y
 {57, 213}.

SHUT

⇒ *dzyip {31, 353};
 *min ✕ *mit {315,
 350, 352, 519}.

SIDE

⇒ *bak {113}; *dzya
 {169}; *nam {40, 100,
 112}.

SILVER

⇒ *mul {415}; *plu {71,
 74, 180, 184}; *ŋul {83,
 414, 415, 424}.

SINEW

⇒ *sa {127, 128, 129,
 162, 166}.

SING

⇒ *ga ✕ *ga:r {392, 401,
 425, 427}.

SINGLE

⇒ *dan ✕ *day {262,
 516}; *kyaŋ {264}; *tan
 ✕ *tay {262}.

SINK

⇒ *lip ✕ *lup {354,
 370}; *nip ✕ *nup ✕
 *nyap {339, 342, 355,
 356, 370, 499, 505, 507}.

SIP

⇒ *rup {369, 495}.

SISTER

⇒ *sriŋ {77, 307}.

SISTER (of a man)

⇒ *dzar {34, 385, 388,
 391}.

SIT

⇒ *duŋ/k ✕ *tuŋ/k
 {288, 523}.

SIT ON EGGS

⇒ *ʔu {180, 199}.

SIX

⇒ *kruk {23, 71}; *ruk
 {44, 140, 145, 148, 149,
 357, 360, 361, 363}.

SKIN

⇒ *kok ✕ *kwa(:)k
 {378, 514}; *pin ✕ *pun
 {418}; *p^wil ✕ *p^wul
 {280, 501}; *rəy {189};
 *wul ✕ *wun {418};
 *ʔul {58}.

SKY

⇒ *ka {177, 450}; *məw
 {81, 129, 183, 184}.

SLAB

⇒ *dey {206}.

SLANT

⇒ *rwəy {195}.

SLAVE

⇒ *g(y)wal ✕
 *k(y)wal {248, 261, 408,
 424}.

SLEEP

⇒ *dzim {305}; *mwəy
 {195, 200}; *nyit {36,
 350}; *yip ✕ *yup {27,
 35, 56, 153, 192, 315, 354,
 369, 370, 499, 500, 533}.

SLEEPY

⇒ *myel {420, 427}.

SLEET

⇒ *ser {399, 402}.

SLICE

⇒ *lep {376}; *mwan ✕
 *mwat {518}.

SLINGSHOT

⇒ *ləy {48, 50, 140,
 192}.

SLIP

⇒ *ble {203}.

SLOPE

⇒ *rwəy {195}.

SMALL

⇒ *zəy {66, 191}; *ŋay
 {209}.

SMELL

⇒ *bat {330}; *nam
 {103, 119, 250, 251, 253};
 *saŋ ✕ *suŋ {288, 482,
 513}.

SMOKE

⇒ *kəw {178, 182, 184, 199, 451, 454}.

SNAKE

⇒ *bəw {19, 130, 139, 148, 154, 178, 183, 184};
*ru:l {43, 44, 80, 81, 83, 134, 151, 235, 385, 387, 388, 414, 417, 424, 426};
*wəy {83}.

SNAP AT

⇒ *hap {58, 335, 341}.

SNORE

⇒ *hal {406, 424}; *ɲor {400}.

SNOT

⇒ *nap {37, 99, 102, 112, 336}.

SNOW

⇒ *kyam {252, 532};
*p^wal {172, 408}; *wa {46, 171, 428}; *wal {387, 404, 428}.

SNUFF UP

⇒ *rup {369, 495}.

SOAK

⇒ *t(w)i(y) {351, 434}.

SOFT

⇒ *nem ɹ *nyam {248, 290, 299, 509}; *now {38, 223, 224}; *pryo {205, 481}.

SOIL

⇒ *ha ɹ *ka {57, 127};
*ley ɹ *ləy {48, 71, 81, 191, 201, 218, 464, 509};
*sa {176}.

SOLDIER

⇒ *mak {35, 99, 318}.

SOLE

⇒ *p^wa {173, 175, 446};
*p^wak {61}.

SOLID

⇒ *gair ɹ *kair {392, 426}; *tas {127, 128, 129, 432}.

SON

⇒ *tsa ɹ *za {27, 31, 33, 34, 154, 162, 165, 169, 171, 172, 176, 188, 448, 450}.

SON-IN-LAW

⇒ *krwəy {22, 69, 82, 194, 200}; *ma:k {37, 233, 325, 474}.

SOOT

⇒ *mu {112, 180}.

SOUL

⇒ *hla {162, 172}; *la {39, 164}; *sam ɹ *sem {311, 537}.

SOUND

⇒ *glaŋ ɹ *klaŋ {267};
*mriŋ {307}.

SOUR

⇒ *krəy {22, 118, 189, 193, 436, 456}; *kyur ɹ *kywar {85, 384, 398, 402, 426, 449, 475, 514};
*sur ɹ *swar {85, 384, 398, 402, 426, 449, 475, 514}.

SOW (seeds)

⇒ *gray {211}; *ka {163}.

SOW BROADCAST

⇒ *sywa-n/t ɹ *sywar {66, 84, 386, 394, 402, 427}.

SPAN

⇒ *ka {24}.

SPARROW

⇒ *tsa {168}.

SPEAK

⇒ *br(w)ak ɹ *br(w)aŋ {523}; *dam ɹ *tam {299}; *grwas {437}.

SPEAR

⇒ *duŋ {284}.

SPECKLED

⇒ *bruk {363}.

SPEECH

⇒ *daŋ {19}; *glaŋ ɹ *klaŋ {267}; *ka {174};
*rey {205}.

SPENT

⇒ *ma {334}.

SPEW

⇒ *tu:k {117, 359, 360}.

SPIDER

⇒ *kaŋ {266}; *kaŋ ɹ *waŋ {57}.

SPILL

⇒ *sywa-n/t ɹ *sywar {66, 84, 386, 394, 402, 427}.

SPIN

⇒ *ga {266}; *gyaŋ {266}; *kaŋ ɹ *waŋ {57}; *p^waŋ {61, 266, 269, 303}; *waŋ {269}.

SPINDLE

⇒ *b^war {61}; *mwəy {195}; *p^waŋ {61, 266, 269, 303}; *waŋ {269}.

SPINE

⇒ *ra {173}.

SPIRIT

⇒ ***hla** {56}; ***la** {39, 164}; ***sam** ⌘ ***sem** {311, 537}.

SPIRIT (evil)

⇒ ***na** {38, 162, 168, 333, 335, 440, 452, 520}.

SPIT

⇒ ***t(w)i(y)** {195}; ***til** ⌘ ***ts(y)il** {79, 80, 119, 124, 410, 411, 424}; ***tu:k** {117, 359, 360}; ***twa** {173, 174}.

SPITTLE

⇒ ***til** ⌘ ***ts(y)il** {79, 80, 119, 124, 410, 411, 424}; ***twa** {173, 174}; ***yen** {115}.

SPLEEN

⇒ ***pay** {208, 221}; ***pray** {73}.

SPLIT

⇒ ***(d)zi:t** ⌘ ***(t)sit** {350, 502}; ***dzik** ⌘ ***dzing** {31, 502}; ***lap** {337}.

SPOILED

⇒ ***hew** {231}.

SPOTTED

⇒ ***bup** {369}.

SPREAD

⇒ ***dal** {424}; ***kaŋ** {266}; ***yair** {393, 403, 426}.

SPREAD WIDE

⇒ ***bran** {260}.

SQUEEZE

⇒ ***nip** ⌘ ***nup** ⌘ ***nyap** {339, 342, 355, 356, 370, 499, 505, 507};

***nyit** {349, 355}; ***tsyir** ⌘ ***tsyur** {397, 426, 498}.

SQUIRREL

⇒ ***ley/ŋ** ⌘ ***rey/ŋ** {77, 292, 296, 311, 512}.

SQUIRREL (flying)

⇒ ***ru** {180}.

STAIN

⇒ ***saiy** ⌘ ***tsaiy** {210}.

STALK

⇒ ***kaŋ** ⌘ ***keŋ** {283, 293, 311}.

STAND

⇒ ***r(y)ap** {35, 48, 136, 339, 342}; ***rap** {35, 56, 315, 339, 530}.

STAR

⇒ ***gray** {212}; ***grəy** {23}; ***kar** {386, 387, 391}; ***mwat** {332}; ***ŋ^w(y)a** {24, 26, 85, 332, 335}.

STARTLED

⇒ ***ti** {462}.

STAY

⇒ ***na** {433, 442, 471, 477}.

STEAL

⇒ ***hu** ⌘ ***kəw** {57}; ***kun** ⌘ ***kut** ⌘ ***kəw** {127, 129, 178, 182, 184, 198, 227, 441, 442, 454, 515}; ***ru:k** {80}.

STEEP

⇒ ***tsyuk** {357}.

STEM

⇒ ***kaŋ** ⌘ ***keŋ** {283, 293, 311}; ***ku:ŋ** {287,

310}.

STENCH

⇒ ***ri(y)** {145, 193}.

STEP ON

⇒ ***nak** ⌘ ***nan** {523}.

STICK (n.)

⇒ ***da** {163}.

STICK INTO

⇒ ***kyap** {337}; ***swat** {332}; ***tsap** {337}.

STICKY

⇒ ***neck** {374}; ***nyak** {374}.

STIFF

⇒ ***rwat** {332}.

STING

⇒ ***taiy** {210}.

STIR

⇒ ***hwel** {420}; ***ŋwal** {408}.

STOMACH

⇒ ***grwat** {334}; ***p^wik** {47, 344, 496}; ***ri:l** {44, 385, 387, 412, 413, 426}; ***wam** {46, 253}; ***wik** {47, 344}.

STONE

⇒ ***luk** ⌘ ***luŋ** {47, 50, 70, 127, 128, 288, 523}; ***rak** {318, 319}.

STOP UP

⇒ ***tsu(w)** ⌘ ***tsəy** {367, 461}.

STOUT

⇒ ***bwam** ⌘ ***bwap** {252, 341, 518}.

STRAIGHT

⇒ ***dyam** ⌘ ***tyam** {51,

65, 307}; *tan {260}.	STRIPED ⇒ *bay ʔ *pay {208}; *gak {120}.	SULLEN ⇒ *mu:k ʔ *mu:ŋ {81, 127, 289, 309, 310, 359, 360, 523}.
STRAIGHT(en) ⇒ *bleŋ ʔ *pleŋ {281, 292}.	STROKE ⇒ *sap {337}.	SUMMIT ⇒ *diŋ {307}.
STRAIN ⇒ *gyan ʔ *kyan {248, 260}.	STRONG ⇒ *graŋ ʔ *kraŋ {267, 303}; *tsan {260}; *zan {28, 260, 442}.	SUN ⇒ *ka {177, 450}; *nəy {191, 201, 464}; *riŋ {281}.
STRANGER ⇒ *gra {173}.	STUFF (n.) ⇒ *ray {209, 212}.	SUNLIGHT ⇒ *məw {30}.
STRANGLE ⇒ *ʔik {344, 348}.	STUMP ⇒ *bul ʔ *pul {416, 424}.	SUNSHINE ⇒ *riŋ {281}; *tsyar {391}.
STREAM ⇒ *klyoŋ {294}; *lwi(y) {197}.	STUNTED ⇒ *grum {272}.	SUPERIOR ⇒ *ryan ʔ *zryan {66, 79, 303}.
STRENGTH ⇒ *baŋ {140}; *ra {170}.	STUPID ⇒ *ga ʔ *ʔa {57, 165, 176}.	SUPPURATE ⇒ *t(w)i(y) {194}.
STRETCH OUT ⇒ *dzyan ʔ *tsyan {260}; *kaŋ {266}.	SUBMERGE ⇒ *nip ʔ *nup ʔ *nyap {339, 342, 355, 356, 370, 499, 505, 507}.	SURROUND ⇒ *kroy {229}.
STRIDE ⇒ *ga ʔ *gar {392, 401, 425, 427}; *ka {484}.	SUBORDINATOR ⇒ *ray ʔ *way {35, 47, 209, 221, 482, 510}.	SWAGGERING ⇒ *ʔut {364}.
STRIFE ⇒ *ran ʔ *ray ʔ *ra:l {44, 48, 261, 387, 388, 404, 407, 423, 425, 516}.	SUCK ⇒ *dz(y)o:p ʔ *ts(y)o:p {31, 371, 382}; *dz(y)əw {382}; *dzyip ʔ *dzyup {316, 382, 500}; *dzyow {382}; *dzyuk {382}; *dzyut {382}; *tsyip ʔ *tsyup {500}; *tsyuk {30}.	SWALLOW (v.) ⇒ *mlyəw {81, 84}.
STRIKE ⇒ *dip ʔ *tip {498}; *dup ʔ *tup {498}; *duŋ {309, 363}; *tuk {358, 363}.	SUFFER ⇒ *na {38, 162, 168, 333, 335, 440, 452, 520}; *tyak {323}; *ʔiŋ {281}.	SWEAT ⇒ *grwəy {82, 195}; *hir ʔ *hur ʔ *hwar ʔ *hyar {399, 429, 514}; *krul ʔ *ŋrul {83, 102, 129, 414}; *krwəy {82}.
STRING ⇒ *bliŋ {307}; *kriŋ {23, 282}; *krəw {199}.		SWEEP ⇒ *py(w)ak {66, 85, 128, 323, 527}; *sit ʔ *sut {315, 366, 502}; *syim {305}.
STRIP ⇒ *ku:k {359, 361}.		SWEET ⇒ *dz(y)im {34, 66,

271}; *hil ɤ *hul {58, 419, 501}; *klum {275}; *kyəw {182, 185}; *min {39, 277, 296, 495, 496}; *t(w)i(y) {197}.

SWELL UP

⇒ *bwam ɤ *bwap {252, 341, 518}; *pwam ɤ *pwap {315}.

SWIDDEN

⇒ *hya {56, 171}.

SWOLLEN

⇒ *bwam ɤ *bwap {252, 341, 518}; *pwam ɤ *pwap {249}.

SWORD

⇒ *duŋ {284}; *ran ɤ *ray ɤ *ra:l {44, 48, 261, 387, 388, 404, 407, 423, 425, 516}; *ta {162}.

T

TAIL

⇒ *ba {123}; *may ɤ *mey ɤ *mi {81, 106, 127, 208, 216, 217, 221, 511}.

TAKE

⇒ *dz(y)u {479}; *hyal {65, 406}; *yu {35, 180, 184}.

TALENT

⇒ *(d)zary ɤ *(t)sary {210, 221}.

TALK

⇒ *dam ɤ *tam {299}.

TARO

⇒ *blum {273}; *grwa {173}.

TEA

⇒ *la {48}.

TEACH

⇒ *ma {38, 113, 163, 241}.

TEAR

⇒ *dzyit ɤ *dzyut {365, 502}; *mrak {80}.

TEARS

⇒ *brəy {124}.

TEMPERAMANT

⇒ *(d)zary ɤ *(t)sary {210, 221}.

TEN

⇒ *g(y)ip {198, 352, 356}; *gip {353}; *ts(y)i(y) ɤ *tsyay {30, 31, 208, 212, 219, 510}.

TEND

⇒ *way {209}.

TEND GRAZING ANIMALS

⇒ *gyoŋ {294}; *wul {384, 416}.

TENDER

⇒ *now {38, 223, 224}.

TENSE

⇒ *daŋ ɤ *taŋ {267}.

TERRIFY

⇒ *krim {271}.

TESTICLES

⇒ *lik {344, 374}; *səw {182}.

TETHER

⇒ *dar {401}.

THAT

⇒ *day {207}.

THICK

⇒ *dow ɤ *tow {181, 222, 224, 226, 228, 452, 515}; *tas {127, 128, 129, 432}; *tu:k {359, 360, 361}.

THICK (of liquids)

⇒ *na:ŋ {302}.

THIEF

⇒ *kun ɤ *kut ɤ *kəw {127, 129, 178, 184, 198, 227, 441, 442, 454, 515}.

THIN

⇒ *ba {19, 24, 162, 169, 440}; *ban/t ɤ *pan/t {440}; *lep ɤ *lyap {51, 339, 377}; *per {386, 400, 426}.

THING

⇒ *dzas {432, 437}.

THINGS

⇒ *ray {209, 212}.

THINK

⇒ *daŋ {266}; *ga {163}; *nyam {299}.

THIRSTY

⇒ *sip {353}.

THIS

⇒ *day {207}.

THORN

⇒ *(d)z(y)u(:)k {31, 362, 529}; *dz(y)ut {529}; *tsow {30, 222, 223, 224, 227, 454, 515, 529}.

THOUSAND

⇒ *toŋ {294}.

THREAD

⇒ *bliŋ {307}; *kriŋ
{23, 282}; *krəw {199}.

THREATEN

⇒ *krim {271}.

THREE

⇒ *sum {32, 33, 56, 135,
149, 272, 275, 308}.

THROAT

⇒ *ʔol ʔor {58, 421}.

THROW

⇒ *ba ʔ *ba:y {170,
231, 483}.

THROW (away)

⇒ *b^war ʔ *h^war {55,
394, 425}.

THUNDER

⇒ *bruk ʔ *bruŋ {524}.

THUNDERBOLT

⇒ *gle:k {373}.

TICKLE

⇒ *li {186}; *yak {51,
317, 326, 329}.

TIE

⇒ *du ʔ *tu {367, 452,
460}; *dut {368};
*g(y)it/k ʔ *k(y)it/k
{344, 345, 347, 528};
*grak {327}.

TIGER

⇒ *key ʔ *kəy {139,
141, 217, 219, 510}; *la
{70, 138, 173, 393}.

TIGHT

⇒ *daŋ ʔ *taŋ {267};
*graŋ ʔ *kraŋ {267,
303}.

TIME

⇒ *kri:n ʔ *kyi:n {249,

277}; *pok {379}; *ta
{163}.

TINY

⇒ *zəy {66, 191}.

TIRED

⇒ *bal {386, 404, 406,
427}; *nyuŋ {284}.

TIRED OF

⇒ *baŋ {265}.

TOAST

⇒ *gaŋ {268}; *ka(:)ŋ
{268}.

TONGUE

⇒ *l(y)a {50, 165, 171,
215, 487, 511}; *lay ʔ
*ley {48, 102, 119, 124,
141, 208, 215, 217, 487,
511}; *lyak {23, 48, 80,
81, 92, 124, 137, 153, 323,
327, 528}; *lyam {299}.

TOOTH

⇒ *dzyway {30, 212};
*swa {27, 166, 167, 171,
172}; *ŋa {175}.

TOP

⇒ *diŋ {307}; *tak {317,
326}.

TOUGH

⇒ *rwat {332}.

TRADE

⇒ *par {391}.

TRAIN

⇒ *gyaŋ {265}.

TRANSITIVE MOTION

⇒ *ʔay {209, 482, 483}.

TRANSPORT

⇒ *wan ʔ *wat {519}.

TRAP

⇒ *wa {163}.

TRAVEL

⇒ *grwat {335}.

TREE

⇒ *bul ʔ *pul {416,
424}; *dziŋ {281};
*ku:ŋ {287, 310}; *sik
ʔ *siŋ {32, 33, 34, 282,
283, 315, 347, 475, 524,
528}.

TREMBLE

⇒ *tur {396}.

TRILL

⇒ *dit {349}.

TROUSERS

⇒ *la {29, 56, 112, 163,
165, 169, 172}.

TRUMPET

⇒ *g^wya {26}.

TRUST

⇒ *dz(y)u {479}.

TRY TO

⇒ *ney {206}.

TUBE

⇒ *gliŋ {280}.

TURN

⇒ *gil {410, 412}.

TURN OVER

⇒ *pup {337, 369};
*pyap {337}.

TURN UP

⇒ *pyak {323}.

TUSK

⇒ *dzyway {30, 212};
*wik {344}.

TWENTY

⇒ *kul {24, 119, 384,

385, 388, 414, 416, 425}.

TWIRL

⇒ *mwəy {195}.

TWIST

⇒ *hi:l ɤ *ki:l {57, 412, 413, 426}; *na:y {210}; *sik {344}.

TWO

⇒ *ni {135, 149, 241, 351, 352, 434, 477, 481}.

U

UNCLE

⇒ *b^waŋ ɤ *p^waŋ {269, 303}; *ryaŋ ɤ *zryaŋ {66, 79, 303}.

UNDER

⇒ *ʔok {377}.

UNTIE

⇒ *prəy {73}; *pyin ɤ *pyit {520}.

UPPER PART

⇒ *tyaŋ {304}.

UPRIGHT

⇒ *tan {260}.

URINE

⇒ *ts(y)i ɤ *zəy {27, 31, 187, 189, 194, 441, 454}.

USE

⇒ *zum ɤ *zuŋ {28, 34, 66, 276, 531}.

V

VAGINA

⇒ *b(y)et {375}; *dzyuk {66}; *tu {247}.

VALLEY

⇒ *k(l)uk ɤ *klu(:)ŋ {287, 524}; *klyoŋ {294}; *kor ɤ *kwar {395, 401}; *laŋ {266}.

VANISH

⇒ *myak {322}.

VAULTED

⇒ *ku(:)m {276}.

VEGETABLE

⇒ *t(s)a:y {221}.

VEGETABLE (green)

⇒ *raŋ {265}.

VEGETABLE DISH

⇒ *h(y)an {65}.

VEIN

⇒ *sa {127, 128, 129, 162, 166}.

VERMIN

⇒ *bəw {19, 130, 139, 148, 154, 178, 183, 184}.

VERY

⇒ *t(y)ak ɤ *t(y)ik {65, 324, 507, 508}.

VESSEL

⇒ *not ɤ *nut {381}.

VICINITY

⇒ *ba {163}.

VILLAGE

⇒ *dya:l ɤ *tyal {65, 406}; *kak {319}; *wa {127, 134}.

VIRILITY

⇒ *səw {182}.

VISCOUS

⇒ *na:ŋ {302}.

VOICE

⇒ *sam ɤ *sem {252, 532}.

VOMIT

⇒ *pat {315, 330, 335, 442}; *ʔaw {227}; *ʔon {292}.

VULTURE

⇒ *glaŋ {23, 75}; *lak ɤ *laŋ {263, 393, 521}.

VULVA

⇒ *b(y)et {375}; *dzyuk {66}; *tu {247}.

W

WAIL

⇒ *ku:k {363}.

WAIST

⇒ *dzyuk ɤ *gyuk {72, 357, 358}; *ta:y {210, 220}.

WAIT

⇒ *dzoŋ {31, 294}; *laŋ {112, 266}; *lyan {266}.

WANT

⇒ *ga {163}.

WAR

⇒ *mak {99, 318}; *ran ɤ *ray ɤ *ra:l {44, 48, 261, 387, 388, 404, 407, 423, 425, 516}.

WARM

⇒ *lim ɤ *lum {272, 273}.

- 275, 496}.
- WARM (*make*)
⇒ *lim ʰ *lum {272, 275, 496}.
- WASH
⇒ *gro:l {421}; *hir ʰ *hur {397, 501}; *krəw {461}; *s(y)il ʰ *syal {409, 410, 413, 425, 508}; *tsəy {30, 189}.
- WASP
⇒ *plyum {531}.
- WASTED
⇒ *hew {231}.
- WATCH
⇒ *way {209}.
- WATCH FOR
⇒ *dzon {31, 294}.
- WATER
⇒ *rəy {42, 43, 189, 213, 250}; *t(w)i(y) {193, 194, 195, 451, 471}.
- WAVE (*in water*)
⇒ *ba {174}.
- WAVE (v.)
⇒ *wəy {210}; *ya:p {45, 137, 339, 340}.
- WAY
⇒ *niŋ {281}.
- WEAR
⇒ *gwa ʰ *kwa {25, 168, 172, 177, 259, 333, 334, 452}; *pun {495}; *w(y)a {333, 334, 335, 508}; *wat {331}.
- WEAR DOWN
⇒ *nu:l {417, 426}.
- WEAR ON HEAD
⇒ *kuk {357}.
- WEASEL
⇒ *ley/ŋ ʰ *rey/ŋ {77, 292, 296, 311, 512}.
- WEAVE
⇒ *rak {41, 42, 43, 61, 146, 315, 319}; *t(r)ak {318, 328, 374}.
- WEDGE
⇒ *sap {336, 342}.
- WEED (v.)
⇒ *klaw {23, 225}.
- WEEDS
⇒ *mrak ʰ *mruk {80, 482, 513}; *mu:k {360}.
- WEEP
⇒ *krap {137, 336, 339, 342}; *ku:k {363}; *ŋəw {182, 185}.
- WEIGH
⇒ *kyi:n {27, 249, 277}.
- WELL
⇒ *məy {132, 207, 210}.
- WELL (*for water*)
⇒ *dwa:ŋ {249, 269}.
- WEN
⇒ *men {81, 290, 296}.
- WET
⇒ *hus {435}; *nyak {323, 374}; *t(w)i(y) {351, 434}.
- WHAT
⇒ *ba {488}; *ma {488}.
- WHEN
⇒ *ta {163}.
- WHICH
⇒ *ka {488}; *kaŋ {488}.
- WHIRL
⇒ *wəy {210}.
- WHISPER
⇒ *syip ʰ *syup {356}.
- WHISTLE
⇒ *dit {349}; *huy ʰ *hyu {65}; *sit {349}.
- WHITE
⇒ *bok {378}; *hwarr {385, 402, 426}; *hwa:r ʰ *yar {429}; *plu {71, 74, 180, 184}; *pwa(:)r {402}; *wa {429}.
- WHO
⇒ *su {3, 180}.
- WHOLE
⇒ *dan ʰ *day {262, 516}; *tan ʰ *tay {262}.
- WIDE
⇒ *glay {221}.
- WIDOW
⇒ *tsyəw {182}.
- WILD DOG
⇒ *kywal {261, 407, 423, 449}; *wan {261, 449}.
- WILD YAK
⇒ *broŋ {294}.
- WILDCAT
⇒ *roŋ {138, 294}.
- WILLOW
⇒ *gləŋ {304}.
- WIN
⇒ *ra {170}.

WIND (n.)

⇒ ***buŋ** {531}; ***ləy** {39, 50, 134, 192, 194, 247}.

WIND AROUND

⇒ ***bat** {330}.

WING

⇒ ***duŋ** {19, 285}.

WINNOW

⇒ ***ra** {163}.

WIPE

⇒ ***sit** ⌘ ***sut** {315, 366, 502}.

WITHER

⇒ ***hwa:y** {214}; ***nəw** {182}.

WITHERED

⇒ ***raw** {225}; ***ŋrəw** {184}.

WOLF

⇒ ***kywal** {261, 407, 423, 449}; ***wan** {261, 449}.

WOMAN

⇒ ***mow** {223, 227}; ***nya** {173}.

WOMB

⇒ ***lam** {250}; ***not** ⌘ ***nut** {381}; ***pru(w)** {199}.

WOOD

⇒ ***sik** ⌘ ***siŋ** {32, 33, 34, 282, 283, 347, 475, 524, 528}.

WORD

⇒ ***glaŋ** ⌘ ***klaŋ** {267}; ***grwas** {437}; ***ka** {174}.

WORK

⇒ ***mow** {224}.

WORM

⇒ ***di** {188}; ***zril** {78, 79, 188, 388, 410, 412, 425}.

WORSE

⇒ ***ryut** {364}.

WOUND

⇒ ***ma** {81, 127, 334, 461}.

WRAP

⇒ ***klup** {369}; ***pun** {495}; ***tul** {127, 129, 415}.

WRAP UP

⇒ ***tip** ⌘ ***tum** ⌘ ***tup** {354, 370, 497, 517}.

WRING

⇒ ***tsyip** ⌘ ***tsyup** {371, 498}; ***tsyir** ⌘ ***tsyur** {397, 426, 498}.

WRINKLE

⇒ ***dwan** ⌘ ***twan** {258}.

WRIST

⇒ ***hwal** {407, 423}; ***wan** {301}.

WRITE

⇒ ***bup** {369}; ***ris** ⌘ ***rit** ⌘ ***rəy** ⌘ ***ri:n** {43, 132, 441}.

***r(y)a** {78, 173}.

YEAR

⇒ ***kuk** {357, 358}; ***nik** ⌘ ***niŋ** {282, 283, 475, 524, 528}.

YEAST

⇒ ***t(s)i** {34, 540}.

YELLOW

⇒ ***hwaŋ** {430}; ***hwa:r** ⌘ ***yar** {429}; ***rwəy** {191}; ***wa** {429}.

YOUNGER SIBLING

⇒ ***doy** {221, 228}; ***na:w** {225, 226}; ***nyey** {206}; ***toy** {221, 228}.

YOUTH (youngster)

⇒ ***lak** {53}.

Z

ZONE

⇒ ***day** {211}; ***tary** {210, 220}.

Y

YAK

⇒ ***yak** ⌘ ***yaŋ** {29, 523}.

YAM

⇒ ***kywəy** {66, 195}; ***nway** {215, 217}.

Index of Chinese Characters

This character index, designed by Richard S. Cook, is alphabetized according to the *pinyin* orthography of the Mandarin pronunciation, disregarding tone. Each character is followed by two sets of numbers. The first, in curly brackets, refers to the page(s) in the text where the character is cited. The second, a “left zero-padded” 4-digit number in square brackets, is the character’s number in Karlgren 1957 (*GSR*), *e.g.*:

<i>ge</i>	歌 {174, 391, 399} [0001q]
<i>sui</i>	髓 {231} [0011g]
<i>kou</i>	口 {199} [0110a]
<i>jiang</i>	江 {286} [1172v]

A number in square brackets preceded by P means that the exact character does not appear in *GSR*, but the phonetic (or a graphic variant of the phonetic) is the same as the series cited, thus:

<i>fu</i>	蝠 {324} [P0933a]
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A number in square brackets preceded by V means that the cited character is a graphic variant of the one that appears with that number in *GSR*, *e.g.*:

<i>fu</i>	腑 {199} [V0136n]
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In the very rare cases when a character is followed by empty square brackets, that means that neither the character, nor its phonetic, nor any graphic variant of it appears in *GSR*.

beng 嘜 {520} []

For the sake of completeness, if the character has more than one Mandarin reading it is listed under all of them, even if the alternate reading(s) is/are rare:

	<i>Usual reading</i>	<i>Rare reading</i>
無	<i>mo</i>	<i>wu</i>
間	<i>jian</i>	<i>gan</i>
單	<i>dan</i>	<i>chan</i>
數	<i>shu</i>	<i>shuo</i>

<i>a</i>	<i>Index of Chinese Characters</i>	<i>cheng</i>
a	阿 {105} [0001m].	bo
ai	愛 {58, 220} [0508a].	伯 {305} [0782i]; 播 {425} [0195p]; 波 {174} [0025l]; 白 {379} [0782a]; 簸 {425} [0025n]; 跛 {221} [0025m]; 駁 {363} [1127a].
an	俺 {276, 308} [P0614a]; 鵠 {403} [P0614a].	cai
ao	熬 {227} [1130h].	才 {221, 489} [0943a]; 纔 {489} [V0943a]; 菜 {221} [0942e].
ba	伯 {305} [0782i]; 八 {151, 334, 352} [0281a]; 巴 {175} [0039a]; 把 {175} [0039b]; 爸 {175} [P0039a]; 笆 {175} [P0039a]; 芭 {175} [0039c]; 狍 {328} [0039d].	can
bai	伯 {305} [0782i]; 白 {379} [0782a].	參 {308} [0647a]; 餐 {177, 440, 451} [0154c].
bao	胞 {199} [1113b].	cang
bei	倍 {220} [0999c']; 韍 {368} [0276l].	倉 {304} [P0703a].
ben	本 {424} [0440a].	cao
beng	噉 {526} [].	草 {177, 449} [1049b].
bi	妣 {201} [0566n]; 畀 {200} [0521a]; 筆 {504} [0502d]; 跛 {221} [0025m]; 鞞 {368, 505} [0407m]; 鼻 {103} [0521c].	cen
bian	編 {401, 518} [0246e]; 辯 {401, 518} [P0219a]; 采 {465} [0195a].	參 {308} [0647a]; 𡗗 {305} [0661a].
bie	別 {334} [0292a].	chai
bing	炳 {303} [0757i].	芄 {532} [0625g].
		chan
		單 {262, 403, 516} [0147a]; 產 {422} [0194a]; 纏 {401} [0204c]; 蟪 {78, 425} [0148p].
		chang
		長 {303} [0721a].
		che
		尺 {300} [0794a].
		chen
		塵 {422, 503} [0374a]; 臣 {424} [0377a].
		cheng
		丞 {304} [0896g]; 乘 {304} [0895a]; 𠂔 {304} [0894a]; 𣎵 {311} [0834m]; 經 {311} [0831x].

chi

侈 {221} [0003t]; 尺 {300} [0794a];
濱 {327} [0954i]; 赤 {328} [0793a];
踦 {373} [0866q].

chong

蟲 {310} [1009c].

chu

出 {200, 464} [0496a]; 楚 {227}
[0088a].

chuan

川 {435, 437, 451} [0462a]; 膊 {259,
301} [0231k].

chun

唇 {539} [V0455u]; 純 {452}
[0427n]; 脣 {423} [0455u]; 膊 {259,
301} [0231k]; 鶻 {403} [0464j].

cong

匆 {526} [1199b]; 蔥 {311} [1199g].

cu

促 {526} [1219d]; 卒 {368} [0490a].

cui

脆 {334} [0296d].

cuo

𪔐 {174} [0005m].

da

大 {220, 484} [0317a]; 答 {342}
[0676a]; 揸 {526} [].

dai

大 {220, 484} [0317a]; 帶 {220}
[0315a].

dan

丹 {177, 262, 452, 485, 516} [0150a];
單 {262, 403, 516} [0147a]; 彈 {301}
[0147n]; 擔 {298} [0619k]; 蟪 {78,
425} [0148p].

deng

登 {304} [0883e].

di

弟 {221} [0591a]; 滴 {327} [P0877k];
翟 {328, 347} [1124a]; 踦 {373}
[0866q]; 躄 {373} [0877o].

dian

屍 {422, 504} [0429a]; 殿 {422, 453,
504} [0429d].

diao

寫 {228} [P0409a]; 鳥 {226, 227}
[1116a].

die

啞 {464} [0413m]; 牒 {377} [0633g];
疊 {341} [1255a]; 蝶 {377} [0633h].

ding

定 {123, 307} [0833z]; 頂 {307}
[0833e].

du

毒 {363} [1016a].

duan

剮 {259, 301} [0168e]; 斷 {259, 301}
[0170a].

dui

敦 {228, 452} [0464p].

dun

敦 {228, 452} [0464p]; 沌 {422, 504}
[0427h]; 鈍 {422, 453, 504} [0427i];
頓 {422, 504} [0427j].

duo

多 {485} [0003a].

e

阿 {105} [0001m]; 鵝 {177, 259, 449}
[V0002p].

er

二 {352, 434, 437} [0564a]; 爾 {464}
[0359a]; 耳 {176} [0981a]; 邇 {220}
[0359c].

<i>fa</i>	<i>Index of Chinese Characters</i>	<i>hua</i>
fa	發 {335} [0275c].	gong
fan	燔 {305, 402} [0195i]; 飯 {437} [0262i].	公 {302} [1173a]; 宮 {274, 504, 531} [1006a]; 弓 {310} [0901a]; 躬 {309} [1006f]; 躬 {309} [1006e].
fang	紡 {303} [0740r].	gou
fei	肺 {342, 476, 533} [0501g]; 韍 {368} [0276l]; 飛 {402, 505} [0580a].	狗 {201, 407, 448} [0108d].
fen	奮 {402, 505} [0473a]; 焚 {402} [0474a]; 粉 {402, 505} [0471f].	gu
feng	芑 {532} [0625g]; 蜂 {531} [1197s]; 風 {531} [0625h]; 鳳 {532} [0625j].	穀 {363} [1226i]; 罍 {177, 450} [0041d]; 谷 {524} [1202a]; 骨 {435, 437, 465} [0486a].
fu	夫 {173} [0101a]; 孚 {181, 199} [1233a]; 孵 {181, 199} [V1233a]; 市 {368, 476, 505} [0501a]; 扶 {173} [0101f]; 斧 {172} [0102h]; 父 {172} [0102a]; 腑 {198} [0136o]; 腑 {198} [V0136n]; 腹 {362} [1034h]; 蝠 {326} [P0933a]; 負 {199, 444} [1000a]; 鈇 {172} [0101e]; 韍 {368} [0276l].	guan
gan	乾 {177, 450} [0140c]; 敢 {298} [0607a]; 肝 {173, 176, 306, 451} [0139l]; 間 {71, 422} [0191b].	冠 {177, 335, 453} [0160a].
gang	岡 {266, 303} [0697a].	guang
ge	歌 {174, 393, 401} [0001q]; 革 {328, 379} [0931a].	廣 {525, 526} [0707h].
geng	梗 {303} [0745e]; 頸 {281, 307} [0831n].	gun
		滾 {412} [P0418b].
		guo
		齔 {487} [0351c].
		ha
		虻 {304} [V0742t].
		hai
		還 {424} [0256k].
		han
		含 {299} [0651l']; 旱 {259, 301} [0139s]; 頤 {299} [0651n']; 斂 {424} [P0139a].
		he
		嚇 {327} [0779b]; 壑 {379} [0767a]; 荷 {423} [0001o]; 赫 {328} [0779a].
		hei
		黑 {326, 522} [0904a].
		hu
		戶 {173} [0053a]; 狐 {167, 173} [0041i]; 虎 {173} [0057b].
		hua
		樺 {175} [P0044a]; 話 {437} [0302o].

huan

宦 {424} [0188a]; 環 {424} [0256n];
緩 {423} [0255l]; 纓 {424} [0256q];
還 {424} [0256k].

hui

惠 {222} [0533b]; 惠 {222} [0533a];
輝 {402} [0458k]; 輝 {402} [0458l].

hun

囡 {424} [0425a]; 昏 {309} [0457k];
殍 {309} [0457k]; 輝 {402} [0458k].

huo

擘 {525} [0616g]; 火 {305, 402}
[0353a]; 話 {437} [0302o].

ji

極 {328} [0910e]; 汲 {341} [0681h];
疾 {177, 464} [0494a]; 輯 {342}
[0688d]; 集 {342} [0691a]; 革 {328,
379} [0931a]; 饑 {437} [0547k]; 騎
{188, 200} [0001u].

jia

桱 {341} [0630f]; 甲 {342} [0629a].

jian

檻 {299} [0609g]; 荐 {449} [0432b];
見 {291, 311} [0241a]; 間 {71, 422}
[0191b].

jiang

江 {287} [1172v]; 薑 {302} [0710d].

jiao

攪 {363} [1038i]; 焦 {348} [1148a];
焦 {348} [1148b]; 覺 {363} [1038f];
角 {480} [1225a].

jie

傑 {335} [0284b]; 接 {341} [0635e];
接 {342} [0635f]; 節 {347, 527}
[0399e]; 結 {347, 528} [0393p].

jin

今 {309} [0651a]; 噍 {305, 306}
[0652g]; 噤 {299} [0655m]; 浸 {305}
[0661a]; 盡 {306} [0381a]; 禁 {305}
[0655k]; 縉 {177, 452, 485} [0378g].

jing

脛 {283, 311} [0831k]; 莖 {283, 311}
[0831u]; 頸 {281, 307} [0831n].

jiu

九 {199} [0992a]; 糾 {199} [1064b];
舊 {199} [1067c]; 酒 {199} [1096k];
鳩 {199} [0992n].

ju

局 {363} [1214a]; 懼 {379} [0096i];
瘡 {328} [0803a]; 跼 {363} [1214b].

juan

圈 {424} [0226k].

jue

掘 {381, 463} [0496s]; 焦 {348}
[1148b]; 絕 {334} [0296a]; 臄 {327,
528} [0803h]; 覺 {363} [1038f]; 角
{480} [1225a].

jun

隼 {199, 449} [0468s].

kai

開 {484} [0541a].

kan

勘 {298} [V0672e]; 戡 {308}
[0658q]; 戡 {308} [0651v]; 檻 {299}
[0609g].

ke

恪 {327, 379} [0766g]; 殼 {379}
[V1226a].

kong

孔 {310} [1174a]; 空 {310} [1172h].

kou

口 {198} [0110a]; 寇 {198} [0111a].

<i>ku</i>	<i>Index of Chinese Characters</i>	<i>meng</i>
ku		lie
哭 {363} [1203a]; 堀 {381, 463} [0496p]; 苦 {167, 172, 176, 306, 451} [0049u].		裂 {334} [0291f].
kuan		lin
寬 {526} [0165b].		林 {281, 299} [0655a].
kui		ling
鞞 {328, 379} [0774i].		令 {306} [0823a]; 領 {281, 307} [0823f].
kun		liu
昆 {450} [0417a].		六 {363} [1032a].
kuo		long
廓 {525} [0774g]; 擴 {526} [0707t]; 闊 {526} [0302q]; 鞞 {328, 379} [0774i].		龍 {524} [1193a].
la		lu
落 {480} [0766q']; 蠟 {377} [V0798y].		鹵 {173} [0071a].
lai		luo
來 {220, 484} [0944a].		絡 {327} [0766o]; 落 {480} [0766q']; 雒 {327, 379, 521} [0766q].
lan		lǜ
籃 {299} [P0609a]; 藍 {299} [0609k].		呂 {173} [0076a]; 律 {504} [0502c]; 旅 {173} [0077a].
lao		lüe
絡 {327} [0766o]; 落 {480} [0766q'].		掠 {525} [0755k].
lei		ma
類 {437} [0529b].		媽 {175} [P0040a]; 罵 {176, 462} [0040h]; 馬 {177} [0040a].
li		mao
慄 {527} [0403d]; 縻 {79, 424} [1237q]; 立 {342} [0694a]; 糲 {437} [0340g]; 離 {423} [0023f]; 麗 {327} [0878a].		毛 {423, 505} [1137a].
lian		mei
憐 {306} [0387l]; 聯 {311, 422} [0214a]; 連 {311, 422} [0213a].		寐 {200} [0531i]; 眉 {423, 505} [0567a]; 美 {220} [0568a].
liang		men
涼 {73, 302, 521} [0755l]; 糧 {303} [0737d]; 良 {327, 521} [0735a]; 量 {303} [0737a].		悶 {309} [0441d]; 殢 {309} [P0457k]; 門 {402} [0441a].
		meng
		夢 {302, 309, 521} [0902a]; 孟 {302} [0761e]; 瞢 {309} [0902d]; 蒙 {309} [1181a]; 虻 {304} [V0742t].

mi

米 {221, 486} [0598a]; 靡 {489} [0017h].

mian

面 {422} [0223a].

miao

苗 {348} [1159a].

mie

滅 {352, 520} [0294b].

min

民 {201, 449} [0457a]; 閩 {424} [0441i].

ming

名 {281, 306, 307, 529} [0826a]; 命 {306, 529} [0762a]; 鳴 {307} [0827a].

mo

墨 {326, 522} [0904c]; 無 {489} [0103a].

mu

母 {227, 363} [0947a]; 目 {327, 347} [1036a].

na

納 {505} [0695h].

nan

赧 {177, 451} [0216b]; 難 {333, 335, 440, 452, 520} [0152d].

nang

孃 {174} [P0730a].

nei

內 {505} [0695e].

nen

恁 {299} [0667q].

ni

泥 {201, 464} [0563d]; 逆 {525} [0788c].

nian

年 {103, 284, 475, 524, 528} [0364a]; 念 {299} [0670a]; 拈 {526} [0618o]; 捻 {342, 526} [P0670a].

niang

娘 {174} [P0735a]; 孃 {174} [P0730a].

niao

鳥 {226, 227} [1116a].

nie

涅 {464} [0404j]; 躡 {356} [0638b]; 鑷 {342, 526} [P0638a].

ning

擰 {526} [P0837a].

niu

牛 {176} [0998a].

nong

濃 {303} [1005i]; 穰 {303} [1005k].

nu

弩 {172} [0094z].

nuan

暖 {423} [0255j].

nuo

擗 {526} [P1123a].

nü

女 {173} [0094a].

ou

嘔 {227, 402} [0122i].

peng

芄 {532} [0625g].

pi

披 {423} [0025j]; 疋 {200} [0090a, 0408d]; 脾 {73, 221} [0874h].

pian

翩 {402} [0246k].

<i>pin</i>	<i>Index of Chinese Characters</i>	<i>shang</i>
pin		rang
牝 {201, 448} [0566i]; 貧 {423, 503} [0471v].		孌 {174} [P0730a]; 穰 {302} [0730h].
ping		ren
平 {293} [0825a].		妊 {308} [0667i]; 荏 {299} [0667s].
po		reng
婆 {174} [0025q]; 市 {368, 476, 505} [0501a]; 蟠 {402} [0195r].		仍 {302} [0945e].
qi		ri
七 {103, 352} [0400a]; 聿 {356, 494} [0688a]; 泣 {342} [0694h]; 漆 {201, 464} [0401b]; 耆 {437} [0552l]; 豈 {489} [0548a]; 騎 {188, 200} [0001u].		日 {201, 464} [0404a].
qian		rou
乾 {177, 450} [0140c]; 千 {103} [0365a]; 拊 {526} [0606h]; 淺 {272} [0155k]; 績 {177, 452, 485} [0812t].		肉 {481} [1033a].
qiao		ru
樵 {348} [1148i]; 殼 {379} [V1226a]; 樵 {348} [1148b].		乳 {198} [0135a]; 入 {356, 505} [0695a]; 汝 {177} [0094j].
qin		rui
侵 {305} [0661c]; 寢 {305} [0661f]; 嶽 {298} [0652k]; 擒 {305} [0651n]; 禽 {305} [0651j]; 親 {176, 450, 529} [0382o].		媿 {199, 449} [0468s].
qing		sa
情 {347} [0812l]; 績 {177, 452, 485} [0812t].		撒 {402, 525, 526} [P0156a].
qiu		san
旻 {305} [0661a].		三 {275, 308} [0648a]; 散 {402, 525, 526} [0156a]; 霰 {399, 402} [0156d].
qu		sao
曲 {362} [1213a]; 臄 {327, 528} [0803h]; 跼 {363} [1214b]; 軀 {198} [0122g].		臊 {227} [1134e].
quan		se
圈 {424} [0226k]; 犬 {201, 423, 448} [0479a].		色 {78, 326} [0927a].
		sha
		殺 {335, 492} [0319d]; 沙 {176, 487} [0016a].
		shai
		色 {78, 326} [0927a].
		shan
		善 {301} [0205a]; 單 {262, 403, 516} [0147a]; 彡 {299} [1008c]; 繕 {301} [0205f]; 纚 {489} [V0943a]; 蟪 {78, 425} [0148p].
		shang
		尚 {79, 303} [0725a].

she

射 {487} [0807a]; 折 {334} [0287a];
攝 {342} [0638e]; 舌 {299, 300, 327,
528} [0288a, 0302f]; 蛇 {81} [0004l];
麝 {176} [P0807b].

shen

參 {308} [0647a]; 榧 {198, 308}
[0658f]; 矧 {423} [0560i]; 腎 {73,
198, 309} [0368h]; 身 {177, 278, 306,
448, 475} [0386a].

sheng

乘 {304} [0895a]; 狴 {77, 293, 311,
512} [0812t]; 生 {78, 307} [0812a];
甥 {308} [0812g]; 繩 {81, 307}
[0892b]; 鼈 {77, 293, 311, 512}
[0812u].

shi

事 {437} [0971a]; 似 {199} [0976h];
使 {199} [0975n]; 十 {198, 356}
[0686a]; 屎 {201} [0561d]; 矢 {422}
[0560a]; 蝨 {78, 347, 402, 527}
[0506a]; 跽 {373} [0866q]; 食 {81,
177, 480} [0921a].

shou

手 {199} [1101a]; 獸 {177, 448}
[1100a].

shu

屬 {480} [1224s]; 數 {79, 200}
[0123r, 1207a]; 几 {201} [V0130a];
疋 {200} [0090a, 0408d]; 薯 {78,
173} [P0045r]; 鼠 {228} [0092a].

shui

水 {435, 437, 451} [0576a].

shuo

數 {79, 200} [0123r, 1207a]; 燭 {328}
[1119f].

si

似 {199} [0976h]; 四 {147, 200}
[0518a]; 死 {201, 475} [0558a]; 食
{81, 177, 480} [0921a]; 飮 {177}
[0921e].

sou

嗽 {199} [1222s]; 騾 {311} [0821c].

su

俗 {363} [1220a]; 宿 {77, 328}
[1029a].

suan

酸 {402, 475} [0468e].

sui

隨 {229} [0011g]; 髓 {230} [0011h].

sun

孫 {199, 449} [0434a].

suo

所 {78, 173, 468} [0091a].

tai

太 {220, 485} [0317d]; 泰 {220, 485}
[0316a].

tan

彈 {301} [0147n]; 灘 {301} [0152m];
炭 {422} [0151a]; 談 {299} [0617l];
譚 {299} [0646c].

ti

弟 {221} [0591a]; 梯 {217, 220, 511}
[0591l]; 洩 {201, 435, 437} [0551f];
涕 {201} [0591m]; 踢 {373}
[P0850a]; 跽 {373} [0866q]; 蹄 {373}
[0877h].

tian

天 {177, 450} [0361a]; 甜 {299} []; 舔
{299} [P1247c].

tie

擲 {525} [V0616g].

<i>tou</i>	<i>Index of Chinese Characters</i>	<i>xu</i>
<i>tou</i>		<i>xia</i>
偷 {198} [0125u]; 頭 {198} [0118e].		呷 {341} [V0313k]; 嚇 {327} [0779b]; 狹 {342} [0630e]; 遐 {175} [0033j].
<i>tu</i>		<i>xian</i>
吐 {173} [0062d].		晁 {464} [1250e]; 洗 {425} [0478j]; 現 {311} [0241e]; 袂 {450} [V1141d]; 見 {291, 311} [0241a]; 銛 {299} [0621a]; 霰 {399, 402} [0156d]; 鮮 {402} [0209a]; 鹹 {299} [0671f].
<i>tui</i>		<i>xiang</i>
蛻 {335} [0324e].		皂 {513} [0714a]; 薌 {513} [0714m]; 象 {302} [0728a]; 香 {513} [0717a].
<i>tun</i>		<i>xiao</i>
屯 {452} [0427a]; 臀 {422, 453, 504} [0429c].		梟 {199} [1070m].
<i>tuo</i>		<i>xie</i>
唾 {174} [0031m]; 脫 {334} [0324m]; 鱉 {78, 425} [0148p].		挾 {526} [0630l]; 蟹 {220} [0861d]; 血 {201, 230, 464} [0410a].
<i>wan</i>		<i>xin</i>
完 {423} [0257m]; 挽 {301} [0260m]; 擊 {301, 423} [0273b]; 腕 {301, 423} [0260n].		尋 {298} [0662a]; 心 {311, 532} [0663a]; 新 {402} [0382k]; 薪 {284, 347, 475, 524, 528} [0382n]; 辛 {306, 475} [0382a]; 駢 {311} [0821c].
<i>wang</i>		<i>xing</i>
望 {303} [0742m]; 網 {304} [0742a]; 罔 {304} [0742l].		姓 {77, 307} [0812q]; 狴 {77, 293, 311, 512} [0812t]; 猩 {307} [0812z]; 駢 {311} [0821c]; 颺 {77, 293, 311, 512} [0812u].
<i>wei</i>		<i>xiong</i>
噲 {305, 306} [0652g]; 唯 {222} [0575i]; 尾 {221} [0583a]; 微 {201} [0584d]; 惟 {222} [0575n]; 為 {200, 230} [V0027a]; 豕 {200} [V0027a]; 維 {222} [0575o]; 胃 {334} [0523a].		兄 {303} [0765a]; 熊 {274, 299, 531} [0674a].
<i>wen</i>		<i>xiu</i>
吻 {402} [0503o].		宿 {77, 328} [1029a]; 鵠 {199} [1070i].
<i>wo</i>		<i>xu</i>
我 {174, 489} [0002a].		婿 {200} [P0090e]; 婁 {77, 198, 475} [0133e].
<i>wu</i>		
五 {167, 173} [0058a]; 吾 {167, 173, 489} [0058f]; 無 {489} [0103a].		
<i>xi</i>		
啞 {464} [0413m]; 夕 {329} [0796a]; 息 {326} [0925a]; 悉 {465} [1257e]; 洗 {425} [0478j]; 犀 {220} [0596a]; 習 {342} [0690a]; 黷 {327, 379} [0787d]; 覷 {327, 379} [0789a].		

xuan

暉 {402} [0458k].

xue

血 {201, 230, 464} [0410a].

xun

尋 {298} [0662a]; 暉 {402} [0458k];
熏 {199, 451} [0461a]; 訓 {423}
[0422d].

ya

啞 {176} [0805f]; 揶 {525} [V0616g];
牙 {175} [0037a].

yan

延 {403} [0203a]; 壓 {525} [0616g];
揶 {525} [V0616g]; 演 {403}
[0450k]; 筵 {403} [0203b]; 讞 {525}
[0252i]; 雁 {177, 259, 449} [0186b];
鴛 {401} [0146g]; 鸚 {401} [0146i];
鹽 {308} [0609n].

yang

揚 {303} [0720j]; 楊 {304} [0720q];
羊 {304, 523} [0732a].

yao

曜 {328} [1124i]; 燿 {328} [1124j];
爚 {328} [1119f]; 祆 {450} [V1141d];
耀 {328} [1124k].

ye

夜 {329} [0800j]; 壓 {525} [0616g];
揶 {525} [V0616g]; 液 {327}
[0800n]; 腋 {326} [0800m]; 葉 {342}
[0633d].

yi

一 {352} [0394a]; 尾 {221} [0583a];
弋 {487} [0918a]; 揖 {342} [0688g];
易 {222, 327, 521} [0850a]; 灑 {327}
[0954i]; 縊 {348} [0849g]; 翼 {327}
[0954d]; 趲 {329} [V0954g]; 胰
{422} [P0551a]; 臆 {327, 528}
[0803h]; 蛇 {81} [0004f].

yin

陰 {305, 306} [0652g]; 夤 {73}
[0450h]; 引 {403} [0371a]; 蚓 {78,
425} [0371c]; 蟪 {78, 425} [0450j];
銀 {424} [0416k]; 陰 {308} [0651y];
飲 {298, 533} [0654a].

ying

盈 {281, 307} [0815a]; 蠅 {302}
[0892a]; 迎 {525} [0699d]; 鷹 {263,
521} [0890c].

yong

用 {276} [1185a].

you

佑 {327} [0995k]; 友 {327} [0995e];
右 {176, 327} [0995i]; 廌 {227}
[1096h]; 酉 {327} [1096a].

yu

于 {173} [0097a]; 攬 {301} [0260m];
鰕 {489} [0089e]; 禹 {227} [0099a];
踰 {363} [0125k]; 羽 {172} [0098a];
聿 {504} [0502a]; 與 {173, 489}
[0089b]; 芋 {173} [0097o]; 谷 {524}
[1202a]; 雨 {173} [0100a]; 魚 {167,
172, 475} [0079a].

yuan

員 {424} [0227a]; 圓 {424} [0227c];
援 {423} [0255e]; 苑 {525} [0260d];
遠 {195, 452} [0256f]; 院 {424}
[0257u]; 鳶 {259, 301} [0230a].

yue

悅 {334} [0324o]; 曰 {525} [0304a];
月 {26, 85, 335} [0306a]; 爚 {328}
[1119f]; 越 {335} [0303e].

yun

云 {525} [0460a]; 暉 {402} [0458k].

zha

眨 {526} [P0641a].

zhai

翟 {328, 347} [1124a].

zhan

展 {424} [0201a]; 戰 {423} [0147r];
 漸 {526} [V0153b].

zhang

張 {303} [0721h]; 長 {303} [0721a].

zhe

折 {334} [0287a]; 摺 {342}
 [V0690g]; 褶 {341} [0690g]; 蹠
 {373} [0877o].

zhen

枕 {198, 308, 503} [0656g]; 榧 {198,
 308} [0658f]; 針 {342, 517}
 [V0671o]; 鍼 {198} [0671o].

zheng

正 {293} [0833j]; 繡 {177, 452, 485}
 [0812t].

zhi

制 {259, 301} [0168e]; 姪 {201, 464}
 [0413o]; 織 {76, 328} [0920f]; 脂
 {422} [0552g]; 蛭 {352} [P0413a]; 贄
 {342} [0685m]; 蹠 {373} [0866q]; 蹠
 {373} [0877o]; 輕 {201} [0413e]; 陟
 {326} [0916a]; 隻 {347} [1260c].

zhong

中 {287, 310} [1007a]; 冢 {310}
 [1218h].

zhou

晝 {363} [1075a].

zhu

屬 {480} [1224s]; 朱 {177, 452, 485}
 [0128a]; 煮 {227} [0045m]; 諸 {485}
 [0045p].

zhuan

制 {259, 301} [0168e]; 衷 {222}
 [0533b]; 膊 {259, 301} [0231k].

zhuang

撞 {309} [1188f].

zhui

隹 {222} [0575a].

zhun

屯 {452} [0427a]; 窰 {452} [0427k].

zhuo

啄 {526} [1218b]; 啄 {363} [1218c];
 灼 {348} [1120f]; 焦 {348} [1148b].

zi

子 {176, 450} [0964a]; 紫 {485}
 [0358j]; 自 {103} [1237m].

zu

卒 {368} [0490a].

zuo

忤 {326} [0806r].

TB Languages, Dialects, and Subgroupings

TB language names are a complicated business, with many overlapping and competing terms for individual languages and language groupings.¹ No attempt is made in this Index to include all variant names, or to distinguish among the various nomenclatural subtypes (autonyms, exonyms, loconyms, peletonyms, neonyms, *etc.*). All the names of the languages and dialects are presented in a single alphabetical list.

The heuristic system of decimal numerals used to encode linguistic groupings in the STEDT database are presented in the following chart:

SCHEMATIC CODING FOR TIBETO-BURMAN LANGUAGE GROUPS

<i>Sino-Tibetan</i>	0.0.0
<i>Tibeto-Burman</i>	0.1.0
<i>Kamarupan</i>	1.0.0
<i>North Assam</i>	1.1.0
<i>Tani</i>	1.1.1
<i>Deng</i>	1.1.2
<i>Monpa</i>	1.1.3
<i>Kuki-Chin-Naga</i>	1.2.0
<i>Kuki</i>	1.2.1
<i>Chin</i>	1.2.2
<i>Naga</i>	1.2.3.0

1. For detailed lists and discussion of the issues involved, see JAM 1986a and 1996a.

<i>Northern Naga</i>	1.2.3.1
<i>Meithei</i>	1.3.0
<i>Mikir</i>	1.4.0
<i>Mru</i>	1.5.0
<i>Bodo-Garo</i>	1.6.0
<i>Chairel</i>	1.7.0
<i>Himalayish</i>	2.0.0
<i>Tibeto-Kanauri</i>	2.1.0
<i>Western Himalayish</i>	2.1.1
<i>Lepcha</i>	2.1.2
<i>Tibetic</i>	2.1.3.0
<i>Tamangic</i>	2.1.3.1
<i>Tibetan</i>	2.1.3.2
<i>Bodish</i>	2.1.3.3
<i>Mahakiranti</i>	2.2.0
<i>Newari</i>	2.2.1
<i>Kham-Magar-Chepeng-Sunwari</i>	2.2.2
<i>Kiranti</i>	2.2.3.0
<i>Western Kiranti</i>	2.2.3.1
<i>Eastern Kiranti</i>	2.2.3.2
<i>Tangut-Qiang</i>	3.0.0
<i>Tangut</i>	3.1.0
<i>Qiangic</i>	3.2.0
<i>rGyalrong</i>	3.3.0
<i>Jingpho-Nung-Luish</i>	4.0.0
<i>Jingpho</i>	4.1.0
<i>Nungic</i>	4.2.0
<i>Nung</i>	4.2.1
<i>Luish</i>	4.3.0
<i>Tujia</i>	5.0.0
<i>Lolo-Burmese</i>	6.0.0
<i>Naxi</i>	6.1.0

<i>Burmish</i>	6.2.0
<i>Yipho</i>	6.3.0
<i>Northern Loloish</i>	6.3.1
<i>Central Loloish</i>	6.3.2
<i>Southern Loloish</i>	6.3.3
<i>Jinuo</i>	6.4.0
<i>Karenic</i>	7.0.0
<i>Bai</i>	8.0.0
<i>Sinitic</i>	9.0.0
<i>Old Chinese</i>	9.0.1
<i>Middle Chinese</i>	9.0.2
<i>Modern Chinese</i>	9.0.3

Each language name on the left side of a column is associated with a designation on the right. These are of several types:

- Terms in curly brackets are higher-order groupings to which the language is deemed to belong, *e.g.*:

<i>Atsi</i>	{Burmish}
<i>Lui</i>	{Jingpho-Nung-Luish}
<i>Lushai</i>	{Chin}

- Terms in capital letters preceded by an arrow are cross-references. These are of two subtypes:

(A) Alternate names for the same language, *e.g.*:

<i>Mizo</i>	=> LUSHAI
<i>Atsi</i>	=> ZAIWA
<i>Langsu</i>	=> MARU

(B) The language to which a dialect belongs:

<i>Hkauri</i>	=> JINGPHO
<i>Jianchuan</i>	=> BAI
<i>Risiangku</i>	=> TAMANG
<i>Balti</i>	=> TIBETAN

Sometimes the cross-reference is itself referred to a more general term:

Bakeo => YELLOW LAHU => LAHU

i.e., Bakeo is a subdialect of Yellow Lahu, which in turn is a dialect of Lahu.

Higher-order terms to which a schematic coding is assigned are so designated, preceded by the letter G:

Himalayish	G#2.0.0
Burmish	G#6.2.0
Tujia ^a	G#5.0.0

a. The Tujia language has so far not been assigned to any higher-order group, so it is encoded as a separate entity in its own right.

Several of these higher-order names (*e.g.* Kamarupan, Mahakiranti, Yipho) do not appear in this Index, since they are too general or controversial to be useful.

TB Languages, Dialects, and Subgroupings

Abor..... => PADAM	Banai {Jinuo}
Abor-Miri.....=> PADAM-MISING	Banlan=> YELLOW LAHU
Achang..... {Burmish}	Bantawa..... {E. Kiranti}
Ahi {C. Loloish}	Barish..... => BODO-GARO
Ahraing {Chin}	Bassein..... {Karenic}
Aimol..... {Kuki}	Batang=> TIBETAN
Akha..... {S. Loloish}	Bawm..... {Chin}
Alike {Tibetan}	Bawtala{Jingpho-Nung-Luish}
Amdo..... => TIBETAN	Baya..... {Jinuo}
Anal {Kuki}	Belhare.....{Kiranti}
Ancient Chinese.....=> MIDDLE CHINESE	Bengni{Tani}
Andro..... {Jingpho-Nung-Luish}	Bhamo=> JINGPHO
Angami {Naga}	Bhote {Tibetan}
Anong => DULONG	Bhramu..... {W. Himalayish}
Ao {Naga}	Bijiang-Bai..... {Bai}
Apatani..... {Tani}	Bijiang-Nusu{N. Loloish}
Arakanese {Burmish}	Bisu {S. Loloish}
Archaic Chinese..... => OLD CHINESE	Biyue => HANI
Ashö..... {Chin}	Bla-brang.....=> TIBETAN
Assam {Jingpho}	Black Lahu.....=> LAHU
Athpare{Mahakiranti}	Blimaw..... => KAREN
Atong..... {Bodo-Garo}	Bodic=> TIBETIC
Ats'ang.....=> ACHANG	Bodish G#2.1.3.3
Atsi..... {Burmish}	Bodo..... {Bodo-Garo}
Awa {Chin}	Bodo-Garo.....G#1.6.0
Axi=> AHI	Boga'er => BOKAR
Badian {Naxi}	Boga'er Luoba => BOKAR
Bahing {W. Kiranti}	Bokar{Tani}
BaiG#8.0.0	Bokar Adi..... => BOKAR
Baima.....{Tibetic}	Bola {Burmish}
Baka..... {Jinuo}	Bor-Abor => PADAM
Bakeo.....=> YELLOW LAHU	Bori{Tani}
Balti=> TIBETAN	Boro=> BODO

INDEX V

Bumthang {Tibetic}	Dafla => NISHI
Bunan {W. Himalayish}	Dali => BAI
Burmese {Burmish}	Damu {Tani}
Burmish G#6.2.0	Danba {Qiangic}
Buyuan => JINUO	Danu {Burmish}
Bwe {Karenic}	Daofu {Qiangic}
Caiyuan => HANI	Daofu Zhaba {Qiangic}
Cak => SAK	Darang {Deng}
Cangla => TSANGLA	Dayan {Naxi}
Cangluo => TSANGLA	Dazhai => HANI
Cantonese {Sinitic}	Debbarma => KOKBOROK
Caodeng {Tani}	Dege => TIBETAN
C. Loloish G#6.3.2	Delta Pho {Karenic}
Ch'iang => QIANG	Delugong => KAREN (SGAW)
Chairel G#1.7.0	Deng G#1.1.2
Chakrü => CHOKRI	Deori => DEURI
Chamling {E. Kiranti}	Deuri {Bodo-Garo}
Chang {N. Naga}	Dhimal {Himalayish}
Chantyal {Tamangic}	Digaro {Bodo-Garo}
Chepang {Kham-Magar-Chepang-Sunwari}	Dimasa {Bodo-Garo}
Chin G#1.2.2	Dodem {Jingpho-Nung-Luish}
Chinbok {Kuki}	Dolakha {Newari}
Chinese {Sinitic}	Dolakhae => DOLAKHA
Chiru {Kuki-Chin-Naga}	Dolakhali => DOLAKHA
Chitabu => KAREN (BWE)	Dulong => TRUNG
ChiuTzuYing {Qiangic}	Dulonghe => TRUNG
Chokri {Naga}	Dumi {Kiranti}
Chourasya {Himalayish}	Dungmali {Kiranti}
Chukwa {E. Kiranti}	Dzongkha {Tibetan}
Chungli => AO	E. Bhutan => CANGLUO
Chutiya => DEURI	E. Dafla => NISHI
Cuona Menba => TSHONA	E. Kayah {Karenic}
Dafang {N. Loloish}	E. Kiranti G#2.2.3.2

TB Languages, Dialects, and Subgroupings

Empeo => ZEME	Horpa => DAOFU
Enkun => JINGPHO	Hpun {Burmish}
Ergong {Qiangic}	Hruso => AKA
Ersu {Qiangic}	Hsi-Hsia => TANGUT
Fugong => NUNG	Hu Than {S. Loloish}
Gabing => KOKBOROK	Hwalngau {Chin}
Gahri => BUNAN	Idu {Deng}
Gallong {Tani}	Intha {Burmish}
Ganan {Jingpho-Nung-Luish}	Jianchuan => BAI
Ganluo => ERSU	Jiarong => rGYALRONG
Ganyu => CHINESE	Jili {Jingpho}
Garó {Bodo-Garó}	Jinghpaw => JINGPHO
Gasu {N. Loloish}	Jinghua => PUMI
Gazhuo {N. Loloish}	Jingpho G#4.1.0
Geba {Karenic}	Jingpho-Nung-Luish G#4.0.0
Gelanghe {S. Loloish}	Jingpo => JINGPHO
Geman {Deng}	Jinuo G#6.4.0
Ghachok => GURUNG	Jirel => TIBETAN
Guiqiong {Qiangic}	Jiulong {Qiangic}
Gurung {Tamangic}	K'umi => KHUMI
Gyarong => RGYALRONG	Kabui => RONGMEI
Gyaru => MANANG	Kachari => BODO
Haka => LAI	Kachin => JINGPHO
Hakha => LAI	Kadu {Jingpho-Nung-Luish}
Hani {S. Loloish}	Kaduo => HANI
Haoni => HANI	Kaike {Tibetic}
Hawa-jap => NOCTE	Kaman {Deng}
Hayu {W. Kiranti}	Kamarupan G#1.0.0
Helambu => TIBETAN	Kanauri {W. Himalayish}
Himalayish G#2.0.0	Kanawari => KANAURI
Hinthada {Karenic}	Kanburi Lawa => UGONG
Hiranpi {Chin}	Kantu {Jingpho-Nung-Luish}
Hkauri => JINGPHO	Kao Hua-Nien {S. Loloish}

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Karen {Karenic}	Kulung {Kiranti}
Karenic G#7.0.0	Kurtey {Tibetan}
Kathmandu => NEWARI	Lachhe {Burmish}
Katso => GAZHUO	Ladakhi => TIBETAN
Kayaw => KAREN	Lahauli => LAHULI
Kejiahua => CHINESE	Lahu {C. Loloish}
Kelun => KAREN	Lahuli {Tibetan}
Kezhama => KHEZHA	Lai {Chin}
Khaling {W. Kiranti}	Lailenpi {Chin}
Kham {Kham-Magar-Chepeng-Sunwari}	Laizo {Chin}
Kham-Magar-Chepeng-Sunwari G#2.2.2	Lakher {Chin}
Khami {Chin}	Lalo {N. Loloish}
Khams => TIBETAN	Lalung {Bodo-Garo}
Kharmile {Tamangic}	Lambichong {Kiranti}
Khastap => KHALING	Lamgang {Kuki}
Khatu => HANI	Lancang {C. Loloish}
Khezha {Naga}	Langsu => MARU
Khezham => KHEZHA	Lanping {Qiangic}
Khiamngan {Bodo-Garo}	Lashi {Burmish}
Khoirao {Kuki-Chin-Naga}	ICog-rtse => RGYALRONG
Khonoma => ANGAMI	Lechi => LASHI
Khualsim {Chin}	Lente {Chin}
Khumi {Chin}	Lepcha G#2.1.2
Khøzha => KHEZHA	Leqi => LASHI
Kinnauri => KANAURI	Leshi => LASHI
Kiranti G#2.2.3.0	Lhasa => TIBETAN
Kohima => ANGAMI	Lhoba => IDU, BOKAR
Kokborok {Bodo-Garo}	Lianghe => ACHANG
Kom Rem {Kuki-Chin-Naga}	Liangmei {Kuki}
Konyak {N. Naga}	Liangshan {N. Loloish}
Konyak Naga {N. Naga}	Lijiang => NAXI
Kuki G#1.2.1	Limbu {E. Kiranti}
Kuki-Chin-Naga G#1.2.0	Lipho {N. Loloish}

TB Languages, Dialects, and Subgroupings

Lisaw => LISU	Mahakiranti G#2.2.0
Lishan {N. Loloish}	Maiserang => CHEPANG
Liso => LISU	Mama => CUONA
Lisu {C. Loloish}	Manang {Tamangic}
Lohorong {E. Kiranti}	Manchad => PATTANI
Lolo {C. Loloish}	Manchati => PATTANI
Lolo-Burmese G#6.0.0	Mandarin {Sinitic}
Loloish => YIPHO	Manipuri => MEITHEI
Lolopho {Yipho}	Manyak {Qiangic}
Longchuan => ACHANG	Mao {Naga}
Longchuan Achang {Burmish}	Maram {Chin}
Longquan {Naxi}	Maran {Jingpho}
Longshan => TUJIA	Maring {Chin}
Lotha {Naga}	Marpha => THAKALI
Lotha Naga => LOTHANAGA	Maru {Burmish}
Lu-ch'üan => LUQUAN	Matupi {Chin}
Lui {Jingpho-Nung-Luish}	Mawo {Qiangic}
Luish G#4.3.0	mBisu => BISU
Lungmi => NUNG	Meche {Bodo-Garo}
Luoba => LHOBA	Megyaw => HPUN
Luoba (Boga'er) => BOKAR	Meitei => MEITHEI
Luoba (Sulong) => SULONG	Meithei G#1.3.0
Luoba (Yidu) => IDU	Meluri {Chin}
Luotongba => BAIMA	Menba => CUONA, MOTUO
Luquan {N. Loloish}	Menba (Motuo) => CANGLUO
Lushai {Chin}	Mera {Chin}
Lusu {Yipho}	Metjo {Burmish}
Luxi => ACHANG	Metu => NUNG
Lüchun => HANI	Middle Chinese G#9.0.2
Ma'erkang => ZHUOKEJI OF RGYALRONG	Miji {North Assam}
Maerkang {rGyalrong}	Miju Mishmi => KAMAN
Magar => MAGARI	Mikir G#1.4.0
Magari {Kham-Magar-Chepeng-Sunwari}	Milang {Tani}

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Mile {N. Loloish}	Namsang. => NOCTE
Minchia => BAI	Namuyi {Qiangic}
Mindonghua => CHINESE	Namuzi => NAMUYI
Minnanhua => CHINESE	Nanhua {N. Loloish}
Minyang => MUYA	Nanjian {N. Loloish}
Minyak => MUYA	Nasu {N. Loloish}
Miri. => MISING	Naxi G#6.1.0
Mising {Tani}	Neisu. {N. Loloish}
Mizo => LUSHAI	Nesu {N. Loloish}
Mo-Ang {S. Loloish}	Newar => NEWARI
Modern Chinese G#9.0.3	Newari G#2.2.1
Moinba => MENBA	Ngawal {Tamangic}
Mojiang {S. Loloish}	Ngawn {Chin}
Mongsen. => AO	Ni {C. Loloish}
Monpa G#1.1.3	Nishi {Tani}
Monpa, C. => CANGLUO	Nishing {Tani}
Moshang. => TANGSA	Nocte {N. Naga}
Moso. => NAXI	Noesu {N. Loloish}
Motuo => CANGLUO	North Assam. G#1.1.0
Motuo Menba. {Tibetic}	N. Loloish. G#6.3.1
Moulmein. {Karenic}	N. Naga. G#1.2.3.1
Moyon {Meithei}	N. Qiang => QIANG (N.)
Mpi. {S. Loloish}	Nosu {N. Loloish}
Mru. G#1.5.0	Nruanghmei => RONGMEI
Mutwang => NUNG	Ntenyi. {Naga}
Muya {Qiangic}	Nu (Fugong). => NUNG
Myanmar => BURMESE	Nujiang => TRUNG
Mzieme. {Naga}	Nung. G#4.2.1
Na. => BENGNI, LAHU	Nung (Rawang) => ANONG
Naga G#1.2.3.0	Nungic G#4.2.0
Nahsi => NAXI	Nusu {N. Loloish}
Nakhi => NAXI	Nyi => SANI
Nalda => LAHULI	Nyisu => NISHI

TB Languages, Dialects, and Subgroupings

Old Chinese G#9.0.1	Rangkhol {Kuki}
Ombule {Mahakiranti}	Rangloi {W. Himalayish}
Pa-O {Karenic}	Rangoon => BURMESE
Paangkhua {Chin}	Rawang => NUNG
Padam-Mising {Tani}	Rengma {Naga}
Paku {Karenic}	rGBenzhen {Tani}
Palaychi {Karenic}	rGyalrong G#3.3.0
Pattani {W. Himalayish}	rGyarong => rGYALRONG
Pfetsero => KHEZHA	Riang {Bodo-Garo}
Pho {Karenic}	Risiangku => TAMANG
Phom {N. Naga}	Rodong => CHAMLING
Phou Noy => PHUNOI	Rokhung {E. Kiranti}
Phun => HPUN	Rongmei {Kuki}
Phunoi {S. Loloish}	Rumdali {Mahakiranti}
Phuthao {C. Loloish}	Rungchangbung {E. Kiranti}
Phön => HPUN	Sabra => SUNWARI
Pijo => HANI (BIYUE)	Sadiya => MISING
Plains Kachari => BODO	Sadon => ZAIWA
Praka => PRAKAA	Sahu {Tamangic}
Prakaa => MANANG	Sahugaon => TAMANG
Primi => PUMI	Sak {Jingpho-Nung-Luish}
Puhgut => SULONG	Sakka Trokpa {Tibetan}
Puiron {Kuki}	Samong {Burmish}
Pumi {Qiangic}	Sampang {E. Kiranti}
Purik {Tibetan}	Sangkong {S. Loloish}
Putao {C. Loloish}	Sangtam {Naga}
Putonghua => MANDARIN	Sani {C. Loloish}
Pyu {Burmish}	Sani (Nyi) => NYI
Qiang {Qiangic}	Sema {Naga}
Qiangic G#3.2.0	Sengmai {Luish}
Queyu {Qiangic}	Sgaw {Karenic}
Rabi => BANTAWA	Shangge {N. Naga}
Rai => E. KIRANTI	Sharchop-kha => CANGLUO

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Shehleh. {C. Loloish}	Tangsa. {N. Naga}
Sherpa. => TIBETAN	Tangut. G#3.1.0
Shili {Tani}	Tangut-Qiang G#3.0.0
Shixing {Qiangic}	Tani. G#1.1.1
Sho => ASHÖ	Tankhur. => TANGKHUL
Shuikui => HANI	Taoba => PUMI
Simi => SEMA	Taoping {Qiangic}
Sindhuli {Tamangic}	Taraon. => DARANG
Sinitic G#9.0.0	Tashigang {Bodish}
Sino-Tibetan G#0.0.0	Taung-Yo {Burmish}
Siyin {Chin}	Taungtha {Chin}
Songbu => RONGMEI	Taungthu. => PA-O
S. Loloish G#6.3.3	Tavoyan {Burmish}
S. Qiang => QIANG (S.)	Tenasserim {Karenic}
Spiti => TIBETAN	Tengsa. {N. Naga}
Stau. => DAOFU	Tha'oa {Chin}
Sulong {Tani}	Thaadou => THADO
Sulung => SULONG	Thado {Chin}
Sumi => SEMA	Thadou => THADO
Sunawar => SUNWARI	Thakali {Tamangic}
Sunwar => SUNWARI	Thami {Chin}
Sunwari {Kham-Magar-Chepeng-Sunwari}	Thanphum. {Kuki}
Syang => THAKALI	Thebor {W. Himalayish}
Sümi => SEMA	Theng-yüeh. {C. Loloish}
Tablung. {N. Naga}	Thulung {Kiranti}
Tagen => NISHI	Tibetan G#2.1.3.2
Tagin. {Tani}	Tibetic. G#2.1.3.0
Taglung. => TAMANG	Tibeto-Burman G#0.1.0
Taman. {Jingpho-Nung-Luish}	Tibeto-Kanauri G#2.1.0
Tamang. {Tamangic}	Tiddim {Chin}
Tamangic G#2.1.3.1	Tilang => CANGLUO
Tamlu {N. Naga}	Tinan. => RANGLOI
Tangkhul. {Naga}	Tintekiya. {Bodo-Garo}

TB Languages, Dialects, and Subgroupings

Tircul => PYU	Xiandao {Burmish}
Tiwa => LALUNG	Xiangyu => CHINESE
Tosu {Tangut}	Xide {N. Loloish}
Toto {Himalayish}	Xinlong Queyu {Qiangic}
Tripuri => KOKBOROK	Xixia => TANGUT
Trung {Nungic}	Xongsai {Kuki}
Tsaiwa => ZAIWA	Yacham-Tengsa {N. Naga}
Tsangla {Tibetic}	Yadu {Qiangic}
Tsangla Monpa => MONPA	Yajiang Queyu {Qiangic}
Tshangla => CANGLUO	Yakha {E. Kiranti}
Tshona {Tibetic}	Yakhaba => YAKHA
Tsuta {rGyalrong}	Yamphe {E. Kiranti}
Tujia G#5.0.0	Yanchok => MAGARI
Tukche => THAKALI	Yangphe {E. Kiranti}
Ugong {S. Loloish}	Yano {Tani}
Ukhrul => TANGKHUL	Yawdwin {Kuki}
Vayu => HAYU	Yellow Lahu => LAHU
Wakching {N. Naga}	Yi => LOLOISH (N./C.)
Waling {E. Kiranti}	Yi (Lolophu) => LOLOPHO
Wanang {Bodo-Garo}	Yi (Nanhua) => NANHUA
Wancho {N. Naga}	Yi (Sani) => SANI
Weishan {N. Loloish}	Yi (Weishan) => WEISHAN
Weixi {Lolo-Burmese}	Yi (Wuding) => WUDING
Weizang => LHASA TIBETAN	Yi (Xide) => XIDE
Wenlang => CUONA	Yidu {Tani}
W. Himalayish G#2.1.1	Yimchungrü {Naga}
W. Kiranti G#2.2.3.1	Yipho G#6.3.0
Womatu {Chin}	Yogli => TANGSA
Woni {S. Loloish}	Yongning => NAXI
Wuding {N. Loloish}	Yongsheng {C. Loloish}
Wuyu => CHINESE	Youle => JINUO
Xi => LAHU	Yue {Karenic}
Xiahe => BLA-BRANG	Yueyu => CANTONESE

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Zahao => LAIZO
Zaiwa => ATSI
Zeku => TIBETAN
Zeme {Naga}
Zerungge {Mahakiranti}
Zhaba=> QUEYU (YAJIANG); DAOFU ZHABA
Zhizhiluo {N. Loloish}
Zhuokeji => RGYALRONG
Zotung {Chin}

Index of Proper Names

This *Index* includes the names of individuals and languages or language groups mentioned in the body of the text. Omitted from this *Index* are those languages, groups and individuals who are mentioned so often that they are designated only by their initials, *e.g.* JAM, RSC, KVB, SB, *etc.* These abbreviations, as well as those referring to scholarly works (*e.g.* *STC*, *GSR*, *etc.*), are listed in the *Symbols and Abbreviations*, above.

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References

For abbreviations, see *Symbols and Abbreviations*, above page xxxi. A few items in these *References* are not directly mentioned in the text, but are included for their bibliographical interest.

ACHARYA, K. P. 1975. *Lotha Phonetic Reader*. Phonetic Readers #14. Mysore: CIIL.

ALLEN, N. J. 1975. *Sketch of Thulung grammar, with three texts and a glossary*. (Cornell East Asia Papers 6). Ithaca, NY: Cornell University China-Japan Program.

American Heritage Dictionary of the English Language. 2000. 4th Edition. Boston and New York: Houghton Mifflin Co.

BAILEY, Thomas Grahame. 1911. *Kanauri Vocabulary in Two Parts: English-Kanauri and Kanauri-English*. Monograph #13. London: Royal Asiatic Society.

BARNARD, J. T. O. 1934. *A Handbook of the Răwang Dialect of the Nung Language*. Rangoon.

BARRAU, Jacques, *et al.* 1972. *Langue et techniques, nature et société* (Volumes presented to A-G. Haudricourt on his 60th birthday), Vol. I: *Approche linguistique*. Paris: Klincksieck. ("LTNS")

BAUER, Robert S. 1992. "Winkin', blinkin' and nod: a study in the historical-comparative semantics of Southeast Asian languages." LTBA 15.2:151-84.

References

- and Paul K. BENEDICT. 1997. *Modern Cantonese Phonology*. Trends in Linguistics, Studies and Monographs #102. Berlin, New York: Mouton de Gruyter.
- BAXTER, William. 1992. *A Handbook of Old Chinese Phonology*. Trends in Linguistics, Studies and Monographs #64. Berlin, New York: Mouton de Gruyter.
- and Laurent SAGART. 1998. “Word formation in Old Chinese.” In Jerome L. Packard, ed., *New Approaches to Chinese Word Formation: Morphology, Phonology and the Lexicon in Modern and Ancient Chinese*, pp. 35-76. Berlin and New York: Mouton de Gruyter.
- BENEDICT, Paul K. 1939. “Semantic differentiation in Indo-Chinese.” HJAS 4:213-29.
- . 1940. “Studies in Indo-Chinese phonology.” HJAS 5:101-27.
- . 1941. *Kinship in Southeastern Asia*. Ph.D. dissertation in Anthropology, Harvard University. 526pp. Unpublished.
- . 1942a. “Thai, Kadai, and Indonesian: a new alignment in Southeastern Asia.” AA 44:576-601.
- . 1942b. “Tibetan and Chinese kinship terms.” HJAS 6:313-37.
- . 1943. “Secondary infixation in Lepcha.” SiL I, no. 19.
- . 1948. “Tonal Systems in Southeast Asia.” JAOS 68:184-91.
- . 1972a. *Sino-Tibetan: a Conspectus*. Contributing Editor, James A. MATISOFF. Princeton-Cambridge Studies in Chinese Linguistics #2. New York: Cambridge University Press. (STC).
- . 1972b. “The Sino-Tibetan tonal system.” In LTNS, Vol. I: 25-34.
- . 1973. “Tibeto-Burman tones, with a note on teleo-reconstruction.” AO 35: 127-38.
- . 1975a. *Austro-Thai Language and Culture, with a glossary of roots*. New Haven: HRAF Press.
- . 1975b. “Where it all began: memories of Robert Shafer and the *Sino-Tibetan Linguistics Project*, Berkeley 1939-40.” LTBA 2.1:81-92.

- . 1975c. “The Chinese *s-orgy: further adventures and misadventures.” Paper presented at ICSTLL #8, University of California, Berkeley, Oct. 24-26.
- . 1976a. “Sino-Tibetan: another look.” JAOS 96.2:167-97. (“STAL”)
- . 1976b. *Rhyming Dictionary of Written Burmese*. Compiled under the supervision of Paul K. BENEDICT, ca. 1940. Published (1976) in LTBA 3.1.
- . 1979. “Four forays into Karen linguistic history.” Edited and expurgated by J.A. MATISOFF. LTBA 5.1:1-35. [“A note on the loss of final stop in Karen” (pp. 4-7); “A note on the reconstruction of Karen preglottalized surd stops” (pp. 8-12); “A note on the reconstruction of Karen final *-s” (pp. 13-20); “A note on Karen genital flipflop” (pp. 21-24).]
- . 1981. “Comment on Thurgood, ‘The Sino-Tibetan copula *wəy.’” Circulated at ICSTLL 14, University of Florida.
- . 1983a. “This and That in TB/ST.” LTBA 7.2:75-98.
- . 1983b. “Qiang monosyllables: a third phase in the cycle.” LTBA 7.2:113-14.
- . 1983c. “TB/Karen cluster vs. prefix *s.” In Chauncy CHU, W. South COBLIN, and Feng-Fu TSAO eds., *Papers from the 14th ICSTLL*, pp. 9-20. Taipei: Student Book Publishing Co.
- . 1984. “PST interrogative *ga(ng) ~ *ka.” LTBA 8.1:1-10.
- . 1990. *Austro-Tai/Japanese*. Ann Arbor: Karoma Press.
- BERNOT, Denise. 1978-92. *Dictionnaire birman-français*. 15 Fascicules. Paris: SELAF.
- BEYER, Stephan V. 1992. *The Classical Tibetan Language*. Albany: State University of New York Press.
- BHASKARARAO, Peri. 1996. “A computerized lexical database of Tiddim Chin and Lushai.” Tokyo: ILCAA, Tokyo University of Foreign Studies.
- BHAT, D.N.S. 1969. *Tankhur Naga Vocabulary*. Poona: Deccan College Postgraduate and Research Institute.

References

- BIELLENBERG, Brian and Zhalie NIENU. "Chokri (Phek dialect): phonetics and phonology." LTBA 24.2:85-122.
- BJÖRVERUD, Susanna. 1998. *A Grammar of Lalo*. Lund University, Sweden: Department of East Asian Studies.
- BLAGDEN, Charles Otto. 1914. "The transliteration of old Burmese inscriptions. JBRS 4:136-9.
- BODMAN, Nicholas C. 1969. "Tibetan *sdud* 'folds of a garment', the character 卒, and the *st- hypothesis." AS/BIHP 39:327-345.
- . 1980. "Proto-Chinese and Sino-Tibetan: data towards establishing the nature of the relationship." In Frans van Coetsem and Linda Waugh, eds., *Contributions to Historical Linguistics*, pp. 34-199. Leiden: E. J. Brill.
- BOODBERG, Peter. 1937. "Some proleptical remarks on the evolution of Archaic Chinese." HJAS, 2.3/4:329-372.
- BRADLEY, David. 1979. *Proto-Loloish*. Scandinavian Institute of Asian Studies, Monograph #39. London: Curzon Press.
- BUCK, Carl Darling. 1949. *A Dictionary of Selected Synonyms in the Principal Indo-European Languages: a contribution to the history of ideas*. Chicago: University of Chicago Press.
- BURLING, Robbins. 1959. "Proto-Bodo." *Language* 35:433-53.
- . 1966. "The addition of final stops in the history of Maru." *Language* 42.3:581-6.
- . 1967/1968. *Proto-Lolo-Burmese*. Indiana Publications in Anthropology and Linguistics #43. The Hague: Mouton and Co. Issued simultaneously as a Special Publication, IJAL 33.2, Part II.
- . 1969. "Proto-Karen: a reanalysis." OPWSTBL 1:1-116.
- . 1971. "The historical place of Jinghpaw in Tibeto-Burman." OPWSTBL 2: 1-54.
- . 1983. "The *sal* languages." LTBA 7.2:1-32.
- . 1999. "On Kamarupan." LTBA 22.2:169-171.

- CAUGHLEY, Ross. 1972. *A Vocabulary of the Chepang Language*. Kirtipur: SIL and Institute of Nepal Studies.
- . 1982. *The Syntax and Morphology of the Verb in Chepang*. Pacific Linguistics B-84. Canberra: Australian National University.
- CHAKRAVARTY, L. N., *et al.* 1963. *A Dictionary of the Taron Language*. Shillong: Philology Section, Research Department, NEFA.
- CHAO Yuen-Ren 趙元任 . 1934. The non-uniqueness of phonemic solutions of phonetic systems.” AS/BIHP (Peking) 4.4:363-97.
- CHELLIAH, Shobhana. 1997. *A Grammar of Meithei*. The Hague: Mouton de Gruyter.
- CHEN Kang 陈康 . 1986. “A comparative study of vowels among the dialects of the Yi language.” Paper presented at ICSTLL #31, University of Lund, Sweden.
- CHOU Fa-kao 周法高 . 1984. 中國音韻學論文集 *Zhōngguó Yīnyùnxué Lùnwénjí*. [“Collected papers on Chinese phonology.”] Chinese University of Hong Kong.
- . 1972. 上古漢語和漢藏語 *Shànggǔ Hànyǔ hàn Hàn-Zàng-yǔ* [“Archaic Chinese and Sino-Tibetan.”] JICSCUH 5.1:159-237.
- COBLIN, Weldon South. 1974. “An early Tibetan word for *horse*.” JAOS 94.1:124-5.
- . 1986. *A Sinologist's Handlist of Sino-Tibetan Lexical Comparisons*. Monumenta Serica Monograph #18. Nettetal: Steyler Verlag.
- COOK, Richard S. 1999. “Echo vocalism in the Chokri Naga topicalization/suspensive construction.” Linguistics 240 (“Field Methods”) term paper, U.C. Berkeley. 10 pp. MS.
- . 2000. “Making waves in Proto-Sino-Tibetan: ripples of PST *wave*. Paper presented at 33rd ICSTLL, Bangkok.
- COURANT, M. 1903. “Note sur l'existence, pour certains caractères chinois, de deux lectures distinguées par les finales k-ñ, t-n, p-m.” *Mémoires de la Société Linguistique de Paris* 12:67-72.
- DAI Qingxia 戴庆厦 , *et al.* 1983. 景汉辞典 *Jǐng-hàn cídiǎn* [*Jingpho-Chinese Dictionary*]. Kunming: Yunnan People's Publishing Co..

References

- , eds. 1991. 藏緬語十五種 *Zàngmiǎn-yǔ shíwǔ zhǒng* [*Fifteen Tibeto-Burman Languages*]. Beijing: Yánshān Chūbǎnshè.
- and Huang Bufan 黃布凡, eds. 1992. 藏緬語族語言詞匯 *Zàng-Miǎn yǔzú yǔyán cíhuì* [Authors' English title: *A Tibeto-Burman Lexicon*.] Beijing: Central Institute of Minorities. (TBL).
- DAS GUPTA, Kamallesh. 1971 *An Introduction to the Nocte Language*. Shillong: Philology Section, Research Department, Northeast Frontier Agency.
- DELL, François. 1981. *La langue bai: phonologie et lexique*. Paris: EHESS.
- DIFFLOTH, Gérard. 1980. *The Wa Languages*. LTBA 5.2:1-182.
- DOWNER, Gordon B. 1959. "Derivation by tone change in Classical Chinese." BSOAS 22.2:258-90.
- DRIEM, George (Sjors) VAN. 1997. "Sino-Bodic." BSOAS 60.3:455-88.
- . 1998. *Dzongkha*. Leiden: School of Asian, African and Amerindian Studies.
- . 2001. *Languages of the Himalayas: an ethnolinguistic handbook of the greater Himalayan region, containing an introduction to the symbiotic theory of language* (2 vols.). Leiden: Brill.
- DUAN Yucai 段玉裁. 1815. 說文解字注 *Shuōwén Jiězì Zhù* [*Commentary on the Shuowen Jiezi*]. Reprinted 1989 by Shànghái Gǔjí Chūbǎnshè.
- DUROISELLE, Charles. 1916. "Literal transliteration of the Burmese alphabet." JBRS 6:81-90.
- EBERT, Karen. 2000. "Kiranti languages." 14 pp. MS. To appear in Graham THURGOOD and Randy LAPOLLA, eds., *The Sino-Tibetan Languages*.
- EVANS, Jonathan P. 2001. *Introduction to Qiang Phonology and Lexicon: synchrony and diachrony*. Tokyo: ILCAA.
- FRASER, James Outram. 1922. *Handbook of the Lisu (Yawyin) Language*. Rangoon. Office of the Superintendent of Government Printing.

- FRENCH, Walter T. 1983. *Northern Naga: a Tibeto-Burman Mesolanguage*. Ph.D. Dissertation, City University of New York.
- GAO Xingzhi 盖兴之. 1986. 基诺语简志 *Jīnuò-yǔ jiǎnzhì* [Brief Description of the Jinuo Language]. Beijing: Nationalities Press.
- GAO Huanian (Kao Hua-nien) 高華年. 1955. 陽武哈尼語初探 *Yángwǔ Hāní Chūtàn* ["Preliminary investigation of the Hani language of Yang-wu"]. *Chungshan University Journal*.
- . 1958. 彝語語法研究 *Yí-yǔ yǔfǎ yánjiū* [A study of Yi (Nasu) grammar]. Peking: Scientific Publishing Co.
- GEDNEY, William J. 1989. "A spectrum of phonological features in Tai." In Robert J. Bickner *et al.*, eds., *Selected papers by William J. Gedney on Comparative Tai Studies*, pp. 165-190. Ann Arbor: Center for South and Southeast Asian Studies, University of Michigan. Originally presented at ICSTLL #3 (1970), Cornell University.
- GENETTI, Carol. 1994. *A Descriptive and Historical Account of the Dolakha Newari Dialect*. Tokyo: ILCAA.
- GIRIDHAR, P. P. 1991. "On the word in Angami Naga." *LTBA* 14.1:1-54.
- GONG Hwang-cherng, 龔煌城. 1985. "The phonological reconstruction of Tangut through examination of phonological alternations." Paper presented at ICSTLL #18, Bangkok.
- . 1990. 從漢藏語的比較看上古漢語若干的擬測 "Cóng Hàn-Zàngyǔ de bǐjiào kàn Shàngǔ Hànyǔ ruògān shēngmǔ de nǐcè" [Reconstruction of some initials in Archaic Chinese from the viewpoint of comparative Sino-Tibetan]. In *A Collection of Essays in Tibetan Studies*, Vol. 3, pp. 1-18. Taipei: Committee on Tibetan Studies.
- . 1994a. "A hypothesis of three grades and vowel length distinction in Tangut." *JAAS* 46/47: 305-314.
- . 1994b. "The first palatalization of velars in Late Old Chinese." In Matthew Y. Chen and Ovid J. L. Tzeng, eds., *Linguistics Essays in Honor of William S.-Y. Wang: interdisciplinary studies on language and language change*, pp. 131-142. Taipei: Pyramid Press.
- . 1995. "The system of finals in Proto-Sino-Tibetan." In William S.-Y. Wang, ed., *The Ancestry of the Chinese Language*, pp. 41-92. Berkeley: POLA.

References

- . 1997. 從漢藏語的比較看重紐問題（兼論上古介音對中古韻母演變的影像）“Cóng Hàn-Zàngyǔ de bǐjiào kàn chóngniǔ wèntí (jiān lùn Shànggǔ *-rj- jièyīn duì Zhōnggǔ yùnmǔ yǎnbiàn de yǐngxiǎng)” [The *chongniu* problem from the viewpoint of comparative Sino-Tibetan (with discussion of the effect of the Old Chinese medial *-rj- on the development of Middle Chinese rhymes)]. In Republic of China Phonology Conference, Taiwan Normal University Chinese Department and Academia Sinica Institute of History and Philology, eds., 聲韻論叢 *Shēngyùn lùn cóng* [Collected essays in Chinese phonology], Vol. VI, pp. 195-243. Taipei: 台灣學生書局 Táiwān Xuéshēng Shūjú.
- . 1999. “Xixia cognates or synonyms corresponding to sets in Matisoff’s list of Qiangic correspondences.” Unpublished 23pp. MS. (See JAM 1999d.)
- . 2000. 從漢藏語的比較看上古漢語的詞頭問題 “Cóng Hàn-Zàng yǔ de bǐjiào kàn shànggǔ Hànyǔ de cítóu wèntí” [“The problem of Old Chinese prefixes from the perspective of comparative Sino-Tibetan studies”]. *Languages and Linguistics* (Taipei) 1.2:39-62.
- . 2001. 上古漢語與原始漢藏語帶 r 與 l 複聲母的構擬 “Shànggǔ Hànyǔ yuánshí Hàn-Zàng yǔ dài r yǔ l fú shēngmǔ de gòunǐ” [“A reconstruction of consonant clusters with r- and l- as the second elements in Old Chinese and Proto-Sino-Tibetan”]. 台大文史哲學報 (*Humanitas Taiwanica*) 54:1-36.
- GREENBERG, Joseph H. 1987. *Language in the Americas*. Stanford, CA: Stanford University Press.
- GRIERSON, Sir G.A. 1921. “Kadu and its relatives.” BSOS 2:39-42.
- GRIERSON, Sir G.A. and Sten Konow, eds. 1903-28. *Linguistic Survey of India*. 13 vols. Vol. III, Parts 1-3, *Tibeto-Burman Family*. Calcutta: Office of the Superintendent of Government Printing. Reprinted (1967) by Motilal Banarsidass (Delhi, Varanasi, Patna). (“LSI”)
- GRIMES, Barbara, ed. 1988. *Ethnologue: Languages of the World*. Dallas: SIL.
- GRINSTEAD, Eric. 1972. *Analysis of the Tangut Script*. SIAS Monograph Series #10. Lund: Studentlitteratur. [See Sofronov 1978.]
- GRÜSSNER, Karl-Heinz. 1978. *Arleng Alam, die Sprache der Mikir: Grammatik und Texte*. Beiträge zur Südasien-Forschung #39. Wiesbaden: Franz Steiner Verlag.

- HANDEL, Zev J. 1997. "A snake in the grass: an exploration of a slippery Sino-Tibetan etymon." Paper presented at 30th ICSTLL, Beijing.
- . 1998. *The medial systems of Old Chinese and Sino-Tibetan*. Ph.D. dissertation. Berkeley: University of California.
- . 2001. "Proto-Lolo-Burmese velar clusters and the origin of Lisu palatal sibilants." Paper presented at ICSTLL #34, Kunming.
- HANSON, Ola. 1906. *A Dictionary of the Kachin Language*. Reprinted (1954) by Baptist Board of Publications, Rangoon.
- HANSSON, Inga-Lill. 1989. "A comparison of Akha, Hani, Khatu and Pijo." *LTBA* 12.1:6-91.
- . 1996. "Object-verb in Akha: the ABB structure." *LTBA* 19.1:77-95.
- HARTMANN, Helga. 2001a. "Prenasalization and preglottalization in Daai Chin, with parallel examples from Mro and Mara." *LTBA* 24.2:123-142.
- . 2001b. "The function of *naak/na* in Daai Chin with examples from other Chin languages." *LTBA* 24.2:143-156.
- HASHIMOTO, Mantaro J. 橋本萬太郎. 1976. *Genetic Relationship, Diffusion and Typological Similarities of East and Southeast Asian Languages*. Tokyo: Japan Society for the Promotion of Science. ("GRDT")
- HAUDRICOURT, André-Georges. 1942-5. "Restitution du karen commun." *BSLP* 42.1:103-11.
- . 1953. "A propos de la restitution du karen commun." *BSLP* 49.1:129-32.
- . 1954a. "Comment reconstruire le chinois archaïque." *Word* 10:351-61.
- . 1954b. "De l'origine des tons en vietnamien." *JA* 242:69-82.
- . 1972. *Problèmes de phonologie diachronique*. Paris: SELAF.
- . 1975. "Le système de tons du karen commun." *BSLP* 70: 339-43.

References

- HE Jiren 和即仁 and JIANG Zhuoyi 姜竹仪 . 1985. 纳西语简志 *Nàxī-yǔ jiǎnzhi* [A brief description of the Naxi language] Beijing: Nationalities Press.
- HENDERSON, Eugénie J. A. 1965. *Tiddim Chin: a descriptive analysis of two texts*. London Oriental Series #15. London: Oxford University Press.
- . 1986. “Some hitherto unpublished material on Northern (Megyaw) Hpun.” *CSTS* 101-134.
- . 1997. *Bwe Karen Dictionary*. London: School of Oriental and African Studies, University of London.
- HERTZ, H. F. 1935. *A Practical Handbook of the Kachin or Chingpaw Language*. Rangoon: Office of Government Printing and Stationery.
- HOCKETT, Charles F. 1947. “Peiping phonology.” *JAOS* 67:253-67.
- HONDA, Isao 本田伊早夫. 2002. “Seke phonology: a comparative study of three Seke dialects.” *LTBA* 25.1:195-214.
- HOUGHTON, Bernhard. 1896. “Outlines of Tibeto-Burman linguistic palaeontology.” *JRAS* 23-55.
- HUANG Bufan 黄布凡 . 1991. 羌语支 “*Qiāng yǔzhī*” [“The Qiangic branch.”] In MA Xueliang, ed., *Hàn-Zàng-yǔ gài lùn* [A General Introduction to Sino-Tibetan Languages], pp. 208-369. Beijing: Běijīng Dàxué Chūbǎnshè.
- HUANG Chenglong 黄成龙 . 1997. 羌语动词的前缀 *Qiāng-yǔ dòngcí de qiánzhuì* [“Verbal prefixes of the Qiang language.”]. *MZYW* 2:68-77.
- HYMAN, Larry M. ed. 1973. *Consonant Types and Tone*. Los Angeles: University of California, Los Angeles. (“CTT”)
- JACQUESSON, François. 1998. “L’évolution et la stratification du lexique: contribution à une théorie de l’évolution linguistique.” *BSLP* 93.1:77-136.
- JÄSCHKE, H. A. 1881. *A Tibetan-English Dictionary*. London. Reprinted (1958) by Routledge and Kegan Paul Ltd., London.
- JIN Youjing 金有景 . 1988. 拉祜语的紧元音 *Lāhù-yǔ de jǐn yuányīn* [“The problem of tense vowels in the Lahu language.”] *MZYW* 3:11-18.

- JONES, Robert B., Jr. 1961. *Karen Linguistic Studies: description, comparison, and texts*. University of California Publications in Linguistics #25. Berkeley, Los Angeles: University of California Press.
- JONES, Robert R. 1999. "A connectionist model for Sino-Tibetan-Mayan phonology." Paper presented at 22nd ICSTLL, Urbana-Champaign.
- JØRGENSEN, Hans. 1936. "Linguistic remarks on the verb in Newari." AO 14:280-5.
- . 1941. *A Grammar of the Classical Newari*. Danske Videnskabernes Selskab, Historik-filologisk Meddelelser 27.3. Copenhagen: Ejnar Munksgaard.
- JOSEPH, U.V. and Robbins Burling. 2001. "Tone correspondences among the Bodo languages." Paper presented at ICSTLL #32, Univ. of Illinois, Urbana-Champaign. Published in LTBA 24.2:41-56.
- JUDSON, Adoniram. 1893. *Burmese-English Dictionary*. Rangoon. Revised and enlarged (1953) by Robert C. STEVENSON and F. H. EVELETH. Reprinted (1966) by Baptist Board of Publications, Rangoon.
- KARLGREN, Bernhard. 1915. *Etudes sur la phonologie chinoise*. [Uppsala: K. W. Appelberg]; Leyde: E.-J. Brill (1941 printing).
- . 1923. *Analytic Dictionary of Chinese and Sino-Japanese*. Paris: Librairie Orientaliste Paul Guethner. Reprinted (1974) by Dover Publications, New York. ("AD")
- . 1933. "Word families in Chinese." BMFEA 5:5-120.
- . 1940. *Grammata Serica: Script and Phonetics in Chinese and Sino-Japanese*. BMFEA, 12.
- . 1954. "Compendium of phonetics in Ancient and Archaic Chinese." BMFEA 26:211-367.
- . 1957. *Grammata Serica Recensa*. BMFEA 29:1-332. ("GSR")
- KEPPING, Ksenia Borisovna. 1975. "Subject and object agreement in the Tangut verb." Translation by JAM. LTBA 2.2:219-31.

References

- KITAMURA Hajime 北村甫, NISHIDA Tatsuo 西田龍雄, and NAGANO Yasuhiko 長野泰彦, eds. 1994. *Current Issues in Sino-Tibetan Linguistics*. Osaka: Organizing Committee of 26th ICSTLL. (“CISTL”)
- KUNST, Richard. 1985. “Appendix” to JAM 1985a (*GSTC*):66-9.
- LAHAUSOIS, Aimée. 2002. *Aspects of Thulung Rai Grammar*. Ph.D. Dissertation, University of California, Berkeley.
- LAPOLLA, Randy J. 1987. “Dulong and Proto-Tibeto-Burman.” *LTBA* 10.1:1-43.
- . 1996. “Middle voice marking in Tibeto-Burman.” In *Pan-Asiatic Linguistics: Proceedings of the Fourth International Symposium on Languages and Linguistics*, Vol. V, pp. 1940-54. Bangkok: Mahidol University.
- . 2001. “Overview of Sino-Tibetan morphosyntax.” 33 pp. MS. To appear in Graham THURGOOD and Randy LAPOLLA, eds.
- and John B. LOWE. 1994. *Bibliography of the International Conferences on Sino-Tibetan Languages and Linguistics I-XXV*. 2nd Edition. STEDT Monograph #1A. Berkeley: University of California.
- and HUANG Chenglong. 1997. *Grammatical Sketch of the Qiang Language, with texts and annotated glossary*. MS. City University of Hong Kong.
- and Dory POA. 2001. *Rawang Texts*. Munich: Lincom Europa.
- LE Saiyue 乐赛月 and LUO Meizhen 罗美珍 (tr.) 1984. 汉藏语概论 *Hàn-Zàng-yǔ gàilùn* [Chinese translation of *Sino-Tibetan: a Conspectus*]. Beijing: Minority Languages Institute of the Chinese Academy of Social Sciences.
- LI Fang-Kuei 李方桂. 1965. “The Tai and the Kam-Sui languages.” *Lingua* 14:148-79.
- . 1971/1980. 上古音研究 “*Shàngǔyīn Yánjiū*” [Studies on Old Chinese phonology]. *Tsing Hua Journal of Chinese Studies*, n.s. 9:1-61. Reprinted (1980), Beijing: 商务印书馆 *Shāngwù Yìnshūguǎn*, pp. 1-83.
- . 1976. 幾個上古聲母問題 “*Jǐge Shàngǔ shēngmǔ wèntí*” [“Some problems concerning Old Chinese initials”]. In 總統蔣公逝世週年論文集 *Zōngtóng Jiǎng gōng shìshì zhōunián lùnwén jí* [Collected papers in commemoration of the anniversary of

- the death of President Jiang], 1143-1150. Taipei: Academia Sinica. Reprinted in Li 1980:85-94.
- . 1977. *A Handbook of Comparative Tai*. Oceanic Linguistics Special Publication #15. Honolulu: University Press of Hawai'i. ("HCT")
- LI Yongsui 李永燧. 1991. 缅彝语言调查的新收获：桑孔语 “*Miǎn-Yí yǔyán diàochá de xīn shōuhuò: Sāngkǒng-yǔ*” [“A new harvest from research into Burmese-Yi: the Sangkong language.”] Beijing: Institute of Nationality Studies, Chinese Academy of Social Sciences. 53 pp. MS. presented at the Firth International Yi-Burmese Conference, Xichang, Sichuan.
- LIN Xiangrong 林向荣. 1993. 嘉戎语研究 *Jiāróng-yǔ yánjiū* [A Study of rGyalrong]. Chengdu: 四川民族出版社 *Sìchuān Mínzú Chūbǎnshè* [Sichuan Nationalities Press].
- LÖFFLER, Lorenz G. 1985. “A preliminary report on the Paangkhua language.” In LSTA, pp. 279-86.
- LORRAIN, J. Herbert. 1907. *A Dictionary of the Abor-Miri Language*. Shillong.
- . 1940. *Dictionary of the Lushai Language*. Bibliotheca Indica #261. Calcutta: Royal Asiatic Society of Bengal. (Reprinted 1965, 1976).
- LORRAIN, J. Herbert. and F. W. SAVIDGE. 1898. *A Grammar and Dictionary of the Lushai Language (Dulien dialect)*. Shillong.
- LORRAIN, Reginald Arthur. 1951. *Grammar and Dictionary of the Lakher or Mara Language*. Gauhati: Department of Historical and Antiquarian Studies, Government of Assam.
- LUCE, Gordon H. 1981. *A Comparative Wordlist of Old Burmese, Chinese and Tibetan*. London: School of Oriental and African Studies.
- . 1986. *Phases of Pre-Pagán Burma: Languages and History*. 2 vols. Oxford and New York: Oxford University Press.
- LUNDELL, J. A. 1879. Det svenska landsmalsalfabetet, tillika en ofversikt af sprakljudens forekomst inom svenska mal, af J. A. Lundell. Stockholm: P.A. Norstedt & Soner, Kongl. Boktryckare.

References

- LUO Meizhen 罗美珍 . 1982. 试论泰语的系属问题 “Shì lùn Tàì-yǔ de xìshǔ wèntí” [“On the genetic affiliation of the Tai languages.”] Paper presented at ICSTLL #15, Beijing.
- . and LE Saiyue. 1984. See LE Saiyue and LUO Meizhen.
- LYOVIN, Anatole. 1968. “Notes on the addition of final stops in Maru.” POLA, 2nd series, L1-22.
- MA Xueliang (MA Hsueh-liang) 马学良 . 1949. 傈文作祭獻藥供牲經譯注 [*Annotated Translation of The Lolo Classic of Rites, Cures, and Sacrifices.*] AS/BIHP (Peking) 20: 577-666.
- . 1951. 撒尼彝语研究 *Sāní Yí-yǔ yánjiū* [Research on the Sani Yi language]. Chinese Academy of Sciences Linguistics Monograph #2. Shanghai.
- MAINWARING, George Byrn 1898. *Dictionary of the Lepcha Language*. Revised and completed by Albert GRÜNWEDEL. Berlin: Unger Bros.
- MALLA, Kamal P. 1985. *The Newari Language: a working outline*. Monumenta Serindica #14. Tokyo: ILCAA.
- MARAN, LaRaw. 1971. “A note on the development of tonal systems in Tibeto-Burman.” OPWSTBL II:1-24.
- . 1979. *A Dictionary of Modern Spoken Jingpho*. Unpublished MS.
- MARRISON, Geoffrey E. 1967. *The Classification of the Naga Languages of Northeast India*. Doctoral dissertation, SOAS, University of London.
- MATHEWS, R.H. 1960. *Chinese-English Dictionary*. Revised American Edition. Cambridge, MA: Harvard University Press.
- MATISOFF, James A. 1968. Review of Burling 1967. *Language* 44.4:879-97.
- . 1969. “Lahu and Proto-Lolo-Burmese.” OPWSTBL I:117-221.
- . 1970. “Glottal dissimilation and the Lahu high-rising tone: a tonogenetic case-study.” JAOS 90.1:13-44. (“GD”)
- . 1972a. *The Loloish Tonal Split Revisited*. Research Monograph #7. Berkeley: University of California Center for South and Southeast Asia Studies. (“TSR”)

- . 1972b. “Tangkhul Naga and comparative Tibeto-Burman.” TAK 10.2:1-13.
- . 1972c. “Lahu nominalization, relativization, and genitivization.” In John Kimball ed., *Syntax and Semantics* (Studies in Language series), Vol. I:237-57. New York: Seminar Press.
- . 1973a. “Tonogenesis in Southeast Asia.” In CTT, pp. 71-96.
- . 1973b. *The Grammar of Lahu*. University of California Publications in Linguistics #75. Berkeley and Los Angeles: University of California Press. Reprinted 1982. (“GL”)
- . 1973c. “The Mon-Khmer substratum in Tibeto-Burman.” Talk presented at FIC-CAL #1.
- . 1973d. “Various interpretations of the PTB (and PST) vowel systems, or What to do if you can’t move your vowels.” 2 pp. class handout, Linguistics 245, U.C. Berkeley.
- . 1974. “The tones of Jinghpaw and Lolo-Burmese: common origin vs. independent development.” ALH 15.2:153-212.
- . 1975a. “Benedict’s Sino-Tibetan: a rejection of Miller’s *Conspectus* inspection.” LTBA 2.1:155-72.
- . 1975b. “Rhinoglottophilia: the mysterious connection between nasality and glottality.” In C.A. Ferguson, L.M. Hyman, and J.J. Ohala, eds., *Nasálfest: Papers from a Symposium on Nasals and Nasalization*, pp. 265-87. Stanford University Language Universals Project, Stanford, CA.
- . 1975c. “A new Lahu simplex/causative pair: *study* / *train*.” LTBA 2.1:151-4.
- . 1976a. “Lahu causative constructions: case hierarchies and the morphology/syntax cycle in a Tibeto-Burman perspective.” In GCC, pp. 413-42.
- . 1976b. Preface to Benedict 1976b. LTBA 3.1:iii-x
- . 1977. “The lexicon of Loloish and Loloish lexicography.” Paper presented at ICSTLL #10, Georgetown University.
-

References

- . 1978a. *Variational Semantics in Tibeto-Burman: the 'organic' approach to linguistic comparison*. Philadelphia: Institute for the Study of Human Issues.
- . 1978b. "Mpi and Lolo-Burmese microlinguistics." *Monumenta Serindica* 4:1-36. Tokyo: ILCAA.
- . 1979. "Problems and progress in Lolo-Burmese: quo vadimus?" *LTBA* 4.2: 11-43. ("QV")
- . 1980. "Stars, moon, and spirits: bright beings of the night in Sino-Tibetan." *GK* 77:1-45.
- . 1982a. "Proto-languages and proto-Sprachgefühl." *LTBA* 6. 2:1-64.
- . 1982b. "Conjugal bliss: an Indo-Aryan word-family pair/yoke/join in Tibeto-Burman." *South Asian Review* 3:42-50.
- . 1983. "Translucent insights: a look at Proto-Sino-Tibetan through Gordon H. Luce's *Comparative Wordlist*." *BSOAS* 46.3:462-76.
- . 1985a. "God and the Sino-Tibetan copula, with some good news concerning selected Tibeto-Burman rhymes." *JAAS* 29:1-81. (*GSTC*)
- . 1985b. "Out on a limb: *arm*, *hand*, and *wing* in Sino-Tibetan." In *LSTA*, pp. 421-50.
- . 1986a. "The languages and dialects of Tibeto-Burman: an alphabetic/genetic listing, with some prefatory remarks on ethnonymic and glossonymic complications." In *CSTS*, pp. 1-75.
- . 1986b. "Labiovelar unit phonemes in Lolo-Burmese? A case to chew over: Lahu bɛ̃ 'chew' < PLB *N-gwya²." *LTBA* 9.1:83-88.
- . 1988a. "Universal semantics and allofamic identification: two Sino-Tibetan case-studies: 'straight/flat/full' and 'property/livestock/talent'." In Akihiro SATO, ed., *Languages and History in East Asia: Festschrift for Tatsuo Nishida on the Occasion of his 60th Birthday*, pp. 3-14. Kyoto: Shokado.
- . 1988b. *The Dictionary of Lahu*. University of California Publications in Linguistics, #111. Berkeley, Los Angeles, London: University of California Press. ("DL")

- . 1989a. "The bulging monosyllable, or the mora the merrier: echo-vowel adverbialization in Lahu." In J. Davidson, ed., *South-East Asian Linguistics: Essays in Honour of Eugénie J.A. Henderson*, pp. 163-97. London: SOAS.
- . 1989b. "Tone, intonation, and sound symbolism in Lahu: loading the syllable canon." *LTBA* 12.2: 147-163. Reprinted (1995) in L. HINTON, J. NICHOLS, and J.J. OHALA, eds., *Sound Symbolism*, pp. 115-29, Cambridge University Press.
- . 1989c. "A new Sino-Tibetan root ***d-yu-k** BELONG / TRUST / DEPEND / ACCEPT / TAKE, and a note of caution to megallo-reconstructionists." In David BRADLEY, Eugénie J.A. HENDERSON, and Martine MAZAUDON, eds., *Prosodic Analysis and Asian Linguistics: to honour R. K. Sprigg*, pp. 265-269. Canberra: Pacific Linguistics C-104.
- . 1989d. "Toward a Eurasian bestiary: the otter and the jackal." Paper presented at ICSTLL #22, University of Hawai'i.
- . 1990a. "On megalocomparison." *Language* 66.1:106-20.
- . 1990b. "The dinguist's dilemma: l/d interchange in Sino-Tibetan." Paper presented at ICSTLL #23, University of Texas, Arlington.
- . 1990c. "Bulging monosyllables: areal tendencies in Southeast Asian diachrony." In Kira Hall, et al., eds., *Proceedings of the Sixteenth Annual Meeting of the Berkeley Linguistics Society*, pp. 543-59.
- . 1990d. "Etymologizing monosyllables: headaches in the compilation of the *Sino-Tibetan Etymological Dictionary and Thesaurus*." Paper presented at the Summer Meeting of the Society for the Study of the Indigenous Languages of the Americas, Vancouver.
- . 1991a. "Sino-Tibetan linguistics: present state and future prospects. *Annual Review of Anthropology* 20:469-504.
- . 1991b. "Endangered languages of mainland Southeast Asia." In R. H. ROBINS and E. M. UHLENBECK, eds, *Endangered Languages*, pp. 189-228. Published with the authority of the Permanent International Committee of Linguists. Oxford and New York: Berg Publishers Ltd.
- . 1991c. "Jiburish revisited: tonal splits and heterogenesis in Burmo-Naxi-Lolo checked syllables." *AO* 52:91-114.
-

References

- . 1991d. “Areal and universal dimensions of grammaticization in Lahu.” In Elizabeth C. TRAUGOTT and Bernd HEINE, eds., *Approaches to Grammaticalization*, Vol. II:383-453. Amsterdam: Benjamins.
- . 1991e. “The Mother of All Morphemes.” In Martha RATLIFF and Eric SCHILLER, eds. *Papers from the First Annual Meeting of the Southeast Asian Linguistics Society (SEALS)*, pp. 293-349. Tempe: Arizona State University, Program for Southeast Asian Studies.
- . 1992. “Following the marrow: two parallel Sino-Tibetan etymologies.” *LTBA* 15.1:159-177.
- . 1994a. “Regularity and variation in Sino-Tibetan.” In *CISTL*, pp. 36-58.
- . 1994b. “Sangkong of Yunnan: secondary “verb pronominalization” in Southern Loloish.” In *CISTL*, pp. 588-607. Also published (1993) in *LTBA* 16.2:123-142.
- . 1994c. “Protean prosodies: Alfons Weidert’s *Tibeto-Burman Tonology*.” *JAOS* 114.2:254-8.
- . 1994d. “How dull can you get?: *buttock* and *heel* in Sino-Tibetan.” *LTBA* 17.2:137-51. Reprinted in Pierre Pichard and François Rabine, eds., *Etudes birmanes en hommage à Denise Bernot*, pp. 373-83. Paris: EFEO.
- . 1994e. “Watch out for number ONE: Jingpho ṇāi ‘I’ and ləṇṇāi ‘one’ (with some speculations about Jingpho number TWO).” *LTBA* 17.1:155-65.
- . 1995a. “Sino-Tibetan palatal suffixes revisited.” In *NHTBM*, pp. 35-91. Osaka: National Museum of Ethnology. (“Pal. suff.”)
- . 1995b. “Sino-Tibetan numerals and the play of prefixes.” *Bulletin of the National Museum of Ethnology* (Osaka) 20.1:105-252. Republished (1997) as “Sino-Tibetan numeral systems: prefixes, protoforms, and problems”, *Pacific Linguistics* B-114, Canberra: Australian National University.
- . 1996a. *Languages and Dialects of Tibeto-Burman*. With Stephen P. BARON and John B. LOWE. STEDT Monograph Series #2. Berkeley: University of California Center for Southeast Asia Studies.
- . 1996b. “The cognate noun/verb construction in Lahu.” *LTBA* 19.1:97-101.

-
- . 1997a. “Primary and secondary laryngeal initials in Tibeto-Burman.” In Anne O. YUE and Mitsuaki ENDO, eds., *In Memory of Mantaro J. Hashimoto*, pp. 29-50. Tokyo: Uchiyama Books Co. ((PSLTB))
- . 1997b. “Vowels and feature shuffling in monosyllabic languages.” Paper presented at *Symposium on Vowels as Victims and Perpetrators of Phonetic Variation*. U.C.Berkeley: Phonology Laboratory.
- . 1998. “Dayang Pumi phonology and adumbrations of comparative Qiangic.” *MKS* 27:171-213.
- . 1999a. “Tibeto-Burman tonology in an areal context.” In Shigeki KAJI, ed., *Proceedings of the Symposium “Cross-Linguistic Studies of Tonal Phenomena: Tonogenesis, Typology, and Related Topics.”* Tokyo: ILCAA.
- . 1999b. “A preliminary sorting of materials for the reconstruction of Proto-Qiangic.” Paper presented at Workshop on Qiangic Languages and Linguistics, Academia Sinica, Taipei.
- . 1999c. “In defense of Kamarupan.” *LTBA* 22.2:173-182.
- . 2000a. “An extrusional approach to *p-/w- variation in Sino-Tibetan.” *Language and Linguistics* (Taipei) 1.2: 135-86.
- . 2000b. “On ‘Sino-Bodic’ and other symptoms of neosubgroupitis.” *BSOAS* 63.3: 356-69.
- . 2000c. “The present state of PST/PTB reconstruction: can we even write a fable in Proto-Lolo-Burmese?” Paper presented at ICSTLL #33, Ramkhamhaeng University, Bangkok.
- . 2000d. “Three Tibeto-Burman/Sino-Tibetan word families: set (of the sun); pheasant/peacock; scatter/pour.” In Marlys MACKEN, ed., *Papers from the Tenth Annual Meeting of the Southeast Asian Linguistics Society*, pp. 215-32. Tempe, AZ: Arizona State University, Program for Southeast Asian Studies.
- . 2001a. 用楔字撬开问题 *Yòng xiēzì qiào kāi wèntí* [“Using a wedge to pry open a problem.”] *YYYJ* (Wuhan) 1:106-27. Published (2002) under the title “Wedge issues” in *LTBA* 25.2:137-64.
-

References

- . 2001b. “The interest of Zhangzhung for comparative Tibeto-Burman.” In Yasuhiko NAGANO and Randy J. LAPOLLA, eds., *New Research on Zhangzhung and Related Tibeto-Burman Languages*, pp. 155-80. Senri Ethnological Reports #19. Osaka: National Museum of Ethnology.
- . 2001c. “Genetic vs. contact relationship: prosodic diffusibility in Southeast Asian languages.” In Alexandra Y. AIKHENVALD and R.M.W. DIXON, eds., *Areal Diffusion and Genetic Inheritance: problems in comparative linguistics*, pp. 291-327. New York: Oxford University Press.
- . 2001d. “On the genetic position of Bai within Tibeto-Burman.” Paper presented at the 34th ICSTLL, Kunming.
- . 2001e. Review of Chelliah 1997. AL 43.2:246-52.
- . 2001f. “Is there such a thing as areal semantics, and if so, can we distinguish between plausible and implausible semantic change/associations in the Southeast Asian linguistic area?” Paper presented at the 7th Himalayan Languages Symposium, Uppsala University.
- . 2002. “Wedge issues.” LTBA 25.2:137-64. (Translation of JAM 2001a).
- . 2003. “Aslian: Mon-Khmer of the Malay Peninsula.” MKS 33:1-57.
- and Inga-Lill Hansson. 1979/1990. “Akha-Lahu-Written Burmese cognates: the ‘Black Box’.” 91 pp. MS.
- MAZAUDON, Martine. 1973. *Phonologie tamang*. Langues et civilisations à tradition orale #4. Paris: SELAF.
- . 1974. “Tibeto-Burman tonogenetics.” LTBA 3.2:1-123.
- . 1978. “Consonantal mutation and tonal split in the Tamang subfamily of Tibeto-Burman.” *Kailash* (Kathmandu) 6.3:157-79.
- . 1985. “Proto-Tibeto-Burman as a two-tone language? Some evidence from Proto-Tamang and Proto-Karen.” In LSTA:201-29.
- . 1993-94. Problèmes de comparatisme et de reconstruction dans quelques langues de la famille tibéto-birmane. 2 vols. Vol. II: Matériaux pour une étude comparative des

- langues du groupe tamang. Thèse pour le doctorat d'Etat ès-lettres. Paris: Université de la Sorbonne Nouvelle (Paris III).
- MCCOY, John and Timothy LIGHT, eds. 1986. *Contributions to Sino-Tibetan Studies*. Leiden: Brill. ("CSTS")
- MEI Tsu-lin 梅祖麟. 1989. "The causative and denominative functions of the *s- prefix in Old Chinese." In *Proceedings of the 2nd International Conference on Sinology*. Taipei: Academia Sinica.
- and Jerry NORMAN. 1976. "The Austroasiatics in ancient south China: some lexical evidence." MS 32:274-301.
- MELNIK, Nurit. "Verbal alternations in Lai." LTBA 20.2:163-72.
- MICHAILOVSKY, Boyd. 1988. *La langue hayu*. Paris: Editions du Centre National de la Recherche Scientifique.
- . 1991. *Proto-Kiranti*. Unpublished MS.
- and Martine MAZAUDON. 1994. "Preliminary notes on the languages of the Bumthang group." In Per KVAERNE, ed., *Proceedings of the 6th Seminar of the International Association for Tibetan Studies*, pp. 545-57. Fagernes, Norway.
- MILLER, Roy Andrew. 1956. "The Tibeto-Burman ablaut system." *Transactions of the International Congress of Orientalists in Japan* 1:29-56.
- . 1958. "The Tibeto-Burman infix system." JAOS 78.3:192-204.
- . 1968. "Once again, the Maru final stops." Paper presented at ICSTLL #1, Yale University.
- . 1970. Review of Burling 1967. *Indo-Iranian Journal* 12.2:146-59.
- . 1974. "Sino-Tibetan: inspection of a conspectus." JAOS 94.2:195-209.
- MILNER, G. B. and E. J. A. Henderson, eds. 1965. *Indo-Pacific Linguistic Studies*. Part I: *Historical Linguistics*. Amsterdam: North-Holland Publishing Co. ("IPLS")
- Myanmar-English Dictionary*. 1993. Rangoon: Myanmar Language Commission, Ministry of Education.

References

- NAGANO Yasuhiko 長野泰彦 . 1984. *A Historical Study of the rGyarong Verb System*. Tokyo: Seishidō.
- NAMKUNG, Ju, ed. 1996. *Phonological Inventories of Tibeto-Burman Languages*. STEDT Monograph Series #3. Berkeley: University of California.
- NAYLOR, Leonhard Brown. 1925. *A Practical Handbook of the Chin Language (Siyin Dialect)*. Rangoon.
- NISHI Yoshio 西義郎 . 1976. “Medials in Burmese.” In *GRDT*, pp. 15-29.
- James A. MATISOFF, and NAGANO Yasuhiko 長野泰彦 , eds. 1995. *New Horizons in Tibeto-Burman Morphosyntax*. Senri Ethnological Studies #41. Osaka: National Museum of Ethnology. (“NHTBM”)
- NISHIDA, Tatsuo 西田 龍雄 . 1964/1966. 西夏語の研究 *Seikago no kenkyū*. [Author’s English title: *A Study of the Hsi-hsia language: Reconstruction of Hsi-hsia language and decipherment of the Hsi-hsia script*]. 2 vols. Tokyo: Zauhō Press.
- . 1973. 多續譯語の研究 *Tosu yakugo no kenkyū*. [Author’s English title: *Tosu, a language of the Lolo group*]. Kyoto: Shōkadō.
- . 1976. “Hsi-hsia, Tosu, and Lolo-Burmese languages.” *Studia Phonologica* 10:1-15.
- NORMAN, Jerry. 1988. *Chinese*. Cambridge: Cambridge University Press.
- OKELL, John. 1969. *A Reference Grammar of Colloquial Burmese*. London Oriental Series. 2 vols. London: Oxford University Press.
- . 1971. “**K**- clusters in Proto-Burmese.” Paper presented at ICSTLL #4, Indiana University, Bloomington.
- . 1995. “Three Burmese dialects.” In David Bradley, ed., *Papers in Southeast Asian Linguistics*. No. 13. *Studies in Burmese Languages*. pp. 1-138. Canberra: Pacific Linguistics, A-83.
- OKRAND, Marc. 1974. “Na-khi and Proto-Lolo-Burmese.” *LTBA* 1.1:55-97.
- OSTAPIRAT, Weera. 1998. “Tiddim Chin tones in historical perspective.” *LTBA* 21.1:235-48.

- PAN Wuyun 潘悟云 . 2000. 漢語歷史音韻學 *Hànyǔ Lìshǐ Yīnyùnxué* [Chinese historical phonology.] Shanghai: Jiaoyu Chubanshe.
- PATENT, Jason. 1997. "Lai verb lists." *LTBA* 20.2:57-112.
- PEIROS, Ilia and S.A. STAROSTIN. 1996. *A Comparative Vocabulary of Five Sino-Tibetan Languages*. 5 Fascicles. Melbourne: University of Melbourne.
- PETTIGREW, William. 1918. *Tangkhul Naga Grammar and Dictionary (Ukhrul Dialect)*. Shillong: Assam Secretariat Printing Office. Reprinted (1979) by the Tangkhul Naga Baptist Convention, Ukhrul, Manipur.
- PHILLIPS, Audra. 2000. "West-central Thailand Pwo Karen phonology." Paper presented at ICSTLL #33, Ramkhamhaeng University, Bangkok.
- PRZYLUSKI, Jean and Marcelle Lalou. 1933. *Le da-drag tibétain*. *BSOS* 7:87-9.
- PULLEYBLANK, Edwin G. 1962. "The consonantal system of Old Chinese." *Asia Major* 9:58-144, 206-265.
- . 1963. "An interpretation of the vowel systems of Old Chinese and Written Burmese." *Asia Major* 10.2:200-21.
- . 1965. "Close/open ablaut in ST." *Lingua*. 14:230-240.
- . 1973. "Some further evidence regarding Old Chinese *-s and its time of disappearance." *BSOAS* 36.2:368-73.
- PULLUM, Geoffrey K., and William A. Ladusaw. 1996. *Phonetic Symbol Guide*. Chicago: University of Chicago Press. Second edition.
- RAMSEY, S. Robert. 1987. *The Languages of China*. Princeton, NJ: Princeton University Press.
- ROCK, Joseph F. 1963. *A Na-khi English Encyclopedic Dictionary*. Serie Orientale Roma, XXVII. Rome: Istituto Italiano per il Medio ed Estremo Oriente.
- RÓNA-TAS, András. 1956. "Tally-stick and divination-dice in the iconography of Lhomo", *AOH*:163-79.

References

- RUI Yifu (JUI I-fu) 芮逸夫 . 1948. 記僂僂語音兼論所謂僂僂文 *Jì Lìsù yǔyīn jiàn lùn suǒwèi Lìsù wěnx* [Author's English title: "Notes on the sounds of the Lisu language with remarks on the Lisu script."] AS/BIHP (Taipei) 17:303-27.
- SAGART, Laurent. 1990. "Chinese and Austronesian are genetically related!" Paper presented at ICSTLL #23, University of Texas, Arlington.
- . 1999. *The Roots of Old Chinese*. Amsterdam Studies in the Theory and History of Linguistic Science, 184. Amsterdam: John Benjamins.
- SAWADA Hideo 澤田英夫 . 1999. "Outline of the phonology of Lhaovo (Maru) of Kachin State." Report of Research Project, *Linguistic and Anthropological Study on the Shan Culture Area*, pp. 97-147. Tokyo: Grant-in-Aid for International Scientific Research.
- SCHÜSSLER, Axel. 1976. *Affixes in Proto-Chinese*. Wiesbaden: Franz Steiner Verlag.
- . 1985. "The function of *qusheng* in early Zhou Chinese." In LSTA, pp. 344-62.
- . 1987. *A Dictionary of Early Zhou Chinese*. Honolulu: University of Hawai'i Press.
- . 1996. "Palatalization of Old Chinese velars." JCL 24.2:197-211.
- SEDLÁČEK, Kamil. 1970. *Das Gemein-Sino-Tibetische*. Wiesbaden: Franz Steiner Verlag.
- SHAFFER, Robert. 1938. "Prefixed **m-** in Tibetan." *Sino-Tibetica* 3:11-28.
- . 1940/41. "The vocalism of Sino-Tibetan." Part I: JAOS 60:302-37; Part II: JAOS 61:18-31.
- . 1966-73. *Introduction to Sino-Tibetan*. 5 parts. Wiesbaden: Otto Harrassowitz.
- SHARMA, D.D. 1988. *A Descriptive Grammar of Kinnauri*. Delhi: Mittal Publications.
- SHARMA, Suhnu Ram. 1997. "Manchad phonology: some problems." Paper presented at 3rd Himalayan Languages Symposium, University of California, Santa Barbara.
- SHIBATANI Masayoshi 柴谷方良 , ed. 1976. *The Grammar of Causative Constructions*. New York: Academic Press. ("GCC")

- SHINTANI Tadahiko. 2002. "Classification of Brakaloungic (Karenic) languages, in relation to their tonal evolution." Paper presented at *Third Workshop on Cross-linguistic Studies of Tonal Phenomena*, Tokyo University of Foreign Studies, Dec. 17, 2002.
- SIMON, Walter. 1940. "Certain Tibetan suffixes and their combinations." *HJAS* 5:372-91.
- SMITH, Tomoko Y. 1998. "The middle voice in Lai." *LTBA* 21.1:1-52.
- SOFRONOV, M.V. 1976. "The decipherment and analysis of the Tangut phonetics." In *PICO 29, Etudes Tibétaines*, Section organisée par Ariane MacDonald, pp. 65-74. Paris: l'Asiathèque.
- . ca. 1978. Annotations to Grinstead 1972. MS. Berkeley, CA.
- SOLNIT, David B. 1979. "Proto-Tibeto-Burman *r in Tiddim Chin and Lushai." *LTBA* 4.2:111-21.
- . in prep. *A Handbook of Comparative Karen*. MS.
- SRINUAN Duanghom. 1976. *An Mpi Dictionary*. Edited by Woranoot Pantupong. Working Papers in Phonetics and Phonology #1, Indigenous Languages of Thailand Research Project. Bangkok: Chulalongkorn University.
- STAROSTIN, Sergej A. 1989. *Rekonstrukcija Drevnekitajskoj Fonologičeskoj Sistemy* [A reconstruction of the Old Chinese phonological system]. Moscow: Nauka, Glavnaja Redakcija Vostočnoj Literaturny.
- SUN Hongkai 孙宏开. 1981. 羌语简志 *Qiāng-yǔ jiǎnzhì*. [Outline Grammar of the Qiang Language]. Beijing: People's Publishing Co.
- . 1982. 独龙语简志 *Dúlóng-yǔ jiǎnzhì* [Outline Grammar of the Trung Language]. Beijing: People's Publishing Co.
- . 1983. "Languages of the 'ethnic corridor' in Western Sichuan." *Xīnán Mínzú Yánjiū* (Chengdu), pp. 429-54. English translation (1990) by Jackson T. Sun, *LTBA* 13.1:1-31.
- *et al.*, eds. 1991. 藏缅语语音和词汇 *Zàng-Miǎn-yǔ yǔyīn hé cíhuì* [Tibeto-Burman Phonology and Lexicon]. Beijing: Chinese Social Sciences Press. (ZMYYC)

References

- SUN, Jackson Tianshin 孫天心 . 1993. *A Historical-Comparative Study of the Tani (Mish) Branch of Tibeto-Burman*. Ph.D. dissertation, University of California, Berkeley.
- . 1994. “Caodeng rGyalrong phonology: a first look.” *LTBA* 17.2:29-47.
- SUWILAI Premssirat. 2002. “Khmu dialects: a case of register complex or tonogenesis.” Paper presented at *Third Workshop on Cross-linguistic Studies of Tonal Phenomena*, Tokyo University of Foreign Studies, Dec. 17, 2002.
- TAKAHASHI, Yoshiharu 高橋慶治. 1999. “A descriptive study of Kinnauri (Pangi dialect).” Paper presented at symposium *New Horizons in Bon Studies*, National Museum of Ethnology, Osaka.
- TELFORD, J. H. 1938. *Handbook of the Lahu (Muhso) Language and English-Lahu Dictionary*. Rangoon.
- THOMASON, Sarah G. and Terrence S. KAUFMAN. 1988. *Language Contact, Creolization, and Genetic Linguistics*. Berkeley, Los Angeles, London: University of California Press.
- THOUDAM, Purna Chandra. 1980. *A Grammatical Sketch of Meiteiron*. Ph.D. dissertation. New Dehli: Jawaharlal Nehru University.
- THURGOOD, Graham. 1981. *Notes on the Origins of Burmese Creaky Tone*. Monumenta Serindica #9. Tokyo: ILCAA.
- . 1982. “The Sino-Tibetan copula *wəy.” *CLAO* 11.1:65-81. Originally presented at ICSTLL 14 (1981), University of Florida.
- . 1984. “The Rung languages: a major new TB subgroup.” In *Proceedings of the Tenth Annual Meeting of the Berkeley Linguistics Society*. pp. 338-349. University of California, Berkeley.
- . and Randy J. LAPOLLA, eds. To appear. *The Sino-Tibetan Languages*. London: Curzon Press.
- , James A. MATISOFF and David BRADLEY, eds. 1985. *Linguistics of the Sino-Tibetan Area: the State of the Art*. Canberra: Pacific Linguistics C-87. (“LSTA”)
- TUNG T’ung-ho [Dǒng Tónghé] 董同龢 . 1948. 上古音韻表稿 “Shàngǔ yīnyùn biǎo gǎo” [Draft phonological tables of Old Chinese]. *AS/BIHP* (Peking) 18:1-249.

- TURNER, R. L. 1966. *A Comparative Dictionary of the Indo-Aryan Languages*. London: Oxford University Press.
- Ulving, Tor. 1997. *Dictionary of Old and Middle Chinese: Bernhard Karlgren's Grammata Serica Recensa Alphabetically Arranged*. With Ferenc Tafferner. Göteborg, Sweden: Acta Universitatis Gothoburgensis. *Orientalia Gothoburgensia*, 11.
- VANBIK, Kenneth. 2001. "Three types of causative constructions in Lai." U.C. Berkeley Qualifying Paper. MS.
- VIAL, Paul. 1909. *Dictionnaire français-lolo, dialecte gni*. Hongkong: Imprimerie de la Société des Missions-Etrangères.
- WALKER, G. D. 1925. *A dictionary of the Mikir Language, Mikir-English and English-Mikir*. Shillong: Assam Government Press.
- WANG Fushi 王輔世. 1979. 苗语方言声韵母比较 *Miáo-yǔ fāngyán shēngyùnmǔ bǐjiào*. [Comparison of the Initials and Finals of the Miao Dialects] Beijing: People's Press.
- WEIDERT, Alfons K. 1975. *Componential Analysis of Lushai Phonology*. Amsterdam: J. Benjamins B. V.
- . 1979. "The Sino-Tibetan tonogenetic laryngeal reconstruction theory." *LTBA* 5.1:49-127.
- . 1981. "Star, moon, spirits, and the affricates of Angami Naga: a reply to James A. Matisoff." *LTBA* 6.1:1-38.
- . 1987. *Tibeto-Burman Tonology: a comparative account*. *Current Issues in Linguistic Theory* #54. Amsterdam and Philadelphia: John Benjamins.
- WEN Yu 聞宥. 1943. "Verbal directive prefixes in the Jyarong language and their Ch'iang equivalents. *Studia Serica* 3.1:11-20. Chengdu: China Cultural Studies Research Institute, West.
- WHEATLEY, Julian K. 1973. *The Lu Chywan dialect of Loloish*. Unpublished MS.
- WINTER, Werner. 1985. "Materials towards a dictionary of Chamling." 78 pp. MS. Kiel.
- WOLFENDEN, Stuart N. 1928. "The prefix **m-** with certain substantives in Tibetan. *Language* 4:277-80.
-

References

- . 1929. *Outlines of Tibeto-Burman Linguistic Morphology, with special reference to the prefixes, infixes, and suffixes of Classical Tibetan, and the languages of the Kachin, Bodo, Naga, Kuki-Chin, and Burma groups*. Prize Publication #12. London: Royal Asiatic Society.
- . 1936a. “On certain alternations between dental finals in Tibetan and Chinese.” JRAS 401-16.
- . 1936b. “Notes on the Jyârung dialect of Eastern Tibet.” TP 32:167-204.
- . 1937. “Concerning the variation of final consonants in the word families of Tibetan, Kachin, and Chinese.” JRAS 4:625-55.
- . 1939. “On the restitution of final consonants in Burmese.” AO 17:156-68.
- WU Zili 武自立 . 1993. 云南富宁末昂话初探 “*Yúnnán Fùnìng Mò-áng-huà chūtà*n” [“A preliminary study of the Mo’ang speech in Funing County, Yunnan Province.”]. MZYW 2:53-63.
- XU Xijian 徐悉艰 . 1981. 景颇族载瓦语概要 *Jǐngpō-zú Zàiwǎ-yǔ gàiyào* [“A brief description of the Zaiwa language of the Jingpo people”]. MZYW 1981.3:57-72.
- YABU Shiro 藪司郎 . 1982. アツイ語基礎語彙集 *Atsui-go kiso goi shū*. [Author’s English title: *A Classified Dictionary of the Atsi or Zaiwa Language (Sadon dialect), with Atsi, Japanese, and English Indexes*]. Tokyo: ILCAA.
- YAKHONTOV, S. E. 1960. “Fonetika Kitajskogo Jazyka pervogo Tysjačletija do n. e. (labializovannye glasnye) [The phonology of the Chinese language of the 1st millennium B.C. (rounded vowels)].” Problemy Vostokovedenija 6:102-115. Translated (1970) by Jerry Norman in *Unicorn* 6:52-75.
- YANG, Paul Fu-mien 楊福綿 . 1985. “Initial consonant clusters **KL-** in Modern dialects and Proto-Chinese. In *LSTA*, pp. 168-179.
- YU Nae-wing 余迺永 . 2000. 新校互註・宋本廣韻 *Xīn Jiào Hù Zhù - Sòng Běn Guǎngyùn*, “A New Revision of the Sung Edition of the *Kuang-yun* Rhyming Dictionary.” Shanghai Cishu Chubanshe.
- YUAN Jiahua (YUAN Chia-hua) 袁家驊 . 1953. 阿細民歌及其語言 *Āxì míngē jí qí yǔyán*. [The *Folksongs and Language of the Axi people*]. Peking: Chinese Academy of Sciences, Linguistics Research Department.

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