

Microvariation and macrocategories:
Differential Plural Marking and Phase theory

~~0.~~ *DPM phenomena*

We collect under the umbrella term of Differential Plural Marking (DPM) the numerous instances whereby in Romance Ds have different plural morphology with respect to Ns and As. The same asymmetry extends to object clitics (OCl) and subject clitics (SCL) when compared to the participles they agree with. The phenomenon has largely escaped attention because most standardized languages (Italian, French, Spanish, European Portuguese) do not present this asymmetry – while in Romanian, postnominal articles and inflections are impossible to tease apart. Nevertheless, in the corpus of 81 varieties presented by Manzini and Savoia (2005, III, pp. 574-660), DPM characterizes practically all Northern Italian and Rhaeto-Romance varieties.

In the formal literature, the relevant phenomenon has been observed at least since Manzini (1997) for Lunigiana dialects, Costa and Figueiredo Silva (2002) for Brazilian Portuguese (BP) dialects. In BP (1), *-s* plural morphology is present on Ds, but not on Ns nor on postnominal adjectives, (1a). Prenominal adjectives optionally bear *-s* (1b); possessive pronouns bear *-s*, as in (1c). The examples in (2) show that DPs of the form just reviewed, display ordinary agreement with the finite verb, though adjectival and participial predicates are again deprived of *-s*. This corresponds to the BP1 dialect. In the dialect BP2, the finite verb is in the singular, as in (3).

- (1) a. o-s/este-s/algum-s/un-s livr-o muito bonit-o
M-PL/this-PL/some-PL/a-PL book-M very nice-M
'the/these/some very nice books'
- b. o-s primeir-o-(s) livr-o da biblioteca
M-PL first-M-PL book-M of.the library
'the first books of the library'
- c. o-(s) me-u-s livr-o
M-PL my-M-PL book-M
'my books'

- (2) a. o-s carr-o são lind-o.
 M-PL car-M are nice-M
 'the cars are nice'
- b. a-s cas-a foram destruíd-a.
 F-PL house-F were destroyed-F
 'the houses were destroyed'
- (3) a. o-s carr-o é lind-o
 M-PL car-M is nice-M
 'the cars are nice'
- b'. a-s cas-a foi destruíd-a.
 F-PL house-F was destroyed-F
 'the houses were destroyed'

Brazilian Portuguese (Costa and Figueiredo Silva 2002)

All of the DP-internal categories in (1) agree with respect to gender, so that only the distribution of plural inflections is asymmetric, not the application of Agree. Examples (1) also allow us to dismiss the possibility that DPM is purely lexical. Adjectives make it clear that it is position that determines whether they pattern with D (prenominally), cf. (1b) or with N (postnominally), cf. (1c). We do not have data on clitics, presumably because BP is consistently reported to be missing (3P) clitics (Luis and Kaiser 2016, p. 225); in any event, they take the same *os/as* form as determiners.

We turn next to Ladin (Rhaeto-Romance) varieties (see Rasom 2008 on Fassano). In the feminine plural (4a), the *-a* inflection of D and of the prenominal A contrasts with the *-es* inflection of N. Since the distribution of *-s* is a near mirror image of that of BP, no special relation of *-s* with D is involved in DPM. Outside the DP, the *-es* feminine plural characterizes both the clitic *les* and the perfect participle agreeing with it in (4b). In other words, DPM is confined in the DP, while sentence internal agreement displays a uniform distribution of plural inflections. Interestingly, the fact that the *les* item exists in the lexicon of the language shows once again that the occurrence of *la* in (4a) is dictated by syntactic, not lexical reasons.

- (4) a. l-a/ kel-a/ kel autr-a bel-a femem-e-s
 the-F/ that-F/ that other-F fine-F woman-PL-PL
 'the/those (other) fine women'
- b. al l-e-z a veđuč-e-s strak-e-s
 3MSG 3-PL-PL has seen-PL-PL tired-PL-PL
 'he has seen them tired' Borca di Cadore (Ladin, Rhaeto-Romance)

The Ladin masculine plural (5) also presents a D-NP asymmetry, but in that Ds are characterized by the *-i* inflection, while the NP domain is characterized by varying *-e*, *-i*, *-s* inflections. In other words, DPM cannot be described in terms of presence *vs* absence of plural morphology. Rather, the asymmetry in (5) concerns the fact that D is only associated with *-i* and *-s* is only associated with N, where both *-i* and *-s* are plural. The singular, for instance (5b'), has neither. As expected, masculine plural clitics in (6) have the same *i* shape as determiners.

- (5) a. k-i/ kist-i bje-i libr-e/tʃɛ-i vɛtʃ-e
 that-MPL/this-MPL nice-MPL book-PL/dog-MPL old-PL
 'those/these nice old books/dogs'
- b. i fuo-s/ i fuog-e
 the.MPL fire-PL/the.MPL fire-PL
 'the fires'
- b'. al fuo
 the.MSG fire
 'the fire'
- (6) a. i i/ el-e-s l-e-s ðɔrm-e
 3PL 3PL/ 3-PL-PL 3-PL-PL sleep-3
 'they sleep'
- b. l-a i/ l-e-s veð-e
 3-FSG 3PL/ 3-PL-PL see-3
 'she sees them'
- Borca di Cadore (Ladin, Rhaeto-Romance)

In Friulian varieties, Ds have different plural morphology from Ns in both genders. Thus in masculine (7) and in feminine (8), D is asigmatic and N sigmatic. Nevertheless both sigmatic and asigmatic endings are plural. Specifically, *-s* is in complementary distribution with *-i* in the masculine (7). In the feminine the *-i* inflection of Ds is part of the inflection *-i-s* of Ns, the singular ending being *-a*, as in (8a')¹.

¹ Benincà and Vanelli (1978) explain the occurrence of post-tonic *-i-* in feminine plural as a raising phenomenon, namely as the final evolution of *e* or *o* outcomes of the original unstressed *a*, in pre-consonantal contexts. This hypothesis is called into question by several distributional facts. Thus the vocalic morphemes in determiners and nouns may be phonologically different although both are unstressed and followed by *-s*. For instance, in the dialect of Forni di Sotto the feminine plural article/clitic is *las/as* contrasting with the feminine plural *-es* in nouns. Moreover, the predicted coincidence between nominal and verbal outputs in the relevant contexts is not regularly observed. For instance, in the Montereale dialect the 2nd person singular of the imperative has *-e*, contrasting with *-i-s* in the feminine plural.

- (7) a. i/ke-i bje-i ɔŋ-s/ɔm-i-s vɛtʃ-u-s
 the.PL/that-PL fine-PL man-PL-PL old-M-PL
 ‘the/those fine (old) men’
 b. i kur'tʃe-i
 the.PL knife-PL
 ‘the knives’
- (8) a. l-i altr-i/ bjel-i(s)/bun-i-s fɛmin-i-s
 the-PL other-PL/nice-PL/good-PL-PL woman-PL-PL
 ‘the other/nice/good women’
 a'. l-a/kist-a/ke altr-a fɛmin-a
 the-F/this-F/that other-F woman-F
 ‘the/this/that other woman’
 b. l-i/kest-i fɛmin-i-s vɛtʃ-i-s
 the-PL/this-PL woman-PL-PL old-PL-PL
 ‘the/these (old) women’ Montereale (Friulian, Rhaeto-Romance)

Clitic Ds and participles have asymmetric realization of plural along the same lines as Ds *vs* Ns in DPs. Thus in (9) plural clitics are externalized as (-) *i*, while participles have sigmatic endings (-*i*)-s.

- (9) a. i duar
 3PL sleep
 ‘they sleep’
 b. l-i ai klamad-i-s/vjɛrt-i-s
 3-PL I.have called-PL-PL/opened-PL-PL
 ‘I have called/opened them(f)’

Next, under a phonological explanation we expect a parallelism between verbal and nominal outcomes (cf. Benincà and Vanelli 1978), which we do not find. For instance, in the dialect of Comeglians *-a-s* characterizes the nominal plural (e.g., *las rwed-as* ‘the wheels’), whereas the 3rd person plural of the verb has *-in*, for instance *a lavi-in* ‘they wash’, *a bev-in* ‘they drink’. In the dialect of Travesio, the 3rd person plural *-in* contrasts with *-e-s* in plural feminines and *-a* in singular feminines. Note that there are dialects where the 3rd plural *-in* shows up only in the interrogatives with subject inversion like *mi klam-in-e?* ‘do they call me?’ as opposed to the declarative *i mi klam* ‘they call me’ (Forni Avoltri). So, we may conclude that the distribution of the thematic vowel *-i-* is *unified* from any phonological mechanism. Other incongruities concern also the distribution of the lack of *-s* in the plural feminine articles, normally missing also in intervocalic contexts, like *li ongulis* ‘the nails’ (Cordovado).

In general, it seems to us that palatalization and velarization of *a* to *ɛ* and *ɔ* respectively, are usual phonological processes, while the assumed further step to *-i* is a less motivated process phonetically, particularly from *ɔ*. The picture that we obtain from the data is that determiners and nominal morphology are asymmetric and that the distribution of *-i(-)* in determiners, clitics and nouns takes account of the morphemic nature of *-i* as the exponent of plural.

b'. j-u ai klama:-s/ vjer-s
 3PL-M I.have called-PL/opened-PL
 'I have called/opened them(m.)'

Montereale (Friulian, Rhaeto-Romance)

Previous accounts of the phenomena fail to take into account the attested range of variation. Costa and Figueiredo Silva (2002), working in a DM framework, propose that BP in (1) ~~reflects~~ the syntactic reality of plural inflection in DPs, namely that plural is present only on the D referential anchor of the DP (singleton morpheme). Multiple occurrences of plural, for instance in European Portuguese are derived by a morphological rule (dissociated morpheme, Embick and Noyer 2001). An obvious difficulty with the singleton/dissociated morpheme analysis is the fact that in Ladin (4)-(5) and in Friulian (7)-(8), -s has mirror image distribution with respect to BP, which may involve multiple occurrences of -s.

A syntactic account of the distribution of the Ladin feminine plural is proposed by Rasom (2008). Like Giusti (2008), Rasom assumes that there is a Concord rule (roughly feature percolation) taking place between N and the functional nodes on the nominal spine. What Rasom calls Lazy Concord languages are characterized by a restriction whereby Concord takes place only downward. Therefore N can percolate its plural feature downwards, hence to its right, but not upwards, hence not to its left. Stark and Pomino (2009) take up the issue concerning the asymmetries inside the DP in Cadore varieties, as well as in BP varieties, and propose an analysis that, all things considered, is not very different from that of Rasom. For Stark and Pomino the adjective corresponds to a ModifP projection; they see its movement to prenominal position as a type of incorporation into the n° head (where the adjective can have only an individual level interpretation). Gender and number agreement depend on two functional head projections of N, namely n° and Num°. In languages like Brazilian Portuguese, the n° head is defective with respect to number, while number features are present on n° in languages like Spanish or Fassano. At the next step of the derivation, the head Num° works as a probe for ϕ -features, taking N° as its goal. Once this happens, plural features percolate to n° in Spanish or Fassano, but not in BP. The result is that in Spanish, both n° and the adjective moved to n° realize number. In Fassano, however, the feature percolation on the adjective is avoided, because of a constraint whereby adjectives “demand a plural exponent only in phrase final position” (p. 127). The result is a circular explanation, given that this restriction is just what should be ~~explained~~.

These treatments raise many problems, both theoretical and descriptive. Theoretically, they require ad hoc stipulations, like the restriction to the phrase final position of adjectives just mentioned². Furthermore, the recourse to the interaction of percolation with agreement (as opposed to just Agree) to explain the distribution of inflectional properties renders the analysis quite rich. More recent approaches to DPM also suffer from the difficulty of capturing the observed variation by means of a principled general solution, even loosening the theoretical requirement or adding stipulations which in fact encode the facts to be explained.

Cyrino and Espinal (2019, p. 25), in treating BP and other similar data assume that “the PLURALIZER is a syntactic adjunct to D”. A general constraint whereby “if X (that is, a pluralized D) c-commands Y (that is, N or A), which in its turn c-commands Z (N or A), plural marking maybe overt on X alone, on X-Y, on X-Y-Z, but not on X-Z” insures that agreeing and non agreeing heads are not interspersed. Languages like European Portuguese or Italian are just a special instance of this pattern. They further propose that languages like Fassano display a marked parameter value whereby PLURALIZER is adjoined to *n*. Once again, this kind of approach entirely fails to recognize that the split between D and NP is independent of the a zero *vs* non-zero externalization; it is also found in Friulian where two plural inflections characterize the two domains. Theoretically, furthermore, Cyrino and Espinal (and similar approaches which they extensively quote, including Rasom’s and Stark and Pomino’s) encode the relevant parameters not at the externalization interface but in the core syntax – whereas effectively they lack any evidence for syntactic interactions. In other words major syntactic parameters are invoked for what is essentially evidence at the interface, which seems a needless overkill.

Descriptively, it is hard or impossible to see how to extend these approaches to the full range of variation observed in Romance; recall that Friulian displays a left-right asymmetry in the externalization of plural, which is nevertheless present (in different forms) on all nodes. For that matter, the same is true of the masculines of Ladin. Furthermore, the parallelism between DP-internal and sentence-internal configurations (De-

² The recent revision of the minimalist paradigm would exclude complex cartographic representations, like the ones use in Stark and Pomino (2009) on principled bases, as failing of the conditions of *acquirability* and *evolvability* (Chomsky *et al.* 2019).

terminer and clitic Ds) which holds in BP, Friulian, and many varieties sheds doubts on the possibility that nominal Concord (*vs* sentential Agree) may be crucially involved.

2. *Agree and phases*

While analyses proposed to account for one particular variety do not easily extend to cover variation, the unified nature of DPM must be the null hypothesis, given the pervasive presence of certain common traits, such as the D *vs* NP asymmetry, however realized. The D *vs* NP asymmetry holds in BP, where D is sigmatic and NP asigmatic, as well as in Ladin and Friulian where the distribution is reversed. It holds both in BP and the Ladin feminine, characterized by the presence *vs* absence of *-s* – and in Friulian, where two different externalizations of plural *-i vs -(i)s* are at stake. There is also the possibility that OCl and participles, hence presumably vPs, are structurally contrasted in the same way. Thus we are beginning to form a picture of DPM along the lines of (10).

(10) DPM

- a. Syntactic universal
D *vs* NP, Cl *vs* vP, ...
- b. Externalization parameter

plural externalized	(i)	as <i>-s</i> , as <i>-i</i> , as $\emptyset$, ...
	(ii)	uniformly <i>vs</i> on D/on NP ...

The crucial question is whether there is some independently needed principle of grammar which yields the common structural core of the DPM phenomenon in (10a). Our proposal is that the asymmetries noted simply correspond to the distinction between head of a phase and complement of the phase, independently individuated by the Phase Impenetrability Condition (PIC). As defined by Chomsky (2001), the PIC states that in a structure $[_{ZP} Z \dots [_{HP} \alpha [H YP]]]$, where Z and H are phase heads, the complement YP of H is not accessible to operations at ZP, as in (11).

(11) Phase Impenetrability Condition (PIC)

The domain of H is not accessible to operations at ZP; only H and its edge are accessible to such operations

Though the original phases proposed by Chomsky (2001) include only vP and CP, there are reasons to conclude that DP is a phase, beginning with the evidence that led it to be considered as a cyclic node for Subjacency, namely the difficulty in extracting from it. Extraction from DP is not impossible, but is generally restricted to the possessor, which has an escape hatch within the DP (Szabolcsi 1994). We therefore assume CP, vP and DP to be phases. We also assume the inheritance mechanism whereby in particular ϕ -features are inherited by T from the phase head C (Chomsky 2007).

Importantly, the notion of phase, or of complement of a phase as defined by the PIC, is tied up with that of externalization. “At certain stages of generation by repeated Merge, the syntactic object constructed is sent to the two interfaces by an operation Transfer, and what has been transferred is no longer accessible to later mappings to the interfaces (the phase impenetrability condition PIC)” (Chomsky 2007). Therefore we may expect phasal organization to be relevant not only for core syntax, e.g., forcing successive-cyclic movement, but also at externalization. That it plays such a role is in fact suggested by the literature on phonosyntactic phenomena (D’Alessandro and Scheer 2015 and references quoted there). The insight of these works is that phonosyntactic processes (e.g., Italian *raddoppiamento fonosintattico*) may apply freely within Spell-Out domains, but may be blocked across Spell-Out domain boundaries.

Let us then consider DPM again. Suppose that at each transfer point a consistent lexicalization of agreeing inflections is adopted; for instance, plural *-s* is consistently realized in the NP, i.e., the complement of the D phase head (N and modifiers of N), or consistently not realized. This does not say anything about whether material transferred as part of a different phase needs to display a consistent lexicalization with that of the previous phase. Thus plural *-s* may be excluded by D. This is what emerges in the dialects examined here, and in a wider cross-Romance perspective. Our working hypothesis puts phases to a different use than approaches such as D’Alessandro and Scheer (2015). The latter exemplify a use of phasal boundaries as blocking certain phonosyntactic processes, as we just mentioned. In the present case study, phasal boundaries on the contrary account for the possibility of some externalization choices, namely non-uniform lexicalization of plural morphology. This is an equally canonical use of locality domains; for instance coreference of a pronoun with a c-commanding antecedent is enabled by the presence of a locality domain boundary between the two (Binding Principle B).

We are then in a position to flesh out the sketch in (10). The universal core of the DPM is now seen to consist of the organization of syntactic domains determined by the PIC under the operation Transfer, namely (12i). Accounts of DPM reviewed in section 1 typically assume two separate processes of agreement, namely Agree *vs* Concord (Rasom 2008, following Giusti 2008), or syntactic *vs* morphological (the singleton *vs* dissociated morpheme of Costa and Figueiredo Silva 2002, following Embick and Noyer 2001). Yet we saw that there is hardly any empirical advantage to be gained. Therefore, we ~~insert~~ just Agree among the syntactic universals of our account in (12ii).

(12) DPM: Syntactic universals

- (i) Transfer (Spell-Out) operation and Phase Impenetrability Condition (head *vs* complement of a phase)
- (ii) Agree

There are several proposals in the literature as to how to extend ~~it~~ to DPs without breaking agreement into sentential Agree and nominal Concord. A standard approach uses ~~some~~ version of Multiple Agree whereby a single goal (N) is multiply probed by modifier and determiner categories (Carstens 2000). Manzini and Savoia (2005, 2018a) endorse an even simpler alternative, which simply eliminates probe-goal asymmetries from the core formulation of Agree, thus allowing it to iteratively apply between any two c-commanding members of a DP. Agree does not eliminate uninterpretable feature bundles – it creates sets of ϕ -features bundles which are interpreted as multiple occurrences of the same referent. The result at the SEM interface is equivalent, namely a single occurrence of a given feature bundle, other occurrences having been eliminated by Agree – or multiple occurrences of the same feature bundle, identified via Agree. These issues are orthogonal to the present discussion and only mentioned here to clarify our mention of Agree in relation (also) with DP-internal agreement.

According to the discussion at the beginning of this section, the link between phasal organization and externalization is provided by the fact that a language may enforce a uniform lexicalization of some given property, typically agreement ones (occurring on several members of the domain) within each/some Spell-Out domain. On the other hand, different Spell-Out domains do not enforce any uniformity, as in (13ii). Needless to say, nothing prevents uniformity throughout, as in (13i). Importantly (13) is neither a

syntactic principle nor a phonological principle, but rather a parameter regulating the interface between syntax and externalization. Parameter (13) is consistent with the idea of parameters as externalization choices (Berwick and Chomsky 2011). It is compatible with a Subset format (Manzini and Wexler 1987), of the type also embedded in recent proposal by Biberauer *et al.* (2014), Ledgeway and Roberts (2017). In the framework of Longobardi (2017) it suggests the existence of some parameter schema based on phasal organization (see also the discussion by Manzini 2019).

- (13) DPM parameter: occurrences of the ϕ -feature (set) $F, F_1, \dots, F_n$ identified by Agree are externalized
- (i) uniformly
 - (ii) uniformly in the Spell-Out domain
 - ...

The net effect of parameter value (13ii), when taken together with universal (12i), is to make phase-internal structure visible in morphophonology. In other words, externalization cooperates with the syntactico-semantic component to make the latter maximally transparent. We correspondingly reject views of the mapping of the syntactico-semantic component to the externalization component involving systematic opacization. In both the Distributed Morphology and the Optimality Theory treatments of the interface, underlying syntactic structures comprising only abstract terminals are pronounced after a series of morphonological readjustments that rearrange the content and distribution of syntactic nodes, in such a way as to inevitably render the syntactico-semantic content more opaque. However, there doesn't seem to be much to be gained by assuming this classical view, namely neither formal simplifications nor empirical insights³.

³ A related question is whether lexicalization (i.e., externalization by the lexicon) takes place post-syntactically or pre-syntactically. As we briefly mentioned, DM and OT necessitate the first option, since lexical insertion must apply after morphological rules. The second option corresponds to projection of the syntax from actual lexical items, which would seem to be the approach endorsed by the Minimalist Program (Chomsky 1995). Under the prevalent Late Insertion view, parameter (13) works as a set of constraints on the operation of lexical insertion. Under the projectionist view, endorsed by Manzini and Savoia (2005, 2018a) for Romance, the same parameter works as a set of filters on lexical representations. The issue is orthogonal to the present discussion, which goes through either way.

3. *DP Parameters*

On the basis of universal (12) and parameter (13), we may finally address the finer parametrization involved in DPM and illustrated in section 1, beginning with the DP. The first externalization choice is whether to make phasal organization morphologically visible via the adoption of two different inflections at two distinct Spell-Out points (13ii) – or not doing so (13i). If the option (13ii) is taken, one first choice concerns whether plural is externalized at all. Thus, in BP in (1) it is externalized on D but not on NP. One then may expect the reverse distribution also to be found.

Data which *prima facie* mirror those of BP are presented by Bonet *et al.* (2015) for North East Central (NEC) Catalan, as in (14). Note the lack of plural *-s* on the left-hand constituents of DP in (14a) and its presence on N and postnominal modifiers in (14b). At the same time, the NEC Catalan examples in (14) differ from those reviewed so far in that they are phonologically conditioned. Thus an example like (14c), where prenominal plural *-s* occurs in intervocalic position ~~are~~₁ perfectly wellformed.

- (14) a. el bon vin-s
 the good wine-PL
 ‘the good wines’
 b. el vin-s blanc-s
 the wine-PL white-PL
 ‘the white wines’
 c. el-s antic-s amics
 the-PL old-PL friend-PL
 ‘the old friends’

NEC Catalan (Bonet *et al.* 2015)

No phonological conditioning affects the examples of BP, or Ladin or Friulian. In fact, NEC Catalan seems a phonosyntactic phenomenon. Since phonosyntactic phenomena are sensitive to phasal boundaries, as suggested by the literature quoted in section 2, we are not surprised to find that *-s* is externalized at the boundary between head of phase D and complement of the phase NP only if in intervocalic position. However the range of phenomena that we consider under the DPM umbrella are purely morphological.

Another possible candidate for zero plural on D is the feminine of the Ladin varieties in (4). However, there are reasons to believe that the data are not to be construed this way. Specifically, the reading of the data must take

into account the fact that *-a* is attested in Romance as a plural or collectivizer. In Italian, *-a* plurals are characterized by Acquaviva (2008) as involving pluralities of parts (mass plurals) or of “poorly differentiated” individuals (*dit-a* ‘fingers’, *uov-a* ‘eggs’). The same characterization extends to Central and Southern Italian *-a* plurals (Manzini and Savoia 2017, 2018b, 2019). The *-a* ending is further documented as a collectivizer (for instance, in Romansh varieties of the Lumnezia Valley, Grisons, Manzini and Savoia 2017). Taking this various data into account Manzini and Savoia (2017, 2018b, 2019) characterize Romance *-a* as externalizing an [aggregate] property, understood as in Chierchia (2010) – namely as a property capturing the common core of mass and plural.

If *-a* in Ladin (4a) is actually [aggr], then feminine plural D and NP are characterized by two different inflections, not by the presence of plural morphology on NP as opposed to its absence on D. This way of generalizing over the data has the advantage of maximizing the similarity between masculine (5) and feminine (4). In other words, both in the feminine and in the masculine there is an asymmetry between D and NP and in both instances, two different plural inflections are involved.

We schematically summarize the data reviewed so far in (15). Only plural inflections are indicated; the dash amounts to absence of plural inflections. Following the analysis just proposed for the Ladin feminine, *-a* is entered as plural morphology. The double vertical line || indicates the boundary between the D phase head, also subsuming quantificational material and some prenominal modifiers (e.g., possessive pronouns), and the NP complement of the phase

(15) (a) *Brazilian Portuguese*

	D/Q	A		N	A
F	-s	(-s)		–	–
M	-s	(-s)		–	–

(b) *Montereale*

	D/Q	A		N	A
F	-i	-i(-s)		-i-s	-i-s
M	-i	-i/-s		-i/-s	-i/-s

(c) *Borca di Cadore*

	D/Q	A		N	A
F	-a	-a		-e-s	-e-s
M	-i	-e/-i		-e/-s/-i	-e/-i

Interestingly, it seems that an important generalization of Costa and Figueiredo (2002) is upheld by (15), namely that D as referential anchor of the DP (and phase head) is expected to externalize plural. This generalization seems to hold of the North-Italian and Rhaeto-Romance data in Manzini and Savoia (2005) and specifically of those discussed in a framework compatible with the present one by Baldi and Franco (2018), Manzini *et al.* (2019), Savoia *et al.* (2018, 2019, *in prep.*). The generalization may provisionally be formulated as in (16).

- (16) If ϕ -feature (set) F is externalized at phase XP, it is externalized on phase head X.

Going back to the schematization of the data in (15), a further descriptive issue concerns material which appears between D (or other material which can be imputed to D such as demonstratives and quantifiers) and N, which heads the NP complement of D. This material includes in particular a restricted set of adjectives normally found in prenominal position in Romance. The obvious thing to say is that there is functional structure belonging to the head-of-phase domain hosting these intermediate As, but not postnominal As, as in (17)⁴.

- (17) [_{DP} ke-i [_{FP} bje-i [_{NP} ɔŋ-s vɛtʃu-s]]] cf. (7a)

Other material which can be imputed to D includes demonstratives, that in fact behave like D. As for quantifiers, the available data show that they behave *substantially* like pre-nominal adjectives. This is exemplified in (18) for BP (Costa and Figueiredo Silva 2002, p. 3); in (18'a-b) for the feminine and in (18'c) for the masculine of Borca (Ladin); in (18'c-d), for feminine and masculine respectively of Montereale. So quantifiers subsume the plural inflection in BP if D is absent, cf. (18). They display *-a* in plural feminine contexts in the Borca dialect (18'a-b). In Montereale, they have sigmatic agreement as the pre-nominal adjectives do.

- (18) algun-s livr-o muito bonit-o
 some-PL book-SG very pretty-SG
 'some very pretty books' BP

⁴ We are aware that present assumptions are not neutral with respect to syntactic theories of the DP, e.g., Cinque (2010) for Italian. We must leave this matter entirely open here.

- (18') a. pwotf-a fēmen-e-s
 few-F woman-PL-PL
 'few women'
- b. dut-a kel-a fēmen-e-s
 all-F that-F woman-PL-PL
 'all those women'
- c. pwotf-e libr-e
 few-PL book-PL
 'few books' Borca di Cadore
- d. potf-i-s fēmin-i-s
 few-PL-PL woman-PL-PL
 'few women'
- e. pok-s ɔŋ-s
 few-PL man-PL
 'few men' Montereale

Possessives parallel the behavior of pre-nominal adjectives in BP, externalizing the plural inflection, possibly to the exclusion of *-s* on the article, as in (19). This can be connected with the fact that possessives cross-linguistically are often seen to be in complementary distribution with Ds of which they evidently can subsume the definiteness properties.

- (19) o-s/o meu-s livr-o
 the-PL/the my-PL book-SG
 'my books' BP

In the Borca and Montereale varieties a reduced not agreeing form is introduced in pre-nominal position, not inflected for number and gender, illustrated in (20a-b) and (20c-d), as normally in North-Italian type varieties.

- (20) a. l-a tɔ tʃamɛz-e-s
 the-F your shirt-PL-PL
 'your shirts'
- b. i tɔ libr-e
 the.PL your book-PL
 'your books' Borca di Cadore
- c. li me fi-i-s
 the-PL my daughter-PL-PL
 'my daughters'
- d. i ɲo fio-i
 the.PL my son-PL
 'my sons' Montereale

4. *vP and CP extensions*

The DP phase, on which we focussed so far, is not mentioned in parameter (13), which is taken to hold in principle of any phase, hence of the vP and CP phases. If the hypothesis that phase head *vs* Spell-Out domain are involved in the distribution of DPM in Romance DPs cannot be enforced in the CP and vP phase, then our case is weakened, and we may have to retract to some alternative hypothesis (though it is not obvious which).

An example of a language where the prediction is not verified is *Borca di Cadore* in (4)-(6), since in the DP-phase the *-a* feminine plural on D determiners contrasts with the *-es* inflection on NPs, as in (15c). However, in the vP phase, OCLs and perfect participles uniformly lexicalize feminine plural as *-es*, as illustrated in (4b). This is compatible with present assumptions, since nothing prevents uniform lexicalization to respect the NP Spell-Out boundary, in accordance with (13ii), while applying uniformly in sentential structure. At the same time, it provides no evidence in favour of a generalization of (13) to the vP and CP phases.

Such evidence comes instead from the Friulian data on object clitics and participles/predicative adjectives in (9). These suggest that OCLs *vs* verbal/adjectival predicates display the same asymmetric realization of plural as Ds *vs* NPs. SCLs in turn have the same morphology as OCLs. In other words, the distribution of plural agreement morphology on verbs and clitics suggests that a unified account with DPs is desirable, as schematized in (21). A descriptive difficulty arises in (21) insofar as the finite verb inflection, encompassing person, is not comparable to nominal inflections not encompassing person. We correspondingly parenthesize the lexicalization of T, which in Friulian happens to include no externalization of plural.

(21) *Montereale*

(a) DP phase:	D/Q	A		N	A
F	-i	-i(-s)		-i-s	-i-s
M	-i	-i/-s		-i/-s	-i/-s
(b) CP phase:	SCL			(T)	
F	-i			(-)	
M	-i			(-)	
(c) vP phase:	OCL			v	
F	-i			-i-s	
M	-i			-s	

As it turns out, in some North Lombard varieties like that of Soazza (Mesolcina Valley, Grisons) in (22)-(24), we can study the distribution of plural not only on OCLs *vs* participles, but also on SCLs *vs* finite verbs. This is because in the relevant varieties the feminine plural is externalized by an *-η* inflection shared with the (3P) plural of the finite verb⁵. Indeed the feminine plural *-η* inflection is non-etymological and is generally thought to originate from the (etymological) *-η* plural of the verb. Specifically, in the variety of Soazza, feminine plural determiner Ds, OCLs and SCLs have uniform *-a* morphology – as opposed to Ns, participles and finite verbs, which have uniform *-η* morphology. (22) illustrates DP-internal contexts. (23) displays SCLs agreeing with the finite verb (C phase) and with the perfect participle or predicative adjective (*v* phase); note the *-η* ending on the finite verb in the feminine in (23a), but not in the masculine (23b). (24) displays the OCL; perfect participle agreement displays the same morphology observed for the unaccusative verb in (23).

- (22) a. l-a ʃkabel-əη
 the-F chair-FPL
 ‘the chairs’
 b. i di:t /frade-i
 the-MPL finger.MPL/brother-MPL
 ‘the men’
- (23) a. l-a ε-η vənɪtʃ-əη /rivad-əη
 3-F be-FPL come-FPL/arrived-FPL
 ‘they have come/arrived’
 b. i ε və'nitʃ/riva-i
 3MPL be come /arrived-MPL
 ‘they have come/arrived’
- (24) a. l-a l a-η tʃamad-əη
 3-F 3.F have-FPL called-FPL
 ‘they have called them’
 b. i avenη lava-i
 them have.1PL washed-MPL
 ‘we washed them’ Soazza (Lombard, Val Mesolcina, Grisons)

⁵ For the sake of simplicity and uniformity we use *-η* to represent this ending, which however has two alternants, namely *-η* after a vocalic base and *-əη* after a consonant base, as generally with nouns.

Again, as in (18') and (19), quantifiers and possessives repeat the agreement properties of the pre-nominal adjectives, displaying *-əŋ* in the feminine, as in (25). The same holds for masculines in (26).

- (25) a. pək-əŋ ʃkabel-əŋ
 few-FPL chair-FPL
 'few chairs'
- b. l-a mɛ-n sɔrɛl-əŋ
 the-FPL my-FPL sister-FPL
 'my sisters'

- (26) a. pək ne'ot
 few nephew.MPL
 'few nephews'
- b. i mɛ frade-i
 the.MPL my brother-MPL
 'my brothers'

The data are schematized in (27), adopting the by now familiar format. The schema in (27) parallels that in (21) in all relevant respects – except that in (27) verbal and nominal inflections are comparable in the feminine, yielding the predicted distribution in the CP phase as well.

(27) *Soazza*

(a) DP phase:	D/Q		A	N	A
F	-a		-ŋ	-ŋ	-ŋ
M	-i		(-i)	(-i)	(-i)
(b) CP phase:	SCI			T	
F	-a			-ŋ	
M	-i			-	
(c) vP phase:	OCl			ʃ	
F	-a			-ŋ	
M	-i			(-i)	

Pescarini (*this volume*) reviews etymological proposals concerning the origin of *-n* in the feminine plural, endorsing the idea that *-n* derives from the 3rd person plural of the verb. He argues that in the dialects of Mesolcina, the spread of *-n* as plural exponent in nouns and in a subset of nominal modifiers is due to a mechanism of metathesis. In contexts where clitics followed the 3rd plural person of verbs, the verb inflection *-n* is reanalyzed as a discontinuous inflection of feminine plural, *-a-n*. This is a possible his-

torical explanation, though it is unclear which contexts could be originally involved; crucially, clitics lack this exponent, cf. (27c). There is also the fact that only feminines are affected by this type of re-lexicalization. This is in keeping with the other asymmetries between the different DP/vP/CP contexts in the realization of plural that, again, emerge only in the feminine. Appealing to the fact that the plural *(-i)* is not an adequate context for the various processes interesting the plural feminine, as in the present case the diffusion of *-n*, does not seem sufficient⁶.

Before discussing how an extension of our account of the DP phase to the vP and CP phases might work, it is important to stress that drafting the plural data into those relevant for phase theory, is going to have consequences not only for the plural data themselves, but also potentially for phases. Let us consider the vP phase first. Data such as those summarized in (21c) and (27c) for the vP phase lead us to surmise that the OCl is the actual *v* phase head, while the participle, like other secondary predicates (predicative adjectives) is in the complement of the phase.

Technical implementations may vary. For instance, we may assign the structure in (28) to the sentence in (24a). The perfect participle may have raised to a position necessary and sufficient for it to pick up its perfect inflection, say *v/Asp* – at the same time the head responsible for the accusative alignment of the sentence and the merger of the external argument, namely *Voice* according to current notations, is taken by the clitic. This is in keeping with current conceptualizations of the vP phase, to the extent that OCl can be seen as a pure instantiation of accusativity/transitivity. It is also in keeping with the *AccVoice* label originally suggested by Sportiche (1996) as part of his base generation analysis of clitics. Roberts (2010) in a head-mvt framework has a similar proposal, since movement of the clitic is possible to the extent that its label is non distinct from that of the (phase-head) probe.

(28) ... [_{VoiceP} *la* [_{v/AspP} *t*]*amad-ən*] ... cf. (24a)

The next question to be addressed is what happens when the internal argument of *v/Voice* is represented not by a clitic but by a lexical DP. In the

⁶ Pescarini extends his hypothesis also to the distribution of *-n* plurals in the dialects of Val Bregaglia, where this exponent is limited to feminine articles and object clitics, and is excluded from nouns and subject clitics, and, moreover, regularly occurs on the verb (Savoia and al. 2019). He argues that the different outcomes resulting from the same morphosyntactic mechanism of reanalysis support the conclusion that the historical change is not predictable in a principled way.

varieties under consideration (North-Italian and Rhaeto-Romance) the lexical DP is in complementary distribution with the clitic. Furthermore, in the absence of the clitic, the perfect participle takes an invariable/non-agreeing form, in accordance with Kayne's (1989) generalization that perfect participles agree only with internal arguments moved to their left. Therefore, since there is no agreement between the participle and the lexical DP, the externalization parameter does not apply⁷.

Finally, we consider the evidence concerning the CP-phase. The most interesting language in this respect is that of Soazza, where the same *-η* exponent for plural attaches to both nominal and verbal categories. As shown in (23a), the SCL has the same *la* morphology as the D in the DP, while the finite verb in T bears the *-η* feminine plural. This suggests a further symmetry between OCl and SCL, whereby in the CP phase it is SCL, rather than T, that inherits the C phase head agreement properties. Once again, this is in keeping with the conceptual core of classical analyses of subject clitics (Rizzi 1986), where SCL are conceived essentially as a double of the verb inflection (or as a clitic inflection). Indeed, the present proposal may be seen as an execution of such ideas. As for the technical implementation, following recent suggestions on labelling by Chomsky (2013) we may reinstate ~~SCL~~_{in} the Agr position, along the lines of (29).

(29) ... [_{AgrP} *la* [_{TP} ε-η] ... cf. (23a)

5. *Conclusions*

This contribution considers data relating to the distribution of plural morphology within the DP, which can be described in terms of a contrasting realization by the D head of the DP *vs* its NP complement. We found existing explanations of this distribution unsatisfactory, failing to predict what we argued to be the unitary nature of the DPM phenomenon. Excluding a purely morphological account, or an account in terms of the peculiarities of DP-internal agreement (Concord) we outlined an account based on the role that phases play in delimiting structural chunks destined for transfer at the

⁷ Kayne's (1989) generalization holds in many Romance languages, but some allow agreement with the internal argument in situ. Similarly, the complementary distribution of clitics and (non topicalized) lexical DPs holds in some Romance languages, while others have clitic doubling. What exactly is the formulations of the relevant parametrized restrictions is beyond the scope of the present article.

interface. The different distribution of plurals reflects the fact that the phase complement and the phase head are part of different chunks being shipped to the interface. Functionally speaking (assuming optimization at the interface) this and other morphophonological phenomena are advantageous insofar as they favour the processing of phasal boundaries.

At this point, it may be interesting to go back to the parameter in (13) and see in detail how they apply to the languages in (15), (21) and (27). The parameter is reproduced as (30).

- (30) DPM parameter: occurrences of the ϕ -feature (set) $F, F_1, \dots, F_2$, identified by Agree are externalized
- (i) uniformly value +U
 - (ii) uniformly in the Spell-Out domain value -U
 - ...

The table in (31) provides an overview of how the parameter values in (30) apply to the three varieties whose data have been introduced here, namely Borca, Montereale and Soazza. For parameter value (30i) we use the shorthand label +U, while -U is shorthand for parameter value (30ii). All of the varieties in (31) have value -U for the DP – which is what brought them to our attention; at this very abstract level, masculine and feminine display the same pattern. The data of Borca are interesting because they very clearly display a +U lexicalization of plural in the vP phase, as seen in example (4b). In the CP phase again the parameter is set at -U if we consider that the verb has no plural inflection (but coincides with the 3rd person singular/the lexical base), as in example (6a). For Montereale and Soazza, we just indicate the values of U corresponding to tables (21) and (27) respectively, yielding an asymmetric treatment of head and complement of phase across the board.

(31)			DP	vP	CP
	Borca	F	-U	+U	-U
		M	-U	+U	-U
	Montereale	F	-U	-U	-U
		M	-U	-U	-U
	Soazza	F	-U	-U	-U
		M	-U	-U	-U

In addition to parameter (30) we have seen that the distribution of asymmetries in -U varieties and contexts, takes into account the requirement in

(16) whereby the head of phase is somehow privileged in externalizing inflectional representation of agreement. This proposal depends on rejecting the traditional idea that the asymmetric distribution of plural affects only feminine. Rather, we propose that the *-a* inflection seen on feminine Ds and clitics may be a specialized plural in the varieties in (21) ad (27). One of the advantages in looking at the facts in this way is that a clear parallelism between feminine and masculine as in (31) replaces the otherwise unexplained asymmetry between the two genders.

If our line of explanation is correct, we can add a new set of phenomena to those potentially relevant for the study of phases as theoretical objects. For instance if we are correct, DPM provides support for the complement of phase domain, independent of the needs of successive cyclic movement. Even more importantly, venturing away from the DP phase into sentential phases, DPM allowed us to make hypothesis on the nature of the vP and CP phasal heads in clitic languages. Specifically, we found good to propose that it is the clitic, rather than the verb that is the (agreement) head of the phase. This in turn is compatible with base generation of clitic heads (Sportiche 1996, adopted here); it is not compatible with an (XP-)movement approach to clitics.

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