ON RECONSTRUCTING THE PROTO-SALISH SOUND SYSTEM

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0. INTRODUCTORY. There is a lack of agreement on the sound system of PS on two main points at present: (a) the status of PS *r and (b) the labial and labialized velar series. In addition, there still exists doubt on one overall comparative question, to wit, the CS counterparts of the IS uvular resonants ʕ ʕ'. In the present paper an attempt is made to clear up these points. Swadesh's 1952 phoneme inventory is taken as a point of departure, with the following modifications: ē and γ (velar resonant) are added, so are glottalized resonants (these will not concern us further), ʌ is eliminated, the arrangement is changed.

\[
\begin{array}{cccccccc}
p & t & c & k & q & k' & q' \\
\tilde{p} & \tilde{t} & \tilde{c} & \tilde{k} & \tilde{q} & \tilde{k'} & \tilde{q'} \\
\tilde{l} & s & x & x' & \tilde{x} & \tilde{x'} \\
m & n & l & r & y & y & z & w & \mathcal{v} & h & i & u \\
m̆ & n̆ & l̆ & r̆ & y̆ & y̆ & z̆ & w̆ & \mathcal{v̆} & ? \\
\end{array}
\]

0.1 Phonemes r r (as distinct from l l) are found only in part of the Southern IS languages (Cb Ok Cv Sp Cr), and here they have a marginal status, occurring only as C₂ in roots (not suffixes) C₁VC₂(C₃), and this only when C₁ is not a uvular. It is tempting to treat such marginal cases either as remnants or as innovations.

The first road was taken by Kinkade and Thompson (1972, 1974): starting from Swadesh's observation (l.c. 242) that in Th *l>γ but *r>l, and noting that Th has cases of l in positions where the r-languages do not admit r, they regard these additional cases of Th l as going back to *r (the r-languages having eliminated *r in favor of l in the aforementioned positions).

The second road was taken by Kuipers (1973): the distinction l - r is explained as a result of the same "darkening" feature / \ as is responsible for the distinctions a - ā, u - ū, s - ś, c - č as found in several IS languages (distinctions not accounted for in the traditional theory). One should therefore in first analysis reconstruct *l *l rather than *l *r; furthermore, there are clear indications that ś c l are associated with roots which had a darkened vowel, and s c l with roots which had a plain vowel, so that the distinction l - l was originally a matter of positional variation.
L.C. Thompson (1977:40) proposes a revised phonological chart for PS. The labials (*p *p̪ *m *ṃ) are bracketed because they may have been lacking. The labiovelars *kʷ *ḳ *ṇ *ẉ (the latter two additions to the traditional inventory) are regarded as having developed to p̪ m m in all Salish languages except St, where they yielded c ɔ n (and if all St words with p̪ m are borrowings, the bracketed PS labials can be eliminated from the chart). A phoneme *n is tentatively added for theoretical reasons (ibid. 23) -- it could possibly account for the Northern IS velar resonant y and for some unexplained cases of y. The uvular resonants are given as (boxed) *γ *γ̣ *γ̣ *γ̣; in addition there are two laryngeals *ɔ *ɔ̣. One concludes that *γ *γ̣ represent an alternative origin for IS γ γ. Phonemes *r *t are given between brackets. The vowels are listed as *a *i *u *e.

In what follows, sect. 1-3 consist almost entirely of material. Sect. 1 gives examples substantiating the correspondence IS γ γ̣ // CS x x̣. Sect. 2 presents uvular - velar doublets. Sect. 3 contains all-Salish examples of l - l doublets. In sect. 4 a number of conclusions are drawn from the material given in sect. 1-3. Sect. 5 deals with some IS problems of detail. In sect. 6 Thompson's proposed revision of the PS phonological chart is discussed. Sect. 7 contains some concluding remarks.

THE CORRESPONDENCE I.S. γ γ̣ // C.S. x x̣, proposed in Kuipers 1978:fn. 6 is not yet generally accepted (cf. Thompson 1977:14). The set of examples has grown since, and the equation now has a firmer footing.

1 (1) Li ɔis Th ɔvísis (recorded ɔˈvis) Sh ɔis- to shrink (with derivative ɔ̣- ɔs-ɔis-s-m arch one's eyebrows; ɔ̣- ...-s eye) // Sq ɔis- shrink, contract, cramp (with derivative ɔ̣is-qs-am turn up one's nose; -qs nose).

(2) Li ɔen get tough with sb., try really hard Sh ɔn-em to growl // Sq ɔ́n-m Ld ɔ́id-ib to growl, cf. also, with (z)γ instead of n, Li ɔˈaz-ən (inversion) Th ɔaz-ən Cb ɔˈiy-m // Ch ɔˈay- to growl.

(3) Li ɔˈe̥rˈe̥l Sh ɔˈil- lose (contest, etc.) Cb əˈel-p broke, lose Ka əˈal- lose in gambling // Sq əˈe̥l- be lost (of special gift or ability).

(4) Cb tˈhˈil-aʔst-n cut hair Ka əˈl cut with scissors // Sq əˈx-xˈl-qˈ-n cut sb.'s hair.

(5) Sh ɤˈe̥l- glittering Cb ɤˈe̥l bright, shiny, glisten // Cx ɤˈx-xˈl- shiny.

(6) Sh ɤ- to grind // Be ʔiˈx grind, crush.

(7) Sh ɔˈstɨn rattlesnake // Sq ɔˈxtn id., poison.

(8) Th ɔˈiˈw Sh ciˈw- to bleed // Sq ɔˈe-ciˈw girl's puberty.

(9) Cr saˈw to flow // Cx saʔ-sxʷ dew Se sa-sxʷ-úlmixw damp ground Sq sa-sxʷ damp sóxʷa? urinate (semantically cf. Skt dhavate flows Engl. dew).
(10) Li x'aw- Th x'aw- Sh t's- - hard // Be x'aax- Sq x'aax- id.
(11) Li la'aw-1ox make room for oneself Sh li'n- - loose, leaving room // Sq yaax- - free, loose.
(12) Sh cu'aw-t sore // Be cu-cq', cuux- having sores (delabialization automatic).

Additional possible examples involve irregularities:
(13) Li s'ic-em tell a joke // Be x'is-m to play, joke (c - s to be explained).
(14) Sh li'n thaw, open up (of ice in river) // Be x'ay (inversion) Cx x'ax' Se yaax' Sq yaax' Cl caax' melt, where the CS forms have y instead of l (cf. 41).
(15) Th s'uy-t sleep Sh s'uy-t withered, tired s-'uy-m-qn dandelion-type withered flower (-qn head) // Cx x'uw-um-us Se s-xul-um Sq s-x'uy-um grey hair, where the CS forms have l instead of y (cf. also Ld q'ul-ub grey hair, with a deviating initial).

See also exx. 52, 53 and 54.

2 UVULAR-VELAR DOUBLETS. The PS velar (incl. w) and uvular series parallel each other as follows:

\[
\begin{align*}
\text{k} & \quad \text{k} & \quad \text{k}' & \quad \text{x'} & \quad \gamma & \quad w \\
\text{q} & \quad \text{q} & \quad \text{q}' & \quad \text{x} & \quad \text{x}' & \quad \gamma & \quad \text{w}'
\end{align*}
\]

Here examples are presented of words that have alternative forms with members of either series. In a number of cases the alternation has a sound-symbolic value.

(16) UVULAR Cb t-x'aw-x'ul-alq' flute -- VELAR Cb x'aw-x'iw-mn whistle Sh Cb x'iw- to whistle Cw š-x'awʔ-qn whistling swan. -- Conss. of both series in Ld š'aw- to whistle.

(17) UVULAR Cb q'aw- to shove, slide stg. q'aw- p/s-c-q'aw-n-cút-aw to slide (as children playing) -- VELAR Cb k'uw-min-ct crawl on belly Sh k'w- to shove, slide stg. k'iw-lx to drag oneself along the ground k'w-ílep to slide (as children on sledge). -- Conss. of both series in Sh q'aw-lx to creep.

(18) UVULAR Li la'aw-1ox', etc. (see ex. 11) -- VELAR Be 1aw, l1- loose.

(19) UVULAR Li x'aay-x'ay-aqs maggots on head of deer Th x'ec'-x'wáče Sh x'wy-x'wéye maggots Be x'aw-x'i eggs of bluebottle (fly) Ch mox'-x'iy-x'iy centipede-like bug in salmonberries Cz x'aw-x'ay- fly (zool.) Se x'wy-x'ayú black fly Sq ṕaw'ay housefly ṕ'aw'ic maggots Ck ṕ'aw-x'wéye big fly, blowfly ṕ'aw- x'iy dáyá (also x'w-) housefly -- VELAR Li s-x'aw-x'awže Th s-x'aw-x'weće Sh s-x'wy-x'wéye ant Se s-x'aw-x'n-am worm Ck x'aw-x'weye worm in salmonberry Ld šu3e maggots.

(20) UVULAR Li x'ey-t many people dead Th x'ey-t Sh x'ey- Sq x'ay- perish Cz x'ay- miss, be gone -- VELAR Li x'ez- Sh x'ey- disappear.
(21) UVULAR Li -BEGIN_TIP丰 Th Xi?-xey-t steep -- VELAR Sh x1-xal-t steep n-xl-xank steep (slope) Cb x1-xal-t/xai-xal-t steep (bank) Ka sehen steep, possibly also Cr șar difficult, disobedient, annoying.

(22) UVULAR Sh  glyphiconritic fall in the mud -- VELAR Sh  glyphiconritic fall in the snow.

(23) UVULAR Sh t'ukw-up-t explode (tire, firecracker), go off (firearm) Cr t'eq' id. -- VELAR Li t'akw burst open Sh t'ukw-up-t break, burst open (as egg) Cb t'okw-p blow up, burst Sq t'okw's explode.

(24) UVULAR Li q'eqw's small -- VELAR Li k'ikw's Th s-k'is id.

(25) UVULAR Cr sa'w flow Cb sa?-sxw' dev2 Se sa-sxw'-ümix' damp ground -- VELAR Sh t-sw-su?-t (= -swu?-t) dev. Cf. ex. 9.

(26) UVULAR Li n'aywus to sink -- VELAR Sh w'us to dive.

(27) UVULAR Th (Lytton) za'w-zów'-t strong (person) Sh y'w-yu'w'-t intensive, hard (work), violent (disease), strong Cb y'w-yu'w'-t hard (work, rain) -- VELAR Th (Spuzzum) zu?-zów'-t strong (person).

(28) UVULAR Li s-kew wife, female friend -- VELAR Li Sh s-kew Cb nskaw F1 isčew woman's sister-in-law Ch s-caw (Boas: man's) sister-in-law Sq ču'aš wife Cz kuw1 wife, woman.

(29) UVULAR Cb k-sh-aws-n shake (a tree) -- VELAR Sh sey- to shake off.

(30) UVULAR Li s'al-sal strong s'al-ílx make a big effort -- VELAR Sh y'l-yal-t strong Cr s'al firm, strong.

(31) UVULAR Li n-q'olon-étk'e yellow moss Th s-qlid? copper, green Cb q'ød? gall Be q'ød green, yellow Sq q'øy-qi copper -- VELAR Li k'lid? green, yellow k'á?l'us pale in face Th k'lo? gall k'á?l turn green Sh k'á1-t yellow k'le-?ép alder k'á1-alst gall Cb k'rayq yellow k'fit/s-k'ra?kán gold Ka k'á1? yellow Sq k'ul?-ay alder.

(32) UVULAR Cb s-s'aw-s'aw cougar -- VELAR Li s-wú-we Th Sh s-míwe? Cr s-wa? Sq (n-)s-wú?-wu Ck š-x'ówa id.

(33) UVULAR Li q'ól1 Th s'wuy- to light, set fire to Sh q'ów- glittering Cb q'ól1 bright, shiny, glisten Ka ʔó/1/0/10/1 to burn Cx ʔow1-, ʔow1- shiny -- VELAR Li w'ól-wólq'-ús-om lighting Sh ʊl1 to burn w'ól-wól-t shiny s-wól-ás-m (also -ás-m) flower Cb s-wór-ás-m fishing torch Ka ʊ1 to burn Sp wó/ʔu'r id. Cv ʔur(i), ʔur fire Cr g'él burn, blaze g'af be silvery, clear s-g'ar-p-om flower Se s-wil sunshine Ld g'ílíc-ob shine (as fur), luster Ch wól- glitter wól- polish.

(34) UVULAR Li q'ów1 sucker (fish) Sh s-q'ów1 wól lake trout -- VELAR Th s-we-wól fish (other than salmon) Sh s-we-wól fish (generic) wól-m to fish Ka suwé?uí fish, possibly also Se s-wól-tñ Sq s-wól-tñ snipe Ld s-wól-anx' salmon (generic). It is possible that (33) and (34) are originally identical (cf. English "shiner"), cf. also Sh s-wól-wól mica wól-wól snipe Cb wór-wór-iwa?
red-winged blackbird, etc. In that case, the semantic range of this root is comparable to that of IE *bhel-, cf. Russ. belyj white Gr. phlego burn Engl. bleak (1. *pale, 2. a fish), bloom, etc.

(35) UVULAR Li pɔ́w to bump into stg. Th pɔ́w- Sh pɛ́w- to knock, rap -- VELAR Th pw- mín drum Sh pw- to drum Cb pw- mín(-tn) drum Ka pu’m to beat the drum Cb paw’ drum on drum pɔ́w drum on tin.

Though no velar-uvular cons. are involved, the following example exhibits the same pattern:

(36) RETRACTED Sh s-cas-čes-lólse Cb ʂ-čəs-luʃə? hail -- NON-RETRACTED Cb s-čəs-lúson Cb s-s-čes-lúse? id.

Many incidental examples can be added to the above list, e.g., qə́pə́x̌/ qə́pə́x̌ nut, sxʷə́yat/sxʷə́yat mountain goat, xʷay/-xʷay- sharp, q̓tunt/k̓tunt plentiful, etc.

3 DOUBLETS i - i are found all over the Salish area. Often both forms occur in the same language, though not in free alternation. The doublets very probably result from a devoicing of *i. The examples which follow concern words which are found in both IS and CS.

(37) *pi/ə́l -- Sh pil- scatter x-pil-1x disperse (itr., of persons) pal-to smear, smudge Cr pił be scattered, possibly Ka pilʃ to go in, pl. (disperse to homes?), Cx pə́y-it Se pɨ-it scatter Sq pił be smudged pil-án? scatter (ordered things), erase.

(38) *pi/ə́l -- Cr ʃi-pił smashed flat Cx ʃi-it flat ʃi-pə́y? thin layer Se s-pił-it flat ʃi-pił thin (layer) Ck ʃi-ə́t flatten stg. s-ʃi-pə́ł flattened, perhaps also Li n-ʃei people lying around Sh c-ʃei lying state x-ʃei-ʃs exhausted, dead-tired (lit. "laid out") Ka ʃei-ʃə́ut (also pə́l-) to lie, pl.

(39) *mə́l -- Li mlə́mə́n medicine Th mlamm id. Sh mlam- heal, marry, baptize Cb mə́ryám medicine Ka mə́liyə́ drug, medicine Cr mar-in treat for illness Ld bai- cure by a shaman.

(40) *tu/ə́l -- Li tə́l- stretch out a rope tə́l-1ə́x to stand up tə́l- string out a line (from ball), uncoil a line tə́l unravel a rope Th tə́l (tə́l?) to stretch out, extend tə́l- unravel Sh tə́l- to stretch s-tə́l-tə́l-xh-sit-with legs stretched out Cb tə́l straight Cv tə́l undo tə́l- straight Ka tə́l until, unwrap Cb tə́l be straight u:-tə́l-t go directly tə́l undo tor stretch out, extend (as hand) Cx tə́l- to spread out Se tə́l- open stg. fan-wise tə́l-at measure with arms túluk’ unraveled Sq tə́l fathom tə́l-m lengthwise, parallel Ch Cz tu-n to stretch.

(41) *çi/ə́l -- Li cə́l-n-ékt-ə́m shade eyes with hand cə́l-e alike Sh cə́l-, cə́l- same, similar Cb ʔas-cə́l, s-çə́l shade s-cə́l-cə́l, s-cə́l-çə́l shadow cə́l-
Čal-t shady Cr čiľ be outline, shadow (this item shows the connection between the meanings shadow and similar) Be či to cover, shade off Sq čay? be sheltered (from wind, sun, rain) čay?-tn umbrella Ld čal-bid shadow čal-ič-tad umbrella, cf. also Se čay there is no sun s-čay-ít shade(d) with ģ for 1 (cf. ex. 14).

(42) *čy/ůl -- Li čeč cool off čuí-um chilly Th čeč-t Sh čeč-t Cb čeč-t cold čai-n to cool (solids) Cv čač Sp čeč Ka čal-t cold Cr čič weather is cool čar-t feel cold to the touch (stove, ice) Sq čuí- cold Sg čaţi- on get, feel cold. 3

(43) *ki/anč -- Sh kěmč but, only, red. ké-kmeči almost Ck čičmč (be) almost, near.

(44) *koli -- Li koli-q-čen cut with scissors Th kili- cut strips of skin Sh kli-am id., cut anything with shears, saw, etc. Cb kör- cut thin material (buckskin, paper, cloth) Cv kör- to cut Cr čar cut flimsy object with shears Ld čal ripped through ("typical use would be when a fishhook pulled through a fish's mouth" Hess s.v.).

(45) *čul -- Li k'ul-čen Sh k'čēčen Cb k'učiš Ka kunič borrow Cr kut borrow kul lend Be k'ul-t Cx k'čūma Se k'či-ton Sq k'ulčič Ld čul- borrow.

(46) *xwal -- Li x'weč Th (xč-)kveč Sh x'čo-x'weč Cb xowal Ka šu?-šučeč Cr n-čechoči Se šawič Sq šučič Ms xeč Čw ščič Ld ščiči Sg sač Cl suč road.

(47) *qal -- Sh qeč-qičč (red. of -qič) to graze (as bullet) Sq n-qal be in the way, be hit n-qči-naxč run into, strike (an obstacle) accidentally n-qal-s be hit.

(48) *xil -- Li xičt to do stg. Sh xil-m act thus xič-t do stg. thus Cb xač-xičt xil same, similar Ka xačič- to behave in this, that way Cr axil do thus Be xičt to (often) do stg. Ld xččč as if, like, seem.

(49) s-čixʷčič -- Sh s-yxʷčič cut illegitimate child Cb s-čixʷičič brothers and sisters (collectively) Sq s-čixʷčič child, baby.

Cases with initial *t:

(50) *lič -- Li s-čič-čič fish slime Th 1ač-čič get slimy Sh s-lex-čič fish slime Be lič-, čič skinny Cx xčič(-im) Se s-čič skinny.

(51) *tu/ćqcw -- Li tucčw-, loččw- tear off (as treebark) Th šucčw bald, to peel Sh šuččw- pull out, pluck (a bird) šucčw- bald Ka šucčw- bald-headed Cr šucčw skin, pull off šucčw- be bald, bare Be šuččw- skin peels, comes off (de-labialization automatic) Sq šucčw- come off (of skin, bark) šucčw peel bark Cw s-šucčw bark Ch Čz šucčw- bald, peeled.

4 A NUMBER OF CONCLUSIONS can be drawn from the material given in the preceding sections.
4.1 With regard to the universal devoicing of PS *ŋʷ, Bella Coola (exx. 6, 10, 12, 13) parallels all the other CS languages. This important common innovation ranges Be together with the rest of CS, and the isogloss coincides with the one that divides the languages distinguishing gender in articles (CS) from those which do not (IS). There is a third, far reaching difference of a lexical nature: in all of IS numerous names for parts of structured wholes (body, house, geography) are based on a root *km-, of which CS lacks any trace. In view of these facts, the old primary division of Salish as a whole into CS and IS should not be lightly dismissed.

4.2 The fact that Ld šu3e? maggots (ex. 19) forms part of a group of words where forms with xʷ and xʷ existed side by side, this group in turn being part of a general velar-uvular alternation, shows that Ld secondarily changed xʷu into šu. The same development may therefore be assumed for the other cases where Ld has palatals before u: čubō go up landward, proceed away from shore < kʷum, čūtop flea < kʷul-p, čūsed star < kʷusn, čūl- borrow < kʷul-, -čup firewood < -kʷup, also šu1- in Southern Ld šulakʷcup firedrill < xʷul- (cf. Thompson 1977:22-3). The dynamics are clear: in languages where before u the distinction k - kʷ was neutralized, the cons. in a sequence k(ʷ)u could be identified either with k or with kʷ; if with k, then it underwent the changes to which k was subject. In the case of star, Li has the reduplicated formation n-ke-šusn-ət, where the initial phoneme of the root is reduplicated with ke-, cf. the alternative treatment in Th n-kʷə-šusn Ka l-kʷ-šusn. The Li form provides the link between PS *kʷusn and Ld čūsed. As is common in Salish, Ld also has forms from other (micro)dialects, cf. skʷuy mother (Cb skʷuy). The alternative possibilities for the identification of the velar in k(ʷ)u help explain the irregular correspondences of kʷu- and ču- forms in the č-languages (a somewhat comparable case is presented by Engl. path-paths (vl), cloth-cloths /clothes (vl/vd), wreath-wreaths (vd) besides Germ. Pfad; Kleid, OHG rīdan). Compare (a) Cx čuy? young, child (Sh s-kʷuye); (b) Cx kʷusen? Sq kʷusn Ld čūsed star (Sh sekʷusnt); (c) Cx kʷiema Sq kʷuin Ld čūl- Ch čo·ya? borrow (Sh kʷuin Be kʷul-t); (d) Ld s-kʷuy Ch kʷuy mother (Cb s-kʷuy). Cx has č in (a) but kʷ in (b, c); Ch has č in (c) but kʷ in (d); Ld has č in (b, c) but kʷ in (d). Note also that Cr has ču ču in one example each only, and lacks cases of šu.

4.3 Earlier, seemingly contradictory CS correspondences were noted for IS *ŋʷ, cf. Kinkade 1967:233, where on the one hand Cb ḥiy- (<ṣiy) // Ch xa·y-growl (ex. 2) is given as "the best Ch correspondence for a Cb form with an unrounded pharyngeal" -- an opinion which is confirmed --, while on the other hand a correspondence *ŋʷ - w is observed, e.g., in Cb *ŋʷəl bright, shiny // Ch wələ- glitter wələ- polish (ex. 33). In the same way, Nater 1977 notes the
etymologies given in ex. 12 (with a Be uvular) and 18 (with Be w). The facts pointed out in sect. 2 provide the explanation: PS had (remnants of) a velar-uvular alternation, the regular IS-CS correspondences are \( *\gamma w - \check{x}\gamma w \) and \( w - w \), but since \( *\gamma w \) and \( *w \) alternated, we also find the cross-correspondences \( *\gamma w - w \) as in the examples just given, and on the other hand the opposite cross-correspondence IS \( w - CS \check{x}\gamma w \), cf.

(52) Li čéw-én Th čéw- Sh čéw- Cb čaw- Cv ğiâ- Ka čé?u Cr čaw wash // Cx čaw-t wash Se čaw clean (adj.) Sq čaw wash (objects) Cw čaw-at Ch Cz čaw-wash, possibly also Be čaw white LD čaw's bright.}

(53) Th čéw-ix reach for stg. Sh čew-kst-m id. // Sq čaw-am id. A possible connecting link is Li čaw stripe Sh čaw- make a stripe Cb s-caw-âkst fingers Ka *co Cr ca stripe. Due to the infrequency of Li Th Sh \( \gamma \) it is hard to find possible CS cognates here. The Southern IS correspondences are exemplified by Li 1\( \check{\alpha} \)-c-\( \check{\alpha} \)th to cork stg. Sh \( \check{\alpha}y\) - put, stick into Cb \( \check{\alpha}y\) - stab, poke, spear Cr \( \check{\check{\alpha}} \) stab. The uvular correlate of \( \gamma \) is \( \check{\gamma} \), see exx. 29 and 30. A Sq candidate for a cross-correspondence IS \( \gamma // CS \check{x} \) is

(54) Li γæp- Sh γæp- to put up (as pole) γæp tree // Sq xp-ay? cedar.

4.4 Among the 1-1 doublets we find cases with both 1 and \( \check{1} \) in IS as well as CS in exx. 37, 38, 40, 41, 45; the cases with only \( \check{1} \) (and not 1) in CS are 39, 42, 44, 46, 48, 49, 51, those in IS are 43, 47, and these two each concern one word in one IS language only. IS, then, has a stronger tendency to devoicing \( *1 \) than has IS, and though with \( *1 \) it did not become the rule, as in the case of \( *\gamma *\gamma w \), it is nevertheless part of the same general phenomenon of devoicing of resonants, the beginning of which must be old, cf. also the devoicing of \( *\gamma \) to \( \check{\alpha} \) in Cb, and isolated cases like Cb sa?\( \check{x}\gamma w \) dew (see fn. 2). The cases involving \( r \) in the r-languages are 39, 40, 42, 44, and they parallel those that have 1 in the r-languages (41, 45, 46, 48, 49). This by itself suggests that in these languages \( r \) \( < *1 \). In cases like (39) LD bal, (44) LD ca? one could posit a development \( *r > *1 \). But this is impossible for the r-languages themselves: if Cr has (40) tel besides tar, tor, and (42) \( \check{\gamma} \) besides \( \check{\gamma} \) car, then the opposite development \( *1 > r \) is compellingly indicated, as this provides the only explanation for the parallel devoiced forms with \( \check{1} \). Because of the special development of certain instances of \( *1 \) in Th and the r-languages, we shall in first analysis posit as ancestor of \( r \) not \( *1 \) but retracted \( *1 \).

4.5 The cases of parallel forms with velar and uvular cons. are instructive in one more respect. The r-languages do not admit \( r \) as \( C_2 \) in roots with a uvular \( C_1 \). Accordingly, we find Cb k'raya yellow but q'\( \check{\alpha} \)li? gall (31), Cr g'\( \check{\alpha} \)f be silvery, clear but Cb q'\( \check{\alpha} \)f bright, shiny, glisten (33), devoiced in Sh q'\( \check{\alpha} \)f-
glittering. Th cases conforming to this pattern are "oy burn (cf. Thompson 1977:39) versus Sp wi?/u·r id. (33), cf. also Th x?+-y·r steep vs. Sh x?·sid id. (ex. 21; Sh al regularly corresponds to Cr ar, while Sh el corresponds to Cr il, el). Cb has alternative forms here, x?·r-t/x?·t steep (bank); while r is excluded after a uvular C, both r and l are possible after a velar, and the cons. of the retracted form has been introduced into the nonretracted one (cf. the mixed forms with cons. of both series in exx. 16 and 17, also Cr gWel burn besides gWaf be silvery, clear). If Sq is given any weight at all, then here the evidence would point the same way, cf. Sq k"lual?ay alder with l vs. "eyqi copper with y (ex. 31). Thus both Th and Sq witness against an original wider extension of a separate phoneme *r, confirming the conclusion reached in sect. 4.4.

5 SOME I.S. PROBLEMS OF DETAIL. So far we have adduced evidence showing (a) that r of the r-languages goes back to *l, and (b) that originally Th and Sq knew the same restrictions as to the occurrence of *l as obtain in the r-languages. This still leaves open the question (c) whether or not *l was opposed to *l at least in a late stage of PS. It also leaves a number of problems of detail, the most important of which are the occurrence of retracted vowels before 1 in the r-languages and in the neighborhood of s c as opposed to $\xi\xi$, and the distinctive occurrence of retracted vowels after uvulars.

5.1 Cb has developed new retracted variants 1 besides 1 1; in addition, it has r f from the old *l. We consider here those instances of Cb 1 1 which are due to the retracting influence of a uvular. We find Cb 1 1 matched by Th 1 1 in Cb qWli?i gall Th s-q"li? copper, green (ex. 31) and Cb -qWlq/-qWlq Th -e/alq clothes (Thompson 1977:39). Since Cb admits both 1 and r before a uvular (cf. Cb toq- kick, sn-porq-qin hat), the Th suffix cannot be reconstructed as *-arqs (Kinkade and Thompson 1974:25); cf. also Cb x?lxalxn' sober, an inverted form corresponding to Sh loxli? sober 1oXlex smart Th yeXyiX id. Here Cb 1 is matched by Th y, as expected in initial position. The cases where Cb 1 is matched by Th 1 show that in Th, too, an original *l was secondarily retracted by a uvular. Notice, however, that Cb has kept apart the old *l, which became r, and the new 1, whereas in Th sq"li?, -e/alq the uvular-conditioned 1 coincided with the old, retracted-vowel conditioned one. The two developments are parallel but separate.

5.2 The Cv cases of retraction as described by Mattina (1978) are similar to those in other IS languages, except that retracted q is replaced by qa, which is a (phonetic?) innovation, and that Cv has qa also in cases where other lan-
guages have $u$ (o), which is another innovation. In particular, Cv lacks $a < a$ before $r$ (l.c. 158; cf. the elimination of retracted vowels before $r$ in Cb and Sp). But the retracted vowel has been introduced in roots where it did not originally belong, cf. Cv $\check{x}a\check{l}^{-}$ (day)light, which is the same root as in Cb $\check{x}a\check{l}x\check{l}a\check{m}^{w}$ sober Th $\gamma\check{a}x\check{i}x$ smart treated above (semantically cf. Engl. lucid, bright). We find similar cases in Th Ka Cr. A factor which has contributed to the irregular appearance of retracted vowels after a uvular $C_{1}$ is their regular occurrence in the first element of reduplicated forms, cf. the very first Cr irregularity noted by Kinkade and Sloat (1972:31): in Cr $q^{w}am-q^{w}am-t$ be pleasant, etc. the first vowel is the regular reflex of PS $*a$ when a uvular follows (not necessarily immediately); the second one is irregular, and is analogous to the first. A new simplex with an irregular vowel could then appear as a back-formation from such a reduplication. Suffixes containing a uvular can have led to the same non-phonetic development.

5.3 Sh, unlike Ka Cv Cr, lacks distinctive retracted vowels after a uvular initial, cf. Sh $q^{w}ey-m$ to blacken besides Cv $q^{w}ay$ Ka $q^{w}ay$ black; Sh $q^{w}emq^{w}mt$ nice besides Cr $q^{w}amq^{w}amt$ (in Sh only an immediately following uvular causes a nondistinctive retraction). In this respect Cb largely goes together with Sh where full vowels are concerned, cf. Cb $q^{w}ay-q^{w}s$ priest (lit. black-cloak), $q^{w}amq^{w}amt$ good, with a rather than $a$ in the root (exception: ($n$)$q^{w}q^{w}st$ deep).

In Sh roots beginning with a uvular resonant the vowel takes on a nondistinctive darkened coloring, but no such root ever takes a darkened suffix. Only roots with distinctively darkened vowels can trigger the darkening harmony in suffixes. In Sh and Cb are conservative as against Cv, where the new distinctive retraction in $q^{w}ay$ black triggers the retracted vowel of the suffix in $q^{w}oy-$ $q^{w}as$ Black man (cf. Sh $q^{w}y-q^{w}us$ dark-faced).

5.4 In Cr the opposition $1-r$ has a low functional yield. A root $C_{1}el-$ will appear as $C_{1}al-$ if a uvular follows, so that there is an opposition $C_{1}al-Q$ vs. $C_{1}ar-Q$ ($Q =$ uvular). Furthermore, Cr, like Cv, has sometimes introduced the back vowel $a$ in forms with $1$, cf. $\check{x}a$ redhot, $\check{x}a$ spy (vs. $\check{e}l$ lay evenly), $q^{w}al$ be black from burning. With a non-uvular $C_{1}$ we have $a$ be uncomfortably warm, come to a boil (Cb $n-\check{m}el$ lukewarm), potentially opposed to $am$ as in $\check{m}ar-im$ treat for illness, further $\check{c}al$us kingfisher (Cb $\check{c}eris$) as opposed to $\check{c}ar$ be ill, hurt, ache; cf. also $m1-\check{ol}amx^{w}$ soil, earth, where the suffix points to a root with a darkened vowel (confirmed by Sh malt deerlick Ka malt mud, clay, earth). In these cases it is $1$ that has been introduced in roots with a retracted vowel. Similar irregularities occur in Cr words with a $C_{2}$ other than $1$, e.g., in $\check{e}aw$ wash, where the retracted vowel may stem from a uvular form $*\check{ca}x^{w}$ which would correspond directly to CS $\check{ca}x^{w}$- (ex. 50), cf. also $paw$ drum.
on drum besides Sh pēv- knock, rap (ex. 35). Again, the nonretracted cons. was retained (or reintroduced) in Cr g'æl burn besides Cb wør- Sp wi['r (ex. 33). Cr lacks examples of ær (only ar or er) so that this form cannot be opposed to a Cr form *g'ær; but Sh pæl- Cb pær- overflow, spreading of water point to PS *pæl-, while Sq pi- (= pøy-) id., if to anything, points to *pæl-.

Cb has eliminated retracted vowels before r, just as Sh and Ka never phonemicized l (in opposition to l) after retracted vowels. This is an indication that PS opposed plain Vl to retracted Vl as a whole. Since an opposition V vs. V occurs independently of a following l l (cf. Li lɔ̊ Sh lət Cb ləl Cv ləat wet; Th mafe Sh mæpe? Cb mæp bee, wasp; Ka sənosCr snos Cv snæas snot, for CS cf. Cw snæ < *snus fat, grease), it is necessary in first analysis to reconstruct a series of retracted vowels *a *u *i (no plurilingual evidence for *i). The next question is whether the retracted cons. ç § 1 were positional variants of c s 1. It can hardly be doubted that this was originally the case. It provides a simple explanation for the curiously limited distribution of r in the r-languages: r as C 2 developed from *l, which was the positional variant of *1 after retracted vowels, and the latter were excluded after a uvular C l -- hence r is found only as C 2 after a non-uvular C l .

We still find cases where a vowel alternation plain - retracted has a symbolic value, e.g., Li 1ək get deflated, go down (of dough) vs. 1ək get pooped, conk out, Th ʔesiəık figured, spotted, spattered (small pattern) vs. ʔesiəık id. (large pattern), cf. also Cr pew drum on tin vs. paw drum on drum. We also still find cases of pure retracted forms, e.g., Li col- to stretch, Th kəst dirty, ugly, but in many cases the retracted sounds have been replaced by unretracted ones, cf. Th məult pus vs. Li məcoł (u - o); Th məsəiciʔtn kidney vs. Cb moʔuę (s - ș); Th moc crush (Thompson 1977:39) vs. Cb mmuć soft (c - ç). In the last two examples we find in Th mixed sequences os oc which are the counterpart of the Cr mixed cases with al.

As the examples Sh q'wey- Cv q'wey-, etc., and Th moc Cb mmuć, etc., show, the replacement of plain by retracted and of retracted by plain sounds is largely language-specific. The parallel developments mentioned at the end of sect. 5.1 are likewise independent of each other. It is difficult to make a case for a phonemic distinction c s 1 - ç § 1 even in Proto-IS; there is no evidence at all for its existence in PS.

As to Thompson's 1977 revision of the PS phoneme system (see sect. 0.2), little evidence is presented for it, and none of the problems it involves are discussed. Besides the question of St č č ń in part of the lexicon corresponding to p ŋ m elsewhere, one of the considerations which underly the proposal
is that "as more etymologies are worked out, it becomes apparent that clear cases of PS *kw *kʷ are not very common" (p. 22). This in turn is based on the conclusion that Ld forms with ĉu ĉu point to original velars rather than labio-velars (p.22-3). As was pointed out in sect. 4.2, the development in Ld and other ĉ-languages can be explained as secondary. Another consideration is the existence of the velar resonant γ in Northern IS (p. 23), but as the parallel velar-uvular forms relate it to ө (exx. 29, 30, possibly 54) it is unlikely to go back to a nasal.

The main problem the proposal leaves unsolved is presented by the all-Salish cases of kʷ kʷ not only in IS and the rest of CS, but also in St itself. St words with kʷ kʷ which have kʷ kʷ in all known CS and IS languages are CI kʷ in how many (Kuipers 1970 no. 84), kʷatun? rat (no. 82), kʷas get burned (no. 83), kʷen see (no. 85), xʷakʷ pull (Sh xʷukʷ-), ?awkʷ belongings (Cr duʔukʷ be stingy), Sg kʷnas hold, take (Sh kʷen-), sʔkʷaʔíʔws left (hand, side) (no. 41); to these, Sg kʷasən star (no. 79; Ld čusad) may safely be added. Note that here one cannot have recourse to borrowing, as the other Salish languages would have had forms with p̥ p̥ rather than kʷ kʷ. Much larger is the group of St words with kʷ kʷ which have known cognates in CS only, and here have kʷ kʷ in all known instances, e.g., Cl kʷ- demonstr. particle, tukʷ go home, skʷʔis co-parent-in-law, skʷačí daylight, ƛ̓ kʷxən goose, kʷic to butcher, sʔas-xʷaxʷkʷ drunk, Sg kʷekʷi be hungry, skʷe be unable, meʔkʷi be hurt, etc., including cases where no cognates are known to me from the immediately surrounding languages: Sg nəkʷ-əsən nod the head (Se yíkʷusəm Ch náʔkʷusən/níʔkʷ(um)ə), x̂tkʷ/ʔatikʷ to carve (Se x̂tkʷəm id. Cx x̂atəkʷ totempole), Cl səkʷ take (hold of) (Be kʷ pick up a small object; Cx səkʷ pick with a different final cons.).

On the other hand, there are all-Salish sound- and act-imitative roots such as evidenced by Sg pəxʷ Cr tə-peştə to spit (ibid. no. 1), Sg puh- Ka péu blow, pant, breathe (no. 4; cf. Thompson 1977:32), which point to PS *p̥.

Finally, though typological considerations must always take second place to factual evidence, they do add to counter-evidence. A phoneme n̥̄ would be enough of an oddity to require a firm adstruction.

The labial-to-palatal shift in St (which is a "mixed" language in other respects, too)⁹ may well have been typical of part of a language community, such as the Ms sʔamqən group(s) described by Elmendorf and Suttles (p.7f), or the Sg sxʷínəxʷən group mentioned by Mitchell s.v. The shift could have had an external cause, e.g., the use of labrets or a tendency to avoid visible articulations; it could have been characteristic of one of the sexes only. A similar cause may (but need not) have led to the elimination of labials in Ti. The phenomenon is common enough to have earned the German designation Labialscheu;
not having to account for it (Thompson 1977:24) is no argument in favor of the proposal.

CONCLUSION. A reconstructed phoneme system is not only the starting point of a search for wider genetic connections of a language family; it is also a frame of reference within which developments in the separate languages are accounted for. The traditional PS phoneme inventory, with *a *u *i added and *r *t eliminated, allows a reasonable account of the main phonetic developments in the separate languages. In particular, it puts the Th cases with l in positions where the r-languages do not have r in their proper perspective. It should be noted that the reconstruction of a Proto-IS (not PS!) r in root-initial position (Kinkade and Thompson 1974:24) is based on three Th roots in all, viz. 1ap- bend stg. over, 1owa- knock, hammer and 1ox-, 1?ix fishy taste, slimy. For the last of these see ex. 50 and sect. 4.4 above; the second example, as sound-imitative, is given with a question mark by the authors themselves. This leaves only 1ap-, the retracted vowel of which may have given rise to a secondary retracted variant *[l] which did not shift to y (cf. Th sq'il? in 5.1), or the word may be a borrowing, as in all of IS borrowings show a predilection for retracted sounds. On the other hand, the Th 1800-word list (Kuipers 1972) contains ten verbal roots beginning with y- (nine of them matched by Sh 1-), but not a single one with 1-. The Th root 1ap-, with 1- and a retracted vowel, stands out as an exceptional case. The only other evidence given for Proto-IS root-initial *r is Cz yapa: bend down (a branch), "suggesting that PS *r may have developed to Cz y while *l remained 1" (ibid. 28). But in all known cases where the r-languages have r the Cz correlate has 1 rather than y, cf. Cz č̣aḷạṃ kingfisher (Cb č̣aṛís, ibid. 26-7), paḷaḳẉ- pierce (Cr pạḳẉ), yạḷoṃ go around (Sp yīr round, ibid. 23), so that Cz yapa- clearly shows the incidental 1 - y interchange found as an irregular feature all over the Salish area (cf. exx. 14 and 41 above). The evidence even for Proto-IS (let alone PS) initial *r is therefore nonexistent.

It has become a habit to regard the r-languages as conservative because they have two phonemes -- 1 and r -- where the others have one. At the same time, the IS retracted vowels, which cannot be explained by a regressive influence of a phoneme *r, were left out of account in all reconstructions so far. Once this omission is rectified, the splitup of *l into two phonemes, one of them with a narrowly limited distribution, is not at all surprising: there are numerous examples of a phoneme 1 being more strongly influenced by a preceding than by a following vowel, and more by a back than by a front vowel. The onetime existence of a symbolic plain-retracted alternation goes a long way towards explaining multiple correspondences between IS and CS, and partic-
ularly inside IS. At the same time, new problems come into focus. It is at present unclear why roots with retracted vowels in so many cases have ablaut χ/ϕ, cf. *τυ/ʔl stretch, *(s-)χυ/ʔm suck (bone), *χυ/ʔl cold, *(s-)Ϧυ/ʔς wet (snot, grease), *κυ/ʔl yellow, green, gall, *γυ/ʔl burn, *ʔυ/ʔl freeze. Nor is it clear why some of these roots have doublets with m- and n-, cf. Sh moy-/noy- bend, Cb ύυγ/ʔγ Cocr noc soft. These and other questions may get closer to a solution as more lexical material, particularly of IS languages, becomes available.
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Footnotes

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responsibility for the present paper is my own.

The following abbreviations of language names are used:

Be Bella Coola  Cv Colville  Ka Kalispel  Sg Songish
Cb Columbian  Cw Cowichan  Ld Lushootseed  Sh Shuswap
Ch Upper Chehalis  Cx Comox  Li Lillooet  Sp Spokane
Ck Chilliwack  Cz Cowichan  Ms Musqueam  Sq Squamish
Cl Clallam  Fl Flathead  Ok Okanagan  St Straits
Cr Coeur d'Alene  Hl Halkomelem  PS Proto-Salish  Th Thompson
CS Coast Salish  IS Interior Salish  Se Sichelt  Ti Tillamook

The transcription is that of the respective authors, with the usual mod-
erization of Reichard’s (á replaced by e); for Th that of Thompson 1977 is
used. As retracted vowels are important in the discussion, here follow those
immediately recognizable as such: Li Th Sh a o ø (vs. nonretracted e u ø; Sh
ø replaces the symbol ∧ of Kuipers 1974), Cb ø u ø, Ka Cr a o (note that o and
u are graphic variants of the same retracted vowel; a retracted i also occurs,
viz. in Li Th Cb, but it plays no role in the discussion). Sh [a o] are written
e u in positions where they are automatic: immediately before all uvulars
and after uvular resonants. Retracted c s l are written with a subscript point:
č s (Li Th Cb), l (Li Cb). The symbol Y is used for any retracted vowel.

The term uvular is used for all the ten phonemes in the columns of q and
q’ in the chart on p. 1; in part of IS the articulation of the resonants is
pharyngeal (see Kinkade 1967).

2) This form shows an incidental devoicing, cf. also Cb səxʷ-p to drip vs.
Cr səxʷ-p leak. Such cases are rare outside the alternation 1 - ɨ. Sh has ūk-
xi? there besides γi? that tl-γi? from there (parallel to ūk-ɨu? over yonder
besides ūu? there, that, non-present); other possible cases are Li əx cold
(weather) besides əl-úl̓əxe̓ frozen ground and Ka Oγəncút laugh, sg. besides
xʷə- xʷə?ei id., pl.
3) The root *cold may well be identical with the roots *hurt, *smart (Cr *čar, etc.) and *salt, *sour (Cr *čor, etc.), all from an original meaning stinging or the like, but for our purposes the group of *cold suffices.

4) In Kuipers 1974:212-3 the items *km-ekst-m to get a handful (e.g., of berries) and ke-*km-1x to tiptoe, sneak up should have been listed separately, and not under the root referred to here. For the first of these cf. Cb *šom- grab a handful Cr *čim grab some Sq *šom? bite (semantically cf. Russ. kusók piece kus-át' to bite, also Engl. a bit).

5) Alternative identifications of velars or uvulars before u could also become apparent after a change of u to a. As far as I know, HI and Northern St retain labialized velars. A possible example of a delabialized uvular is HI qa? (Li q'u?) water. The only possible example with a velar I have found is Cz káši? star, but I know of no u a shift in this area. One does find other isolated examples of sound-shifts far from the area where they are regular, cf. Sq ?íx'íč maggots (ex. 19) with č for *ý as in Th, or Ld q'ulub grey hair (ex. 15) with q' for x' as often in Be.

6) For the doubtful value of Sq 1 as indicative of a correlate r in the r-languages see Kuipers 1973:5. Where CS cognates have 1, Sq has 1 in two thirds and y in one third of the cases. Hence the evidence -- if any -- of Sq y for *1 is greater than that of Sq 1 for *1.

7) A darkened suffix with a uvular-initial root is found only in the petrified complex q'eq'íčye gills (?). The item xčlos to boil dried salmon was corrected to šqclus. Neither item (both in the appendix Kuipers 1974:296) is quite familiar to the Shuswap speakers that were consulted.

8) Vogt is therefore right -- synchronically as well as diachronically -- in treating Ka vowel harmony as one phenomenon (1940a:19f.; the case žal-t it is cold, in-čol-átš the water is cold is exactly the same as the case i-pás he is bewildered, ps-ap he gets scared. Cv eliminated retracted vowels in roots *C₁al > C₁ar and with them the alternation a i u // a in their suffixes (cf. Mattina 1978:154-5, particularly fn. 5).

9) Cf. the double reflex of PS *k *k; the minority of cases with č č rather than c/s č includes such basic items as Sg če? - make nec different, change čč know, find out, learn čšoč - twist, turn šač cold N. wind, etc. The numerous
cases for which only CS cognates are known (Sg ieč dark čeças long scóêt clever iqelč month ščes island xáče lake, etc., etc.) include a function element like the evidential clitic č apparently.

10) The precise details of this alternation in PS deserve to be the object of a special investigation. An excellent account of the details of similar sound-symbolic processes -- though involving consonants only -- is found in Adelaar 1977:290-2. See also Nichols 1971.

11) For this reconstruction cf. Cr yar be torch Sq yuč burn.