

Numerative and numeral inflection in Ossetic

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Abstract. Ossetic, like many Middle and Modern Iranian languages, has a special form for nouns in the nominative when modified by a numeral. This numerative form takes the ending *-i* in the Digor dialect and *-y* in the Iron dialect, e.g. Digor *avd furt-i*, Iron *avd fyrty-y* ‘seven sons’. The oblique cases are inflected normally in Iron, e.g. genitive *avd fyrty-y*, dative *avd fyrty-æn*, but Digor adds *-e(m)-* to nouns before the case endings, as well as to numerals when used alone, e.g. genitive *avd furt-e-j* ‘of the seven sons’, *avd-e-j* ‘of the seven’, dative *avd furt-em-æn* ‘to the seven sons’, *avd-em-æn* ‘to the seven’.

The origin of the numerative markers remains a controversial question of Ossetic historical grammar. Although the numerative in Sogdian and Khwarezmian goes back to the Proto-Iranian dual, a change with typological parallels in eastern South Slavic, the Ossetic numerative in *-i/-y* cannot reflect any of the inherited dual markers. It is proposed that this ending rather continues the Proto-Iranian nominative plural in **-āh* of *ā*-stems and animate *a*-stems. Although it was replaced by **-āhah* and collective **-ā* in most Iranian languages, and indeed already in Avestan, **-āh* could have survived in pre-Ossetic. There it regularly developed to *-i/-y* after numerals, but was ousted in all other contexts by an innovative (originally collective) formation in **-tā- > -tæ*, a situation paralleled in Middle Welsh. It is further hypothesized that the suffix *-e(m)-* of the Digor oblique cases was generalized to numerals from adjectives of quantity, or it could have originated in Proto-Ossetic **duwe* ‘two’ < Proto-Iranian **duwai*. From numerals, it then spread to nouns governed by numerals.

Keywords: Ossetic, Sogdian, Iranian, Slavic, numeral systems, numerative, plural, dual, pronominal inflection, “laws of finals”.

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Нумератив и склонение числительного в осетинском языке

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Аннотация. В осетинском, как и во многих ново- и среднеиранских языках, имеется особая форма номинатива существительных, входящих в именную группу с числительными. Эта форма, нумератив, принимает в дигорском окончание *-i*, а в иронском *-y*, например, дигор. *avd fyrt-i*, ирон. *avd furt-y* ‘семь сыновей’. В косвенных падежах в иронском употребляются обычные падежные формы, а в дигорском падежным окончаниям таких существительных, как и числительных в самостоятельном употреблении, предшествует суффикс *-e(m)-*.

Происхождение показателей нумератива остается спорным вопросом исторической грамматики осетинского языка. В согдийском и хорезмийском нумератив восходит к праиранским показателям двойственного числа, что находит типологическую параллель в южнославянских языках. Осетинский нумератив *-i/-y*, напротив, не может быть возведен ни к одному из унаследованных показателей двойственного числа.

В статье приводятся аргументы в пользу происхождения осетинского нумератива от праиранского окончания номинатива множественного числа **-āh* основ на *-ā-* и основ на *-a-* одушевленных имен существительных. Хотя окончание **-āh* во многих иранских языках было вытеснено окончаниями собирательного числа **-ā* и **-āhah*, оно могло сохраниться в праосетинском. Предполагается, что именно **-āh* было вытеснено во всех остальных контекстах новым показателем множественного числа **-tā-* > *-tæ*, развившимся на базе собирательных форм.

Высказывается гипотеза о том, что суффикс *-e(m)-* в формах косвенных падежей дигорского диалекта сформировался в числительных под влиянием прилагательных, выражающих количество, либо под влиянием праосетинского **duwe* ‘два’ < пра-иран. **duwai*. От числительных этот показатель мог дальше распространиться на синтаксически зависимые существительные.

Ключевые слова: осетинский, согдийский, иранские языки, славянские языки, числительные, нумератив, множественное число, двойственное число, прономинальное склонение, закон конечного слога.

1. Introduction

It is a pleasure to contribute to this volume in honor of Professor Kazansky, an esteemed scholar and colleague who has done so much to make St. Petersburg an internationally renowned center of Indo-European linguistics. The following study reflects my longstanding enthusiasm for one of the many fascinating languages spoken in his native country, as well as the historical evolution of his mother tongue and its closest relatives.

Like many Middle and Modern Iranian languages, Ossetic has a special form for nouns when modified by a numeral or certain quantifiers.¹ In the nominative, nouns take the ending *-i* (Digor), *-y* (Iron), synchronically identical to the genitive and inessive in *-i/-y*, e.g. Digor *avd furt-i*, Iron *avd furt-y* ‘seven sons’. In the other cases, the modified noun has the usual case markers in Iron, but Digor shows a more complex pattern: the genitive, allative, and superessive endings are preceded by *-e-*, the dative, ablative, and inessive endings by *-em-*. When used alone, numerals inflect as ordinary nouns in Iron, e.g. *avd* ‘seven’, gen. *avd-y*, dat. *avd-æn*, etc. In Digor, however, they show the same exceptional inflection as nouns modified by numerals, e.g. gen. *avd-e-j*, dat. *avd-em-æn*; so also do adjectives of quantification such as *ijnnæ* ‘other (of two)’, *be(w)ræ* ‘much, many’, *ægas* ‘all’.² The following table illustrates these facts with the inflection of Digor *avd* ‘seven’ and *avd furti* ‘seven sons’, together with the

¹ Where two Ossetic forms are given separated by a slash, the first is in the Digor dialect, the second in Iron. I retain the usual scholarly transcription system for Ossetic, except that *w* is distinguished from *u* (both represented by <y> in Cyrillic orthography). The more phonetically based transcriptions of Belyaev and Erschler reflect the shifts in Iron consonant articulation since the 19th century, e.g. retraction of *s* [s], *z* [z] > [ʂ], [ʐ] and deaffrication of *c* [tʂ], *ɟ* [dʐ] > [s], [z] except in geminates ([Thordarson 1989a: 463, 1989b]).

² See [V. F. Miller 1881–1887, 2: 159; W. Miller 1903: 49 §55; Abaev 1949: 397–398, 398–399; Isaev 1966: 50–52, 1987: 592; Christol 2003: 30–32; Belyaev 2017: §§1–2; Erschler 2019: 868, 870 (Table 6)]. An interesting point of divergence between the two dialects is that the numerative occurs with *pluralia tantum* in Digor but is

pronominal inflection of *ci* ‘which’ (oblique stem *cæ-*) and *ijnnæ* ‘other (of two)’ for comparison, followed by the corresponding forms in Iron.

Table 1. Inflection of ‘seven’, ‘seven sons’, ‘which’, and ‘other (of two)’ in Digor and Iron Ossetic

Digor				
nominative	<i>avd</i>	<i>avd furt-i</i>	<i>ci</i>	<i>ijnnæ</i>
genitive	<i>avd-e-j</i>	<i>avd furt-e-j</i>	<i>cæ-j</i>	<i>ijnn-e-j</i>
dative	<i>avd-em-æen</i>	<i>avd furt-em-æen</i>	<i>cæ-m-æen</i>	<i>ijnn-em-æen</i>
allative	<i>avd-e-mæ</i>	<i>avd furt-e-mæ</i>	<i>cæ-mæ</i>	<i>ijnn-e-mæ</i>
ablative	<i>avd-em-æj</i>	<i>avd furt-em-æj</i>	<i>cæ-m-æj</i>	<i>ijnn-em-æj</i>
inessive	<i>avd-em-i</i>	<i>avd furt-em-i</i>	<i>cæ-m-i</i>	<i>ijnn-em-i</i>
superessive	<i>avd-e-bæel</i>	<i>avd furt-e-bæel</i>	<i>cæ-bæel</i>	<i>ijnn-e-bæel</i>
equative ³	<i>(avd-ej-aw</i>	<i>avd furt-ej-aw)</i>	<i>cæj-aw</i>	<i>ijnn-ej-aw</i>
Iron				
nominative	<i>avd</i>	<i>avd fyrt-y</i>	<i>cy</i>	<i>innæ</i>
genitive	<i>avd-y</i>	<i>avd fyrt-y</i>	<i>cæ-j</i>	<i>innæj-y</i>
dative	<i>avd-æen</i>	<i>avd fyrt-æen</i>	<i>cæ-m-æen</i>	<i>innæ-m-æen</i>
allative	<i>avd-mæ</i>	<i>avd fyrt-mæ</i>	<i>cæ-mæ</i>	<i>innæ-mæ</i>
ablative	<i>avd-æj</i>	<i>avd fyrt-æj</i>	<i>cæ-m-æj</i>	<i>innæ-m-æj</i>
inessive	<i>avd-y</i>	<i>avd fyrt-y</i>	<i>cæ-m</i>	<i>innæj-y</i>
superessive	<i>avd-yl</i>	<i>avd fyrt-yl</i>	<i>cæ-wyl</i>	<i>innæ-wyl</i>
equative	<i>avd-aw</i>	<i>avd fyrt-aw</i>	<i>cæj-aw</i>	<i>innæj-aw</i>
comitative	<i>avd-imæ</i>	<i>avd fyrt-imæ</i>	<i>cæ-imæ, cemæ</i>	<i>innæ-imæ</i>

blocked in Iron, e.g. D. *ærtæ bijnont-i* ‘three families’, dat. *ærtæ bijnont-em-æen* vs. I. *ærtæ binontæ* ‘id.’, dat. *ærtæ binont-æen* (Belyaev 2017:§3.1).

³ No equative forms are given for Digor by Isaev [1966: 50–51; 1987: 592] or Christol [2003: 31], though it is not clear if this is because they are “pragmatically improbable” [Erschler 2019: 870, fn. 8]. They do occur in Iron, e.g. *Dywæ goræt, — Xiro-simæ, Nagasaki...dywæ cæstaw fæsoqqyr kodtat zæxx!* ‘Two cities, Hiroshima and Nagasaki... like two eyes, you blinded the earth!’ (E. Tedety, *Byndary kadæg* [2005];

Erschler [2019: 868] refers to the elements preceding the oblique case endings in Digor as the “dedicated numeral declension suffixes” *-e-* and *-em-*, e.g. D. *duw-e-j* ‘two-NUM-OBL’, *duw-em-æj* ‘two-NUM-ABL’.⁴ Since however the same distribution of *-m-* is found in both dialects in demonstrative and interrogative pronouns, the numeral inflection may synchronically be considered a subset of the pronominal inflection.⁵ The numeral suffix is homophonous with the associative plural marker D. *-e-*, I. *-i-*, e.g. D. *Woræzmæg-e-tæ* ‘Worazmag and his companions’, I. *Aslan-i-tæ* ‘Aslan and the others’, ‘Aslan and the gang’ [Bailey 1956: 125–126; Erschler *op. cit.*], although whether this identity is original or has arisen secondarily remains unclear.

The origin of this inflectional pattern, for which Digor undoubtedly preserves the more archaic situation, remains an unresolved mystery of Ossetic historical grammar. Most grammatical studies simply equate the numerative in *-i/-y* with the homophonous genitive ending, e.g. [Bagaev 1965: 214] (“beginning with the numeral *dywæ* ‘two’, in the nominative and accusative the substantive in combination with the numeral occurs in a form similar to the genitive, i.e. with the ending *-y*”; tr. mine), [Kim 2003: 49, fn. 18] (“the ordinary genitive”), [Thordarson 2009: 132] (“the numerative use of the genitive after cardinal numerals higher than ‘one’”). As observed by Erschler [2019: 870, fn. 7], “[i]n numeral

cited from the Ossetic National Corpus) or, from the Ossetic Bible translation by the Jehovah’s Witnesses, *Wycy ærtæjaw wymæn dær jæ kad ajq^uyyst* ‘He became as famous as those three’ (1 Chronicles 11: 20, 2 Samuel 23: 18; <https://www.jw.org/os/библиотека/библи/bi12>; accessed on: 20.08.2020).

⁴ Erschler glosses the case ending in D. *duw-e-j* as “oblique”, as the genitive and inessive are identical for lexical nouns; but since the two cases are distinguished in Digor numeral inflection (and more generally in pronominal inflection), I have retained the genitive label here and below.

⁵ This *-m-* must ultimately be connected with the Plr. pronominal case forms in **-hm-*, i.e. dat. sg. **-hmāi*, abl. **-hmāt*, loc. **-hmi* (cf. OAv. rel. pron. *yahmāi*, *yahmī*, YAv. *yahmāṭ*; [Kim 2003: 45, fn. 9; Cheung 2008: 99, 102]), but the details remain to be clarified. Belyaev [2010: 298–299, 302] derives dat. *-m-æn* from a construction acc. + **ana/u*, but it is unlikely that Plr. word-final **-m* in the acc. sg. would have survived long enough for the creation of new cases from postpositional phrases.

phrases in the nominative, the oblique marking surfaces on the nouns: *vertv qaž-ə* three goose-OBL ‘three geese’. In other cases, the oblique is replaced by the respective case marker: *vertv qaž-en* three goose-DAT.” The morphosyntax of quantified noun phrases in Ossetic is thus comparable to that of Russian, with heterogeneous case distribution in the nominative and homogeneous case distribution in the oblique cases in the terminology of Babby [1987: 100–101] (see below).

However, while valid on a descriptive level, the identification of the numerative with the genitive offers no insight into its actual origin. Furthermore, Belyaev [2014: 46–47; 2017: §3.2; 2021: 259, 263–264] adduces evidence from coordinate phrases that the numerative is synchronically distinct from the genitive: in both Iron and Digor, if two or more nouns modified by a numeral are coordinated and the case affix on the nonfinal conjunct(s) is suspended, the numerative ending appears, e.g. D. [*ærtæ yæw-i æma duwæ goræt*]-*e-mæ*, I. [*ærtæ qæw-y æmæ dywæ goræt*]-*mæ* ‘to three villages and two towns’. Since nouns can only surface in the unmarked form in instances of suspended case affixation (e.g. I. [*Zawyr æmæ Alan*]-*æn* ‘to Zawyr and Alan’), the ending of D. *ærtæ yæw-i*, I. *ærtæ qæw-y* cannot be the genitive marker *-i/-y* but, like singular *yæw/qæw* and plural *yæwtæ/qæwtæ*, must be unmarked for morphological case.

One point that must be made clear at the outset is that the numerative ending *-i/-y* need not have the same source as the inflected (oblique) case forms of the numerals themselves. A quick glance at the situation in Slavic will make this clear. In Proto-Slavic and Old Church Slavonic, the numerals inflected as substantives of various inflectional classes, but in many modern Slavic languages they have been influenced by the inflection of pronouns and definite adjectives: ‘two’, ‘three’, ‘four’ in Russian gen./loc. *dvux, trëx, četyrëx*, Polish gen./loc. *dwóch, trzech, czterech*; optionally for higher numerals in Ukrainian, e.g. gen./loc. *p’jat’óx* ‘five’, *desjat’óx* ‘ten’ (beside inherited *p’jatý, desjatý*). In contrast, nouns in the nominative (and, for inanimate nouns, accusative) take the genitive singular in Russian and BCSM when modified by the numerals ‘two’, ‘three’, and ‘four’, e.g. Ru. *dva/tri/četýre stolá* ‘two/three/four tables’ (to *stol* ‘table’, cf. nom. pl. *stoly*). This pattern originates in the Proto-Slavic dual, which in the largest inflectional class of masculine *o*-stems fell together with the genitive singular;

this led speakers to abstract a rule of heterogeneous case agreement, which was then extended to ‘three’ and ‘four’.⁶ In eastern South Slavic, the originally dual ending *-a* has been extended to all higher numerals and quantifiers for masculine nouns, yielding a true numerative in e.g. Bulgarian *tri/déset/mnógo biléta* ‘three/ten/many tickets’ (to *bilét* ‘ticket’, cf. pl. *biléti*).

2. The numerative: an old dual?

The origin of the Ossetic numerative has most recently been discussed by Sims-Williams [2020]. In Sogdian, as in eastern South Slavic, nouns immediately preceded by any numeral take a form that goes back to the Old Iranian dual, e.g. m. *a*-stem *’δw’ kp’* ‘two fishes’, *xii βγ’* ‘twelve gods’ with *-’* [-ã] < PIr. **-ā*; f. *ā*-stem *xii δrxwšy* ‘twelve she-devils’, n. *a*-stem *ii βγnyy* ‘two temples’ with *-y(h)* [-ẽ] < PIr. **-ai*; *aka*-stem *dw’ z’t’* ‘two sons’, *ds’nyzb’n’* ‘ten passions’, *xwšrts wyc’w’* ‘sixteen martyrs’ with *-’* [-ã] < PIr. **-akā* [Sims-Williams 1979: 339–342, 2020: 955–958].⁷

⁶ The oblique cases show a homogeneous case distribution with the usual plural endings, e.g. Ru. gen. *trëx stolóv* three-GEN table-PL-GEN, instr. *tremjá stolámi* three-INST table-PL-INST. No position is taken here on the theoretical analysis of the numeral agreement patterns of Russian and other Slavic languages, which have been extensively investigated in the syntactic literature (in addition to [Babby 1987], see [Franks 1994; Rappaport 2002; Pesetsky 2013]). Since a few nouns in Russian maintain a distinction of stress between the gen. sg. and the count form (e.g. *dva/tri/četyre časá* ‘two/three/four hours’ to *čas* ‘hour’, cf. gen. sg. *čása*), it could be argued that the latter is in fact synchronically a minor numeral category of “paucal”, homophonous with the gen. sg. for the great majority of nouns ([Rakhlin 2003; Bailyn, Nevins 2008: 263–268]; otherwise [Pesetsky 2013: 21–34, 89–91]). Such an analysis seems warranted for BCSM, where attributive adjectives and (optionally) predicates also exhibit the ending *-a* with masculine nouns, e.g. *tri b(ij)el-a stol-a su bil-a* ‘three white tables were’ [Naylor 1972: 4–5; Belić 2003, 2008].

⁷ The m. *a*-stem numerative could alternatively continue the Old Iranian nom. pl. **-ā* (OAv. *-ā*, Khot. *-a*), which survives in the early Sogdian *βγ’* ‘gods; lords’; but the forms of the other inflectional classes can only go back to the dual.

A similar system seems to have existed in Khwarezmian [Durkin-Meisterernst 2009: 343; Sims-Williams 2020: 959–960], and several Modern Iranian languages also have numerative forms that may be of dual origin, including Pashto and Parachi [Sims-Williams 2020: 960–963]. Following an earlier suggestion [Sims-Williams 1979: 342] (cf. [Tremblay 1997: 158–159, fn. 5; Kim 2003: 49, fn. 18]), he therefore proposes that the Ossetic numerative ending *-i/-y*, like the Sogdian numeratives in *-y(h)* [-ě] cited above, goes back to PIr. *ā*-stem and n. *a*-stem dual **-ai* (YAv. *-e*, cf. Ved. *-e*; [Sims-Williams 2020: 963–968]).

The problem with this attractive idea is that word-final **-ai* is reflected in all clear cases as Oss. *-æ*, as in the enclitic pronouns *mæ*, *dæ* < PIr. **mai*, **tai* [Cheung 2002: 63–66, 2008: 97; Kim 2003: 46, fn. 10]. Sims-Williams raises the possibility that PIr. **-ai* yielded Oss. *-æ* in monosyllables but *-i/-y* in polysyllables, but this too is contradicted by the evidence of the following:

ændæ/æddæ ‘outside’ < POss. **ænde* < PIr. loc. **antai* (cf. Ved. *ánta-* ‘end, limit’);

dælae ‘below, beneath, under’ < POss. **dæle* < PIr. loc. **adarai* (cf. YAv. *aḍara-* ‘lower, western’);

falæ ‘beyond, on the other side’ < POss. **fale* ← PIr. loc. **pārai*, loc. of **pāra-* (YAv. *pāra-*, Khot. *pāra-* ‘border’, NP *bār* ‘bank’);⁸

and

duwæ/dywæ ‘two’ < POss. **duwe* < PIr. f./n. **duwai* (YAv. *duiie*, (neut.) *duuaē-ca*; cf. Ved. *duvé*) < PIE f. **d(u)weh₂ih₁*, n. **d(u)woih₁* (see [Cheung 2002: 65; Kim 2020: 261 with refs.]).

These forms suggest that PIr. word-final **-ai* underwent regular monophthongization to POss. **-e* as in other positions, and that this

⁸ Cf. *fal-*, *falæ* ‘beyond, on the other side’, *fale* (< *falæjæ*) ‘beyond’, likewise with analogical *-l-* from *faldær* ‘farther’ (dissimilated from **far-dær*), *fallag* ‘located on that side’ (< pre-POss. **pār-yāka-*); the older form *far-* survives only in *far-ast* ‘nine’ < ‘beyond eight’. See [Kim 2020: 260 with refs.].

gave *-æ* in both Digor and Iron [Kim 2007: 53–541; Cheung 2008: 101].⁹ Such a development is supported by the adjectives *ijnnæ/innæ* ‘other’ and *be(w)ræ/biræ* ‘many, much; very’, where Digor preserves the stem-final **-e-* in the plurals *ijnne-tæ*, *bere-tæ*. As seen by Cheung [2002: 64, 65–66], the innovative plural marker **-tā* must have been added to the inherited pronominal m. nom. pl. **-ai*, then the unextended form was re-analyzed as singular. Hence D. *ijnnæ*, pl. *ijnne-tæ* ‘other’ < POss. **ijnne* < PIr. **anyai* (YAv. *āniie*, OP *aniyai*; cf. VeD. *anyé*) and D. *be(w)ræ*, pl. *bere-tæ* ‘much, many’ < POss. **bewre* < **baiwarai* ← PIr. **baiwar/n-* ‘ten thousand’ (YAv. *baēuuarə*, pl. *baēuuq̄n*, *baēuuani*).

As for the other common dual ending, PIr. m. *a*-stem dual **-ā*, it is universally agreed that word-final **-ā* became POss. **-æ* > D. *-æ*, I. *-Ø*.¹⁰ Since neither PIr. **-ā* nor **-ai* would have led to the desired outcome, I conclude that the Ossetic numerative ending *-i/-y* cannot be of dual origin.

3. The numerative as inherited plural

If the dual is ruled out, the most likely remaining source for the Ossetic numerative is an inherited plural formation that has been ousted in all other contexts by the innovative (originally collective) formation in **-tā-* > *-tæ*. Such a situation has parallels in Indo-European,

⁹ The inessive case ending *-i/-y* thus cannot reflect PIr. *a*-stem loc. sg. **-ai* (*pace* [Christol 1990: 32, 2003: 37, 38]). Although some details remain to be clarified, I continue to believe that it goes back to PIr. case endings of the shape **-ayā(h)*, which developed via syncope and other regular changes to POss. **-i* (Kim 2003); also possible on formal grounds is the PIr. relational adjective suffix **-īya-* ([Cheung 2008: 94; Belyaev 2010: 300]; see already [Miller 1903: 46]).

Cheung [2008: 101] suggests that post-PIr. **-ai* > POss. **-e* is reflected as *-e/-i* in tonic monosyllables, as in the interrogative-relative pronoun D. *ka* (gen. *ke*), I. *čī* ‘who’. This is phonetically plausible, but much about the inflection of this pronoun remains obscure [*op. cit.*: 101–103].

¹⁰ Or *-æ* in both dialects in the special case of pl. **-tā* > POss. **-tæ* > D., I. *-tæ*. On the phonological “semi-independence” of the plural suffix, see [Bailey 1945: 25].

e.g. in Middle Welsh numeratives such as *tri broder* ‘three brothers’, *pedwar broder* ‘four brothers’ (to *brawd* ‘brother’) or *tri meib* ‘three sons’, *pedwar meib* ‘four sons’ (to *mab* ‘son’), where *broder* and *meib* preserve the Proto-Celtic plurals **brāter-es*, **mak^w(k^w)-ī*, replaced elsewhere by the innovative formations *brodyr* and *meibion*.¹¹

Of the possible starting points in Proto-Iranian, athematic animate nom. pl. **-ah* may immediately be left aside, since it should have been lost by apocope (*pace* [Bielmeier 1982: 59, 66; Thordarson 1989a: 468, 2009: 132–133]); and pronominal m. nom. pl. **-ai* cannot have given *-i/-y* for the reasons put forth in §2 (*pace* [Christol 1990: 35, 2003: 37; Tremblay 1997: 159, fn. 5]). By process of elimination, we are left with the nom. pl. **-āh* of *ā*-stem and animate *a*-stem nouns.¹² This seems promising, as generalized nom. pl. **-āh* has left reflexes elsewhere in Iranian, e.g. the endingless form of nouns after numerals in Modern Persian or the Balochi nom. pl. in *-Ø* [Tedesco 1921:64–65]. But would this ending have given Oss. *-i/-y* by the regular laws of finals, or *Auslautgesetze*?

PIr. **-āh* appears to give Oss. *-Ø* in reflexes of adjectives in **-mant-*, **-want-* with nom. sg. **-māh*, **-wāh*, e.g. *fusun/fysym* ‘host, person who practices hospitality toward guests’, *rædaw* ‘generous’ < PIr. **fšu-māh*, **fra-dā-wāh*. Also pointing in this direction is the equative case ending D., I. *-aw* (e.g. *furtaw/fyrtaw* ‘like a son’), if it too continues adjectives

¹¹ The respective forms after ‘two’ go back to the inherited dual, which has fallen together with either the singular or the plural: cf. *dau froder* ‘two brothers’ < PCelt. du. **brāter-e* vs. *dau fab* ‘two sons’ < PCelt. du. **mak^w(k^w)-o*. Cases such as the latter, as well as those where both dual and plural fell together with the singular by sound change (e.g. *dyn* ‘man’ < PCelt. sg. **doniyos*, du. **doniyo*, pl. **doniyī*), gave rise to the selection rule of Modern Welsh by which nouns appear in the singular after all numerals. For details and discussion, see [Nurmio, Willis 2016: 309–312; Nurmio 2019: 214–241, esp. 220–223].

¹² The latter have largely replaced this ending with originally collective **-ā* (> OAv. *mašiiā*, YAv. *mašiiā* ‘people’, Khot. *-a*) and **-āhah* (> OAv. *mašiiāhō* ‘id.’, OP *bagāha* ‘gods’; cf. Ved. *-āsaḥ*), but **-āh* could well have survived in the dialects ancestral to Ossetic. OP *-ā* and early Sogd. *βγ*’ [βaγ-ā] ‘gods’ can go back to either PIr. **-ā* or **-āh*, but the Av. and Khot. endings can only continue **-ā*.

in **-want-*.¹³ However, Cheung [2002: 62] rightly points out that these forms could have been remodeled to **-mah*, **-wah* after the preponderant masculine *a*-stems, so they are not probative examples of a phonetic development to Oss. $-\emptyset$ (*pace* [Tremblay 1997: 159, fn. 5]). Cheung [2002: 61, 185–186] adduces *fændælfænd* ‘plan, intention’ < PIr. **pantāh* ‘way, road’ < PIE **pént-oh₂-s* (YAv. *pantā*, Khot. *pande*; cf. Ved. *pánthāh*) as evidence for the regular treatment of word-final **-āh*, but this noun could also reflect a remade *ā*-stem **pantā* (cf. NP *pand* ‘advice, opinion’; [Abaev 1958–1995, 1: 445], which in turn served as the basis for the extended **pantā-ka-* > Oss. *fændag* ‘way, road’.

There are thus to my knowledge no clear counterexamples to a development PIr. **-āh* > POss. **-i*. The phonetic evolution cannot be determined with certainty: possibly **-āh* first became **-e*, as in Khotanese *ā*-stem nom./acc. pl. *-e* < PIr. **-āh* and *pande* ‘path’, *ysare* ‘old age’, *urmaynde* ‘sun’ < PIr. **pantāh*, **jarāh*, **ahura mazdāh* [Emmerick 1968: 278, 309, 347–348],¹⁴ then was raised to **-i*, merging with the genitive and inessive cases. The same ending may also have given rise to numeratives in other Iranian languages: for instance, the Pashto numerative in *-a* (e.g. *dwa šāla* ‘40’, *dre zāra* ‘3000’, *pinjā plāra* ‘five fathers’) could reflect m. nom./acc. du. **-ā* [Sims-Williams 1979: 341; 2020: 961] or n. nom./acc. pl. **-ā* [Tremblay 1997: 171, fn. 31], but an origin in m. nom. pl. **-āh* is also possible [Morgenstierne 1942: 94].

¹³ Since the original value of this suffix was ‘provided with X, abounding in X’ (cf. Ved. *-va(n)t-*, Gr. $-(\text{f})\epsilon\upsilon\tau-$), Cheung [2008: 95] argues that the equative was abstracted from **mā-want-* ‘like me’, **θwā-want-* ‘like you’ (OAv. *mauuant-*, *θbāuuant-*, cf. Ved. *mā-vant-*, *tvā-vant-*). *Pace* Cheung, the language suffix *-aw* (e.g. *Ironaw* ‘in Ossetic’; cf. Sogd. *-w*, Khot. *-au*) is surely of the same origin.

¹⁴ The nom. pl. *-e* found with several masculine *a*-stems (beside the majority ending *-a* < PIr. **-ā*) may likewise continue PIr. **-āh* [Emmerick 1968: 265], but of the examples listed there, *ggare* ‘mountains’ is an old *i*-stem and so may in fact continue PIr. **garayah*, while old neuters such as *ggūne* ‘hairs’, *date* ‘wild beasts’ could have taken over the ending from the *ā*-stems. (I thank Nicholas Sims-Williams for helpful discussion of the Khotanese facts.)

4. The oblique cases

As for the oblique case forms, it is commonly assumed that pronominal inflection was generalized to numerals from adjectives of quantity, e.g. *ijnnaē/innæ* ‘other’, *ægas* ‘all, whole’,¹⁵ then spread to nouns governed by numerals. The stem vowel **-e-* (> D. *-e-*) allows for multiple sources. It could go back to PIr. pronominal m. nom. pl. **-ai* reinterpreted as a stem suffix, comparable to what happened in D. *ijnnaē* ‘other’, *be(w)raē* ‘many, much; very’ (pl. *inne-tæ*, *bere-tæ*) < POss. **ijnne*, **bewre* < (post-)PIr. **anyai*, **baiwarai* ‘ten thousands’ ([Cheung 2002: 64, 65–66]; see above, §2). Another possible source is the PIr. pronominal endings gen. pl. **-ai-šām*, dat. **-ai-byah*, loc. **-ai-šu* (cf. OAv. rel. pron. *yaēšqm*, *yaēbiiō*, *yaēšū* [Kim 2003: 45, fn. 9]).¹⁶

However, the oblique **-e-* of numerals could have an entirely different origin, namely POss. **duwe* ‘two’ (> *duwæ/dywæ*), which continues PIr. f./n. **duwai* rather than m. **duwā*.¹⁷ From the case forms of ‘two’, e.g. gen. **duw-e-j*, dat. **duw-em-æn* (> D. *duwej*, *duwemæn*), the stem vowel **-e-* spread to the higher numerals, producing e.g. gen. **avd-e-j*, dat. **avd-em-æn* ‘seven’ (> D. *avdej*, *avdemæn*). The extension of a feature from ‘two’ to all higher cardinal numerals might seem surprising, but an approximate parallel may be adduced, once again from Slavic: the instrumental dual ending *-ma* has spread in several modern Slavic languages from ‘two’ to ‘three’ and ‘four’ (e.g. Ru. *dvumjá*, *tremjá*, *četyr’mjá*, Pol. m. *dwoma/f. dwiema*, *trzema*, *czterema*), and in Polish to all numerals up to ‘nine hundred’ (e.g. *pięcioma* ‘five’, *dziesięcioma* ‘ten’, *trzydzie-stoma* ‘thirty’, *stoma* ‘hundred’, *trzystoma* ‘three hundred’). Even more

¹⁵ Cf. [Miller 1903: 49, §55 (“durch den Einfluss der Pronominaldeclination”)]; Isaev 1987: 592; Èdel’mán 1990: 199; Kim 2003: 49, fn. 18; Thordarson 2009: 185]. For a parallel from Slavic, see §1 above on the (optional) pronominal inflection of the numerals ‘five’ and over in Ukrainian.

¹⁶ Pace [Belyaev 2010: 291, 294], I see no grounds for assuming a *postposed* demonstrative pronoun **ai-*.

¹⁷ See [Cheung 2002: 63; Kim 2003: 62, fn. 48; 2007: 50; 2020: 261].

Table 2. Evolution of ‘other’, ‘two’, ‘seven’, ‘son(s)’, and ‘seven sons’ from Proto-Iranian to Ossetic

Proto-Iranian			POss.	Digor	
* <i>anyah</i>	→ * <i>anyai</i>	→	* <i>ijnne</i>	* <i>ijnne</i>	<i>ijnnæ</i>
		→ obl.	* <i>ijnne(m)-</i>	* <i>ijnne(m)-</i>	<i>ijnne(m)-</i>
* <i>anyai</i>	→ * <i>anyai-tā</i>	→	* <i>ijnne-tæ</i>	* <i>ijnne-tæ</i>	<i>ijnnetæ</i>
* <i>duwai</i>	>		* <i>duwe</i>	* <i>duwe</i>	<i>duwæ</i>
		→ obl.	* <i>duwe(m)-</i>	* <i>duwe(m)-</i>	<i>duwe(m)-</i>
* <i>hafta</i>		→	* <i>avd</i>	* <i>avd</i>	<i>avd</i>
		→ obl.	* <i>avde(m)-</i>	* <i>avde(m)-</i>	<i>avde(m)-</i>
* <i>puθrah</i>	>	* <i>puθri</i>	>	* <i>furt</i>	<i>furt</i>
* <i>puθrāh</i>	→ * <i>puθri-tā</i>	>		* <i>furt-tæ</i>	<i>furttæ</i>
* <i>hafta puθrāh</i>	>	* <i>avd furte</i>	>	* <i>avd furti</i>	<i>avd furti</i>
		→ obl.	* <i>avd furte(m)-</i>	* <i>avd furte(m)-</i>	<i>avd furte(m)-</i>

strikingly, the genitive/locative dual ending *-u* of Pol. *dwu* ‘two’ has also spread to the numerals ‘five’ to ‘ten’ (e.g. *pięciu* ‘five’, *dziesięciu* ‘ten’), then to higher numerals (e.g. *trzydziestu* ‘thirty’, *stu* ‘hundred’, *trzystu* ‘three hundred’).¹⁸ Once the oblique numeral stem in *-e-* was established, with the allomorph *-em-* influenced by pronominal inflection,

¹⁸ The Russian development is actually more complex, since the instrumentals of ‘two’ (ORu. *dŭvěma*) and ‘three’/‘four’ (ORu. *trīmi*, *četyrīmi*) have mutually influenced each other. The Polish numerals in *-u* have become the general form for all oblique cases, instrumental (alongside *-ma*) and dative as well as genitive and locative, and also the nominative for masculine personal (“virile”) nouns. For the chronology and details, see [Bulakhovskij 1958: 197–199] for Russian and [Klemensiewicz et al. 1965: 338–353, 354–356] for Polish. On the role of the dual in bringing about replacement of the acc. pl. with the gen. pl. in these languages, and the shift of *-u* and *-ma* from dual to virile markers, see [Janda 1996: 175–202, 1998, 2000].

it would have spread to nouns governed by numerals as under the preceding analysis.

Thus even if a dual source is ruled out for numerative *-i/-y* (§2), a trace of dual inflection could survive in the inflection of the numerals themselves, as suggested by Sims-Williams [2020: 966]. The inflectional evolution of these categories therefore passed through the approximate stages in Table 2, illustrated with the reflexes of PIr. **anya-* ‘other’, **duwai* ‘two’, **hafta* ‘seven’, and **puθra-* ‘son’.

5. Summary

Despite parallels in Sogdian and other Iranian languages, the Ossetic numerative in *-i/-y* is unlikely on formal grounds to go back to a dual ending. It could instead continue PIr. *ā*-stem and m. *a*-stem nom. pl. **-āh*, which in all other contexts was replaced by the new plural formation in **-tā-*. The pronominal inflection of the numerals, with stem-final element **-e(m)-* in the oblique cases, could have been taken over from adjectives of quantity; alternatively, it could have begun in POss. **duwe* ‘two’ and spread from there to the higher numerals. Finally, the inflectional pattern was extended to nouns governed by numerals. The Proto-Ossetic state of affairs is preserved in Digor, while Iron has generalized ordinary noun inflection for numerals and numeral-governed nouns.

Abbreviations

abl. — ablative; dat. — dative; du. — dual; f. — feminine; gen. — genitive; instr. — instrumental; loc. — locative; m. — masculine; n. — neuter; nom. — nominative; obl. — oblique; pl. — plural; rel. pron. — relative pronoun; sg. — singular.

Av. — Avestan; BCSM — Bosnian, Croatian, Serbian, Montenegrin; D. — Digor; I. — Iron; Khot. — Khotanese; NP — New Persian; OAv. — Older Avestan; OP — Old Persian; ORu. — Old Russian; Oss. — Ossetic; PCelt. — Proto-Celtic; PIE — Proto-Indo-European; PIr. — Proto-Iranian; Pol. — Polish; POss. — Proto-Ossetic; Ru. — Russian; Sogd. — Sogdian; Ved. — Vedic.; YAv. — Younger Avestan.

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