ASSIMILATION, AND THE DEFINITE NOMINAL PARTICLE IN BALTI TIBETAN

—R. K. SPRIGG

I. Introductory

A noteworthy feature of one of the nominal-phrase particles in the Balti dialect of Tibetan, the definite particle, is that it varies considerably in phonetic shape according to context, being pronounced as [po] in certain circumstances,[1] and as [o] in other circumstances, and sharing, in yet other circumstances, vowel features with the final vowel of a preceding noun, as in (i) [limikpo] 'the key', (smɒnpo) 'the medicine' (ide-mig, sman),[2] (ii) (hrtao) 'the horse', [kha:o] 'the snow' (rta, kha-ba),[3] and (iii) [hrto:] 'the horse', [mju:] 'the man' (rta, mi).

At the grammatical level of analysis the definite particle is a component of the nominal phrase, or, more specifically, of a sub-category of nominal phrase hence termed the 'definite' sub-category of nominal phrase. Where the definite nominal phrase contains more than one word, the definite particle is exemplified in the final word of the phrase, the order of grammatical categories in that word being (i) noun, and (ii) definite particle (and, if exemplified, (iii) the agentive particle [si], the dative particle [la], or some other particle); e.g. [smɐnpo], [phɐnkhjo:], [strʌppɔ], [bu:], [cikposi], [khju:si], [smɐnpola], as in the following sentence examples, in which the nominal phrase has been enclosed in round brackets:

i. [smɐnpo; ga:r jɔt]   Where is the medicine ? (sman)
ii. [(phɐnkhjo:) ci s͠ɔ:] What advantage came from it ? (phan-kh) (y)e
iii. [(de strʌppo) khjõ] Being that bridle. (srab)
iv. [(go-la skespi bu:) nanin sis] The son who was born first died last year. (bu)
v. [(cikposi) dju: zers, - - -]'One said this, - - -' (p. 6).[4] (gcig)
vi. [(de khju: si) khola tapfiin] That dog has bitten him. (khyi)
vii. [(di smɐnpola)] For this medicine - - -. (sman)

The grammatical structure of the one-word, two-word, and three-word nominal phrases in these examples, in which word boundaries are indicated by space in the phonetic transcription, and by semi-colon in the following grammatical analysis, is:

i-ii. noun, definite particle ;

iii. preposition ; noun, definite particle ;

iv. noun, locative particle ; verb, nominalizing particle, genitive particle ; noun, definite particle ;

v. noun, definite particle, agentive particle ;

vi. preposition ; noun, definite particle, agentive particle ;

vii. preposition ; noun, definite particle, dative particle.

In example (iii), (vi), and (vii) the nominal phrase includes a preposition ([de], [di] ; 'that', 'this'), and in (iv) a qualifying nominal phrase containing the genitive particle ; in all such cases the definite particle is obligatory. In examples (i), (ii), and (v), in which there is neither a preposition nor a qualifying nominal phrase, the definite particle links the utterance containing the example with some earlier utterance. For comparison I now give a few examples of words that do not exemplify the definite particle: [khji], [pʰɐnkhje], [smɐní] and [str ɓí], as in the following sentences examples,

i. [khji cigisi khola sɔ taps] A dog bit him. (*khyi*)

ii. [pʰɔɴkhje cᵇ: met] There is no advantage. (*phan-kh (v) e*)

iii. [smɐní bɪɔtpo xɔsa duget] The taste of medicine is bitter. (*sman*)

iv. [strʌbí baxspo lɔxsɔ duget] Leather for a bridle is special. (*srab*)

The grammatical structure of these four words is:

i-ii. noun ;   iii-iv. noun, genitive particle.

My aim, in introducing these sentences containing words that exemplify the definite nominal-phrase particle, together with contrasting examples that do not exemplify it, is not, however, primarily grammatical. It is to propose a phonological analysis that shall deal adequately with the various phonetic forms of this particle, whose diversity must now be evident from the words [smɐnpo], [pʰɐnkhjo:], [str ʌ ppo], [bu:], [cíkposí], [khju : sí], [sm ɐnpola], [bɪc tpo], and [baxspo], in each of which it is present, though in [pʰɐnkhjo:], [bu:], and [khju: sí], for example, it is well disguised.

The method adopted in phonemic analysis for dealing with phonetic variation of the sort exemplified by the definite particle is first to phonemicize the variants, and then, in the subsequent stage called morphophonemics, in which each of the phonemic forms of individual morphemes are related to the others, to treat one of the variant phonemic forms, usually the most complex, as a so-called 'base form', and to derive the remaining variant forms from the 'base form' by processes of simplifica-

tion termed 'assimilation' and 'elision'. A well-known passage in Gleason, 1955, deals with the different forms of the English plural flexion [s], [z], and [iz], as in the noun plural forms *bits*, *bids*, and *fishes* ([bits], [bidz], [fisiz]): 'It is sometimes of little importance which allomorph is selected as the base form. The English noun plural morpheme [-Z_1] has three common allomorphs /-z ∾-s ∾-iz/ which are phonemically conditioned. Any one of these can be selected as the base form. If we assume /-s/ to be basic, we may say that after a voiced sound it becomes voiced, /-z/ ; after s z š ž č ǰ / a vowel /i/ is inserted, and----.

One of the commonest types of morphophonemic change is *assimilation*. This is a label for the situation where some phoneme is more nearly like its environment than is the phoneme sound in the base form. - - - The chance of /n/, an alveolar nasal, to /m/, a bilabial nasal, makes it more similar to /p/, a bilabial stop. The assimilation of /n/ is said to be conditioned by /p/' (pp. 82-3).

A more recent theory, the 'generative phonology' of Chomsky and Halle, has abandoned some of the concepts of phonemic analysis ; but the 'base form' concept has been retained, with change of name to 'underlying representation'. I cannot, unfortunately, illustrate the continuance of this concept in their work from the same material as for Gleason, the English s-plural flexion ; but the following passage makes it clear that they treat certain verb forms as 'base forms' in relation to corresponding nouns: 'from the verbs *permít*, *tormént*, etc., we derive the nouns *pérmit,tó rment* in the next transformational cycle by the substantive rule, the stress on the second syllable being automatically weakened to secondary' (Allen and Van Buren, 1971, p. 89).

Several years of studying the pronunciation of such Indian languages as Gujerati and Panjabi while teaching English at Government College, Lahore, in the twenties aroused the late J.R. Firth's hostility towards the assimilation concept.[5] In one of his earlier publications, 'The use and distribution of certain English sounds', in 1935, he attacked that concept in the following passage: '- - - it is of the utmost importance to investigate the distribution of phoneme alternation in various contexts, or what I have termed *contextual distribution*. If sounds are described, classified, and explained by this statistical contextual technique, most contemporary theories of elision, coalescence, and assimilation will be seen to be confusing and, what is much more to the point, entirely unnecessary' (Firth, 1957, p. 37).

Throughout my career in linguistics I have regarded Firth as my *guru* ; against the general background of his teaching I found no difficulty

in accepting his low opinion of the value to linguistics of 'assimilation', or in following him in his belief that variant phonetic forms of the same lexical item should be given equal status, each being appropriate to its particular 'context', or environment, to the exclusion of the others. When each variant is uniquely appropriate to its phonetic context, it follows that there is no room for the principle of elevating one particular form to the status of 'base torm'; on the contrary, each variant phonetic form should enjoy parity of esteem with its fellows. On the basis of these equal variant phonetic forms of a common lexical item, whether that lexical item be the plural 's'-flexion lexical item of English or the definite-particle lexical item of Balti Tibetan, one can then devise an abstract form, or formula, that is equally representative of each of the variant phonetic forms, and equally remote from each of them. Such an abstraction, a linguistic lowest common denominator, as it were, has come to be known in 'prosodic analysis', the phonological theory that I am applying in this article, as a 'phonological formula'. In a prosodic analysis each lexical item (or lexically separable item), e.g. the four separable items of English *cat-s*, *dog-s*, and *fish-es,* or the three balti lexical items of [cík-po-sí] 'by the one', or the two Balti lexical items combined in [bu:] 'the son', has its phonological formula, and one only. The phonetic features by which a phonological formula is linked to the variant forms by which it is exemplified in utterances are termed its phonetic 'exponents'.

The 'phonological formula' concept is my reason for resisting the the temptation to refer to the Balti definite-particle lexical item as 'po' : for the phonetic form [po], as in, for example, [sm ɐnpo:] 'the medicine', to which 'po' would correspond, is only one of the phonetic variant shapes, a consonant-and-vowel phonetic shape, that this lexical item assumes. Whatever of tunes of the vowel of [bu:] 'the son', or of the first of the two syllabic vowels [u:] of [khju:sí] 'by the dog', or of the second syllabic vowel ([o:]) of [phɐnkhjo:] 'the advantage', also represent the definite-particle lexical item   act   as its phonetic exponents equally with [po] ; and the only difference between them and [po] is the difficulty, or impossibility, of isolating those 'phonetic exponents from the words [bu:], [phɐnkhjo:], etc., in which they occur. That difficulty, though, is no valid reason for giving them a status inferior to the more manageable form [po], as though they were, in some sense, second-class citizens ; on the contrary, the aim should be to devise a formula, a 'phonological formula', to cover all variants on an equal footing.

II. Phonetic exponency

In order to arrive at a phonological formula I shall follow Firth's prescription, quoted above: 'it is of the utmost importance to investigate the distribution of phoneme alternation in various contexts, or what I have termed *contextual distribution*', except for the reference to 'phoneme' alternation, which Firth later abandoned; it is the relations of *sounds* to preceding and following sounds, sounds studied from the point of view of their syntagmatic relations, that I shall be concerned with, the contextual distribution not of phonemes but of sounds and the phonetic features that they are composed of.

There are two main contexts to be considered, (A) the context to which the consonant-and-vowel variant form [po] is appropriate, and (B) the context to which certain vowel features are appropriate. There is no denying that the [po] variant form is the easiest to account for; and, since I have, in any case, to account for all the phonetic forms that this particle lexical item takes, I might as well begin with the easiest one.

A. *The 'consonantal' type of piece* ([-Cpo])

The term 'consonantal' is doubly appropriate for the phonetic context, or phonetic piece of utterance, in which the variant [po] occurs, because this form of the particle matches a preceding consonant ([-C]) as the final of the noun constituent of the word in which they both occur, and also because it is only in this type of piece that the definite-particle lexical item has a consonant ([p]) among its exponential features. The span, or extent, of the piece concerned includes the final sound of the preceding noun syllable ([-n], [-p], [-k], etc.), and, for the particle, consonant and vowel:

consonat : labiality + plosion + voicelessness + non-aspiration,

half—closeness + backness + rounding [-Cpo].

More specially, the consonantal features summarized as 'consonant' ([-C]) here are (with labiality, uvularity, velarity, dentality, alveolarity, and palatalization and retroflexion abbreviated as follows: lab., uvul., vel., dent. alveol., pal., pal., voicelsns., occ., nas., fric., lat., palzn., retro.):

i.	lab.	+ voicelsns.	+ occ.	[ppo]
ii.	,,	+ (voice)6	+ nas.	[mpo]
iii.	uvul.	+ voicelsns.	+ occ.	[qpo]
iv.	vel.	+ ,,	+ fric.	[xpo]

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v.	vel.	+(voice)	+nas.		[npo]
vi.	dent.	+voicelsns.	+occ.		[tpo]
vii.	„	+(voice)	+nas.		[npo]
viii.	alveol.	+voice	+lat.	+palzn.	[lpo]
ix.	„	+ „	+roll		[rpo]
x.	„	+voicelsns.	+fric.		[spo]
xi.	pal.	+ „	+occ.	+retro.	[ʈpo]

e.g.

[de strʌppo] that bride *srab* [di rgɔmpo] this box *sgam* [di hjaqpo]
this yak *g.yag* [di tsɔxpo] one like this *tshogs* [de sinpo] that wood
shing [di snɔtpo] this pot *snod* [smɐnpo] the medicine *sman* [di bɐlpo]
this wool *bal* [di kharpo] this palace *mkhar* [di bɹɐspo] this rice '*bras*
[di gʌʈpo] this knot.

as in such sentences as:

ii. [di rgɔ mpo ɲai in] This box is orus.
iii. [di hjaqpo swi in] Whose is this yak?
iv. [di tsɔxpo khj̃ɔ :] Bring one like this.

Since [po] is the phonetic form of the definite particle that is appro-
priate to the 'consonantal' piece, it could usefully be distinguished
from the other phonetic variants (section B) as the 'consonantal-piece'
form. All the noun lexical items that are associated, or collocated,
with this particle lexical item in the consonantal type of piece ([-Cpo])
could, equally be classified as 'consonantal-piece' noun lexical items:
[strɔp], [rgɔm], [hjaq], etc. This type of piece draws on two sylla-
bles for its features one of which is the syllable containing final [ɔ]
and the other the syllable [po].

B. *The 'vowel' type of piece* ([-ao], [-a:o]; [-v:])

1. *In contrast with the consonantal type*

Like the consonantal type of piece, the vowel type of piece may,
at least in the Skardu dialect, draw on two syllables ([-ao], [a:o]);
but commonly examples of this type of piece draw on a single syllable,
though that single syllable corresponds to two lexical items, one of
which is, of course, the definite-particle lexical item; e.g.

two-syllable piece ([ao], [a:o])
[hrtao] (my) horse *rta* [khao] (this) mouth *kha*
[sna:o] (my) ear *rna-ba* [kha:o] (this) snow *kha-ba*

one-syllable piece ([u:], [ju:] ; [o:],
[bu:] the son *bu* [sɔqbu:] (this book *shog-bu*
[mju:] (that) man *mi* [kursju:] (that) chair *kursī* (Urdu)
[zgo:] (this) door *sgo* [bjafo:] (this) cockerel *bya-pho*
[mjo:] (this fire *me* [phɐnkhjo:] the advantage *phan-kh (y)e*
[kho:] (her) mouth *kha* [sno:(la)] (to my) ear *rna-ba*.

Before leaving these examples there are two points to be made.
Firstly for the two-syllable-piece examples there is a pitch difference
between the short-vowel examples ([-ao]) and the long-vowel examples
([a:o]): the former have a fall in pitch on the first of the two syllables
and the latter a rising-falling pitch. Secondly, the two-syllable examples
are alternative pronunciations of some of the one-syllable examples,
whence the fact that [khao] '(this) mouth' and [sna:o] '(my) ear'
in the two-syllable set of examples are matched by [kho:] '(her) mouth'
and [sno:] (la)" '(to my) ear' in the one-syllable set. My informant
preferred the one-syllable-piece type of pronunciation, as in [kho:]
and [sno:]. Some of these single-word examples are further
illustrated in the following sentences :

bu	[gola skespi bu : nan*in si*ş]	The son who was born first died last year.
shog-bu	[di sɔqbu: *n*ji: *in*]	This book is mine.
mi	] de mju: - ? c̃ : set]	That man has come.
(U). *kursī*	[de kursju: ljaxmɔ met]	That chair is no good.
sgo	[di zgo: cɔt]	Shut this door.
bya-pho	[di bjafo : nji : *in*]	This cockerel is mine.
me	[di mjo:ljaxm bʌren jɔt]	This fire is burning well
phan-kh (y) e	[phɐnkhjo: ci s̃ɔ :]	What advantage came from it ?
kha	[mwe: kho: le:*gi* chɔgɔ jɔt]	Her mouth is too big.
rna-ba	(*n*ji: sno:la tshet)	It is painful to my ear.

Some idea of the sort of contribution the definite-particle lexical
item makes to these noun-and-particle words can be gained by comparing
them with corresponding noun words, in which it is a noun lexical
item that is final in the composition of each word ; so the final features
of that word are those of the noun lexical item, not those of the noun
lexical item in combination with those of definite-particle lexical
item :

monosyllabic	*noun*		*disyllabic noun*	
[bu] son (s)	*bu*	[sɔqbu]	book	*shog-bu*
[mi] man	*mi*	[kursi]	chair	*kursī* (U.)

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[zgo] door	*sgo*	[bjafo]	cockerel	*bay-pho*
[me] fire	*me*	[phɐnkhje]	advantage	*phan-kh(y)e*
[kha] mouth	*kha*	[sna:]	ear	*rna-ba.*

These examples appear in sentences as follows:

bu	[bu bzi jɔt]	There are four sons.
shog-bu	[sɔqbu cɨk khjɔ̃:]	Bring a book.
mi	[mi cɨk ? 5 : set]	A man has come.
kursī (U.)	[kursi cɨk khjɔ̃:]	Bring a chair.
sgo	[zgo cɨk ʃcɔs]	Make a door.
bya-pho	[bjafo cɨk khjɔ̃:]	Bring a cockerel
me	[me spɔr]	Light a fire.
phɐn-kh (y)e	[phɐnkhjo mɛt]	There is no advantage.
kha	[kha zdamse jɔq]	Shut your mouth'.
rna-ba	[sna: bjɔs, le:]	Hey! Pay attention!

If one compares this last set of examples noun-word examples, with the noun-and-(definite)-particle words given just before them, one can set up the following relationships between the syllable-final features of the noun words and the syllable-final features of the noun-and-particle words:

| noun word: | [u | i] | [o | e | a | a:] |
| noun-and-particle word: | [u | ju:] | [o: | jo: | o: | o:]. |

The five short final vowels of the noun word correspond to long vowels in the noun-and-particle word ; and the one long final vowel so far give in a noun word also corresponds to a long vowel in the corresponding noun-and-particle word, but not the same long vowel ([a:] versus [o:]).

The long vowel [a:] is not, however, the only long vowel that can occur finally in a noun word ; there are also [u:] and [o:], and the words in which they occur are characterized by the same rising-falling pitch (or alternatively, a rising pitch) as was noted above for such noun words in [-a:] as [sna:] 'ear (*rna-ba*) and [kha:] 'snow' (*kha-ba*)[7]; e.g.

| [bu:] calf | *be'u* | [phru:] | child | phru [g]-*gu* |
| [co:] rajah | *jo-bo* | [tsho:] | grandson | *tsho-bo* |

as in such sentence examples as:

| [bu: bzi jɔt] | There are four calves. |
| [tsho: tsa:m jɔt] | How many grandsons are there ? |

These words ending in [a:], [u:], and [o:] could, from their pitch behaviour, usefully be considered as disyllabic, and treated as having final [aa], [uu], and [oo].

The relations of these noun words ending in [uu] and [oo] with their corresponding noun-and-definite-particle words seem to show identical final features in both: a long vowel, either close ([u:]) or half-close ([o:]), together with the characteristic rising-falling or rising pitch pattern; in this respect they show a different relationship from noun words and noun-and-particle words like [snaa] and [sno:] (or [snaao]; *rna-ba*) and [khaa] and [kho:]; *kha-ba*) above.

noun word: [uu]
                                [oo   aa]
noun-and-particle word: [u:]
                                        [o: o:], e.g.
be'u .   [de bu: khuri men]   That calf is not his own.
phru (g) -*gu*   [de phru: khwe: in]   That child is his.
jo-bo   [co: sagranin saxset[The Rajah has gone to
                                                   the polo-ground.
tsha-bo   [khwe: tsho: iskulin gwet] His grandson goes to
                                                   school.

To summarize the position thus far, then: if the long vowels [u:], [o:], and [a]: are treated as disyllabic, i.e. as [uu], [oo], and [aa], then the final vowels of the noun type of word are the following five:

a. i.   close back rounded   (u)
    ii   „   front spread   (i)
b. i.   half-close back rounded   (o)
    ii.   „   front spread   (e)
    iii. open front/back neutral   (a)

(the degree of frontness and backness of the open vowel varies with palatality and non-palatality of the preceding consonant, and with nasality and non-nasality).

In order to try and arrive at vowel feature to ascribe exclusively to the definite-particle lexical item one might try to subtract the final features of noun words listed in the preceding paragraph from the final features stated earlier for the noun-and-particle word, which are, it will be recalled:
            [u: ju: o: jo: o:/ao]:
but this would be far from easy. For example, since the only feature that distinguishes [bu] 'son' from [bu:] 'the son' is vowel length, only

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vowel length could, in this instance, be attributed to the definite-particle lexical item; in the case of [kha] 'mouth' and [kho:] 'the mouth', the difference is, again, vowel length, and, added to this, the difference in degree of openness between openness and half-closeness; and, lastly, the difference between [buu] 'calf' and [bu:] 'the calf' appears to me to be nil. On the other hand, such a disentanglement of phonetic exponents may not be necessary: the vowel features can be attributed to the definite-particle lexical item and the final of the noun lexical item combined, without attempting to delimit boundaries. The two lexical items can have an undefined share in the available vowel features, rather as though the vowel features were a joint bank account.

In that case the features to be stated for the combination of definite particle lexical item with noun lexical item are the following vowel features, both syllabic and non-syllabic:

a.	i.	palatal non-syllab;	close		back rounded long [ju:]
	ii.		,,	,,	,,	,, [u:]
b.	i.	,, ,,	half-close	,,	,,	,, [jo:]
	ii.		,,	,,	,,	,, [o:]
	iii.	open neutral short;	,,		,, ,, short [ao:]

e.g.

		monosyllabic noun			*disyllabic noun*			
a.	i.	[mju :]	(that) man	*mi*	[kʉrsju:]	(that)	chair (U.)	*kursī*
	ii.	[bu :]	the son	*bu*	[sɔqbu:]	(this)	book	*shog-bu*
					[ʌbu:]	(that)	calf	*be'u*
b.	i.	[mjo :] (this) fire	*me*	[phɐnkhjo:]	The advantage	*phan-kh(y)e*
	ii.	[zgo :] (this) door	*sgo*	[bjafo:]	(this)	cockerel	*bya-pho*
				̗[ʌco:]	the	Rajah	*jo-bo*
		[kho:] (her) mouth *kha*	[ʌlaqpo:]	(my)	hand	*lag-pa*
				[ʌkho :	(this)	snow	*kha-bao*
	iii.	[khao :] (,,) ,, ,,	[ʌkhaao:]	(,,)	,,	,,

2. *A further prosodic subdivision*: 'close', 'open'

In anticipation of a further prosodic subdivision the phonetic exponents of the vowel type of piece given in the preceding paragraph, and the examples of them, have been listed as either (a) or (b). This division reflects the difference between the vowel feature closeness (section (a); [u:] and the contrasting half closeness feature (section (b)); ([o:], [o]). One of the vowel-feature exponents in the 'vowel' type of piece, the degree-of-openness feature, alternates between closeness (section (a)) and half-closeness (section (b)), whence two sub-categories of 'vowel' piece, termed 'close' and 'open', need to be distinguished.

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Correspondingly, those noun lexical items which are colligated with the definite-particle lexical in its 'closet-piece phonetic form ([u:]) can be classified as 'close'-piece lexical items, while those noun lexical items, on the other hand, which are restricted to the 'open' piece are classified, prosodically, as 'open'-piece ([o:], [ao]); e.g.

a. close-piece: [(mimju:],[sɔq)] bu, (sɔq) bu :], [(bu)u, (bu)u]

b. open-piece: i. [me, mjo:], [(bja) fo, (bja) fo:], [(co)o, (co)o]
 ii. [kha, kho:/khao], [(kha)a, kho: /(kha)ao]

a. *mi, (shog)-bu, (be)-u* ;
b. i. *me, (bya)-pho, (jo)-o* ; ii. *kha, (kha)-ba.*

Every 'vowel'-piece noun lexical item can be put into one or other of these two prosidic cassifications accordingly, as 'close'-piece or as 'open'-piece lexical items ; and the degree of openness of vowel for the definite-particle lexical item is a function of the prosodic type of piece, 'close' or 'open', in which it occurs.

Within the open sub-category of piece of further division has to be drawn to account for the distinction between (i) the type of open piece that has, as its phonetic exponent, a pure vowel ([o:]) and (ii) the type of open piece that alternates a pure vowel ([o:]) with a vowel sequence ([ao]). Again, the noun lexical items that are restricted to the former type, e.g. [me]/[mjo:] *me,* [(bja)fo]/[(bja)fo:] *(bya)-pho,* [(co)o]/[(co)o] *(jo)-bo,* need to be distinguished from the latter, e.g. [kha]/ [kho:]/[khao] *kha,* [(laq)pa]/ [(laq)po:] *(lag)-pa,* [(kha)a]/[kho:]/ [(kha)ao] *(kha)-ba.* In any case, the former type of noun lexical item has, as its phonetic exponents in the noun-word type of piece, one or other of the half-close vowels [e] and [o], while the latter has, in corresponding circumstances, the open vowel [a]. If the latter type is termed 'neutral', or, for easy symbolization, 'ə' the former type can be termed 'non-neutral', or 'non-ə'.

The definite-particle lexical item cannot, of course, be classified like its associated noun lexical items, as consonant-piece or vowel-piece, and, if the latter, as close-piece, open-piece, ə piece or non-ə-piece ; for it occurs in all four types of piece, and is not exclusive to any one type. Only its phonetic forms can be classified by type of piece :

A. 'consonantal' piece: [po]
B. 'vowel' piece ;   a. 'close':   a share in   [u:]
                       b. 'open'; i. non-ə : „   „   „   [o:]
                                  ii.   ə : „   „   „   „
                                                                [o]

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The only phonetic features common to all the phonetic forms the definite-particle lexical item are (i) lip-rounding, and (ii) a degree of openness of vowel that allows of variation between close and half-close according to type of piece. The minimum requirement for a phonological formula is a symbolization that shall cover these two common features, the rest being contributed, in each instance, by the prosodic type of piece; but it is also necessary to take account of comparable contrasting lexical items.

The definite-particle lexical item is restricted, in its relations with preceding lexical items, to intraverbal junction: it can never occupy the initial place in a word. In order to be comparable, therefore, other lexical items must be members of the particle category, and subject to this same limitation. There are seven other particle lexical items. Only one of these seven shares lip-rounding and backness with the definite particle; it is the locative particle [tʊ]/[nʊ]/[rʊ]. Its remaining vowel feature, degree of openness, is constant, being between close and half-close, with some centralization; while the definite particle, in contrast, alternates between closeness and half-closeness under the conditions that I have stated. Consequently these two will require different vowel terms U and O, the phonetic exponents of which are:
U: backness, rounding, between close and half-close, centralized
O: ,, , ,, half-closeness/closeness, by type of piece;

e.g. (locative particle)
[laqtʊ] to hand *lag-pa*; [dʊnʊ] ahead *mdun*; [thʊrʊ] down *thur*.

As far as the consonantal piece is concerned, the definite particle shares labiality, plosion, voicelessness, and non-aspiration with the comparative particle [patse], e.g. [smanpatse[than medicine *sman*, [rhʊppatse] than darkness; but there the resemblance ends, for the comparative particle has those same features in the vowel piece as well, e.g. [ɲapatse] than I *ɲa*, [dju:patse] than this *'di*. These two lexical items cannot, therefore, have the same initial consonant term; and, in fact, the vowel term O proposed above for the sake of a vowel distinction is itself sufficient indication of the [p-] variant appropriate to the consonantal-piece pronunciation of the definite particle as well as of the vowel pronunciation ([o]) and the shared-feature pronunciations [o:] and [u:].

The phonological formula of the definite-particle lexical item is O.

III *Conclusion*

The phonological formula O for the definite-particle lexical item summarizes the sets of features, or the share in a set of features, stated

five paragraphs earlier in accordance with its 'contextual distribution' as proposed by Firth as long ago as 1935. Translated into a diagram it would appear as follows :

$$O$$

	(definite particle)		
consonantal piece	close piece	vowel piece	open piece
			e
		non-ə	
e.g. [strʌppo	bu:	zgo:	kho:]
[bɐlpo	(sɔq bu:	cô:	khao:]
[bɹɐspo	mju:	mjo:	k̂ho:]
[sinpo	(kur) sju:	(ph n) khjo:	(k̂ha)ao]

This summary of mine deals with all the variant phonetic forms of the particle lexical item O, and does it economically, through a total of four different types of piece. It does not need to have recourse to derivation, by rule, from a base form in the manner of Chomsky, or derivation, by assimilation from a base form in the manner illustrated from Gleason in section (I), through a so-called 'substitution' of phonemes.

Since there is not a study of the Balti-Tibetan definite-particle lexical item by Chomsky or any of his followers, I cannot assess the value of my form of statement against a generative-phonology statement of the same data in the light of such criteria as adequacy and economy; but I suspect that prosodic analysis has an advantage over generative phonology as regards economy of statement in that it 'cuts its coat according to its cloth': each variant form of a lexical item is accounted for via the 'piece' of utterance that relate variant to the phonetic context in which that variant occurs. Generative phonologists, on the other hand, seem to have a weakness for over-generalizing, with the result that each such over-generalization has to be corrected by a 'deletion' rule; and every 'deletion' rule adds, unnecessarily, to the complexity of the statement.

Further, prosodic analysis reflects the trained hearer's response to the phonetic data supplied by the speaker, and does not require the hearer to try and guess the speaker's intentions. It is not concerned, in other words, with 'what the speaker of a language knows implicity (what we may call his *competence*' (Chomsky, 1966, p. 7); but if it should, at some future time, become possible to relate the hearer's reaction to an utterance to the speaker's intuition concerning his utterance, I suspect that intuition may well turn out to be closer to the contextually distributed and, therefore, direct and equal relationship of the variant phonetic forms of a lexical item that result from prosodic analysis than to such 'phonological representations', in generative phonology, as result from a chain of process rules transforming a base form.[8]

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NOTES

I. Phonetic transcription is indicated by square brackets; its symbols have the values laid down by the International Phonetic Association, except that [C] and [V] have been introduced to represent, respectively, any appropriate consonant and vowel, and that, in the hope of making things easier for the printer, [c] symbolizes not a voiceless palatal plosive but a voiceless palato-alveolar affricate. Also with the printer in mind the following non-IPA symbols have been introduced:

[?] = glottal plosive; [hr] = voiceless alveolar roll, commonly one-tap; [hj] = voiceless non-syllabic front spread vowel; [*i*] = somewhat centralized front spread vowel between close and half-close, as in both vowels of the English word *Hindi* and the first vowel of the Hindi word *hindī* : [*u*] = somewhat centralized back rounded vowel between close and half-close, as in English *bull*; [*e*] = half-open front spread vowel; [*n*] = voiced velar nasal; [*g*] = voiced velar fricative; [*z*] = voiced palato-alveolar fricative; [*t*] = voiceless prepalatal retroflex plosive; [*s*] = voiceless palato-alveolar fricative; [*f*] = voiceless bilabial fricative.

The Balti examples are of the Skardu dialect, as spoken by Mohammad Zakir Hussein Baltistani, a seventeen-year-old student, as part of six months' research carried out in 1964-5 in Rawalpindi. To those who may be wondering why I did the research in Rawalpindi rather than in Skardu itself, less than two hours' flying time away, I would explain that I was prevented from taking this obviously preferable course by the Pakistan Government, who denied me permission to visit Baltistan.

2. Where it seemed useful to do so, I have added Classical Tibetan forms in italic, for comparison.

3. Pronunciations of the kind illustrated at (ii) are to be heard in Skardu, the capital of Baltistan; but are probably not current in Khapalu, the other main Balti dialect area.

4. It is a pleasure to acknowledge the help that I received from A.F.C. Read, the author of *Balti Grammar*, a ready-made source of examples indicated here by inverted commas and a page reference.

5. The extent to which Firth came under the spell of Indian languages. Dravidian as well as Indo-Aryan, can be measured from the following extract from his list of publications : 'A short outline of Tamil pronunciation', appendix to A. H. Arden, *A progressive grammar of Tamil,* Madras, 1934; 'Phonological features of some Indian languages', *The procedings of the Second International Congress of Phonetic Sciences,* 1935 ; 'Alphabets and phonology in India and Burma', *Bulletin of School of Oriental Studies,* 8 (1936); 'A practical script for India', *Indian Listener,* 1938 ; 'Specimen : Kashmiri', *Maître Phonétique,* 1939; 'Alphabets for Indian languages', in D. Jones, *The problem of a national script for India,* 1942 ; 'Introduction' [on pronunciation and the alphabet], in

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A.H. Harley, *Colloquial Hindustani*, 1944 ; 'Introduction' [on spelling and pronunciation), in T. Grahame Bailey, *Teach yourself Hindustani*, 1950 ; 'Indian languages', *Encyclopedia Britannica*, 1956 ; 'Hindustani language', *Encyclopedia Britannia*, 1957 ; 'Phonetic observations on Gujerati', *Bulletin of the School of Oriental and African Studies*, 20, 1957.

When I visited Government College, in 1964, I found that Firth was still remembered there. Indeed, in an article 'Government College: some reminiscences' in the *Pakistan Times* 'looking forward to the Centenary celebrations' Abdul Majid wrote: 'Among professors of English Mr. H. Y. Langhorn and Mr. J. R. Firth held an esteemed place. The latter's contribution to the improvement of English pronunciation is part of the College tradition and still a continuing influence' (25th Oct., 1964).

6. I have enclosed 'voice' in brackets here because, unlike Burmese, voice is invariably concomitant with nasality in Balti Tibetan, and is therefore implied by it.

7. For pitch features in Balti see 'Lepcha and Balti Tibetan: tonal or non-tonal languages ? ', Sprigg, 1966.

8. Chomsky's base form, or 'underlying form', is not necessarily at as remote a degree of abstraction as a phonological formula ; indeed it can even, apparently, occur in utterances. Underlying forms are said, in Chomsky, 1968, to 'appear in isolation' ; and the fact that 'from the verbs *permit, tormént*, etc. We derive the nouns *pérmit, torment* →──→──the stress on the second syllable being automatically weakened to secondary' (Chomsky, 1963, p. 89) surely must mean that these verbs base forms are audibly stressed on the second syllable. For audible features a phonological formula, on the other hand, relies on its phonetic exponents, in an indirect relationship.

References

Allen, J.P.B. and Van Buren, p., 1971, *Chomsky: Selected Readings*, OUP

Chomsky, N., 1963, 'Formal analysis of natural languages', *Handbook of Mathematical Psychology*, II (for page references see Allen and Van Buren)

1966, *Topics in the theory of generative grammar*, Mouton Firth, J. R., 1935, 'Use and distribution of certain English sounds', *English Studies*, XVII, I (for page references see Firth, 1957)

1957, *Papers in Linguistics* 1934-1951, OUP Gleason H.A., 1955, 1961, *An Introduction to Descriptive Linguistics*, Holt, Rinehart, and Winston Read, A.F.C., 1934, *Balti Grammar*, Royal Asiatic Society, Sprigg, R. K., 'Lepcha and Balti Tibetan: tonal or non-tonal languages ? ' *Asia Major*, New Series, XII, 2, 185-201