TONES IN WAKASHAN

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1. In the summer of 1972 I spent ten weeks in the village of Klemtu, B.C., where I studied the Heiltsuk language. During this period I collected a vocabulary of over 4000 words. My main informant was Mr. William Freeman. The investigation was financed by the Netherlands Organization for the Advancement of Pure Research (Z.W.O.).

The Heiltsuk language, which belongs to the Northern (Kwakiutlic) branch of the Wakashan language family, is spoken in two exclusively Indian villages, Bella Bella and Klemtu, situated on islands opposite the Canadian Pacific coast. These villages came into being at the end of the 19th century, when the surviving members of the Heiltsuk ($Héylzdq^\circ$) tribes gathered together. Today, various dialects of their language ($Héylzdq^\circ ld$) can still be distinguished. Part of the Klemtu population is Tsimshian.

The structure of the Heiltsuk language is largely similar to that of Kwakiutl. Though the language has been innovating in some respects, it also seems to have preserved a number of ancient characteristics. In this communication I shall discuss a few striking features of Heiltsuk phonetics.

2. Heiltsuk occlusives are plain $(b, d, \lambda, z, g, g^{\circ}, \bar{g}, \bar{g}^{\circ})$, aspirated $(p, t, \lambda, c, k, k^{\circ}, q, q^{\circ})$, or glottalized $(\dot{p}, t, \lambda^{\circ}, \dot{c}, k, k^{\circ}, q, q^{\circ})$. Both plain and, more rarely, glottalized occlusives have voiced allophones, but the voiceless variants are more frequent. Word-initially, glottalized occlusives are more frequent than aspirated ones, and aspirated occlusives are more frequent. The fricatives $(l, s, x, x^{\circ}, \bar{x}, \bar{x}^{\circ})$ are voiceless. There is no labial fricative, cf. the old loan word $sd\dot{u}p$ from English *stove*. Palatals and velars are plain $(g, k, k, x, \bar{g}, q, \bar{q}, \bar{x})$ or labialized $(g^{\circ}, k^{\circ}, k^{\circ}, x^{\circ}, \bar{g}^{\circ}, q^{\circ}, \bar{q}^{\circ}, \bar{x}^{\circ})$. The labialized phonemes are distinct from clusters of plain phonemes and w, cf. e.g. $\bar{x}^{\circ} is \bar{g}^{\circ} dl\dot{a}$ 'the other side of the river', $g^{\circ} ds \bar{s} \bar{g}^{\circ} dl\dot{a}$ 'this side of the river',

 $\dot{m}n(\bar{g}w\dot{a}l\dot{a}$ '1 person (walking outside)', $s\dot{k}d\bar{g}w\dot{a}l\dot{a}$ '5 persons (walking outside)', $m\dot{u}\bar{g}^{\circ}w\dot{a}l\dot{a}$ '4 persons (walking outside)', $y\dot{u}tx^{\circ}w\dot{a}l\dot{a}$ '3 persons (walking outside)', $\dot{e}ykw\dot{a}$ 'to win', $qw\dot{a}y\dot{u}$ 'knife for scraping the inner bark of a tree'. The affricates (z, c, \dot{c}) are distinct from clusters of occlusive and fricative, cf. e.g. $ts\dot{a}$ 'to push', ts7it 'to push away', $t\dot{c}\dot{a}$ 'to warm oneself at the stove'. The lateral occlusives are distinct from clusters of occlusive and l, cf. e.g. $m\dot{a}tl\dot{a}$ 'to fly', $m\dot{a}\dot{\lambda}\dot{a}$ 'to wave one's hand', $m\dot{a}\dot{\lambda}l\dot{a}$ 'to lead a person by the hand'. Heiltsuk resonants are plain (m, n, l, y, w) or glottalic $(\dot{m}, \dot{n}, l, \dot{y}, \dot{w})$. Apparently, glottalic resonants are not opposed to clusters of glottal stop and resonant. I write 7 for the glottal stop except before word-initial vowel, where it is automatic.

In contradistinction to Kwakiutl, where no consonant clusters occur at the beginning of a word, initial clusters are frequent in Heiltsuk, cf. e.g. $\hbar \bar{x} s \dot{y} \dot{a} l \dot{a} w t$ 'to pull a boat up a rocky shore', $t \dot{q}^{\circ} \dot{a}$ 'octopus', $t g^{\circ} \dot{a} n \dot{m}$ 'human being', txtxní 'owl', ttxstú 'bulging eyes', qx°á 'to have sexual intercourse', *gklá* 'not fit', *kllá* 'to be amazed', $l\bar{x}^{\circ}lq^{\circ}á\dot{c}w\dot{a}$ 'brains', $tx^{\circ}s\bar{x}\lambda\dot{a}q\dot{a}$ 'to jump over s.th.'. These clusters have apparently come into existence by the loss of short vowels. This loss has also led to the existence of vowelless words, cf. e.g. $ln\bar{x}$ 'native crab apple', $lnt\bar{x}^{\circ}$ 'snot', ll 'dead', $\lambda x\bar{x}s$ 'cross-piece of a canoe'. The latter word is $\hat{\lambda} a x \dot{a} \bar{x} s$ in the neighbouring Haisla language. For the Klemtu word gàgs 'eye' most Bella Bella speakers have ggs. Instead of the Bella Bella word tpk° 'flash-light' Klemtu speakers use sbávú, cf. spá 'to flash', tpá 'to press'. (Cf. also sgávú 'spear' from ská 'to spear'. The suffix $-k^{\circ}$ is a passive nominalizing formative.) Medial clusters are also frequent, cf. e.g. $\hat{\lambda}' \hat{u} \hat{q} q \hat{a}$ 'bald hair', $\hat{d} w \bar{x}^{\circ} \hat{\lambda} x s \hat{y} \hat{d} 7 \hat{l} s l \hat{a}$ 'to pack s.th. on one's back and carry it up to the woods'. Lateral clusters are characteristic of this language, cf. e.g. máñlá 'to lead a person by the hand', mállá 'to swim', màllá 'to stir', llúyá 'still-born'. For word-final clusters cf. e.g. $laqx^{\circ}$ 'sundried berries', λiqx° 'brave', $diq^{\circ}x^{\circ}$ 'deadfall', $nik^{\circ}x^{\circ}$ 'night'. (Such forms are frequent because $-x^{\circ}$ is an alternant of the suffix $-k^\circ$, cf. *làqá* 'to spread berries on a surface', $diq^\circ a$ 'to make a deadfall'.)

3. The most salient feature of Heiltsuk phonetics is the presence of phonemic pitch. Vowels and syllabic resonants are high (') or low ('). Stress is automatic and falls on the first high-pitched syllable of a word, if any. The large majority of words contain at least one high-pitched syllable, but this is not necessarily so, cf. e.g. $t\bar{x}bi\lambda anug^{\circ}a$ 'I pretend'. The tone of a suffix depends not only on the suffix itself but also on the preceding stem, and, what is more, not only on the pitch contour of the preceding stem. The verbs $wa\bar{x}wa\bar{x}a$ 'to smoke', mismisa 'to eat meat', and

myáxmyàkà 'to eat salmon' are on the surface identical formations. But they have a different influence on the tone of the personal suffixes: waxwaxanug°a 'I smoke' and mismisanug°a 'I eat meat' versus myax-myakanug°a 'I eat salmon'. The future tense suffix - λ -, which precedes the personal suffixes, lowers the tone of the preceding syllable: waxwaxaxanug°a'I shall smoke' and $mismisa\lambdanug°a$ 'I shall eat meat' versus $myax-myaka\lambdanug°a$ 'I shall eat salmon'. Cf. also waxwaxaxaxanugaxanug°a 'I shall eat salmon'. Cf. also waxwaxaxaxanugaxanugaxanug°a 'I shall eat salmon'. Cf. also waxwaxaxaxanugaxanugaxanugaxanug°a 'I shall eat salmon'. Another example of pitch lowering before the suffix - λ - is $eyxbi\lambdaa\lambdanug°a$ 'I shall pretend to be good', as opposed to $eyxbi\lambdaanug°a$ 'I pretend to be good' (cf. eyk 'good'). On the other hand, the pitch of a suffix also depends on the suffix itself: duq°la 'to see, look' versus duq°a 'to see, visit'.

The interrelation between the pitch contour of a word and the phonemic shape of its constituent parts is clearly observable in the case of numerals. Heiltsuk, like other languages of the North-West Pacific Coast, uses different sets of numerals in counting objects of different kinds, at least in counting from one to six. There are also corresponding forms for 'many'. I have registered 42 sets of numerals. The number is expressed by the stem, and the kind of object counted by the suffix, e.g. $\dot{m}\dot{n}\dot{c}d\bar{x}$, màcàx, yúdùcàx, múcàx, đéynámcàx '1, 2, 3, 4, many (sticks, trees, logs, bottles, cigarettes, fishing nets)', mnxlá, mal7axlá, yútx°la, múwíxla, qéynámxlà '1, 2, 3, 4, many (dishes, pots, cups, glasses)', mnxsá, malxsá, yútx°sà, múwíxsà, qéynámxsà '1, 2, 3, 4, many (flat objects, halibuts. sheets of paper)'. The stem of '1' is mn- (22 ×) or u- (18 ×), depending on the suffix, with a preference for mn- in counting objects and for u- in counting events. The proper tone of the stem is revealed by the forms containing the vowelless suffix $-\bar{x}s$: $mn(\bar{x}s, md|\bar{x}s, yut\bar{x}^\circ s, mu\bar{x}^\circ s, ska\bar{x}s,$ $dd\lambda' dxs$ '1, 2, 3, 4, 5, 6 persons (in a boat)'. The stem '4' lowers the tone of all following syllables, cf. e.g. $\dot{u}pinix^{\circ}ls$, $mdlpinix^{\circ}ls$, $yutx^{\circ}pinix^{\circ}ls$, $mupinix^{\circ}ls$ '1, 2, 3, 4 days', úpnálàla, malpnálala, yútx°pnálala, múpnalalala '1st, 2nd, 3rd, 4th day of the month', mncaqlá, macaglá, yúdùcaglá, múcaglà '1, 2, 3, 4 boats (travelling)', úphg°ùstíwá, màlphg°ùstíwá, yútx°phg°ùstíwá, múphg°ùstìwà '1, 2, 3, 4 trips (in the mountains)'. Some suffixes have the same tone as the stem, with the exception of the low pitch after '4': mńsgms, masms, yútx°sms, músgms '1, 2, 3, 4 houses', úphx, malphx, yútx°pńx, múphx '1, 2, 3, 4 fathoms', úpńs, màlphs, yútx°pńs, múphs '1st, 2nd, 3rd, 4th day of the week (i.e., Monday, Tuesday, Wednesday, Thursday)'. Other suffixes are marked by a tone opposite to that of the stem: m'nx7hx, màl7hx, yútx°7hx, múx°7hx '1, 2, 3, 4 years', m'nsgm,

màsm, yútx°sm, mús \bar{g} m '1, 2, 3, 4, dollars', mníklbå, màlklbá, yútx°lbà, múk°lbà, qéyklbà '1, 2, 3, 4, many cloths'. Some suffixes change the tone of '1' into low pitch, like $-\bar{x}\lambda a$ and $-\bar{x}sa$ above, whereas others change the tone of '2' into high pitch, cf. málwàlà '2 persons (walking outside)'. The latter suffix has low pitch after '1', '2', '3', '4', but high pitch after '5' and '6': skágwálà, qà λ' ágwálà.

As is clear from the foregoing examples, the phonemic shape of a word form is not always predictable on the basis of its constituent morphemes, cf. e.g. $mdl7d\bar{x}\bar{\lambda}d$ '2- $\bar{x}\bar{\lambda}a$ ' versus $md\bar{x}sd$ '2- $\bar{x}sa$ ' mentioned above. Moreover, the quality of the vowels may depend on their pitch. High ey and aw often correspond to low *i* and *u*, respectively: mn(klbil, mdlklba7eyl,yútx°lbéyl, múk°lbil, qéyklbéyl '1, 2, 3, 4, many blankets', úp'nkstéys,mdlpňkstéys, yútx°pňkstéys, múpňkstis, mdla7áwspňkstéys, yútx°áwspňkstis '1, 2, 3, 4, 7, 8 hundred', úpňstáwt, mdlpňstáwt, yútx°pňstáwt,múpňstùt, qéynámpňstùt '1, 2, 3, 4, many times setting a fish net', $<math>mn\bar{x}\lambda$ áwl, mdl7 $d\bar{x}\lambda$ áwl, yút \bar{x} ° λ áwl, múw $i\bar{x}\lambda$ il '1, 2, 3, 4 times a glass or cup', úpňs $\bar{x}\lambda$ éys, mdlpňs $\bar{x}\lambda$ éys, yútx°pňs $\bar{x}\lambda$ éys, múpňs $\bar{x}\lambda$ is, qéynámpňs $\bar{x}\lambda$ is '1, 2, 3, 4, many trips (behind the village)'. However, this is not always so, cf. èy in mícàqéylá, màcàqéylá, yúdùcàqéylá, múcàqèylà '1, 2, 3, 4 o'clock'. Cf. also í next to éy in mn17ìl, màlíl, yúdùwil, múwil, skà7éyl, qà λ 'à7éyl, qå7éyl '1, 2, 3, 4, 5, 6, many persons (in the house)'.

4. The non-automatic alternations in the tone pattern and the absence of tone in the neighbouring non-Wakashan languages (Tsimshian and Bella Coola) suggest that Heiltsuk pitch goes back to the proto-Wakashan period and has been lost in the other languages of the family. I have noted the absence of distinctive tone in the dialect of Rivers Inlet, which is transitional between Bella Bella and Kwakiutl and very close to Haisla. These observations show that typological and genealogical generalizations are unwarranted before the material of the surviving dialects has been properly investigated.

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