Phenomena in Romance verb paradigms: Syncretism, order of inflectional morphemes and thematic vowel[*]

Benedetta Baldi and Leonardo M. Savoia
University of Florence, Italy

Abstract

This article aims to propose a treatment of the internal morphological organization of words, based on the idea that morphology is part of syntactic computation. We disagree with Distributed Morphology model, whereby morphology is identified with a post-syntactic component conveying an information 'separated from the original locus of that information in the phrase marker' (Embick and Noyer 2001: 557) by rules manipulating syntactic nodes. We also consider inadequate the costly and complex syntactic structures that cartographic approach maps into inflectional strings. We pursue a different conceptualization assuming that morphology is governed by the same rules and principles of syntax. Sub-word elements, including inflections, thematic exponents and clitics, are fully interpretable and enter (pair-)merge operations (in the sense of Chomsky 2020a,b, 2021) according to their content, giving rise to complex words.

Keywords: morphology, syntax, inflection, thematic vowel, Romance languages

1. Is there a morphological component?

In the generative framework, the best-known generalization concerning the distribution of inflectional morphemes is Baker's (1988) Mirror Principle, whereby the verb moves to combine with the closest suffix: V attaches to T, and then T-V moves to AgrS, which closes the complex word. Thus, for instance, the 2nd plural of the Italian imperfect *lava-va-te* 'you(pl) washed', is obtained by moving *lava-*, the lexical head to the inflectional head T/I, and then to the agreement position for the subject, where *–te* is taken on. Therefore, the complete form is the result of syntactic derivation. The Mirror Principle translates into syntactic operations the idea, traditional in generative grammar, that the composition of complex words is an ordered

cyclic mechanism. At once, it realizes the linkage between inflection and syntactic categories. Differently, Distribute Morphology (DM, see Halle and Marantz 1993, 1994), the more adopted approach to morphology, identifies morphology with an autonomous component, in which the insertion of morphemes is after syntax (Late insertion) and yet it is based on a mechanism in which sub-word elements (affixes and clitics), are understood as 'dissociated morphemes' conveying an information 'separated from the original locus of that information in the phrase marker' (Embick and Noyer 2001: 557) and involving post-syntactic rules of the linear adjacency (Local dislocation) (Embick and Noyer 2001). As we can expect, there are empty morphological elements, as in the case of Thematic Vowels of Romance languages, identified with 'ornamental pieces of morphology' by Embick (2010). Moreover, agreement and case morphemes are not represented in syntax, but they are added postsyntactically 'during Morphology'. As for 'Late insertion' Collins and Kayne (2020) underline that, apart from other critical points, it entails that the relevant features are repeated in Vocabulary Items and as terminals of syntactic representations; moreover, the syntactic features are duplicated in post-syntactic insertion of phonological forms.

Let us deepen the role of Thematic Vowels (TV) in the verbal inflection of Romance varieties. Usually, tense/ aspect/ mood exponent(s) are inserted in-between the root, possibly enlarged by the TV, and person and number inflection, as in (1) for Italian. The R underwritten indicates the root.

(1)   *dorm-   i   va-   te*
        sleep$_R$ TV   Tense   AgrS$_{2PL}$
        'you (pl) slept'

In DM treatment, *-te* is the morpheme introduced for the feature 2pl, *-va-* for T$_{Impf}$ whereas *-i-* is introduced by an ad hoc rule whose effect is to specify the class of the verb, a post-syntactic semantically empty mechanism as (2a). The motivation for rules like (2a) is to create the correct context for the subsequent Vocabulary insertion, (2b).

(2)
a. $\varnothing$ → i$_{TV}$ / Root$_{4thClass}$ ___
b.   Impf → -v- / TV ___

The question is why language, understood also in the broad sense (Hauser, Chomsky, and Fitch 2002), should be engaged in obscuring or complexing the relationship between interpretive (IC) and sensory-motor (SM) interfaces (Manzini and Savoia 2011a, 2018). The idea that morphology is someway an imperfection of language is rooted in morphosyntactic literature. It is no accident if Aronoff (1998: 406) concludes that 'morphology is inherently unnatural, it is a disease, a pathology of language'. But, as we shall see, we do not believe that. On the contrary, it is possible to think of the relation between syntax and morphology as based on the lexical content of those 'pieces'.

The approach to morphology that we will follow, is based on the idea that morphology is part of the syntactic computation and there is no specialized component for the morphological structure of words (Manzini and Savoia 2017, 2011a, Manzini et al. 2020,

Savoia et al. 2018; see also Collins and Kayne 2020). Lexical elements, including morphemes, are fully interpretable, and contribute to externalizing the syntactic structure. Hence, morphemes are endowed with interpretive content and obey the general requirement of *inclusiveness condition* on syntax, thus excluding Late Insertion and the other adjustments provided by Distributed Morphology, such as the manipulation of terminal nodes, impoverishment, and fusion of φ-features.

Inflected words are analyzed as the result of the Merge operation that combines inflectional heads with a category-less lexical root R, interpreted as a predicate. In the case of nominal elements, inflectional contents are Class (gender feminine/masculine) and other classificatory properties such as number and case (Manzini and Savoia 2011b). In inflected verbal forms, agreement features and mood/ tense/ voice inflections are merged with R. Specifically, syncretism and other kinds of ambiguity imply a treatment based on the interpretive properties of the items/inflectional exponents and not on different syntactic structures. We distance ourselves also from the attitude of cartography to build the meaning through and in the terms of the structure. Similar conclusions are now further supported by Wood and Marantz (2011), and specifically in Collins and Kayne (2020) with regard to the relationship morphology/ syntax.

We can assume that the Merge operation (Chomsky 2020a,b) in (3) creates the combination of morphemes in complex words:

(3)   Merge(X,Y) →[X,Y]

This procedure operates on syntactic objects, therefore accessible both to semantic interpretation and phonological linearization (see also the discussion in Collins and Kayne 2020: 13). Chomsky (2020a: 55) sees in pair-merge the way of treating head raising: 'It's always described incorrectly. If a verb raises to inflection, say to T, it's always described as if the T-V complex becomes a T; but it's not, it's a V-the outcome of the adjunction is really verbal, not inflectional'. As for modification as in the case of adnominal adjective expressions such as *young man*, Chomsky concludes that it is the result of an operation of conjunction where the same categorizer *n* (Link) is shared by the conjuncts, whereby R(oot) merges with the Link/categorizer *n*. In this line, we conceptualize categorizers such as *v, n*, as the bundles of φ-features that characterize the functional content of words entering into the agreement operations (Manzini 2021, Baldi and Savoia 2021). Hence, *n* is the label for the class and number features of the nominal agreement, and *v* is the label for the verbal categories of tense, aspect, and mood that make an eventive/stative root a verb. As it is well known also from a typological perspective, the inflection, for instance of tense or agreement, is sufficient to make a root a verb from a noun or, conversely, a noun from a verb.

Chomsky (2021: 30 and 36 ff.) in discussing the illegitimate nature of head movement, observes that V-to-T raising is unjustified because 'interpretation is the same whether a verb raises to INFL or stays *in-situ'*. He proposes that head movement must be treated as the result of Merge between root and inflection, on which an operation of amalgamation applies, yielding complex forms subject to externalization. Now, the external argument is interpreted in the phase of T by the inflected form of the verb, and v is no longer involved in the process.

Morphology substantially involves the combination of morphemic heads with roots or morphological amalgams, also merging clitics to words. In the minimalist model we apply, the agreement is accounted for as the morphological manifestation of the identity between referential feature sets corresponding to the arguments of the sentence. In other words, there is no uninterpretable category triggering the raising of a goal (see Chomsky et al. 2019, Chomsky 2020a,b). If words are formed by combining the uncategorized lexical root with morphological elements, inflectional morphemes select for the compound including the root and its immediately attached morpheme (cf. Marantz 2001, 2007). In (4), a partial contextualization of the occurrence of TV is suggested for the second plural of the present indicative and the imperfect; in (4) φ stands for the relevant features.

(4) $\text{Root}_{4thClass}$ __ present 2nd plural/$v_{Impf} \longleftrightarrow i_{TV/\varphi}$

This model, therefore, excludes the separation between inflectional morphology, introduced in syntax, and derivational morphology, substantially lexical as generally in the generative approach. The idea is that 'syntax perform[s] all merger operations including those between morphemes within a word' (Marantz 2001: 6).

In the following sections, we aim to show that identifying morphology with syntactic Merger gives rise to valuable results. To do this, we will present and discuss some crucial morphological phenomena concerning the verb in Romance varieties: syncretism and the interaction between thematic vowel and inflection.

2. Syncretism

As widely known in the relevant literature, in Romance dialects spoken in North Italy the subject is expressed by a clitic pronoun (SCl) preceding the inflected verb. SCls can cover the entire paradigm or occur only on a subset of persons, as illustrated in Manzini and Savoia (2005). Interestingly, Renzi and Vanelli (1983) suggest some (weak) implications, whereby if there is only one SCl, this is the SCl of 2ps, and if there are two SCls, they are the 2ps and 3ps, although a sufficiently large sample shows that mandatory constraints do not exist (Manzini and Savoia 2005).

Several syncretism phenomena appear that can also involve both the inflection and the SCls paradigm. We will examine a case in point in order to explore the properties of syncretism and its theoretical treatment, addressing the distribution of inflections and subject clitics in the dialect of Trecate, spoken in the area between Piedmont and Lombardy. The examples in (5a,b,c,d) illustrate the four verb classes. As we see, the SCls coincide in form *i* except for the $2^{nd}/3^{rd}$ persons, in (5e), and the inflection –*a* covers four persons, as schematized in (5f). We remain in doubt about the inflection of 2nd plural, given that in the present indicative this is the only form including the realization of the thematic vowel, with the result that it is the latter that specifies the person rather than a specialized inflectional exponent. We will come back in the following section to syncretism in the thematic part of the 1st and 2nd plural persons, where *-u-m* is generalized to all classes, while –*i* of the $2^{nd}/3^{rd}/4^{th}$ classes contrasts with -*ɛ* in the 1st class. In (5a',b',c',d') the infinitive is provided.

(5)

a.			b.			c.			d.		
	i	tʃam-a		i	vød-a		i	pɛrd-a		i	drøm-a
	te	tʃam-a		te	vød-a		te	pɛrd-a		te	drøm-a
	a	tʃam-a		a	vød-a		a	pɛrd-a		a	drøm-a
	i	tʃam-um-a		i	vid-um-a		i	pird-um-a		i	drum-um-a
	i	tʃaˈm-ɛ		i	viˈd-i		i	pirˈd-i		i	druˈm-i
	i	tʃam-u		i	vød-u		i	pɛrd-u		i	drøm-u
	'I call, etc.'			'I see, etc'			'I loose, etc.'			'I sleep, etc.'	

a' tʃaˈm-ɛ 'to call'   b'. vøt 'to see'   c'. pɛrd 'to lose'   d'. druˈm-i 'to sleep'

e. SCls
   i ←→ 1st sg / 1st pl / 2nd pl / 3rd pl
   te ←→ 2nd sg
   a ←→ 3rd sg

f. Inflections
   -a   ←→ sg PresInd/ 1st pl
   -u   ←→ 3rd pl
   -um-   ←→ 1st pl
   -i[+stress] ←→ 2nd pl

                                                            Trecate

For the sake of comparison, we report the data of other Gallo-Italic varieties ((6a,b) Southern Piedmont and (6c) Lombardy) concerning the present indicative of 'sleep'. We note that in some dialects the 3rd person SCl distinguishes a masculine and a feminine form: we find the masculine *u* and the feminine *a* in (6a) and (6b), and the masculine *al* and the feminine *l-a* in (6c). In (6c) two plural SCls are also attested, i.e., the masculine *i* and the feminine *l-i* (cf. Manzini and Savoia 2005).

(6)

a.	b.	c.
a drø:mu	a drɔ:m	a dɔrmi
ti drø:mi	ta drɔmi	at *dɔrmi*
u/a drø:ma	u/a drɔmæ	al/la *dɔrʊm*
a drumimu	a ˈdrɔmʊm	a dʊrmem(*a*)
a druˈmi	a druˈmi	a dʊrˈmi
i drøma	a drɔmen	i/li dɔrʊm
'I sleep, etc.'		
Arquata Scrivia	Viguzzolo	Revere

(6) shows two general properties of paradigms: (i) syncretism in SCls is widespread, independently of the properties of the inflectional paradigm; (ii) an implicational relation between the specialized SCls and inflections seems to concern the fact that nondistinct SCls generally combine with specialized inflections. Inversely, we can find distinct inflections combining with distinct SCls, as in the case of the 2nd singular person, mostly characterized by a specialized SCl including the morpheme *t*, and by a specialized inflection –*i*.

Let's move on to how syncretism can be conceived and treated. Syncretism is a typical test bench in morphological analysis, generally seen as supporting the hypothesis of a formal level independent of semantics and syntax, the 'morphomic' level of Aronoff (1994). DM deals with syncretism in terms of 'Late Insertion' of the Vocabulary items and manipulation of the features by impoverishment rule, with the consequence that morphemes/ lexical entries are inserted after modifying the underlying syntactic terminal nodes. Thus, for instance, the

occurrence of the ending –*a* in (5f) can be viewed as the insertion of a default empty element, in (7b), in impoverished contexts like (7a).

(7)
a.   sg/ 1ˢᵗ pl → ∅ / [Pres Ind] __
b.   ∅ → a

Collins and Kayne (2020) propose an analysis of syncretism based on silent elements not externalized, while the morpheme realized is the same. So, in the case of the syncretic masculine and feminine reading of English *they*, the rule in (8a,b) is formulated (Collins and Kayne 2020: 16), where –*ey* is analysed as an irregular form corresponding to two gender contexts, phonologically unexpressed.

(8)
a.   [DP th- [#P -ey [GenP MASC NP]]]
b.   [DP th- [#P -ey [GenP FEM NP]]]

The silent contexts are obscured by the morpho-phonological idiosyncrasies of the pronoun.

In other words, morphology has recourse to markedness criteria whereby a very spread unspecialized element is treated as the default. As we know, markedness is a circular notion, so what is frequent is unmarked and what is unmarked is frequent. Moreover, in many cases, it is undecidable, as in the case of the pronoun of 1ˢᵗ person, marked with respect to the unspecialized nature of the 3ʳᵈ person, but clearly unmarked with respect to the discourse. It is no accident if it gives rise to widespread Differential Marking phenomena both of subject and object. In the case in point, default elements are substantially unmotivated insofar as they reflect a null content. The question of why languages should obscure the linkage between morpho-syntax and interpretation remains unexplained.

2.1. *The interpretative properties of morphemes*

We may think that the suitability of certain forms to operate in correspondence with different interpretive properties derives from the semantic content of such forms. Morpho-syntactic contexts can contribute to introducing different readings (cf. Franco et al. 2020: 12). As to (5a), we initially have to establish the status of SCls. A reasonable idea is that clitics are an expression of the agreement properties of verbal projections, as also recently argued by Roberts (2010, 2018). According to Roberts (2018: 261), SCls are the result of a sort of fission (in the sense of DM) of φ-features of T, which in languages with obligatory SCls, like Northern-Italian dialects, gives rise to the distribution in (9).

(9)   SCl$_φ$ [T + φ]
        Fission: {φ} in the context [T__, is changed to φ [T+ φ]

The gist is that SCls are a morphological tool doubling φ-features agreement on the verb in T, but as a sort of reflex of the agreement (Baldi and Savoia 2021). If that was exactly the case, we would expect an interpretive bi-univocal correspondence between SCls and inflections. The

examples in (5) and (6) show that things are different. Moreover, Chomsky (2015: 9, 2020a) has clarified the fact that the rich agreement of the verb is sufficient to label < φ, φ> both TP and {Spec TP}, hence refusing the traditional approaches based on the little *pro* and the connected treatments of SCls. However, the agreement between SCls and inflections is a necessary requirement, given that SCls and inflections realize the same argument. Doubling of features does not implies a perfect formal correspondence between SCls and inflections, but it is based on compatibility with the same referent, as observed and discussed, for instance for the relation between D and the agreement inflection on N in Savoia et. al. (2019), Manzini et al. (2020).

Pair-merge yields well-formed combinations that are amalgamated into the corresponding inflected forms, as in (10a). Merging Infl and R creates the inflected verb, whose inflection identifies the subject. (10b) creates the sequence *SCl+V* on the basis of sharing φ-features.

(10)
a. $< \text{Infl}_\varphi, R > \rightarrow [_T R + \text{Infl}_\varphi]$
b. $< [_\varphi \text{SCl}], [_T V + \text{Infl}_\varphi] > \rightarrow [_T [_\varphi \text{SCl}] [_T R + \text{Infl}_\varphi]]$

But what are the features involved? Syncretism seems to indicate some type of underspecification, so to say, and it must also be such that SCLs and inflectional elements are combined as markers of the same argument. As to the SCl *i*, we recall that in the Trecate dialect, as well as in the other Northern Italian dialects, it is also the OCl plural and the dative, as illustrated in (11a,b)

(11)
a. l   a   tʃama-r/   ra/   i
   SCl   has   called-him/ her/   them
   '(s)he has called him/ her/ them'
b. da-i   kust
   give-him/her this
   'give it to her/ him'

According to a proposal by Manzini and Savoia (2011a, 2017) and following a suggestion by Chierchia (1998), plural morphology can be associated with the part-whole/sub-set content, i.e., the inclusion relation [⊆], as in (12). In other words, the content of the plural, [⊆], indicates that the argument of the root, here represented by the SCl, can be partitioned into subsets. This analysis allows explaining the coincidence between plural and dative in many Romance varieties, as in (11). More precisely, in the case of the plural, the part-whole relation concerns the argument of the nominal/ pronominal base, while in the case of dative, the sub-set relation is between the possessum and the beneficiary of the event. Therefore, dative can be treated as a type of 'zonal inclusion' in the sense of Belvin and den Dikken (1997)[1]. In fact, while the nominal plural expresses a subset within the set of the individuals

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[1]   The idea is that in all possession contexts the conceptual property of 'inclusion' is involved, in the sense initially discussed in Manzini and Savoia (2011a) whereby all types of possession fall under the same basic relation. Their proposal resumes the idea of Belvin and den Dikken (1997:170) according to whom 'entities

identified by the noun, the dative expresses the inclusion relation between the object of the verb and the recipient, i.e., the dative.

(12)   i = [⊆]

Syncretism in the persons implies that *i*, i.e. the exponent for the sub-set relation [⊆], possibly includes the singular in the case of the first person here, where the 1st person is evidently treated as a subset of the participants.

On the contrary, the syncretic inflection –*a* in the paradigm in (5) can be characterized as an element of definiteness, which selects all the persons except the second and the third plural, as suggested in (13). In this dialect, the 3rd plural has the specialized inflection -*u*; as to 2nd plural, we will see that it can be identified with the TV.

(13)   a = Def,   1,2,3,4,6 person __

It is interesting to note that -*a* is also merged with the specialized exponent of the first plural, as in (14a,b), where the amalgam *drum-um-a* 'we sleep' is yielded by Merge and the process of amalgamation, that we directly represent in the derivation.

(14)
a. $< [\text{drum}_R], \text{um}_{1pl}$ ➜ $[_\varphi \text{drum}+\text{um}_{1pl}]$
b. $< [_\varphi \text{drum}+\text{um}_{1pl}], \text{a}_{Def}$ ➜ $[_{T/\varphi} [\text{drum}+\text{um}_{1pl}] \text{ a}_{Def}]$

As for its interpretation, a complex realization such as *vid-um-a* 'we see' puts together the specification for the inclusion, ⊆, with Def and person specifications, as in (15), exploiting their referential compatibility.

(15) $[\subseteq \text{i}] [_T [\text{drum-um}_{1pl}] \text{ a}_{Def}]$

At this point, the main question is why the 2nd and 3rd persons require a specialized SCl, differently from the other, a question regarding DSM, and, by hypothesis, relating to the 'third factor'[2] and other cognitive constraints.

3. Thematic vowel

Let us consider now the thematic vowel TV, i.e., the vocalic element that in Romance languages is generally associated with the inflectional class (conjugation) of the verb. For

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have various zones associated with them, such that an object or eventuality may be included in a zone associated with an entity without being physically contained in that entity [...] The type of zones which may be associated with an entity will vary with the entity'. Hence, possession–on a par with location–can be understood as a type of 'zonal' inclusion.

[2]   Chomsky (2005: 6) calls third factor the set of 'Principles not specific to the faculty of language' operating into the growth of language in the individual. Among others, they include 'principles of structural architecture'. We can think that the structural architecture interacts with other cognitive mechanisms of a general nature in the conceptualizing the world.

instance, in Italian *-a-* characterizes the first conjugation, as in *port-a-re* 'to bring', *port-a-v-o* 'I brought', *port-a-t-o* 'brought *past participle, msg*', *-e-* the second and third conjugations and *-i-* the fourth one. The thematic vowel raises reconstructive and interpretive problems, as far as it is related neither to a clear etymological origin[3] nor to some salient semantic status, save to distinguish verbal classes, even if with some important complications. Moreover, in Romance languages the thematic vowel is subject to many distributional idiosyncrasies with phenomena of extension or gaps in paradigms, and in the 2nd and 3rd conjugation is generally excluded in strong perfects and participles, where the inflection of tense or aspect is directly combined with the root, such as in *perd-e-re* 'to lose', but *per-s-i* 'I lost', *per-s-o* 'lost' (cf. Calabrese 2015 for a DM approach to Italian strong paradigms).

3.1. Extension phenomena of TV in Northern Italian dialects

Let us begin with the perhaps best-known process concerning TV, i.e. the extension of a thematic vowel to all verb classes as attested in many Northern and Central Italian dialects, and in other Romance languages. Typically, it is the TV *-e-*, i.e. the thematic vowel characterizing the second and third conjugations which extends to the verbs of first and fourth conjugation. We illustrate a pattern of this type provided by the North Piedmontese dialect of Trecate (cf. (5)) in (16) and the adjacent Lombard dialect of Casorezzo, in (17). (16a,b,c,d) illustrate the distribution of *-e-* in the imperfect indicative for the four verb classes, where the extension of *-e-* is accompanied by the complete syncretism in plural persons.

(16)

a.		b.		c.		d.	
i	tʃam-e-v-a	i	vid-e-v-a	i	pird-e-v-a	i	drum e-v-a
te	tʃam-e-v-a	te	vid-e-v-a	te	pird-e-v-a	te	drum-e-v-a
a	tʃam-e-v-a	a	vid-e-v-a	a	pird-e-v-a	a	drum-e-v-a
i	tʃam-e-v-u	i	vid-e-v-u	i	pird-e-v-u	i	drum-e-v-u
i	tʃam-e-v-u	i	vid-e-v-u	i	pird-e-v-u	i	drum-e-v-u
i	tʃam-e-v-u	i	vid-e-v-u	i	pird-e-v-u	i	drum-e-v-u
	'I called, etc.'		'I saw, etc.'		'I lost, etc.'		'I slept, etc.'

Trecate

A similar distribution characterizes Casorezzo, as in (17a,b,c,d).

(17) Imperfect indicative
a. a parl-e-(v)-u, te parl-e-(v)-a, al parl-e-(v)-a, a parˈl-e-(v)-am/um, a parl-i-(v)-i, a parˈl-e-(v)-an 'I spoke, etc.'
b. a vid-e-(v)-u, te vid-e-(v)-a, al vid-e-(v)-a, a viˈd-e-(v)-am/um, a vid-i-v-i, a viˈd-i-(v)-an 'I saw, etc.'
c. a rid-e-(v)-u, te rid-e-(v)-a, al rid-e-(v)-a, a riˈd-e-(v)-am/um, a rid-i-v-i, a riˈd-e-(v)-an 'I laughed, etc.'
d. a durm-e-(v)-u, te durm-e-(v)-a, al durm-e-(v)-a, a durˈm-e-(v)-am/um, a durm-i-v-i, a durˈm-e-(v)-an 'I slept, etc.'

Casorezzo

In the present indicative of the dialect of Casorezzo, the second plural coincides across all classes as schematized in (18a), repeating a distribution already seen in the paradigms in (5).

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[3] Villanueva Svensson (2021) connects thematic vowels in Indo-European verbs with a denominative function from thematic adjectives. However, the question is very controversial.

By contrast, the first plural present indicative is stressed on the root and lacks the thematic element, as in (18b).

(18)   Present indicative
a.   a parˈl-i: 'you speak'
      a viˈd-i: 'you see' '
      a riˈd-i: 'you laugh'
      a durˈm-i: 'you sleep'
b.   a parl-um/am 'we speak'
      a ved-um/am 'we see'
      a rid-um/am 'we laugh'
      a dɔrm-um/am 'we sleep'

<div align="right">Casorezzo</div>

The comparison between the imperfect indicative of Trecate in (16) and that of Casorezzo in (17) highlights an interesting point, i.e., that in the 2nd plural, illustrated in (18a), the TV *-i-* occurs as the specialized exponent. In other words, TVs can express both tense/ aspect features and/or person features, exactly like inflection. This is clearly evidenced by the data concerning some Lombard-Alpine dialects, such as, for instance, those of Sonogno (Verzasca Valley) and Cavergno (Maggia Valley), spoken in the Switzerland area bordering Northern Italy (data from Manzini and Savoia 2005). Like (16) and (17), the imperfect extends the same TV *-ɛ-* to the first class in Sonogno in (19), differently from Cavergno in (20), where *-a-* is retained. Nevertheless, in both, the 2nd person has the specialized TV *-i-* (highlighted in grey).

(19)   a tʃam-ɛ-v-a 'SCl called'/ a ved-ɛ-v-a 'SCl saw'
        ti tʃam-i-v-a
        o tʃam-ɛ-v-a
        o m tʃam-ɛ-v-a
        a tʃam-i-v-o
        i tʃam-ɛ-v-a

<div align="right">Sonogno</div>

(20)   a tʃam-a-v-a 'SCl called'/ a veɟ-ɛ-v-a 'SCl saw'
        ti tʃam-i-v-u
        u tʃam-a-v-a
        u m tʃam-a-v-a
        a tʃam-i-v-u
        i tʃam-a-v-a

<div align="right">Cavergno</div>

A similar distribution is attested in the present indicative in (5) and (18a), where the TV *-i* is specialized for the 2nd plural in all classes in (18a) and in all but first class in (5). The comparison between the first plural present indicative in (18b) and in (5) shows that the same string *–um* can be treated as a usual inflectional element.

(21)
a.   drum-ù-m-a 'we sleep'   Trecate
b.   dɔrm-u-m 'we sleep'   Casorezzo

The data synthesized in the comparison between (21a) and (21b) highlights the possibility for the thematic morphemes to behave like nothing but a type of inflection. In *dɔrm-um* 'we sleep' in (21b), the rhizotonic nature of the form suggests that the morpheme –*u-m* is treated as a simple inflectional ending. However, it includes a clear inflectional part, that is –*m*, and an element –*u-* reminiscent of the thematic vowel, otherwise attested in many Piedmontese dialects, as in *drum-ù-m-a* 'we sleep' in (21a). We conclude that in (21b) an inflectional exponent replaces the thematic vowel, so confirming the close structural proximity between inflection and TV.

3.2. *TV as a nominal property*

As discussed in section 1, in DM thematic vowels have been seen as empty elements (Embick 2010), a conclusion made own by Calabrese (2015) where thematic vowels are 'special morphological elements adjoined to certain functional heads in morphological structure' by means of an ad hoc rule. In fact, this analysis is common to different formal approaches to morphology, at least starting from Anderson (1992) and Aronoff (1994), where theme vowels are considered 'empty morphs':

> The theme vowel is thus a marker of the category *verb* only in the sense that it is determined by the category *verb*, […] In itself, it has no significance. It is empty. Nonetheless, it is not useless. It has a use in the language, but that use is purely morphophonological: the theme vowel is the *conjugation vowel*, it serves to determine the conjugation of the verb stem, or which inflectional affixes will realize the various morphosyntactic properties that the verb bears in a particular instance.
>
> Aronoff (1994: 44)

Maiden (2018), using the notion of 'morphome' proposed in Aronoff (1994) as the autonomous representation level of the morphological elements, in turn defines the thematic vowel as 'a referentially empty element present in some cells of the inflectional paradigm and is the basis of the traditional distinctions by inflexion class.' As Thornton (2005) underlines, assuming empty morphs weakens the adequacy of models where morphologically complex forms are seen as composed by the concatenation of pieces endowed with semantic content. Moreover, it remains true that empty elements make the morphological facts substantially unexplainable or irrelevant for linguistic analysis, except for vague functional criteria.

In what follows, we see that TVs are able to behave like the other functional exponents. More precisely, TVs can extend over different or all classes in correspondence to interpretive properties, not only tense and/ or mood, but also number and person, and, in participles they can host the nominal agreement. We note that all these behaviors are manifested also by inflectional exponents, such as person and number, while in participle the nominal agreement has the usual role of inflectional exponents. Moreover, it is usually the case that inflection is extended through all classes, such as -*o*, -*i* for the 1st and the 2nd person of present indicative. Nevertheless, specialized inflections are also able to signalize tense properties, as in the perfect in Standard Italian, where we find personal specialized exponents, as in (22).

(22)   port-a-i, port-a-sti, porˈt-ɔ, port-a-mmo, port-a-ste, port-a-rono 'I brought, etc.'

In (22), specialized inflections for the perfect are combined with thematic vowels, i.e. *-i-* in the 1st sg, *-sti* in the 2nd sg, *-mmo*, *-ste* and *–rono* in the three persons of the plural. In addition, in the 3rd sg the theme and the person overlap in a unique form. In the next section, we will explore a similar distribution in a Central Italian dialect.

Before illustrating the phenomena concerning TV, it must be noted that we consider realizations of the thematic vowel only the stressed vocalic elements interpolated between the root and the tense/mood/aspect or the person/number exponent, i.e., the thematic vowels recognizable as pieces of the morphological string. An interesting topic is why *-e-* is favored in the mechanisms of extension, as shown by the dialects examined below as well as in the imperfect indicative of French (for a historical point of view, cf. Nyrop 1903). A plausible hypothesis is that the TV *-e-* actually was already specialized in the original 2nd and 3rd conjugations, given that in those classes perfects and participles excluded *-e-*, since they were strong or formed by the TV *-u-*. The distribution of -e- was concentrated in the imperfect, independently from the infinitive where all original classes were represented. Again, causes concerning the cognitive implementation of verbal properties seem to explain why the imperfect and other past or Irrealis forms are more subject to morphological reorganization processes implying the manipulation of TVs and inflections. We can link the greater resistance of the present indicative with its Discourse Linked nature, deictically working in establishing the interpretive properties of the event. The result seems to be that the basic distinctions, including the contrast between inflections and TVs, are preserved.

Resuming and deepening a proposal of Manzini and Savoia (2005, 2007, 2011a) we can identify TV with an N element, i.e., a sort of nominalizer that changes R into an inflected base, substantially like the other agreement inflections of the verb. More precisely, the hypothesis adopted here is that Thematic Vowels introduce an indefinite variable 'x', whose value is fixed by the subject. In other words, TVs are nominal inflections making the verbal root a predicate available to combine with the tense/aspectual/modal elements.

Let us take a form such as the 2nd plural of the imperfect indicative in (17a) *tʃam-e-v-u* 'you(pl) called'. It is the result of merging operations that combine TV and R, with the effect of assigning to R a nominal slot x, as in (23a). This amalgam is merged to the tense/ aspect exponent *-v-*, yielding (23b). The agreement inflection realizes the φ-features of T, in (23c).

(23)
a. $< \text{tʃam}_R, e_x> \rightarrow [[\text{tʃam}_R] \, e_x]$
b. $[_v < [[\text{tʃam}_R] \, e_x, v_{PastProgressive}] > \ldots \rightarrow [_v \, [[\text{tʃam}_R] \, e_x] \, v_{PastProgressive}] \ldots$
c. $[T < [[\text{tʃam}_R] \, e_x] \, v_{PastProgressive}], i_{Infl} > \rightarrow [_T \, [[[\text{tʃam}_R] \, e_x] \, v_{PastProgressive}] \, i_φ] \ldots$

-e- is associated with tense/ aspectual proprieties, as suggested by the selection restriction in (24), whereby the derivation is good only if (24) is fulfilled.

(24) $e_{TV} \leftrightarrow \_\_ \, v_{PastProgressive}$

We can understand a constraint of the type in (24) as a property learned by the speaker. Its application relies on the 'free application' of Merge in the sense discussed in Chomsky (2020b) and Chomsky et al. (2020). The case in which the TV includes also a specialized cluster of φ-

features, as the 2nd person features introduced by the morpheme *-i-* in (18), (19a), (20), and (21), for instance, *parl-i-(v)-i* 'you spoke', is more restrictive. We conclude that the only possible occurrence of *-i-* of 2nd person is when the subject is of 2nd person in turn, as in (25a-c).

(25)
a. $< \text{parl}_R, \text{i}_{2ps} > \rightarrow [_{2ps} [_R \text{parl}] \text{i}]$
b. $[_v < [_{2ps} [\text{parl}_R] \text{i}], v_{PastProgressive} > \ldots \rightarrow [_v [[\text{parl}_R] \text{i}_{ps}] v_{PastProgressive}] \ldots$
c. $[_T < [[\text{parl}_R] \text{i}_{2ps}] v_{PastProgressive}], \text{i}_{2ps} > \rightarrow [_T [[[\text{parl}_R] \text{i}_x] v_{PastProgressive}] \text{i}_{2ps}] \ldots$

In (25) the feature 2ps of the inflection *-i* agrees with the feature 2ps of TV. The ability of the TV *-i-* to express 2ps agreement features characterizes also the 2nd plural person of the present indicative in (5), except for the first conjugation, and in (19). Similar conclusions have been reached in the discussion around (21), in the sense that inflectional exponents and thematic vowels share similar referential properties.

3.3. TVs and agreement inflections

All in all, what we see is that in many varieties TVs do not provide the subdivision of verbs into purely formal classes, but systematically introduce interpretive properties concerning persons instead of/ in addition to tense/ aspect distinctions. In other words, TVs are not simple signals of set of roots (conjugations) but contribute to semantics on a par with the inflectional suffixes. The verb pattern of the Abruzzo dialect of Mascioni, that we are about to examine, highlights the fact that in certain cases it is difficult to individuate two different functions for TV and inflection. In (26) the stress is indicated only in the case of the antepenultimate or final position. However, for the sake of clarity, the stressed vowel is indicated in bold. The grey color indicates the shapes of 1pl and 2pl, which in the imperfect combine two thematic elements.

(26)	Present indicative	Imperfect indicative	Imperfect subjunctive	Perfect
a.	jɔk-o	jok-**e**-a	jok-**e**-ss-e	jo'k-**ɔ**
	j**o**k-i	jok-**i**-i	jok-**i**-ʃti	jok-**i**-ʃti
	jɔk-a	jok-**e**-a	jok-**e**-ss-e	jo'k-**ɔ**
	jok-**e**-mo	jok-e-**a**-mo	jok-e-ss-**ɛ**-mmo	jok-**ɛ**-mmo
	jok-**e**-te	jok-e-**a**-te	jok-e-ss-**ɛ**-ʃte	jok-**ɛ**-ʃte
	'jɔk-enu	jo'k-**e**-enu	jo'k-**e**-ss-eru	jok-**ɔ**-ru
	'I play, etc.'	'I was playing, etc.'	'(if) I played, etc.'	'I played, etc.'

a'.   jo'k-**a** 'to play'

b.	bb**e**j-o	bbej-**e**-a	bbej-**e**-ss-e	bb**e**bb-e
	bb**i**j-i	bbej-**i**-i	bbej-**i**-ʃti	bbej-**i**-ʃti
	bb**e**j-e	bbej-**e**-a	bbej-**e**-sse	bb**e**bb-e
	bbej-**e**-mo	bbej-e-**a**-mo	bbej-e-ss-**ɛ**-mmo	bbej-**ɛ**-mmo
	bbej-**e**-te	bbej-e-**a**-te	bbej-e-ss-**ɛ**-ʃte	bbej-**ɛ**-ʃte
	bb**i**j-u	bbe'j-**e**-enu	bbe'j-**e**-ss-eru	'bb**e**bb-eru
	'I drink, etc.'	'I was drinking, etc.'	'(if) I drank, etc.'	'I drank, etc.'

b'.   bbej-e 'to drink'

c.   ɔrm-o   orm-**e**-a   orm-**e**-ss-e   orˈm-**i**

      orm-i   orm-**i**-i   orm-**i**-ʃti   orm-i-ʃti

      ɔrm-e   orm-**e**-a   orm-**e**-ss-e   orˈm-**i**

      orm-**e**-mo   orm-e-**a**-mo   orm-e-ss-**ɛ**-mmo   orm-**ɛ**-mmo

      orm-**e**-te   orm-e-**a**-te   orm-e-ss-**ɛ**-ʃte   orm-**ɛ**-ʃte

      orm-u   orˈm-**e**-enu   orm-e-ss-eru   orm-**i**-ru

      'I sleep, etc.'   'I was sleeping, etc.'   '(if) I slept, etc.'   'I slept, etc.'

c'.   orˈm-**i** 'to sleep'

Mascioni

The patterns discussed so far emerge in the data in (26) in an even more complex form: (i) The 1st and 2nd plural in the present indicative and the entire imperfect indicative show the specialized TV *-e-*; (ii) *-e-* is unstressed in the 1st and 2nd plural of the imperfect indicative (blackened), exactly as in the standard Italian forms like *ved-e-và-mo/ved-e-và-te* 'we/you saw' and in the 3rd plural of the present indicative of the first class, between the root and the inflection *-nu*, cf. *jɔk-enu* 'they play'; (iii) The ending *–enu* occurs also in the 3rd plural of the imperfect, suggesting that it can be treated as a single element; (iv) In the imperfect subjunctive *-e-* occurs in all persons except the 1st and the 2nd plural where, as in the imperfect indicative, it is unstressed and interpolated between the root and the inflectional string *–ss-ɛ-mmo/ -ss-ɛ-ʃte* (blackened), where the same stressed TV *-ɛ-* as in the perfect occurs; (v) Both weak and strong perfects present the same TV pattern in 2nd singular and 1st and 2nd plural, with the metaphonized outcome *-i-* from *-e-* before final *-i* in the 2nd singular and the open result *-ɛ-* in the two plural persons. The metaphonetic outcome *-i-* occurs also in the 2nd singular of the imperfect subjunctive and in the perfect; (vi) In weak perfects the 1st singular and 3rd singular and plural share the same stressed vowel. The first class introduces a specialized stressed morpheme *-ɔ* that shares with the TV the position and the stress, occurring also in the 3rd plural between the root and the ending *-ru*. The fourth class introduces *-i/ -i-ru*.

Schematizing, the TV *-e-* and its metaphonetic outcome *-i-* occur throughout the paradigm without class distinction. In the imperfect indicative *-e-* is the only realization of the tense/ aspectual property, while in the subjunctive it combines with the specialized inflection *-ss-*. Since in this dialect *-e-* appears also in the 1st and 2nd plural of the present indicative, we need to assume that it is not specialized for tense and aspect, as suggested in (27) where it is characterized as the exponent for the argumental variable.

(27) e_x

In the 1st and 2nd plural of the imperfect, *-e-* is followed by a stressed vowel preceding the inflectional elements, as in *jok-e-**a**-mo* 'we played'/*jok-e-ss-ɛ-mmo* '(if) we played'. The simplest hypothesis is to think that *-a-* and *-ɛ-* are in turn thematic vowels specialized for the imperfect, respectively indicative and subjunctive. They host the main stress as real TVs and precede the inflectional endings, as in (28). The amalgam created by (28a), with *-e-* as TV, is merged to the mood exponent *-ss-* in (28b), and this combination in turn to specialized TV *-ɛ-* in (28c). Finally (38d) yields the 1st plural inflected form.

(28)

a.   < jɔk$_R$, e$_{TV}$ > → [[jɔk$_R$] e$_{TV}$]

b.   [$_v$ < [[jɔk$_R$] e$_{TV}$], ss$_{PastSubj}$ > … → [$_v$ [[[jɔk$_R$] e$_{TV}$] ss$_{PastSubj}$] …

c.   [$_v$ < [[jɔk$_R$] e$_{TV}$] ss$_{PastSubj}$], ε$_{TV}$ > → [$_v$ [[[[jɔk$_R$] e$_{TV}$] ss$_{PastSubj}$] ε$_{TV}$]…

d.   [$_T$ < [[[[jɔk$_R$] e$_{TV}$] ss$_{PastSubj}$] ε$_{TV}$], mmo$_{Infl}$ > → [$_T$ [[[[[jɔk$_R$] e$_{TV}$] ss$_{PastSubj}$] ε$_{TV}$]mmo$_φ$]…

Thus, we have clear evidence of the fact that TVs are able to systematically interact with other types of inflectional exponents, and they can be duplicated as in (28c), by a TV specialized for the mood or tense inflection. The same applies to the imperfect indicative *-e-a-*, where *-a-* is the specialized morpheme for the 1st and 2nd plural persons, as in (29a), where the interpretation introduced by *-a-* can be specified as Past Progressive. The fact that *-ɛ-* also occurs in the perfect, cf. *jok-ɛ-ʃte* 'you played', suggests that it is connected to non-Discourse Linked contexts, in general sense Irrealis, as indicated in (29b).

(29)

a.   a ←→ [x, Past Progressive]

b.   ε ←→ [x, Irrealis]

The weak perfect introduces a specialized TV in the 1st singular and the 3rd singular and plural, *-ɔ-* and *-i-*. Again, it is difficult to classify *-ɔ-* as a TV or an inflectional exponent. However, its distribution, particularly its occurrence between the root and the inflection in the 3rd plural person, e.g., *jok-ɔ-ru* 'they played', identifies it as a tense/ aspectual specialized TV, as in (30).

(30)   ɔ ←→ [x, Past]

3.4. Inflections and TVs as exponents of agreement features: inflection or TV?

Sharing the same inflectional structure in the 1st and 2nd person plural is a widespread pattern. A good example is given by the present indicative of the Piedmontese Franco-Provençal of Coazze (Turin), which presents a single inflectional and thematic paradigm throughout the verbal classes, as in (31). The levelling affects both person exponents (1st singular, 2nd singular and 3rd singular and plural) and thematic forms, *-ø-* and *-ɛi*. The exponent *–nt* includes 1st and 3rd plural. As already noticed for other systems, the SCls are partially syncretic, specifically 1st/3rd person plural/feminine, 2nd plural/3rd singular masculine.

(31)

a.		b.		c.		d.	
i	tʃam-u	i	vɛj-u	i	kor-u	i	drøm-u
t	tʃam-e	t	vɛj-e	t	kor-e	t	drøm-e
u/i	tʃam-at	u/i	vɛj-at	u/i	kor-at	u/i	drøm-at
	tʃaˈm-ø-nt		viˈj-ø-nt		kuˈr-ø-nt		dryˈm-ø-nt
u	tʃaˈm-ɛi	u	viˈj-ɛi		kuˈr-ɛi	u	dryˈm-ɛi
i	tʃam-unt	i	vɛj-unt	i	kor-unt	i	drøm-unt
'I call, etc.'		'I see, etc'		'I run, etc.'		'I sleep, etc.'	

a'   tʃaˈm-ɛ 'to call'   b'.   vere 'to see'   c'.   kore 'to run'   d'.   dryˈm-i 'to sleep'

This pattern exemplifies the other side of the phenomenon concerning the role of inflectional endings. In fact, in (31) personal inflections contribute to realizing the present as shown by comparison with other paradigms. In the latter, in fact, they are added to the suffix of tense/aspect, with the exception of the forms 1º and 2º plural, which introduce a specialized TV. The simplest idea is that forms like *tʃam-u* 'I call' are devoid of a tense/ aspect specification and their use is only based on the predicate nature of the root, with the result that the agreement element is sufficient to associate the predicate with the argument, in (31a), yielding a verb form able to realize T.

(31)
a.　　< tʃam$_R$, u$_\varphi$ > → [$_{v/\varphi}$ [tʃam$_R$] u]
b.　　[$_T$ [$_{v/\varphi}$ [tʃam$_R$] u]…

This means that TVs are selected by 1st and 2nd plural persons, as in (32a,b), or, more precisely, we can assign them the specialized content of 1st and 2nd plural person respectively:

(32)
a.　　ø $_{1st\ plural}$ ←→ / R __
b.　　ɛi $_{2nd\ plural}$ ←→ / R __

In other words, these elements can by now be associated with agreement features. Moreover, in the 1st plural the exponent *–nt* is joined, as in (33). We can treat that element as endowed with the only property [⊆] as far as it occurs in both the 3rd plural and in the 1st plural.

(33)
a.　　< tʃam$_R$, ø$_{TV}$ > → [[tʃam$_R$] ø$_{TV}$]
b.　　[$_T$< [[tʃam$_R$] ø$_{TV}$], nt$_{Infl}$ > … → [$_T$ [[[tʃam$_R$] ø$_{TV}$] nt$_{Infl}$] …

This hypothesis is supported by the fact that thematic vowels display the same behavior as the other verbal inflectional elements, morphemes, and clitics. Specifically, they are sensitive to φ-features and person differences, thus showing:

• 　Syncretism
• 　Extension to sub-sets of persons
• 　Complementary distribution with inflectional elements

4. Some final remarks

The data we have looked at shows some specific patterns that emerge in the paradigms of different varieties. A typical pattern concerns the 1st and 2nd plural persons, which generally require a special expression, distancing themselves from singular and 3rd plural morphology. This pattern is highlighted in (26) and in (31), while characterizing only partially the Northern dialects examined in the preceding sections (see the first plural in (5)). It is present in Romance varieties in different ways (cf. Maiden 2018), and in Standard Italian appears in the first plural present indicative and in the imperfect paradigms.

The best-known property of 1ˢᵗ and 2ⁿᵈ plural persons is that they include the deictic reference to one of the interlocutors and the reference to other individuals. The latter involves the third person reference, that is, anaphoric with respect to discourse. We see that this composed interpretation is associated in many cases with a specialized way to introduce the reference to the subject, an evident kind of Differential Subject Marking, including either special generalized inflections or the duplication of the TV, as in *jok-e-a-mo* 'we played'/*jok-e-ss-ɛ-mmo* '(if) we played' discussed in (28) and (29), as well as in the Standard Italian forms *gioc-a-v-a-mo* 'we played'. The latter solution, i.e., doubling of TV, can be treated as a way of expressing the composed reference. In other words, the TV associated with the root is integrated with a TV connected with the tense/aspect or mood specification. The generalization of the same morphology for the 1ˢᵗ and 2ⁿᵈ plural persons, as in (32), is based on a specialized TV. Again, the TV expresses the same reference as the subject. Naturally, the syntactic computation combines sub-word elements based on their selection restrictions. We could think that the observed grammatical tendencies reflect the role of semantic and conceptual properties, at least partially governed by restrictions not specific to the language. In other words, selection restrictions are the result of the way references and events are conceptualized. A similar suggestion can be extended to the issue, that here we only mention, of the mutual order of inflectional suffixes.

Summing up, our discussion has faced some theoretical and descriptive points concerning morpho-syntactic phenomena involving the internal structure of words. Syncretism and the role of TV in Romance languages provided the testing ground for the morphological level of analysis. In contrast to the split between syntactic structures and morphological representations pursued by DM, which confines morphology to an extern level, a more significant and non-ad-hoc treatment is available, based on the idea that no autonomous morphological component is necessary or useful. We have assumed that all morphological elements are endowed with interpretable content, including inflectional exponents and that Merge and amalgamation operations are able to account for the formation of complex words on principled bases.

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