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# Implicational relationships between desinences in Occitan imperfect and conditional forms<sup>1</sup>

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## Abstract

This study discusses the origins and subsequent development of conditional and non-first-conjugation imperfect indicative desinences in varieties of Occitan. The systematic identity between these series of desinences can be traced to their common origin (Latin imperfect indicative forms in -ĒBAM, -ĒBAS, -ĒBAT, etc.), and predisposes them to undergo the same sound changes as each other: a change of particular interest is the irregular loss of intervocalic -B-, which is here argued to originate in the conditional. Strikingly, the identity between the series of desinences is also maintained in three cases of analogical change (levelling and extension) reported here, indicating strong implicational relationships between the series. In the light of these historical and comparative facts, the study proposes that the identity between conditional and non-first-conjugation imperfect indicative desinences is most accurately captured by treating it as morphomic.

**Keywords:** autonomous morphology, language change, Occitan, imperfect, conditional

## Résumé

Cette étude a pour sujet les origines et l'évolution ultérieure des désinences de l'imparfait de l'indicatif (hors première conjugaison) et du conditionnel dans les parlers occitans. Ces séries de désinences montrent une identité systématique, qui remonte à l'origine commune des formes (imparfaits de l'indicatif latins en -ĒBAM, -ĒBAS, -ĒBAT, etc.), et qui les prédispose à subir les mêmes évolutions phonologiques : parmi celles-ci figure notamment la perte irrégulière de -B- intervocalique, qui, selon les arguments ici présentés, débute au conditionnel. De façon plus remarquable, l'identité entre ces séries de désinences est également maintenue dans trois cas d'évolution analogique (nivellement et extension) ici décrites, ce qui indique l'existence de fortes relations implicationnelles entre les séries. Pour bien rendre compte de ces données diachroniques et comparatives, l'étude propose que l'identité entre les désinences de l'imparfait de l'indicatif (hors première conjugaison) et du conditionnel doit être considérée comme un phénomène morphomique.

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**Mots-clefs** : morphologie autonome, diachronie, occitan, imparfait, conditionnel

## 1. Introduction

This study discusses the implicational relationships holding between exponents of the paradigm categories conventionally labelled IMPERFECT INDICATIVE (henceforth IPFV.IND) and SYNTHETIC CONDITIONAL (henceforth COND) in varieties of Occitan (Gallo-Romance).

Most Occitan varieties present systematic identity between series of desinences in the COND forms of all lexemes and in the IPFV.IND forms of non-first-conjugation lexemes. These desinences have a common historical origin, as all COND and non-first-conjugation IPFV.IND forms continue Latin forms in -ĒBAM, -ĒBAS, -ĒBAT, etc. (section 2), and consequently each series tends to undergo the same sound changes as the other. Moreover, the formal identity between the series is maintained in several cases of analogical change, suggesting that it has some measure of reality for speakers as a systematic distributional template (section 3).

The diachronic behaviour of the pattern observed here recalls the existing morphomic structures identified for Romance languages by Maiden (e.g. 2009a, 2011a, 2011b, 2016a, 2018), though these patterns differ in scope. Maiden's patterns, defined in terms of lexical root or stem distribution, can act as templates for the distribution of almost all types of inflectional exponents, while the analogical changes reported in this study affect only desinences and thematic elements. Additionally, Maiden's patterns are defined paradigm-internally and independently of conjugational class, while the relationship studied here involves multiple paradigm types and makes crucial reference to conjugational class.

To account for this combination of similarities and differences, the study makes the following proposal (section 4). Two separate implicational relationships are assumed to hold: one between COND forms of all lexemes, and another, paradigm-internal, between COND and IPFV.IND forms in a subset of lexemes. The latter relationship is classed, like Maiden's patterns, as a METAMORPHOME<sup>2</sup> in the terms of Round (2015), namely a set of paradigm cells which systematically share exponents. The behavioural differences between the distribution described here and Maiden's patterns are argued to emerge from such factors as lexical type frequency and the function of the exponents on which generalisations about identity are based. The proposed analysis is consistent with observations that multiple and conflicting paradigmatic distribution templates may co-exist (e.g. Smith, 2011, for sociolinguistic variation between templates for stem distribution; Maiden, 2000, 2012a, 2018, pp. 288-289; and Esher, 2015b, for 'clash' between templates for the distribution of different exponents in a single paradigm), and contributes to understanding of the interactions between such templates.

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<sup>2</sup> For consistency and clarity I will apply Round's terminology throughout, even where it conflicts with the practice of other authors (Maiden, for example, refers systematically to MORPHOMES).

## 2. Occitan conjugation and the historical source of identity between COND and non-first-conjugation IPFV.IND forms

### 2.1. Modern Occitan systems

The majority of Occitan varieties, like most Ibero-Romance varieties, present two distinct types of desinence in the IPFV.IND, both of which continue Latin IPFV.IND forms. One is characterised by a theme vowel /a/ and a labial consonant, and is confined to first-conjugation IPFV.IND forms; the other, common to all non-first-conjugation IPFV.IND forms, usually presents either a yod followed by a stressed vowel or an /i/ followed by an unstressed vowel. The latter type is also found in COND forms of all conjugations, as the Gallo- and Ibero-Romance COND has its origin in a periphrasis collocating the lexical infinitive and an IPFV.IND form of the second-conjugation verb HABERE ‘have’ (e.g. CANTARE HABEBAT > Fr. *chanterait*, Cast. *cantaría*, Cat. *cantaria*).

Some illustrative examples are shown in Tables 1 and 2. Table 1 gives full IPFV.IND and COND paradigms for the three conjugations traditionally recognised for Occitan (continuants of Latin conjugations I, IV and III respectively; II was early assimilated to III) in the variety of Fauch. Table 2 shows sample IPFV.IND and COND forms from varieties spanning a selection of traditional dialect groups.

	<i>cantar</i> ‘sing’, I		<i>bastir</i> ‘build’, IV		<i>vendre</i> ‘sell’, III	
	IPFV.IND	COND	IPFV.IND	COND	IPFV.IND	COND
1SG	kānt'aʃi	kāntarj'ɔ	bastisj'ɔ	bastirj'ɔ	bēndj'ɔ	bēndrj'ɔ
2SG	kānt'aʃos	kāntarj'os	bastisj'os	bastirj'os	bēndj'os	bēndrj'os
3SG	kānt'aʃo	kāntarj'ɔ	bastisj'ɔ	bastirj'ɔ	bēndj'ɔ	bēndrj'ɔ
1PL	kānt'aʃēn	kāntarj'ēn	bastisj'ēn	bastirj'ēn	bēndj'ēn	bēndrj'ēn
2PL	kānt'aʃes	kāntarj'es	bastisj'es	bastirj'es	bēndj'es	bēndrj'es
3PL	kānt'aʃu	kāntarj'ow	bastisj'ow	bastirj'ow	bēndj'ow	bēndrj'ow

Table 1. Comparison of COND and IPFV.IND forms for continuants of Latin conjugations I, IV and III in the Occitan variety of Fauch (Languedoc, ALLOc survey point 81.12). Exponents shared across COND and non-first-conjugation IPFV.IND forms are highlighted in bold face.

		Occitan, Graulhet	Occitan, Var	Occitan, Nice	Occitan, Nontron	Occitan, Aubenas	Occitan, Val d'Aran
I	COND	parla'rjɔ	cantarié	canteria	parlariá	tirariá	cantarie
	IPFV.IND	par'laβɔ	cantavo	cantava	parlava	tirava	cantava
IV	COND	dyrβi'rjɔ	fenirié	finisseria	legiriá	feniriá	servirie
	IPFV.IND	dyrβi'sjɔ	fenissié	finissia	legissiá	fenissiá	serviva
III	COND	me'trjɔ	metrié	bateria	metriá	rendriá	meterie
	IPFV.IND	me'tjɔ	metié	batia	metiá	rendiá	meteva

Table 2. Comparison of 3SG COND and IPFV.IND forms for continuants of Latin conjugations I, IV and III in the Occitan varieties of Graulhet (Languedoc: Lieutard, 2004), Var (Provence: Domenge, 2002), Nice (Nice: Toscano, 1998), Nontron (Limousin: Reydy, 2008), Aubenas (Vivarais: Moulin, 2006), Val d'Aran (Gascony: Carrera, 2007). Orthography replicates that of the source material. Exponents shared across COND and non-first-conjugation IPFV.IND forms are highlighted in bold face.

As can be seen from Table 2, the phonological form of the desinences varies by region, but the basic distribution pattern, in which COND and non-first-conjugation IPFV.IND forms pattern together, contrasting with first-conjugation IPFV.IND forms, remains constant across varieties, with the exception of Gascony. In the latter area, it is common for a three-way conjugational distinction to be preserved in the IPFV.IND (compare also 3SG forms *cantava* vs. *sentiva* vs. *batèva/batè* in Béarn: Romieu & Bianchi, 2005, p. 277), and for the COND to present a unique series of desinences (compare also *cantaré*, *sentiré*, *bateré* in Béarn: Romieu & Bianchi, 2005, p. 278). The history and behaviour of these forms falls outside the scope of the present study.

Note also that in the conjugational systems discussed here, distinction between continuants of Latin conjugations IV and III is based entirely on stem formatives: continuants of IV are characterised by a theme vowel /i/ and/or a thematic 'augment', which usually takes the form /is/ in the IPFV.IND (Esher, 2016).

## 2.2. Historical background

The Occitan two-way system represents a reduction of the three-way contrast found in Latin IPFV.IND forms and exemplified in Table 3. Reflexes of Latin first-conjugation IPFV.IND forms in -ĀBAM, etc. have remained distinct, whereas -ĪEBAM, etc. characteristic of the fourth conjugation was reduced to -ĒBAM, etc. (Ronjat, 1937, p. 71), thus falling together with etymological -ĒBAM, etc. in the second and third conjugations. The COND, due to its historical source, patterns with the -ĒBAM, etc. group. Exemplar IPFV.IND forms for mediaeval Occitan are shown in Table 4, illustrating the two-way contrast which is continued by modern varieties.

## FORMS

	cantāre ‘sing’, I	habēre ‘have’, II	mittere ‘send’, III	audire ‘hear’, IV
1SG	cantābam	habēbam	mittēbam	audiēbam
2SG	cantābās	habēbās	mittēbās	audiēbās
3SG	cantābat	habēbat	mittēbat	audiēbat
1PL	cantābāmus	habēbāmus	mittēbāmus	audiēbāmus
2PL	cantābātis	habēbātis	mittēbātis	audiēbātis
3PL	cantābant	habēbant	mittēbant	audiēbant

Table 3. Exemplar IPFV.IND forms for Latin conjugations I-IV.

	<i>cantar</i> ‘sing’	<i>aver</i> ‘have’	<i>metre</i> ‘put’	<i>auzir</i> ‘hear’
1SG	cant <u>a</u> va	av <u>i</u> a	met <u>i</u> a	auz <u>i</u> a
2SG	cant <u>a</u> vas	av <u>i</u> as	met <u>i</u> as	auz <u>i</u> as
3SG	cant <u>a</u> va	av <u>i</u> a	met <u>i</u> a	auz <u>i</u> a
1PL	cantav <u>a</u> m	avi <u>a</u> m	meti <u>a</u> m	auzi <u>a</u> m
2PL	cantav <u>a</u> tz	avi <u>a</u> tz	meti <u>a</u> tz	auzi <u>a</u> tz
3PL	cantav <u>a</u> n	avi <u>a</u> n	meti <u>a</u> n	auzi <u>a</u> n

Table 4. Exemplar IPFV.IND forms for mediaeval Occitan reflexes of the Latin lexemes in Table 3 (Anglade, 1921, pp. 271, 285, 294, 318, 396; Skårup, 1997, pp. 98-99). Vowels bearing primary stress are underlined. Palatalisation of d &gt; z before i constitutes a regular sound change in these varieties.

The sound changes undergone by first and non-first-conjugation IPFV.IND forms are deserving of comment, since these forms differ not only in theme vowel but in their treatment of intervocalic -B-. In first-conjugation forms, -B- undergoes lenition to [β] or [v], a development which is demonstrably regular (compare e.g. FABA > [faβɔ], [fava] ‘bean’). In forms continuing -ĒBAM, etc., by contrast, intervocalic -B- is deleted, a change which is usually considered idiosyncratic.

Historical grammars of Gallo-Romance varieties (e.g. Anglade, 1921, p. 286; Fouché, 1931, p. 623; Ronjat, 1937, p. 171; Zink, 1989, p. 74; Buridant, 2000, p. 271) typically seek to motivate the deletion of -B- in non-first-conjugation IPFV.IND forms in isolation, assuming that the COND forms will automatically undergo identical developments. According to these grammars, the loss of -B- first occurs by dissimilation in the IPFV.IND of verbs with a stem in -B-, particularly HABĒBAM ‘have.IPFV.IND.1SG’ etc., but also DEBĒBAM ‘have\_to.IPFV.IND.1SG’, BIBĒBAM ‘drink.IPFV.IND.1SG’, SCRIBĒBAM ‘write.IPFV.IND.1SG’ etc., and is then spread by analogy to other non-first-conjugation IPFV.IND forms (together with the COND, presumably).

Yet this account is unconvincing (Lecoy, 1967, p. 280), from both dissimilatory and analogical points of view (see also Posner, 1961, p.18<sup>3</sup>). The dissimilation claim is based on Grammont’s (1895,

<sup>3</sup> Some scholars have suggested an articulatory explanation hinging on the difference of vowel quality between low [a] and high front [i], [e]: this view is adopted by Posner (1961), who additionally considers -ĒBAM and -ĪBAM to have merged as \*iba rather than \*eba.

p. 79) law XVII, but the predictions of this law differ substantially from the development claimed for HABĒBAM, etc. since, according to Grammont, where two same intervocalic consonants occur successively, it is the first consonant of the pair (not the second) which is liable to be dissimilated (not deleted).

The analogy claim is similarly problematic. According to the general principles identified by Bybee (e.g. 1985, 2001) and Albright (2009), patterns of high lexical type frequency constitute good candidates for models for analogical change, while patterns of high token frequency but low lexical type frequency may resist change, or may undergo idiosyncratic changes (compare e.g. Fr. *mon sieur* ‘my lord’ [mɔ̃ sjœʁ] vs. *monsieur* ‘Mr’ [msjø]; Cast. *Vuestra Merced* ‘Your Grace’ > *Usted* ‘you [polite/formal]’), but do not in general serve as models for change to other items. For the early Romance case under discussion, it may be estimated that non-first-conjugation items represent approximately half of verb lexemes<sup>4</sup>, while around 50 verb lexemes have stems in -B-<sup>5</sup>. The traditional account, in which loss of -B- from -ĒBAM, etc. forms originates in verb lexemes with stems in -B-, thus entails the improbable claim that the IPFV.IND forms of half of all verb lexemes, together with the COND forms of all verb lexemes (in both cases several thousand items), were remodelled based on a few dozen lexemes.

An alternative and more convincing proposal by Togeby (1964, p. 4) asserts that the loss of -B- from -ĒBAM, etc. forms began instead in the COND, due to the grammaticalisation of HABEBAM, etc. from auxiliary to desinence. This case of grammaticalisation is known to involve significant phonological reduction of the periphrases in which the Romance FUT and COND originate, with deletion of unstressed vowels from the erstwhile lexical infinitive and deletion of the stem of HABĒRE (e.g. MITTERE HABEBAT > Occ. *metriā*/\**metraviā*)<sup>6</sup>. Loss of intervocalic -B- would, under Togeby’s view, form part of such phonological reduction.

The resulting forms in \*ea < -EBA- are then assumed to have spread from the COND to all non-first-conjugation IPFV.IND forms: “[d]’après ce modèle [the COND], l’imparfait a également réduit sa désinence à -ea, -ia, mais seulement dans les conjugaisons dont les désinences correspondent à celles du conditionnel”<sup>7</sup> (Togeby, 1964, p. 4). It is not clear whether Togeby himself envisages the mechanism of spread to be morphological analogy or diffuse sound change. Indeed, one of the striking

<sup>4</sup> For Latin, Ernout (1927, pp. 124, 143, 138) estimates 3620 lexemes in conjugation I, 570 in conjugation II and 2400 in conjugation III; regrettably no figure is given for conjugation IV. *Wiktionary* lists 2608 lexemes in conjugation I, 531 in conjugation II, 1786 in conjugation III and 334 in conjugation IV, plus a further 166 lexemes classed as ‘irregular’ (<[https://en.wiktionary.org/wiki/Category:Latin\\_verbs\\_by\\_inflection\\_type](https://en.wiktionary.org/wiki/Category:Latin_verbs_by_inflection_type)>, accessed 16 September 2018). A search of the lemmatiser *Collatinus* yields approximately 1698 lexemes of conjugation I, 301 in conjugation II, 1382 in conjugation III and 199 in conjugation IV (<https://outils.bibliissima.fr/fr/collatinus/>, version 11 accessed 16 September 2018). While the raw figures differ, the ranking of conjugations by size is consistent, and both the *Wiktionary* and *Collatinus* counts suggest that around 48% of verb lexemes belong to the first conjugation and around 52% to the other conjugations.

<sup>5</sup> Estimate based on *Collatinus*.

<sup>6</sup> This point is discussed in more detail by Matthews (1982), based on Ibero- and Italo-Romance data.

<sup>7</sup> ‘Following this model [the COND], the imperfect also reduced its desinence to -ea, -ia, but only in the conjugations whose desinences match those of the conditional’ [my translation].

aspects of his proposal is its concision, a testimony to the strength of the implicative relationship between COND and non-first-conjugation IPFV.IND desinences. It is not *a priori* self-evident that novel COND forms in \*ea should constitute a suitable model for conservative IPFV.IND forms in -EBA-, yet Togeby's analysis offers no justification for the spread of \*ea from COND to IPFV.IND, instead taking it as axiomatic that COND and non-first-conjugation IPFV.IND desinences should consistently display and maintain identity.

In practice, diffuse sound change is a more plausible candidate mechanism for this development than morphological analogy. The diachrony of Maiden's well-documented patterns repeatedly shows that, for a given set of paradigm cells forming a metamorphome, a sound change which causes differentiation between two subsets of these cells ordinarily leads to a novel morphological generalisation splitting the metamorphome in two, rather than to analogical levelling restoring identity of exponence between the cells<sup>8</sup>. It is thus improbable that the identity of COND and IPFV.IND desinences, if initially morphomic and compromised by phonological innovation in the COND, should have been restored by morphological analogy spreading the innovative forms to the IPFV.IND. The spread of \*-ea, etc. from the COND to the IPFV.IND is more plausibly explained as a diffuse phonological change, with loss of -B- from the IPFV.IND beginning while there is still considerable variation between forms with and without -B- in the COND (and thus forms with -B- still occur sufficiently often in the COND for a formal similarity with the IPFV.IND to be perceived).

In their subsequent history, the phonological similarity of COND and non-first-conjugation IPFV.IND desinences predisposes them to undergo the same sound changes as each other, though these may vary by region. For instance, the regular continuant of -ĒBAT is [je] in Provence (e.g. *metrié* 'put.COND.3SG', *metié* 'put.IPFV.IND.3SG' in Table 2, also Ronjat, 1930, p. 390, 1937, p. 172), [jɛ] in the eastern Languedoc (e.g. *vendriè* 'sell.COND.3SG', *vendiè* 'sell.IPFV.IND.3SG' in Sète: Thérond, 2002, pp. 156-157) and [jɔ] in much of the western Languedoc (e.g. *vendriá* [bënd'rjɔ] 'sell.COND.3SG', *vendiá* [bënd'rjɔ] 'sell.IPFV.IND.3SG', in the variety of Roussayrolles: *ALLOc* survey point 81.01). As well as the raising of final /a/ and the reduction of /i/ to /j/, these forms have undergone a stress shift, in which primary stress has moved from the penult to the final syllable (Ronjat, 1937, p. 172). The inherited accentuation pattern with stress on the penult in the singular and 3PL forms (as in Table 4) survives only in certain varieties of the Pyrenees (e.g. Massat: Laurent, 2001, p. 13, pp. 28-29) and of the Nice area (Dalbera, 1994, also section 3.2 below); in some Pyrenean varieties the final unstressed vowel itself undergoes deletion in closed syllables, thus *bastía* [bas'ti.ə] 'build.IPFV.IND.1SG/3SG', *bastiría* [basti'ri.ə] 'build.COND.1SG/3SG' vs. *bastís* [bas'tis] 'build.IPFV.IND.2SG', *bastirís* [basti'ris]

<sup>8</sup> Consider, for example, the split of Latin *imperfectum* forms following context-sensitive palatalisation, which gives rise to Maiden's L-pattern [metamorphome consisting of 1SG.PRS.IND and all PRS.SBJV forms (see Maiden, 2009a, 2018); the label is deliberately arbitrary]; or the split of synthetic future and conditional forms in western varieties of Occitan, following context-sensitive reduction of consonant clusters (Esher, 2015a).



‘build.COND.2SG’, *bastín* [bas'tĩn] ‘build.IPFV.IND.3PL, *bastirín* [basti'rĩn] ‘build.COND.3PL’ in the variety of Quérigut (*ALLOc* survey point 09.33).

While these changes affect COND and non-first-conjugation IPFV.IND forms equally, they are not confined to these categories or indeed to the verb: raising of final unstressed /a/, stress shift and /i/ > /j/ are found in nouns presenting the same phonological context, e.g. in the western Languedoc *porcariá* [purka'rjɔ] ‘pigsty’, *ALLOc* map 440; *resegariá* [resega'rjɔ] ‘sawmill’, *ALLOc* map 777). As general phonological changes applying across the language, they provide no information about what morphological relationship, if any, speakers perceive between COND and non-first-conjugation IPFV.IND forms.

### 3. Analogical changes sensitive to the existing pattern of identity between COND and non-first-conjugation IPFV.IND forms in Occitan

In the Gallo-Romance varieties considered here, unequivocally morphological, analogical change applying to all and only COND and non-first-conjugation IPFV.IND forms was found to be much rarer than such change applying to all and only the cells of a given metamorpheme defined by root or stem material (for which latter see the extensive survey by Maiden, 2018). Among Occitan varieties with a two-way conjugational distinction in the IPFV.IND, this study found three cases in which analogical change appears to show sensitivity to a relationship between COND and non-first-conjugation IPFV.IND forms, namely: the generalisation of final *-i* as an exponent of 1SG, widespread across the Languedoc; the spread of a thematic formative *-av-* into 1PL and 2PL COND and non-first-conjugation IPFV.IND forms in varieties of the Nice area; and the replacement of [a] by [ɔ] across 1PL and 2PL COND and non-first-conjugation IPFV.IND forms in varieties of the Toulouse area. This section sets out the developments observed in historical and comparative dialect data, prior to theoretical discussion in section 4.

#### 3.1. Generalisation of final *-i* across 1sg forms

In many varieties of Occitan, 1SG forms in most or all paradigm categories present an exponent *-i*, realised [i] or [j] (Olivieri & Sauzet, 2016, pp. 333-338). This exponent is etymological in PFV.PST.IND.1SG forms, in all FUT.1SG forms, and in the PRS.IND forms of a subset of lexemes: first-conjugation lexemes with a stem in *-i* e.g. \**cambio* > *cambi* ‘change.PRS.IND.1SG’, continuants of Latin conjugation IV, e.g. AUDIO > *auzi* ‘hear.PRS.IND.1SG’, lexemes with a stem-final consonant cluster requiring a supporting vowel, e.g. \**simulo* > *sembli* ‘seem.PRS.IND.1SG’, and irregular lexemes with *-E-* in hiatus, e.g. DEBEO > *dei* ‘owe.PRS.IND.1SG’ (the outcomes shown are for mediaeval Occitan, following Sutherland, 1959, pp. 39-40 and Skårup, 1997, pp. 93-95). From the mediaeval period onward, the exponent is progressively extended to the PRS.IND forms of remaining lexemes, and to other TAM [tense, aspect, mood] categories, in some varieties colonising all TAM categories (Field, 2003; Esher, 2017a).

Study of diatopic variation in linguistic atlas data across the Languedoc region (Esher, 2017a, 2017b) reveals that in any given system with a two-way distinction in the IPFV.IND, the COND.1SG and non-first-conjugation IPFV.IND.1SG forms systematically pattern together. Either all such forms have -*i* (e.g. variety of Puycelsi, Table 5) or none do (e.g. variety of Cordes, Table 5); no intermediate systems are attested.

	<i>cantar</i> ‘sing’, I		<i>bastir</i> ‘build’, IV		<i>vendre</i> ‘sell’, III	
	IPFV.IND	COND	IPFV.IND	COND	IPFV.IND	COND
Cordes	kānt'aβi	kāntarj'o	bastisj'o	bastirj'o	bēndj'o	bēndrj'o
Puycelsi	kānt'aβi	kāntarj'oj	bastisj'oj	bastirj'oj	bēndj'oj	bēndrj'oj

Table 5. IPFV.IND.1SG and COND.1SG forms for exemplars of the major conjugational types in the varieties of Cordes (*ALLOc* survey point 81.02) and Puycelsi (*ALLOc* survey point 81.03).

The consistency of behaviour between COND and non-first-conjugation IPFV.IND forms is striking in the context of analogical extension of -*i*. In this development, the only other distinct paradigm categories found to pattern together across the survey area are the PRS.IND and PRET of all conjugations, which systematically present -*i*, often for etymological reasons as discussed above; note also that in some varieties the etymological -*i* of the FUT has fallen, and that in general the correlation between presence of -*i* in the FUT and in the COND is not strong. The exceptionless correlation between COND and non-first-conjugation IPFV.IND forms with respect to the presence or absence of -*i* is thus remarkable, particularly since -*i* in these categories can be neither etymological nor the product of regular sound change. The presence of -*i* results from an analogical change which treats COND.1SG and non-first-conjugation IPFV.IND.1SG forms as a single block; such treatment indicates a strong formal, implicational relationship between the forms.

### 3.2. Analogical extension of -[av]- in Nissart

In the variety of Nice, variation is found in the 1PL and 2PL forms of the COND and IPFV.IND, between the historically expected forms in -[i'ãŋ], -[i'as] and forms of more recent, analogical origin, in -[ia'vãŋ], -[ia'vas]. Illustrative examples are given in Table 6.

	<i>parlar</i> ‘speak’, I		<i>finir</i> ‘finish’, IV		<i>aver</i> ‘have’, III	
	IPFV.IND	COND	IPFV.IND	COND	IPFV.IND	COND
1SG	parl <u>avi</u>	parler <u>i</u>	finiss <u>i</u>	finisser <u>i</u>	av <u>i</u>	aur <u>i</u>
2SG	parl <u>aves</u>	parler <u>ies</u>	finiss <u>ies</u>	finisser <u>ies</u>	av <u>ies</u>	aur <u>ies</u>
3SG	parl <u>ava</u>	parler <u>ia</u>	finiss <u>ia</u>	finisser <u>ia</u>	av <u>ia</u>	aur <u>ia</u>
1PL	parlav <u>am</u>	parler <u>iam</u>	finiss <u>iam</u>	finisser <u>iam</u>	avi <u>am</u>	aur <u>iam</u>
		parleriav <u>am</u>	finissiav <u>am</u>	finisseriav <u>am</u>	aviav <u>am</u>	auriav <u>am</u>
2PL	parlav <u>atz</u>	parleri <u>atz</u>	finiss <u>iatz</u>	finisseri <u>atz</u>	avi <u>atz</u>	auri <u>atz</u>
		parleriav <u>atz</u>	finissiav <u>atz</u>	finisseriav <u>atz</u>	aviav <u>atz</u>	auriav <u>atz</u>
3PL	parlav <u>an</u>	parler <u>ian</u>	finiss <u>ian</u>	finisser <u>ian</u>	avi <u>an</u>	aur <u>ian</u>

Table 6. IPFV.IND and COND forms for continuants of Latin conjugations I, IV and III, in the variety of Nice (Toscano, 1998), showing variation in 1PL and 2PL COND and non-first-conjugation IPFV.IND forms due to analogical extension of the formative [av] from the first-conjugation IPFV.IND. Orthography is the usual standard for this area. Vowels bearing primary stress is indicated with an underline.

Whether forms in  $[-ia'v\tilde{a}\eta]$ ,  $[-ia'vas]$  result from the spread of a formative [av] (as assumed by Ronjat, 1937, p. 171) or of entire desinences  $[-a'v\tilde{a}\eta]$ ,  $[-a'vas]$ , the analogically extended material must originate from first-conjugation IPFV.IND forms in  $[-av]$ -, the only area of the verb system in which such a formative was historically present (see e.g. reconstructed paradigms given by Dalbera, 1994, pp. 588, 590, 609). The direction of change is confirmed by the fact that the formative  $[-i]$ -, characteristic of COND and non-first-conjugation IPFV.IND forms, is not spread to first-conjugation IPFV.IND forms (this study found no attestations of forms such as \*parliavam ‘speak.IPFV.IND.1PL’). This fact also indicates that the development is not a general levelling of IPFV.IND and COND forms, but is instead restricted to COND and non-first-conjugation IPFV.IND forms, a set of cells which is uniquely characterised only by the form of its exponents.

The inflectional distribution illustrated in Table 6 is highly localised, being confined to the immediate area of Nice. In a few of the surrounding varieties, such as that of Tende,  $[-av]$ - has spread across IPFV.IND forms of all conjugations, without affecting the COND (Dalbera, 1994, p. 621). This development differs from that observed in Nice, since in the variety of Tende  $-av-$  replaces inherited  $-i-$ , giving e.g. [venda'vamu] ‘sell.IPFV.IND.1PL’, [venda'vai] ‘sell.IPFV.IND.2PL’ (Dalbera, 1994, p. 621), as opposed to the corresponding Nissart forms *vendiam*, *endiavatz* which present both formatives. Nevertheless, it invites the interpretation that the development observed in Nice has two components: firstly, the generalisation of a given exponent across a functionally coherent category [IPFV.IND.1PL or IPFV.IND.2PL respectively], from the conjugation with highest lexical type frequency to conjugations of lower type frequency; and secondly, the spread of this exponent to COND forms, restoring the strong implicational relationship between COND and non-first-conjugation IPFV.IND forms. Such an analysis is supported by the presentation of the variant forms in dialect descriptions:  $av$ -forms tend to be recommended over  $av$ -less forms in the IPFV.IND, while  $av$ -less forms are preferred in the COND, indicating that the  $av$ -forms are less strongly established in the COND than in the IPFV.IND. Moreover, there

are no attestations of varieties in which *-iavam*, *-iavatz* forms are present in the COND but absent from the IPFV.IND. Taken together, these data support a view under which the extension of *-av-* is mediated via the non-first-conjugation IPFV.IND, without direct influence of the first-conjugation IPFV.IND on the COND; the key role of the non-first-conjugation IPFV.IND again points to the importance of the formal, implicational relationship.

A striking aspect of the Nissart development is the restriction of *-av-* to 1PL and 2PL forms. In its etymological distribution, the formative *-av-* is characteristic of all first-conjugation IPFV.IND forms, and is not associated with any particular person/number value(s). One might therefore expect analogical extension to spread *-av-* to all COND and non-first-conjugation IPFV.IND cells, yet instead only 1PL and 2PL forms are affected. It may be significant that, in the paradigm categories concerned, 1PL and 2PL forms are distinguished from the other person/number forms with respect to stress assignment: primary stress is final in 1PL and 2PL forms, but penultimate in the other forms, thus in practice the extension is consistently limited to unstressed *-av-*<sup>9</sup>.

### 3.3. Levelling of final vowels in Haute-Garonne

In many varieties of the Languedoc (e.g. Graulhet: Lieutard, 2004 and Table 7) the COND and non-first-conjugation IPFV.IND present a contrast between final stressed [a] in the 1PL and 2PL forms, and final stressed [ɔ] in the singular and 3PL forms. This contrast is due to a combination of the sound changes discussed in section 2 above. The alternation in vowel quality arises at an early period, when final /a/ undergoes context-sensitive differentiation according to stress: when tonic the realisation [a] is maintained, while when post-tonic the vowel raises to [ɔ] (see reconstructed forms in Table 7). At a later period, when the context-sensitive changes to quality were no longer active, stress shifted from the penult to the final syllable in the singular and 3PL forms of the COND and non-first-conjugation IPFV.IND, resulting in the distribution typically found today.

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<sup>9</sup> Compare the case of analogical levelling discussed in section 3.3., where no stress alternation is present and distinctions of vowel quality are eliminated.

	<i>partir</i> , reconstructed		<i>durbir</i> , Graulhet		<i>bastir</i> , Merville	
	IPFV.IND	COND	IPFV.IND	COND	IPFV.IND	COND
1SG	part'iɔ	-iɔ	dʏrβisj'ɔ	dʏrβirj'ɔ	bastisj'ɔj	bastij'ɔj
2SG	part'iɔs	-iɔs	dʏrβisj'ɔs	dʏrβirj'ɔs	bastisj'ɔs	bastij'ɔs
3SG	part'iɔ	-iɔ	dʏrβisj'ɔ	dʏrβirj'ɔ	bastisj'ɔ	bastij'ɔ
1PL	parti'am	-i'am	dʏrβisj'an	dʏrβirj'an	bastisj'ɔ̃n	bastij'ɔ̃n
2PL	parti'ats	-i'ats	dʏrβisj'as	dʏrβirj'as	bastisj'ɔts	bastij'ɔts
3PL	part'iɔn	-iɔn	dʏrβisj'ɔw	dʏrβirj'ɔw	bastisj'ɔ̃n	bastij'ɔ̃n

Table 7. IPFV.IND and COND forms for continuants of Latin conjugation IV: *partir* ‘leave’ prior to stress shift (based on Anglade, 1921, pp. 285-286; Skårup, 1997, pp. 98, 103), *durbir* ‘open’ in the modern variety of Graulhet (Tarn: Lieutard, 2004, p. 229) and *bastir* ‘build’ in the modern variety of Merville (Haute-Garonne: *ALLOc* survey point 31.01).

An exception to the common pattern is found in the area of Toulouse, where Ronjat (1937, p. 172) notes that the 1PL and 2PL endings in the COND and non-first-conjugation IPFV.IND are not *-ian*, *-iats* as expected, but *-ion*, *-iots*. Such forms are independently attested in linguistic atlas data: forms in [jɔ̃n], [jɔts] are found at eight of the ten *ALLOc* survey points in the département Haute-Garonne, including Merville<sup>10</sup> (*ALLOc* 31.01, Table 7), while the other two points continue the historically expected pattern of alternation between [a] and [ɔ].

The development must be analogical, since there is no phonological motivation for the replacement of [jɔ̃n], [jɔts] by [jɔ̃n], [jɔts]: final stressed [jɔ̃n], [jɔts] remain entirely licit in these varieties, e.g. *vendiam* [bɛ̃n'djɔ̃n] ‘sell.PRS.SBJV.1PL’, *vendiatz* [bɛ̃n'djɔts] ‘sell.PRS.SBJV.2PL’ in the varieties of Merville<sup>11</sup>, Mauressac (*ALLOc* 31.21) and Aignes (*ALLOc* 31.23).

No model for this change, though, is offered by etymological 1PL and 2PL desinences elsewhere in the paradigm. In the variety of Toulouse (Table 8), the exponents of highest paradigmatic type frequency for 1PL and 2PL forms in general, and indeed for 1PL and 2PL forms with final stress, are [ɛ̃n], [ɛts], while the first-conjugation PRS.IND forms, of high lexical type frequency, are [ʼɔ̃n], [ʼɔts]; [ɔ̃n] is found only in 3PL forms, which are rarely syncretic with 1PL forms.

Instead, this appears to be a case of analogical levelling, generalising the vowel [ɔ] found in the singular and 3PL desinences of the COND and non-first-conjugation IPFV.IND to all desinences of these categories. The result is a reduction of allomorphy within the relevant series of desinences, reinforcing the formal similarity between the constituent cells.

<sup>10</sup> Also Toulouse (31.12), Clermont-le-Fort (31.20), Mauressac (31.21), Mascarville (31.30), Montgaillard-Lauragais (31.31), Dreuilhe (31.32), Aignes (31.33), and areas of the départements Ariège and Aude. The survey points Villaudric (31.10) and Garidech (31.11), present, like the variety of Graulhet, the historically expected pattern of alternation between [a] and [ɔ].

<sup>11</sup> A variant form [bɛ̃ndɔts] ‘sell.PRS.SBJV.2PL’ is given for Merville. This form, lacking yod and bearing stress on the root as opposed to the final syllable, is an analogical creation based on the corresponding singular and 3PL forms [bɛ̃ndɔj], [bɛ̃ndɔs], [bɛ̃ndɔ], [bɛ̃ndɔ̃n].

	PRS.IND	IPFV.IND	PRS.SBJV	PRET	IPFV.SBJV	FUT	COND
1SG	k'ānti	kānt'a.i	k'ānte	kānt'eri	kānt'esi	kāntar'e	kāntaj'ɔ
2SG	k'āntəs	kānt'a.əs	k'āntes	kānt'erəs	kānt'eses	kāntar'as	kāntaj'əs
3SG	k'āntə	kānt'a.ə	k'ānte	kānt'et	kānt'ese	kāntar'a	kāntaj'ə
1PL	kānt'ān	kānt'a.ēn	kānt'ēn	kānt'erēn	kānt'esēn	kāntar'ēn	kāntaj'ōn
2PL	kānt'ats	kānt'a.ets	kānt'ets	kānt'erets	kānt'esets	kāntar'ets	kāntaj'əts
3PL	k'āntōn	kānt'a.ōn	k'āntēn	kānt'erōn	kānt'esēn	kāntar'ān	kāntaj'ōn
1SG	bast'isi	bastisj'ɔ	bast'iske	bastisk'ε.i		bastir'ε	bastij'ɔ
2SG	bast'ises	bastisj'əs	bast'iskes	bastisk'ε.əs	bastisk'eses	bastir'as	bastij'əs
3SG	bast'is	bastisj'ə	bast'iske	bastisk'et	bastisk'ese	bastir'a	bastij'ə
1PL	bastis'ēn	bastisj'ōn	bastisk'ēn	bastisk'ε.ēn	bastisk'esēn	bastir'ēn	bastij'ōn
2PL	bastis'ets	bastisj'əts	bastisk'ets	bastisk'ε.ets	bastisk'esets	bastir'ets	bastij'əts
3PL	bast'isēn	bastisj'ōn	bast'iskēn	bastisk'ε.ōn	bastisk'esēn	bastir'ān	bastij'ōn
1SG	b'ēndi	bēn'djɔ	b'ēnde	bēnd'ε.i	bēnd'esi	bēndr'ε	bēndr'ɔ
2SG	b'ēndes	bēn'djəs	b'ēndes	bēnd'ε.əs	bēnd'eses	bēndr'as	bēndr'əs
3SG	b'ēnt	bēn'djə	b'ēnde	bēnd'et	bēnd'ese	bēndr'a	bēndr'ə
1PL	bēnd'ēn	bēn'djōn	bēnd'ēn	bēnd'ε.ēn	bēnd'esēn	bēndr'ēn	bēndr'ōn
2PL	bēnd'ets	bēn'djəts	bēnd'ets	bēnd'ε.ets	bēnd'esets	bēndr'ets	bēndr'əts
3PL	b'ēndēn	bēn'djōn	b'ēndēn	bēnd'ε.ōn	bēnd'esēn	bēndr'ān	bēndr'ōn

Table 8. Finite synthetic forms of *cantar* ‘sing’, *bastir* ‘build’ and *vendre* ‘sell’ in the variety of Toulouse (*ALLOc* survey point 31.12). Note that the IPFV.IND forms [kān'ta.i] etc., and the third-conjugation PRET forms [bēn'de.i] etc., result from a regular sound change specific to this area, in which intervocalic β > 0. Variation in PRET exponents according to inflectional class is rare but not unknown in Occitan varieties of the Languedoc area. The IPFV.SBJV.1SG form for *bastir* is not given in the transcriptions of the fieldwork interviews; [bastisk'esi] would be expected.

While the internal formal consistency of the series is increased by the analogical extension of /jɔ/, the overall distribution of the series is affected by a separate development: a sound change which reduces the sequence /rj/ in COND forms<sup>12</sup> to either /r/ or /j/ (Esher, 2015a). Which element is deleted depends on the preceding segments: in general, /r/ is deleted where the sequence follows a vowel, while /j/ is deleted where the sequence follows a consonant, hence in the variety of Toulouse (Table 8) [kāntarj'ɔ] > [kāntaj'ɔ] and [bastirj'ɔ] > [bastij'ɔ] but [bēndrj'ɔ] > [bēndr'ɔ]<sup>13</sup>. As a result, a subset of COND forms in the modern varieties of this area lack the glide /j/ common to all other COND and non-first-conjugation IPFV.IND forms.

<sup>12</sup> The change does not affect nouns in -[arj'ɔ], nor IPFV.IND forms with stems in -[r]- such as *moríá* [murj'ɔ], ‘die.IPFV.IND.3SG’.

<sup>13</sup> Treatment of the cluster /rj/ following a falling diphthong varies by area: e.g. in the *ALLOc* data *plauríá* ‘rain.COND.3SG’ is realised [plawr'ɔ] in Toulouse (31.12), [plawj'ɔ] in Merville (31.01).

### 3.4. Summary

In the three developments described above, systematic similarities of exponence between COND and non-first-conjugation IPFV.IND forms are variously maintained (extension of *-i* and *-av-*) and reinforced (levelling to *-ɔ/*) in cases of analogical change.

The association of common semantic content with the IPFV.IND and the COND (see e.g. Iatridou, 2000; Touratier, 1996; Vincent, 2013) may be a contributing factor in such parallelism, but is not sufficient to explain the observed distributions, in which first-conjugation and non-first-conjugation IPFV.IND forms are treated differently: while inflectional classes may align to some extent with function, they are intrinsically a phenomenon of autonomous morphology (Aronoff, 1994). The changes observed also show sensitivity to morphosyntactic feature values (notably 1SG) and phonological properties (stress assignment, which is lexically specified in the varieties discussed here).

The picture which emerges is of implicational relationships between paradigm cells, which have psychological reality for speakers demonstrated by their diachronic productivity as templates: for any given person/number value, COND and non-first-conjugation IPFV.IND forms systematically share exponents; across person/number values, COND and non-first-conjugation IPFV.IND forms may share exponents.

## 4. Comparison between the study data and established metamorphomes

The dialect data outlined in section 3 are evocative of implicational, morphomic relationships insofar as they illustrate an inherited identity between exponents being preserved over time and referred to in the process of analogical change: while the relationships themselves are defined synchronically by linguists (see e.g. Aronoff, 1994; Round, 2015) and presumably exist synchronically for speakers, diachronic persistence is a valuable indicator of their psychological reality (Maiden, 2018, pp. 12-13). The descriptions found in historical grammars are similarly indicative of strong implicational relationships between COND forms and non-first-conjugation IPFV.IND forms: so commonplace and systematic is this identity that many authors consider a reference to the IPFV.IND to provide a reliable, informative and sufficient description of the COND.

For these reasons, it would be desirable to formalise the relationship described here as a morphomic object which is part of the structure of the inflectional system, similar to Maiden's patterns. Indeed, neither Aronoff's (1994) initial conception of morphomic functions, nor Round's (2015) notion of metamorphomes as grouping paradigm cells based on exponence, specifies any particular type of exponent to be crucial; thus the existence of metamorphomes based on desinential rather than root material is not a priori excluded. Yet such a formalisation should also account for a number of apparent or real contrasts between the relationships described here and existing examples of metamorphomic phenomena. The nature and significance of these contrasts are addressed over the following sections.

#### 4.1. Characteristics of metamorphomes discussed in existing literature

In a vast comparative-historical survey of Romance data, Maiden (e.g. 2009a, 2011a, 2011b, 2016a) identifies a number of metamorphomic patterns for the distribution of inflectional material in the verb paradigm of Romance languages, showing how these patterns act as templates for the distribution of inflectional allomorphy. Once a template is established, its constituent cells systematically pattern together in analogical change, behaviour labelled COHERENCE by Maiden (2005). Furthermore, analogy may operate between the exponents of this set of cells in separate lexemes, such that these exponents come to share a characteristic phonological shape, a phenomenon labelled CONVERGENCE by Maiden (2005).

An illustrative example of such developments is offered by the Romance FUT and COND in the variety of Nice described above (section 3.2, Table 6), which together constitute a metamorphome. Historically, these forms are reflexes of the construction infinitive + ‘have’, and thus systematically share a stem, which is differentiated from the infinitive by early Romance sound changes, and often unique within the inflectional paradigm (compare e.g. \*uolere > *voler* ‘want.INF’ vs. \*uolere HABET > *vorrà* ‘want.FUT.3SG’, \*uolere HABEBAT > *vorria* ‘want.COND.3SG’ in the modern variety of Nice, Toscano, 1998, p. 130). Subsequent analogical changes taking the set of twelve FUT and COND cells as a template include the spread of the augment *-iss-* < *-ISC-* into all twelve cells (contrasting with most other Occitan varieties, in which the augment is not found in either FUT or COND; Esher, 2016a), and the replacement of etymological theme vowels differentiating conjugational class in the FUT and COND by a single theme vowel /e/ characterising this set of cells across conjugations (Esher, 2013); thus, in Nice, *parleria* ‘speak.COND.3SG’, *finisseria* ‘finish.COND.3SG’ replace etymological *parlaria* and *finiria*, conserved in other varieties).

Analogical redistribution of exponents according to metamorphomic patterns is not limited to thematic elements. In other Romance varieties (see e.g. Maiden, 2018), metamorphomes act as templates for suppletive forms, novel root allomorphy, heteroclisis and defectiveness. Additionally, in a few rare cases, inflectional desinences are redistributed according to metamorphomic templates based on roots: in Daco-Romance: Maiden (2009b) documents the spread of an exponent *-sî* originally unique to PLPF.2SG forms into other 2SG cells forming part of the same established metamorphomic pattern as the PLPF.

#### 4.2. Influence on distribution of exponents within the paradigm

In contrast to existing metamorphomes based on lexical roots, which can act as templates for the redistribution of roots, stems, thematic elements and desinences, the identity of COND and non-first-conjugation IPFV.IND desinences does not appear to serve as a template for redistribution of roots or



stems<sup>14</sup>: this study only found examples of analogical redistribution of desinential material (-i) and thematic material (-av-). The apparent restriction on what the template can manipulate may be merely an artefact of the particular data set considered here; alternatively, it may reflect a potentially general property of distributional templates based on similarity of inflectional desinences.

One interpretation of this contrast is simply that if a metamorpheme is inferred by speakers based on a particular type of exponent (e.g. mainly lexical roots or mainly inflectional desinences), speakers are more likely to exploit it as a template for redistributing broadly similar types of exponent. Although there are occasional cases of inflectional desinences being redistributed according to Maiden's patterns, these are overall much less frequent than the cases of root or stem material being similarly redistributed. As Maiden's patterns, which arise as morphological generalisations about the distribution of root allomorphy, are chiefly of use to speakers in organising phenomena which affect the root, it would not be illogical to expect that patterns which arise as morphological generalisations about the distribution of non-root material would be preferentially exploited for organising non-root material.

An alternative interpretation is that templates based on similarity of root (or, at least, lexical) material have wider influence over the distribution of other exponents than templates based on similarity of desinences. Such a view would be congruent with Maiden's hypothesis that the function of metamorphemes is to provide speakers with a predictable means of distributing arbitrary allomorphy associated with a single lexical item (2013, 2018, pp. 310-314): Maiden observes that, in diachrony, metamorphemes persist where their constituent cells share lexical meaning, but may break down where a given inflectional form acquires a lexicalised meaning distinct from that of its original paradigm (2012b, 2018, p. 262). If Maiden is correct, then metamorphomic distributions pertaining to exponents of lexical meaning (chiefly roots) are expected to be of greater value to speakers, and thus more influential in the paradigm, than metamorphomic distributions pertaining to other, less arbitrary material.

An interesting comparator in this regard is Bybee's (1985, p. 35) observation of a crosslinguistic tendency for exponents of tense and aspect to occur nearest to the stem, while exponents of person/number occur furthest from the stem. Bybee maps this ordering to a cline of semantic relevance, from material central to the meaning of the verb form, which occurs in the stem, to material referring to participants, which occurs furthest from the stem (1985, p. 35); but it may also be characterised as a cline of decreasing arbitrariness. Lexical content, associated with the innermost exponents, is inherent to the lexeme and arbitrary by definition (principle of the Saussurean sign); the morphosemantic fea-

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<sup>14</sup> In the variety of Gartempe (Limousin: Quint, 1996), some third-conjugation verbs display syncretism between IPFV.IND and COND forms which is not limited to identity of desinences, but affects the entire inflected wordform, e.g. [nø vādʒä] 'sell.IPFV.IND/COND.1PL'. This phenomenon is due to regular sound change, specifically the loss of -r- in the COND (Esher, 2015a, forthcoming). As such, it provides no evidence for analogical redistribution of root/stem material based on the morphomic relationship between IPFV.IND and COND forms discussed here.

tures tense, aspect and mood are inherent to a given inflected form, and contribute meaning not recoverable from syntactic context; while the morphosyntactic features person and number are (on the verb) contextual, dependent on agreement and visible in syntax<sup>15</sup>. To the extent that exponents of lexical content, morphosemantic features and morphosyntactic features can be discerned in Romance verb paradigms (rife with cumulative exponence, extended exponence and so-called ‘empty morphs’), the same tendency is visible: relevance in Bybee’s sense and arbitrariness both decrease as distance from the stem increases, and one might reasonably expect the influence of metamorphemes to decrease with these properties of the exponents they are based on.

### 4.3. Internal structure, coherence and convergence

The study data illustrate a degree of coherence, without convergence. These findings are largely inconclusive: they do not constitute sufficient evidence either to assert that the set of COND and non-first-conjugation IPFV.IND forms is a single metamorpheme, or to dismiss the possibility.

It is a feature of the analogical extensions discussed in sections 3.1. and 3.2. that they involve only cells with certain person/number values among COND and non-first-conjugation IPFV.IND forms, rather than treating all such forms as a single block. Such phenomena are not unprecedented in the literature on metamorphemes: Maiden (2018, p. 73) gives several examples of allomorphy within metamorphemes in Italo-Romance and Ibero-Romance varieties, and there are also cases in which the domain of a given analogical change is demonstrably the intersection of a metamorpheme with an extramorphological feature (Maiden, 2009b; O’Neill, 2014); though it should be noted that in these examples, robust independent evidence of the metamorphomic status of the entire set of cells was available.

The more fundamental point to be made is that even established metamorphemes, typically discussed with emphasis on the coherence of their constituent cells, are groupings of individual cells, each with its own bundle of feature values and exponents. As such, the groupings retain internal structure: consider, for example, the Daco-Romance patterns described by Maiden (2011c) as a series of probabilistic, implicational relationships between individual cells. The evidence of coherence adduced in this study does not permit discrimination between an analysis in which all relevant person/number forms belong to the same set of cells (cross-cut by the distribution of morphosyntactic feature values and of stress) and an analysis in which each set of person/number forms constitutes a distinct unit.

Examples of convergence (in which the exponents of a given metamorpheme acquire a characteristic phonological shape across lexemes) were not found in this study. Yet the finding is hardly surprising, since the desinences participating in the formal identity are already constant across lexemes: there is effectively no margin for their similarity to increase.

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<sup>15</sup> The terms ‘morphosemantic features’ and ‘morphosyntactic features’ are taken from Corbett (2012, p. 49). Note that Corbett makes no claim about the relative arbitrariness of such features, and that the claim made in this study relates only to such features on verbs.

It should also be noted that certain of the developments illustrate conflicting tendencies: for example, the extension of *-av-* in Nissart increases differentiation between person/number forms within the series, while such differentiation is reduced by the levelling of vowel alternations in the varieties of Haute-Garonne. The comparison of these two cases thus yields no overall generalisation concerning the relationships between the cells involved; indeed, if there is a generalisation to be made at all, it concerns a tendency to align the distribution of segmental allomorphy with the distribution of stress patterns (see e.g. Maiden, 2000; Esher, 2015b).

#### 4.4. Shape, definition and interaction

The most significant difference observed concerns the shape of the distribution: defining the formal relationships of COND and non-first-conjugation IPFV.IND forms requires reference to multiple paradigms, while familiar metamorphomes (although applying to multiple paradigms) can be defined in terms of cells within a single paradigm.

Maiden's patterns can be represented visually in a manner similar to a distribution schema (Pirrelli & Battista, 2000) or stem space diagram (Bonami & Boyé, 2003), by setting out a grid which represents the cells of a single complete verb paradigm, and shading, outlining or indexing cells to indicate which cells are grouped together. A single grid is sufficient to capture a generalisation which holds for multiple lexemes (e.g. in the variety of Nice it is true for each individual lexeme that all its FUT and COND forms share a stem).

By contrast, in the case of the COND and non-first-conjugation IPFV.IND, the similarity of exponents spans multiple paradigms, and concerns different cells in different inflectional classes (only COND cells in first-conjugation lexemes; COND and IPFV.IND cells in most other lexemes; only IPFV.IND cells for certain lexemes in Haute-Garonne). This relation cannot be diagrammed within a single paradigm, or indeed a single conjugational class.

The solution proposed here, in order to account for the data, is to consider that the identity of COND and IPFV.IND cells is not a unitary object, but that there are at least two relations involved. One holds across COND forms of different lexemes: speakers associate *cantariá* with *finiriá*, *vendriá* and so on. The other, a metamorphome in Round's terms, holds between the COND and IPFV.IND of a subset of lexemes: in these lexemes, speakers associate *finiriá* with *finissiá*, *vendriá* with *vendiá*, and so on.

The proposed metamorphome directly conflicts with the distribution found in first-conjugation verbs, which is of somewhat higher lexical type frequency<sup>16</sup>. Conflict between metamorphomes within

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<sup>16</sup> While first-conjugation verbs are certainly more numerous than non-first-conjugation verbs, the precise ratio between the two is unclear. For varieties of the Languedoc, based on Alibèrt (1965), Oliviéri & Sauzet (2016, p. 333) estimate 10,644 first-conjugation lexemes, 1,266 continuants of Latin conjugation IV, and 446 continuants of Latin conjugation III; according to these figures, identity of COND and IPFV.IND desinences would be found in only 14% of verb lexemes. This estimate contrasts considerably, and rather surprisingly, with the results of Tang & Nevins (2013) for diachronic corpora of Spanish, Portuguese and Italian, according to which non-

a given lexeme or across lexemes is not unprecedented. For example, there is overlap between the respective domains of the L-pattern and the N-pattern (Maiden, 2012a); the modern distribution of stem forms in the Italo-Romance preterite results from the intersection of two patterns (Maiden, 2000; Esher, 2015b); and in Occitan varieties such as that of Toulouse (Table 8) the inherited identity between FUT and COND forms is maintained in some lexemes but lost in others, chiefly due to the differential treatment of the cluster [rj] in the COND. In the case of the COND and IPFV.IND, the lower lexical type frequency of this pattern is a plausible contributing factor to its limited influence and productivity, in comparison to Maiden's patterns, many of which are valid across the lexicon.

A further advantage of this account is that it maintains a clear separation between metamorphomes (categories which group cells within a paradigm) and conjugational classes (categories which group paradigm types; Round, 2015), with the two phenomena remaining independent and orthogonal. Such a view is of descriptive advantage for Occitan dialect data (Esher, 2016a) and is equally compatible with theories which consider conjugational class to be a property of entire lexemes (e.g. Spencer, 2013) and theories which assume that conjugational class is a property of stems (e.g. Stump, 2016).

#### 4.5. Summary

Overall, the behaviours of the study data are shown to be compatible with the existence of a metamorphome comprising COND and non-first-conjugation IPFV.IND cells. While salient properties of the putative metamorphome superficially differ from the characteristic behaviour of Maiden's patterns, the same properties are nevertheless attested for various of Maiden's patterns, and the differences are argued to be gradient and circumstantial rather than categorial. Among the advantages of this approach is that, in rejecting a sharp distinction between 'root-metamorphomes' (Maiden's patterns) and paradigmatic distribution patterns based on similarity of inflectional exponents other than roots, it does not require definitive, categorial segmentation of inflectional forms into root and non-root material (see e.g. Spencer (2012) for the theoretical difficulty in doing so, Blevins (2006) and Maiden (2016b) for the multiple, overlapping and changing segmentations which speakers may infer in reality).

### 5. Conclusions

This study discusses the historical origins and diachronic development of COND and non-first-conjugation IPFV.IND desinences, and the formal relationship between them, in varieties of Occitan. The desinences share a common origin, and tend to undergo the same sound changes as each other, due to their similar or identical phonological form and context. While the usual convention of historical descriptions is to present the IPFV.IND as primary in such changes, it is argued (following Togeby, 1964)

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first-conjugation lexemes represent around 30-40% of verb lexemes. Further investigation would be required to determine whether Occitan is indeed such an outlier in Romance with regard to the relative size of conjugations, or whether the disparity is an artefact of the considerable methodological differences between the two studies.

that at least one change, the loss of intervocalic -B- in early Gallo-Romance, is best accounted for by assuming that change begins in the COND.

The forms are also subject to analogical changes, by which the COND and non-first-conjugation IPFV.IND are equally affected. The study describes three examples of extension and levelling attested in varieties of Occitan, in which thematic formatives and person/number desinences are redistributed (no examples of analogical change affecting roots were found).

The behaviour of these forms shows a number of similarities with established Romance metamorphomes, suggesting that the phenomena are indeed related. Examination of apparent differences compared to established metamorphomes indicates that the majority of these differences do not form significant obstacles to analysing the identity of COND and IPFV.IND forms in non-first-conjugation lexemes as a metamorphome. On the contrary, the data discussed here highlight the variability and internal structure of metamorphomes (previously observed by e.g. Maiden, 2011c ; Smith, 2011): familiar, established Romance metamorphomes consist of multiple implicational relationships between individual paradigm cells, and exist alongside distributional patterns of lower frequency, generality and/or predictive value; while analogical changes affecting the distribution of inflectional exponents may make reference to multiple intersecting metamorphomes as well as to extramorphological properties.

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