

Squibs and Discussion

STRICTLY LOCAL
IMPOVERISHMENT: AN
INTERVENTION EFFECT
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1 Introduction

According to Harley (2008) and Nevins (2011), languages that exhibit systematic patterns of morphological syncretism must involve a rule that derives such syncretism as a “deep” property of the grammar. These authors show that, within Distributed Morphology (DM; Halle and Marantz 1993), the relevant rule is Impoverishment (Bonet 1991, Noyer 1992, Halle and Marantz 1994), which, as a context-sensitive operation, deletes feature F_α in the context of F_β . In discussing Ljubljana Slovenian, Nevins (2011) posits Impoverishment of the DUAL-number contrasts in the context of feminine gender. However, Nevins’s argument is based only on the relevant morphological paradigms in isolation and only on their nominative case forms. This squib provides more empirical context: namely, entire morphological paradigms from Ljubljana Slovenian, and the interaction of the relevant syncretism with agreement patterns. While the agreement patterns confirm the postsyntactic nature of Impoverishment, the full morphological paradigms show that Impoverishment is systematically *blocked* in certain case forms: while Impoverishment applies in the context of *flexional* morphology, it fails to do so in the context of *agglutinative* morphology. This pattern of blocking can be captured as an *intervention effect* if Impoverishment is limited to considering a *strictly local* X^0 as context, namely, the closest X^0 available in the c-command domain.

While the locality constraints of certain PF phenomena, such as allomorphy, have been the subject of much discussion (Embick 2010, Bobaljik 2012, Merchant 2015, Moskal 2015, Moskal and Smith 2016), the limits of Impoverishment have not been explored to such an extent. The present squib offers to amend this, by proposing that

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Impoverishment, like many other principles of grammar, obeys strict locality conditions.

2 DUAL-Syncretism

Number contrasts show systematic syncretism in Ljubljana (LJ) Slovenian. Like Standard Slovenian (Toporišič 2000), LJ Slovenian has a three-way gender system (masculine vs. feminine vs. neuter) and a three-way number system (singular vs. dual vs. plural). Gender is encoded in the paradigms of nouns, pronouns, adjectives, and participles.¹ Note that, in nouns, one major masculine (M) class and one neuter (N) class exist, while for feminines (F) two major classes exist (F₁ and F₂ below).

(1) Nouns (NOM-case)

	SG	DU	PL	
M	stol-∅	stol-a	stol-i	'chair'
N	vesl-o	vesl-a	vesl-a	'oar'
F ₁	miz-a	miz- <u>e</u>	miz- <u>e</u>	'table'
F ₂	kost-∅	kost- <u>i</u>	kost- <u>i</u>	'bone'

(2) Adjectives (NOM-case)

	SG	DU	PL	
	lep-∅	lep-a	lep-i	'pretty'
	lep-o	lep-a	lep-a	
	lep-a	lep- <u>e</u>	lep- <u>e</u>	

(3) Participles

	SG	DU	PL	
M	jok-o-w-∅	jok-a-l-a	jok-a-l-∅	'cry'
N	jok-o-w-∅	jok-a-l-a	jok-a-l-a	
F	jok-a-l-a	jok-a-l- <u>e</u>	jok-a-l- <u>e</u>	

Notice that the DU-PL forms are completely syncretic in the context of feminine gender. Furthermore, it seems that this is not merely a superficial type of syncretism since it is expressed through different exponents. Specifically, the two feminine paradigms in nouns both express this syncretism, but with different exponents, /-e/ and /-i/. Other syncretisms also occur, but I will focus on the number patterns in the context of feminine gender.² This is the pattern discussed by Nevins (2011), though he only considers nouns.

¹ The data are based on the author's observation of spoken Slovenian. In addition, all the data points here were checked with two speakers of LJ Slovenian. Note that there is dialectal variation within the area of Ljubljana itself. The data here represent the version of this dialect as observed by the author and as spoken by the individuals who were consulted. All the data points were constructed and elicited by the author, unless noted otherwise.

² Note that DU-PL syncretism occurs with the neuter forms, as well. These forms will not be discussed here, primarily because it is not fully clear whether they entail actual Impoverishment. See footnote 5 for additional observations on this pattern.

This same basic pattern of syncretism described by Nevins (2011) for nouns can also be found in the system of pronouns. Consider personal pronouns and proximal and distal demonstratives, for which I supply only feminine forms, but across all three numbers.

(4) *Personal pronouns (F.NOM)*

	SG	DU	PL
1P	jəst	m-e(-dv-e)	m-e
2P	ti	v-e(-dv-e)	v-e
3P	on-a	on-e(-dv-e)	on-e

(5) *Demonstratives (F.NOM)*

	SG	DU	PL
PROX	t-a	t-e(-dv-e)	t-e
DIST	tist-a	tist-e(-dv-e)	tist-e

No DUAL contrast³ appears to surface in feminine pronouns.⁴ Before we look further at this syncretism pattern, let us also consider a verbal paradigm.

(6)

	SG	DU	PL	
1P	jok-a-m	jok-a-va	jok-a-mo	‘cry’
2P	jok-a-š	jok-a-ta	jok-a-te	
3P	jok-a-∅	jok-a-ta	jok-a-jo	

Verbs express full number contrast: the DU-PL contrast is not syncretic at all. But this is not unexpected given that verbs do not encode gender at all, and the DU-PL syncretisms observed earlier are tied to feminine contexts.

The syncretism of DU-PL forms in the context of feminine gender is pervasive throughout the dialect and, as already discussed, cuts across paradigms in nouns, manifesting through different exponents. According to Harley (2008) and Nevins (2011), such patterns are instances of *metasyncretism*; these are essentially syncretism patterns that imply a deeper morphological generalization, in this case actual neutralization of number contrast. To capture this, simple Vocabulary item underspecification, as in (7), could be used.

- (7) a. $[-SG, +F] \leftrightarrow -e / \sqrt{RT}_{List1} \text{ ____}$
 b. $[-SG, +F] \leftrightarrow -i / \sqrt{RT}_{List2} \text{ ____}$

However, as Harley (2008) and Nevins (2011) argue, such an account renders the syncretisms completely accidental and misses a morpho-

³ Note that the numeral *dv-e* ‘two’ can be optionally attached to pronouns, to apparently “reinforce” the DUAL contrast. However, since this attachment is optional and since it does not affect the DP triggering DUAL agreement (i.e., these pronouns trigger DUAL agreement just like regular DPs; see section 3), we can conclude that this is not a counterexample to the pervasive DU-PL syncretism identified by Nevins (2011).

⁴ All masculine pronouns reveal full contrast between DU-PL forms, as expected. This contrast is manifested by the obligatory attachment of *dv-a* ‘two’ to the pronouns: for example, *mi-dv-a* (1P.DU) vs. *mi* (1P.PL). This contrasts with the feminine pronouns, where this attachment is optional.

logical generalization. To actually neutralize the contrasts, Harley and Nevins argue for the use of Impoverishment rules. In what follows, I represent number and gender contrasts with a binary feature system, using $[\pm\text{SG}, \pm\text{AUG}]$ for number and $[\pm\text{M}, \pm\text{F}]$ for gender (Harbour 2003, Nevins 2011).

(8) *Impoverishment in LJ Slovenian (first version)*

$[\pm\text{AUG}] \rightarrow \emptyset / \text{---} [+F]$

A rule like this must be posited to derive the DU-PL neutralization. The deletion of the $[\pm\text{AUG}]$ feature in the context of feminine gender results in a two-way number system, expressed solely by $[\pm\text{SG}]$. This is essentially the analysis that Nevins (2011) gives for LJ Slovenian, and it captures the desired generalization.⁵

3 Agreement Interactions

I now consider further new data, from ϕ -agreement, which provide more empirical context for the claim that Impoverishment is involved in the feminine paradigms as proposed by Nevins (2011). The agreement data confirm the standard assumption that Impoverishment is a PF/postsyntactic operation. Note that with tensed verbs, the agreement is for number-person but not gender, since verbs never encode gender in LJ Slovenian.

(9) a. *Plural DP context*

Vran-e leti-jo.
 crow-NOM.NONSG.F fly-3P.PL
 ‘The crows are flying.’

b. *Dual DP context*

Vran-e leti-ta.
 crow-NOM.NONSG.F fly-3P.DU
 ‘The two crows are flying.’

⁵ As mentioned in footnote 2, DU-PL syncretism occurs with the neuter forms, as well, which I will not discuss here. It is not fully clear whether the neuter forms are an instance of real Impoverishment. The neuter syncretism does not actually have any counterexamples in this dialect where the DU-PL contrast would arise, but it is true that it is also not a case of metasyncretism, since only one relevant neuter paradigm exists in the language. This leads Nevins (2011:435–439), for instance, to analyze the neuter number pattern as a superficial type of syncretism derived by Vocabulary item underspecification for number. However, a reviewer points out that the rule in (8) could easily be reformulated so as to account for the neuter syncretism, as well: the context specification could be changed from $[+F]$ to $[-M]$. This is indeed a possibility that I will allow here. However, it is interesting that cross-dialectal considerations suggest that the neuter truly does reflect superficial syncretism. In Božič 2018, I show that a related dialect, Novo mesto Slovenian, is identical to LJ Slovenian in the relevant respects, but differs in that it reveals Impoverishment as an even “deeper” grammatical process; Impoverishment seems to *precede* ϕ -agreement in the context of $[+F]$, so that no DUAL agreement occurs on the verb. However, in the masculine and neuter genders, DUAL agreement is transmitted to the verb in the expected way.

These examples illustrate that, although the DU-PL contrast is neutralized on the DP, the respective dual or plural agreement is still reflected on the verb in LJ Slovenian. This is also true of coordinated structures, where two feminine DPs are involved.

(10) *LJ Slovenian agreement in coordinations*

Marija in Staša sta šle
 Marija.NOM.SG.F and Staša.NOM.SG.F AUX.3P.DU go.PTC.PL.F
 domov.
 home
 ‘Marija and Staša went home.’

The agreement pattern in this dialect fits a typical DM analysis perfectly. Agreement relations take place in narrow syntax—or at an early stage of PF (Arregi and Nevins 2012)—where this dialect needs to still express the DU-PL contrasts with all genders. Subsequently, at PF, Impoverishment neutralizes the relevant contrasts. However, this only happens in the context of feminine gender; verbs are not affected, since they do not agree for gender and easily continue to express DU-PL contrasts with feminine subjects even at PF. This is new evidence for Nevins’s proposal of DUAL-Impoverishment in LJ Slovenian. One could easily imagine that the metasyncretisms were in fact so deep that this would be reflected in the lexical feature bundling of the Numeration set, as Harley (2008:292) tentatively speculates. However, the agreement data confirm that the LJ Slovenian neutralization is an active and postsyntactic process.

4 Impoverishment Blocking

A seeming complication arises once entire paradigms of nouns that undergo Impoverishment are examined. In this section, I will pay special attention to the dative and instrumental case forms, which do not seem to undergo Impoverishment at all: I will show that the inflections in these forms are morphologically complex and that this complexity is the reason Impoverishment is absent. Consider all the case forms for the two classes of feminine paradigms, as shown in (11).

- (11) a.
- | | | | |
|------|-----------------|-----------------|---------|
| | DU | PL | |
| NOM | miz-e | miz-e | ‘table’ |
| GEN | miz-∅ | miz-∅ | |
| DAT | miz- <u>ama</u> | miz- <u>am</u> | |
| ACC | miz-e | miz-e | |
| LOC | miz-ah | miz-ah | |
| INST | miz- <u>ama</u> | miz- <u>ami</u> | |
- b.
- | | | | |
|------|------------------|-----------------|--------|
| | DU | PL | |
| NOM | kost-i | kost-i | ‘bone’ |
| GEN | kost-i | kost-i | |
| DAT | kost- <u>ema</u> | kost- <u>em</u> | |
| ACC | kost-i | kost-i | |
| LOC | kost-eh | kost-eh | |
| INST | kost- <u>ema</u> | kost- <u>mi</u> | |

Syncretism is continued in most nonnominative case forms, but in the dative and instrumental a DU-PL contrast surfaces. In order for Vocabulary Insertion to insert different exponents for these dative and instrumental forms, the DU-PL contrast must be preserved for them.

4.1 Analyses That Modify the Impoverishment Rule

I now consider two analyses of this distribution of Impoverishment, which turn out to be inadequate for several reasons. One option is to make the Impoverishment rule specific to the context of nondative and noninstrumental case forms.

(12) *Impoverishment in LJ Slovenian (case-sensitive version)*

$$[\pm\text{AUG}] \rightarrow \emptyset / \text{---} [\text{+F}, \{\text{NOM}, \text{GEN}, \text{ACC}, \text{LOC}\}]$$

However, such a rule makes incorrect predictions: it predicts that no Impoverishment will occur in contexts where the specified case features are unavailable. This is incorrect since the participles in (3), which encode gender and number but crucially not case, must be subject to the same Impoverishment operation. If Impoverishment were defined as in (12), it would be unable to delete any number features in participles, since the context restriction (the case restriction) could not be met.⁶

A second option is that two Impoverishment rules are involved: the one in (12) and another one made specific to participles.

(13) *Impoverishment in LJ Slovenian (second, participle-specific rule)*

$$[\pm\text{AUG}] \rightarrow \emptyset / \text{---} [\text{+F}]_{\text{PTC}}$$

However, this option misses the generalization that the two rules in (12)–(13) encode the *same* neutralization effect, just in different word classes.

4.2 Flexion, Agglutination, and Blocking

This now means that there must be another way of deriving the impoverishment in this dialect of Slovenian. A closer look at the case forms where Impoverishment blocking occurs suggests a different solution to the problem. Specifically, I propose that, in the dative and instrumental

⁶ However, one might wonder whether participles are perhaps never the target of Impoverishment: since they are probing predicates, perhaps they always probe DP goals that have already been impoverished? In principle, such an analysis is possible if we adopt Agree-Link/Copy (Arregi and Nevins 2012), where Agree-Copy values probes postsyntactically at PF. In addition, we would need to say that Agree-Copy occurs *after* the application of Impoverishment. However, recall from section 3 that tensed verbs systematically show DUAL agreement with DPs that undergo Impoverishment, meaning that Agree-Copy occurs *before* and not after Impoverishment. We could stipulate that Agree-Copy is exceptionally ordered after Impoverishment just for participles and for no other word class, but this is too costly a stipulation; that is, in the absence of independent evidence, it is a brute-force solution to the problem.

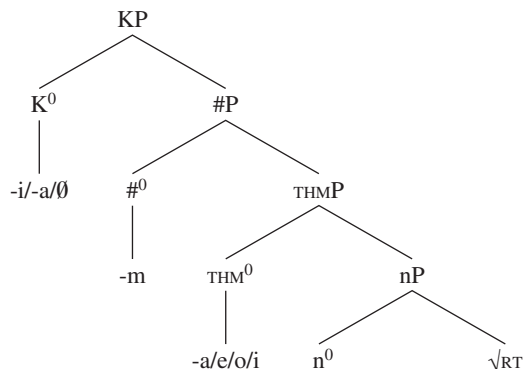
forms, the gender and number features are not in a sufficiently *local relation*, which blocks the application of the Impoverishment rule as stated in (8). I propose that these case forms be analyzed as consisting of layers of syntactic heads, and not just a single “fused” head that combines case and all ϕ -features, as is usually assumed for Slovenian (see, e.g., Börjesson 2006, Caha 2009:240–243).

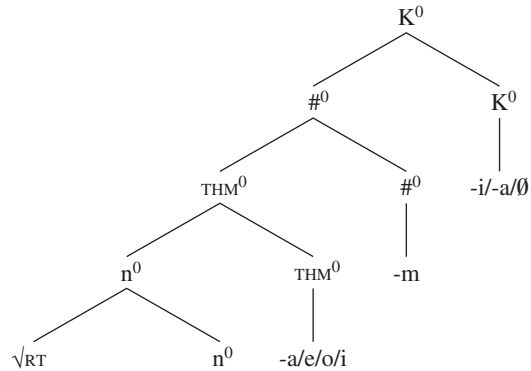
Independent evidence for this proposal comes from the basic exponent alternations observed in these forms: the noun *miza* ‘table’ has the datives *miz-ama* (DU) vs. *miz-am* (PL), but for *kost-∅* ‘bone’, the datives are *kost-ema* (DU) vs. *kost-em* (PL). Also consider the instrumentals: *miz-ama* (DU) vs. *miz-ami* (PL), and *kost-ema* (DU) vs. *kost-mi* (PL). The same segmental subset of these exponents alternates in the different case-number configurations, which suggests that these should be segmented as follows: *miz-a-m-a* (DU) vs. *miz-a-m-∅* (PL), *kost-e-m-a* (DU) vs. *kost-∅-m-i*. Further evidence can be found in masculine and neuter paradigms, which reveal more alternations in these forms.

(14) a.	DU.M	PL.M	
NOM	mošk-a	mošk-i	‘man’
GEN	mošk-ih	mošk-ih	
DAT	mošk- <u>ima</u>	mošk- <u>im</u>	
ACC	mošk-a	mošk-e	
LOC	mošk-ih	mošk-ih	
INST	mošk- <u>ima</u>	mošk- <u>imi</u>	
b.	DU.N	PL.N	
NOM	dreves-a	dreves-a	‘tree’
GEN	dreves-∅	dreves-∅	
DAT	dreves- <u>oma</u>	dreves- <u>om</u>	
ACC	dreves-a	dreves-a	
LOC	dreves-ih	dreves-ih	
INST	dreves- <u>oma</u>	dreves- <u>i</u>	

Notice that the datives and instrumentals show more alternations—but again, alternations of the same segmental subset of the case- ϕ “exponent.” Such alternations provide independent evidence that at least three syntactic heads are involved here: a $\#^0$ head and a K^0 head must be the two final suffixes, while the root-adjacent head is either n^0 or a theme suffix.

(15) *Layers of heads*



(16) *Layers of heads after Head Movement/Merger*

In fact, the root-adjacent vowel suffixes cannot be n^0 since these suffixes occur above overt nominalizers such as */-its/*, as *tigr-its-a* ‘tigress (NOM.SG.F)’ \sim *tigr-its-a-m-i* (INST.PL.F) or *žanj-its-a* ‘reaper (NOM.SG.F)’ \sim *žanj-its-a-m-i* (INST.PL.F). These vowel suffixes should probably be characterized as theme suffixes of sorts because they classify nouns according to gender and morphological class: compare the feminine */-a/* and */-e/* in *miz-a-m-a* and *kost-e-m-a* in (11), the masculine */-i/* in *mošk-i-m-a*, and the neuter */-o/* in *dreves-o-m-a* in (14). In short, n^0 is immediately below THM^0 .⁷

Notice that the locative suffixes also call for such a decomposition: in (11), *miz-a-h* (DU/PL) and *kost-e-h* (DU/PL), and in (14), *mošk-i-h* and *dreves-i-h*. */-h/* is likely the spell-out of K^0 , since it is unique to locative forms, but the preceding vowels could well represent just the theme suffix, or perhaps a combination of the theme suffix with $\#^0$.

The observation that dative, instrumental, and locative case forms reveal multimorphemic inflection has been made before for Slavic in general. Halle (1994:46) credits Roman Jakobson with the observation that */m/*, among other consonants, appears consistently with all dative and instrumental case forms in Russian, and he posits different classes of theme vowels, similar to what is found in Slovenian. Since the claim that several heads may be merged in the domain of nominal inflection, minimally $\#^0$ and K^0 , is well-established by now (Lamontagne and Travis 1987, Ritter 1992, Travis and Lamontagne 1992), the analysis along the lines of (15)–(16) follows naturally. However,

⁷ This analysis of the multimorphemic inflection can be readily formalized in DM. It involves positing */-m/* as an underspecified Vocabulary item for $\#^0$ (perhaps being contextually determined by $K^0_{DAT/INST}$), while the following vowels are exponents of K^0 that are sensitive to the DU-PL features in the adjacent $\#^0$.

alternative treatments of this phenomenon are possible (Halle 1994), which I address in section 4.3.

A question that must now be answered pertains to the trigger of Impoverishment, namely, gender: where is gender positioned? A significant body of literature argues that gender features occur on n^0 (Acquaviva 2008, Kramer 2009, 2015, Deal 2016), and Slovenian also provides evidence for this claim. This assumption follows naturally from the observation that nominalizing suffixes either (a) fix the gender of a genderless stem or (b) change the gender of a stem. As an illustration of (a), consider verbal participial stems constructed with /-l/ (e.g., $\sqrt{hlad-i-l}$ ‘being cold’) that are further turned into adjectives by the attachment of /-n/ (e.g., $\sqrt{hlad-i-l-n}$ ‘cold’). This uninflected stem can then be nominalized either by /-its/, which turns our example into the feminine noun *hlad-i-l-n-its-a* ‘refrigerating room (NOM.SG.F)’, or by /-ik/, which turns it into the masculine noun *hlad-i-l-n-ik-Ø* ‘refrigerator (NOM.SG.M)’. (b) can, in turn, be characterized by the following examples:

(17)	<i>Root</i>	<i>Bare noun</i>	<i>Attaching /-its/</i>	<i>Attaching /-k/</i>
	\sqrt{tiger} - ‘tiger’	tiger-Ø (M)	tigr-its-a (F)	
	\sqrt{slon} - ‘elephant’	slon-Ø (M)	slon-its-a (F)	
	$\sqrt{želv}$ - ‘turtle’	želv-a (F)		želv-a-k-Ø (M)
	\sqrt{srn} - ‘roe’	srn-a (F)		srn-a-k-Ø (M)

Some roots form bare nouns (with no overt nominalizer) of masculine gender, and some form bare nouns of feminine gender. The attachment of the nominalizer /-its/ to a bare masculine noun then turns it into a feminine one; the attachment of /-k/ to a bare feminine noun turns it into a masculine one. It follows that gender is located on n^0 in Slovenian.

The preceding discussion has established that dative and instrumental cases in Slovenian paradigms reveal layers of syntactic heads: n^0 , a theme suffix, $\#^0$, and K^0 . The remaining case forms systematically show a single exponent of case, ϕ -features, and THM^0 throughout the language, and this suggests that they must undergo *fusion* of some sort. Whether they are bundled into one head presyntactically through c-selection (Bobaljik 1995, Pyllkänen 2002) or whether this happens postsyntactically is something one can remain agnostic about. However, for convenience, and to be explicit, I will assume that it occurs through the standard application of postsyntactic Fusion (Halle and Marantz 1993:116), which precedes the application of Impoverishment. The nominal paradigms then essentially have a *flexional* part and an *agglutinative* part. The relevant Fusion rule can be formalized in the following way, as suggested by an anonymous reviewer:

$$(18) \text{ Fusion rule} \\ \left[\left[\left[\text{THM}^0 \right] \#^0 \right] K^0_{\{\text{NOM, ACC, GEN}\}} \right] \rightarrow \left[\text{THM}+\#+K_{\{\text{NOM, ACC, GEN}\}} \right]^0$$

(18) ensures that K^0 , when specified for NOM, ACC, or GEN, fuses with the immediately preceding head, which bears $\#$ -features, and also with

the head before that, which contains theme/class features.⁸ The formalism in (18) also predicts that fusion and agglutination occur in the singular parts of paradigms. This seems to be correct, as some declensions clearly reveal agglutinative morphology in the dative and locative singular forms (e.g., *mošk-i-m-u* ‘man’ (DAT/LOC.SG.M)) and instrumental forms (e.g., *mošk-i-m* (INST.SG.M)).

Now that an explicit fusion analysis has been proposed, a new generalization emerges. Notice that the presence of fusion correlates exactly with the presence of Impoverishment, while the absence of Impoverishment correlates exactly with the presence of agglutination, as stated in (19).⁹

(19) *Agglutination-Impoverishment Generalization*

Agglutination (THM-#-K) correlates with the lack of DUAL Impoverishment.

This is a new generalization that we need to capture. It suggests that a locality constraint on Impoverishment is at play here. I propose that the fusion of THM⁰, #⁰, and K⁰ into one head facilitates Impoverishment, crucially because it renders the number features, [\pm AUG], local to the gender features contained in n⁰. In other words, with fusion n⁰ is the closest X⁰ that the number features c-command, but in the absence of fusion, the closest X⁰ that the number features c-command is THM⁰: THM⁰ intervenes and blocks Impoverishment. This is essentially a type of *Impoverishment intervention effect*.¹⁰ I state the locality constraint as follows:

⁸ The analysis in (18) predicts that all nominative forms in the language will undergo Fusion. However, the inflection found in nominative singular forms in some declensions matches the theme vowel found in the complex multimorphemic forms; compare *sonc-e* ‘sun’ (NOM.SG.N) ~ *sonc-e-m-a* (DAT-DU.N) and *miz-a* ‘table’ (NOM.SG.F) ~ *miz-a-m-a* (DAT.DU.F). One option is that more heavily specified Fusion rules exist, implying that different K-specifications fuse with only some #-features. But it is more likely that fusion is still occurring in these nominative singular forms, but there is simply no other Vocabulary item available than the one for THM⁰; there is no independent item for nominative case, and there also seems to be no independent item for #—the closest item for the latter is /-m/, but /-m/ is likely contextually conditioned by dative/instrumental (see footnote 7). In this scenario, THM⁰ alone expones [K+#+THM]⁰, in accordance with the Subset Principle. Since the DU/PL exponents must be targeting fused case-number features, making reference to non-singular specification, they cannot apply in the nominative singular.

⁹ One could wonder whether the n⁰, which is often null, is also not subject to Fusion: in nondative/noninstrumental forms it could fuse with [K⁰+#⁰+THM⁰] and in dative/instrumental forms just with THM⁰. However, when n⁰ is overt, as in the cases with overt nominalizers, it is always distinct from THM⁰: consider $\sqrt{\text{roz-}\underline{\text{0}}\text{-a-m-i}}$ ‘flowers (INST.PL.F)’, where n⁰ is null, and $\sqrt{\text{slon-}\underline{\text{its-a-m-i}}$ ‘elephants (INST.PL.F)’, where it is overt. Since the Impoverishment pattern is the same with overt nominalizers, n⁰ cannot undergo systematic Fusion.

¹⁰ Notice that the locative forms also reveal agglutinative morphology, as discussed (cf. *miz-a-h* ‘tables (LOC.DU/PL.F)’, *kost-e-h* ‘bones (LOC.DU/PL.F)’, but they never show DU-PL contrasts, which implies the presence of Impoverishment and casts doubt on the generalization stated in (19). However, this is in fact not an issue, as locative forms participate in a broader syncretism/

(20) *Strictly Local Impoverishment*

Triggering context may be contained in (a) the X^0 targeted for Impoverishment, or (b) the closest X^0 that the target of Impoverishment c-commands.

This argues against the proposal advanced by Keine (2010), who claims that Impoverishment can never look beyond the contents of the X^0 that hosts the target of Impoverishment. A proposal along the lines of (20) is novel in the DM literature and is needed here to explain the pattern of Impoverishment blocking found in the agglutinative parts of the Slovenian nominal paradigm. The only prior evidence for such a locality constraint is reported by Kallulli and Trommer (2011), who propose a similar constraint for Albanian, though for an altogether different kind of pattern, involving nonactive voice morphology; they propose that Impoverishment can “search” for context in the closest head that its target c-commands, and also in the head that immediately c-commands the target. This second option is not encoded in (20), but it could be added. The novel contribution of this squib is a pattern of Impoverishment blocking in the nominal ϕ -domain, providing evidence for (20).

To see how (20) works, consider a derivation where Impoverishment applies successfully, namely, in nondative and noninstrumental case forms; see (21). In these forms, K^0 , $\#^0$, and THM^0 undergo Fusion at PF, which yields a single head. That enables the $[\pm AUG]$ features to be in the context of the $[+F]$ feature, since $[\pm AUG]$ immediately c-commands $[+F]$. Here, the Impoverishment rule from (8) applies.

(21) *Impoverishment in {NOM, ACC, GEN, LOC} cases*

a. Narrow syntax

$$[[[[[\sqrt{RT}] n^0_{+F}] THM^0] \#^0_{\pm AUG}] K^0]$$

b. PF Fusion

$$[[[\sqrt{RT}] n^0_{+F}] THM + \#_{\pm AUG} + K^0]$$

c. PF Impoverishment

$$[[[\sqrt{RT}] n^0_{+F}] THM + \#_{\pm AUG} + K^0]$$

In dative and instrumental case forms, on the other hand, no Fusion applies at PF; see (22). The result of this is agglutinative morphology: here, $[\pm AUG]$ immediately c-commands only THM^0 , but crucially not n^0 , which hosts $[+F]$. In other words, the closest head in the c-command domain of $\#^0$ is THM^0 . $[+F]$ context is not identified here and Impover-

Impoverishment pattern. Consider the masculine, neuter, and feminine paradigms and notice that no DU-PL contrasts ever surface in the locative case forms (recall that masculine gender reveals full DU-PL contrasts otherwise). Whether this is just superficial syncretism or whether it reflects Impoverishment is unclear at this point; if it reflects Impoverishment, no reference to n^0_{GEN} is needed, as the trigger is K^0_{LOC} and $\#^0_{\pm AUG}$ is the target, and these are either “adjacent” or fused into a single X^0 , which makes for a different syncretism pattern.

ishment is blocked, which leads to the DU-PL contrasts in (11) and (14).

(22) *Impoverishment intervention in {DAT, INST} cases*

a. Narrow syntax

[[[[[√RT] n⁰_{+F}] THM⁰] #⁰_{±AUG}] K⁰]

b. PF ¬Fusion

[[[[[√RT] n⁰_{+F}] THM⁰] #⁰_{±AUG}] K⁰]

c. PF Impoverishment

[[[[[√RT] n⁰_{+F}] THM⁰] #⁰_{±AUG}] K⁰]
↑
-----↓

This illustrates how the adoption of a locality constraint such as (20) provides a principled account of the distribution of Impoverishment in Slovenian nominal paradigms, and it successfully derives the Agglutination-Impoverishment Generalization stated in (19). In sum, fusion and agglutination conspire to either allow or block Impoverishment.

4.3 Notes on the Multimorphemic Inflection and Fusion

The analysis developed in the previous section gives a principled account of the Agglutination-Impoverishment Generalization (19). Such an analysis provides an argument for the fusion of several syntactic heads in the context of different K⁰ specifications. This is an important point since the presence and absence of the multimorphemic inflection could in principle be derived by just manipulating the spell-out of different syntactic heads through contextual allomorphy: sometimes they would be overt (in the dative/instrumental/locative forms), but otherwise all except one of them would be null. However, the Impoverishment facts imply that the syntactic structure itself is being manipulated in Slovenian, which calls for the application of a structure-changing operation, namely, Fusion.

However, different analyses of the multimorphemic nominal inflection in Slavic have been proposed without invoking Fusion. Halle (1994:46–51), in particular, is concerned with deriving the presence of theme vowels in Russian. He notes that Russian nouns obey the general word “template” [[STEM] THM] [#K]. He proposes that theme vowels have a certain spell-out, which is then contextually changed by readjustment rules, depending on various φ/K-contexts, but he never proposes that theme vowels undergo *Fusion* with some other X⁰. This is justified by empirical facts in Russian (which I do not discuss in detail for reasons of space), which has fully agglutinating sequences throughout adjectival paradigms, and to a lesser extent in nouns. Slovenian is unlike Russian in this respect, since theme vowels are much less pervasive across the nominal and adjectival paradigms; see (11) and (14) for nouns, and (2) and Toporišič 2000:320–329 for adjectives (though cf. footnote 8).

Even so, Halle’s analysis of Russian does not appear to be well-suited for the Slovenian situation, since it prevents us from construct-

ing a principled analysis of DUAL Impoverishment.¹¹ We would need to say that THM⁰ is overt in the dative/instrumental/locative forms, but is spelled out as zero in the remaining forms. In other words, this analysis would imply that the THM⁰ head has a constant, *unfused* presence throughout the paradigm and hence cannot be blocking or licensing Impoverishment, and under such an account, we fail to derive the Agglutination-Impoverishment Generalization (19). A principled account of the Impoverishment alternation effectively requires at least THM⁰ to undergo Fusion to some higher head containing #-features. Such an analysis captures the same generalizations as Halle's proposal and, in addition, allows us to derive the Impoverishment alternation.

Halle also gives an account of the /m/ found in the dative/instrumental (and /h/ in the locative) in Russian. He proposes that a readjustment rule inserts /m/ between the theme vowel and the final inflection in the context of dative/instrumental features, along the following lines:

$$(23) \emptyset \rightarrow m / \text{THM}^0 \text{—} [\#, \text{K}_{\text{DAT,INST}}]^0$$

This also differs from the fusion-based approach proposed here. However, there are two reasons which suggest that the fusion-based approach is on the right track, at least for Slovenian. First, Halle assumes that the inflectional domain in nouns consists of a single morpheme, hence that this must reflect a single syntactic head in DM. However, the claim that several heads may be merged in the domain of nominal inflection, minimally #⁰ and K⁰, is well-established by now (Lamontagne and Travis 1987, Ritter 1992, Travis and Lamontagne 1992),¹² and there is thus no theoretical reason to reject the idea that the /-m/ in Slovenian is in fact the #⁰ head.

Second, as illustrated above, at least THM⁰ must be undergoing some kind of Fusion with the head(s) above it. Since Fusion needs to be used for Slovenian anyway, it seems more parsimonious to analyze /-m/ as the #⁰ head that participates in this fusion process, and so dispense with the above-mentioned readjustment rules altogether. This analysis, like the one I have proposed for THM⁰, captures the same generalizations as Halle's proposal and is more parsimonious in an analysis of Slovenian.¹³

¹¹ Note that Russian does not have a DUAL number system and so does not show the discussed pattern.

¹² While more recent approaches, such as Nanosyntax (Caha 2009), take this a step further and greatly proliferate the number of heads above n⁰. See also Leu 2015.

¹³ A reviewer also suggests that, instead of fusion, fission (Noyer 1992) might be responsible for the multimorphemic inflection in the dative/instrumental/locative forms. To the extent that fission can be defined in a way that allows it to split a single syntactic head into three heads that occur in a sequence, it could indeed be at play in Slovenian. However, it is unclear to what extent fission makes different predictions from fusion, implying that these two options cannot be teased apart in the discussed dataset. It is, however, clear that fission would need to be able to precede Impoverishment in order to capture the discussed patterns. Future work should focus on distinguishing between fusion and fission in Slovenian.

5 Conclusion

In this squib, I have shown that the DUAL-number neutralization in LJ Slovenian truly is a postsyntactic effect because the neutralization occurs “too late” to affect ϕ -agreement. I have also discussed a pattern of Impoverishment blocking in subparts of Slovenian nominal paradigms. To derive this blocking pattern, I argued that it needs to follow from a Strict Locality Constraint, where only the contents of the immediately c-commanded X^0 can trigger Impoverishment. This indicates that the application of Impoverishment is regulated by very strict conditions, allowing it to emerge as fully principled, rather than being an unconstrained operation at the PF interface.

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