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Root, Thematic Vowels and Inflectional Exponents in Verbs: A Morpho-Syntactic Analysis

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Abstract: A long-time generative tradition treats the functional domains of the verb and noun as a result of motion and affixing; however, assuming a close correspondence between the order in syntax and morphology, as in the Mirror Principle proposed by Baker seems to be too strong a hypothesis and empirically unsustainable. Distributed Morphology (DM) incorporates this idea by translating it into rules manipulating syntactic nodes. The morphological phenomena we will investigate essentially concerns the thematic vowel (TV) and its interaction with agreement morphology. A complex micro-variation emerges, which provides us with a test bench in order to account for the word-internal morphological organization. We question the idea that morphology is an auxiliary and expensive post-syntactic component, DM, that conveys information separated from its original locus as assumed by Embick and Noyer. On the contrary, we think that a more adequate account is reached assuming that the morphology is governed by the same computational rules as the syntax, where the operation Merge combines fully interpretable sub-word elements forming complex inflected words.

Keywords: morphology; syntax; inflection; thematic vowel; morphological levelling; Romance languages

1. Morphological Operations

While syntax has a clear theoretical status in linguistic analysis, morphology does not; this is despite its role in the expression of syntactic relations being crucial; although, morphological structures seem to reorganize or obscure the deep syntax level, or, more clearly, the interface between syntax and the IC level of interpretation. This aspect was initially overcome in the generative framework by associating the inflectional morphemes with the slots hosting the verb during its movement to T and AgrS. Baker's (1988) Mirror Principle intends to account for the final order of the root and suffixes in the complex words. Thus, for instance, the second 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, where the complete form is the outcome of syntactic derivation. The link between inflection and syntactic categories is characterized by Distributed Morphology (DM; Halle and Marantz 1993, 1994), identifying morphology with an autonomous component. The insertion of morphemes is successive to syntax (Late insertion); however, it is based on a mechanism in which sub-word elements (affixes and clitics) are understood as 'dissociated morphemes' conveying information 'separated from the original locus of that information in the phrase marker' (Embick and Noyer 2001, p. 557) and involving post-syntactic rules of linear adjacency (local dislocation).

The separation between syntax and morphology has the consequence of admitting the existence of morphological elements without interpretive content. This is 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 post-syntactically 'during Morphology', by virtue of the 'Late insertion' mechanism. This allows the featural content of syntactic terminals to be manipulated by

adjustment rules such as Impoverishment with the effect of obscuring the relation between syntax and interpretation.

We begin by rethinking the question of the thematic vowel, which we identify with the recognizable vocalic characterized by the main stress of the word. Be that as it may, this vocalic element is systematically and crucially connected with the verbal paradigms in Romance languages, of which it fixes the inflectional class (conjugation). For 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. These data lead us to consider VTs as a specialized type of inflection, even more because in Romance varieties their distribution is subject to levelling and specializations significantly interacting with the other inflectional devices. So, for instance, in the present, they appear only in the first and second plural, while in the imperfect they characterize the entire paradigm. A good example of levelling is provided by Italian, where all the conjugations share the same TV in first plural persons *–ia-mo* of the present indicative, while in the second plural the specialized TVs occur, *-a-*, *-e-* and *-i-*, also occurring in the imperfect indicative and subjunctive.

The thematic vowel (VT) is normally adjacent to the root, followed by the aspect/tense/mood exponent and the person and number inflection, as in the Italian form of the imperfect subjunctive *dormissero* '(if) they slept' in (1), where R = root, Subj = Subjunctive.

1.

dorm-	i-	ss	-ero
sleep$_R$	VT	Subj	-3PL
'they slept'			

In a DM approach, *-ero* is the morpheme introduced for the feature 3pl, *-ss-* for T$_{ImpfSubj}$ 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 such as (2a) is to create the correct slot for the subsequent vocabulary insertion, (2b).

2.
   a. $\varnothing \rightarrow$ iTV / Root1stClass __
   b. ImpfSubj $\rightarrow$ -ss- / VT __

We do not expect languages to tend to obscure or complexify the relation between interpretive (IC) and sensory-motor (SM) interfaces (Manzini and Savoia 2011a, 2018). Instead, the difficulty of treating morphology in structural approaches based on a regular correspondence form-meaning led to the conclusion that morphology is in some way an imperfection of language. Aronoff (1998, p. 406) even concludes that 'morphology is inherently unnatural, it is a disease, a pathology of language'. But, the simplest option is, instead, to think that we do not believe that morphology is part of the linguistic knowledge, indeed it is closely related to syntax, of which it represents one of the realizations. In our minimalist approach, morphology is based on 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.

The operation Merge (Chomsky 2015, 2020a, 2020b) can create inflected words by combining 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 to R, based on the interpretive properties of the items/inflectional exponents; Chomsky (2020a, p. 55) sees in Pair-Merge a way of treating head raising. This procedure operates on a syntactic object, therefore accessible both to semantic interpretation and phonological linearization (see also the discussion in Collins and Kayne 2020, p. 13). In (3) Infl is the label for the relevant verbal properties that combine with R yielding an inflected verb.

3. Merge: $< \text{Infl}_\varphi, R > \rightarrow [_\varphi R\text{-Infl}]$

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, *v* is the label for the verbal categories of tense, aspect and mood that make an eventive/stative root a verb. Morphology substantially involves the combination of morphemic heads with roots or other heads, including also merging clitics to words. The idea is that 'syntax perform[s] all merger operations including those between morphemes within a word' (Marantz 2001, p. 6). In the model we apply, agreement can be 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, 2020b). If words correspond to phases, substantially to workspaces and are formed by combining the lexical root, devoid of category, with morphological elements (Marantz 2001, 2007), inflectional morphemes select for the compound including the root and its immediately attached morpheme, as indicated in (4), where *–ss-* is subcategorized for its context and *–ero* for Irrealis, given its ability to occur in forms non Discourse Linked, Subjunctive and Perfect. For the moment we leave out the TV.

4.   a.   -ss- = ImpfSubj, VT __,
      b.   -ero = 3ppl, Irrealis __

We can account for the assemblage of the complex form in (1), by merging –ss- to the stem, in (5a), and then the amalgam obtained to the third plural inflection *-ero*, in (5b), yielding the inflected form realizing the properties of T, the head of the sentence.

5.   a. $< ss_{ImpSubj}, [_{R+TV} dorm-i]> \rightarrow [_{ImpSubj} [dorm-i] ss]$
      b. $< ero_{\varphi}, [_{ImpSubj} [dorm-i] ss] > \rightarrow [_{T/\varphi} [dorm-i] ss] ero]$

In the following sections, we will present and discuss some morphological phenomena concerning the relationship between the thematic vowel and inflection in Romance languages.

2. The Nature of Thematic Vowels: Word Formation Matches Phases

Let us address now the thematic vowel (TV), i.e., the vocalic element that in Romance languages fixes the inflectional class (conjugation) of the verb. The thematic vowel raises reconstructive and interpretive problems since it seems not to imply a clear morphological status save to distinguish verbal classes, even with many complications, nor to have a semantic import. As discussed in Section 1, in DM, thematic vowels have been seen as morphological empty elements (Embick 2010), 'special morphological elements adjoined to certain functional heads in morphological structure' (Calabrese 2015) requiring an ad hoc rule. This conclusion dates back at least to 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, p. 44)

A slightly more sophisticated analysis is discussed in Oltra-Massuet (1999, p. 280), which proposes that the TV is a 'dissociated morpheme', i.e., a morphological element projected postsyntactically, 'as a result of a well-formedness condition requiring a theme position to be adjoined to every syntactic functional head'. This conclusion is linked to the observation that the same thematic element can recur several times in a complex verbal form, such as in the conditional, excluding its specialization for v. In other words, the thematic vowel does not realize the verbalizer v but manifests its presence in the structure.

A different approach is pursued by Fábregas (2017), in which thematic vowels are identified with the exponent of light verbs, essentially the verbalizer[1].

The idea that an autonomous level of representation is necessary to deal with morphology, supported by the proposal of the 'morphome' in Aronoff (1994), is adopted by Maiden (2018), that 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.'

In what follows, we will see that the TV behaves like the other functional exponents. More precisely, TV can extend over different or all classes in correspondence to interpretive properties, typically tense and/or mood. But, what is more crucial, it interplays with inflections in expressing person/number properties. The point is that all of these behaviours are also presented by inflectional exponents. So, it is usually the case that an inflection exponent is extended through all classes, such as *-o, -i* for the first and the second person of present indicative in standard Italian. Moreover, specialized inflections are also able to signalize tense and mood. An example is provided by the perfect in standard Italian and in many central Italian dialects, where we find exponents specialized for the person and tense features, as in (6a) for the first class of Italian, and in (6b) for the first class of the Abruzzo dialect of Mascioni (L'Aquila).

6. a. port-a-**i**   b. pre′k-**ɔ**
      port-a-**sti**   prek-**i**-**ʃti**
      por′t-**ɔ**   pre′k-**ɔ**
      port-a-**mmo**   prek-ε-**mmo**
      port-a-**ste**   prek-ε-**ʃte**
      port-a-**rono** 'I brought, etc.'   prek-**ɔ**-**ru** 'I prayed, etc.'
      Standard Italian   Mascioni (Abruzzo)

In (6a) we find both the inflectional exponents and thematic elements of the perfect: *-sti*, *-mmo, -ste* occur only in perfective or irrealis forms, *–rono* and *-ɔ* only in the perfect. The latter incorporates the TV, including the word stress and a phonological content specialized for the expression of perfect. A similar distribution also characterises the paradigm in (6b), where inflections specialized for perfect combine with the thematic vowels *–i-* in the second sg and *-ε-* in the first and second plural, in turn associated with the perfect. In addition, *-ɔ* occurs as a specialized thematic vowel in the first and third singular and in the third plural where, as a true TV, it is followed by the perfective inflection *–ru*. We could characterize the lexical content of *-ɔ* and *–ru* as in (7a) and (7b), respectively,

7. a.   ɔ,   1psg, 3p
    b.   ru,   3ppl

In accordance with Manzini and Savoia (2005, 2007, 2011a), we identify TV with an N element, i.e., something as a nominalizer that changes R into an inflected base, substantially like the other agreement inflections of the verb[2]. More precisely, the hypothesis we adopt 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 into a nominal form available to insert in the aspectual/modal head. Thus, we annotate the lexical property of the TV as in (8), where the variable of which the TV is the exponent, is subcategorized by the Root.

8. TV = x / R __ , (the relevant subset of verbs)

Exactly like other types of inflectional elements, TVs can also be specialized for a subset of referents, as *-ɔ* in (6a) and (6b), and/or for a subset of verbal forms, as *-ε-* in the first and second plural in (13b). Two clear cases of syncretism.

Let us try to characterize these lexical elements as in (9a) for *-ɔ*, (9b) for *–i-*, associated with the only second singular, and (9c) for *-ε-*, associated with the intersection of participants to the speech act (first and second person) and others. We characterize the latter as subcategorized for irrealis, as far as it occurs in perfect and counterfactual forms.

9.   a.   ɔ = x,   R __, Perfect
      b.   i = 2ps / R __, Perfect
      c.   ε = Participants and x/ R __, irrealis

Of course, lexical properties project the syntactic organization in terms of interpretable elements, phrases, words and morphemes. If we express syntax in terms of the phasal organization of sentences proposed by Chomsky (2001), we expect that operations of Merge on lexical and functional units realize the 'lexical subarrays' computed at the sensory-motor and conceptual-intentional interfaces. As known, the procedure is constrained by the Phase Impenetrability Condition (PIC), whereby 'In a structure [$_{ZP}$ Z . . . [$_{HP}$ α [H YP]]], where Z and H are heads, the complement YP of H is not accessible to operations at ZP and only H and its *edge* are accessible to such operations' (Chomsky 2001, p. 14). With that in mind, we can think of the operation Merge as the way of satisfying the phasal domains CP and vP (introducing the complete argumental structure) and DP. So, taking into account the lexicon subset in (9), *prek-ε-mmo* 'we prayed' is created by merging the TV to the root, in (10a), obtaining a predicative form including the restriction to the referents of first/second plural person. The specialized inflections –*mmo* for the first plural and -*ʃte* for the second plural are merged to -*ε*- with which they share referential features. The complex form is able to realize T, as in (10b)

10.   a.   < ε $_φ$, [$_R$ prεk] > → [$_φ$ [$_R$ prεk] ε]
           b.   < [$_T$ mmo$_φ$, [$_φ$ [$_R$ prεk] ε] . . . > → [$_{T/φ}$ [$_φ$ [$_R$ prεk] ε] mmo] . . .

In this frame, *prek-ε-mmo* 'we prayed' fulfils the requirements of v and of T, realizing argumental features associated with v and the tense and agreement features that T inherits from C, as in (11).

11.   C   T   v   word-phase
               [$_T$ [$_φ$ [$_R$ prεk] ε] mmo]   [$_v$ [$_φ$ [$_R$ prεk] ε] mmo]

A point that has to be underlined is the similarity between TVs and person inflections as regards the ability to register nominal or tense/aspect/mood properties. For instance, the inflection of second singular –*sti* in (6a) and -*ʃti* (6b) is restricted to the perfect, to the effect that it conveys both the person specification and the tense/aspect specification. Let us briefly consider the syncretic forms, as for instance -*ɔ* in (6b) for Mascioni, that occurs in the first and third person. Since our model refuses the manipulation of features adopted in DM, as an ad hoc solution, the only source of syncretism can be found in the content the morphemes are endowed with. In the case of -*ɔ*, its lexical properties make it compatible with the first and third person, exactly like -*ε*- is compatible with first and second plural inflections.

2.1. Argumental TVs in Northern Italian Dialects

In this section, the ability of TVs to realize the person/number and possibly gender agreement will be exemplified and discussed. Our sample includes some Gallo-Romance dialects spoken in Italy (Trecate, Piedmont) or Switzerland (Sonogno, Verzasca Valley and Cavergno, Maggia Valley) and the Franco-Provençal variety spoken in Coazze (North-West Piedmont). In all these varieties SCls[3] are obligatorily introduced before the verb, and, as shown in (18), are subject to an extended syncretism.

The issue we focus on is the relation between TV and the expression of verbal agreement, which, as we will see, is subject to regular patterns. This is the case of the first and second plural persons that in many systems share the same inflection extended to all the conjugations, typically in the present indicative, as in the North Piedmont dialect of Trecate in (12). The inflection of second plural, in the present indicative, is nothing but the thematic vowel, so that it is the latter that specifies the person. In the first and second plural persons, -*u-m* is generalized to all classes, while –*i* of the second/third/fourth classes contrasts with -*ε* in the first class. In (12a',b',c',d') the infinitive is provided.

12.　a.　i　tʃam-a　　　　b.　I　vØd-a　　　　c.　i　pɛrd-a　　　　d.　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-u-m-a　　　　i　vid-u-m-a　　　　i　pird-u-m-a　　　　i　drum-u-m-a
　　　　　i　tʃa′m-ɛ　　　　　　i　vi′d-i　　　　　　i　pir′d-i　　　　　　i　dru′m-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'　tʃa′m-ɛ 'to call'　　b'.　vØt 'to see'　　c'.　pɛrd 'to lose'　　d'.　dru′m-i 'to sleep'

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

In (12), the string –*u-m-a* generalized to all classes in the first plural, shares the property of TVs, that is, the stress on –*u*-, suggesting that this vowel could be identified with a specialized TV. Also, in the second plural, the person is realized by a specialized TV, i.e., –*i*, extended to all the classes except for the first one, that retains -ɛ, as in the infinitive in (12a'). Again, some agreement inflections are syncretic, as generally in these dialects (see also the data in (14) and (15)). Precisely, in (12) only the third plural has a specialized exponent, while in the other persons –*a* occurs and in the second plural the TV.

As we have done for (6), we tentatively relate the distribution of SCls and inflections to their lexical properties. Syncretism depends on such properties, in terms of underspecified representations, as suggested in (13a) and (13b). As for plural SCl *i*, we identify it with the part-whole/sub-set relation expressed by the inclusion relation [⊆] (cf. Manzini and Savoia 2011a, 2017, 2018; Baldi and Savoia 2021)[4]. This abstraction allows us to account for its distribution, encompassing plural and first person. In the case of inflectional endings, we assign –*a* the elementary value of definiteness; *u-m-* is segmented in a specialized TV -*u*-, in (13c), and in the inflectional part -*m*-.

13.　a.　SCls　　　　　　　　　　　　　　　　　　b.　　　　Inflections
　　　i　　= ⊆ (1st sg / 1st pl / 2nd pl / 3rd pl)　　-a　　　= def
　　　te　= 2nd sg　　　　　　　　　　　　　　　-u　　　= 3rd pl
　　　a　　= 3rd sg　　　　　　　　　　　　　　-m-　　= 1pl
　　　　　　　　　　　　　　　　　　　　　　　c. TV
　　　　　　　　　　　　　　　　　　　　　　　-u$_{TV}$ - = 1st pl, Present Indicative
　　　　　　　　　　　　　　　　　　　　　　　-i/ɛ$_{TV}$ = 2nd pl. Present
　　　　　　　　　　　　　　　　　　　　　　　Indicative

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

A point emerging from (12) and (13) is that TVs can express both tense/aspect features and/or person features, exactly like inflection. This is 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). The imperfect extends the TV -ɛ- of the second and third classes to the first class in Sonogno in (14), differently from Cavergno in (15), where -*a*- is retained. Nevertheless, in both, the second person has the specialized TV -*i*-[5].

14.　a.　a tʃam-ɛ-v-a　　　　b.　a ved-ɛ-v-a
　　　　　ti tʃam-i-v-a　　　　　　ti ved-i-v-a
　　　　　o tʃam-ɛ-v-a　　　　　　o ved-ɛ-v-a
　　　　　o m tʃam-ɛ-v-a　　　　　o m ved-ɛ-v-a
　　　　　a tʃam-i-v-o　　　　　　a ved-i-v-o
　　　　　i tʃam-ɛ-v-a　　　　　　i ved-ɛ-v-a
　　　　　'SCl called, . . . '　　　　'SCl saw, . . . '

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

15.　a.　a tʃam-a-v-a　　　　b.　a veɟ-ɛ-v-a
　　　　　ti tʃam-i-v-u　　　　　　ti veɟ-i-v-u
　　　　　u tʃam-a-v-a　　　　　　u veɟ-ɛ-v-a
　　　　　u m tʃam-a-v-a　　　　　u m veɟ-ɛ-v-a
　　　　　a tʃam-i-v-u　　　　　　a veɟ-i-v-u
　　　　　i tʃam-a-v-a　　　　　　i veɟ-ɛ-v-a
　　　　　'SCl called, . . . '　　　　'SCl saw, . . . '　　　　　　Cavergno

The levelling on the TV *-i* specialized for the second plural in all classes is attested in the present indicative as in (16b) for Cavergno, as we saw in (12) for Trecate. Instead, in these dialects the first plural is formed by means of a construct combining the SCL of third singular, the pronominal element *m* (< *homo*)[6] and the inflection of third person, as in (16a):

16. a. u m dørm   u m lav-a   u m pɛrd
        SCl *homo* sleep.3SG   SCl *homo* wash-3SG   SCl *homo* lose.3SG
        'we sleep'   'we wash'   'we lose'
    b. a dør'm-i   /   a la'v-i   /   a pɛr'd-i
        SCl sleep-TV   SCl wash-TV   SCl lose-TV
        'you sleep   'you wash'   'you lose'

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

In conclusion, both in (12) and (26) the second plural person is encoded by a levelled specialized TV, as well as in the case of the imperfect forms in (14) and (15).

TVs can realize the person and number agreement as illustrated by the data presented in this section. In the present indicative their distribution, etymologically restricted to first and second person plural, favours a widespread pattern whereby all classes share the same inflectional form, including a specialized TV, eventually followed by the inflection, as we see in (12) and (16). The gist of our proposal is that the simple TV in the second plural in (16b) and (12) specifies the addressee, while in (12) the first plural requires a special TV *-u-* followed by the complex inflection *-m-a*. (16a) involves a different type of agreement mark, i.e., the SCl *m*. As seen in (9), the general property of the TV is that it introduces a nominal variable x whose reference is fixed by the subject, or, in other words, it agrees with the subject. In the cases in question, we have to conclude that the TV is associated with a restriction specifying its interpretation, (17), as for *–i* in (16b). Its occurrence in the imperfect is admitted, as in (14)–(15).

17. i = Addressee and others, (__ v$_{PastProgressive}$)

We can understand a constraint of the type in (17), on a par with the constraints in (9) and (13), as properties learned by the speaker. Their application relies on the free application of Merge in the sense discussed in Chomsky (2020b) and Chomsky et al. (2019), so that the application of rules can produce deviating results, which speakers will reject. However, the agreement between subject and inflection is a requirement, given that they externalize the same argument. Needless to say, in these dialects, the agreement involves the SCl as well. The idea that clitics realize the agreement properties of verbal projections is supported by Roberts (2018), in the sense that SCLs are a morphological tool doubling φ-features agreement on the verb in T.

So, if we consider the formation of *a tʃam-i-v-u* 'you called' (cf. (15a)), we see that the SCl combines with the specialized TV *–i-* and the specialized *–u* of second person. We conclude that the only possible occurrence of *-i-* of second person is when the subject/SCl is in turn of second person, as in (18c,d). In (18d) the addressee feature of TV agrees, i.e., is compatible, with the specification Def of the inflection *–u*, and the SCl *a*, in turn, a syncretic form realizing the agreeing features of T.

18. a. $< i_{2ps}, tʃam_R > \rightarrow [tʃam - i_{2ps}]$
    b. $[_v < v_{PastProgressive}, [tʃam - i_{2ps}] \ldots > \rightarrow [_v [tʃam - i_{2ps} - v_{PastProgressive}] \ldots$
    c. $[_T < u_{2ps}, [tʃam\ i_{2ps} - v_{PastProgressive}] > \rightarrow [_T [tʃam - i_{2ps} - v_{PastProgressive} - u_{Def}] \ldots$
    d. $< a_φ, [_T [tʃam - i_{2ps} - v_{PastProgressive} - u_{Def}] \ldots > \rightarrow a_φ [_T tʃam - i_{2ps} - v_{PastProgressive} - u_{Def} \ldots$

The data in (12), concerning the first plural person of the present indicative, show that the thematic morphemes can have special forms for particular reading, here *-u-*[7]. It is interesting to note that in correspondence with *–u-ma* in (12), in neighbouring dialects we find an unstressed inflection *–um*, as, for instance in the variety of Casorezzo (Lombardy). In that dialect, for the rest, a similar paradigm of the present indicative occurs, and the second plural is encoded by the simple TV, as in (19)[8].

19.　　　　　　　Present indicative
　　　　a　a par'l-i:　　　　　　'you speak'
　　　　　　a vi'd-i:　　　　　　'you see' '
　　　　　　a ri'd-i:　　　　　　'you laugh'
　　　　　　a dur'm-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'　　　　　　　　　Casorezzo

The possibility for the same form –um- to occur as TV or as inflection is further evidence in favour of substantial functional identity between agreement inflections and TVs.

Agreeing thematic vowels characterize the present indicative of the Franco-Provençal of Coazze (Turin), where a single inflectional and thematic pattern extends throughout the verbal classes, as in (20). The levelling in these paradigms affects both person exponents (first singular, second singular and third singular and plural) and thematic forms, -ø- and -ɛi. The exponent –*nt* includes first and third plural. As already noticed for other systems, the SCls are partially syncretic, first/third person plural/feminine, second plural/third singular masculine.

20.　　a.　i tʃam-u　　　　b.　i vɛj-u　　　　c.　i kor-u　　　　d.　i drprotectøm-u
　　　　　t tʃam-e　　　　　　t vɛj-e　　　　　　t kor-e　　　　　　t drprotectøm-e
　　　　　u/i tʃam-at　　　　u/i vɛj-at　　　　u/i kor-at　　　　u/i drprotectøm-at
　　　　　tʃa'm-**ø-nt**　　　vi'j-**ø-nt**　　　ku'r-**ø-nt**　　　dry'm-**ø**-nt
　　　　　u tʃa'm-**ɛi**　　　u vi'j-**ɛi**　　　ku'r-**ɛi**　　　u dry'm-**ɛi**
　　　　　i tʃam-u-**nt**　　i vɛj-u-**nt**　　i kor-u-**nt**　　i drøm-u-**nt**
　　　　　'I call, etc.'　　　　'I see, etc'　　　　'I run, etc.'　　　'I sleep, etc.'
　　a'　tʃa'm-ɛ 'to call'　b'.　vere 'to see'　c'.　kore 'to run'　d'.　dry'm-i 'to sleep'
　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　　Coazze

As shown by the pattern in (20), however general in Romance languages, person inflections contribute to externalizing the present, insofar as in the other paradigms they are added to the tense/aspect suffix. In other words, in itself, the combination *root+agreement inflection* realizes the present indicative; the first and second plural forms, however, in many systems, are exceptions to the effect that they introduce a specialized TV. Building on the previous discussion, we can tentatively characterize the inflections occurring in the system of Coazze as in (21a.b), where –*at* and –*e* are the inflections specialized for the second and the third person referents, -*u* is the exponent for the basic value of definiteness and –*nt* is the plural. The latter combines with the specialized TV –*ø*- giving rise to the interpretation of the first plural, while the TV -*ɛi* is associated with the addressee (differently from the 2sg referring to the hearer).

21.　a.　Inflections　　　　b.　　TVs
　　　　u = Def　　　　　　　　　ø = Speaker
　　　　e = 2SG/Recipient　　　　ɛi = Addressee (and others)
　　　　at = 3SG/Argument
　　　　nt = ⊆

Coming now to the interpretation of the present, the simplest idea is that forms like *tʃam-u* 'I call' are devoid of a tense/aspect specification and their use is based on the availability of the root to be read as a predicate. The result is that the agreement element is sufficient to introduce the argument, in (22a), yielding a verb form able to realize T, as in (22b).

22.　　a.　$< u_{\varphi}, tʃam_R > \rightarrow [_{v/\varphi} [tʃam_R] u]$
　　　　b.　$[_T [_{v/\varphi} [tʃam_R] u] \ldots$

TVs, in turn, insert a specialized reading of first and second plural persons or, more precisely, these elements work as restrictions on the nominal variable they are associated with, as suggested in (23a). Moreover, in the first plural, the exponent –*nt* realizes the plural

property [⊆], in (23b). The amalgam in (23a) can realize all the agreement properties of v and T, (23b).

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

Based on the preceding discussion, a clear picture shows up, i.e., the fact that in these varieties, TVs do not provide the subdivision of verbs into formal classes, but systematically introduce interpretive properties concerning persons and tense/aspect distinctions. In other words, TVs are not simple signals of classes of roots (conjugations) but contribute to semantics on a par with, or together with, the inflectional suffixes.

3. TV Levelling and Inflections

The best-known process concerning TV, i.e., the levelling by extension of the TV of a verb class to other or all classes, is attested in many northern and central Italian dialects, and other Romance languages, e.g. in French. Typically, it is the TV *-e-*, i.e., the thematic vowel characterizing the second and third conjugations that extends to the first and the fourth conjugation verbs[9]. Levelling seems to reflect some general constraints that influence the expression of persons. We examine the pattern provided by the north Piedmontese dialect of Trecate (cf. (12)) for the imperfect indicative, where the distribution of *-e-* for the four verb classes is illustrated in (24a,b,c,d). The levelling on *-e-* is accompanied by syncretism in the system of person endings distinguishing the singular *-a*, in the same way as the present, and the plural *-u*. In addition, we have already discussed in (13a) the syncretism of SCls.

24.   a.   i tʃam-e-v-a   b.   i vid-e-v-a   c.   i pird-e-v-a   d.   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

The TV *-e-* occurs throughout the paradigm without class distinction. An interesting point is that *−e-* is extended also to counterfactual/imperfect subjunctive forms, as in (25), where it regularly hosts the main stress (for the sake of clarity the stress is indicated on the vowel, writing **-é-**).

25. a.   i tʃam-ar-**é**-s, te tʃam-ar-**é**-s, a tʃam-ar-**é**-s, i tʃam-ar-**é**-s-u, i tʃam-ar-**é**-s-u, i tʃam-ar-**é**-s-u
      'I would call/ (if) I called, etc.'
  b.   i vyd-ar-**é**-s, te vyd-ar-**é**-s, a vyd-ar-**é**-s, i vyd-ar-**é**-s-u, i vyd-ar-**é**-s-u, i vyd-ar-**é**-s-u
      'I would see/ (if) I saw, etc.'
  c.   i bev-ar-**é**-s, te bev-ar-**é**-s, a bev-ar-**é**-s, i bev-ar-**é**-s-u, i bev-ar-**é**-s-u, i bev-ar-**é**-s-u
      'I would drink/ (if) I drank, etc.'
  d.   i drum-ar-**é**-s, te drum-ar-**é**-s, a drum-ar-**é**-s, i drum-ar-**é**-s-u, i drum-ar-**é**-s-u, i drum-ar-**é**-s-u
      'I would sleep/ (if) I slept, etc.'   Trecate

This suggests that *-e-*is associated with forms excluding the linking to discourse, let us call them irrealis. More to the point, in the counterfactual, *-e-* follows another infix in turn associated with the counterfactuality.[10] We can treat *−ar-* as a specialized theme-like morpheme that enriches the root providing it with the eventive variable characterizing irrealis, specifically in the infinitive, from which it derives; it is doubled by the inflection *-s-*. In (25), *-e-* adjoins verbal forms levelled on *-ar-* registering the nominal variable in complex contexts, as in (26) for *i t ʃam-ar-e-s-u* 'we/you/they would call'. In (26), *-u* is characterized as plural and the SCl *a* as definite. So, the amalgam [$_R$ tʃam - ar$_{Irr}$] in (26a) merges with *−e-* in (26b), realizing v, whereas (26c) and (26d) provide the expression realizing the properties of T; the SCl doubles the agreement on T, in (26e).

26.   a. $< ar_{Irr}, t\int am_R > \rightarrow [_R t\int am - ar_{Irr}]$

         b. $[_v < e_x, [_R t\int am - ar_{Irr}] > \rightarrow [_v [t\int am - ar_{Irr} - e_x] \ldots$

         c. $[_T < s_{Irr}, [t\int am - ar_{Irr} - e_x] > \rightarrow [_T [t\int am - ar_{Irr} - e_x - s_{Irr}] \ldots$

         d. $[_T < u_{Pl}, [t\int am - ar_{Irr} - e_x] > \rightarrow [_T [t\int am - ar_{Irr} - e_x - s_{Irr} - u_{Pl}] \ldots$

         e $< a_\varphi, [_T [t\int am - ar_{Irr} - e_x - s_{Irr} - u_{Pl}] \ldots > \rightarrow a_\varphi [_T [t\int am - ar_{Irr} - e_x - s_{Irr} - u_{Pl}]$

As to the change of the TV of levelled systems into an inflectional value, an example is provided by the imperfect of second, third and fourth conjugation in the Coazze variety (Piedmontese Franco-Provençal), where the original theme *-i-* has let the stress pass to the vocalic ending becoming its onset, as illustrated in (27b,c,d). The first conjugation in (27a) retains the original configuration *–a-v.*

27.   a.   i   t∫am-**a**-v-u   b.   i   vi-ʹj**u**   c.   i   kuʹr-j**u**   d.   i   dryʹm-j**u**

             t   t∫am-**a**-v-e   t   vi-ʹj**e**   t   kuʹr-j**e**   t   dryʹm-j**e**

             u/i t∫am-**a**-v-at   u/i vi-ʹj**it**   u/i kuʹr-j**it**   u/i dryʹm-j**it**

             t∫aʹm-**a**-v-i-nt   vi-ʹj**ε**-nt   kuʹr-j**ε**-nt   dryʹm-j**ε**-nt

             u   t∫am-**a**-v-i   u   vi-ʹj**εi**   u   kuʹr-j**εi**   u   dryʹm-j**εi**

             i   t∫aʹm-**a**-v-u-nt   i   vi-ʹj**u**-nt   i   kuʹr-j**u**-nt   i   dryʹm-j**u**-nt

             'I called, etc.'   'I saw, etc'   'I ran, etc.'   'I slept, etc.'   Coazze

The first class shows a pattern *root-TV-Tense/Aspect-Inflection* with the TV stressed in all persons like in the paradigms of northern Italian varieties in (14), (15), (24). In the other classes, the incorporation of the original TV into the ending has created a specialized set of exponents including the features of imperfect and those of agreement. The complex form in (28a) is endowed with the featural content suitable to fulfil T's properties in (28b).

28.   a. $< ju_{\varphi/v}, kur_R > \rightarrow [_{\varphi/v} [kur_R] ju]$

         b. $[_T [_{\varphi/v} [kur_R] ju] \ldots$

Interestingly, whereas in the imperfect the thematic vowel is only recognizable in the first class in (27a), in the imperfect subjunctive the theme *-i-* emerges in the other classes, as in (29a,b,c)

29.   a.   i   t∫am-i- s- u   b.   i   vij- i- s- u   c.   i   vin- i- s- u

            SCl call- TV-Subj-Infl   SCl see-TV-Subj-Infl   SCl come-TV-Subj-Infl

            '(if) I called'   '(if) I saw'   '(if) I came'   Coazze

As shown by these data, the levelling and extension phenomena of the TV generally do not have the effect of representing the verbal class or the time/aspect/mood properties in a uniform manner, even if the TV can be sensitive to the latter. On the contrary, TVs usually tend to subsume the agreement properties.

An interesting example concerns weak participles, in which, in many dialects, the thematic vowel can include agreement properties as an effect of harmony processes on the stressed vowel and/or the deletion of the etymological intervocalic infix of past participle *-t-*. A relevant case is provided by the Lombard-Alpine dialects of Cavergno in (30), Coimo (Vigezzo Valley) in (31) and the Ladin dialect of Corte (Livinallongo) in (32), where the TV of the first conjugation registers the agreement. In all these dialects, the TV can subsume the realization of the agreement properties both using a specialized exponent, as in (30c), (31a,) and (32a,c) for the masculine, and of its bare realization, in (30d) and (31d). An inflectional element for plurality PL is, however, admitted, as in (30c), (31c) and (32c)

30. a.

a	l	ɔ	lav-	a-	u
SCl	3PS	have.1PSG	wash-	TV-	MSG

'I have washed him'

b.

a	l	ɔ	lav-	a-	d-	a
SCl	3PS	have.1PSG	wash-	TV-	PTP-	FSG

'I have washed him'

c.

a	i	ɔ	lav-	ɛ-	i
SCl	PL	have.1PSG	wash-	TV.MPL-	PL

'I have washed them'

d.

a	i	ɔ	lav-	a
SCl	PL	have.1PSG	wash-	TV.F

'I have washed them'

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

31. a.

a	l	ɔ	man'ɟ-	u
SCl	3PS	have.1PSG	eat-	TV.MSG

'I have eaten him'

b.

a	l	ɔ	manɟ-	a- a
SCl	3PS	have.1PSG	eat-	TV-FSG

'I have eaten him'

c.

a	i	ɔ	manɟ-	ø- i
SCl	PL	have.1PSG	eat-	TV.MPL-PL

'I have eaten them'

d.

a	i	ɔ	man'ɟ-	a
SCl	PL	have.1PSG	eat-	TV.F

'I have eaten them'

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

32. a.

l	ɛ	kla'm -	e
3PS	have.1PSG	call-	TV.MSG

'I have called him'

b.

l	ɛ	klam -	a- d-	a
3PS	have.1PSG	call-	TV-PTP	FSG

'I have called him'

c.

i	ɛ	klam -	ɛ-	i
PL	have.1PSG	call-	TV.MPL-PL	

'I have called them'

d.

i	ɛ	klam -	a- d-	e
PL	have.1PSG	call-	TV-PTP	FPL

'I have called them'

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

We adopt the simplest analysis of auxiliary-participle construct, whereby *have/be* are full verbal projections, as in (33), embedding a clause including a predicative relation between the participial element and its IA.

33.

	T	...	v	word-phase/participle
l_{IA}	ɔ	...	*manɟ-u*	

The argumental variable introduced by TV in the participial clause in (33) is closed by the internal argument, given the unaccusative nature of the past participle, typically expressed by the specialized exponent *–t-/-d-* in Romance languages. The deletion of this morphological mark forces the verbal base to realize this reading in auxiliary contexts, as suggested in (34). Resuming a proposal of Roberts (2010, p. 57), Romance OCls can be treated as the head of agreement for the v phase, hence merged with the verb realizing v, here the auxiliary. This means that the OCl of the auxiliary needs to agree with the participle tor to make the sentence interpretable, if we admit that the *auxiliary* and *participle* create an amalgam, as in (34a).

34. a. $< u_\varphi, [_R \text{manɟ}] > \rightarrow [_\varphi \text{manɟ-u}]$
     b. $< \text{ɔ}_T, [_v \text{manɟ-u}_\varphi] > \rightarrow [_T \text{ɔ}[\text{manɟ-u}_\varphi]]$
     c. $< l_\varphi, [_T \text{ɔ}[\text{manɟ-u}_\varphi] \dots]> \rightarrow [_T l_\varphi, [\text{ɔ}[\text{manɟ-u}_\varphi] \dots]$

The participle, (34a), is able to realize v of its clause, in (34b), whereas the object clitic is introduced in the domain of T of which it realizes the agreement properties inherited by v, in (34c).

4. The Order of Morphemes

In Romance varieties, the tense/aspect/modal exponent usually occurs in-between the root, possibly enlarged by the thematic vowel (TV), and the person and number inflection. In the literature, cases are documented with an apparent 'reversed order', where the tense (/aspect/mood) exponent follows the agreement exponent, as supported in Pellegrini (1974), Benincà (1999) and Manzini and Savoia (2005) for the Ladin (Rhaeto-Romance) of Livinallongo. We will illustrate this system with the paradigms of *kla′m-ɛ* 'to call' of first conjugation, *dor′m-i* 'to sleep' of fourth conjugation, of *ve′d-ei* 'to see' of second conjugation and *pjerd-e* 'to lose' of third conjugation (data from Corte and Sief). As shown by the examples, the person exponents of first/second plural precede the imperfect indicative exponent *-v-* in (35b)/(36b), the present subjunctive exponent *-b-* in (35c)/(36c) and the imperfect subjunctive exponent *-s-* in (35d)/(36d). (35a)/(36a) illustrates the present indicative, from where the inflections of first plural *–oŋ* and of second plural *–ei* seem to be extended. It needs to be noted that in the fourth class, the TV *–i-* is included in the exponent of first and second plural, so much so that the extended exponent is *j-oŋ-* and *–j-ei-* in (35d), (36d). Ladin varieties share many essential syntactic properties with Gallo-Italic dialects, and, in particular, they present a system of subject clitics (SCl); the examples in (35), (36) and (37) show SCls in the second singular, *te* 'you', in the third singular, *l* 'he'/*la* 'she', and plural, *i* 'they.M' and *le* 'they.F' (cf. Manzini and Savoia 2005),

35. a. dɔrm-e   b. dor′m-i-v-e   c. dɔrm-e   d. dorm-i-s-e
         te ðɔrm-e   te dor′m-i-v-e   te ðɔrm-e   te dorm-i-s-e
         l/ la ðɔrm   l/ la dor′m-i-v-a   l/ la dɔrm-e   l/ la dorm-i-s-a
         dor′m-**j-oŋ**   dor′m-**j-oŋ**-v-a   dorm-**j-om**-be   dorm-**j-oŋ**-s-a
         dor′m-**j-ei**   dor′m-**j-ei**-v-e/a   dorm-**j-ei**-be   dorm-**j-ei**-s-e/a
         i/ le ðɔrm   i/ le dor′m-i-v-a   i/ le dɔrm-e   i/le dorm-i-s-a
         'I sleep, … '   'I slept, … '   '(if) I sleep, … '   '(if) I slept, … '

36. a. klam-e   b. klam-ʌ-v-e   c. klam-e   d. klam-ʌ-s-e
         te klam-e   te klam-ʌ-v-e   te klam-e   te klam-ʌ-s-e
         l/la klam-a   l/ la klam-ʌ-v-a   l/la klam-e   l/ la klam-ʌ-s-a
         kla′m-**oŋ**   klam-**on**-v-a   klam-**om**-be   klam-**oŋ**-s-a
         kla′m-**ei**   klam-**ei**-v-e/a   klam-**ei**-be   klam-**ei**-s-e/a
         i/ le klam-a   i/ le klam-ʌ-v-a   i/ le klam-e   i/ le klam-ʌ-s-a
         'I call, … '   'I called, … '   '(if) I call, … '   '(if) I called, … '
                                                                                                Corte

(37a,b) and (37a′,b′) illustrate the second and third conjugation verbs, where the simple forms *–oŋ-/-ei-* are preserved.

37. a. veig-e   b. ved-ʌ-v-e / ved-ʌ-s-e   a′. pjerd-e   b′. perd-ʌ-v-e
        te veig-e   te ved-ʌ-v-e   te pjerd-e   te perd-ʌ-v-e
        l/la veig-a   l/ la ved-ʌ-v-a   l/la pjerd   l/ la perd-ʌ-v-a
        ve′d-**oŋ**   ved-**oŋ**-v-a/ ved-**on**-s-a   perd-**oŋ**   perd-**on**-v-a
        ve′d-**ei**   ved-**ei**-v-a/ ved-**ei**-s-e/a perd-**ei**   perd-**ei**-v-e/a
        i/ le veig-a   i/ le ved-ʌ-v-a   i/ le pjerd   i/ le perd-ʌ-v-a
        'I see, … '   'I saw, … '   '(if) I lose, … '   '(if) I lost, … '
                                                                                                Corte

The paradigms (36) and (37) display the extension of the thematic vowel ʌ-[11] to all paradigms except for the fourth conjugation, where *-i-* is inserted, in (35). If we compare (38a,b,c,d) for *be* and (39a,b,c,d) for *have*, we see that the inflectional structure of the

first and second plural of the present of *be* and *have*, coincides with *oŋ* and *ei*, i.e., the specialized TVs, except for the inflectional element *–ŋ* contained in *–o-ŋ*. *Be* extends the entire form *s-o-ŋ* also to the first singular and, mainly, preserves it as a single morpheme in every tense/mood paradigm.

38.
a.		b.		c.		d.	
	s-oŋ …		s-oŋ-v-e …		s-oŋ-s-e ‚‚‚		s-om-b-e veɲ-u/veɲ-u-ð-a
	t es		t e-v-e		te fos-e		te sje-b-e
	l e		l e-v-a		el fos-a		el sje-b-e
	s-oŋ		s-oŋ-v-a		s-oŋ-s-a		s-om-be- veɲ-u-s/veɲ-u-ð-e
	s-ei		s-ei-v-a/e		s-ei-s-a/e		s-ei-b-e
	i e		i e-v-a		i fos-a		i sje-b-e
	I am …		*I was* …		*(if) I was* …		*(if) I am come.m/f (pl)* …
	'I have come … '		'I had come … '		'(if) I had come … '		'(if) I have come … '

39.
a.		b.		c.		d.		
	ε …		ε-v-e …		ε-s-e …		ε-b-e	dor′mi
	t as		t a-v-e		t a-s-e		t a-b-e	
	l a		l a-v-a		l a-s-a		l a-b-e	
	oŋ		oŋ-v-a		oŋ-s-a		om-b-e	
	ei		ei-v-a/e		ei-s-a/e		ei-b-e	
	i a		i a-v-a		i a-s-a		i a-b-e	
	'I have slept … '		'I had slept … '		'(if) I had slept'		'(if) I have slept … '	

Corte

In (38) and (39), we see that the stem generally coincides with an exponent including the TV, for instance *t a-v-e* 'SCl had.2sg, you had' in (39b). In some persons, the TV is specialized for the person, as in *ε-v-e* 'I had', where again <u>ε-</u> is the specialized first person form of the present indicative in (39a). The same is true for *s-o-ŋ-v-e*, *s-o-ŋ-s-e*, *s-o-m-b-e* 'I was/am' in (39b,c,d) where *s-o-ŋ* has been treated as a specialized stem, maybe based on its identity with the first singular of the present indicative. The idea that we are facing the extension of a stem form, is confirmed by neighbouring dialects, such as that of Colle Santa Lucia. In this system, the generalized extension of the type in (36) and (37) is not present, but a trace of this distribution emerges in imperfect indicative and present subjunctive of *be* where *soŋ* is also adopted as a specialized stem, as in (40a,b,c).

40.
a.	s-oŋ	vi′ɲ-u	/	viɲ-u-ð-a
	be.1st	come-TV	/	come-TV-PTP-FSG
	'I have come'			
b.	s-oŋ-v-e	vi′ɲ-u	/	viɲ-u-ð-a
	be.1st-Impf-Infl	come-TV	/	come-TV-FSG
	'I had come'			
c.	s-om-be	vi′ɲ-u	/	viɲ-u-ð-a
	be.1st-Subj	come-TV	/	come-TV-PTP-FSG
	'(if) I have come'			

Corte

As in standard Italian, the past participle agrees with the subject in unaccusative constructs with the auxiliary *be*, where *ve′ɲu/ve′ɲus* 'come' are the masculine forms singular and plural and *veɲuða/veɲuðe* the feminine forms singular and plural; *dor′mi* 'slept' in (39) is the masculine form occurring in unergative.

The comparison with the regular inflections of first and second plural in the present and imperfect indicative (41a,a′,b,b′) highlights the inflection that we should expect in a non-levelled system.

41. a. dor′m-jo-ŋ
         sleep-TV-1PL
         'we sleep'
    a′. dorm-i-v-a-ne
         sleep-TV-Impf-TV-1PL
         'we slept'
    b   dor′m-i
         sleep-TV
         'you sleep'
    b′   dorm-i-v-à
         sleep-TV-Impf-TV
         'you slept'

It is interesting to note that the first and second plural of the imperfect show a complex string, where, like in standard Italian and many other dialects, two TVs are combined: the one of the class, here –*i*-, and a specialized TV of the imperfect, -*a*-, that in the second plural subsumes the agreement properties (cf. the discussion in Section 3).

4.1. Extension of Specialized TVs

If we consider the vocalic endings in (35)–(37), we see that –*e* encompasses first and second singular forms and variably the second plural imperfect; *a*- occurs in the third person and the first plural. A robust syncretism emerges that leads us to treat these morphemes as simple definiteness marks, as already proposed in Section 2.1 for similar syncretic forms. The –*oŋ*/-*ei* forms, generalized in all paradigms, can be identified as specialized thematic elements. More precisely, based on the discussion in this section and the analysis proposed in the previous sections, we conclude that the order *agreement-tense* shown by the Ladin systems in (35)–(37) is only apparent. In fact, since the discussion in Section 4.1, the stressed specialized exponents of first and second plural can be analysed as *bona fide* TVs, even if endowed with agreement properties. If we are on the right track, these thematic elements are combined with the tense and mood inflections as normal and followed by the vocalic ending, which seems to represent the genuine agreement inflection.

Thus, a form such as *klam-oŋ-v-a* 'we called', is yielded by inserting the specialized TVs –*oŋ*/-*ei* instead of the usual TVs -*i*- or -ʌ-, as in (42a). Its ability to realize v and T is applied by merging to –*v*- of the imperfect in (42b) and to the inflection –*a* in (42c).

42. a.   < oŋ$_{TV1pl}$, [klam $_R$] > → [$_φ$ klam-oŋ]
    b.   < [$_T$ [v$_{Impf}$, [$_φ$ klam-oŋ] > → [$_{Impf}$ klam-oŋ$_φ$-v-]
    c.   < [$_T$ [[$_{Impf}$ klam-oŋ$_φ$-v-] a$_{Def}$]

In the present indicative, a contrast emerges between the fourth conjugation and the others, because in the fourth, the first and second plural forms, –*joŋ*/-*jei* incorporate the TV -*i*-, whereas in the other verbal classes the person endings are –*oŋ* and –*ei*. As to the origin of –*be* of present subjunctive, the etymological –*b*- of the present subjunctive of *have* provides a possible solution[12].

Types of reordering are also very sporadically attested to in other unrelated dialects, as in the southern Italian varieties of S. Maria Vico (Campania) in (43), where first and second plural of the imperfect indicative show the sequence *person+imperfect* (Manzini and Savoia 2005, § 2.8.3):

43.   rurme-və
         rurmi-və
         rurme-və
         rur′me-m(u)-wə
         rur′me-v(u)-wə
         rur′me-və-nə   S. Maria Vico

Independently from the way we analyse the distribution we have presented in the preceding discussion, we recall that the question of the order of morphemes in complex verbal forms has been considered in cognitivist approaches. From a typological point of

view, the sequencing *tense-agreement* contrasts with a paradigm valid not only in Romance languages but also generally in Indo-European and other language groups. Proposed explanations have a functional nature, inspired by economy and processability reasons, whereby 'The peripheral position of inflectional formatives facilitates their processing through the effects of psychological primacy and recency and better outward indexicality towards the other parts of the sentence' (Dressler et al. 1987, p. 7). A similar generalization is implicated by the 'Inflection-outside-derivation principle' in Haspelmath (1993, p. 291), requiring that 'A morphologically complex word is preferred if its inflectional affixes are further away from the root than its derivational affixes' (cf. Mithun 2016). Bybee (1985), based on the comparison between languages belonging to different families, concludes that tense/aspect exponents tend to be closer to the stem insofar as they introduce meanings more relevant to the stem. The result is that they precede person morphemes and the deriving order realizes a certain degree of diagrammatic iconicity.

Interestingly, these approaches suggest that the more internal suffixes have a status slightly different from inflectional endings, insofar as they are related to the verbal properties of the root. In our analysis, we suggest a different proposal, whereby the TV provides the Root with an argumental variable, changing it to a predicate. Thus, the similarity between TV and nominal agreement inflections associated with φ-features is evidenced. Hence, the possibility that the TV can be replaced directly by nominal inflections, as in (35)–(37), and that its sensitivity to φ-features of different persons are accounted for.

4.2. First and Second Plural Persons

We wonder why the first and second plural persons generally require a special externalization. This pattern emerges in the northern dialects we have examined in the preceding sections, especially in Section 4.1 and (4). However, it is widespread with different solutions in Romance varieties (cf. Maiden 2018), and in standard Italian appears in the first plural present indicative and the imperfect and perfect paradigms.

The best-known property of these persons is that they include the reference both to one of the interlocutors and to other individuals. The usual nominal reference of the so-called third person elements can be understood as defined, typically anaphoric with respect to an element introduced in the discourse. The composed interpretation of first and second plural is encoded, in many cases, by a specialized way to introduce the reference to the subject, by combining the argumental slot of the TV and the person/number inflection. This mechanism is evidenced in the examples in (44a), from (12) for Trecate and in (44b) for Coazze, from (20).

44. a. $[[[drum_R] u_x] ma_{1PL}]$
'we sleep'

Trecate

b. $[[[dry'm_R] ø_x] nt_{PL}]$
'we sleep'

Coazze

In the variety of Trecate –*ma* is the specialized 1PL exponent, while in Coazze –*nt*, occurring also in the third plural person *drøm-u-nt* 'they sleep', can be identified as the specialized exponent for the plural. In any case, the plural reference is added to the TV. This observation contributes to a better understanding of the realization of first and second plural inflections in the position of TVs in the Livinallongo varieties examined in (35)–(37), as illustrated by (45).

45. $[[[[klam_R] oŋ_{1PL}] v_{Impf}] a_{Def}]$ Corte

In other words, we can see them as nothing but the specialized realizations of these persons, exactly like in cases such as (44a,b), whereby the referential properties of –*(j)oŋ* and –*(j)ei* are required anyway within forms otherwise devoid of corresponding specialized endings, as –*a* in (35)–(37).

5. Some Conclusions

In this article we have pursued two main purposes, i.e., accounting for the morphological properties of verbs as the result of the same computation procedure of syntax and characterizing the nature of the thematic vowel in Romance languages. Our discussion has addressed some theoretical and descriptive points crucial for the relation morphology-syntax. The split between syntactic structures and morphological representations adopted by DM, that confines morphology to a post-syntactic level, a more significant and not-ad-hoc treatment is available, based on the idea that no autonomous morphological component is necessary or useful. In this perspective, we have assumed that all morphological elements are endowed with interpretable content and that the operation Merge is able to explain the formation of complex words, here verbs, as the realization of the phasal domains.

This approach allowed us to deal with a set of morphological phenomena concerning the role of thematic vowels and their relation with the inflectional exponents of the verb. We have started from the hypothesis that the TV is in turn a morpheme corresponding to an argumental variable. Indeed, the close affinity of TVs with inflections shows up as soon as we look with attention to their behaviour and distribution. In fact, TVs are systematically able to subsume the referential properties generally introduced by inflections. So, TVs express persons and gender/number properties in many Romance varieties; furthermore, we see that inflectional elements can occur in the place of TVs in turn subsuming its position in complex verbal forms, as in the case of Livinallongo dialects. If our analysis is correct, the reordering between inflectional morphemes is only apparent in these dialects, to the effect that the interpretive affinity between TVs and inflections can account for the ability of the latter to replace TVs. Especially since the first and second plural persons are involved, where specialized TVs are otherwise often found.

Notes

[1] In the experimental article by Kastner and Martin (2020), the semantic value of the thematic element *-i(s)* in the French verbs is discussed through evidence regarding the preference for different verbal forms depending on the contexts. The authors' conclusion is that *-i(s)* is associated with the meaning of change of state and is not semantically inert. These conclusions seem to reflect the fact that *-i-* is usually associated with derived verbs that introduce a change of state, as in other Romance languages, for example in Italian *arrossire* 'blush'. In fact, even other verbal classes can express that meaning, such as, for example, *sbiancare* whiten', *calmare* 'calm', etc. We can think that there is a selectional relation, but in the sense that the inchoative inflection is subcategorized for the TV *–i-*. Of course, we know that morphological rules are in many cases based on these types of restrictions.

[2] An anonymous reviewer raises the question of why we assume that the thematic vowel is the exponent of a nominal variable. In fact, this is the issue that the article faces and discusses, essentially on the basis of evidence that thematic vowels can systematically express agreement properties.

[3] The analysis of SCls and their distribution remains outside the present work. A forthcoming discussion of syncretism shown by SCls is presented in Baldi and Savoia.

[4] Manzini and Savoia (2011b, 2017); Savoia et al. (2018), following a suggestion by Chierchia (1997), propose that plural morphology may be associated with the part-whole/sub-set content, i.e., inclusion relation [⊆]. In other words, the plural indicates that the argument of the root can be partitioned into subsets.

[5]   It is possible to see in the exponent *-i-* the outcome of an ancient process of metaphony attested in these dialects (Savoia 2015). It is clear that this process no longer works, as evidenced by the loss of the original contexts that triggered metaphony. Indeed, now we find *–i-* in the context of final *–a, -o* in (14) and of *–u* in (15), whereas in these varieties it was the final *–i* that determined metaphony.

[6]   For *m < homo*, see Rohlfs [1949] (1968, § 530); cf. Manzini and Savoia (2005) and the references contained therein. These forms are connected to original impersonal uses of the locution *homo+3rd person*, analogous to French *on mange* 'someone eats' in the sense of 'we eat'.

[7]   It is of note that *–u-* does not coincide with the TV of weak participles, which in this dialect is *–y-*, as in ɲ-*y* 'come'.

[8]   For the origin of stressed *–uma* and unstressed *–um/am*, see Rohlfs [1949] (1968, § 530). A possible connection is tentatively suggested between the latter and the proclitic element *m* seen in (23a) for Cavergno.

[9]   It is interesting to note that the TV *-e-* is generally favoured in levelling in Romance varieties, as shown by the dialects examined here as well as by the imperfect indicative of French. A plausible hypothesis is that in the original second and third conjugations it is in fact already specialized, given that in those classes participles excluded *-e-*, since they were strong in the third class or formed by the TV *-u-*. The distribution of *-e-* was therefore limited to the imperfect (and eventually to the perfect) independently from the infinitive where all original classes were represented. Again, a third factor process concerning the cognitive implementation of verbal properties seems to be behind the fact that the imperfect and other past or irrealis forms are more subject to morphological reorganization processes implying the manipulation of TVs and inflections.

[10]   As is usually found in Romance languages, the infix *-ar-* deriving from the original suffix of the infinitive is the morphological basis of the conditional. In varieties studied here, this suffix is levelled into *-ar-*.

[11]   [ʌ] is the outcome from the original stressed *e in closed position, cf. [mʌte] 'I put' < Latin *mĭtto like [sʌra] 'evening' < Latin *sēra; in these dialects, the context __CV# behaves like the typical closed contexts with a consonant cluster or an original geminate following the nucleus. This distribution is similar to that of Friulian and Carso varieties (Baldi and Savoia 2017; Savoia 2015).

[12]   Benincà (1999), while also assuming this possibility, discusses a different origin connected with the enclitic particle *–ba* (< bene) attested in some Alpine-Lombard dialects, where it is endowed with modal value. The reconstruction proposed by Benincà is plausible in many respects, even if the influence of the *–be* of the subjunctive of *have* is difficult to be totally excluded.

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