

Integrating sound symbolism with core grammar: The case of expressive palatalization

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Factbook

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1. Secondary palatalization

1.1 Southern Estonian babytalk

Babytalk in *Southern Estonian* (Finnic, Uralic) is characterized by extensive palatalization, which affects both non-coronals (a) (except [ʔ h v]) and coronals (b). On most consonants, palatalization is realized as addition of secondary articulation (while [ts] can shift to either [tsʲ] or [tʃ]). Depending on the dialect, palatalization can be realized “stronger” on word-final or word-initial segments. Notably, palatalized non-coronals are more limited in distribution, occurring before /i/ and word-finally; while palatalized coronals can also occur before back vowels. Many babytalk lexical items exhibit free variation between (plain or palatalized) sibilant fricatives, coronal stops, and affricates, indicative of a strong tendency to affricativization (c). This process can occasionally affect [k] (via [kʲ]). In adult South Estonian speech, palatalization is contrastive in coronals only, being limited to word-final position. (Based on Pajusalu 2001: 86-92).

- (1.1) a. [tibu] → [tʲibo]~[tsʲippʲ] ‘chick’
 [kirp] → [kʲirbu] ‘flea’
 [kakkʲ] ‘meat’ (AS *liha*)
 [kukro] → [kukkʲ] ‘piggyback’
 [piim] → [pʲippʲ] ‘milk’
- b. [lutt] → [luttʲu] ‘dummy’
 [kardohkas] → [kaidʲo]~[kattʲu] ‘potato’
 [jænøs] → [jænʲo]~[nænʲo] ‘bunny’
 [tillokano] → [tsʲillʲo] ‘tiny’
 [orikas] → [orʲo]~[orʲø] ‘barrow’
- c. [susi] → [susʲo]~[tsʲytsʲo] ‘wolf’
 [silml] → [sʲimm]~[sʲimmʲ]~[tsʲimm] ‘eye’
 [kʲiisʲo]~[tʲiitsʲu]~[tsʲiitsʲu] ‘kitty’ (AS *kass*)
 [sysar] → [tsytsa]~[tsʲitsʲæ] ‘sister’

1.2 Kildin Saami diminutives

In the *Kildin* dialect of *Saami* (Finnic, Uralic), diminutives are formed by adding the suffix [-a], accompanied by palatalization and degemination of the stem-final consonant. The process targets

consonants of all places – labials, velars (a), and coronals (b), all of which acquire secondary palatal articulation. Palatalized consonants are phonemic in the language. (Based on Kert 1971: 83-87).

- (1.2) a. [fab**b**] → [fʊ**bʲ**-a] ‘salmon’
 [suv**v**] → [suvʲ**-a**] ‘smoke’
 [nɛ**mm**] → [nɛ**mʲ**-a] ‘name’
 [tɔ**gg**] → [tɔ**gʲ**-a] ‘ceiling’
 [ji**ŋŋ**] → [ji**ŋʲ**-a] ‘ice’
 b. [t**udd**] → [t**udʲ**-a] ‘bullet’
 [k**uss**] → [k**uzʲ**-a] ‘fur-tree’
 [m**ann**] → [m**anʲ**-a] ‘month’
 [to**ʰ**] → [to**lʲ**-a] ‘fire’
 [m**urr**] → [m**urʲ**-a] ‘tree’

1.3 Russian hypocoristics

In *Russian* (Slavic, Indo-European), hypocoristics are formed by the truncation of original names, often accompanied by palatalization of stem-final *plain* consonants. Stem-final *palatalized* consonants tend to retain palatalization. Only coronals, however, get palatalized or retain their original palatalization (a). Non-coronals do not get palatalized or lose their original palatalization (or shift to the hypocoristic ‘default’ sibilant fricative [ʃ]). Among the coronals, the trill [r] shows some vacillation: in masculine names it is often depalatalized or palatalized optionally. The resulting palatalized coronal consonants are phonemic. While the language contrasts plain and palatalized labials (e.g. [tʲ**ema**] ‘theme’ vs. [pʲ**emʲ**a] ‘tribe’), palatalized velars are marginal and do not occur stem-finally. (Based on Soglasnova 2003: 68-70; see also Stankiewicz 1957).

- (1.3) a. [stʲ**epan**] → [stʲ**op**-a] [jerʲ**emʲ**ej] → [jerʲ**om**-a]
 [tʲ**ixon**] → [tʲ**ix**-a] [anʲ**ikʲ**ij] → [anʲ**ik**-a]
 b. [vʲ**italʲ**ij] → [vʲ**itʲ**-a] [vadʲ**im**] → [vadʲ**-a**]
 [i**van**] → [i**vanʲ**-a] [vʲ**enʲ**iamʲin] → [vʲ**enʲ**-a]
 c. [j**urʲ**ij] → [j**ur**-a]
 [i**gorʲ**] → [i**gor**-a]~[i**gorʲ**-a]

1.4 Greek babytalk

In *Greek* (Greek, Indo-European) babytalk, consonants are noted to be “strongly palatalized”. This appears to refer exclusively to coronal obstruents acquiring secondary palatal articulation before front and back vowels (a). In some lexical items, dental or alveolar fricatives [ð z] shift to palato-alveolar [ʃ] (b). Neither palatalized coronals, nor [ʃ] are phonemic in Greek (although the former may occur allophonically before front vowels in some dialects). (Based on Pareskevas-Shepard 1985: 25-27).

- (1.4) a. [ps**omi**] → [sʲ**omi**] ‘bread’
 [ok**to**] → [otʲ**o**] ‘eight’
 [d**zidziki**] → [zʲ**izʲiki**]
 [θ**elis**] → [sʲ**elis**] ‘you want’
 [kimi**θ**ume] → [kimisʲ**ume**] ‘we’ll sleep’

- b. [luluði] → [luluzi]~[luluʒ] ‘flower’
 [akuzi] → [akuʒ] ‘bear’

1.5 Japanese sound symbolism

In the sound symbolic stratum of *Japanese* (Isolate) vocabulary, palatalization of consonants is associated with ‘childishness’ and ‘uncontrolledness’. Palatalized variants of labials, velars, and the flap [r] have secondary palatalization, while palatalized variants of anterior coronals [t d s n] are posterior coronals (alveopalatals) [ʃ dʒ ɲ]. The usual structure of mimetic forms with palatalization is a reduplicated CVCV root. Only one consonant per root gets palatalized. This is typically a non-rhotic coronal (in roots with coronals and non-coronals or with two coronals). (Based on Hamano 1986/1998; Takehi et al. 1996; see also Mester & Itô 1989; Alderete & Kochetov 2009; Kurisu 2009). Alderete and Kochetov’s (2009) dictionary survey of mimetic reduplicative CVCV roots revealed a strong preference for the palatalization of coronal obstruents (81% of all forms) compared to coronal non-rhotic sonorants (11%), as well as for coronals in general (92%) compared to non-coronals (8%) and /r/ (0%).

- (1.5) [ʃoko-ʃoko] ‘moving like a small child’
 cf. [toko-toko] ‘trotting’
 [katʃa-katʃa] ‘the sound of keys hitting against each other’
 cf. [kata-kata] ‘the sound of a hard object hitting the hard surface’
 [pʰoko-pʰoko] ‘hopping around in a childish bobbing motion’
 cf. [poko-poko] ‘making holes here and there’

1.6 Polish diminutives and hypocoristics

Polish (Slavic, Indo-European) diminutives exhibit a complex set of alternations, some of which can be attributed to regular phonological palatalization, while others appear to be exclusively expressive. Among the latter, are changes of stem-final fricatives and affricates [s z x ʒ tʃ] to palatal fricatives [ɕ ʒ] before diminutive suffixes -o, -a. These changes are noted to be “frequently encountered in ... ‘baby talk’” (Szypra 1989: 167-168, 1995: 32). Similar changes appear in hypocoristics (Cyran & Szymanek 2010: 14), but seem to affect almost any stem-final consonant (1a). (Alternatively, -ɕ in these cases can be regarded as a hypocoristic suffix: Łubowicz et al. 2006). There is also evidence that in recent diminutive formations, expressive palatalization takes over ground from the regular phonological palatalization, particularly in cases of alternations that are not well-established in the lexicon (Czaplicki 2014ab). For example, the posterior coronal /s/ prefers the diminutive suffix -ik (with the change to [ɕ]) over -ik or -ek (which do not trigger palatalizing changes). Similarly, most anterior coronals and labials take -ik becoming palatal(ized), while most posterior (retroflex) coronals and velars take -ik or -ek, resisting palatalization. In addition, the palatals /p/ and /t/ in recent diminutives with -ek retain their palatalization. This is in contrast to earlier formations that favoured depalatalization of these consonants to /n/ and /s/ (Czaplicki 2013: 41-42).

- (1.6) a. *Adam* [adam] → *Adaś* [adaɕ]
Jan [jan] → *Jaś* [jaɕ]
Zofi-a [zofʲa] → *Zosi-a* [zocɛa]
Monik-a [mojnika] → *Monisi-a* [mojniea]
 b. *fundu*[ʃ] ‘fund’ – *fundu*[ɕ]-ik

- klo[ɕ] ‘lampshade’ – klo[ɕ]-ik
 arku[ɕ] ‘sheet’ – arku[ɕ]-ik
 cf. ko[ɕ] ‘basket’ – ko[ɕ]-yk, kama[ɕ] ‘shoe’ – kama[ɕ]-ek
 a. pie[ɲ] ‘stump’ – pie[ɲ]-ek
 ogie[ɲ] ‘fire’ – ogie[ɲ]-ek
 oko[ɲ] ‘perch’ – oko[ɲ]-ek
 mi[ɕ] ‘bear’ – mi[ɕ]-ek,
 Ja[ɕ] ‘proper name’ – Ja[ɕ]-ek,
 Sta[ɕ] ‘proper name’ – Sta[ɕ]-ek
 cf. jele[ɲ] ‘stag’ – jelo[ɲ]-ek, gę[ɕ], ‘goose’ – gą[s]-ek gen.pl.

1.7 Marathi babytalk

In *Marathi* (Indic, Indo-European), babytalk involves a number of palatalizing changes: sibilant alveolars /ts dz s z/ become post-alveolars [ʈ ɖ ʃ], the sibilant post-alveolar fricative /ʃ/ becomes affricate [tʃ^h], dental stops /t̪ d̪/ become palatalized alveolars [tʰ dʰ], the liquids /r/ and /l/ become [j]. Note that the resulting palatalized alveolars are novel sounds that are not part of the phonemic inventory; post-alveolars are marginally phonemic, commonly occurring in the standard language as allophones of /ts dz s z/ before front vowels. (Based on Kelkar 1964: 44)

- (1.7) a. [tsəvɖa] → [tʃəvɖa] ‘(no glosses provided)’
 [ɖəvə] → [ʃəvə]
 [sak^hər] → [ʃak^hər] → [tʃ^hak^hər]
 [ʃahɳa] → [tʃ^hahɳa]
 [t̪u] → [tʰu]
 [d̪^hav] [dʰav]
 [t̪ula] → [tʰuja]
 [ram] → [jam]

2. Place shifts, typically coronals

2.1 Arandic babytalk

In *Arandic* (Pama-Nyungan, Australian) babytalk, all apical alveolar and retroflex consonants [t n l ʈ ɳ ʎ] are converted to laminal consonants that vary in place between dental and palatal [t̪~c ɲ~ɲ ʎ~ʎ] (a). Given this, the contrast between laminal dentals and laminal palatals is also neutralized. At a later stage, apical alveolars are introduced, while the place contrasts within apicals and laminals remain to be neutralized. The rhotics are avoided in babytalk, with the retroflex approximant [ɻ] and the apical alveolar tap [ɾ] to glides ([w] or [j]) or deleting (b). (Based on Turpin, Demuth, & Campbell 2014).

- (2.1) a. [p̪t̪omə] → [c̪om~t̪om] ‘hit’
 [ə^hɳd̪eɳ] → [ɲceɳ~ɳt̪eɳ] ‘rock, hill’
 [m̪əɳə] → [m̪ɲ~m̪ɳ] ‘tucker’
 [l̪eɳ] → [l̪eɳ] ‘sing’
 b. [m̪oɳə] → [m̪m̪ɳ] (reduplicated) ‘mother-in-law’
 [m̪eɳt̪eɳ] → [m̪eɳc̪ɳ] ‘clothes’

2.2 (Eastern) Basque diminutives and hypocoristics

2.2.1 In *Eastern* varieties of *Basque* (Isolate) (e.g. Baztan dialect), diminutives are produced by shifting apical and laminal dentals/alveolars [t̪ t̪̥ ʃ̪ ʃ̪̥ ɲ̪ ɲ̪̥ l̪ n̪] (<tz ts z s t d l n>) to posterior coronals of the same manner of articulation [tʃ ʃ̠ c ʃ̠ ɲ̠ ɲ̠̠] (<tx x tt dd ñ ll>) (a). The shifts involving sibilants are noted to be most common, compared to palatalization of sonorants, which may be optional. The tap [r] changes to [ʎ], [j], or fails to palatalize (b). The trill [r] and non-coronals never palatalize. (Based on Hualde & Urbina 2003: 39-40; Hualde 1991: 122; see also Hualde 2015).

- (2.2.1) a. [sagu] → [ʃagu] ‘mouse’
 [s̺akur] → [ʃakur ~ tʃakur] ‘dog’
 [ot̺s̺] → [otʃ] ‘cold’
 [tanta] → [canca] ‘drop’
 [eder] → [eʃer] ‘beautiful’
 [labur] → [ʎabur~labur] ‘short’
 b. [bero] → [beʎo~bejo~bero] ‘hot’

2.2.2 The same process applies in modern *Basque* hypocoristics. Sibilants in these forms are noted to be the most common targets (and outputs); the voiceless stop /t/ is commonly targeted as well, while the palatalization of /d/ and /n/ is restricted to eastern dialects, and the palatalization of /l/ is ‘not habitual’ (Salaberri Zaratiegi 2003: 330-331).

- (2.2.2) *A(g)ustina* → *Auxtina* ~ *Auxtiña* (ʃ̺ → ʃ̠, n → ɲ)
Basilio → *Baxilio* (ʃ̺ → ʃ̠)
Egoitz → *Egoitx* (t̺s̺ → tʃ̠)
Zumar → *Xumar* (ʃ̺ → ʃ̠)
Antonio → *Anttonio* (t → c)
Bartolo(meo) → *Barttolo* (t → c)
Domingo → *Ddomingo* (d → ʃ̠)
Fernando → *Ferranddo* (d → ʃ̠)
Andres → *Anddex* (d → ʃ̠, ʃ̺ → ʃ̠)
Mari → *Maddi* (r → ʃ̠)
Ana → *Aña* (n → ɲ)
Bernardo → *Beñardo* (n → ɲ)
Manuel → *Mañuel* (n → ɲ)
Dolores → *Dollores* ~ *Dolorex* (l → ʎ, ʃ̺ → ʃ̠)

2.3 Eastern Basque babytalk

In *Eastern* varieties of *Basque* (Isolate), the consonant shifts mentioned in 2.2 above also apply in babytalk (the “care-taker language”). Here palatalization typically affects all palatalizable consonants in a phrase. (Based on Hualde & Urbina 2003: 39-40; Hualde 1991: 122; see also Hualde 2015).

- (2.3) [ot̺s̺ iten du] → [otʃ̠ icep̠ ju] ‘it is cold’
 [s̺aʃi̺ t̺a eraioʃu t̺ort̺seko] → [ʃ̠aʃi̺ ca eraioʃu cortʃ̠eko] ‘go and tell him/her to come’
 [t̺ort̺sen baʃaar] → [cortʃ̠en baʃara] ‘if you come’

2.4 Gurindji Kriol babytalk

In *Gurindji Kriol* (an English creole based on Gurindji, a Pama-Nyungan language) babytalk register, the contrast between apical alveolar and apical post-alveolar consonants (stops, nasals, and laterals [t (d) n l t̪ (d̪) ŋ]) is neutralized, with both sets becoming alveolopalatal ([t̪ n ʎ]) (a). The process applies in both Gurindji- or Kriol-derived words. The trill [r] and the tap [ɾ] become [j], with the former also turning into [j], [w], or [l] intervocalically. Apical alveolar and apical post-alveolar approximants [ɹ ɻ] become glides [w] or [j] (b). (Based on Jones & Meakins 2013: 178-180).

- (2.4) a. [mɔdɪkə] → [mɔʎkə] ‘car’
[lɛŋə] → [ʎɛŋə] ‘ear’
[nænɪɡɔt] → [nænɪʎɔt] ‘goat’
[kɛŋdɪŋɡɔ] → [kɛʎdɪŋɡɔ] ‘stick-ERG’
b. [bɛɾɪm] → [bɛjɪm] ‘bite’
[ɟɛɾɛɪ] → [ɟɛjɛɪ] ‘that way’
[kɛ.ɹɔ] → [kɛjɔ ~ kɛwɔ] ‘child’
[kɛŋɡɔ.ɹɔ] → [kɛŋɡɔjɔ] ‘kangaroo’

2.5 Huave diminutives

Huave (Huavean) verbal diminutives, which denote attenuated versions of states and actions or add some affective connotation, are produced by raising all root-internal vowels to high and shifting root-internal alveolar consonants ([tⁿ dⁿ t̪ⁿ sⁿ nⁿ l]) to their posterior coronal counterparts ([cⁿ ɟⁿ t̪ⁿ ʃⁿ ɲⁿ ʎ]), as shown in (a). Noncoronals [p^m b^m m^w w^k gⁿ k^w ŋ^w] and rhotics [r ɾ] are never palatalized (b) (the change of [r] to [ɾ] occurs automatically before [i]). (Based on Kim 2008: 42, 320).

- (2.5) a. [n-a-ⁿdan] → [n-a-ⁿɟɲ] ‘blocked’
[sonoⁿg] → [ʃɟɲuⁿg] ‘pile up’
[lohc] → [ʎuhc] ‘pierce’
b. [-waⁿtsak] → [-wiⁿʎɪk] ‘twist’
[-sopop] → [-ʃɟɲɟɲ] ‘drizzle’
[-poros] → [-puruʃ] ‘crunching sound’

2.6 Koryak diminutives

In *Koryak* (Northern Chukotko-Kamchatkan, Chukotko-Kamchatkan), the production of diminutives involves a shift of alveolars [t n l] to the corresponding palatals [c ɲ ʎ]. (Based on Comrie 1981: 243).

- (2.6) [lɛwət] ‘head’ → [ʎawt-əpiʎ] ‘little head’

2.7 Warlpiri babytalk

Warlpiri (Pama-Nyungan, Australian) babytalk is noted for “heavy palatalization”, imitating speech of small children, commonly referred to as ‘*jacajaca-waŋkami*’ ‘speech sounding like [jacajaca] (syllables with palatal consonants)’. As part of babytalk, all alveolar and retroflex stops, nasals, and laterals ([t n l t̪ ŋ ʎ]) shift to the corresponding palatals [c ɲ ʎ] (ab). The rhotics

(the alveolar flap /ɾ/, the retroflex tap /ɽ/, and the retroflex approximant /ɻ/) shift to the palatal glide [j] (c). This process effectively neutralizes a 3-way coronal contrast to a single palatal set. Non-coronals (labials and velars) remain unaffected. (Based on Laughren 1984: 74-80).

- (2.7) a. [wita] → [wica] ‘small’
[jani] → [jɔni] ‘go’
[jali] → [jaɻi] ‘that/there’
b. [wita cara pala jali-ɭa maɲu-kari-ja] →
[wica cɔja paɻa jaɻi-ɻa maɲu-kɔji-ja] ‘You two little ones, play over there!’
c. [ɭamara] → [jamaja] ‘ribs’
[piɽaku] → [pijaku] ‘satiated’
[ɭira-paɽu] → [ɭija-pawu] ‘mouth, diminutive’

2.8 Basque sound symbolism

Basque (Isolate) sound symbolic vocabulary is characterized by a great incidence of consonants that are otherwise relatively infrequent in the language – lamino-alveolar and palato-alveolar sibilant fricatives and affricates, and palatal stops. Among the posterior coronals, the sibilants [ʃ] and [ʒ] are particularly common (for example, accounting for over 70% of items with word-initial posterior coronals), while sonorants [ɲ] and [ʎ] are the least common. Many of reduplicative sound-symbolic items with posterior coronals have a clear diminutive connotation (a) and often contrast with items having anterior coronals (b) (cf. Japanese mimetic palatalization). Posterior coronals also occur frequently in babytalk-specific lexical items (c). (Based on Ibarretxe-Antuñano 2006: 9, 12, 17-18, 66-77).

- (2.8) a. [ʃiki-ʃikia] ‘very small’
[ɲoporo] ‘small person’
b. [ʃapa-ʃapa] ‘walk taking small steps’, cf. [tapa-tapa] ‘tip-toeing’, [trapa-trapa] ‘walk’
[caka-caka] ‘walk taking baby steps’, cf. [taka-taka] ‘toddling’, [traka-traka] ‘walk, trot’
[coko-coko] ‘walk slowly taking small steps’, cf. [toko-toko] ‘walk step by step’
[cara-cara] ‘drag little by little’, cf. [tara-tara] ‘drag helter-skelter’
[ʃabu-ʃabuka] ‘swinging, rocking’, cf. [ʂabu-ʂabu] ‘teetering, tottering’
c. [apatʃ] ‘sit down’
[ʃiʃi] ‘meat’

2.9 Mapuche sound symbolism

In *Mapuche* (Araucanian), the palatalizing changes [s θ] → [ʃ], [t tʂ] → [ʧ], [n] → [ɲ], [r] → [j] express “a difference in emotional value, in degree of formality and in size of the person or object referred to”. Among the changes, those involving fricatives are most common. (Based on Smeets 2008: 31-34).

- (2.9) a. [kisu] → [kifu] ‘alone’
[aθ] → [aʃ] ‘form, habit’
[piθku] → [piʃku] ‘legume’
[fotim] → [foʧim] ‘son (of a man)’
[tʂipa-] → [ʧipa-] ‘to leave’

[aʃeʎpen] → [aʃeʎlpeɲ] ‘floating ashes’
 [mirke] → [miʝke] ‘roasted flour’

2.10 Cahuilla diminutives

Cahuilla (Takic, Uto-Aztecan), words with diminutive meaning are noted to have high incidence of ‘palatal consonants’ (with examples including [ʃ n ʎ]; it is not clear if [ʃ] is part of it), although diminutive sound symbolism is not fully productive. (Based on Hinton 1991: 147).

(2.10) [ʔiɲifiʎ] ‘little’
 [-maʎ] ‘a diminutive affix’, cf. Luiseño [-mal]

2.11 Cupeño diminutives

In *Cupeño* (Takic, Uto-Aztecan), diminutiveness is characterized by palatal consonants, similarly to the closely related *Cahuilla*. (Based on Hill & Nolasquez 1973: 118; Hinton 1991: 147).

(2.11) [puʎiɲ-iʃ-ʔəp] ‘I was a baby’, from [pulɪn] ‘to bear a child’ + diminutive [-iʃ]

2.12 Quechua diminutives and hypocoristics

In many dialects of *Quechua* (Quechuan), alveolars [s n l] shift to their posterior coronal counterparts [ʃ n ʎ] to denote smallness or affection. The example in (a) is from Tarma Quechua. Data in (b) and (c) illustrate hypocoristic formation in Wanca Quechua and Santiago del Estero Quechua, respectively. The contrast between retroflex and palato-alveolar sibilants in Wanca Quechua is limited to expressive vocabulary, having been merged elsewhere. (Based on Adelaar 2004: 204 on Tarma Quechua, Cerron-Palomino 1977: 108 on Wanca Quechua, and Reuse 1986: 57-61 on Santiago del Estero Quechua).

(2.12) a. [ʎanu] ‘thin’ → [ʎaɲu] ‘very thin’
 b. *Santiago* → [ʃanti] *Benedicto* → [biɲi]
 Eustaquio → [uʃta] *Alejandro* → [aʎiku]
 Inosente → [iɲu] *Apolinario* → [puʎi]
 c. *Absalón* → [abʃa] *Cecilio* → [ʃiʃi]
 Gaspar → [gaʃpa] *Bonifacio/Bonifacia* → [buɲi]
 Isabel → [iʃa] *Juanico* → [xwajɪ-ku]
 Zacarias → [ʃaka] *Manuel* → [maɲu-ku]
 Segundo → [ʃigu]

2.13 Latvian babytalk

Latvian (Baltic, Indo-European) babytalk is characterized by a large number of register-specific lexical items, many of which are not directly derived from adult speech (AS) lexical items. Compared to the latter, babytalk items have considerably higher frequency of “palatalized” consonants – both sonorants [ɲ ʎ rʲ] (a) and (particularly) sibilant obstruents [ʃ dʒ ʃ ʒ] (b). Alveolar sibilant affricates are also common, often arising from alveolar stops and fricatives (c) (which are also the source of post-alveolar affricates (b)). All the resulting coronal palatal/palatalized consonants are phonemic in Latvian (with /rʲ/ being marginal). (Based on Rūķe-Draviņa 1977: 239-251).

(2.13) a. [ɲam ɲam]~[ɲamma:t] ‘to eat’ (AS *ēst*)

- [pʌŋku pʌŋku] ‘to bathe’ (AS *mazgāties*)
 [rʲuk rʲuk]~[rukse] ‘little pig’ (AS *cūka*)
- b. [ʧʊʧʲɪnɑ:t] ‘to sleep’ (AS *gulēt*)
 [aija: ʒu:ʒu:] ‘to make the baby sleep’ (interjection)
 [tsigɪŋʃ]~[ʧigɪŋʃ] ‘foal’ (AS *kumelš*)
 [kuzē]~[kuʒa] ‘horse’ (AS *zirgs*)
 [tuku tuku]~[ʧuku ʧuku] ‘train’ (AS *vilciens*)
 [sni:pi:s]~[ʃni:pi:tis] ‘nose’ (AS *dēguns*)
 [tsa:ʧʲis]~[ʧa:ʧʲis] ‘potato’ (AS *kartupelis*)
 [tsipatuot]~[ʧapa:t] ‘to walk’ (AS *iet, staigāt*)
 [tsu:tsis]~[ʧʊʧʲɪŋʃ] ‘(young) dog’ (AS *suns*)
- c. [tsu:tse] ‘backside’ (AS *dibēns*)
 [tizis]~[tita]~[tsitsis]~[tsiʧa] ‘teat’ (AS *krūts* ‘mother’s breast’)

2.14 Cree diminutives

Diminutives in *Moose Cree* and *Eastern Swampy Cree* (Algonquian, Algic) are derived using the suffix [-iʃiʃ]. The addition of the suffix triggers a shift of stem-internal alveolar obstruents [t s] to palato-alveolar sibilants [ʧ ʃ]. (Based on Melnychuk 2003: 22-25).

- (2.14) [wi:htikow-iʃiʃ] → [wi:hʧʲikowiʃiʃ] ‘little windigo’
 [si:pij-iʃiʃ-ihk] → [ʃi:pi:ʃiʃihk] ‘in the creek’
 [tapa-ʃi:ʃ] → [ʧapaʃi:ʃ] ‘down below’
 [iskwe:w-iʃiʃ] → [iʃkwe:ʃiʃ] ‘girl’

2.15 Cree babytalk

Babytalk in *Cree* (Algonquian, Algic) involves a shift of alveolars, mainly obstruents [t s], to palato-alveolar affricate and fricative [ʧ] and [ʃ] respectively, or just to the affricate. The shift is often accompanied by obstruent voicing, resulting in a non-phonemic [dʒ]. (Based on Jones 1988: 141-148).

- (2.15) [ætum] → [ædʒum-ʃ] ‘doggie’
 [nu:ʃæ:nhi] → [ʃu:ʃæ:nhi]~[ʃuʃu]~[dʒudʒu] ‘breastfeed’
 [suzæn] → [dʒudʒæn] ‘Suzan’
 [æʃtum] → [ædʒum] ‘come’

2.16 Island Lake Ojibwa diminutives

The production of *Island Lake Ojibwa* (Algonquian, Algic) diminutives is characterized by a shift of stem-internal alveolar obstruents [t s] to palato-alveolar sibilants [ʧ ʃ], which is often (but not always) accompanied by an addition of the diminutive suffix [-enihs] (a). The (derived or underlying) palato-alveolar fricative [ʃ] is optionally shifted to the affricate [ʧ] (b). The process applies right-to-left, as evident in its optional application to consonants that are further away from the right edge of the word. The degree of right-to-left application of the process seems to be related to the “degree of diminution”, with, for example the second output form in (b) referring a smaller duck than the first form. (Based on Shrofel 1981: 98-102).

- (2.16) a. [kihtikan] → [kihʧʲikan] ‘little garden’

- [ke:h~~te~~:-te:hsapo:n-enihs] → [ke:h~~tʃe~~:tʃe:h~~tʃ~~apo:ne:nh~~tʃ~~] ‘little ancient chair’
 [ʃi:w~~i~~tʃi:hs(-enihs)] → [ʃi:w~~i~~tʃi:h~~tʃ~~(e:nh~~tʃ~~)] ‘little candy’
 b. [ʃi:h~~f~~i:p-enihs] → [ʃi:h~~f~~i:pe:nh~~f~~] ~ [tʃi:h~~tʃ~~i:pe:nh~~tʃ~~] ‘little duck’

2.17 Latvian diminutives

In *Latvian* (Baltic, Indo-European), diminutive suffixes [-uk-] and [-el-] trigger a number of stem-final changes that are different from the regular palatalization alternations. With [-uk-], root-final anterior sibilants [s z ts dz] become posterior [ʃ ʒ tʃ dʒ] in both ‘palatalizing’ (a) and ‘non-palatalizing’ declensions (b) (while phonological palatalization applies only in the former, where it is triggered by a glided thematic vowel [i] - yod palatalization). Root-final velars [k g] become [tʃ dʒ] (also in both types of declensions) (c). This is an unusual output, as phonological palatalization before front vowels produces [ts dz] and in certain special cases (loanwords) [c ɟ]. With [-el-], anterior sibilants [s z ts dz] become posterior [ʃ ʒ tʃ dʒ] (d), while non-diminutive e-initial suffixes (e.g. -en-) do not trigger palatalization. This diminutive palatalization normally targets the root-final sibilants, but can optionally apply non-locally (e). Root-final velars /k g/ become palatals [c ɟ] (an output different from [-uk-]) (f). Note that phonological palatalization of velars before front vocoids produces a different output, [ts dz]. (Based on Urek 2016: 138-140; 141-143; 151-155)

- (2.17) a. [e~~z~~-i-uk-s] → [e~~ʒ~~-uk-s] ‘hedgehog’
 [pu:~~ts~~-e-uk-s] → [pu:~~tʃ~~-uk-s] ‘owl’
 [da~~dz~~-e-uk-s] → [da~~dʒ~~-uk-s] ‘thistle’
 b. [da:rz-a-uk-s] → [da:r~~ʒ~~-uk-s] ‘garden’
 [ma:s-a-uk-s] → [ma:~~ʃ~~-uk-s] ‘sister’
 [muts-a-uk-s] → [mut~~tʃ~~-uk-s] ‘barrel’
 c. [zi~~rg~~-a-uk-s] → [zi~~r~~d~~ʒ~~-uk-s] ‘horse’
 [vil~~k~~-a-uk-s] → [vil~~tʃ~~-uk-s] ‘wolf’
 d. [da:rz-a-el-i-s] → [da:r~~ʒ~~-el-i-s] ‘garden’
 [ma:s-a-el-i-s] → [ma:~~ʃ~~-el-i-s] ‘sister’
 [muts-a-el-i-s] → [mut~~tʃ~~-el-i-s] ‘barrel’
 e. [a:kst-el-i-s] → [a:kst-el-i-s] ~ [a:k~~ʃ~~t-el-i-s] ‘clown’
 [stra~~u~~s-el-i-s] → [stra~~u~~s-el-i-s] ~ [ʃtra~~u~~s-el-i-s] ‘ostrich’
 [si~~r~~d-el-e] → [si~~r~~d-el-e] ~ [ʃi~~r~~d-el-e] ‘heart’
 [ma~~k~~st-el-e] → [ma~~k~~st-el-e] ~ [ma~~k~~ʃt-el-e] ‘womb’
 f. [li:dak-a-el-e] → [li:dac-a-el-e] ‘pike’
 [zi~~rg~~-a-el-i-s] → [zi~~r~~ɟ-el-i-s] ‘horse’
 [tsu:k-a-el-e] → [tsu:c-a-el-e] ‘pig’

2.18 Dakota babytalk

Dakota (Siouan) exhibits a productive shift of alveolar fricatives [s z] to post-alveolars [ʃ ʒ] ‘when petting children’ (Based on Nichols 1971: 846, citing Boas & Deloria 1939: 112-113).

- (2.18) [s z] → [ʃ ʒ]

2.19 Nuuchahnulth diminutives

In *Nuuchahnulth* (a.k.a Nootka; Southern Wakashan, Wakashan), alveolar and palato-alveolar coronal affricates [tʃ tʃ̥] and fricatives [s ʃ] shift to non-phonemic alveolopalatals [tɕ tɕ̥] and [ç] when “speaking of small people” or “small birds” (Based on Nichols 1971: 845, citing Sapir [1915] 1949: 182).

- (2.19) [hin-t-ʃitl-weʔin] ‘he comes, they say’ → [hin-t-çitl-ʔic-weʔin] ‘he, little man, comes, they say’ (with the diminutive suffix [-ʔis] → [-ʔic])

2.20 Persian babytalk

Persian (Iranian, Indo-European) babytalk is characterized by a number of consonantal shifts, including a change of alveolar fricatives to post-alveolars (or palatals). (Based on Paribakht 1978: 46-47).

- (2.20) [sæla:m] → [ʃæla:m]~[çæla:m] ‘hello’
[ba:zi] → [ba:ʒi] ‘play’
[xoʃmaeʒaes] → [xoʃmaeʒaes] ‘is it delicious?’

2.21 Wanca Quechua babytalk

In *Wanca Quechua* (Quechuan) babytalk, retroflex sibilants [ʂ ʂ̥] shift to their palato-alveolar counterparts [ʃ ʃ̥]. (Based on Cerron-Palomino 1977: 108).

2.22 Santiago del Estero Quechua sound symbolism

In the *Santiago del Estero* dialect of *Quechua* (Quechuan), adjectival diminutives and some reduplicative sound-symbolic items show a shift of /s/ to /ʃ/. This appears to be an extension of the pattern observed in diminutives and hypocoristics (see 2.12). The phonetically unconditioned occurrence of [ʃ] in this dialect is mainly limited to diminutive sound symbolism. (Based on Reuse 1986: 57-61).

- (2.22) [aʃi-ku] ‘smiling’, cf. [asi-] ‘to laugh’
[ʃati-ku] ‘meddlesome’, cf. [sati-] ‘to insert’
[uʃa-ku] ‘lousy’, cf. [usa] ‘louse’
[kuʃi-kuʃi] ‘a small ground spider that seems to run around as if it were happy’, cf.
[kusi] ‘happy’
[ʃira-ʃira] ‘a solitary kind of wasp that builds nests under roofs’, cf. [sera] ‘to sew’

2.23 Jaqaru diminutives

In *Jaqaru* (Aymaran), alveolopalatal stops denote ‘smallness’ (occurring mainly in Quechua loans). /tʃ/ is phonemic, but does not seem to participate in sound symbolism (Based on Adelaar 2004: 315; Hardman 1966: 128-129).

- (2.23) [cahʃa] ‘small’ (from Central Peruvian Quechua [takʃa])
[ucucuʎqu] ‘goblin’ (from Central Peruvian Quechua [utʃuk uʎqu] ‘little man’)
[ucici] ‘small’
[ukcica] ‘little’
[waʎkatʃa] ‘a little’

2.24 Wiyot diminutives

Wiyot (Wiyot, Algic) diminutives are produced by adding the affix [-o:ts] (occasionally realized as [-o:tʃ]), which triggers a number of stem-internal consonant changes, among them a shift of the alveolar fricative [s] to the post-alveolar [ʃ] and of the alveolar stop [t] to the affricate [tʃ] (a). In some words, the change is manifested without affixation (b). Note that the language also shows a sound-symbolic change of [t] to [tʃ], which is, however, limited to augmentative formations (Based on Teeter 1959: 41-42; 1964: 22, 30, 52; cf. Nichols 1971: 842).

- (2.24) a. [lolisw-iɪ] ‘he sings’ [roriʃw-o:ts-iɪ] ‘he hums’
[tawi:paʔliɪ] ‘he sings’ → [tʃawi:paʔroɪ-o:ts] ‘twine’
[laptʰoʔw] ‘cloud’ → [laptʰsoʔjaw-o:ts] ‘little cloud’
b. [ditatk] ‘two roundish objects’ → [ditsatsk] ‘two small roundish objects (such as peas)’

3. Affrication I: tʃ

3.1 Western Basque diminutives and Old Basque hypocoristics

3.1.1 In *Western* varieties of *Basque* (Isolate), diminutives are often produced by shifting an initial consonant of any place of articulation to a palato-alveolar affricate [tʃ] (a), or by inserting a [tʃ] to fill in a syllable onset (b). (Based on Hualde & Urbina 2003: 39).

- (3.1.1) a. [pispildu] → [tʃispildu] ‘become happy after drinking, PRF’
b. [Øɪɲuri] → [tʃɪɲuri] ‘ant’

3.1.2 Similar patterns have been observed in *Old Basque* hypocoristics, where “at least in the 15th and 16th centuries the palatalization of the name could consist of putting a ‘protetic’ affricate sound in the word-initial position” (Salaberri Zaratiegi 2003: 330).

- (3.1) *Ferran* → *Txerran* (f → tʃ)
Gabon → *Txabon* (g → tʃ)
Grazia → *Txaxi* (gr → tʃ, ʒ → ʃ)
Lope → *Txope* (l → tʃ)
Madelen(a) → *Txadalen* (m → tʃ)
Mari(a) → *Txaria* (m → tʃ)
Peru → *Txeru* (p → tʃ)
Ana → *Txana* (0 → tʃ)
Andres → *Txandres* (0 → tʃ)
Urdin → *Txurdin* (0 → tʃ)

3.2 Georgian diminutives

In *Georgian* (Kartvelian), diminutives can be formed by a shift of various consonants to alveolar or post-alveolar affricates. Target consonants include coronal stops (a), coronal sonorants (b), and velar stops (c). (Based on Neisser 1953: 41-44; cf. Nichols 1971: 831).

- (3.2) a. [toto] ‘neugeboren Junges Tier (a newborn young animal)’ → [tʃotʃori] ‘Tierjunges (a cub)’
 [pit’i] → [pitʃ’i] ‘Honigscheibe (a honeycomb)’
 [kotani] ‘Topf’ → [kotsɔ] ‘kleiner Weinkrug, kleiner Topf (a small jug of wine, a small pot)’
 [k’vnit’i] → [k’vnitʃ’i] ‘Bißchen (a bit)’, from [k’vnet’a] ‘nagen, beissen (to gnaw, to bite)’
- b. [k’bena] ‘beißen (to bite)’ → [na-k’betʃa] ‘bebeißen, anbeißen (to bite into)’
 [puri] ‘Kuh (a cow)’ → [putʃina] ‘Kälbchen (immer im Munder von Kindern) (a calf (when speaking to children))’
- c. [nak’uk’i] → [natʃ’utʃ’i] ‘Schale (a shell, skin)’
 [kunkuri] → [tʃuntʃuri] ‘Beschälung (covering)’
 [u-k’mak’uri] → [u-ts’mats’uri] ‘unschön, schlecht (ugly, bad)’

3.3 Osage diminutives

In *Osage* (Siouan), anterior stops and affricates /t^ht ts^hts/ alternate with posterior affricates [tʃ^htʃ] to convey diminutive meaning or (in kinship terms) endearment. Apart from their expressive usage, [tʃ^htʃ] rarely occur in the regular vocabulary. The phenomenon is noted to be pan-Siouan. (Based on Quintero 2004: 34, 86).

- (3.3) [wa-hófta-zi] → [wa-hóftʃa-zi] ‘a little bit’; cf. [wa-hófta] ‘little, small’
 [táa^hpa] ‘round’ → [tʃáa^hpa] ‘short and round, squat’
 [wi^htsópa] → [wi^htʃópa] ‘my grandchild’

3.4 Yurok diminutives

Yurok (Yurok, Algic) diminutives involve a shift of alveolar stop [t] to palato-alveolar affricate [tʃ]. (Based on Nichols 1971: 842, citing Haas 1970: 89 and Robins 1958: 14, 189 ff.).

- (3.4) [pontet] ‘ashes’ → [pontʃotʃ] ‘dust’

3.5 Bengali babytalk

In *Bengali* (Indic, Indo-European), the babytalk register involves a number of phoneme substitutions, including the affrication of the post-alveolar fricative [ʃ] to [tʃ^h]. The rhotic [r] gets deleted or changes to [l]. (Based on Dil 1971: 23)

- (3.5) [ʃap] → [tʃ^hap] ([~ t^hap/t^hap]) ‘snake’
 [rɔʃogolla] → [rɔtʃ^hogolla] ([~ rɔt^hogolla]) ‘sweets’

3.6 Chukchi diminutives

Chukchi (Northern Chukotko-Kamchatkan, Chukotko-Kamchatkan) employs a shift [t] to [tʃ] in verbs to denote “special terms” and “single momentary actions” (as opposed to “generalized

terms” and “continued actions”). The shift may also add diminutive connotation. (Based on Bogoras 1922: 834-835; cf. Nichols 1971: 831).

- (3.6) [ɛivu] ‘to walk’ → [tʃɛivu] ‘to walk for a little while’
 [ɪlɛp] → [tʃɪtʃɛp] ‘to look’
 [talɛivu] → [tatʃɛivu] ‘to strike’

3.7 Ventureño Chumash diminutives

Ventureño Chumash (Isolate) diminutives are produced by a shift of both alveolars [ts s] and the palato-alveolar [ʃ] to the palato-alveolar affricate [tʃ] (or sometimes to the alveolar affricate [ts]). This process (and other non-palatalizing diminutive changes) sometimes applies in conjunction with the depreciative affix [-ʔiwaʃ] (which becomes [-ʔiwaʃtʃ]). (Based on Harrington 1974: 8-9).

- (3.7) [tʃjəwʃ] ‘his head’ → [tʃjəwəʃtʃ] dimin., [tʃjəwəʃʔiwaʃtʃ] deprec. dimin.
 [ʔoxʃol] → [ʔoxʃol]~[ʔoxʃol] ‘urine’
 [tskutet] → [tʃkutet] ‘he sucks’

3.8 Japanese babytalk

In *Japanese* (Isolate) babytalk, anterior sibilant fricatives [s z] and the affricate [ts] are systematically replaced with the posterior (alveolopalatal) affricates [tʃ] and [dʒ]. The change of [s] to [ʃ] is also possible, seemingly denoting a lesser degree of ‘babyishness’. (Based on Chew 1969; Kochetov & Alderete 2011).

- (3.8) [osarusan] → [otʃarutʃan] ‘monkey’ (honorific)
 [kutsu] → [kutʃu] ‘shoe’
 [tabemasuka] → ‘Will you eat?’
 [tabematʃuka]
 [omizu nominasai] → ‘Drink your water!’
 [omidʒu nominatʃai]

3.9 Havyaka Kannada babytalk

In *Havyaka Kannada* (Southern Dravidian, Dravidian) many lexical items specific to babytalk, exhibit a shift of coronal fricatives [s ɕ] to the palato-alveolar affricate [tʃ]. (Based on S. Bhat 1967: 36).

- (3.9) [hase] → [hatʃe] ‘mat’
 [pa:jasɑ] → [pa:tʃɑ] ‘pudding’
 [gla:su] → [gatʃu] ‘glass’
 [pi:əkɑt:i] → [pi:tʃi] ‘knife’

3.10 Karok diminutives

In *Karok* (Isolate), diminutive suffixes [-itʃ], [-atʃ], [-iʃ] trigger a shift of the dental fricative [θ] to the palato-alveolar affricate [tʃ] (among other changes). /s/, /t/, and other consonants do not palatalize. (Based on Bright 1956: 76-79; Nichols 1971: 842).

- (3.10) [itʃani:p-itʃ] ‘small fur tree’, cf. [iθari:p] ‘fur tree’

3.11 Korean babytalk

Korean (Isolate) babytalk is characterized by a shift of alveolar fricatives [s s*] to affricates [c c*] (which are laminal alveolars or post-alveolars), among other changes. (Based on Yoonjung Kang, p.c. 12/13/2007).

(3.11) [kɪræs*ʌ] → [kɪdæc*ʌ] ‘did so, said so’

3.12 Southern Sierra Miwok diminutives

Southern Sierra Miwok diminutives exhibit a shift of the alveolar fricative [s] to the palato-alveolar [ʃ], although the process is no longer productive. (Based on Nichols 1971: 843, citing Broadbent 1964: 20-21).

(3.12) [ʔesɛl:i] ‘child’ → [ʔeʃɛl:i] ‘baby’
[pu:si] ‘cat’ → [pu:ʃi] ‘kitty’
[mus:a] ~ [muʃ:a] ‘be ashamed’

3.13 Spanish babytalk and hypocoristics

3.13.1 *Spanish* (Romance, Indo-European) babytalk is characterized by a “widespread” shift of the alveolar fricative [s] to the palato-alveolar affricate [ʃ] – the change that serves as “an identifying feature of baby talk” (Ferguson 1964: 105-106, 108, 109). This change is particularly commonly found in Latin American Spanish (b) (Boyd-Bowman 1955: 350-351).

(3.13.1) a. [beso] → [beʃo] ‘kiss’
[vamos] (calle) → [mamotʃ] ‘going out’
[susjo] → [ʃuʃjo] ‘dirty’
b. Mexican Spanish
señor → *chenol* (s → ʃ)
manzana → *manchana* (s → ʃ)
Argentine Spanish
señora → *cheñora* (s → ʃ)
zapato → *chapato* (s → ʃ)

3.13.2 Hypocoristics in (mainly Latin American) *Spanish* exhibit a number of phoneme substitutions including [s] → [ʃ] (a). The change is commonly accompanied by the truncation of initial unstressed syllables. The affricate [ʃ] can also be inserted to mark the expressive meaning (b), thus acting as a default consonant. Sporadically consonants other than [s] change to [ʃ], with examples in the source including the single [t] and [d], as well as clusters [tj], [br], [xw], and [xj] (c). Rhotics [r] and [ɾ] are avoided in hypocoristics: these either change to [l] or delete. The palatalizing change [s] → [ʃ] is noted to be related to the Spanish babytalk (see 3.13.1). (Based on Boyd-Bowman 1955: 348-351, 357; Lipski 1995: 392; 427; Piñeros 2008).

(3.13.1) a. *Josefa* → *Chepa* (s → ʃ)
Jesus → *Chucho* (s → ʃ)
b. *Juan* → *Juancho* (0 → ʃ)
Ramón → *Ramóncho* (0 → ʃ)

- c. *Bautista* → *Baucha* (t → tʃ)
Martin → *Máchin* (t → tʃ)
Telmo → *Chemo* (t → tʃ)
Santiago → *Chago* (tj → tʃ)
Domingo → *Chómin* (d → tʃ)
Dionisio → *Chonicho* (dj → tʃ)
Gabriela → *Chela* (br → tʃ)
Eugenio → *Cheno* (x → tʃ)
Juan → *Chano* (xw → tʃ)
Sergio → *Checho* (s → tʃ, xj → tʃ)

3.14 Chilean Spanish babytalk

In the *Chilean* variety of Spanish (Romance, Indo-European), the affective register (‘lenguaje cariñoso’) converts both [s] and [t] to [tʃ], thus extending the palatalization pattern noted in Spanish babytalk and hypocoristics (3.13). The standard Spanish diminutive suffix *-ito* has a common variant *-icho*. The change targeting [t] can be attributed the indigenous Araucanian influence. (Based on Boyd-Bowman 1955: 348-350).

- (3.14) *poquitito* [pokitito] → *poquichicho* [pokitʃitʃo]
totitito [toðitito] → *toichicho* [toðitʃitʃo]

3.15 Thai babytalk

In *Thai* (Kam-Tai, Tai-Kadai) babytalk, the alveolar fricative [s] shifts to the affricate [tʃ]. (Based on Nattaya Piriyawiboon, p.c. 01/20/2008).

- (3.15) [sǔaj] → [tʃǔaj] ‘pretty’
[sǒŋsǎan] → [tʃǒŋtʃǎan] ‘pity’
[sûa] → [tʃûa] ‘shirt’
[sìpsǎam] → [tʃìptʃǎam] ‘thirteen’

4. Affrication I: ts

4.1 Greek sound symbolism

In *Greek* (Greek, Indo-European), alveolar affricates [ts] and [dz], which are marginal phonemes of the language, occur at a great frequency in expressive vocabulary, including sound symbolic items denoting “smallness” (a), diminutive affixes (b), hypocoristics (c), and babytalk-specific lexical items (d). Diachronically, affricates have developed through a number of “sporadic and irregular” changes: for example [ts] arose from coronals [s] and [t], and from non-coronal [k] and (the sequence) [ps]. (Based on Joseph 1994: 224-231).

- (4.1) a. [tsita-tsita] ‘just barely’ (said of a tight fit)
[tsima-tsima] ‘right up to the edge, close’
[tsiros] ‘thin person’ (“dried mackerel”)
[dzudzes] ‘dwarf’
[dzingu-dzingu] ‘drop-by-drop’ (West Crete dialect)

- b. [-itsa], [-itsi], [-utsikos], [-dzikos] ‘affective diminutive for adjectives’, e.g. [ɣlik-os] ‘sweet’, [ɣlik-utsikos] ‘cute’
Dimitrios → [mitsos]
Konstandinos → [kotsos]
- c. [tsatsa] ‘auntie’
[tsitsi] ‘meat’
[tsis(i)a]~[dzis(i)a] ‘peepee’
[pitsipitsi] ‘(act of) washing’
[dza]~[tsa] ‘peek-a-boo!’

4.2 Western Swampy Cree and Plains Cree diminutives

In *Western Swampy Cree* and *Plains Cree* (Algonquian, Algie), the addition of the diminutive suffix [-isis] triggers a change of the alveolar stop [t] to the affricate [ts]. Unlike Eastern Swampy Cree and Moose Cree (which exhibit a shift of [t s] to [tʃ]), these dialects do not have phonemic palato-alveolars. (Based on Melnychuk 2003: 22, 35; cf. Hockett 1956: 203 on Plains Cree).

- (4.2) [nite:m-isis] → [nitse:misis] ‘my little horse’
[nitsatsihkosis] ‘my little caribou’, cf. [nitatihk] ‘caribou’
[atsimosis] ‘puppy’, cf. [atim] ‘dog’

4.3 Nez Perce diminutives

Nez Perce (Sahaptian, Penutian) diminutives involve a shift of the alveolar fricative [s] to the affricate [ts] (among other non-palatalizing changes), with or without diminutive reduplication. (Based on Nichols 1971: 843, citing Haruo Aoki, p.c.).

- (4.3) [ke:tis] ‘spear’ → [katitska:tits] ‘toy spear’
[waswasno] ‘chicken’ → [watswatsno] ‘saddle horn’

4.4 Northern Paiute diminutives

In *Northern Paiute* (Numic, Uto-Aztecan) diminutives, alveolar fricatives [s z] shift to affricates of the same place, [ts dz]. (Based on Nichols 1971: 842, citing M. J. P. Nichols, ms.).

- (4.4) [siziʔa] ‘big girls, teenagers’ → [tsidziʔa] ‘little girls’
[isa] ‘wolf’ → [idza] ‘coyote’

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