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Rosemarie Lühr

The lengthened grade in Germanic hypocoristica

Abstract: In Germanic a group of nouns belonging to the *n*-stems display a long **ē* followed by geminate voiced stops, MHG *tāpe* ‘paw’ (**dēbban*-), OHG *tāpe*, MHG *hā(c)ke* ‘hook’ (**hēggan*-), OHG *chrācco* ‘uncinus: barb, fuscina: trident’ (**krēggan*-), OHG *chrāppo* ‘aspidius, uncinus: barb’ (**krēbban*-), MHG *snācke snōcke* ‘midge’ (**snēggan*-). While Kluge explained geminate voiceless stops as lengthening before **n*, he attributed geminate voiced stops to analogy. But the investigation about whether geminate voiceless stops are allowed following long vowels in Proto-Germanic reveals that Kluge’s opinion is indefensible. As sound symbolism and expressivity are present in the Germanic lexicon, it is assumed that mental phenomena caused these sounds. In this regard the status of the long **ē* will be clarified. It is postulated that the long vowels in front of geminate voiced stops have the function of reinforcing expressivity by creating this phonetically odd mixture.

Keywords: lengthened grade, expressivity, ablaut in *n*-stems, sound symbolism, hypocoristic, *n*-assimilation, *n*-gemination, scale of consonantal strength, Voice-onset-time, syllable contact law

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1 Introduction

Among the Germanic *n*-stems there is a group of nouns which show reflexes of a long **ē* followed by geminate voiced stops:

- (1) MHG *tāpe* ‘paw’ (**dēbban*-), OHG *tāpe*, MHG *hā(c)ke* ‘hook’ (**hēggan*-), OHG *chrācco* ‘uncinus: barb, fuscina: trident’ (**krēggan*-), OHG *chrāppo* ‘aspidiscus, uncinus: barb’ (**krēbban*-), MHG *snācke snōcke* ‘midge’ (**snēggan*-)

According to Kluge’s law, geminate voiced stops are not due to sound laws. Only voiceless stops arise from gemination before the nasal *n*. Evidence also comes from the *n*-stems in the Germanic languages. Many of them show ablaut:

- (2) **χrīban-*, **χritta-* ‘fever’ (OHG *rīdo*, MHG *ritze*) (Kroonen 2011: 232ff.; Schaffner 2001: 549ff.)
 **greūban-*, **gruppa-* ‘basket’ (OE *grēofa*, MDu *groppe(n)* ‘iron pan’) (Lühr 1988: 243f.; Kroonen 2011: 161f.)

Kluge himself explained the variation of single and geminate voiceless and voiced obstruents by analogy: “Die doppelformen [ahd. *chnabo* und *knapp-* (aus *kabn-*)] führten durch association zu zwei neuen formenpaaren: man bildete zu *knabo* eine neue geminationsform *knabba* oder zu der geminierten form *knapp-* im anchluss an *knabo* eine form mit einfacher consonanz *knapa*: jenes ist das mhd. *knappe*, dies das ags. *cnapa*.” (Kluge 1884: 176). This view has recently been accepted by Kroonen (2011: 78), concluding “that the paradigmatic interchange of **b* and **pp* [which] gave rise to **bb* und **p* fully predicts the allomorphic variation that is attested across the Germanic dialects”. If this were the case, the assumed generalization of **b* : **bb* instead of **p* : **pp* (< **f*/**b* : **pp*) would concern the spread of voiced stops. However, to pronounce voiced stops speakers must make complex articulatory adjustments.¹ They must direct air to their closed mouth,² which is why voiced stops appear less frequently than voiceless stops. Thus, following Kluge, contrary to markedness theory, a leveling process from the less marked to the more marked would occur:³ $\text{G} : \text{GG} (\leftarrow \text{G} : \text{KK})$.

Since such analogies would constitute awkward allomorphy for the speaker, they were subject to elimination.⁴ In the case of alternation opacity for allomorphemes with **b* : **tt* vs. **d* : **tt*; **f* : **ff* vs. **b* : **pp*; **χ* : **kk* vs. **g* : **kk* one would rather expect analogical leveling yielding: **t* : **tt*; **p* : **pp*; **k* : **kk*. Hence, another explanation of the geminate voiced stops must be found which also has influence on the interpretation of the lengthened grade in the given examples.

In a first step Kluge’s sound law must be proved. It must be determined whether geminate voiceless stops are possible following long vowels in Proto-Germanic. This question throws light on the syllable structure of Germanic. The next investigation step concerns the meaning of the words with geminate voiced

1 E. g. advancing tongue roots, larynx lowering.

2 Ohala & Riordan 1979; Ohala 1983. In fact, many languages disfavour voiced obstruents (e. g. Hawaiian: Hayes & Steriade 2004).

3 Such analogies are generally regarded with skepticism in phonological theory. Cf. Kiparsky 1978; Bybee 1985. According to Albright (2008: 2) “rules are reliable when they are general enough to have true predictive power.”

4 Kiparsky 1982. Cf. the constraint CODA VOICE since MHG. This constraint is manifest in the absence of analogical restoration of voiced obstruents in coda position (Raffelsiefen 2000: 131, 162 n. 12).

stops in Germanic. As sound symbolism and expressivity play an important role in the Germanic lexicon,⁵ it is to be demonstrated to what extent such mental phenomena could have caused these sounds. Next, the status of the long *ē must be settled. Though the Germanic syllable structure forbids super-heavy syllables in general, the long *ē is retained adjacent to voiced stops. We will see that our approach is mainly based on the semantics of diminutives (Schneider 2003: 37–39). Scholars take the hypocoristic value as the starting point of diminution,⁶ therefore we choose hypocoristica as our cover term.

2 Kluge's sound law

Kluge assumed that the process of Proto-Germanic gemination had been caused by the assimilation of a following *n*. Since both Proto-Indo-European voiceless and voiced aspirated stops merged into a Proto-Germanic voiceless geminate, he dated Verner's law earlier than the assimilation of *n*. This chronology was confirmed by the formation Proto-Germanic *se \bar{u} ni- < Early Proto-Germanic *seg^wni- < Pre-Proto-Germanic *sek^wní- in Gothic *siuns*, ON *sjón* 'face, shape'. (Otherwise, **sekk^wi- would have arisen.) However, instead of nasal assimilation, in my monograph *Expressivität und Lautgesetz im Germanischen* I referred to a parallel sound development found in Pāli; cf. Skt. *svapna-* 'sleep' > Pāli *soppa-* < *svappna-; Skt. *chadman-* > Pāli *chaddan-* 'cover, veil'. Gemination in front of liquids is also documented in this language: Skt. *takra-* 'buttermilk' > Pāli *takka-* (Lühr 1988).

Murray & Vennemann (1983) consider this sound development to be "a means of eliminating the poorest syllable contacts", a phenomenon which would be also reflected in the Westgermanic consonant gemination.⁷ They consider the scale of "consonantal strength" (Tab. 1, p. 380) as decisive here.

Cf. the structure formula:

VC_r#C_mV with *r* stronger than *m*

⁵ For phonaesthetics in English cf. Crystal 1995; de Klerk & Bosch 1997; Anderson 1998: 224–239; Taylor 2003: 144–149. For phonesthemes cf. Drellishak 2006; for emphatic speech style cf. Selting 1994.

⁶ Others consider the designation of the genealogical relation between father and child (in the case of human beings) and/or between the adult and the young (in the case of animals) to be the semantic archetype of the diminutive value (Grandi 2011: 15).

⁷ Hill (2009) is very critical of Preference Theory.

Table 1. Scale of consonantal strength

glides	liquids	nasals	$\left\{ \begin{array}{l} \text{voiceless fricatives} \\ \text{voiced stops} \end{array} \right\}$	voiceless stops
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Another motivation for consonant gemination caused by resonant is presented by Denton in her study on the West Germanic Consonant Gemination (Denton 1999). Her proposal will also apply to the gemination in the history of Greek and Romance. It is based on the fact that Voice-onset time (VOT) may be affected in pre-resonant positions in syllables most often following the first stressed syllable. Thus, certain resonants would have the capability to strengthen preceding consonants. Hereby, a close coarticulation of the consonants with the following resonants would arise, i. e., a longer duration of some resonants and more fortis articulations of obstruents, which contributed to the consonants' releases remaining in the onset of the following syllables, where the perception as onset consonants ensued. As a result of this, the consonants would be stretched over the syllable boundary, getting from a consonant-resonant cluster to a geminate-resonant cluster, because noisy or fortis coarticulations of consonant-resonant clusters trigger gemination (Denton 2007). A pre-condition for this reinterpretation would be that in the mentioned languages an inventory of geminate consonants already existed. For Denton's claim is that the priming effect of the existing geminates provides impetus for many of the stretched consonants to be interpreted as geminates.⁸ She refers to the category of CHOICE in Blevins' (2004) Evolutionary Phonology framework, stating that phonetic variability spurs the reanalysis of an exemplar as belonging to a different phonological category than that intended by its speaker (Denton 1999). But sticking to West Germanic, the pre-existing geminates must be principally those which are due to *n*-gemination.

The question now is whether Denton's approach could also be used to explain the Germanic *n*-gemination and the Middle Indic gemination.

To start with Middle Indic, gemination in this language results from nasals, liquids, and semivowels. Liquids (*r*, *l*) and semivowels (*ɨ*, *ʉ*) belong to the same phoneme inventory as the phonemes causing the Westgermanic gemination. Therefore, coarticulation of these resonants with the preceding stops could have happened in Middle Indic, too. In this case, however, there is no reason for the assumption that gemination in front of *n* should have another origin. Rather, it is obvious that coarticulation of a preceding stop with a following *n* also took place.

⁸ Priming took surely place in the case of the High German Consonant Shift (Denton 2013).

If this is true, coarticulation of stops with *n* can also be assumed for Proto-Germanic.⁹ But before being lost, *n* must have merged with the release of the stop, creating a bisegmental consonant with its closure in the coda and its release in the following onset (cf. Denton 2011 for the loss of **j* after the Westgermanic gemination). But let us try to include also the Syllable Contact Law. As Denton (2007) convincingly points out for the Westgermanic geminates the phonetic variability of coarticulation created ambiguity which listeners had to interpret: “Were the consonants longer? ... geminated? Why were they different?” In this situation the syllable contact law comes into play together with Blevins’ (2004) category of CHOICE mentioned above. The listener chose the gemination interpretation because in this way bad syllable contacts could be avoided. In the following the term *n*-gemination is used for this special gemination interpretation caused by a following *n*.

The objection that in the case of *n*-gemination the listener must have selected the gemination interpretation in front of **m* as well does not hold, because *m* and *n* can have different strength degrees. This is shown for example by the sonority plateau with R[esonant]R[esonant]-onsets. The order of the nasals is *mn*; cf. formations of the root **mneh₂*- (Greek μμνήσκω) (Keydana n.d.: 11). Thus, on the scale of consonantal strength *m* takes precedence over *n*, and as *m* is stronger than *n* no gemination interpretation occurs with *m*, only with *n*. Another, but also rebuttable objection against the assumption of *n*-gemination is the following: Why are the voiced fricatives **b*, **d*, **g* geminated while the voiceless fricatives **f*, **þ*, **χ* are not? (Kroonen 2011: 51). Even in this case the syllable contact law obtains. If **f*, **þ*, **χ* were geminated in front of *n*, according to the Germanic lenition laws **f*, **þ*, **χ* were weakened in the syllable onset. Cf. the Old High German written example ⟨fethdhahha⟩ [fepðaxa] in Isidor with ⟨dh⟩ instead of ⟨th⟩ in the onset of the second syllable (Matzel 1966: 34 n. 13; 1970: 451 n. 517). Therefore, in contact with *n* an onset “lenited spirant + *n*” would be weaker, i. e. more sonorous than the syllable coda (/p/): VC_p#C_{dn}V with *p* stronger than *ðn*.

For this reason the gemination interpretation would not have applied. But as for the gemination of the voiced fricatives **b*, **d*, **g* and the voiced stops **b*, **d*, **g*, the voiced fricatives **b*, **d*, **g* could have become voiced stops in contact with **n* first. Then *n*-gemination would only concern occlusives and not fricatives.¹⁰ But whatever the case, the result was **pp*, **tt*, **kk*. Similar to the Upper German devel-

⁹ As amphisyllabic consonants mostly follow a stressed syllable (Jensen 2000), the Proto-Germanic *n*-gemination in front of *n* could also have arisen in this position. For another opinion cf. Lühr 1988.

¹⁰ I am grateful to Sergio Neri for this observation.

opment of the geminate voiced stops to geminate voiceless stops in the course of the Westgermanic consonant gemination, the geminate voiced stops in front of *n* became voiceless.

3 Long vowels in connection with geminate voiceless stops

The rise of true voiceless geminate stops is an important condition for the connection with long vowels. For, if the gemination interpretation actually is a means of avoiding bad syllable contacts, gemination must also have occurred with heavy syllables formed by a long vowel. A parallel to this development can again be found in Upper German. Here, the Westgermanic consonant gemination also caused doubling following long vowels:

- (3) Alemannic Gen.Sg.n. *kerāttes* (*girāti* ‘counselling’), *kiuua^otte* (*giwāti* ‘robe’), *sūroughker* (*sūrougi* ‘bleary-eyed’), Bavarian *louppun* (*loubi* ‘leafy’), Alemannic *sleipha* (‘slide’), Bavarian *unrīpher* (*unrīfi* ‘unripe’), *waitze* (*weizi* ‘wheat’) (Simmler 1974: 234ff., 241, 243, 251, 253, 257).

Evidence that stops are geminated in front of *n* following long vowels as well is found in records like:

- (4) **χēk^kan-*: OS *hácon* ‘uncis: barb’ : **χēχan-*: OHG *hāho* ‘hook’; **χōk^ka-* OE *hōc* m. ‘hook’, MLG *hōk* m. ‘corner’, DU *hoek* ‘corner’ (Kroonen 2011: 437f.) vs. **χēχan-*: OHG *hāho*¹¹

As is to be seen, outside of Old High German the geminate stops are simplified following a long vowel.

¹¹ In contrast to the fricative of OHG *hāho* < **χēχan-*, **χēk^kan-* and **χōk^ka-* show consonantal change to a stop. Cf. further Middle Low German *kōke* ‘sleigh-beak’, OHG *slitochōha* ‘skid, runner’ < **kōkōn-*, Middle Low German *kāk* ‘pillory’ (Norwegian dialectal *kage* ‘low bush’) (Falk & Torp 1909: 33f.).

4 Vowel gradation

Before dealing with words containing a long $*\bar{e}$ and geminate voiced stops, it is necessary to have a look at vowel gradation and afterwards at the semantics of the words with geminate voiced stops and other vowel gradations than a long vowel.

4.1 The lengthened grade

n -stems could have lengthened grade in Proto-Indo-European, as is documented in:

- (5) sg. nom. $*h_3r\acute{e}g\bar{o}(n)$ m. ‘ruler, king’ (Skt. *rājā*), acc. $*h_3r\acute{e}g\bar{o}n\text{-}\eta$ (Skt. *rājānam*), dat. $*h_3r\acute{e}g\bar{n}\text{-}e\grave{i}$ (Skt. *rājñe*), gen. $*h_3r\acute{e}g\bar{n}\text{-}os$ (Skt. *rājñah*)¹²

Also in Germanic lengthened grades are to be expected; cf.:

- (6) $*gr\acute{e}f(i\grave{a})n\text{-}$: $*gr\bar{e}b(i\grave{a})n\text{-}$ ‘count’ (OHD *grāve*, MHG *grābe*) (Schaffner 2001: 542ff. [cf. Gothic *gagrefts* ‘decision’])

4.2 The words with geminate voiced stops and i -, u -, a -vocalism

4.2.1 i -, u -, a -vocalism

As for vowel gradation, in words with geminate voiced stops one finds i -, u - and a -vocalism: OE *twigge* ‘twig’, Middle Low German *podde*, *puddē* ‘toad’, Modern Norwegian *kragg* ‘crooked tree’. $*i$ and $*u$ are normal zero-grades in n -stems in the hysterodynamic accent-type; also o -grade appears in Proto-Indo-European: $*uks\acute{e}(n)$ m. ‘young cow’ (Skt. *ukṣā*, ON *uxi*); $*kolp\acute{e}(n)$ m. ‘ritual priest’ (av. *kar̥pā*) (Schaffner 2009). Another origin of Germanic $*a$ is discussed together with the lengthened grade.

¹² The n -stem is inherited from Proto-Indo-European; cf. Old Brittonic *rigon* [rīyon] ‘king’ (on coin inscriptions) < Proto-Celtic $*r\acute{i}gon\text{-}$ (Schaffner 2009; 2001: 517).

4.2.2 Meaning

The meaning of the words with *i-*, *u-*, *a-* gradation and geminate voiced stops gives reason to organize them in semantic fields.

Geminate voiced stops are to be found in proper diminutives:

- (7) Icelandic *krobbi* ‘body of little children’ (cf. the Icelandic short names *Dabbi* for *David*, *Kobbi* for *Jakob*, *Stebbi* for *Stéfan*, *Addi* for *Andrés*), Middle Low German *kodde* ‘piglet’ (Lühr 1988: 310f.; Jóhannesson 1932: 7)

Other words with geminate voiced stops are used to denote sounds as they arise by the plodding of animals or by entering a swampy or wet place:

- (8) a. German *Dappe*, *Tappe* ‘paw’ < **dabban-*
 b. Middle Dutch *slobbe* ‘sludge’ (Lühr 1988: 296, 305), Middle Low German *dobbe* ‘pool’, Middle Low German *podde*, *pudde* ‘toad’, OHG *chrotta* ‘toad’, MHG *rūp(p)e* ‘eelpout’, Middle Low German *slagge(n)* ‘cold and damp weather, dirty weather’ (Kroonen 2011: 211, 280f., 282f., 314f., 347).

Also small and peaked things are denoted:

- (9) Low German *hobbe* ‘little hill’, OHG *kratto* ‘basket’, Middle Low German *snebbe*, *snibbe* ‘bill’ (Lühr 1988: 371; differently Kroonen 2011: 248f.), OE *twigge* ‘twig’, Middle Low German *tagge* ‘twig’ (cf. Gothic *tagl* ‘hair’), OE *sceagga* ‘hair’, literally ‘being at the top of something’ (cf. Icelandic *skagi* ‘peninsula’) (Kroonen 2011: 257, 271, 316f., 317ff., 326, 328ff.; for OHG *kratto* differently Lühr 1988: 283)

Other words signify soft, round, limp things (Lühr 1988: 379):

- (10) ON *koddi* ‘pillow’ (Lühr 1988: 297), Swedish *rugge* ‘bush’, Early Dutch *klodde* ‘knot’, Norwegian dial. *mugge* ‘heap of 10 sheaves of corn’, Middle Low German *schobbe* ‘sheaf’, ON *stubbi*, *stubbr* ‘stub’, Norwegian dial. *knubb* ‘wooden block’ (Lühr 1988: 287), Saterlandic Frisian *tabbe* ‘tap’¹³

Finally shoddy things can be listed here:

- (11) Middle Upper German *mugge* ‘horse disease’, OHG *scratto* ‘larva, lar malus’ (Kroonen 2011: 279, 345)

¹³ Differently Kroonen 2011: 176, 225ff. [for OHG *zatta* ‘flax’, German *Zotte*], 269, 270f., 273, 275, 279, 284f., 286f., 297ff., 341ff.; but ON *krubba*, Modern Danish *krybbe*, etc. are borrowed from Low German, where **bb* is caused by the Westgermanic consonant gemination (Lühr 1988: 251; but cf. Kroonen 2011: 179).

The variety of these semantic groups is striking. But looking for parallels in other Indo-European languages for this classification, one encounters diminutives.

5 The semantics of hypocoristica in general

One of the most productive Indo-European languages when it comes to diminutives is Croatian. Diminution in this language is expressed by special suffixes.¹⁴

Barić et al. (2005: 396) define diminutives as

nouns expressing something that is in some aspect smaller than the designate of the original word: *boca* – *bočica* ('bottle' – 'small bottle'), *grad* – *gradić* ('town' – 'small town'). ... If the diminutive is motivated by a noun signifying a person, along with the meaning *small*, the meaning can also be *young*: *grof* – *grofić* ('count' – 'young count'), *pastir* – *pastirić* ('shepherd' – 'young shepherd'). By diminutives we also express the meaning of kindness¹⁵ and affection¹⁶ – hypocoristics: *sinčić* ('dear son'), *cvijetak* ('dear flower'), as well as the feeling of contempt, degrading – pejoratives: *činovničić* ('bad clerk'), *direktorčić* ('bad manager').¹⁷

Similar semantics with diminutives appear also in other languages, for example with English diminutives on *-let*:

- (12) Pattern 1: N 'object' + *-let* > N 'small object'¹⁸
 Pattern 2: N 'animal' + *-let* > N 'young animal'
 Pattern 3: N 'person' + *-let* > N 'despicable person'¹⁹

¹⁴ For a comparison of diminutives and augmentatives in Dutch, German, and Polish and of diminutives in Russian and Swiss German cf. Klimaszewska 1983; Kurt 2009.

¹⁵ As Taylor (2003: 174) explains, "[h]uman beings have a natural suspicion of large creatures, while small animals and small children can be cuddled and caressed without embarrassment or fear".

¹⁶ Affection is sometimes directly connected to the semantic feature of *small*, cf. *prasence* 'piglet'. But in *milijunčić* 'small million' (affectionate expression for a million) this connection is lost. It is conceptualized with respect to the domain of affection with no correlation to size. According to Taylor (2003: 174), this semantic feature detached itself from the prototypical category of diminutives through the processes of metonymic transfer.

¹⁷ Bosanac, Lukin & Mikolić 2009: 2. Cf. further *novinarčić* ('small reporter'), derogatory for a reporter, *državica* 'small state', *feljtončić* 'small feuilleton' (Langacker 1987: 147; Langacker 1999).

¹⁸ For the diminutive formation of object nouns with the suffix *-ette* (*pianette*, *statuette*, etc.), for modification of material nouns and for diminutive formation of animal nouns cf. Schneider 2003: 93–96, 99f.

¹⁹ Schneider 2003; Schneider & Strubel-Burgdorf 2011. For Romance languages (especially Italian), Slavonic languages and Greek cf. Grandi 2011.

In their “Cognitive Approach to the Study of Croatian Diminutives” Bosanac, Lukin & Mikolić (2009) add diminutives, which also refer to a small part of something in a partitive sense. Another concept of smallness is related to short temporal duration, as well as to processes of low intensity or poor quality. Examples are:

- (13) *grančica* ‘small branch’ – ‘small part of a branch’, *sanak* ‘short sleep’, *smiješak* ‘light smile’, *plamičak* ‘light flame’ (Taylor 2002; Taylor 2003)

Bosanac, Lukin & Mikolić (2009) also draw attention to a contextualized meaning of diminutives.²⁰ For example *grmečak* ‘small bush, small scraggy bush’ can be interpreted contextually in some instances as *pejorative*, while in others it simply has the quantifying meaning *small* (cf. Schneider 2013), for smallness also goes with lack of value (Taylor 2003: 146). Let us go back to the Germanic material with geminate voiced stops.²¹ In the following words denoting small things the geminate voiced stops have an onomatopoeic character:

- (14) Icelandic *krobbi* ‘body of little children’, Middle Low German *kodde* ‘piglet’, Norwegian dialectal *tobba* ‘mare; tiny, disheveled female being’ beside MHG *zūpe* ‘she-dog (bitch)’ < **tūbbōn-* (Falk & Torp 1909: 151), Middle Low German *sugge* ‘little pig’ (Falk & Torp 1909: 442), German *Dappe*, *Tappe* ‘paw’ (in *Dappe* the *bb* could also have an onomatopoeic function)

As research has shown children’s early productive vocabulary to be largely onomatopoeic (Caselli, Casadio & Bates 2001) I suppose that also in Germanic geminate voiced stops originated in child’s phonology and that adults, like nowadays, take words with this sound pattern over into their own language. After having been established in the phonological system, geminate voiced stops could also be used to express other meanings. These sounds are to be found in words to denote soft, round, limp things:

- (15) ON *koddi* ‘pillow’, Swedish *rugge* ‘bush’, Early Dutch *klodde* ‘knot’, Norwegian dial. *mugge* ‘heap of 10 sheaves of corn’, Middle Low German *schobbe* ‘sheaf’, ON *stubbi*, *stubbr* ‘stub’, Norwegian dial. *knubb* ‘wooden block’, Saterlandic Frisian *tabbe* ‘tap’

²⁰ The feature “large” cannot be applied to Germanic formations. An instance of semantic change is the development into a specialized meaning. The diminutive no longer denotes its once basic meaning referring to the meaning of the word it originated from, but rather becomes an independent lexical item. For example *kvačica* (‘small hook’) no longer means something small, but ‘clip’, ‘tick mark’ or ‘diacritic’.

²¹ Smith 1973: 21. In English, voiced stops are to be found in children’s language, as it is documented for two year old English children; cf. English *daddy*, *teddy*.

They could assume an emotive function as with pejoratives:

- (16) Middle Dutch *slobbe* ‘sludge’, Middle Low German *dobbe* ‘pool’, Middle Low German *podde*, *pudd* ‘toad’, OHG *chrotta* ‘toad’, MHG *rūp(p)e* ‘eelpout’, Middle Low German *slagge(n)* ‘cold and damp weather, dirty weather’
Middle Upper German *mugge* ‘horse disease’, OHG *scratto* ‘larva, lar malus’, ON *skabb* ‘scabies’ (Falk & Torp 1909: 451).

Finally small and peaked things are denoted:

- (17) Low German *hobbe* ‘little hill’, OHG *kratto* ‘basket’, Middle Low German *snebbe*, *snibbe* ‘bill’, OE *twigge* ‘twig’, Middle Low German *tagge* ‘twig’ (cf. Gothic *tagl* ‘hair’, East Frisian *tāk(e)* ‘stinger, thorn, [spine], tip’) (Falk & Torp 1909: 153), OE *sceagga* ‘hair’, literally ‘being at the top of something’ (to Icelandic *skagi* ‘peninsula’)

In this function the geminate voiced stops resemble those of the mentioned Croatian words with diminutive-suffixes, which signify a small part of something in a partitive sense; cf. *grančica* ‘small branch’ – ‘small part of a branch’, *sanak* ‘short sleep’, *smiješak* ‘light smile’, *plamičak* ‘light flame’. As it was shown, it depends on the context whether the meaning ‘small’ or ‘pejorative’ is intended; cf. *grmečak* ‘small bush, small scraggy bush’.

All in all, I assume that the geminate voiced stops in Germanic are instances of sound symbolism, but in Germanic the establishment of geminate voiced stops has a necessary precondition: Since this language had geminate voiceless stops caused by *n*-gemination, geminate voiced stops could emerge from it by stop weakening in an intervocalic position (cf. Colantoni & Marinescu 2010 for such sound changes). The sound symbolism here is organized in terms of the phonemic polarity strong vs. weak (for these polarities cf. Anderson 1998: 105).

- (18) **kuttan-*: German Swabian *kotze* ‘blister, pimple’ → **kuddan-*: ON *koddi* ‘pillow, scrotum, clava’, *kodd(e)* ‘cushion, scrotum, testicle’, Middle Low German *kodde* ‘testicle’, OE *cod* ‘bag, husk’, Early Dutch *kodde* ‘testicle’
**keudan-*: OHG *chiot* ‘marsupium; pouch, sacculim, pecunia: money’, OE *cēod(a)* ‘bag’ (Lühr 1988: 297; Kroonen 2011: 175).

As uncovered by Lühr (1988) there are many of these pairings with geminate voiceless stops and geminate voiced stops which precisely fit in the semantic classes given above.

6 The hypocoristica with lengthened grade²²

Now we shall proceed to the hypocoristica with a long *ē in the root and geminate voiced stops. These are the words MHG *tāpe* ‘paw’ (**dēbban-*), OHG *tāpe*, MHG *hā(c)ke* ‘hook’ (**hēggan-*), OHG *chrācco* ‘uncinus: barb, fuscina: trident’ (**krēggan-*), OHG *chrāppo* ‘aspidiscus, uncinus: barb’ (**krēbban-*), MHG *snācke* and *snōcke* ‘midge’ (**snēggan-*), that have already been mentioned above. Associated forms show a root vowel *a, cf. Tab. 2 (p. 389).

Since words with ē : a-gradation only appear in Northwest Germanic, Kroonen (2011: 326) considers this vowel gradation to be an internally Germanic innovation, “which arose analogically on the basis of the *ī ~ *i alternation, just like the ablaut of *ū ~ *u.” The *terminus post quem* for this analogy would be the lowering of Proto-Germanic *ē to *ā in Proto-Northwest Germanic. However, when looking at the consonant structure of the words in (19), they clearly have the characteristics of the variants which originate from *n*-gemination. Gothic also shows traces of *n*-gemination, cf.:

- (19) Gothic *afhvapjan* ‘to choke, extinguish’ (with *p* < Proto-Germanic **pp* < Proto-Indo-European **pn*): Greek καπνός ‘smoke’ (Lühr 1988: 249)

Hence, the *n*-gemination took place in Proto-Germanic and the source of the diversity in (19) must be looked for in this language. So we are actually not facing a Proto-Northwest Germanic ā-, *a*-gradation, but a Proto-Germanic ē-, *a*-gradation. Here, an *a alternating with *ē can be traced back to a laryngeal or to analogical syllabification of the zero-grade and *ē to **eh*₁. Thus, a root **greh*₁-, **grə*₁- instead of **grh*₁- yields Proto-Germanic **kra*- (Lühr 1988: 287).

As this syllable structure most likely offers an etymological connection, we will prefer this derivation. So we need a Pre-Proto-Germanic root **greh*₁*g*^h- or **greh*₁*b*^h- for OHG *chrācco* ‘uncinus: barb, fuscina: trident’ (**krēggan-*) or OHG *chrāppo* ‘aspidiscus, uncinus: barb’ (**krēbban-*).

Though such roots are not documented outside Germanic, related forms exist, which help us to understand their structure. There is a nasalized variant in **greh*^h-: Middle Dutch *kringhen* ‘turn’ (Lithuanian *gręžiù* [gręžti] ‘twist, drill’)

²² For OHG Alemannic *scuobba* ‘scale’ (MHG *schuope*) < **skōbbōn-* (beside Middle Low German *schōfe* ‘scale’), which belongs to the verb OHG *scaban* ‘scrape’, cf. Lühr 1988: 301f. Other words with a long root vowel and geminate voiced stops are Swiss German *xnuupa-* ‘swelling’ (**knūbbōn-*), German Palatinate **skūbbōn-* ‘forlock’ (Lühr 1988: 287f.; Kroonen 2011: 297f., 283f.), OHG *hāppa*, MHG *hāpe* ‘sickle’ (Falk & Torp 1909: 73–75). With geminate voiceless stops, OHG *ōstarstuopha* ‘wergild’ (Old Frisian *ieldstōpe* ‘wergild’) is attested.

Table 2. Hypocoristica with lengthened grade and associated words with *a

a.	MHG <i>tāpe</i> ‘paw’ (* <i>dēbban-</i>)	German <i>Dappe</i> , <i>Tappe</i> ‘paw, (foot)print’ (* <i>ḍabban-</i>) German <i>Tapfe</i> ‘paw’ (* <i>ḍappan-</i>)
b.	OHG <i>tāpe</i> , MHG <i>hā(c)ke</i> ‘hook’ (* <i>hēggan-</i>) OHG <i>hāho</i> ‘hook’ (* <i>χēχan-</i>) OS <i>hácon</i> ‘uncus; hook’ (* <i>χēk^kan-</i>)	Icelandic <i>haki</i> ‘pickaxe’, Norwegian <i>hake</i> , Old Frisian <i>haka</i> , OE <i>haca</i> ‘crook’ (* <i>χakan-</i>) (Lühr 1988: 285ff.)
c.	OHG <i>chrāppo</i> ‘aspidiscus, uncinus, barb’ (* <i>krēbban-</i>) OHG <i>chrāpfo</i> ‘uncinus: barb’, MHG <i>krāpfe</i> ‘hook, bracket’ (* <i>krēppan-</i>) OHG <i>chrāf(f)o</i> ‘ungula: claw, uncus: hook, fuscina: trident’ (* <i>krēpan-</i>) (Kroonen 2011: 329ff.)	Middle Dutch <i>crappe</i> ‘hook, clamp’, German <i>Krapfen</i> ‘doughnut’ (* <i>krappan-</i>)
d.	OHG <i>chrācco</i> ‘uncinus, fuscina: trident’ (* <i>krēggan-</i>) ON <i>krákr</i> ‘crook to loosen frozen soil’ (* <i>krēk^ka(n)-</i>)	MHG <i>krage</i> ‘hoe’ (* <i>kragōn-</i>) ON <i>kraki</i> ‘crook’, OHG <i>chracho</i> ‘crook’ (* <i>krakan-</i>) Norwegian <i>kragg</i> ‘crooked tree’ (* <i>kragga-</i>) German <i>Krack</i> ‘crook’ (* <i>krakka-</i>) (Kroonen 2011: 331ff.)
e.	MHG <i>snācke</i> <i>snōcke</i> ‘midge’ (* <i>snēggan-</i>) ON <i>snákr</i> ‘snake’ (* <i>snēk^ka-</i>)	Icelandic <i>snagi</i> ‘pin’ (* <i>snagan-</i>) OE <i>snaca</i> , Middle Low German <i>snake</i> ‘snake’ (* <i>snakan-</i>)

(LIV²: 191), which appears beside a rhyming root **grenk-* (ON *krá* ‘corner’, ON *kringr* ‘ring’) pointing at an unextended root **ger-* as in ON *karmr* ‘armor’ (literally ‘wattling’) (Lühr 1988: 178). This root could be extended to **gr-eh₁-ĝ^h-*; cf. root structures like **ĝ/g^hr-eh₁-d-* ‘weep’ in Germanic (Gothic *gretan*) (LIV²: 202). The same development as with the root variants **ger-*, **grenĝ^h-*, **gr-eh₁-ĝ^h-* is conceivable with labial coda, giving rise of **gremb^h/p-*, **gr-eh₁-b^h/p-*; cf. MHG *krimpfen* ‘tense up’ (Lühr 1988: 144).

Whichever one is the starting point for the *ē* : *a*-gradation of the words with onset **kr-* in Germanic, OHG *chrāppo* ‘aspidiscus, uncinus: barb’ (**krēbban-*), OHG *chrācco* ‘uncinus: barb, fuscina: trident’ (**krēggan-*) are rhyming words. Also OHG *tāpe*, MHG *hā(c)ke* ‘hook’ (**hēggan-*) could be connected. But since *ē-* and *a*-gradation are coexistent in *vřddhi*-derivations, as Germanic **uēta-* ‘wet, moist’ (ON *vátr*, OE *wǣt*, Old Frisian *wēt*) beside Germanic **uatar*, **uatnaz* ‘water’ (OHG *wazzar*, ON *vatn*) shows,²³ **ē* could be interpreted as lengthened grade from the Germanic point of view.²⁴

Concerning semantics, a curved object is denoted by the words OHG *chrāppo* ‘aspidiscus, uncinus: barb’, *chrācco* and *tāpe*, since the adjective Proto-Germanic **krump/ba-* ‘crooked’ is associated (OE *crump*, OHG *crumpf*; OHG *krumb*) (Lühr 1988: 269) with the words having a *kr*-onset. As with the words with geminate voiced stops following a short vowel, I assume that this curved thing originally was a smaller object.

The development seems to have been like this: In a first step, a Proto-Germanic *n*-stem nominative **krēban-*, genitive **krab-n-ez* (< **krab^h-n-ez*) was created. In the oblique case forms, *n*-gemination happened, resulting in a stem **krapp-*. Next **pp* in **krēban-* was generalized, as the Proto-Germanic syllable structure allows for long vowels beside geminate stops. The outcome is a new *n*-stem **krēppan-*. For **krēppan-* become a diminutive, the geminate voiced stops are weakened, resulting in **krēbban-*, while **ē* is retained in a sound-symbolic function.

²³ Darms 1978: 20; cf. also *Ægir* (Lühr 2000: s. v.), OHG *klāftra* ‘measurement of extended arms, fathom’ < **klēftrō-* (lit. *glēbiu*).

²⁴ Concerning the distribution of a lengthened grade and long obstruents, other Indo-European languages behave differently as the final investigation step shows. An example is Latin *accipiter* ‘hawk’: the first compound member belongs to Latin *ācer* ‘sharp’ (compare Greek *ὠκύπτερος*, *ὠκυπετής*, Old Indic *āsupátvan-* ‘fast-flying’, epithet of birds of prey). The element **āk-ri-*: Greek *ἄκρο-* ‘sharp’ corresponds to that of Latin *sācri-* (Plautus, *Rudens porci sācrēs*) from Latin *sacro-* ‘holy, sacred’. In *acci-*, from the Caland form **āci-*, a metathesis of quantity occurred. The vowel lengthened grade was shortened; by contrast the obstruent was doubled.

A form expansion similar to OHG *chrāppo* and *chrācco* is encountered in MHG *snācke snōcke* ‘midge’ (**snēggan-*) belonging to the strong verb OHG *dhurah-snahhan* ‘creep into’ (OE *snaca*, Middle Low German *snake* ‘snake’ < **snakan-*). A form with geminate voiceless stops is presupposed by the pre-form **snēk^a-* of ON *snákr* ‘snake’. In the meaning ‘midge’ the word could take on a pejorative sense, which evokes the weakening of the stops in **snēggan-*. If these words are cognates of OHG *sneggo* ‘snail’ (< **snagian-*), the voiceless stop **k(k)* is due to *n*-gemination. The distribution of the word family gives reason to suppose a Proto-Germanic origin. A root formation Pre-Proto-Germanic **sneh₁k/g^h-/*snə₁k/g^h-* is theoretically possible but without parallels in the Indo-European languages. A rhyme word of the words for ‘hook’ could be considered in the case of a mediating concept ‘roundness or curvature’.

The last word with *ē* : *a*-gradation, MHG *tāpe* ‘paw’ (**dēbban-*) beside German *Dappe*, *Tappe* ‘paw, (foot)print’ (**đabban-*), German *Tapfe* ‘paw’ (**đappan-*), can be connected with the verb Middle Dutch *dabben* ‘toddle’ (Kroonen 2011: 327). The noun is a clear hypocoristic form in which the geminate voiced stops and the lengthened grade could also bear an expressive character. Jakobson (1960: 354) calls this phenomenon “emphatic prolongation”. This means that the feature *length* contributes emphasis.

So far we can tell, the semantics of the words with *ē* : *a*-gradation and geminate voiced stops is ‘small hook’, pejorative ‘midge’ and ‘paw’. These meanings fit in with the Croatian diminutives we gave above and demonstrate that the Germanic words form a group characterized by the sound-symbolic features of geminate voiced stops and lengthened grade, though **ē* originally came from **eh₁*.

7 Summary

Summarizing our findings, we state that Kluge’s sound law is valid. But contrary to Kluge, we assume for the geminate voiceless stops not a *n*-assimilation, but an *n*-gemination. This kind of gemination comes from a gemination interpretation of strengthened stops caused by an original *n*-coarticulation, whereby the gemination interpretation was triggered by the syllable contact law. Neither **m* nor voiceless fricatives participate in this gemination. The sound law is most evident in *n*-stems showing different gradation degrees, including **ē*. In these stems geminate voiceless stops can be weakened in *n*-stems yielding geminate voiced stops. As the coexistence of words with short vowels, geminate voiceless stops and geminate voiced stops illustrates, certain semantic groups can be distinguished. Geminate voiced stops are found in proper diminutives, in terms for body parts, in de-

notations of small, soft, round things, and in pejoratives. Parallel semantic groups exist for Croatian diminutives formed with special suffixes. In Germanic, similar meanings appear in the words with \bar{e} : *a*-gradation and geminate voiced stops: ‘small hook’, pejorative ‘midge’ and ‘paw’. Although $*\bar{e}$ originated from $*eh_1$ in Germanic, the long vowel could be interpreted as lengthened grade and thus assumed the function of reinforcing expressivity next to sound-symbolic stops, in this case, geminate voiced stops.²⁵ The small number of words with these sounds in Germanic confirm Sapir’s (1921: 217) dictum that “the emotional aspect of our psychic life is but meagerly expressed in the build of language”.²⁶ Nonetheless it exists and should be sought among the multitude of regular sound laws.

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Abbreviations

LIV² Helmut Rix (2001). *Lexikon der indogermanischen Verben. Die Wurzeln und ihre Primärstambildungen*. Unter Leitung von Helmut Rix bearbeitet von Martin J. Kümmel, Thomas Zehnder, Reiner Lipp, Brigitte Schirmer. 2nd ed. Wiesbaden: Reichert.

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²⁵ This is a special feature of the Germanic branch of the Indo-European languages.

²⁶ Cf. Sapir 1929; Corver 2008; 2012; 2013a; 2013b. For diminutive use in conversation (vocative acts, directive acts, commissive acts, expressive acts, assertive acts) cf. Schneider 2003: 140–235.

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