An Analysis of *z loss in West Germanic

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1. Proposal: a regular sound change in the Ingvaeonic dialects of West Germanic (OE, OFris, OS):

$$*\mathrm{z} > \emptyset \ / \ \{*\mathrm{i},*\mathrm{e}\} \ \_ \ \$ \text{ with compensatory lengthening of preceding vowel}$$

To my knowledge, this sound change has not been previously identified as a regular sound change (cf. e.g. Brugmann 1897, Campbell 1959).

While earlier accounts were obliged to assume that the rule of **z*-deletion applied sporadically, the rule proposed here appears to have applied regularly. I claim that there is a reasonable explanation for each of the apparent exceptions.

2. A subset of the relevant data (a more extensive collection of data are in the appendix):

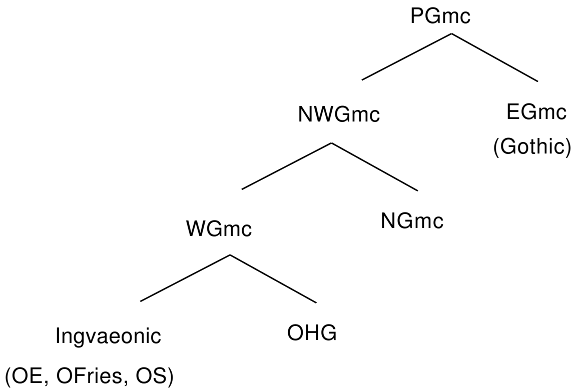
PGmc	Goth	ON	OHG	OE	OFris	OS	
*miz	mis	mēr	mir	mē		mī	"me (dat.)"
*wīz	weis	vēr	wĭ̄r	wē		wī, we	"we"
*maiz	mais	meir	mēr	mā	mē(r)	mē(r)	"more (adv.)"
*mizdō	mizdon		mēta/ miata/ mieta	mēd/ meord	mēde/ mīde/ meide	mēda/ mieda	"reward, payment"
*hezdōn				heorde	hēde		"flax fiber"
*twiznaz		tvennr/ tvinnr	(zwirn)	twīn			"twine; twofold"
*liznōn			lernēn/ lirnēn	leornian	lernēn/ lirnēn	līnōn	"learn"
*razdō	razda	rǫdd	rarta	reord			"language, speech"
*huzda	huzd	hodd	hort	hord		hord	"treasure"
*bruzdaz		broddr	brort	brord			"edge"
*hraznō		hrǫnn		hræn hærn			"wave"
*gazdaz	gazds		gart	(gierd)		gard	"rod, prickle"
*uzdaz		oddr	ort	ord	ord		"(spear)point, place"
*mazgaz		mergr	marc	mearg	marg	merg	"marrow"

This presentation expands on a point from a longer discussion of the trend in WGmc toward the elimination of the PGmc voiced fricatives (Crist, 2001). This trend is modeled formally in Optimality Theory as the rise in relative ranking of a *VOICED-FRIC constraint. The present discussion, however, is pretheoretic.

Thanks to Don Ringe and to Jay Jasanoff for discussion. Any errors are of course my own.

The form *zwirn* is attested in MHG but not in OHG. The OE form *gierd* is said to be derived from a form **gazdi.*

3. The standardly accepted Germanic phylogeny, for reference:



Defining the problem

4. **Distribution of PGmc** ***z***

Because of the history of **z* (arising either **s* either by Verner's Law or by assimilation to a following voiced obstruent), the segment has a somewhat lopsided distribution: it is found only in syllable codas and in word-medial onsets; never in word-initial onsets (Campbell 1959 p. 163-4).

5. **The first WGmc** ***z*****-deletion (old news)**

Throughout WGmc, PGmc **z* deletes word-finally in unstressed syllables; this is already understood (e.g. Campbell p. 166). I assume here that this pan-WGmc rule predates and is separate from the Ingvaeonic rule of **z*-deletion proposed here.

The earlier WGmc sound change applies across the board, and has major consequences for WGmc morphology, since **-z* was very common among PGmc inflectional suffixes.

After this Proto-West-Germanic sound change, **z* exists only word-medially in syllable onsets, and in the codas of stressed syllables (whether in stressed monosyllables or in the stressed initial syllable of polysyllabic words).

6. **Rhotacism**

**z* never survives as such into the historical WGmc languages. In all cases where it survives the WGmc deletion and the Ingv. deletion, it rhotacizes to *r*, merging with original PGmc **r* (Campbell 1959 p. 166; Steblin-Kamenskij 1963).

It might be tempting to suppose that rhotacism precedes the two *z*-deletions, since the deletion of /r/ in codas is attested in other languages, e.g. modern English. However, this cannot be the case; original *r never deletes in the relevant environments (**miz, *wīz* > **mez, *wēz* > OE *mē, wē* "me, we", but **hēr* > OE *her* "here"). The deletion of **z* is clearly sensitive to the original **r/*z* contrast.

Although *z > r also occurs in NGmc, it can be shown that this is a parallel rather than shared innovation. There are sound changes unique both to NGmc and to WGmc which depend on the contrast between **z* and **r;* hence the two branches must have developed separately for a while before both underwent the merger between original **r* and **z.* In NGmc, the sound change in question is *ai > a: / _ {*h, *r}(but not before *z; OIcel **sair* > *sár* "wound", but **maizan* > *meiri* "more"; Noreen, 1904, p. 75). In WGmc, the sound changes are the two deletions of **z* themselves.

(I deliberately overlook the second person pronouns which appear in Gothic as *izwis, izwara;* for discussion of the special WGmc development *zw > *ww, see Stiles 1986, p. 92-3.)

7. **Distinguishing the two deletions**

The deletion of **z* has been thought of as a single sound change. Previous accounts of the deletions of **z* do not distinguish what I am treating here as two separate sound changes. For example:

> "Between a vowel and consonant *r* usually remains, e.g. *hord, reord* ... but it is lost with compensatory lengthening in OE *hād-* hair (cf. ON haddr), *mēd* reward (beside *meord*), *twīn* linen (cf. Ger. *zwirn*), cf. OS *līnon* learn, MD *hede* hards of flax (beside OE *leornian, heordan* ...). ... *z* is lost in West Gmc. finally in unaccented syllables, e.g. many n.s. and n.p. inflexions, the unaccented pronominal words OE *we, ġe, he me, þe, hwa.*"

(Campbell 1959 p. 166)

So far as I know, Brugman (1897) comes the closest to solving the problem; he recognizes that there appears to be some kind of connection with preceding front vowels, but says:

> Bei vorausgehendem palatalen Vocal erscheint im Westgerm. auch Wegfall des *z.* So as. *līnōn* : ahd. *lirnēn;* ags. *twín* : mhd. *zwirn* ... Eine allseiting befriedigende Erklärung ist für diese Erscheinung ... noch nicht gefunden.

8. **Some observations**

a. Non-final **z*-deletion never occurs after back vowels in any WGmc language; not even one exception.

b. Non-final **z*-deletion never occurs outside OE, OFris, OS, with the sole exception of OHG *mēde,* etc. "reward, payment".

9. **Problematic forms:**

OHG *mēta/miata/mieta* (Secondary **z*-deletion doesn't otherwise occur in OHG)
OFris, OS *mē(r)* (**z* should have been deleted completely, but it is variably present as *r*)
OE *meord, heorde* (Deletion of **z* unexpectedly fails)
OE *leornian,* OFris *lernēn/lirnēn* (same)

In the case of OHG *mēta,* I claim that this is simply a loan-word from Ingvaeonic into OHG. It would hardly be remarkable for the word for "payment" to be borrowed in a trade situation.

The variable presence of *r* in OFris, OS *mē(r)* can be explained straightforwardly in terms of analogical restoration of *r (*z)* on the model of the comparative and superlative adjectives **maizan, *maistra,* and perhaps on the analogy of the general comparative adjectives as well. In the case of OE, this restoration has not yet occurred in the earliest written records, but it later happens in the full light of history.

In the cases of OE *meord, heorde*, I notice that the failure of secondary **z*-deletion is found in both the cases where **d* follows (so far as I know, these are the only cases of this kind). Continental Pre-OE was originally spoken in Jutland at the northern periphery of the Ingvaeonic continuum; so perhaps the application of the rule in polysyllabic words did not spread this far north. The existence of OE *mēd* beside *meord* is not surprising if Old English is the product of some degree of dialect mixture, as is generally assumed.

As for OE *leornian,* OFris *lernēn/lirnēn,* there are at least two possible explanations. One possibility is to extend the explanation above so that in northernmost Ingvaeonic, secondary **z*-deletion fails not only before **d* but also before **z* as well, in which case OE *twīn* must hail from a closely related dialect further south.

There is a second possibility: namely, that the the *z was originally deleted throughout Ingvaeonic in **liznōn,* but was later restored by analogy with the related causative verb **laizijanã* "to teach" (Goth. *laisjan,* OHG *lēren,* etc.) This restoration could have happened either together or separately in OE and OFris; it could also have happened only in OE and have been reintroduced into OFris as a loan by Christian missionaries from England.

10. **Possible problems**

Torp (1909) lists the following:

PGmc.	*waida (*waizda) n. "woad"	**PGmc.**	*kizna m. n. "resinous wood"
OE.	wâd n. (engl. woad)	**OE.**	cên m. "pine, fir, spruce"
OFris.	wêd	**MLG.**	kên
MLG.	wêt, wêde	**OHG.**	chien, kien, kên
OHG. MHG.	weit m.	**MHG.**	kien m. n. "fir, spruce; splinter or torch (of such wood)"
NHG.	Waid		

If these reconstructions of **z* are correct, then the High German forms are problematic, since **z*-deletion would seem to have occurred here, contrary to prediction. One loan word *(mēta)* is not very bad, but the argument becomes weak if loans must be posited for these two words as well.

How secure is the reconstruction of **z* for these two forms? In the case of **kizna,* the word is not attested in any Germanic languages outside WGmc. It has been proposed to connect this word with Russian *sosná* (in glaring violation of Grimm's Law, since *k > *h in Germanic; see Ringe 1984 for critical discussion) and with OIr. *giús* "fir" (where the consonants at least fit; but I am told that the vowel in the OIr. form reflects an original long vowel). I follow Ringe (1984) in simply considering this a WGmc word of unknown origin which happens to contain an apparent WGmc $*\bar{e}_2$.

In the case of **waizda,* the argument for the existence of **z* is that there is a medieval Latin word *waisdo* (among other spellings); Feist 1909 and Torp 1909 suggest that this could be a loan from an unattested Gothic word **wizdila,* with zero-grade ablaut. This is not impossible, but it would be a stretch to base any strong conclusions on such a supposition. Feist (1939) revises his earlier view and suggests that this is simply a Wanderwort; we might not be able to tell which are the donor and recipient languages. Kluge (1999) remarks "Die Vermutung, daß alle diese Wörter aus ein unbekannten Sprache entlehnt sind, liegt nahe."

It should be noted in this connection that Webster's 1913 Unabridged Dictionary (Gutenberg online version) lists the cognates Dan. *vaid, veid,* Sw. *veide.* If these words are real, they would presumably argue against reconstructing **z* for this word since geminate *dd* would be predicted as the NGmc outcome for **zd,* unless there is some degemination in later NGmc which I am not aware of. However, I have not been able to confirm these words in any of the several dictionaries of Danish or Swedish I have consulted, nor in any other etymological discussions of this word; so the entire sub-argument is probably moot. Rejecting **z* in this reconstruction can still be argued solely on the argument above.

10. **Relative chronology**

$*z > \emptyset$ / $\{*i,*e\}$ _ \$ must *follow* the Ingvaeonic lowering $*i > *e$ / _ *z.

$*z > \emptyset$ / $\{*i,*e\}$ _ \$ must *precede* the Ingvaeonic chain vowel shift which included the change *ai > *a:, since the *i element of the diphthong triggers secondary *z*-deletion.

$*z > \emptyset$ / $\{*i,*e\}$ _ \$ must *precede* rhotacism, since original **r* does not delete in this environment, as noted.

Appendix: PGmc words with *z in stressed codas

The following words were collected from the online version of Torp (1909) (http://www.ling.upenn.edu/~kurisuto/germanic/pgmc_torp_about.html) by searching for "z" in the first or second word of each entry. Since the online version is only partially corrected, it is possible that there might be a form or two not caught by this search; it is also possible that a new cognate set or two might have been discovered since 1909. Excluded are a few words which do not survive into WGmc. Otherwise, this list is fairly complete.

Instances of *z in unstressed (non-initial) syllables are not included, since these were uniformly deleted throughout WGmc and are not candidates for the second *z-deletion under discussion here.

The following is essentially a translation of the relevant entries from Torp, with various revisions of my own.

*z preceded by a front vowel

PGmc.	*wīz "we", nom. plur.
Goth.	weis
ON.	vēr (OSwed. vī(r))
OS.	wi, we, ps. auch wir
OFries.	wi
OE.	wē
ModE.	we
OHG.	wir, wir
NHG.	wir

Ig. vei-s. Cf. skr. vay-im wir.

PGmc.	*liznōn "to learn"
OS.	līnōn
OFries.	lirna, lerna
OE.	leornian
ModE.	learn
OHG.	lirnēn, lernēn, lernōn
MHG. NHG.	lernen

*Torp includes an alternate PGmc form *līznōn to account for the long vowel in the OS form. However, this can be explained as the regular compensatory lengthening from *z-deletion.*

PGmc.	*laizijanã "to teach"
Goth.	laisjan
OS.	lērian
OFries.	lēra
OE.	lǣran
OHG.	lērran, lēran
MHG.	lēren
NHG.	lehren

ON. læra is a loan from OE. Causativ zu līsan.

*Included here as the possible source for the analogical restoration of *z in OE* leornian *(see main text).*

PGmc.	maiz adv. comp. "more"

Goth. mais “more”
ON. meir
OS. mē, mēr
OFries. mā(r), mē(r)
OE. mā;
OHG. mēr
NHG. mehr

Comparative and superlative of the adjectival forms:

PGmc. maizan “greater, more” sup. maista.
Goth. maiza, maists größer, größt
ON. meiri, mestr
OS. mēro, mēst
OFries. OE. māra, māst
ModE. more, most
OHG. mēro, mēst
NHG. mehr, meist

German. ma-is, ma-is-ta, formell comp. und sup. zu mēria, der Bedeutung nach zu mekila. Vgl. ir. máo, móo größer.

Torp lists an OHG form mē *alongside* mēr. *This would be problematic for the sound change proposed here, but as far as I can determine, OHG* mē *is a ghost word. I can find no reference to it in Schützeichel (1969), Braune/Ebbinghaus (1969), or Wright (1888).*

Torp also lists an alternative PGmc form *mais. *I see no need for this; the devoicing of the *z in Gothic is regular.*

PGmc. *tvizna “to each (*je zwei*)”
ON. tvennr, tvinnr “twofold”
OE. twīn n. “Leinwand (canvas, screen)”
ModE. twine
MLG. twern “doubly spun twine”
MHG. zwirn m. “doubly spun twine”
NHG. Zwirn

Cf. lat. bīni (aus dvisno-).

PGmc. *tviznōn, -ēn “to twine”
ON. tvinna “to double, duplicate”
ModE. twine (verb)
MLG. twernen
OHG. zwirnēn, zwirnōn
MHG. zwirnen “twist together twice, twine”

PGmc. *þrizna “threefold, the three (*je drei*)
ON. þrennr, þrinnr “threefold”, pl. “the three”

Cf. lat. terni dass.

This wouldn’t even be relevant, except that Clark Hall (1962) lists OE forms þrinna and þrinen “three-fold”. He doesn’t show the vowel on the second one as long. A recoinage in OE?

PGmc. *mizdō(n) f. “reward, payment, fee”

Goth. mizdō f. “reward”
OS. mēda, mieda f. “payment”
OFries. mēde, mīde f. “reward, rental, payment, gift”
OE. mēd und meord f. “reward, payment”
ModE. meed
OHG. miata, mēta
MHG. miete f. “payment, reward, bribe”
NHG. Miete

Germanic mēdō from mēizdhā. Cf. OSl. mĭzda “reward”. — Gr. μισθός m. “reward, payment (of a soldier)”. — Skr. mīḍhá n. “reward from a battle, competition”, Av. mīzhda n. “reward”.

Torp of course assumes the old view that the long vowel in the WGmc forms arises from PIE *mēizdhā > *PGmc* *mēzdō(n). *However, Ringe (1984) refutes the long-standing notion that there was an* *$\bar{e}_2$ *in PGmc. In this case, the apparent* *$\bar{e}_2$ is simply the product of the regular compensatory lengthening.

PGmc. *hezdon f. “coarse flax or hemp fiber, oakum”
OFries. MLG. hēde f.
OE. heorde f.
ModE. hards (=coarse refuse of flax or similar fiber)

Cf. lat. caesaries “head-hair”, skr. késara m. “hair, mane”. Uncertain. OE. heorde könnte auch germ. hezdōn sein; Wz. hes = ig. kes kratzen, kämmen, s. hes 3.

Torp lists an additional PGmc form *haizdon *giving rise to the long vowel in the OFries, MLG forms. Once again, this can simply be the regular compensatory lengthening. Torp reconstructs *i as the vowel, but I am told that this is inconsistent with the Gk cognate.*

PGmc. *kizna m. n. “resinous wood”
OE. cēn m. “pine, fir, spruce”
MLG. kēn
OHG. chien, kien, kēn
MHG. kien m. n. “fir, spruce; splinter or torch (of such wood)”

Cf. Ir. gius (< *gisosto) “fir, spruce”

See main text for comment.

PGmc. vaida (vaizda) n. “woad”
OE. wād n. (engl. woad)
OFris. wēd
MLG. wēt, wēde
OHG. MHG. weit m.
NHG. Waid.

Daneben german. vaizda (woraus mundartl. vaida?), vgl. mlat. vaizda und got. (ablautend) vizdila. Das Verhältnis zu lat. vitrum und gr. ἴσατις ist unklar.

See main text for comment.

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*z preceded by a back vowel

PGmc. *uzdaz m. “point, ‘place’”
ON. oddr gen. odds m. “point, place”

OS. ord m. "point, edge (blade)"
OE. ord m. "point, spearpoint"
OHG. MHG. ort m. n. "point, corner, edge (part, piece, small coin)."
Perhaps PIE. ud-dho > uzdho, from ud (s. ūt) and the root dhē "to set".

PGmc. *hazdaz m. "head-hair"
ON. haddr m. "long hair (of a woman)"
Ablauting form *hezda in
OE. wunden-heord "having curled hair (?)"
Cf. asl. kosa "hair", kosmŭ "head-hair", nsl. kosem "bundle of flax (*Flachsbund*)". — ir. cass (i.e. *kasto-) "curl, tress". From this could also be drawn OE. heordan pl. (engl. hards of flax), MDut. herde "flax fiber". Cf. gr. κέσ-κιον Werg.

*It isn't clear to me how OE. heordan could arise from *kasto- without a high front vocoid to first umlaut the vowel before the Breaking.*

PGmc. *huzda n. "hidden treasure"
Goth. huzd n. "treasure"
ON. hodd
OS. hord, horð, horth n. "treasure, closed or hidden interior"
OE. hord m. n. "treasure, amassed wealth"
ModE. hoard
OHG. MHG. hort n.
Cf. Gr. κύσθος m. cavity, vulva; Lat. custos "a guard".

PGmc. *hraznō f. "source"
ON. hrǫnn f. "wave"
OE. hræn, hærn f. "wave, sea"
Ablauting
MHG. rünne f. "storm surge?"
Cf. gr. κρήνη

Lexer (1986) does in fact list rünne *"Sturmwoge, Sturm"; the word is real. Torp includes the question mark, perhaps indicating that the cognation is uncertain (and I agree that it is uncertain). If I am understanding, Torp is implicitly assuming that the MHG form reflects an original zero grade.*

The PGmc gloss "source" ("Quelle") does not make a great deal of sense; perhaps Torp mistakenly wrote "Quelle" for "Welle".

PGmc. *gazdaz m. "prickle, point; rod"
Goth. gazds m. "prickle"
ON. gaddr m. "prickle"
OS. gard "staff, rod"
OHG. gart, cart
MHG. gart m. "prickle, stick for driving (animals)"
Cf. OSl. žrudŭ "flimsy pole"). Basic meaning: "rod, pole". Cf. Ir. gat (d. i. *gazdo-) "rod" and gas f. (d. i. *gasta) "sapling, sprout, shoot". — lat. hasta "rod, shaft, spear".

English "goad" isn't connected; it is simply a separate word.

PGmc. *bruzdaz m. “blade, edge”, *brazda, *brezda m. “edge”

ON. broddr m. “point, sprout”

OE. brord m. dass.

OHG. brort, prort m. “skewer, projectile, edge, rim (*Bord)*, forepart of a ship”

MHG. brort

Norw. vernac. bradd m. “shore, edge”

OE. breord. brerd m. dass.

OHG. brart m. “edge, forepart of a ship”

(Possibly connected are Germ. barda and burda “edge, seam”, from *barzda, *burzda? See ber 3). Cf. Ir. brot m. “prickle”, cymr. brathu “to prick, bite”.

PGmc. *nazjan “to heal, rescue, sustain”

Goth. (ga)nasjan “to make healthy, heal, rescue”

OS. nerian “to save”

OFries. nera “to nurture”

OE. nerian “to save, protect”

OHG. nerjan, nerren, neren

MHG. nerigen, neren, nern “heal, sustain the life of, save, protect, nourish”

NHG. nähren “nurture, nourish”

Causative to *ganesan. Cf.

ON. nara (= Germ. nazēn) “to live”, aldr-nari (= nazan) m. “life-sustainer (=fire)”

OS. līfnara f. “food, nourishment”

OE. ealdor-neru f. “saving of a life”

OHG. nara

MHG. nare f. “salvation, rescue, nourishment, sustenance”

PGmc. *mazgaz m. “marrow”

ON. mergr g. mergjar m. “marrow in a bone”

OS. marg n.

OFries. merch, merg m. n.

OE. mearg m. n.

ModE. marrow

OHG. marg, marag, marc, marac g. marges, marages

MHG. marc g. marges n.

NHG. Mark n.

Cf. OSl. mozgŭ “brain”. — Skr. majján m., majjā́ f. “marrow”. Perhaps also ir. medg (aus mezghā) f. “whey”, cf. russ. mozga “blood”; and OSl. mězga “sap, juice”, nsl.: “(tree) sap”, klruss. mjazok “marrow”, mjazka “(tree) sap”.

PGmc. *razna n. “house”

Goth. razn n. “house”

ON. rann n. “house”

OE. ærn n. “house”; cf. ræsn n. “plank, ceiling”

OFries. ransa

Cf. Ir. árus “dwelling”.

PGmc. *razdō f. “voice, sound”

Goth. razda f. “voice, pronunciation, speech”

ON. rǫdd f. “sound, voice, vowel”

OE. reord f. “voice, sound, speech”

OHG. rarta f. "voice, modulation"

PGmc. *razdō f. "food, meal"
OE. reord f., gereord n. "meal, feast, food", gereordian "feed, entertain, feast"
ON. greddir "feeder, satisfier" (from a verb. *gredda = *ga-razdian),
grenna "to feed" (derived from a noun *grǫnn).

Perhaps from the basic root ras (s. ras 3), cf. the double meaning of Germ. vesan.

PGmc. *uz-laga m. n. "fate"
ON. or-lǫg n. pl. "fate"
OS. orlag and orlagi
OE. orlæg n. "fate"
OHG. orlac m., urlaga f. (?) dass.

PGmc. *vala-kuzjōn f. "valkyrie"
ON. valkyrja f. "valkyrie"
OE. wælcyrige "erinys (one of the Furies), sorceress"

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