Bantawa Rai s-, t-, and z-final verb roots: transitives, intransitives, causatives, and directives

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At the Twelfth International Conference on Sino-Tibetan Languages and Linguistics, Paris, 1979, Michailovsky presented a paper, "Tibeto-Burman dental suffixes: evidence from Limbu" (Michailovsky 1979), in which he analysed Limbu verb roots into three phonological classes, two of them based on root-final consonant clusters containing -S or -T, e.g., -PS, -MS, -TT, -NT (together with -S and, in some cases, -T), and the third a contrasting clusterless class containing either a final single consonant or a final vowel, e.g., -P, -M, -N, -R, and -Ø (and, in some cases, -T). To these phonological classes he went on to attribute morphosyntactic categories, transitive, intransitive, and deponent, and the semantic notions "causative," "directive," etc.²

This paper is a corresponding analysis of Bantawa, one of the Rai group of languages (Thulung, Khaling, Bahing, Kulung, etc.), and closely related, within Kiranti, to Limbu. In both Limbu and Bantawa I have analysed the finals of verb roots into three prosodic classes, S, T, and Z, on the basis of junction features, and into the seven phonematic units P, T, K, Ø, M, N, and Q (together with a lateral-final type of root in Bantawa); and I have made a similar attempt to Michailovsky's to ascribe intransitive, transitive, and causative functions (II), and directive and nondirective functions (III) to T, S, and Z, though my material is not as comprehensive as his.

1. Limbu and Bantawa root-final categories.

In order to show how closely Bantawa resembles Limbu (though the two languages are not mutually intelligible), and, therefore, to prove that the same phonological analysis can reasonably be applied to both these languages, I begin with skeleton prosodic and phonematic analyses of the verb root final in Limbu (A) and Bantawa (B).

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¹ This is a revised version of a paper presented at the Eighteenth Conference on Sino-Tibetan Languages and Linguistics, Bangkok, 1985.
² Michailovsky prefers the term "directive" to "benefactive" or "applicative."
A. Limbu.

In Table 1, I give the phonetic exponents of the prosodic units \(t\), \(s\), and \(z\) and of the phonematic units \(P\), \(T\), \(K\), etc., as they appear in only one of the five main types of junction, that in which the root is followed by a suffix that is vowel-initial.\(^3\) This type of junction provides phonetic criteria for distinguishing all these units except for \(T\) and \(N\), which, in this case, share \([\cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \cdot \·
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TABLE 1

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4 These alternative features in quotation marks, from the Tamur Khola dialect, are quoted from Weidert 1982:5.
Probably the most controversial feature of Table 2 is my having attributed an identical phonetic expenency, in the t type of final, at (l), to both T and Ø, not merely in one but in both of the two types of junction (a, b) shown in the table (and, in fact, in all types of junction). How, in that case, can a verb with forms such as [itte, it], which I have classified as Øt, be distinguished from my example of a Tt verb, with such forms as [sjettse, sjet]? My reason for classifying the [itte, it] verb as Øt rather than Tt is given in (II.B) and (III.B) below; briefly, the reason is that I take [itte, it] to be the t forms corresponding to the Z forms [1:je, ?1:], which are clearly those of a Ø-final verb. The glosses of these Ø-final root forms are:

[1:je] 'laugh: come down'

[?1:] '(he) laughs: (he) comes down'

[itte] 'laugh at (him); bring it down'

[it] '(he) laughs at (him); (he) brings (it) down'.

As regards the grammatical categories transitive and causative, and the lexical category "directive" (or "benefactive"), the most revealing example in my Bantawa material has the following set of three forms, Z, S, and t, the root-final phonematic unit being Ø:

Z: [duŋe] 'drink (it)'
S: [dɔŋsje] 'offer a drink to (him)'
T: [dɔnte] 'drink it for X'.

Cf. Limbu: THUN tr. 'drink' ≠ THUN S tr. 'cause to drink, entertain' (Michailovsky 1979:19). I have no other examples in my material as revealing as this. The nearest to it are the two following. In the first, a -M verb, the Z form is intransitive, the S form transitive, and the T form also transitive but not, apparently, directive:

Z: [jo:ma] '(he) starved'
S: [jo:msje] 'starve (it)'
T: [jomte] 'starve (it)'.

In the other, a -K verb, the T form is directive and the Z and S forms nondirective, all three being, apparently, transitive:

Z: [hɔ:je] 'open (it)'
S: [hɔŋsje] 'open (it)'
T: [hɔkte] 'open it for X';

Cf. Limbu: [kʰo:ndɛ] 'open (it)'.

Since sets of three forms are rare and generally unsatisfactory, I have presented my material (in sections II and III below) through pairs of forms.
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<td>'winnow it'</td>
<td>'lick it'</td>
<td>'tell him to to kill it'</td>
<td>'brand it'</td>
<td>'drink it for X'</td>
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<td>'laugh at (him); 'bring it down'</td>
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<td>'he winnows it'</td>
<td>'he licks it'</td>
<td>'he tells X to kill it'</td>
<td>'he brands it'</td>
<td>'he drinks it for X'</td>
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<td>'he laughs at X; he brings X down'</td>
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<td>'i slept'</td>
<td>'bathe (him)'</td>
<td>'make X run'</td>
<td>'sniff/smell'</td>
<td>'offer a drink to X'</td>
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<td>'run'</td>
<td>'stank'</td>
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<td>'fly; grow big'</td>
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<td>'he stinks'</td>
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<td>'it flies; 'he grows big'</td>
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Section II deals with intransitives, transitives, and causatives; section III deals with directives and nondirectives. Within these two sections I have paired the forms as follows: A = Z versus S, B = Z versus t, C = s versus t. In addition, there is in section II an extra subsection, D (-Nt versus -Tt).

II. Intransitives, Transitives, and Causatives.

A. Z versus S.

1. Intransitive versus transitive/CAUSATIVE.

My material comprises 25 (or possibly 26) examples:

   S [joŋse] ‘put (lt) down’ [thanse] ‘bring (lt) up’

b. H Z [na:me] ‘stink’ [ka:ma] ‘(lt) stayed joined’
   S [namse] ‘sniff, smell’ [kamsje] ‘join (them)

c. N Z [po:n] ‘(he) grows big’ [pɛn] ‘(lt) flies’
   S [poisje] ‘save (money)’ [pe:ṣje] ‘fly (lt)’

d. ˚O Z [ma:] ‘(he) got lost’ [kv:ə] ‘it rotted’
   S [masje] ‘lose (lt)’ [kv:še] ‘rot (lt) down’

e. K Z [(wa:) tsaŋje] ‘have a bath’
   S [(wa:) tsaŋṣje] ‘bathe (him)’

f. P Z [khap] ‘(he) cries’ [e:p] ‘(he) stands up’
   S [khamse] ‘make (him) cry’ [emsje] ‘stand (lt) up’

g. T Z [lo:t] ‘(he) runs’ [tsora] ‘(lt) dripped’
   S [loisje] ‘make (him) run’ [tsoisje] ‘sprinkle (lt)’

2. Transitive versus causative (1 pair).

H Z [dune] ‘drink (lt)’
   S [dɔŋṣje] ‘offer a drink to (him), water (cattle)’

For comparison I give the following forms from Limbu. Those in capitals are from Michailovsky 1979:
1a. JUN, JUKS (16); THAN, THANSS (16)

b. [namče]: KAM, KAMS 'be habituated', 'habituate someone'

c. POR, PHOS (18); PE R, PE S (18)

d. MA:R, MAS (17): [ki:la] 'rotted' (intr.)

e. [tsaːkte] 'swim'

f. HA:P, HA:PS (15); JE P, JE PS (17)

g. LOKT, LOKS (22); SC :R, SC :NT (20)

2a. THUN, THANSS (19).

Among the above Bantawa/Limbu pairs, (e) through (g) show K. P. and T in Z forms alternating with K, P, and T respectively in S forms. Since there are no such root finals as [ks], [ps], and [ts] in Bantawa (Table 2), such pairs suggest that some apparent instances of ηs, Ms, and Ns should be regarded as phonetic exponents of underlying Ks, Ps, and Ts respectively. The alternating η, M, and N of examples (a) through (c) and 2, on the other hand, provide phonetic exponents of ηz, Mz, and Nz, versus ηs, Ms, and Ns respectively, on phonetic and morphological grounds.

The total number of supporting pairs for Z versus S functioning as intransitive versus transitive/ causative, or as transitive versus causative, is: η: 7/8; M: 5; N: 2; Ω: 6; K: 1; P: 3; T: 2. for a total of 26/27.

B. Z versus T.

1. Intransitive versus transitive/causative.

My material here comprises 15 (or possibly 18) examples:

   t [jomte] 'starve (him)' [romte] 'parch it'

b. P Z [e:p] '(he) stands'
   t [e:pte] 'stand (it) up'

c. K Z [le:k] (?) 'he licks'
   t [lekte] 'lick it'
d. Đz [juŋe] 'sit down'  ṭ [thaŋe] 'come up'
    K t [jokte] 'mount it'  ṭ [thakte] 'bring (it) up'

e. N z [mina] 'he) thought'
    T t [mitte] 'remember (it)'

f. Ő z [ma:] 'he) got lost'  [i:je] 'laugh, come down'
    t [matte] 'lost (it)'  ṭ [itte] 'laugh at (him),
                 'bring (it) down'

g. Ő z [?ia] 'he felt sleepy'
    P t [?ipte] 'put it to sleep'

h. Ő z [dha] '(it) falls'
    N t [dhante] 'take (it) down'
    Ő z [ma:] '(he) got lost'
    N t [mantu (kje:su:)] '(he) went and forgot (it)'

2. Transitive versus causative.

My material comprises 5 pairs of examples:

a. K z [paŋje]  'wear (it)'
    t [pakte]  'clothe (him)'

b. T z [ware]  'wear (it)'
    t [watte] 'garland/muzzle (X)'
                 [sette] 'tell X to kill'

c. Ő z [tsa:]  '(he) eats (it)'
    N t [tsante]  'graze (them)'

d. T z [kire]  'be frightened of X'
    N t [kinte]  'frighten (him)'

As before, I give Limbu forms from Michalovsky 1979 for comparison:

1b. JEP, JEPS (17)

d. JU, JUKT, THA, THAKT (16)

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7 I should have expected a short vowel [a], here. This present-tense form [tsa:], if heard correctly, is perhaps to be explained as due to emphasis in a contrast situation; cf. Sprigg 1989:101, n. 10. For a final long vowel [a:] in a past-tense intransitive form see [ma:] 'he got lost', in which the length ([ː]) is due to the past-tense intransitive suffix -A, as also in [ky:a] 'it rotted' and [?ia] 'he felt sleepy'.
f. MA:R, MAS: ET, ETT (21); JU, JU:T (15)
g. IPS, IPT (23)
h. THA, THANT (15); MA:R, MA:NT (17)

2b. WA:T, WA:TT (21)
c. CA, CA:TT (20)
d. KIS, KIT (23)

The examples at (1d-e), in which there is an alternation of η with K and of N with T, suggest that [-kt-] and [-tt-] might have developed from *[-ηt-] and *[-nt-] via *[-ηkt-] and *[-ntt-], in which case Ki and Tt in these examples should be treated as reflexes of *ηt and *Nt.

The examples at (1f), on the other hand, suggest that [-tt-] in these words might have developed from an earlier *[-t-], which is what one would have expected the phonetic exponent of ⟨Ot to be, in which case [-tt-] in pairs of lexical items such as these should be treated, as here, as the phonetic exponent of ⟨Ot, though it is otherwise to be regarded as the regular phonetic exponent of ⟨Tt (2b).

The total number of supporting pairs for ⟨z versus ⟨t functioning as intransitive versus transitive/causeative, or as transitive versus causeative, is: M: 2; P: 1; K: 1/2; T: 2; 0: 6/7; η/K: 3; N/T: (?) 1; O/P: 1; 0/N: 3; T/N: 1, for a total of 20 or possibly 23.

C. s versus t.

1. Intransitive versus transitive/causeative.

There are only 6 (or possibly 7) examples:

a. P s [?umse] 'sleep'
   t [?ip-te] 'put X to sleep'

b. T s [tɕheːsje] 'urinate'; [tɕheːn] 'he urinates'
   t [tɕhɛtte] 'urinate on X'

c. Ø s [ʔeːsje] 'defecate'; [bʱeːsje] 'break wind'
   t [ʔɛtte] 'defecate on X'; [bʱɛtte] 'break wind (♀at)

The following Limbu forms, for comparison, are from Michailovsky 1979:

a. IPS, IPT (23)
b. SES, SEʔR (23)
Since there are no such plosive clusters as [ps] and [ts], or single plosives such as [p] and [t] in the \(s\) (prosodic) class of root final (Table 2), it is reasonable to find the corresponding nasals and clusters [ms] and [n] deputizing for them, as in (a) and (b) above. (Cf. also A.1 e-g.) In other words, [ms] and \([eːs]/[n]\), in these \(s\)-piece lexical items, are exponents of \(P\) and \(T\). In other alternating lexical items, however, such as those at A.1.b-c, [ms] and \([V1ːs]\) are exponents of \(M\) and \(N\).

In the examples at (c) above, I have treated the sequence [-tt-] as the phonetic exponents of \(Øt\), but in (b), on the contrary, I have given that same sequence as the phonetic exponents of \(Tt\). My arguments in favor of allowing \(Øt\) and \(Tt\) to have identical phonetic exponents, an admittedly controversial solution to the problem, can be found at I.B and II.B above. An alternative solution would be to treat [-tt-] in the examples at both (c) and (b) as phonetic exponents of \(Tt\), the phonematic unit \(Ø\) being absent from, or unrepresented in, the \(t\) category of root final. \(Tt\) would then be treated as the reflex of \(Tt\) where it alternates with \(Ns\), as in (b), but in those lexical items for which there is an alternation with \(Øs\), as in (c), it would be treated as the reflex of \(Øt\). In other words, I have preferred a solution at the phonological level to a solution through reconstruction, but at the price of allowing identity in phonetic exponency for \(Tt\) and \(Øt\) (Tables 2 and 3).

The number of supporting examples, by phonematic unit, is: 
\(Ø\) (alternatively \(Ø/Øt\)): 4/5; \(P\): 1; \(T\): 1, for a total of 6/7.

2. *Causative versus transitiv/transitive.*

There are also two \(N/T\) pairs in which the grammatical relationship of \(s\) and \(t\) seems to be different from that in (1) above. That is, although the \(t\) form is transitive or intransitive, the \(s\) form is causative:

\[
\begin{align*}
T & \quad [\text{paǐsje}] \quad '\text{make } X \text{ shout}' \quad [\text{kvoǐsje}] \quad '\text{carry for a walk}' \\
\text{t} & \quad [\text{patte}] \quad '\text{shout at } X' \quad [(\text{ləm}) \text{kɔtte}] \quad '\text{go for a walk}'
\end{align*}
\]

In the following \(N\) and \(P\) examples, the \(s\) form is again causative: but the \(t\) form is intransitive:

\[
\begin{align*}
a & \quad N \quad s \quad [(pùː) \, lɔ/ɔĩʃe:] \quad '\text{make } X \text{ get up}' \\
& \quad t \quad [lɔ/ɔnte] \quad '\text{stand up}'
\end{align*}
\]

\[
\begin{align*}
b & \quad P \quad s \quad [\text{θɔmsje}] \quad '\text{have/keep a Dhami [tribal priest]}' \\
& \quad t \quad [\text{θɔptɛ}] \quad '\text{behave like a Dhami}'
\end{align*}
\]
D. \( (t) \) \text{N versus T: intransitive versus transitive.} \\

There is one pair of examples in which both forms of the verb belong to the \( t \) prosodic class. In this instance, the grammatical difference between the two is therefore a function of one phonematic unit versus the other, of \text{N (intransitive) versus T (transitive)}:

\[
\begin{align*}
\text{t N} & \quad [lɔɛnte] \quad \text{'go out'} \\
\text{T} & \quad [lɔtɛ] \quad \text{'bring/take out'}
\end{align*}
\]

III. \text{Directive versus nondirective.}

A. \( Z \) versus \( S \) (nondirective versus directive).

The only candidate for this class in my material is:

\[
\begin{align*}
\text{N} & \quad Z [ʰɛnɛ] \quad \text{‘sacrifice X (to a god)'} \\
\text{S} & \quad [ʰɛ:ʃe] \quad \text{‘set aside X for Y'}
\end{align*}
\]

B. \( Z \) versus \( t \) (nondirective versus directive).

I can support this category with 7 examples:

\[
\begin{align*}
a \quad & Z [dʊɲɛ] \quad \text{‘drink (it)'} \\
& t [dɔɲɛtɛ] \quad \text{‘drink it for X'}
\end{align*}
\]

\[
\begin{align*}
b \quad & K Z [hoɲɛ] \quad \text{‘open (it)'}
\end{align*}
\]

\[
\begin{align*}
c \quad & T Z [laɲɛ, laːɛ] \quad \text{‘take (it) out'}
\end{align*}
\]

\[
\begin{align*}
\text{t} & \quad [lɑtɛ] \quad \text{‘take (it) out for X'}
\end{align*}
\]

\[
\begin{align*}
T \quad & Z [kjɛre] \quad \text{‘break (it)'}
\end{align*}
\]

\[
\begin{align*}
\text{t} & \quad [dɛɛtɛ] \quad \text{‘cut it'}
\end{align*}
\]

\[
\begin{align*}
T \quad & Z [kjɛtte] \quad \text{‘break (it) for X'}
\end{align*}
\]

\[
\begin{align*}
\text{t} & \quad [dɛɛtte] \quad \text{‘cut it for X'}
\end{align*}
\]

\[
\begin{align*}
d \quad & Z [tʊɲɛ] \quad \text{‘dig (it)'}
\end{align*}
\]

\[
\begin{align*}
\text{t} & \quad [tɔtɛ] \quad \text{‘dig (it) for X'}
\end{align*}
\]

I have given my reasons above (I.B) for treating \([-t t-]\) as the phonetic exponent of both \( Tt \) and \( \text{Øt} \), as in (c) and (d) just cited.
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**TABLE 4**

C. *s* versus *t* (nondirective versus directive).

For this category I have only one example to offer:

\[
\begin{align*}
\text{ә̃} & \quad s & \quad [dəŋ̊sje] & \quad '\text{offer a drink to (him)}' \\
\text{ә̃} & \quad t & \quad [dəŋ̊te] & \quad '\text{drink (it) for X}'
\end{align*}
\]

The nine pairs of directive and nondirective examples in (A)-(C) above also all appear to be transitive, except one, the ә̃ example [joŋ̊jo̱]/[joŋ̊te] in (B). These constitute all the examples of the directive-versus-nondirective category that I have in my material; but I suspect that with greater care in collecting the glosses, I might have found more.

I conclude with Table 4, in which I have plotted the number of examples that I can call on to support the functions of *z* as intransitive, transitive, and nondirective; of *s* as intransitive, transitive/causative, causative, directive, and nondirective; and of *t* as transitive/causative, causative, intransitive/transitive, and directive.
REFERENCES


