A dedicated nominal singular morpheme without singulative semantics[*]

David Erschler
Ben-Gurion University of the Negev
erschler@bgu.ac.il

I show that in Digor Ossetic, an agglutinative Eastern Iranian language spoken in the Caucasus, the nominal singular morpheme has a non-null allomorph *-ӕ*. I provide evidence that this morpheme does not cumulatively expone any other morphological feature. However, it occurs with both count and non-count nouns and therefore does not express singulative semantics. I provide a Distributed Morphology analysis of number marking in Digor Ossetic and show that the morph *-ӕ* spells out Num^0. I observe that overt dedicated marking of the singular and the plural also exists in Emai and Ọ̀kọ, Edoid languages of Nigeria, and, as was recently shown, in Kipsigis (Nilotic). Accordingly, overt dedicated marking of the singular is likely to be a robustly attested phenomenon, which provides an additional argument in favor of treating of the singular as one of the values of a binary feature, rather than an absence of a feature.

1. Introduction

The coding of nominal singularity has attracted much less attention in the literature than that of nominal plurality. It is telling that the World Atlas of Linguistic Structures (Dryer & Haspelmath 2013) has a chapter (Dryer 2013) entitled *Coding of nominal plurality*, but no parallel chapter on nominal singularity.

Perhaps as a result of this, it is often assumed in the literature, tacitly or explicitly, that the singular is the unmarked member of the pair singular-plural. For instance, Farkas & de Swart (2010: 6: 16) write "We differ from previous approaches, however, in adopting the null hypothesis and taking plural morphology to mark the presence of the privative feature [Pl], and not positing a singular feature or a null singular morpheme."

Kratzer (2008: 271-273), argues against the existence of the feature [Singular] in English. One of her arguments is "[s]ince there is also no overt morpheme marking nominal [singular] in English, we might suspect that there is no such feature to begin with," p. 273. This highlights the importance of morphological evidence for the investigation of number. It is natural to assume that overt morphological marking reflects semantic markedness, see e.g. a brief discussion and the references in Grimm (2018: 551).

Nevins (2011: 947), while also arguing for the absence of feature [Singular] in the narrow syntax, proposes that the feature [Singular] is inserted post-syntactically, to account for situations where it definitely plays a role in morphology, such as the Kiowa noun class system as analyzed in Harbour (2008). A similar proposal is advanced in Ackema & Neeleman (2019: 28-33).

In contrast to these analyses, a number of authors argue in favor of semantic markedness of the singular, see, for instance, Sauerland (2003; 2008), Sauerland et al (2005); Spector (2007), Zweig (2009); Kagan (2010); and Bylinina & Podobryaev (2020).

The arguments advanced in favor of the markedness of the singular include the number-neutral interpretation of the morphological plural in the sentences such as *You're welcome to bring your children/#child*, Sauerland et al (2005: 417); the existence of the plural of politeness, that is, morphologically plural pronouns that allow the singular reference, such as the French *vous* or the German *Sie*, Sauerland et al (2005: 418), to which the properties of the English singular *they* can be added. Furthermore, Bylinina & Podobryaev (2020: 121, 124) notice a

[*] I am grateful to all the speakers of Digor Ossetic who have been generously sharing their language with me over the years. For his help with this paper, I am particularly obliged to Uruzmag Abaev. I thank Peter Arkadiev, Lisa Bylinina, Greville Corbett, Heidi Harley, Pavel Iosad, Pavel Rudnev, Emine Şahingöz (Tsoriti), and the anonymous reviewers for comments to, and discussions of the earlier versions of this paper.

contrast existing in Barguzin Buriat (Mongolic; Russia) in the interpretation of bare singular nouns and singulars modified by adjectives. While a bare singular noun (say, *nom* 'book') is number-neutral, when modified by an adjective (*ula:n nom* 'red book'), it only allows a singular interpretation.

Any approach of this type makes a singular feature, no matter whether privative or equipollent, logically necessary – such a feature cannot be absent altogether. Although a number of influential papers took number features to be privative (Harley & Ritter 2002; Béjar 2003; Béjar & Rezac 2009), it was cogently argued in Harbour (2011), that using equipollent features is theoretically preferable. This is the view that I will adhere to in this paper.

Now, positing an equipollent feature for number[1] (or a dedicated privative feature for the singular) makes us expect overt marking of the singular to be robustly attested cross-linguistically, even conceding that more frequent feature values tend to receive phonologically null expression, see e.g. Haspelmath & Karjus (2017: 2014) and references there for a discussion of frequency-based marking contrasts. However, dedicated morphs that would only expone the singular seem to be relatively rare. In this paper, I argue that such a morpheme exists in one language, Digor Ossetic, and suggest that a more in-depth cross-linguistic study is likely to bring up many more such instances.

The morphological observation (going back at least to Greenberg 1966:32) that makes one want to consider the singular as unmarked is that in many well-described languages, the nominal singular is either not marked overtly, as in Turkish (1a), or is expressed cumulatively with case, as in more conservative Indo-European languages, illustrated for Russian in (1b), or expressed together with gender or noun class, as it is the case in many Niger-Congo languages (1c-d). The Chichewa sentences in (1c-d) illustrate the fact that verbs in Bantu agree with their subjects in noun class, that is, gender and number, and not just in number.

(1) a. Turkish (Turkic)

	Singular	Plural
Nominative	ev	ev-**ler**
	house.SG[2]	house-PL
Locative	ev-de	ev-**ler**-de
	house.SG-LOC	house-PL-LOC

b. Russian (Slavic; Indo-European)

	Singular	Plural
Nominative	ryb-**a**	ryb-**y**
Dative	ryb-**e**	ryb-**am**
	'fish'	

Chichewa (Bantu; Niger-Congo)

c. **m**-kángo **u**-na-thyól-á m-pánda
3-lion 3SM-PST-break-FV 3-fence
'The lion broke the fence.' Mchombo (2004: 67)

d. **mi**-kángo **i**-ku-sák-á zi-gawénga
4-lion 4SM-PRS-hunt-FV 8-terrorist
'The lions are hunting the terrorists.' Mchombo (2004: 19)

[1] I abstract away from more complex number systems that will include the dual (and possibly other paucal numbers), Corbett (2000:21-30); Harley & Ritter (2002: 492-495), Cowper (2005:441); Harbour (2008: 1; 2011: 562; 2014: 186), and others. The issue of whether the singular is an absence of a feature or is a feature value is independent of the question of how richer number systems ought to be treated. However, any typologically viable analysis of richer number systems ought to allow for the existence of two-term number systems as a limiting case. Therefore, the findings of the current study are relevant for analyses of richer number systems, albeit indirectly.

[2] Glosses: 3,4,8 noun classes in Chichewa; ABL ablative; ALL allative; EP epenthetic; FV final vowel; LOC locative case; MOD.INF modal infinitive; NOM nominative; NUM numerative sufiix; PL plural; PRS present; PST past; SG singular; SM subject marker; SUP superessive case; TH thematic suffix.

e. **m**-lenje m-módzi **a**-na-bwél-á ndí mí-kóndo
1-hunter 1SM-one 1SM-PST-come-FV with 4-spear
'One hunter came with spears.' Mchombo (2004: 4)

In this paper, I show that Digor Ossetic has a morph *-ɐ* that expones, or is conditioned by, the feature [+Sg] in nouns. Moreover, it does not expone any other morphosyntactic feature. The other allomorph of the respective morpheme is null. Nouns taking each of the allomorphs are illustrated in (2). I will call them *ɐ*-class and Ø-class nouns, respectively.

(2) a. *ɐ*-class nouns

χod-ɐ	kizg-ɐ	fid-ɐ	ʦɐnχ-ɐ	χiʦ-ɐ
hat-SG	girl-SG	father-SG	salt-SG	envy-SG
'hat'	'girl'	'father'	'salt'	'envy'

b. Ø-class nouns

dor-Ø	biʃʃew-Ø	sɐkɐr-Ø	mast-Ø
stone-SG	boy-SG	sugar-SG	grief-SG
'stone'	'boy'	'sugar'	'grief'

Put briefly, the arguments in favor of treating *-ɐ* as a singular marker are the following. First, *-ɐ* always disappears in the plural, so it cannot be a nominalizing suffix (or, assuming the existence of the category-defining head n^0, the spellout of n^0). Second, *-ɐ* is not in a complementary distribution with other case markers, so it cannot be a case marker. Third, *-ɐ* often disappears in compounds and derived nouns for demonstrably non-phonological reasons, so it cannot be a part of the root.

Given that *-ɐ* occurs both with countable and uncountable nouns, e.g., 'hat' and 'envy' in (2), it does not express singulative or individuating semantics. What it expresses is a formal morphological feature, comparable to overtly marked gender for inanimates in a gender-marking language, (see e.g. the discussion in Corbett 1991: 39-43 about the gender in Russian; Kramer 2015: 40-42), see also a discussion of number in *pluralia tantum* in Corbett (2019).

To return to the question of how rare such a system is, the case for a non-null allomorph of the singular has been made by Kouneli (2021) for number marking in Kipsigis (Nilotic). At present, it is unclear whether systems with non-null allomorphs of the singular are really typologically uncommon. I observe, however, that in some languages with noun classes, the latter, under certain conditions, can be re-analyzed as allomorphs of number markers. This suggests that equipollent dedicated number marking may be a robustly attested phenomenon.

The paper is organized as follows. In Section 2, I present basic facts about the main character of the paper, the nominal stem-final *-ɐ* in Digor Ossetic. Section 3 provides the necessary background about this language. Section 4 discusses the status of the nominal stem-final *-ɐ* with minimal theoretical assumptions. Essentially, I only assume in this discussion that morphosyntactic features exist and that they are exponed by morphemes. In Section 5, I provide a theory specific analysis of the nominal stem-final *-ɐ* in the framework of Distributed Morphology. In Section 6, I observe that non-null singular markers have emerged in Emai (Edoid) and, as Atoyebi (2009: 108, 138) has shown, in Ọ̀kọ̣ (Edoid). Section 7 concludes. Unless explicitly indicated otherwise, all examples in this paper are from Digor Ossetic.

2. The stem-final *-ɐ* in Digor nouns

In this section, I lay out basic information about the stem-final *-ɐ* in Digor nouns. Although we will see later that *-ɐ* is indeed a separate morpheme, in this section I will use the agnostic term "the stem-final *-ɐ*", not to prejudice the outcome of the discussion about its status.

To repeat, some nouns in Digor Ossetic end in *-ɐ* in the nominative singular. The class of nouns of this type is relatively large (some 700 words in the dictionary Takazov (2015), not counting those formed by productive suffixes) and open, insofar as Russian nouns in stressless

-a are automatically adopted into it. This class is neither semantically nor phonologically coherent as the data in (3) show.

(3)

madɐ	'mother'
χʷarɐ	'sister'
fidɐ	'father'
ɐrvadɐ	'member of the same patrilinear clan'
χɐpsɐ	'frog'
sɐʁɐ	'goat'
tunɐ	'ray'
ɐχsɐvɐ	'night'
zɐnχɐ	'earth'
ʒmensɐ	'sand'
qʷɐtsɐ	'smoke'
atsʼaʁʷɐ	'talent'

The presence of *-ɐ* is unrelated to the semantics of the noun, in particular, to the natural gender, animacy, or the mass-count distinction. Both count nouns, such as *χʷarɐ* 'sister', *fidɐ* 'father' *χɐpsɐ* 'frog', or *ɐrvadɐ* 'member of the same patrilinear clan', and mass nouns, such as *ʦɐnχɐ* 'salt', *zɐnχɐ* 'earth' or *ʒmensɐ* 'sand' belong to the *ɐ*-class. Abstract nouns occur in this class as well, for instance, *aχuradɐ* 'learning, education', *zundɐ* 'familiarity', or *adgindʒijnadɐ* 'sweetness'.

Without the final *-ɐ* (or plural marking), the respective roots cannot function as free forms in Digor: **mad*, **fid*, **ɐrvad*, etc[3]. This distinguishes the Digor system from those existing in languages with a singulative marker, i.e. a marker that derives a unit-denoting noun from a (morphologically) more basic non-unit-denoting noun, to use the definition of Acquaviva (2015: 1171). Such markers exist, for instance, in Maltese[4], Mifsud (1996: 34-35), or the Brythonic Celtic languages, (Favereau 1997: 50-51; King 2016:50). To illustrate such systems, some examples, with the singulative marker highlighted with the bold, are given in (4).

(4)

Maltese, Mifsud (1996: 35)	
nemel 'ants'	neml-**a** 'an ant'
ħobz 'bread'	ħobz-**a** 'loaf of bread'
ħut 'fish (collective)	ħut-**a** 'a fish'
Breton, Favereau (1997: 50)	
gwez 'trees'	gwez-**enn** 'tree'
istr 'oysters'	istr-**enn** 'oyster'
logod 'mice'	logod-**enn** 'mouse'

Nouns that form collective-singulative pairs tend to belong to specific semantic classes, see the discussion in Grimm (2012a: 69-74, 2018: 548) and Haspelmath & Karjus (2017: 1220-1223). Specifically, these tend to be entities in the middle part of the "individuation scale" introduced in Grimm (2018: 548), in particular, see Table 20 on p. 249 of that work. For more discussion of singulatives see a.o. Corbett (2000: 17) and Kouneli (2021: 1206-1207). In Digor, on the other hand, no semantic restrictions exist on *ɐ*-final nouns. Accordingly, it can be concluded that *-ɐ* is not a singulative marker.

Earlier descriptive work on Ossetic noticed the final *-ɐ* in Digor, but did not attempt to analyze it, or even to address its morphemic status. Miller (1904: 40) observed that *-ɐ* always

[3] In the closely related Iron Ossetic, the cognates of these words, when existent, either lose the final *-ɐ* (*mad* 'mother', *fəd* 'father'), or have it reanalyzed as a part of the stem: *ʒɐrd**ɐ*** 'heart' / *ʒɐrd**ɐ**tɐ* 'hearts', cf. the Digor *zɐrd**ɐ*** / *zɐrd**i**tɐ*).

[4] Maltese features an additional dedicated morphological form to combine with low numerals, Mifsud (1996: 35), but it does not concern us here.

disappears in the plural. Thordarson (2009: 114-115) discussed the Digor "*æ*-declension," and argued that the *æ*-declension goes back to "ancient feminines in **-ā*". However, he did not address the synchronic status of *-ɐ* in modern Digor. Erschler (2016: 3164) called it "vestigial nominative", which is arguably correct diachronically, but does not say anything about the status of the morph in the synchronic system.

3. Background on Digor Ossetic

Digor Ossetic is an endangered East Iranian language spoken in the Central Caucasus by 30,000 to 50,000 people, (Thordarson 2009: 2-5; Erschler 2018b: 862). The closely related Iron Ossetic lacks the phenomenon addressed in this paper.

3.1 General Profile

Digor Ossetic is predominantly head final and largely agglutinative. The language distinguishes the singular and the plural number in nominals (5).

(5) a. bɐχ-bɐl
horse-SUP
'on a/the horse'
b. bɐχ-tɐ-bɐl
horse-PL-SUP
'on (the) horses'

The finite verb agrees with the subject in person and number (6). The language lacks grammatical gender. Nouns of the ɐ-class and of the Ø-class behave identically with respect to agreement with the verb, while agreement/concord in noun phrases is altogether absent – the forms of 'this' and 'young' in (6) do not depend on the properties of the head noun.

(6) a. aʧi ɐrigon kizg-**ɐ**/biʧʧew kaf-uj
this young girl-**ɐ**/boy dance-PRS.3SG
'This young girl/boy is dancing.'
b. aʧi ɐrigon kizg-u-ttɐ/biʧʧew-tɐ kaf-untsɐ/*kaf-uj
this young girl-TH-PL/boy-PL dance-PRS.3PL/*dance-PRS.3SG
'These young girls/boys are dancing.'

Importantly for the argument in this paper, multiple case marking ("Suffixaufnahme", Plank 1995: v) is unattested in Digor.

3.2 Phonology

A crucial question for the discussion in this paper is what triggers the deletion of the final /*ɐ*/ in some forms of /*ɐ*/-class nouns. For a brief description of the segmental phonology of Digor, see Erschler (2019: 865-866). The two facts relevant for the further discussion in this paper are, first, that hiatus is not tolerated in this language, and, second, that vowel deletion only occurs productively to avoid hiatus.

In particular, hiatus resolution is the only condition that productively triggers /*ɐ*/ deletion. Vowels other than /*ɐ*/ do not delete at all. A more detailed discussion of this will be taken up in Section 4.1, where it belongs by the logic of argumentation.

A pilot study by the author failed to discover word stress in Digor. Consultants lack consistent stress judgments and no obvious acoustic cues for stress are observable. Digor is not unique in this respect – similar findings have been reported, for instance, for several Malay varieties, see Goedemans and Van Zanten (2007: 54) and Maskikit-Essed & Gussenhoven 2016:370) for reliable perceptual studies. Ideally, a similar study needs to be performed for

Digor as well. Provisionally, however, I conclude that evidence for word stress in Digor is absent.

3.3 Number marking in nouns

The structure of a singular noun is shown in (7). The vowel *-ɐ*, which I will argue to be a morph expressing the singular, is the main topic of this paper.

(7) a. Stem_{SG}-(ɐ)-case marker

The structure of a plural marked noun is shown in (8a). The plural root is for many nouns weakly suppletive with respect to the singular root. The choice of a thematic suffix, denoted by the gloss TH in the scheme in (8a), is a lexical property of the stem. It is independent of whether the given lexeme is of the *ɐ*-class or not. Likewise, the gemination of /*t*/ in the plural suffix *-tɐ* appears to be lexically determined by the stem.

(8) a. Stem_{PL}-TH-(t)tɐ– case marker

b.

bɐχ-tɐ	bɐχ 'horse'
horse-PL	
χod-tɐ	χodɐ 'hat'
hat-PL	
suvɐllɐn-ttɐ	suvɐllon 'child'
child.PL-PL	
ʁoʃ-i-tɐ	ʁog 'cow'
cow.PL-TH-PL	
kɐsɐlg-i-tɐ	kɐsalgɐ 'fish'
fish.PL-TH-PL	
sunkk-i-tɐ	sunk 'seam'
seam.PL-TH-PL	
kizg-u-ttɐ	kizgɐ 'girl'
girl-TH-PL	
ɐrvad-tɐl-tɐ	ɐrvadɐ 'member of the same patrilinear clan'
clan.member-TH-PL	

Although exploring the semantics of number in Digor is not my primary goal here, it is perhaps worth noting that mass nouns can form the plural in Digor, with some coerced meaning. In (9), this is illustrated for *zɐnχɐ* 'soil, land' and *fudɐnχɐ* 'hate, enmity'.

(9) a.

jetʃi	tillɐg-i	muggag	χ^{w}ɐnχag	**zɐnχ-i-t-i**
that	cereal-OBL	seed	alpine	land-TH-PL-OBL
nɐ	zadɐj			
NEG	grow.PST.3SG			

'The seeds of this cereal (corn) didn't grow on alpine lots.' Sabajti 2010: 54

b.

jetʃi	**fudɐnχ-i-t-ɐn**	buχs-ɐn	nɐjjes
that	enmity-TH-PL-DAT	tolerate-MOD.INF	NEG.exists

'It's impossible to tolerate such acts of enmity.' Maliti 1995: 117

Finally, productive[5] singulatives, see Section 2 for a definition, do not exist in Digor.

[5] I am not aware of non-productive ones either, but I cannot rule out the possibility that some rare non-productive derivational suffix(es) can be analyzed that way.

3.4 Morphophonology of the final -ɐ

One fact about Digor morphophonology that is going to play an important role in the reasoning below is that any morpheme-final *-ɐ* always[6] disappears before vowel-initial morphemes to resolve the hiatus that would appear, Erschler (2018a: 26-28) and Caha (2020: 39). As was noted above in Section 3.2, hiatus resolution is the only condition in Digor under which vowel deletion productively occurs.

The data in (10) illustrate the disappearance of /ɐ/ before vowels for several *ɐ*-final morphemes, namely, for the nominal negative prefix *ɐnɐ-* in (10a) and for the sentential negation marker *nɐ=* in (10b).

(10)	a.	zongɐ 'familiar'	ɐnɐ-zongɐ 'unfamiliar'
		aχur 'familiar'	ɐn-aχur 'uncommon'
		ɐʁdaw 'custom'	ɐn-ɐʁdaw 'uncivil'
	b.	baχ^{w}ɐruj 'eats'	nɐ=baχ^{w}ɐruj 'doesn't eat'
		agoruj 'seeks'	n=agoruj 'doesn't seek'
		ɐrɐnʦajuj 'rests, calms down'	ne=rɐnʦajuj 'doesn't rest, calm down'

To illustrate one more environment where an *ɐ*-final morpheme interacts with a vowel-initial one, in combination with numerals, nouns in Digor can take the numeral morpheme *-e-/-em-*, (11a). (It is called "augment" in Caha 2020: 133). The status of this morpheme is irrelevant for our present purposes (see Caha 2020: 150-152 for a proposal). What matters is that it appears in combinations of nouns with numerals. In *ɐ*-class nouns, the final /ɐ/ disappears in the presence of this suffix (11b). That does not happen to any other stem-final vowels – an epenthetic *-j-* is inserted instead (11c-d).

(11)	a.	bɐχ	duwɐ	bɐχ-**e**-mɐ	duwɐ	bɐχ-**em**-ɐj
		'horse'	2	horse-NUM-ALL	2	horse-NUM-ABL
			'to two horses'		'from two horses'	
	b.	χodɐ	duwɐ	χod-**e**-mɐ	duwɐ	χod-**em**-ɐj
		'hat'	2	hat-NUM-ALL	2	hat-NUM-ABL
			'to two hats'		'from two hats'	
	c.	k'ibila	duwɐ	k'ibila-**j**-**e**-mɐ	duwɐ	k'ibila-**j**-**em**-ɐj
		'bucket'	2	hat-EP-NUM-ALL	2	hat-EP-NUM-ABL
			'to two buckets'		'from two buckets'	
	d.	zok'o	duwɐ	zok'o-**j**-**e**-mɐ		
		'mushroom'	2	mushroom-EP-NUM-ALL		
			'to two mushrooms'			
			duwɐ	zok'o-**j**-**em**-ɐj		
			2	mushroom-EP-NUM-ABL		
			'from two mushrooms'			

With these preliminaries in mind, we can proceed to discuss the status of the final *-ɐ* in Digor nouns.

4. The status of final -ɐ in Digor nouns

Now let us use the facts laid out in Sections 2 and 3 to determine the status of the final *-ɐ* in Digor nouns. I will first lay out the logical possibilities for the analysis, and then show that only

[6] The only exception is the behavior of /ɐ/ in the preverb *fɐ-*, the sentential negation marker *nɐ*, and possessive prefixes. If any of them precedes an *ɐ-* or *i*-initial stem, the resulting hiatus is resolved as *ɐ+ɐ/i → e* rather than the deletion of /ɐ/. For instance, negating *ɐnʁez-uj* 'ferments/leavens; is possible', we obtain ***nɐ****=nʁez-uj*.

one of them, that -ɐ is a singular marker, is fully compatible with all the facts. I keep this discussion theory neutral, the only assumptions that I make are that morphosyntactic features exist and are exponed by morphemes.

A priori, -ɐ can either be a separate morpheme, or a segment of the root. If it is a separate morpheme, it can express either case, or number, or case and number at once, or be a nominalizing suffix. Finally, it can be a 'theme vowel', a morpheme that does not express any morphosyntactic feature of its own[7].

To demonstrate that -ɐ is not a part of the root, I will show in Section 4.1. that it can disappear in compounds and before derivational suffixes in situations where this disappearance cannot be motivated phonologically. In Section 4.2, I lay out the key observation: -ɐ disappears in the plural. That leaves us two possibilities: either -ɐ expones only the feature [+Sg], or it expones [+Sg] and some other nominal morphosyntactic feature alongside [+Sg]. The only candidate for such a feature is case.

To demonstrate that -ɐ is not a case marker, I will show in Section 4.3 that it is compatible with other case markers, which is in general impossible in Digor. Furthermore, other morphemes that would express case and number at once are unattested in Digor.

Finally, -ɐ could be taken to be a nominalizing suffix. However, we would then have expected it to be preserved in the plural, which is not the case. I discuss this in Section 4.4.

4.1 -ɐ is a separate morpheme

It is *a priori* possible that -ɐ is a part of the singular root rather than a separate morpheme. To argue against this possibility, I show that it can disappear in derived nominals and compounds before consonant-initial morphemes[8]. For nouns with derivational suffixes, it is illustrated in (12).

(12)	zɐnχɐ 'land'	zɐnχ-gun 'landowner'
	χɐʣarɐ 'house'	χɐʣar-gin 'houseowner'
	χʷasɐ 'hay'	χʷas-donɐ 'hayloft'
	fagɐ 'millet'	fag-gun 'made of millet'
	ʃinʣɐ 'thorn'	ʃinʣ-gun 'thorny, prickly'
	bɐlasɐ 'tree'	bɐlas-gun 'covered with trees'
	k'abazɐ 'piece'	k'abaz-gaj 'piecewise'
	ʦ'arɐ 'skin, layer'	ʦ'ar-gaj 'by layers'

The same happens in compounds (13).

(13)	zɐnχɐ 'land'	zɐnχ-kosɐg 'land-tiller'
	wadɐ 'storm'	wad-gurojnɐ 'windmill'
	rɐzɐ 'fruit'	rɐz-bɐlasɐ 'fruit tree'
	sɐʁɐ 'goat'	sɐʁ-ʣar 'goat hide'
	kɐsalgɐ 'fish'	kɐsalg-ʣaw 'fisher'
		kɐsal-χʷar 'otter' (lit. fish eater)
	χɐʣarɐ 'house'	χɐʣar-gɐs 'house watcher'

An anonymous reviewer raises a possibility that the disappearance of -ɐ in compounds, before consonant-initial derivational suffixes, and in the plural is of a phonological nature. This possibility is hardly plausible. This would-be phonological rule, no matter whether it deletes the

[7] The possibility of -ɐ being a theme vowel (adjoined to Num^0) will be taken up in Section 5.2, where it will be shown that this possibility is empirically indistinguishable from -ɐ being a singular marker.

[8] Before vowel-initial morphs, -ɐ always disappears as well. However, as was discussed in Section 3, that process is phonologically conditioned. Therefore, the interaction of ɐ-class stems with vowel-initial morphs does not provide any evidence about the morphemic status of -ɐ.

vowel in compounds or inserts it in free-standing nouns, must be applicable only to /ɐ/-final nominal stems in all the environments other than the singular. It should not be sensitive to any other properties of the stem, as it must apply to each and every /ɐ/-final nominal stem.
If the hypothetical rule inserts the vowel in the singular rather than deleting it in all the other forms, it must do so at the end of the word without any obvious phonological reason, consider the minimial and near-minimal pairs in (14).

(14)

bal 'group'	balɐ 'the lizard *Pseudopus apodus*'
bɐχ 'horse'	lɐχɐ 'excrements'
dor 'stone'	morɐ 'small bit'
sug 'drop, tear'	mugɐ 'semen'
dun 'rear side'	tunɐ 'ray'

All of the above forces me to reject the possibility that the disappearance of the final /ɐ/ in compounds and before consonant-final derivational suffixes is of a phonological nature.

I wrote "-*ɐ* can disappear" rather than "-*ɐ* disappears", because in some cases -*ɐ* is preserved in derived words or compounds (15). This has no clear, if any, semantic consequences.

(15)

χɐdonɐ 'shirt'	χɐdonɐ-χ^{w}ar 'amount of fabric sufficient for a shirt'
rɐzɐ 'fruit'	rɐzɐ-donɐ 'orchard'
ʦɐnχɐ 'salt'	ʦɐnχɐ-k'aχɐg 'salt miner'

This fact is not problematic for my main point, namely, that -*ɐ* is a singular number marker. Cross-linguistically, in languages with overtly marked plural, plural-marked nouns can sometimes serve as input for further derivation (16), see the discussion in Chapman (1996).

(16)

a. German, Chapman (1996: 178)
Frau-en-bewegung
woman-PL-movement
'women's movement'
Büch-er-regal
book-PL-shelf
'bookshelf'

b. Dutch, Chapman (1995: 178)
huiz-en-rij
row-PL-house
'row of houses'
dak-en-zee
roof-PL-sea
'sea of roofs

With some reservations, the Welsh *danhedd-og* tooth.PL-SUFF 'having teeth' and *llysieu-ol* plant.PL-SUFF 'relating to plants, herbal' can also serve as such examples, see Nurmio (2017: 68) for a discussion.

Moreover, in German and Dutch, entire phrases can serve as input for derivation, see Lawrentz (1996: 5) for German and Ackema & Neeleman (2004: 147) for Dutch, and a discussion of English facts in Punske & Jackson (2017: 236-237). In Digor, plural-marked nouns sometimes participate in derivation as well (17).

(17)

χabar 'news, story'	χabɐr-ttɐ-gond 'talk, transmission of news'
deχ 'part'	deχ-tɐ-gond 'divided'
k'ɐlɐs 'animal with crooked horns'	k'ɐlɐs-tɐ-gond 'crooked'
k'ɐbɐz 'branch'	fɐk'k'ɐbɐz-tɐ-gond 'branching'
χawɐ 'eyelash, fringe'	χaw-tɐ-gun 'ciliate'

Therefore, the fact that -*ɐ*-final nouns can occur in derived forms and in compounds is not indicative of the fact that -*ɐ* is a part of a monomorphemic root. I leave systematic investigation of Digor compounds for future study.

An alternative to positing a synchronic singular morpheme -*ɐ* would be to say that ɐ-less compounds and derived nouns got lexicalized when -*ɐ* still was an analyzable morpheme, no matter with what functions, while synchronically that is not so anymore. However, the disappearance of -*ɐ* in these environments is productive insofar as it occurs with recent loans from Russian.

(18) maʃinɐ 'car' maʃin-gun 'car owner'
fanerɐ 'plywood' faner-gun 'made of plywood'

Accordingly, -*ɐ* must be a separate morpheme rather than a part of the root. Having established this fact, we can proceed to examine its functions.

4.2 Key observation: -*ɐ* disappears in the plural

The key observation in favor of treating -*ɐ* as a singular marker is that it always disappears in the plural. As I have mentioned above, this observation was already made by Miller (1904: 40), who however did not explore its consequences.

To illustrate this point, we focus on nouns that require no thematic suffix in the plural, or the thematic suffix -*tɐl*. For the thematic suffixes -*i*- and -*u*-, the disappearance of -*ɐ*- could be the result of the hiatus resolution rule discussed in Sections 3.2 and 3.4. In (19a), nouns without a thematic suffix are illustrated, and in (19b), nouns with the suffix -*tɐl*. The Russian loans in (19c) show that the *ɐ*-drop in the plural is a productive rule.

(19)	a.	χod-ɐ	χod-tɐ	'hat'
		ag-ɐ	ɐg-tɐ	'cauldron'
		dog-ɐ	dog-tɐ	'epoch'
		χɐʤar-ɐ	χɐʤɐr-ttɐ	'house'
		wesojn-ɐ	wesɐn-ttɐ	'besom'
	b.	mad-ɐ	mat-tɐl-tɐ	'mother'
		fid-ɐ	fit-tɐl-tɐ	'father'
		ɐrvadɐ	ɐrvat-tɐl-tɐ	'member of the same patrilinear clan'
	c.	maʃin-ɐ	maʃin-ttɐ	'car' (Rus.)
		brigad-ɐ	brigɐd-tɐ	'work team' (Rus.)
		fabrik-ɐ	fabrik-tɐ	'factory' (Rus.)

I am aware of one exception, *mɐngɐ* 'lie', which pluralizes as *mɐngɐ-ttɐ* preserving the stem-final /*ɐ*/. However, this is one of the two lexemes in which the allomorph -*ttɐ* occurs after a vowel (the other one is Sg. *kizgɐ*, Pl. *kizg-u-ttɐ* 'girls'), so this plural is very irregular anyway.

Given that the plural marker has the form –*(t)tɐ*, it is natural to wonder whether the /*ɐ*/ in the plural is not the same entity as the /*ɐ*/ in the nouns of the *ɐ*-class. However, there is no independent evidence that the plural marker is not monomorphemic: the only environment where the /*ɐ*/ of the plural marker disappears is in front of the vowel-initial case suffixes. Tellingly, the /*ɐ*/ in the plural marker is always preserved in compounds and derived forms, see (17) above. Additionally, the final /*ɐ*/ in the plural obligatorily appears even in the nouns of the null-class, e.g. *dor dor-tɐ* 'stone(s)' and *uru uru-tɐ* 'rats'.

It still remains a possibility that -*ɐ* expresses some other feature along with number, or that it is an allomorph of some morpheme *conditioned* by the singular number. I will explore and reject these possibilities in Section 4.3.

4.3 -ɐ does not expone case

In this section, I show that -ɐ cannot be involved in the marking of case. A priori, it could expone case only, expone case and some other feature, or be a part of a (possibly multimorphemic) case marker. To explore, and reject, these possibilities, we need to examine case marking in Digor in more detail.

4.3.1 Case marking in Digor

To repeat, case marking in Digor is agglutinative. The basic allomorphs of the case markers are shown in Table 1 below.

Table 1: Case markers

Nominative	-Ø
Oblique[9]	-i
Dative	-ɐn
Ablative	-ɐj
Equative	-aw
Allative	-mɐ
Superessive	-bɐl

The paradigms in Tables 2 and 3 below show that the non-null case markers are naturally divided into two groups: the two consonant-final ones – the allative and the superessive; and the vowel-initial rest of the cases. While no morphophonological processes[10] are associated with the consonant-initial cases, the vowel-initial ones require insertion of the epenthetic /*j*/ after vowel-final stems for vowels other than /*ɐ*/. For *ɐ*-final stems, that is, singular nouns of the *ɐ*-class and all plurals, the final /*ɐ*/ disappears. As we have seen in Section 3.4, the disappearance of a morpheme-final /*ɐ*/ before a vowel-initial morpheme is an automatic process in Digor. It is independent of the nature of the morphemes involved.

Table 2: Noun inflection in the singular

	Consonant-final	ɐ-final	Other vowel-final		
Nominative	dor 'stone'	χodɐ 'hat'	k'ibila 'bucket'	k'ere 'pie'	zok'o 'mushroom'
Oblique	dor-i	χod-i	k'ibila-j	k'ere-j	zok'o-j
Dative	dor-ɐn	χod-ɐn	k'ibila-j-ɐn	k'ere-j-ɐn	zok'o-j-ɐn
Ablative	dor-ɐj	χod-ɐj	k'ibila-j-ɐj	k'ere-j-ɐj	zok'o-j-ɐj
Allative	dor-mɐ	χodɐ-mɐ	k'ibila-mɐ	k'ere-mɐ	zok'o-mɐ
Superessive	dor-bɐl	χodɐ-bɐl	k'ibila-bɐl	k'ere-bɐl	zok'o-bɐl
Equative	dor-aw	χod-aw	k'ibila-j-aw	k'ere-j-aw	zok'o-j-aw

[9] I use the label "oblique" for accusative, genitive, and locative, which are syncretic for all lexical nouns. After the vowels other than /*ɐ*/, the allomorph of the oblique is *-j*, see Table 2.

[10] Except for the labial assimilation of /*n*/ before the allative suffix *-mɐ*. For instance, for *kɐron* 'border, boundary' the allative form /*kɐron-mɐ*/ will be realized as [*kɐrommɐ*]. This phenomenon, however, is irrelevant for our purposes.

Table 3: Noun inflection in the plural

Nominative	dor-tɐ ‘stone’
Oblique	dor-t-i
Dative	dor-t-ɐn
Ablative	dor-t-ɐj
Allative	dor-tɐ-mɐ
Superessive	dor-tɐ-bɐl
Equative	dor-t-aw

With these facts in mind, let us proceed to show that the stem-final -*ɐ* does not participate in the exponence of case in Digor.

4.3.2 Final -*ɐ* and case marking

Now let us address the logically possible analyses of -*ɐ* as a case-related morpheme and show that they are not supported by the data.

The crucial observation is that -*ɐ* is not in complementary distribution with case markers, as shown in Table 2. Namely, it co-occurs with the consonant-initial allative and superessive markers[11].

(20)	χod-ɐ-mɐ	χod-ɐ-bɐl	kizg-ɐ-mɐ	kizg-ɐ-bɐl
	hat-ɐ-ALL	hat-ɐ-SUP	girl-ɐ-ALL	girl-ɐ-SUP
	‘to the hat’	‘on the hat’	‘to the girl’	‘on the girl’

Moreover, the cases in which it disappears, namely the oblique, dative, ablative, and equative, are exponed by vowel-initial suffixes, see the data in Table 1. Therefore, the disappearance of -*ɐ* before them can be taken to be a phonological phenomenon, see the discussion in Sections 3.2 and 3.4. Therefore, -*ɐ* is not in a complementary distribution with case markers. As was noted in Section 3.1, multiple case marking (Suffixaufnahme) is not attested elsewhere in Digor Ossetic. Therefore, -*ɐ* cannot be taken to be a case marker.

The possibility that -*ɐ* expresses case and some other feature can be rejected as well. The only candidate for this additional feature is number. This would have made the Digor case and number marking similar to that in more conservative Indo-European languages, as was illustrated for Russian in (1b) above. However, unlike in such Indo-European languages, no other case marker in Digor expresses case and number together, as can be readily seen from the data in Tables 1-3.

Finally, we need to take into account the possibility that -*ɐ* is genuinely absent in the oblique, dative, ablative, and equative rather than deleted by a morphophonological rule. Thus, the exponents of these cases will be genuinely monomorphemic, while the nominative, superessive, and allative case markers will be genuinely bimorphemic. Then, the cases fall into two natural groups (21).

(21) Group I: nominative, allative, superessive;
Group II: oblique, dative, ablative, equative.

[11] The retention of -ɐ in these configurations cannot be explained by the need to break up a consonant cluster. In nouns that end in consonants or even consonant clusters, epenthetic vowels are never inserted in these case forms (i).

(i)	urg ‘kidney’	urg-mɐ kidney-ALL	urg-bɐl kidney-SUP
	fons ‘livestock’	fons-mɐ livestock-ALL	fons-bɐl livestock-SUP
	sɐrft ‘cleaned one’	sɐrft-mɐ cleaned.one-ALL	sɐrft-bɐl cleaned.one-SUP
	ɐχst ‘shooting’	ɐχst-mɐ shooting-ALL	ɐχst-bɐl shooting-SUP

This division could correspond, for instance, to the featural representations of the respective cases. However, for personal pronouns[12], deictics, and wh-words, whose paradigms are given in Tables 4-6, the partition of the case system is entirely different: the nominative and the oblique are set apart, while two natural subparadigms are formed on the one hand, by the superessive, allative and equative, and on the other hand, by the ablative and dative. The latter two cases require *-m-* in the paradigms of the deictics, Table 5, and wh-words, Table 6. I stay agnostic as to the status of the *-m-*, for a discussion of it see Caha (2020: 133-152).

Table 4: Inflection of personal pronouns.

	1Sg	2Sg
Nominative	ɐz	du
Oblique	mɐn	dɐw
Dative	mɐn-ɐn	dɐw-ɐn
Ablative	mɐn-ɐj	dɐw-ɐj
Allative	mɐnmɐ	dɐw-mɐ
Superessive	mɐn-bɐl	dɐw-bɐl
Equative	mɐn-aw	dɐw-aw

Table 5: Inflection of deictics.

	Proximal		Distal	
	Sg	Pl	Sg	Pl
Nominative	a/ajɐ	a-tɐ	je	je-tɐ
Oblique	aj	an-i	woj	won-i
Dative	a-**m**-ɐn	an-ɐn	wo-**m**-ɐn	won-ɐn
Ablative	a-**m**-ɐj	an-ɐj	wo-**m**-ɐj	won-ɐj
Allative	a-mɐ	an-ɐmɐ	wo-mɐ	won-ɐ-mɐ
Superessive	a-bɐl	an-ɐbɐl	wo-bɐl	won-ɐ-bɐl
Equative	a-j-aw	ani-j-aw	wo-j-aw	woni-j-aw

Table 6. Case marking in wh-words

	'who'	'what'
Nominative	ka	ʧi
Oblique	ke	tsɐ-j
Dative	kɐ-**m**-ɐn	tsɐ-**m**-ɐn
Ablative	kɐ-**m**-ɐj	tsɐ-**m**-ɐj
Allative	kɐ-mɐ	tsɐ-mɐ
Superessive	kɐ-bɐl	tsɐ-bɐl
Equative	kɐ-j-aw	tsɐ-j-aw

Accordingly, the partition of the case system shown in (21) does not naturally extend to the entire system of nominals in Digor, and therefore cannot be explained by the featural representation of the cases. The assumption that *-ɐ* is always underlyingly present in singular stems of the *ɐ*-class and only disappears in vowel-initial cases for phonological reasons explains the facts more naturally.

Therefore, we must conclude that *-ɐ* does not expone any case features in Digor. Given that the only overt morphosyntactic features that nouns can bear in Digor are number and case, the only feature that can be exponed by *-ɐ* is [+Sg]. The other allomorph of the respective morpheme is null.

[12] In Table 4, only the singular pronouns *ɐz* 'I' and *du* 'you (Sg)' are represented. The plural pronouns *maχ* 'we' and *sumaχ* 'you (Pl)' inflect as consonant-final lexical nouns and therefore do not provide any new information about the paradigm partition.

5. Distributed Morphology analysis

The discussion of the preceding sections was kept theory-neutral as much as possible, modulo the assumption that morphosyntactic features are exponed by morphemes. In this section, I propose an analysis of number marking in Digor in the framework of Distributed Morphology (DM), (Halle and Marantz 1993).

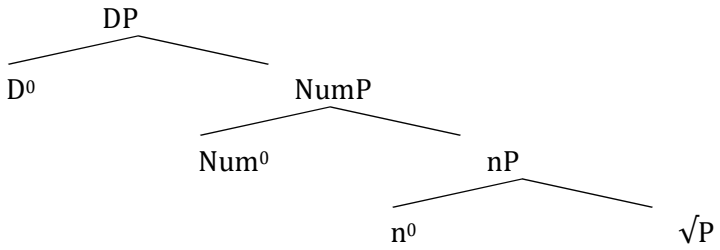
A basic assumption of the DM framework is that morphemes correspond to nodes in the syntactic structure and the bundles of features carried by these nodes (see, e.g., a recent concise overview in Bobaljik 2017 and references there). Another crucial assumption of DM is that roots are acategorial, while the lexical category is contributed by a dedicated lexical head (Marantz 1997: 215, Harley 2014: 263, a.o.). Phonological exponents are inserted in the structure after the spellout by Vocabulary Insertion. The latter is either concurrent with linearization, as was originally proposed by Embick & Noyer (2001: 562), or follows linearization (Arregi & Nevins 2012: 4; Ostrove 2020: 522). Vocabulary Insertion proceeds from the bottom of the tree upwards. Prior to Vocabulary Insertion, but after the spellout, certain very constrained movement may occur and nodes may be inserted that were absent in narrow syntax, (Embick & Noyer 2001: 558, 562-563; Embick 2010: 75).

This section is organized as follows: I first present my assumptions about the DP syntax in Digor and recall the basic facts about the surface structure of Digor nouns, Section 5.1. Then I proceed to identify the nodes in the syntactic structure with overt morphemes. In Section 5.2, I do this for the singular, and in Section 5.3, for the plural.

5.1 DP syntax in Digor and the surface structure of nouns

I adopt here the now standard proposal for the relevant part of the DP structure (22), see e.g. (Harbour 2014: 191; Kramer 2015: 43; Deal 2016: 324; and Kouneli 2021: 1218)[13]. For arguments in favor of positing the DP in Digor, see Erschler (2019). However, for the purposes of my present argument, it is irrelevant whether the DP exists in Digor.

(22)



Interpretable number features are taken to be hosted by Num⁰, while uninterpretable number features are hosted by n⁰, see e.g. Acquaviva (2008: 270); Alexiadou (2011:39); Kramer (2015: 43), and references there. For arguments in favor of positing NumP in general, see Ritter (1993).

The argument in the preceding sections has justified the need to posit a singular number feature to account for the distribution of the *-ӕ* suffix. Furthermore, based on the aforecited argument of Harbour (2011), I take the number feature to be equipollent. Specifically, I adopt [± Sg] feature for number (Harbour 2008: 67; Kouneli 2021: 1218), corresponding to [± atomic] of

[13] A strain of research originating in Borer (2005) argues for the existence of the projection DivP above nP, see e.g. De Belder (2011: 180-183) and Mathieu (2012: 652). The head Div⁰ is taken to be responsible for individuation, while the reference of nP is argued to be universally to kinds. I do not take a stand here in the debate about the existence of DivP; see e.g. Wilhelm (2006; 2008:64), Doron & Müller (2013: 94), and Grimm (2018: 564-565) for a variety of arguments, based on data from several typologically diverse languages, against the view that any noun is generated with non-count reference; and Bale & Barner (2009: 234) for a proposal that countability is a diacritic on n⁰ rather than is introduced by a dedicated head. In any event, I assume DivP to be unrelated to the spellout of *-ӕ*, given that the division of Digor Ossetic nouns into the *ӕ*- and ∅-classes crosscuts the count-mass distinction.

Harbour (2011: 565; 2014: 191) and [∓Pl] of Kramer (2015: 43). Given the absence of the dual (or the collective) in Digor Ossetic, a richer feature system is unnecessary to account for the facts.

For the sake of convenience, I repeat here the maximal structure of singular and plural nouns in Digor, presented in Section 3.3, as (23). The gloss TH stands for the thematic suffix in the plural, which has lexically determined allomorphs /-Ø-/, /-*i*-/, /-*tɐl*/, and /-*u*-/.

(23) a. Singular
$Stem_{SG}$-(ɐ)-case marker

bɐχ-bɐl	χod-ɐ-bɐl	fid-ɐ-bɐl	zɐnχ-ɐ-bɐl
horse-SUP	hat-ɐ-SUP	father-ɐ-SUP	land-ɐ-SUP
'on a/the horse'	'on a/the hat'	'on a/the father'	'on (the) land'

b. Plural
$Stem_{PL}$-TH-(t)tɐ– case marker

bɐχ-tɐ-bɐl	χod-tɐ-bɐl	fid-tɐl-tɐ-bɐl	zɐnχ-i-tɐ-bɐl
horse-SUP	hat-PL-SUP	father-TH-PL-SUP	land-TH-PL-SUP
'on (the) horses'	'on (the) hats'	'on (the) fathers'	'on (the) lands'

We need now to identify the morphemes occurring in (23) with the nodes in (22). For the purposes of the present discussion, it is immaterial whether case markers spell out a dedicated K head, or are dissociated morphemes. This is so because the discussion of Section 4.3 allows us to take case features out of consideration.

5.2 The structure of the singular

In this section, I provide explicit Vocabulary Insertion rules for the Digor singular nouns given the syntactic structure in (22). The main questions that need to be answered are, first, what syntactic head (or dissociated node) the morph -*ɐ* corresponds to, and, second, where to put the diacritic that conditions the choice of this allomorph. The analysis that I argue for here is that -*ɐ* and -Ø are the allomorphs of Num^0, while the diacritic is hosted by the node right below n^0 – either the root, or, if present, a derivational suffix.

The reason to put the diacritic on the root or a derivational suffix is that, on the one hand, adding an *ɐ*-less derivational suffix to a root that requires -*ɐ* produces a Ø-class noun (24a), and, on the other hand, adding a derivational suffix in -*ɐ* to a Ø-class noun produces an *ɐ*-class noun (24b).

(24) a. Ø-class noun derived from ɐ-class noun

ʦ'ar-ɐ 'skin, layer'	ʦ'ar-ug 'cover'
qɐdor-ɐ 'beans'	qɐdor-gun 'bean pie'

b. ɐ-class noun derived from Ø-class noun

iχɐs 'debt, duty'	iχɐs-ad-ɐ 'post, job position'
χeʦaw 'head, administrator'	χeʦaw-ʤijnad-ɐ 'authority, domination'

Given the structure in (22), it is logically possible to assume that -*ɐ* spells either n^0 (Option I), or Num^0 (Option II), or is a dissociated morpheme[14] adjoint to either of these heads (Option III). Likewise, the thematic suffix in the plural can either spell out n^0, or be a dissociated morpheme adjoint either to n^0 or to Num^0. I will first address Options I and III and show that they are analytically inadequate. Then I will proceed to examine Option II, the actual analysis I argue for in this paper.

[14] That is, a morpheme that corresponds to a node that is absent in syntax, but is inserted after the spell-out and adjoint to one of the nodes inserted in syntax.

The Vocabulary Insertion rules for Options I and II are shown in (25). In these rules, I take into account that the interpretable number feature is hosted in Num^0, while the uninterpretable number feature is hosted by n^0, see the references in Section 5.1. Based on the discussion in Sections 2 and 4, I assume that the uninterpretable [+*u*Sg] feature nevertheless conditions the spellout of n^0 (Option I) or Num^0 (Option II) as -*ɐ*. Accordingly, I put [+*u*/*i*Sg] either as a feature on the head being spelled out, or as a conditioning feature (understood to be located elsewhere). In (25), I only show the rules for *ɐ*-class nouns. For ∅-class nouns, the VI rules are trivial – both n^0 and Num^0 are spelled out as ∅.

(25) a. Option I: -*ɐ* spells out n^0

n^0 [+*u*Sg]	↔	/-ɐ/_[ɐ-class diacritic]
n^0	↔	/-ɐ/ __[+ *i*Sg], [ɐ-class diacritic]
Num^0	↔	∅

b. Option II: -*ɐ* spells out Num^0

n^0	↔	∅
Num^0 [+*i*Sg]	↔	/-ɐ/_[ɐ-class diacritic]
Num^0	↔	/-ɐ/__[+ *u*Sg], [ɐ-class diacritic]

Let us first examine Option I in more detail. If -*ɐ* spells out n^0, it must be conditioned by either interpretable or uninterpetable feature [+Sg] located somewhere. In particular, for mass nouns, such as 'land' or 'respect', this u[+Sg] feature must be located on n^0. Then we will expect -*ɐ* to automatically surface in synthetic compounds, assuming that a non-head part of a compound is an nP[15], (Siddiqi 2009: 58-60; Harley 2011: 140). As we have already seen in Section 4.1, this does not happen (26), where I gloss -*ɐ* agnostically as ɐ. Accordingly, we must conclude that -*ɐ* cannot spell out n^0.

(26)

zanχ-ɐ	zɐnχ-kosɐg
land-ɐ	land-worker
'land'	'land-tiller'
ʧi̯t-ɐ	ʧi̯t-warzagɐ
fame-ɐ	fame-lover
'fame, respect'	'ambitious'

Now let us consider Option III, that is, the possibility that -*ɐ* is a dissociated morpheme expressing the inflectional class (see e.g. Embick 1997: 8; Embick & Halle 2005: 45-46; Embick 2010: 75; and Kramer 2015: 237-239). The idea to treat inflectional class markers this way is motivated by the fact that they do not play any role in the syntactic derivation. Compare a similar analysis of thematic vowels in Romance, (Alexiadou 2004:24; Kramer 2015: 213; and

[15] An anonymous reviewer raises a possibility that non-head parts of compounds in Digor Ossetic are RootPs rather than nPs. That would render invalid my argument against -*ɐ* being the spellout of n^0. However, the loss of -*ɐ* occurs in synthetic compounds, that is, in compounds where the non-head is an argument of the head (i). In (i a), *kɐsalgɐ* 'fish' is the argument of *ʦɐw-* 'hunt'; in (i b) it is the argument of *χ^{w}ar-* 'eat'; in (i c) *χɐʤarɐ* 'house' is selected by *kɐs-* 'watch'.

(i)

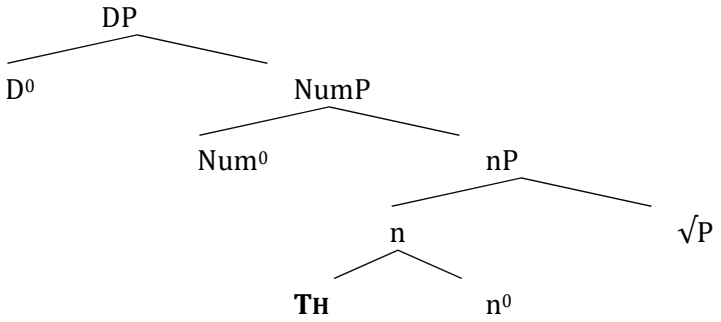
a.	kɐsalg-ʤaw	'fisher' (lit. fish-hunter)
b.	kɐsalg-χ^{w}ar	'otter' (lit. fish-eater)
c.	χɐʤar-gɐs	'house watcher'

Given the standard assumption that selection is category sensitive, and the premise of Distributed Morphology that roots are acategorial, a necessary conclusion is that the respective non-head roots are nominalized. That is to say, the non-head parts of such compounds must be at least nPs.

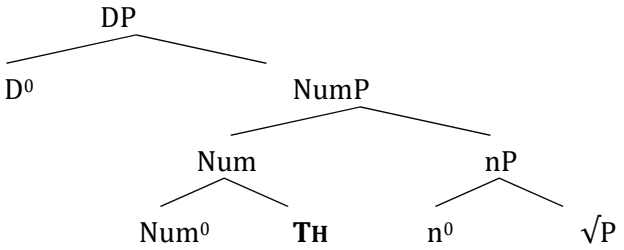
Additionally, as was shown in Section 4.1, -ɐ cannot be part of the root. Accordingly, the view is untenable that Digor compounds where -*ɐ* disappears are RootPs.

Kramer 2016: 662). Possible adjunction sites of the corresponding dissociated nodes are n^0 or Num^0, as shown in (27a) and (27b) respectively.

(27) a.



b.



If the respective dissociated node is adjoined to n^0, we would again expect *-ɐ* to be preserved in compounds, as it would have been the case if *-ɐ* spelled out n^0. Thematic vowels are indeed preserved, for instance, in Spanish and Catalan compounds (28).

(28) a. Spanish, Butt et al (2019: 13, 230)

lanza-llam-**a**-s	perr-o policí-**a**	beb-é-probet-**a**
throw-flame-TH-PL	dog-TH police-TH	baby-TH-test.tube-TH
'flame-thrower'	'police dog'	'test tube baby'

b. Catalan, Wheeler et al (1999: 24)

camió cistern-**a**	fil-ferr-**o**
truck tank-TH	thread-iron-TH
'tank truck'	'wire'

However, as we have seen already, this is not what happens in Digor, see the data in (26). Given that *zɐnχɐ* 'land' and *ʧitɐ* 'fame' are mass nouns, we have to conclude that the feature [+Sg] is uninterpretable and therefore it must be hosted by n^0. Accordingly, if the insertion of the node is conditioned by the [+Sg] feature, the conditions for its insertion would have been met in this case.

Accordingly, *-ɐ* cannot spell out a dissociated node adjoined to n^0. We are left with the possibility that it is either the spellout of Num^0 or a dissociated node adjoined to Num^0 and conditioned by the feature [+Sg]. It is not clear whether the two analyses are empirically distinguishable. I provide explicit VI rules for these analyses in (29). As in (25) above, I omit the trivial case of Ø-class nouns.

(29) a. /-ɐ/ spells out Num^0

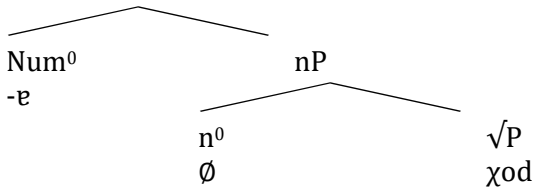
n^0	↔	Ø
Num^0 *i*[+Sg]	↔	/-ɐ/_[ɐ-class diacritic]
Num^0	↔	/-ɐ/__*u*[+Sg], [ɐ-class diacritic]

b. /-ɐ/ spells out Th adjoint to Num^0

n^0	↔	Ø__[+Sg]
Num^0	↔	Ø__[+Sg]
Th	↔	/-ɐ/__[+Sg], [ɐ-class diacritic]

On the grounds of theoretical parsimony, I choose the option in (29a). On the assumption that *-ɐ* is a dissociated morpheme, the acquiring child would need to arrive to this non-default parse in the absence of any positive evidence for it. The resulting structure is shown in (30).

(30) χod-ɐ 'hat'



An anonymous reviewer objects that the fact that *-ɐ* appears only in a subclass of Digor nouns and is lexically specified for them, is incompatible with the conclusion that *-ɐ* must be a dedicated singular marker in Digor. However, systems where a *plural* number marker is lexically determined are cross-linguistically common. Indeed, examples of such systems are the English *-s* and the null allomorph of the plural marker, or the much richer German system of the plural allomorphs, see e.g. Trommer (2021) and references there. The fact that in German, nouns are specified for the choice of a plural allomorph (*-er*, *-(e)n*, *-s*, *-e*, *-Ø*, etc.) in an arbitrary manner[16], does not undermine the conclusion that all these are allomorphs of a dedicated plural marker in this language.

Analogously to the Digor *-ɐ*, which can mark mass nouns, any allomorph of the German plural marker can mark *pluralia tantum*, e.g. *Trümm-er* 'ruins', *Maser-n* 'measles', *Scher-e* 'scissors', *Lebensmittel-Ø* 'foodstuffs'. That is to say, they do not necessarily expone the plural semantics as such. See also the observations to the same effect about the allomorphs of the nominal plural in Welsh in Awbery (2009: 1-3). Applying the same logic to the singular in Digor Ossetic, the treatment of the Digor *-ɐ* as an exponent of the singular is justified.

5.3 The structure of the plural

For the sake of completeness, let us now consider the structure of the plural in Digor. Recall that descripitvely, plurals in Digor bear a thematic suffix (which is either null, *-i-*, *-u-*, or *-tɐl-*) and the obigatory plural marker *–(t)tɐ*, as shown in (31).

(31) a. Stem$_{PL}$-TH-(t)tɐ– case marker

b.

bɐχ-tɐ	bɐχ 'horse'
horse-PL	
χod-tɐ	χodɐ 'hat'
hat-PL	

[16] To illustrate this point, compare the plural forms of the three phonologically very similar neuter inanimate nouns in (i), which all use different allomorphs of the plural, Trommer (2021: 603):

(i)

Fett	[fɛt]	→	Fett-**e**	['fɛ.tə] 'fat(s)'
Brett	[bʁɛt]	→	Brett-**er**	['bʁɛ.tɐ] 'plank(s)'
Bett	[bɛt]	→	Bett-**en**	['bɛ.tn̩] 'bed(s)'

ʁoʃ-i-tɐ	ʁog ‘cow’
cow.PL-TH-PL	
kɐsɐlg-i-tɐ	kɐsalgɐ ‘fish’
fish.PL-TH-PL	
kizg-u-ttɐ	kizgɐ ‘girl’
girl-TH-PL	
ɐrvad-tɐl-tɐ	ɐrvadɐ ‘member of the same patrilinear clan’
clan.member-TH-PL	

As was mentioned in Section 3.3, the plural stem is sometimes weakly suppletive, e.g. *ʁo**g*** ‘cow’ vs. *ʁo**ʧ**-i-tɐ* ‘cows’ or *ʦop**a**lɐ* ‘cluster’ vs. *ʦop**ɐ**l-tɐ* ‘clusters’. Provisionally, I take this suppletion to be an outcome of Readjustment Rules[17].

Given that the suffix *–(t)tɐ* is always present in plurals, and only in plurals, it has to be identified with Num^0 that bears the interpretable *i*[-Sg] (for the plurals of countable nouns) or with Num^0 under the condition that the uninterpretable *u*[-Sg] is present lower in the structure (for the plurals of mass nouns) [18]. The respective Vocabulary Insertion rules are shown in (32).

(32) Num^0 *i*[-Sg] ↔ /-(t)tɐ/
Num^0 ↔ /-(t)tɐ/__*u*[-Sg]

Now let us address the status of thematic suffixes in the plural. They can either spell out n^0 in the presence of the [-Sg] feature somewhere in the structure, or be dissociated nodes adjoint to n^0 or to Num. Adjunction to Num, as shown in (27b), can be ruled out for the ordering reasons, because the thematic suffix always precedes the plural marker. On the other hand, it seems to be impossible to distinguish empirically the analyses of the thematic suffixes as allomorphs of n^0 conditioned by the feature [-Sg] or as dissociated inflection class markers adjoint to n, as shown in (27a). I provide VI rules for both options in (33).

(33) a. Thematic suffixes spell out n^0
n^0 ↔ /X/_[-Sg], X is determined by the inflectional class of the noun.
Num^0 ↔ /-(t)tɐ/

b. Thematic suffixes spell out a dissociated node adjoint to n, (27a)
n^0 ↔ Ø
Th /X/_[-Sg], X is determined by the inflectional class of the noun.
Num^0 ↔ /-(t)tɐ/

To conclude the discussion of this section, in the DM framework adopted here, *-ɐ* must either spell out Num^0 (conditioned by the feature [+Sg]) or be a dissociated morpheme adjoint to Num.

However, on either of these analyses, *-ɐ* either expones the [+Sg] feature, or is conditioned by it, and only by it. Given that *-ɐ*-class nouns can be either count or mass, *-ɐ* is not sensitive to

[17] For a critique of Readjustment Rules as a theoretically problematic tool, see (Siddiqi 2006: 63-66, 2009: 42-43, Bermúdez-Otero 2012: 80; Bye & Svenonius 2012: 428, Haugen & Siddiqi 2013: 496, and Gribanova 2015: 522-523; 549-550). The issue of how this suppletion is obtained is however orthogonal to the main topic of this paper. I leave for further research the question of whether weak suppletion in Digor plurals can be accounted for without Readjustment Rules.

[18] For the sake of completeness, let us consider, and reject, the possibility that the plural marker is an adjunct to some nominal projection in Digor. Such an analysis of plural marking was first proposed by Wiltschko (2008) for Upriver Halkomelem and then argued to hold for Yucatec Maya by Butler (2012: 34-39). Specifically, Wiltschko (2008: 672) argued that a nominal number marker X should be analyzed as an adjunct if, first, it is optional, and, second, number agreement with nouns bearing X is optional. Neither condition is fulfilled in Digor. Singular countable nouns only have the singular interpretation, and verbs obligatorily agree in the plural with plural marked DPs, see the data in (6).

the interpretablity of the [+Sg] feature. That is to say, it expones the formal morphological singular feature, but lacks inherent singulative semantics.

6. Putative non-null singular morphemes in languages of the world

To return to the starting point of this paper, the issue remains underresearched of how widespread are non-null morphemes exponing the singular in languages of the world. The findings of Kouneli (2021) for Kipsigis[19], and my current argument for Digor provide two such cases. The proposal that number is expressed by an equipollent feature, whatever the specific technical implementation, predicts, or at least makes us expect, that overt marking of [+Sg] should be robustly attested cross-linguistically.

In this section I bring up one more example of what arguably are non-null singular markers in Emai. In this language, noun classes are overtly marked on nouns and are sensitive to the number, but do not participate in any agreement processes. Moreover, the membership in these noun classes lacks a clear semantic motivation.

Effectively this means that the class markers have been reanalyzed into allomorphs of number markers in this language. Accordingly, Emai now possesses non-null allomorphs of the singular marker.

Moreover, it is plausible that other Niger-Congo languages exist where what descriptions call genders or noun classes are synchronically better analyzed as allomorphs of number markers, see also a general discussion in Güldemann & Fiedler (2019) of the status of the Niger-Congo "noun classes". Therefore, it seems plausible that non-null allomorphs of dedicated singular markers are indeed robustly attested cross-linguistically.

To discuss one such example in detail, Emai is an Edoid language of south central Nigeria, Schaefer & Egbokhare (2017). Emai exhibits what Schaefer & Egbokhare (2017: 22) term "remnant genders". These "genders" are semantically opaque and marked by prefixes on nouns (34). I will argue in this section that they can be analyzed as allomorphs of the number marker.

(34)	Sg	Pl	
	á-khè	é-khè	'ceramic pot'
	á-wà	é-wà	'dog'
	ọ́-dọ̀n	é-dọ̀n	'husband'
	ọ̀-bè	è-bè	'bad, evil'

In verb agreement, no number or "gender" agreement is exhibited, Schaefer & Egbokhare (2017: 24). Within the extended noun phrase, only determiners exhibit concord, and it is only sensitive to number, Schaefer & Egbokhare (2017: 173-174). The "gender" markers on nouns and the concord markers on the determiner are bolded in (35).

(35)	Sg	Pl	
	ọ́-lì **ẹ́**-wè	**é**-li **é**-wè	'the goat'
	ọ́-lì **ú**-kpún	**é**-li **í**-kpún	'the cloth'
	ọ́-lì **ó**-kpósó	**é**-li **í**-kpósó	'the woman'
	ọ́-lì **ẹ́**-mẹ̀lá	**é**-li **í**-mẹ̀lá	'the cow'

Pronouns in Emai lack gender distinctions, Schaefer & Egbokhare (2017: ch. 5). Accordingly, what Schaefer & Egbokhare (2017: 22) call "remnant genders" in Emai can be synchronically described as lexically determined allomorphs of the nominal singular and plural.

A very similar system was described by Atoyebi (2009: 108, 138) for another Edoid language, Ọ̀kọ. In his description, Atoyebi explicitly calls the Ọ̀kọ prefixes number markers

[19] Kouneli's reasoning is probably fully applicable to the number marking system in Dar Daju Daju (Daju; ?Eastern Sudanic; ?Nilo-Saharan) as described by Aviles (2008), but more data is needed to evaluate this issue.

without invoking "genders" or "noun classes": "Human nouns, nominal adjectives, two body part nouns ('hand' and 'leg'), and two nouns referring to animals ('animal' and 'monkey') can take singular and plural prefixes," Atoyebi (2009: 108). Verb agreement in Ọ̀kọ is only sensitive to the number and person of the subject.

To conclude the discussion of this section, overt dedicated singular marking exists in several languages of Africa. A systematic cross-linguistic study of overt singular marking is beyond the scope of this paper. However, these preliminary findings suggest that it should be a robustly attested phenomenon.

7. Conclusion

In this paper, I have addressed the issue of dedicated overt singular marking in nouns with the main focus on the Digor Ossetic system. I have argued that this language has developed a non-null allomorph of the nominal singular marker, and provided an explicit Distributed Morphology analysis of number marking in Digor. Specifically for the Digor Osetic marker *-ӕ*, I have shown that while it expones the formal morphological singular feature, it lacks inherent singulative semantics. Moreover, I have shown that Emai (Edoid, Nigeria) also possesses overt dedicated singular markers. This provides additional evidence in support of theories that treat the singular as a morphosyntactic feature value rather than absence of number.

Additional evidence in favor of the presence of the singular feature in grammar is the existence of "inverse marking systems", i.e. systems where the same morphological marker is used to form the plural of individual denoting nouns and the singular of collective denoting nouns, such as described for Kiowa (Tanoan; USA) in Harbour (2008; 2011) and for Dagaare (Gur; Ghana) in Grimm (2012b; 2021).

Together with the findings of Kouneli (2021) for Kipsigis (Nilotic) and of Atoyebi (2009) for Ọ̀kọ (Edoid), my findings suggest that overt dedicated singular markers are probably not very rare cross-linguistically. However, as the argument developed here illustrates, recognizing a dedicated singular marker may require a not fully straightforward reasoning. This is perhaps one of the reasons why few such systems have been identified so far.

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