Notes

1 All Colville data were taken from A. Mattina's unpublished fourth version of Colville Dictionary.

2 Two suffixes: -ilx 'motion', -əlx 'plural'

3 The list of cognates is based on Kinkade's 1977 materials.

4 Karen Booker discusses general pattern in the use of number-paired roots in her paper entitled "A Cross-Linguistic Study of Number Suppletion in North American Languages". Here she notes the types of words commonly suppleted, and some constraints on the occurrence of these pairs.

References

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Proto-Salish *γ and the Velar Nasal Problem[1]

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The resonant γ,[2] a front velar fricative articulated with little friction, has been added as a 'latecomer' to the overall Salish phoneme inventory on the basis of its recent 'discovery' in Lillooet(Li), Thompson(Th), Shuswap(Sh), and northern dialects of Okanagan(NOk). Its existence as a Salish phoneme came to light only after detailed research on these northern languages of the Interior uncovered this exceedingly rare sound.

Earlier studies on Salish comparative phonology by Boas and Haeberlin (1927), Vogt (1940b), Swadesh (1952) and Reichard (1958) dealt very little with the northern Interior languages, and it is therefore not surprising to find a complete lack of reference to γ in their studies. Interestingly enough, Boas' comparative Salishan vocabularies (APS manuscript) show forms for at least two words now known to contain γ: 'tree' and 'lynx'. He transcribes γ as either r or ɣ (= x, i.e front velar), e.g.

(1) Th, Li *cγe'p; Sh (s)cγe'p : 'tree'[3]

Boas MS., item 265:
Li cEra'ap
Th cira'p
Sh tsEra'p
Ok tcire'p

(2) PIS *smγa'w 'lynx'[4]

Boas MS., item 176:
Li sEmɣa'u
Th sEmEra'u
Sh sEmr'a'u

Kuipers was the first to recognize γ as a Salish phoneme, and he also posited it as a Proto-Salish (PS) phoneme in 1970 on the basis of its occurrence in Shuswap. In describing his proposed PS phoneme inventory, he writes:

> 'γ (phonetically related to y in the same way as, e.g. Dutch v to labiodental w) is found in Sh[uswap] only; in the other interior languages it has merged with y.' (Kuipers 1970:48)

In the same year Watkins' (1970) dissertation shows γ as a phoneme in a northern dialect of Okanagan (NOk). Shortly thereafter Lillooet was added to the list of languages having γ, followed by Thompson. Thompson was at first thought to show a reflex 4 for PS *γ, with γ occurring as a fronted allophone of 4 in the environment of high vowels and y. After directing special attention towards elicitation of this rare sound, however, contrasts became apparent and γ was raised to phonemic status (L.C. Thompson, p.c.). In addition, a number of the Th roots containing γ were found to have cognates in other northern Interior languages; e.g. Th yeγ (PS *l > Th y), 'insert' and Sh leγ, 'poke' (additional examples in appendix).

Understanding of γ increased as more and better materials became available. Kuipers (1974) suggested Southern Interior cognates for Shuswap forms with γ in the comparative Salish data included in his Shuswap dictionary, e.g. Sh γal, 'strong', Coeur d'Alene ǰaɬ', 'firm'; Sn (s)cγe'p, 'tree', Colville (SOk) cii'p, 'tree'. Later, Kuipers (1976, 1979) formally outlined the reflexes

for PS *γ in the Interior languages, e.g.

	PS *γ
Li, Th, Sh, NOk	: γ
Ka, Cm, SOk	: y
Cr	: ǰ

Incidentally, the change of PS *γ > y > ǰ in Cr parallels the change of PS *y > Cr d; Vogt (1940b:15) recognized the Ka y : Cr d correspondence in his brief but insightful comparative southern Interior Salish study. It is important to note that in the proposed PS *γ > *y > Cr ǰ the original PS *y must have already shifted before the PS *γ > intermediate Cr *y. There was probably an intermediate stage or so in the PS *y > Cr d shift, i.e. *y > *dy > d. Ps *γ, on the other hand, may have moved directly to a palatal stop, i.e. Cr ǰ.

Reflexes of PS *γ for Coast Salish, however, have been, and continue to be, elusive. Two possible correspondences have been suggested, both of which are based on single forms. The first suggestion was a PS *γ : CS y correspondence, based on the word for 'coyote'/'lynx', e.g.[5]

(3) PS *smγa'w) : 'lynx'/'coyote'

INTERIOR		
Sh	semγe'w)/smeγe'w)	: 'lynx'
Th,Li	smγe'w)	: 'lynx'
NOk	smyáw	: 'coyote'
SOk	(smya'w	: 'coyote')
Sp	smye'w	: 'coyote'
Ka,Sp	(s)kwtisemiye'	: 'cougar'
Cm	smya'w	: 'coyote'
Cr	smiyi'w	: 'coyote'
COAST		
Ld (Coast)	sb(i)ya'w	: 'coyote', fox

This term, however, seems more likely to have been a borrowing into the Coast language Lushootseed. Mattina and Montler (1978:327) mark it as a borrowed termed in their Colville dictionary (SOk) (perhaps due to the unexpected a-vowel?). In Coeur d'Alene, one would expect a ǰ rather than a y as the reflex for PS *γ, so it is probably a loan there as well. Kalispel kwtisemiye' 'cougar' contains kwtí'n 'big' and semiye'; the second morpheme is probably cognate with NInt smye'w(') 'lynx' and the original PIS meaning was probably also 'lynx' (Lynx canadensis?).[6] The other Kalispel form smye'w 'coyote' is either a borrowing or reflects an early semantic shift from the original 'lynx'. This is discussed below. The fact that more commonly used words already exist for 'coyote' in the Kalispel dialects having smye'w (spi'lye' < Nez Perce or Sahaptin; snč)ele''/snč)ele'p with cognates throughout the Interior), increases the suspicion that smye'w is a borrowed term.

Borrowing of animal terms is not surprising when one considers that the different Salish peoples occasionally used common grounds for hunting and gathering, and there would surely have been many occasions on which common flora and fauna would have been discussed. Even a cursory look at Salish animal nomenclature points to extensive borrowing of terms. In the case of smye'w), it probably was originally an Interior term for 'lynx' which underwent local semantic reinterpretations.[7] In Columbian it probably became 'coyote', another common medium-sized predator of the Plateau which shows some physical similarity to the lynx, a somewhat 'dog-like' feline. The occurrence of sb(i)ya'w, 'coyote' in Coast Salish Lushootseed could then be traceable to Columbian, a language with which it shared a linguistic border and some contact (in spite of the intervening Cascades). The Colville-Okanagan, Coeur d'Alene, and Kalispel forms could also be explained as borrowings from Columbian.

The second correspondence (not a direct reflex) proposed for PS *γ is ɣ, again based on a single form (Kuipers 1979:8):

(4) PS *γa'p : 'stand', 'vertical'

INTERIOR		
Li, Th, Sh, NOk	: γe'p	'stand', 'vertical'
Li, Th, NOk	: sγe'p	'tree'
Sh	: (s)cγe'p	'tree'
SOk	: yi'p	'standing'
SOk	: cyi'p	'tree'
COAST		
Sq	: ɣpa'y'	'cedar'
Ld	: ɣpa'y'ec	'cedar'
Kl (borrowing)	: ɣpa'y'	'cedar shakes'; 'dried cedar'
Kl (native)	: ɣčá''č+č	'(red) cedar'
Cx	: ɣa'pay	'stick'

The connection of IS γ with CS ɣ draws on Kuipers' (1979) uvular-velar doublets hypothesis, which advances the suggestion that uvulars and velars were in some kind of sound symbolism relationship in PS. PS *k and *q may been appeared in alternate forms of the same root, with perhaps *q denoting a larger item and *k a smaller one (Sahaptin and Nez Perze to the south of Salish show this kind of k-q sound symbolism; cf. Rigsby and Silverstein 1969:56; Nichols 1971). The parallel variation for the resonants would have been *ƛ and *γ, and since the CS reflex for *ƛ is ɣ, one may find CS forms with ɣ that would correspond to the (missing) *ƛ partner of the attested *γ. He thus suggests use of the 'large' uvular partner of the root to refer to what is on the Coast a large tree. The semantic connection is not unreasonable. If the *γap meant something like 'long cylindrical object stands sticking straight up from the ground' (as it does seem to), then it is not difficult to imagine different languages (i.e. IS and CS) making the same logical assignment to trees of this description. The CS word may have meant something like 'large stand erect-tree', with the augmentative form of the root *γap, 'stand erect' and the lexical suffix -a'y), 'plant/tree': *ƛap-a'y).

It is important to note in considering this example, however, that the uvular-velar sound-size symbolism elsewhere in NW America has been found to be sporadic, not general, although in some languages it is found to be quite common (Nichols 1971). ɣap is apparently also limited in its occurrence to this single word in CS.

These two things taken together weaken the case for a PS *γap : CS χp(-a'y') etymology considerably.[8]

A search for further examples has yielded a few possibilities:

(5) Cowlitz
sle:χn' 'earring' (perhaps to be analyzed s-le:χ-n')
NOM-poke/pierce-ear
cf. Sh laγ 'poke'

This could be cognate instead with the element li'χ occurring in Th li'χ=xn, 'foot' and li'χ=kst, 'hand', which seems to mean something like 'fringe'.

(6) Songish
χac 'lake', 'pond', 'swamp' (cf. Ld : χa'čʊ' 'lake')
Th γəK 'high-water'[9]

As long as the matter of the Coast reflexes of a PS *γ remains uncertain, the status of the reconstruction will be troublesome. Neither one of the proposals offered thus far can be viewed as satisfactory considering the lack of solid confirming evidence from the Coast. It might be argued that the PS *γ was simply lost in the Coast languages. Again we need convincing cognates. This paper includes an appendix giving all roots or stems containing γ, which may aid in identifying possible cognates in the Coast languages. It is of course possible that all forms involving PS *γ were simply lost in the CS languages; γ is certainly rare enough where it does occur (in the NInt languages).

Thompson (1979) hints towards an alternative source for the NInt γ and its SInt γ/ʔ counterparts - a PS *ŋ. In discussing the possibility of a PS *ŋ, he writes (Thompson 1979:716):

> 'Etymologies thought to contain PS *γ but showing inappropriate reflexes in certain languages may well reflect a *ŋ. And the rare Proto-Interior *γ may reflect the same element.'

Thompson appears to point to γ as an intermediate Proto-Interior Salish (PIS) phoneme which would correspond to the reflexes of PS *ŋ on the Coast. How would this fit into the overall PS sound system? What would the reflexes of this PS *ŋ be in CS languages? These are questions which must be considered. Before turning to these, however, comments on Thompson's 'hint' by Kuipers (1979) need to be addressed.

In the same article in which he proposed the PS *γ : CS χ correspondence, Kuipers critiques some of Thompson's ideas, in some cases apparently misunderstanding some of the reflexes of Thompson's revised PS sound system.[10] In connection with the suggested PS *ŋ he says:

> 'A phoneme *ŋ is tentatively aided for theoretical reasons-- it could possibly account for the Northern IS velar resonant γ and for some unexplained cases of y. The uvular resonants are given as *χ̇, *χ̇', *χ̇ʷ, *χ̇'ʷ, in addition there are two laryngeals *ʜ, *ʜ'. One concludes that the *χ̇, *χ̇' represent an alternative for IS γ, γ.' (Kuipers 1979: 2)

> 'Another consideration is the existence of the velar consonant γ in the Northern IS, but as the parallel velar-uvular forms relate it to ʜ, it is unlikely to go back to a nasal.' (ibid. 12)

Kuipers' first comment requires some correction. Thompson's uvular resonants become pharyngeals in the modern Interior languages, i.e. ʜ, ʜʷ, ʜ', ʜ'ʷ. The PS pharyngeals, *ʜ, *ʜ', he proposes were lost in all languages except Okanagan. These are reconstructed on the basis of retracting roots in the Interior languages. Thompson's PS *χ̇, *χ̇', then, are not possible alternatives for the NInt γ, γ'. NInt γ, γ' are reflexes of his PS *ŋ, *ŋ'. Kuipers' second comment assumes that he has made a strong case for the uvular-velar doublets hypothesis. So far as *γ/*ʜ for Proto-Salish, the hypothesis seems to be based on the single case discussed above.

Returning now to the questions of the place of PS *ŋ in the overall PS system and the reflexes of PS *ŋ in CS, we observe here a good deal of open-ended speculation.

Thompson's tentative suggestion of a PS *ŋ (it is listed with a query in his PS phoneme chart) is added theoretically (as Kuipers points out) as a logical counterpart to what appears to be a more motivated PS *ŋʷ. The PS *ŋʷ has probable reflexes m and ŋ in Salish, and because a labialized consonant is assumed to be more marked than a its plain counterpart, a system without plain *ŋ seems somewhat suspect typologically; this leads to speculation about what may have happened to an expected parallel *ŋ. The *ŋʷ is part of a PS labio-velar set Thompson (1979) proposes, ŋʷ (ŋ'ʷ) kʷ and k'ʷ to account for the odd correspondences of m, m' and p, p' in some languages to ŋ, ŋ' č, č' (respectively) in Straits languages. Kuipers finds fault with the proposal of these labio-velars, especially the PS *ŋʷ.[11] After pointing out forms in Straits which he considers problematic in considering Thompson's proposal, he states:

> 'Finally, though typological considerations must always take second place to factual evidence, they do add to the counter-evidence [i.e. evidence against Thompson's proposed PS *kʷ, *k'ʷ, *ŋ, *ŋʷ]. A phoneme ŋʷ would be enough of an oddity to require a firm adstruction.'

Acceptance of the PS *ŋ and its labialized counterpart *ŋʷ will of course be met with a good deal of skepticism. This skepticism has as its source some unconscious prejudices or tacit assumptions on how proto-systems should look. First, there seems to be a definite prejudice that velar nasals do not make for very good proto-phonemes; i.e. instances of ŋ (and ŋʷ) are best treated as secondary developments (e.g. ng > ŋg > ŋ with loss of g). Part of this attitude no doubt comes from Indo-European scholarship, where ŋ can be shown to be a secondary development in the languages that have it. Second, labialized consonants also seem to be considered lesser candidates for proto-phonemeship.[12] This may stem from notions on markedness; i.e. labialized consonants are considered to be rather marked

and therefore unlikely candidates for inclusion in proto-systems, or simply from the experience that with familiar languages such elements seem to function as clusters.

It is also true that proposals for new proto-phonemes usually are met with resistance. Scholars are reluctant to tamper with what has been established. Algoquianists will not touch Bloomfield's PA *p, even though there is the possibilty of it being improved upon, considering the reflex in Arapaho/Atsina is č; maintaining Bloomfield's reconstruction indicates a highly marked unconditioned *p > Ar/At (> k) > č (this is discussed below). Indo-Europeanists are not content with the unnatural p,t,k,kʷ / b,d,g,gʷ / bh,dh,gh,gʷh stop system; yet, new suggestions are met with cool reception.[13]

Perhaps it is time to question some of these tacit assumptions. First, the prejudice concerning PS *ŋ's right to proto-phonemeship is addressed, showing that such a PS phoneme is reasonable in in light of data found in other Amerindian languages. Second, the notion that (proto-)systems lacking labials are oddities is questioned, as Thompson's proposal of PS *ŋ, *ŋʷ is necessarily affected (adversely) by this notion. Third, distribution of ɣ in languages neighboring the Salish linguistic area is studied as a possible explanation of how a proposed PS *ŋ may have become ɣ as a reinterpretation due to areal influence. Fourth, irregularities in the sound correspndences in certain Salish languages are presented, which may bring additional support to the PS *ŋ, *ŋʷ proposal.

There are several cases of phonological irregularities in certain Amerindian languages outside Salish which point toward ŋʷ as a means of explaining anomalies. Campell (1976) proposes an underlying /ŋw/ in Hueyapan Nahuatl to account for what he considers an anomalous [ŋ] - [v] alternation. Although /ŋw/ never surfaces as [ŋw], Campell argues for its existence at the underlying level based on an apparent parallel with an underlying /kw/ accounting for a [k] - [w] alternation, in addition to other supportive phonological evidence he finds in the language.

Morgan (1980:9-11), in his thesis proposing a distant genetic relationship between Kootenay and Salish, suggests a 'special sound correspondence' between Kootenay m/n, w and Salish *ŋʷ. He adds, however, that there is internal evidence which points to /ŋʷ/ as an earlier Kootenay phoneme, commenting (11):

'The peculiar alternation between /m/ and /n/ in certain morphemes in Kootenay cries out for some sort of explanation or an internally reconstructed phoneme having both nasal and labial properties, but which is distinct from /m/. The total lack of [ŋ] in any form of Kootenay phonology and the internally evident likelihood that an earlier form of Kootenay had labialized velar and uvular consonant phonemes make */ŋʷ/ a candidate for such an internally reconstructed phoneme, even without reference to reconstructed Salishan phonology.'

Other puzzling sound changes concerning labial and velar (nasal) correspondences can be found in the proposed Proto-Uto-Aztecan system (Voegelin, Voegelin, and Hale 1962).

P-UA *w > TÜbatulabal and Hopi ŋʷ

P-UA *m > Southern Paiute ŋʷ

The conditioning factors given for such changes are obscure.

The Tubatulabal and Hopi change was supposedly conditioned by a preceding a high nasalized vowel (in the proto-language). A question then arises as to the origin of this proto-nasalized vowel. Perhaps a labio-velar (*ŋʷ) might be seen as a reasonable alternative here. Munro (1968) suggests Proto-Uto-Aztecan *w as a possible source for Luiseño ŋ. Again, a P-UA *ŋʷ might be seen as an alternative.

Another case where ŋʷ might be considered as a proto-phoneme is Athabaskan; Leer (1979) proposes Proto-Athabaskan *ȳ and *w̄, with *ȳ showing reflexes i, ɪ, n, and ŋ (voiceless) and *w̄ presumably being lost (no reflexes were directly given nor could any be inferred from his material). Here, too, ŋ or ŋʷ might be seen as reasonable alternatives. After all, how different is a ȳ from a (front velar) ŋ or w̄ from ŋʷ articulatorily or acoustically?

Turning now to the notion that phonological systems lacking labials are oddities, one finds that systems or proto-systems lacking labials are perhaps not as odd in North America as one might expect, considering that both Proto-Athabaskan (Krauss 1964, Leer 1979) and Proto-Iroquoian (Mithun 1979) are reconstructed without labials. Proto-Caddoan might also be added to the list; cf. Chafe's (1979:222) comment concerning the proposed Proto-Caddoan *p > Wichita, Kitsai w, kʷ (unconditioned change):

> 'It is of course possible that the original sound was *kʷ rather than *p, in which case Wichita and Kitsai have preserved the earlier situation and the other languages have innovated.'

Tlingit, of which the genetic connection to Athabaskan-Eyak will presumably be established (cf. Krauss 1964), also lacks labials. Haida, too, is weak in labials. Reference to these languages or language families north of Salish territory is presumably what Thompson (1979: 716) alludes to in his comment [after proposing labio-velars for Proto-Salish instead of labials]:

> 'This would fit interestingly with other languages in the area which are weak in labials.'

Problems exist with proposed proto-labials and their labio-velar reflexes in other languages. Proto-Algonkian (Bloomfield 1946) *p > Proto-Arapaho-Atsina *k (Goddard 1974, Haas 1978), developing further to č in that language; Proto-Algonkian *p corresponds to p, k in its distant Californian relative, Yurok (both go back to Proto-Algic, where most scholars would presumably reconstruct a Proto-Algic *p?).

PA	*pepo•n	Yurok kipu•n	'turn'
PA	*pyem	Yurok kelom-	'winter'

(Haas 1978: 254, 255)

The first case, PA *p > Arapaho, Atsina (> k) > č involves an unconditional change. The change of Proto-Algic(?) *p > Yurok k would presumably be conditioned by a front vowel. Conditioned changes of the second type are understandable; Tibetan p > č and Latin p > Roumanian č, k in palatalizing environments are similar changes.[14] Unconditional changes of p > k, however, are strikingly odd, and firmly documented diachronic changes of this sort appear to be nonexistent in the world's languages.

ɣ is found in a number of languages to the north of the

Salish linguistic area, i.e. Athabaskan, Coast Tsimshian, and Eskimo-Aleut, and this may be important in the development of Salish γ. Sherzer (1976:34) gives γ as a trait of all dialects of Eskimo and 'perhaps all languages of the Western Subartic.' While his statement may be an over-generalization concerning the Athabaskan languages of the area, γ has been recorded in at least Kutchin, Dogrib, Slave, Chipeweyan, Tanana, Yukon Ingalik, Hare, Clilcotin, Sarsi, Carrier, and Ahtena (inferred from Hoijer 1963, Krauss 1964, Sherzer 1976, Rice 1977, and Cook 1977). Perhaps others can be added to the list. Sarsi, Chilcotin, and Carrier border on the NInt Salish languages to the north; all have γ. It would also be interesting to know if the Athabaskan enclave of Nicola had γ, as it must have had some effects on the NInt Salish languages. Sapir (1931), Hoijer (1963), and Kraus (1964) do not reconstruct a Proto-Athabaskan *γ; but Leer (1979) does reconstruct it. It is impossible at this time to say anything about relative chronologies between the NInt γ and a putative Proto-Ath *γ or modern neighboring Chilcotin, Carrier, and Sarsi γ.

It is significant, however, that γ occurs in these languages to north of Salish, paralleling the occurrence of γ in the NInt; and that γ is not found in languages in any areas to the immediate south or west of Salish, again paralleling the lack of γ in SInt and Coast Salish.[15]

Assuming then that a labial-less PS system is reasonable and that a PS *ŋ could have become a γ in NInt due to areal influence, consideration must be given to the development of PS *ŋ outside of the NInt languages. It is perhaps reasonable to posit a Proto-Interior Salish *γ with reflexes NInt γ and SInt y, ǰ (with the exception of γ in NOk, which belongs to the southern subgroup)[16] Evidence from Thompson (River) Salish would seem to support this, where γ is being replaced by y. This may be traceable to borrowing from a SInt language (SOk?) or younger bilingual Thompson-Englishspeakers replacing rare γ with more common y. Certain root doublets, however, point to a sound change in progress, e.g. cʾəγ and cʾəy: 'erect long cylindrical object' (Thompson, Thompson, et al In preparation: 233, 234).

What are the reflexes of PS * ŋ on the Coast? A number of possibilities exist.

1. *ŋ could have vocalized in unstressed syllables where it fell between consonants , as is the case for m and n in a number of modern languages; it could have then been reduced from such unstressed syllables, along with many other unstressed vowels.
2. *ŋ could have been fronted to n; this would parallel the fronting of k, kʾ > č, čʾ). Possible examples of this may be:

Saanich:	χʷəʾŋ	'fast'
Thompson:	χʷəʾn(-t)	'fast'
Klallam:	čʾaʾŋ)-t	'come back home'
Thompson:	pʾəʾnʾ)-t	'return (home)'

The Th root χʷən commonly occurs with the immediate aspectual suffix -t; this may be the same element in the second Thompson form, which always has final -t. An assimilation of a PS *ŋ > n/__(-)t is not hard to imagine in these cases. The case is further strengthened by the Thompson root χʷəy, which appears in just a few derivatives; e.g.

χʷy-eʾkst-e Do it fast!

χʷy-eʾkst-m-t-m We did it fast

χʷy-uʾcn kn I eat fast
χʷi-χʷy-uʾcn They all eat fast

(Note also that P-UA *ŋ fell together with *n in several Uto-Aztecan languages; e.g. Papago, Nahuat, etc.)

3. *ŋ could have been fronted early with a loss of nasalization to *y, in which case its reflexes would be Ld dz, St č, other CS y.
4. *ŋ could have been fronted to y after *y had shifted to Ld dz and St č, in which case it may account for those 'unexpected' instances of y in Ld and St.

We need, then, to check the NInt forms containing γ against forms in various Coast languages, keeping in mind these new possible reflexes: n and y (and Ld dz, St č). We also need to consider carefully all forms in Straits languages involving labials; some are obvious loans, but it may yet be possible to discover complementation between the palatal stops and velar ŋ on the one hand, on the other, labials in words that appear not to be loans.

The argument for a PS *ŋ, along with Thompson's labio-velar set may come down to the theoretical approach one takes towards reconstruction of proto-systems. Should one reconstruct 'natural' looking proto-systems with unnatural rules to account for modern reflexes? Or should one reconstruct 'unnatural' looking proto-systems with natural rules to account for modern systems? Kuipers (1979) seems to prefer the first course, i.e unconditioned change of PS *m > m, ŋ; PS *p > p,č. Thompson (1979) seems to prefer the second course, i.e. PS *ŋw > m, ŋ; PS *kw > p, č. What might tip the scale in favor of the second course is the following notion: doesn't it seem logical that languages would move from less natural systems to more natural ones - and by natural rules?

Footnotes

[1]This paper was written as part of a seminar on comparative Salish at the University of Hawaii during Spring Semester 1981. I am grateful to the seminar members, Anatole Lyovin, Mariana Maduell, Claudine Poggi, Joan Romick, and Terry Thompson. Their comments and suggestions were helpful in improving both the content and organization of this paper. I owe a special thanks to L. C. Thompson, the seminar's 'chief', for his generous guidance throughout all phases of researching and writing this paper. My research on the Salish languages has been generously supported by the Melville and Elizabeth Jacobs Research Fund and the National Endowment for the Humanities.

[2]γ is used throughout the paper for both γ and γ'. γ' is found in the modern languages only as a secondary phoneme, e.g. Th smγe'γ'u' 'lynx kitten' (diminutive).

[3]The Li and Th forms for 'tree' may not be directly comparable with the Sh and NOk forms for 'tree'. The Li and Th words seem to be composed of a s-nominalizer and the root γe'p, 'to erect s.t.'. In the Sh and NOk forms the (c) may be a prefix before the cognate root γe'p, but this is not certain. Another possibility might be a weak root cəγ plus the lexical suffix -e'p 'bottom'.

Sources for the data cited are as follows: Sh Kuipers (1974); NOk Watkins (1970); SOk Mattina and Montler (1978); Th Thompson and Thompson (In preparation); Li Lyovin, field notes; Ka Vogt (1940); Sp-Ka Carlson (In preparation); Cm Krueger (1967); Cr Reichard (1939a); Ld Hess (1976); Kl Thompson and Thompson, field notes; Sq Kuipers (1967, 1969); Cz, Kinkade (In preparation); Sg Mitchell (1968).

[4]Kuipers (1976:12) gives PS *s-mγ-a'w' : 'lynx', 'coyote'. It is proposed more conservatively here as a PIS form with the meaning 'lynx'. The etymology of the form has probably been lost. It is perhaps related to the NOk root məγ, 'fasten' and the Th lexical suffix -e'w' found in: q'wy-e'w' : 'to pick berries'
ripe-?

[5]Kuipers (1976:3) advanced the suggestion of PS *γ > CS y, as well as the *γ > SINt y. He writes: 'Only northern IS retains a full complement [of PS resonants], elsewhere γ > y.' Thompson (1979:714) echoes this suggestion, stating PS *γ was 'perhaps y on the Coast.' The example on which the suggestion was based was Kuipers' PS *s-mγ-a'w' 'lynx/coyote', showing up as Ld as sb(i)ya'w 'coyote'.

[6]Ka 'cougar' : kwtu'n - səmiye'(w) > kwtisəmiye'(w)
'big' 'lynx'
//kwtu'n// > kwtuy /__s; V > Ø (reduction); y > i
kwtu'n > kwtuy > kwty > kwti
I thank Barry Carlson for bringing this to my attention.

[7]The modern distribution of the lynx (Lynx canadensis) coincides nicely with the aboriginal NInt liguistic area (Ingles 1965: 389; Cowan and Guiget 1965). This may indicate that the term *s-mγ-a'w' was not a PS word but one coined by coastal Salish moving into the Interior upon encountering the novel feline. The bobcat (lynx rufus) has a much wider modern distribution, taking in the whole of what was the aboriginal Salish area. The proposed PS *p'k'əm 'bobcat' (Kuipers 1976:12) is well-attested on throughout much of Salish. The term for 'lynx', on the other hand, appears to be lacking or language specific throughout Salish other than the NInt, and this may indicate the 'lynx' (Lynx canadensis) was not a familiar animal to the Coast and SInt Salish peoples. The details concerning these two felines have yet to be worked out. Sources often prove to be of little use, because the term 'lynx' is used for both felines; this is similar to problems with vocabularies that do not always differentiate fisher, marten, and weasel.

[8]If ɣ is indeed the correct Coast reflex for PS *4, then the reflex of PS *γ might also be devoiced; so x, s, and s could be possible CS reflexes to check against NInt γ.

[9]Here the augmentative-diminutive pattern would appear to be reversed; i.e. γək suggests a more augmentative notion, while Sg ɣac, Li ɣa'ču' are relatively colorless or tend toward the diminutive.

[10]For direct comparison of the protosystems proposed by the two authors they are cited together here:

Kuipers (1979)

p	t	c	k	q	kʷ	qʷ			
p'	t' x'	c'	k'	q'	k'ʷ	q'ʷ		a	
	+	s	x	ɣ	xʷ	ɣʷ		ə	
m	n l	y	γ	4	wˢ	4ʷ	h	i	u
m'	n' l'	y'	γ'	4'	w'	4'ʷ	'		

Thompson (1979)

(p)	t	c		k	kʷ	q	qʷ	ʔ
(p')	t'	c' x'		k'	k'ʷ	qʷ	q'ʷ	
		s +		x	xʷ	ɣ	ɣʷ	h
(m)	n	r l		ʔŋ	ŋʷ	γ	γʷ	4
(m')	n'	r' l'			ŋ'ʷ	γ'	γ'ʷ	4'
				y	wˢ			
				y'	w'			
				i	u			
				ə				
				a				

[11]Thompson first proposed the labio-velar set to account for these correspondences in 1965 in a paper read at the 4th CAIL, Denver. Suttles (1965) independently called attention to the same correspondences, which he attributes to original labials; extant labials in Straits languages, he says are all due to borrowing. Rankin (1974) points out that the labio-velar to bilabial shift is fairly common

in the world's languages. It occurs in Roumanian (< Latin), Welsh and Breton, Oscan-Umbrian, Ancient Greek, Alabama-Kosati, Caddo and Choctaw-Chickasaw among others. Proto-Uto-Aztecan *kw > Papago b can be added to this list (Voegelin, Voegelin, and Hale 1962:48).

[12]Note, however, that Haas (1978) gives kw as a consonant in her 'basic core for North America'.
e.g.

p	t	č	k	kw	ʾ
m	n				
	s				h
		y			
w		l			

[13]Hopper (1973) proposes a distiction of plain, ejective and murmured stop series in PIE as an alternative to the traditional voiceless, voiced, and voiced apirated series, respectively. This serves to make the PIE stops look more like a 'natural' system; e.g. instead of the traditional t, d, dh he proposes t, tʾ, d (d = murmured stop).

[14]I am indebted to Anatole Lyovin for information on Tibetan p > č change ; the similar Latin p > Roumanian (some dialects) k,č is discussed in detail by Rankin (1974).

[15]Swadesh (1953:35) proposes Proto-Wakashan *γ, *γʾ, in spite the fact that these have not come down in any of the modern languages. This would have implications for a the greater areal picture. Unfortunately, He offers no evidence in the way of reflexes for PW *γ, *γʾ or sample etymologies. He presumably bases the reconstruction on some irregular alternations caused by the 'sonantizing influence of certain suffixes' (n - x, y; ibid.: 36, cf. also Sapir 1938). Considering the lack of supporting data, the proposal for PW *γ, *γʾ must be considered only tentative and scarcely compelling. Thus, the incidence of γ remains solely to the north of Salish, paralleling its occurrence in the NInt languages, while it is lacking in all areas neighboring the CS and SInt languages.

[16]Morgan (1980:10) gives a 'special sound correspondence' of Kootenay y : Salishan γ. This parallels the PIS *γ > SInt y (and ǰ) shift. Kootenay probably occupied an area south and west of its present or even pre-contact' location, which would give it an affiliation more with the SInt than the NInt linguistic area. It should also be noted that a putative Proto-Kootenay-Salish *ŋ could logically have developed to Kootenay y either independently or as part of a later 'wave' across the whole family area - a spread which, however, did not affect Northern Interior dialects of Okanagan, where the areal influence was inducing (or had already resulted in) the shift of *ŋ to γ.

Appendix

1. PIS *ləγ 'pierce'
Sh ləγ 'put in'; 'poke'
Th yəγ 'insert tight'
Li ləγ 'insert' (ləγ)-c-əʾn) : to cork s.t.; with secondary glottalization)
NOk ləγ 'stab'; 'sting'
Cm liy 'stab', poke, spear
Cr lej 'pierce'; 'prick'

2. PIS *γaʾp 'erect'; 'vertical'
Sh γeʾp 'to put up'; 'to stand s.t. up'
Th γeʾp 'erect'
Li γeʾp 'to put up'
NOk γeʾp 'long object stands'
SOk γiʾp 'standing'

3. 'tree' (presumably etymologically connected with 2)
Sh (s)cγeʾp
Th sγeʾp
Li sγeʾp (Lyovin); cγeʾp (Kuipers)
NOk cγeʾp
SOk cəyiʾp, cyiʾp

4. PIS *smγaʾw(ʾ) 'lynx'; 'coyote'
Sh semγeʾwʾ)/sməγeʾwʾ) 'lynx'
Th smγeʾwʾ) 'lynx'
Li smγeʾwʾ) 'lynx'
SOk smiyaʾw 'coyote'
Cm sɣmiyaʾw 'coyote'
Ka-Sp kʷti-səmyeʾw 'mountain lion'; 'cougar'
Ka-Fl kʷti-səmiyeʾ 'mountain lion'; 'cougar'
Ka smyaʾw 'coyote'
Cr smiyiʾw 'coyote'

5. PIS *γal 'strong'
Sh γl-γal-t 'strong'
Li 4l-4al 'strong'
SOk yəʔ 'push s.t.')
Ka elʾ) 'to try hard'; 'make an effort'
Cr ǰarʾ 'firm'

(Cm yər-min 'push')

6. PIS *təγ
Th təγ 'besprinkle'
NOk təγ 'water flows'
SOk təγ 'water runs'
Ka tiʾn-uʾleʾxwʔ 'Spring' = 'melt ground'
Cr tʾaǰʔ 'pour liquid' (glottalization?)
timʾ)ʔ '(snow) melt'

7. PIS *γe(ʾ)ʔ
Sh γiʾ 'this'

Ka ye 'this'

8. PIS *γən?
Th γən 'shiver'
NOk γan 'itch'

9. PIS *səγ
Sh səγ 'shake off'
Th səγ 'aspirate; blow with mouth'
Cm k-sḫ-a'w)-n 'shake a tree' sáḥ-n 'I shook it (off)'

10. PIS *γec? 'hawk'
NOk γe'cγc 'hawk'
SOk yy)i'cye 'hawk'

11. Additional Shuswap forms containing γ:
a. ceγ 'burn' Cm ciy- 'fire, build a fire'
b. peγ 'cool s.t. off'
c. γ'al 'evening'
d. t)γi'-n-s 'to compete with s.o.; to doubt one's word'

12. Additional Thompson forms containing γ:
a. c)əγ 'vertical' ? in Cm nkčaẏháw̓asxn̓ 'ladder'
b. γək 'high-water'
c. γəs 'begin to get dark' e.g. 'es-t-γə's-e : 'it's just beginning to get dark'
d. γət 'numb'
e. γət 'stick blade in'
f. kəγ 'sweep'

13. Additional Northern Okanagan forms with γ:
a. γoy 'burrow' e.g. γoy-xo'tn : 'badger' Cm yəx̣ʷyəx̣ʷútxn
b. məγ 'fasten' e.g. mγ-me'n : 'safety pin' Cm yəm- 'pin'

14. Addition Coeur d'Alene forms with ǯ:
a. ǯam 'pin'; 'brace'
b. ǯax̣ 'mark by scratching' Cm yəx̣- in yə́x̣lʼəxʷtn 'spike-toothed harrow'
c. ǯay)ǯiy)(-t) 'be ugly'; 'homely'; 'ugly'

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