Phonological variation and change in Romanian

Summary:

Romanian stands out from its sister Romance languages through the conditions of its historical evolution. It has developed in isolation from the other Romance languages, and in cultural and linguistic contact with various non-Romance populations. The history of writing in Romanian, and the earliest preserved texts from the 16th century, also reflect this rather unique heritage. The main dialectal division is marked geographically by the Danube river. The variety developed north of the Danube forms the Daco-Romanian group, while the variety developed south of the Danube includes Aromanian and Megleno-Romanian. The most characteristic changes affecting consonants in the development of Romanian include several patterns of palatalization (with or without affrication, depending on the segments' place and manner of articulation), the emergence of labial-coronal clusters as part of a more general preference for labials, and rhotacism, a major feature of non-standard varieties. Major vocalic changes include patterns of diphthongization, vowel raising before nasals and in the context of trills, which led to the development of two phonemic central vowels, /ɨ/ and /ʌ/. Many of these patterns show variation among different varieties. In all varieties of Romanian, vowel alternations are involved in morpho-phonological alternations. The stress pattern of modern Romanian follows the stress pattern of Balkan Romance. The standard and non-standard varieties differ with respect to their intonation patterns, particularly in the case of yes/no questions.

1. Introduction

This article addresses the theme of phonological variation and change in Romanian mainly from a diachronic and geographic perspective, relying on a rich existing body of research on sound change and dialectal variation. Section 2 begins by situating Romanian in the context of the Romance languages, by highlighting the specific historical and cultural conditions that characterize the emergence of a Romance linguistic variety in the Eastern part of Europe. Sections 3 and 4 review the major consonantal and, respectively, vocalic changes that took place in the evolution of Romanian from Latin. Section 5 is devoted to suprasegmental variation and change, describing differences in the primary stress pattern and in intonation patterns between standard Romanian and several dialectal varieties. Section 6 presents the few existing sociolinguistic studies, and explains the historical political conditions that prevented such research until relatively recently. Section 7 concludes the article by outlining novel lines of research, and emerging research questions.

2. Romanian in time and space

It is important to establish that the oldest attested written text in a Romance language is "Les Serments de Strasbourg", dating back to the year 842, whereas the oldest attested written text in Romanian is a letter written seven centuries later, in 1521. This letter, written in the Cyrillic alphabet, was found in the National County Archives of Brașov, a city in the Northern arch formed by the Carpathian mountain range, center of a Saxon colony of traders. The letter was written by the merchant Neacșu [ne̞akʃu] of Câmpulung, a town across the mountains, on the southern slopes of the Carpathians, and is addressed to Hans Benkner, judge of Brașov, to warn

him of an imminent attack by the Turks. The letter basically says (in a language that is perfectly understandable to a modern-day speaker of Romanian), that Neacșu has learned from reliable sources that the sultan has ordered his commander Mahomet Beg to gather his ships and his army and to sail up the Danube. The letter is secretive, and the planned attack is not stated explicitly, but rather vaguely mentioned as "lucrul Turcilor" ("the usual business of the Turks"), implying that this is not the first time Neacșu is writing to warn Benkner of a similar danger. Neacșu continues to refer to actions that are familiar: "those ships that you know" "will be crossing the Danube at that narrow place". He advises Benkner to be careful with whom he shares this information, to take the warning seriously, and to protect himself and his people accordingly.

The content of Neacșu's letter explains several major aspects about the development of Romanian, that set it apart from the other Romance languages. It explains, for example, why written literature in Romanian took so long to emerge, and why earlier stages of the language are not attested. It also shows that the language managed to survive and to evolve as a Romance language in spite of its isolation from other Romance languages, and in spite of continued contact with a variety of non-Romance ones.

By the time Neacșu was writing to Benkner, the Oaths of Strasbourg had given way to a rich oral literature in the French vernaculars, followed by written literature in subsequent stages of French, that survives in well-preserved texts of the 9th century (*La Séquence de Sainte Eulalie*), of the 12th century (*Le roman de Renart* and *Les lais de Marie de France*), in the works of established authors like Christine de Pisan (14th century), or François Villon (15th century). Marguerite de Navarre, author of the Heptameron, was a contemporary of Neacșu and Benkner. Such precise chronologization as that of the French language is not possible for Romanian,

because historical conditions did not favour the emergence of written literature, nor the preservation of written material until the 16th century.

It is equally important to establish that, with the withdrawal of the Romans from the colonized territory of Dacia during the reign of Aurelian (270 to 275 CE), the Roman province north of the Danube lost some of its cultural and linguistic links with Latin. At the same time, successive waves of invasions of mixed ethnic and linguistic stock from the general direction of the Eurasian steppe increased contact with non-Romance languages. Nevertheless, Latin survived as the main language of communication in the area, and the Latinized language that was emerging locally continued to develop, giving rise to Romanian, a full-fledged Romance language. It is therefore significant that as late as the 16th century, Neacşu and Benkner, two men of different ethnic backgrounds, separated by a mountain range, were corresponding in a language that was just a few minor changes away from modern Romanian.

Later texts of the 16th century written in Romanian continue to reflect the unique mix of cultural and linguistic influence that characterizes the geographic and cultural space where this Romance language developed. Thus, the oldest Romanian religious texts of this time use Cyrillic characters. Two of the most important ones, *Psaltirea scheiană* and *Codicele voroneţean*, are translations of Slavonic texts. Specific regional linguistic features indicate that the translations were made in the eastern region of Moldova and in the southwestern part of today's Romania, respectively (Gheţie and Mareş, 1985). At the same time, in the region of Transylvania, north and west of the Carpathian range, the arrival of Luther's reform contributed, rather unexpectedly, to the strengthening of the Romanian language, as religious texts were translated from Hungarian and printed in Romanian for dissemination to the local population. The most important text, *Palia de la Orăştie* (1582), containing part of the Old Testament, was the last one still printed in

the Cyrillic alphabet. Gradually, Cyrillic was replaced by the Latin alphabet in the main printing presses. Later, religious texts translated from Hungarian were printed in Romanian using the Latin alphabet, but with Hungarian orthography. Thus, the earliest Romanian text printed in the Latin alphabet is a collection of church songs translated from Hungarian by the protestant bishop Paul Tordasi, and printed in Cluj, 1564-1568.

The information presented so far illustrates to what extent Romanian stands out from its sister Romance languages, through the specific conditions of its emergence and evolution, and through the resilience of the Romance element, far from any of the other Romance languages. Romanian is thus the only language that has survived as Romance in isolation from other Romance languages, and in close contact with non-Romance ones. The linguistic rough cut that resulted from this scenario is divided geographically by the Danube river (Tagliavini, 1972: 357-364). It consists of:

- The *Daco-Romanian* group, including the dialects spoken north of the Danube in present-day Romania, in the regions known by their Romanian names: Valahia (or Muntenia), Transilvania (or Ardeal), Banat, Moldova, Bucovina, Basarabia. Varieties of Daco-Romanian are also spoken throughout the Republic of Moldova, and in some areas of Ukraine, Hungary, Serbia.
- *Aromanian* (or Macedo-Romanian), spoken in the Balkan peninsula (Greece, Bulgaria, Albania, Macedonia); *Megleno-Romanian* spoken in Greece.

All varieties of Romanian are descendants of Balkan Romance, via a stage of Common Romanian. The North-of-the-Danube, Daco-Romanian branch of Common Romanian has evolved along two different directions (Vasiliu, 1968: 123):

- a Western and North Western dialectal group, containing the regional dialects of Moldova, Northern Transylvania, Banat. This sub-branch also includes the endangered Istro-Romanian dialects, spoken in very small communities in Croatia (Filipi, 2002; Vrzić and Doričić, 2014; Vuletić, 2014) by descendants of a population believed to have migrated from Transylvania in the Middle Ages.
- a Southern and South Eastern dialectal group, containing the regional dialects of Muntenia, Oltenia, and Southern Transylvania.

The historical development of Romanian has been studied extensively (Vasiliu, 1968; Rosetti, 1973, 1986; Close, 1974; Sala, 1976, 2005; Coteanu, 1981; Ivănescu, 2000, among others). The linguistic varieties that have been best studied are those belonging to the Daco-Romanian group. They were more accessible since they developed in close contact with one another throughout history, and contributed to the emergence of modern Romanian, of a literary written standard, and of a national language. Within the Daco-Romanian group there is high mutual intelligibility from one regional variant to another. The varieties spoken south of the Danube remained instead mostly oral dialects.

Studies of linguistic variation in Romanian have mostly focused on dialectal and regional variation, with only a few isolated studies of social variation. A long tradition of dialectology was established in Romanian linguistics, going back to the end of the 19th century, and has received considerable international attention from Romance dialectologists at different points in time.

The rest of the article highlights a selection of phonological changes, that are at once most representative of Romanian, and that show interesting dialectal variation. The main historical changes have been clearly and succinctly presented by Alkire and Rosen (2010), whose work is

followed here. In addition, for each change, any attested regional dialectal variation will be indicated.

3. Variation and change in consonants

A number of consonantal changes set Romanian apart from the other Romance languages. The main changes described here include the palatalization patterns, the emergence of labial-coronal clusters, and rhotacism, a salient feature of non-standard varieties. The Modern Romanian consonant inventory is shown in Table 1:

Table 1.   The Romanian consonant inventory

	labial	alveolar	palatal	velar	glottal
stops	p, b	t, d	ʧ, ʤ	k, g	
		ts			
fricatives	f, v	s, z	ʃ, ʒ		h
nasals	m	n			
approximants		l			
		ɾ			

Palatalization patterns. Probably the main characteristic of Romanian consonantal change is palatalization. It involves several patterns, and different triggers. A major palatalization pattern is triggered by the high vowel /i/ or the palatal glide /j/: SENTĪRE > [simˈtsi] 'to feel', DIEM > [ˈzi] 'day', CAMISIA > [kʌˈmaʃe] 'shirt'. The coronal obstruents /t, d, s/ are palatalized as /ts, z, ʃ/, respectively. While this change is broadly referred to as palatalization, it involves different changes depending on the segments' place or manner of articulation. The alveolar stops /t, d/ undergo affrication (or assibilation) to /ts, dz/. The voiced affricate further changes into the fricative /z/. The alveolar fricative /s/ instead changes its place of articulation to alveo-palatal /ʃ/.

The velar stops /k, g/ are palatalized by all front vocalic segments /i/, /j/, as well as /e/. The change involves both affrication and a shift in their place of articulation, resulting in the

postalveolar affricates /ʧ/ and /ʤ/, respectively: CAELUM > [ʧer] 'sky', GĔLU > [ʤer] 'frost'. This type of change is more appropriately termed coronalization, as defined by Itô and Mester (1989), building on Clements (1976).

The palatalization pattern of velars shows dialectal variation. Thus, in Aromanian, the palatalized velars result in the alveolar affricates /ts/ and /dz/ ([tser] 'sky'). Palatalized /d/ also results in /dz/, and stays so: [dzuʌ] 'day', VĬRĬDĬA > [ˈvardzʌ] 'cabbage' (standard Ro. [ˈvarzʌ]), PRANDĬUM > [ˈprɨndzu] 'lunch'/'noon' (standard Ro. [prɨnz]).

Some dialects of Muntenia and Moldova have postalveolar fricatives instead of affricates in the same context: [ˈzɨʃe] 'says', [ˈʃapʌ] 'onion', [mʌrˈʒele] 'beads', for standard Romanian [ˈzɨʧe], [ˈʧapʌ], [mʌrˈʤele].

In addition to these two palatalization patterns, all word-final consonants acquire a secondary palatal articulation /ʲ/ when they are followed by a final /i/ inflectional marker. The inflectional marker surfaces as palatalization on the root-final consonant. A straightforward example involving labials is given here, from nominal morphology: [lup] – [lupʲ] 'wolf-wolves'. This pattern is discussed in more detail in section 4. An interesting dialectal variant of palatalized labials [p, b] is attested in several Daco-Romanian dialects (Puşcariu, 1937; Vasiliu, 1968). Here, the palatalized forms contain a palatalized velar instead of a palatalized labial: [lup] – [lukʲ] 'wolf-wolves'. Similarly, other forms containing a labial stop followed by /i/ are produced with a velar in these dialects, or with what would be an intermediary stage, an intrusive velar stop after the labial: [ˈgine], [ˈbᵍine] 'good'/ 'well' (standard Ro. [ˈbine]), [kjept], [pᵏjept] 'chest' (standard Ro. [pjept]), [kiˈʧor], [pᵏiˈʧor] 'leg' (standard Ro. [piˈʧor]).

Similar variants containing velars are found in Aromanian (Caragiu-Marioţeanu, 1968: 65, 80), as in [lukʲ] 'wolves', and with a full [i] maintained after a consonant cluster: [ˈkorgi]

'ravens' (standard Ro. [korbʲ]), [ˈʃerki] 'snakes' (standard Ro. [ʃerpʲ]), [ˈkʲeptu] 'chest' (standard Ro. [pjept]).

One additional historical source of palatalization concerns the cluster velar+/l/, which gave /kʲ/ and /gʲ/, respectively: AURIC(U)LA > [uˈrekʲe] 'ear', OC(U)LUS > [okʲ] 'eye', [ˈungʲe] 'fingernail', [ˈgʲatsʌ] 'ice'. Recent lexical items, such as [ˈglandʌ] 'gland', [ˈklasʌ] 'class', [klar] 'clear' maintain the cluster. This contrast is best illustrated by GLANDA, which gave the Romanian form [ˈgindʌ] 'acorn', as a result of the combined effect of velar+/l/ palatalization and /a/ raising before nasals. Aromanian appears to maintain the clusters, palatalizing the liquid: see [glʲem] 'skein' (standard Ro. [gʲem]) (Caragiu-Marioțeanu, 1968: 58, 79).

Labial-coronal clusters. The change of velar-coronal clusters to labial-coronal is referred to as the "labial conspiracy" by Alkire and Rosen (2010). This is indeed one of the signature changes of Romanian, prevalent in its lexicon: LUCTA > [ˈluptʌ] 'fight', OCTO > [opt] 'eight', LIGNU(M) > [lemn] 'wood', COXA > [ˈko̯apsʌ] 'hip'. Alkire and Rosen also include in the "labial conspiracy" the change /kw/, /gw/ to /p/, /b/, respectively, a sound change that Romanian shares with Sardinian. A representative example is AQUA > Ro. [ˈapʌ], Sard. [ˈab:a] 'water'.

Rhotacism. In standard Romanian intervocalic /l/ underwent rhotacism: SCALA > [ˈskarʌ] 'ladder', SOLE > [ˈso̯are] 'sun'. In some dialects (northern Transylvania), as well as in Istro-Romanian, rhotacism also affected /n/: EXPONIT > [ˈspure] 'says' (standard Ro. [ˈspune]), MANUS > [ˈmʌrʌ] 'hand' (standard Ro. [ˈmɨnʌ]), LANA > [ˈlɨrʌ] 'wool' (standard Ro. [ˈlɨnʌ]). Nasal rhotacism is widely attested in 16th century Romanian (e.g., *Psaltirea scheiană* and *Codicele voronețean*). As mentioned in section 2, these texts were translated from Slavonic in the northern parts of Transylvania and Moldova, where rhotacism of intervocalic nasals is still attested in present-day varieties (Tagliavini, 1972: 297).

4. Variation and change in vowels

The major Romanian vowel changes, as laid out by Alkire and Rosen (2010), are presented in this section, with additional information on dialectal variation, when present. To begin with, the Latin vowel system has undergone a characteristic type of merger in its evolution to the 7-vowel system of Romanian, shown in 1. All 7 vowels are phonemic and can occur in stressed and unstressed position.

(1) The Romanian phonemic vowel system

$$
\begin{array}{ccc}
i & ɨ & u \\
e & ʌ & o \\
 & a &
\end{array}
$$

While the Latin front vowels underwent the same merger as the Western Romance languages (Latin /ĭ/ and /ē/ merged to /e/), the back vowels simply neutralized quantity distinctions: /ŏ/ and /ō/ merged to /o/, /ŭ/ and /ū/ merged to /u/. A detailed analysis of these changes is found in Herman (1971, 1983, 1990), summarized in Loporcaro (2015: 54). The central vowels, high /ɨ/ and mid /ʌ/, developed as a result of phonetic changes which will be detailed below. The presence of /ɨ/ is, in addition, reinforced by contact with Slavic and Turkish (Renwick, 2012: 24-70; 2014: 33-62).

Diphthongization. Two diphthongs, /e̯a/ and /o̯a/, specific to Romanian, have developed from different sources. One such source involves metaphony. In modern standard Romanian the two diphthongs participate in morpho-phonological stem alternations with /e/ and /o/, respectively (Chitoran 2002). Chitoran (2002) treats these diphthongs as systemically equivalent to front and back low vowels. The historical development of /e̯a/ interacts with the independent

diphthongization of mid /ɛ/ under stress. The Latin vowel quantity distinction gave way to a

contrast in quality, with long vowels being tense, and short vowels lax (cf. e.g., Alkire and Rosen

2010: 254-256). Stressed Latin /ɛ/ diphthongized to /jɛ/, then /je/, in several Romance

languages: Fr. [mjɛl], Sp. [mjel], It. [ˈmjele], Ro. [ˈmjere] for 'honey'. In addition, in non-final

syllables, stressed /e/ in Romanian diphthongized to / e̯a/, and /o/ to / o̯a/, in non-final syllables,

depending on the word-final vowel. Examples are shown in 2:

(2) Diphthongs / e̯a/, / o̯a/ and morphological alternations

Latin	Romanian		Latin	Romanian	
NĬGRA	ˈn e̯agrʌ	'black' f.	NĬGRU	ˈnegru	'black' m.
SĒRA	ˈs e̯arʌ	'evening'	SĒRAE	ˈserʲ	'evenings'
TĒSTA	ˈts e̯astʌ	'skull'	TĒSTAE	ˈtseste	'skulls'
RŎTA	ˈr o̯atʌ	'wheel'	RŎTAE	ˈrotsʲ	'wheels'
MŌLA	ˈm o̯arʌ	'mill'	MŌLAE	ˈmorʲ	'mills'
NOCTE	ˈn o̯apte	'night'	NOCTĒS	ˈnoptsʲ	'nights'

The diphthongization illustrated in (2) also affects /e/ when it is part of the diphthong /je/. The

(reconstructed) outcome is the triphthong *[j e̯a], which is then simplified to [ja]. This analysis

explains forms such as [ˈpjatrʌ] from PĔTRA 'stone' and [ˈtsarʌ] from TĔRRA 'land', whose

evolution is analyzed as follows: [ˈpjɛtra] > [ˈpjetra] > *[ˈpj e̯atra] > [ˈpjatrʌ]. In the absence of

the hypothesized triphthong stage, the Romanian form should contain the diphthong [je], just like

It. [ˈpjetra], Sp. [ˈpjeðra], Fr. [pjɛʁ]. The form for 'land' includes one additional step, in which /t/

is palatalized by the palatal glide of the diphthong, and the glide disappears: [ˈtiɛrra] > [ˈtjerra] >

*[ˈtj e̯arra] > [ˈtjarra] > [ˈtsarʌ] (compared to Sp. [ˈtjerra]).

In other Romanian varieties, such as the Istro-Romanian dialects and Transylvanian regional varieties, the metaphonic diphthongs did not develop. The change resulted instead in mid low /ɛ/ and /ɔ/, respectively: [ˈnɔpte] 'night', [ˈnɛgrʌ] 'black f., [ˈkɔdɛ] 'tail' (standard Ro. [ˈko̯adʌ]). Some dialects of Muntenia do not have the front diphthong [e̯a] after alveolar sibilants, and /a/ surfaces instead: [ˈsarʌ] 'evening', [treˈza] 'woke up' (standard Ro. [treˈze̯a]).

While the majority of diphthongs can be explained by metaphony, this analysis cannot account for the diphthongization in forms such as: [de̯a] < DET 'give-3sg.subj', [ste̯a] < STET 'stay-3sg.subj', where there is no following vowel to condition the diphthong under stress. The development of these forms is explained by assuming that the diphthongization of stressed /e/ to /e̯a/ applied only to vowels which had not undergone raising (cf. Nandriş, 1963: 212-213; Sala, 2006: 150; Loporcaro, 2011: 128-130, 2016: 79-82).

The central vowels /ɨ/ and /ʌ/. For a comprehensive discussion of the sources of the two central vowels and their marginally contrastive status in modern standard Romanian, see Renwick (2012: 24-70; 2014: 33-62). One source of the central vowels is vowel raising before nasal consonants. This change affected all vowels between Latin and Romanian. The mid front vowels raised to /i/, the mid back vowels to /u/, and the low vowel /a/ raised all the way to /ɨ/. These changes are illustrated in 3.

(3) Vowel raising before nasals

DĚNTE	ˈdinte	'tooth'
VĚNIT	ˈvine	'comes'
BONU	bun	'good' m.
NOMEN	ˈnume	'name'
LANA	ˈlɨnʌ	'wool'

CAMPU   kɨmp   'field'

In Istro-Romanian, /a/ raised only to /ʌ/ before nasals: LANA > [ˈlʌrɛ] 'wool' (standard Ro. [ˈlɨnʌ]), MANUS > [mʌr] (standard Ro. [ˈmɨnʌ]).

Word-initial /i/ followed by a nasal changed to /ɨ/: INTEGRU > [ɨnˈtreg] 'whole', IMPERATOR > [ɨmpʌˈrat] 'emperor'. Interestingly, in Megleno-Romanian the initial vowel is instead /a/ ([ampiˈrat] 'emperor'), while in Aromanian such forms can have an initial syllabic nasal (Vasiliu, 1968: 62-63): [m̩pʌˈrat], [n̩ˈtreg].

The high vowel /i/ is backed to /ɨ/ after a word-initial /r/: RĪVU > [rɨw] 'river', RĒU > [rʌw] 'bad', RĪPA > [ˈrɨpʌ] 'river bank' (Vasiliu, 1968: 125). In Megleno-Romanian, in the same lexical items, /i/ is both backed and rounded to [ɔ], giving [rɔw], [rɔw], [ˈrɔpʌ], respectively (Vasiliu, 1968: 55), although the rounding is possibly due to the following labial segment.

In Aromanian, /r/-initial forms acquire a prosthetic /a/: [aˈrɨw] 'river', [aˈrʌw] 'bad', [aˈrɨpʌ] 'river bank' (Caragiu-Marioțeanu, 1968: 61; Vasiliu, 1968: 55). Similar pre-trill prosthesis is attested in several other Romance languages, and can be motivated articulatorily (Recasens, 2014). The rhotic in all Romanian dialects is a tap [ɾ], which tends to be realized as a trill in word-initial position. In describing the complex articulation of the trill, Recasens (2014: 21-24) notes that low vowel insertion preceding a trill can be the result of anticipatory tongue dorsum lowering and backing, which are both needed for the preparation and maintenance of trilling. According to Recasens, predorsum lowering facilitates the free movement of the tongue tip in producing quick sequences of short apicoalveolar contacts.

In standard Romanian and Daco-Romanian dialects (except for an area in the Southwest) front vowels were backed to /ʌ/ after labial consonants, unless the following syllable contains a front vowel. Compare the singular and plural pairs in (4) below.

(4) Vowel backing after labials

Singular			Plural		
MĒLU(M)	mʌr	'apple'	ˈmere	'apples'
PǏLU(M)	pʌr	'hair'	perʲ	'hairs'
PǏRU(M)	pʌr	'pear tree'	perʲ	'pear trees'
FĒTU(M)	fʌt	'boy' (archaic)	fetsʲ	'boys'
VĒRUS	vʌr	'cousin'	verʲ	'cousins'
VERSO	vʌrs	'I pour'	verʃ	'you pour'

The plural forms preserve the Latin /e/ vowel, under the influence of the inflectional marker, which is always a front vowel in the case of the plural. Thus, alternations such as the ones in 4 have been analyzed as metaphonic patterns (Chitoran, 2002; Marin, 2007; Renwick, 2012) because they involve the stressed vowel of the root. However, vowel backing in the labial context is independently observed in unstressed position, as well: PECCATU(M) > [pʌˈkat] 'sin', VETERANUS > [bʌˈtrɨn].

As part of the metaphonic pattern, /a/ appears where the diphthong /ea̯/ was expected, if it is preceded by a labial and followed by a back vowel. This is the case, for example, in FETA > [ˈfatʌ] 'girl', instead of the expected *[ˈfe̯atʌ]. Vowel backing after labials did not occur in Megleno-Romanian, where we find [mer] 'apple', [per] 'pear tree'. In Aromanian the reported outcomes are mixed, depending on the dialect: vowel backing after labials gave /ʌ/ in some dialects, /ɨ/ in others ([pʌˈdure] vs. [pɨˈduri] 'forest' vs. standard Ro. [pʌˈdure]), and /e/ is also reported to remain unchanged (Vasiliu, 1968). At the same time, however, the diphthong /ea̯/ was not affected by this change, and appears after labials, as in Megleno-Romanian: [ˈfe̯atɨ] 'girl', [ˈfe̯ati] 'girls', [ˈve̯adi] 's/he sees', [kɨˈme̯aʃi] 'shirt' (standard Ro. [ˈfatʌ], [ˈfete], [ˈvede],

[kʌˈmaʃe]). Similarly, some dialects of south-western Romania and of Moldova are reported in Vasiliu (1968: 128-129) as maintaining /e/ and / e̯a/ after labials: [kʌˈme̯aʃʌ] 'shirt', [ˈpe̯anʌ] 'feather' (standard Ro. [ˈpanʌ]).

In some Daco-Romanian dialects of Moldova, Northern Transylvania, and Banat, the front vowels /i/ and /e/ were backed to /ɨ/ and /ʌ/, respectively, when preceded by an alveolar sibilant fricative /s, z/. This change, illustrated in (5), is independent of the post-labial backing in (4). Like post-labial backing, it interferes with diphthongization, so that /a/ surfaces where the front diphthong /e̯a/ is expected.

(5) Vowel backing after alveolar sibilants

Dialects of Moldova, N Transylvania, Banat	Standard Romanian	
sʌmn	semn	'sign'
ˈsɨngur	ˈsingur	'alone'
ˈzʌt͡ʃe	ˈzet͡ʃe	'ten'
ˈzɨt͡ʃe	ˈzit͡ʃe	'says'
treˈza	treˈze̯a	's/he woke up'

In Aromanian the same vowel backing occurs after the sibilant affricates /ts, dz/.

Central vowels and morpho-phonological vocalic alternations. A third source of central vowels is the vowel change occurring in word-final position. Latin word-final /a/ changes to /ʌ/, and /o/ to /u/. This involves morpho-phonological vowel alternations, since both vowels are desinence vowels marking feminine and masculine gender, respectively. A third desinence vowel is /e/, which is shared by feminine and masculine nouns. Modern standard Romanian preserves final /e/ unchanged. In Aromanian, final /a/ changes to /ɨ/ ([ˈko̯adɨ] 'tail' vs. standard Ro. [ˈko̯adʌ]), and final /e/ changes to /i/ ([ˈfrati] 'brother' vs. standard Ro. [ˈfrate]). Table 2

illustrates the change affecting final vowels, and the alternations of root-internal vowels in singular-plural pairs of feminine nouns, comparing the standard Romanian and Aromanian forms. Note in particular how, in Aromanian, vowel backing after sibilants affects the plural marker /i/, in forms 3, 6, 13, and 14. All the Aromanian examples in this section are from Caragiu-Marioțeanu (1968: 71-79).

Table 2. Singular-plural pairs in standard Romanian vs. Aromanian – Feminine nouns

Standard Romanian		Aromanian		
Singular	Plural	Singular	Plural	gloss
Latin -A	**Latin -E**			
1. ˈfatʌ	ˈfete	ˈfe̯atɨ	ˈfe̯ati	'girl(s)'
2. ˈkasʌ	ˈkase	ˈkasɨ	ˈkasi	'house(s)'
3. ˈfatsʌ	ˈfetse	ˈfatsɨ	ˈfatsɨ	'face(s)'
Latin -A	**Latin -I**			
4. ˈgurʌ	gurʲ	ˈgurɨ	gurʲ	'mouth(s)'
5. ˈpo̯artʌ	portsʲ	ˈpo̯artɨ	ˈportsɨ	'gate(s)'
6. ˈko̯ardʌ	korzʲ	ˈko̯ardɨ	ˈkordzɨ	'string(s)'
7. ˈbarbʌ	bʌrbʲ	ˈbarbɨ	ˈbʌrgi	'beard(s)'
Latin -E	**Latin -I**			
8. kʌˈrare	kʌˈrʌrʲ	kɨˈrari	kɨˈrʌrʲ	'path(s)'
9. sʌrbʌˈto̯are	sʌrbʌˈtorʲ	sɨrbɨˈto̯ari	sɨrbɨˈtorʲ	'feast(s)'
10. ˈplo̯aje	ploj	ˈplo̯ai	ploj	'rain(s)'
11. kʌˈmaʃe	kʌˈmʌʃʲ	kɨˈme̯aʃi	kɨˈmeʃʲ	'shirt(s)'
12. ˈko̯aʒe	koʒʲ	ˈko̯aʒi	koʒʲ	'(tree) bark'

| 13. ˈmo̯arte | mortsʲ | ˈmo̯arti | ˈmortsɨ | 'death(s)' |
| 14. ˈparte | pʌrtsʲ | ˈparti | ˈpʌrtsɨ | 'part(s)' |

Forms 5, 6, 7, 13, 14 show that in Aromanian a full final vowel is maintained whenever the noun stem ends in a consonant cluster. This is different from standard Romanian, where a full vowel (/i/ or /u/) is maintained only after an obstruent-liquid cluster: [ˈakru]-[ˈakri] 'sour', [ˈaspru]-[ˈaspri] 'rough', [alˈbastru] – [alˈbaʃtri] 'blue', [ˈsuflu] 'breath'. Finally, the form [ˈbʌrgi] (number 7) also illustrates the Aromanian labial-velar alternation conditioned by a following high vowel, mentioned in section 3.

Turning now to the word-final desinence vowel /u/, we observe that it is entirely deleted in modern standard Romanian, and is only retained after obstruent-liquid clusters, and as [w] after a vowel ([viw] 'alive', [tɨrˈziw] 'late', [bow] 'ox'). In Aromanian, instead, final /u/ is maintained after all clusters, even those that decrease in sonority: [ˈalbu] 'white' (standard Ro. [alb]), [ˈlemnu] 'wood' (standard Ro. [lemn]), [ˈorbu] 'blind' masc. (standard Ro. [orb]). After a singleton consonant, /u/ is also maintained, but described as a "short" vowel by Caragiu-Marioțeanu (1968), and transcribed as a superscript: [kosᵘ] 'I sew' (standard Ro. [kos]). An illustration of these patterns is shown in Table 3.

Table 3. Singular-plural pairs in standard Romanian vs. Aromanian – Masculine nouns

Standard Romanian		Aromanian		
Singular	Plural	Singular	Plural	gloss
Latin -U	**Latin -I**			
1. prun	prunʲ	prunᵘ	prunʲ	'plum tree(s)'
2. lup	lupʲ	lupᵘ	lukʲ	'wolf, wolves'

3. sak	satʃʲ	sakᵘ	satsʲ	'bag(s)'
4. bʌrˈbat	bʌrˈbatsʲ	bɨrˈbatᵘ	bɨrˈbatsʲ	'man, men'
5. korb	korbʲ	ˈkorbu	ˈkorgi	'raven(s)'
Latin -E	**Latin -I**			
6. ˈsǫare	sorʲ	ˈsǫari	sorʲ	'sun(s)'
7. ˈʃarpe	ʃerpʲ	ˈʃarpi	ˈʃerki	'snake(s)'
8. ˈmunte	muntsʲ	ˈmunti	ˈmuntɨ	'mountain(s)'
9. ˈdinte	dintsʲ	ˈdinti	ˈdintɨ	'tooth, teeth'
10. pʌˈrinte	pʌˈrintsʲ	pɨˈrinti	pɨˈrintsɨ	'parent(s)'

Once again, we see full final vowels maintained in Aromanian after a consonant cluster. In the Aromanian plural forms 8, 9, 10, final /i/ turns the preceding /t/ into an alveolar affricate. The sibilant affricate, in return, changes the front vowel to the back [ɨ], rendering the morpho-phonological alternation opaque. Finally, forms 2, 5, and 7, illustrate the labial-velar alternation before /i/.

To complete the brief illustration of vocalic alternations in nominal morphology, the standard Romanian and Aromanian singular-plural pairs of neuter nouns are compared in Table 4. Neuter nouns trigger masculine agreement in the singular and feminine agreement in the plural. They thus share the masculine desinence /u/ in the singular, and the feminine plural marker /e/. There is only one plural marker reserved exclusively for neuter nouns, the Latin -ORA which becomes [urʲ]. Aromanian shares with standard Romanian this particular plural form.

Table 4. Singular-plural pairs in standard Romanian vs. Aromanian – Neuter nouns

Standard Romanian	Aromanian	

Singular	Plural	Singular	Plural	gloss
Latin -U	**Latin -ORA**			
1. lok	ˈlokurʲ	lokᵘ	ˈlokurʲ	'place(s)'
2. trup	ˈtrupurʲ	trupᵘ	ˈtrupurʲ	'body, bodies'
Latin -U	**Latin -E**			
3. gjem	ˈgjemurʲ, ˈgjeme	glʲemᵘ	ˈglʲami	'skein(s)'
4. os	ˈo̦ase	osᵘ	ˈo̦asi	'bone(s)'
5. mats	ˈmatse	matsᵘ	ˈmatsɨ	'intestine(s)'
Latin -U	**Latin -E**			
6. semn	ˈsemne	ˈsemnu	ˈse̦amni	'sign(s)'
7. lemn	ˈlemne	ˈlemnu	ˈle̦amni	'wood(s)'

The variation and changes presented in sections 3 and 4 compared outcomes in standard Romanian to those in other varieties of Romanian. They all concern the segmental level, and have been extremely well studied for standard Romanian, more sporadically for regional dialects. Suprasegmental factors such as stress are mentioned only when actively involved in some of the changes, as in the case of diphthongization. In the next section we turn to the relatively less well documented descriptions of suprasegmental variation.

5. Suprasegmental variation and change

This section gives a brief overview of the main stress and intonation patterns in Romanian. Historically, Romanian has inherited the stress patterns of Balkan Romance, which underwent several stress shifts with respect to Latin. While Latin is quantity-sensitive, Balkan Romance is

quantity-insensitive. The Latin stress system is also non-distinctive, and sensitive to morphological structure (Posner, 1996: 108). Clitics are not included in the stress domain. While Romanian stress is usually presented as distinctive (Mallinson, 1988), predictable patterns are revealed when considering morphology (Chitoran, 2002). Inflectional material is not visible to stress assignment, and different non-distinctive, predictable stress patterns are identified separately in verbs, and in nouns and adjectives. Considering such subtle generalizations has allowed the development of an algorithm predicting the modern Romanian stress pattern (Dinu et al., 2014).

Other restricted stress patterns coexist with the main one. These are attributed to lexical borrowing through contact, as in the following exhaustive list of six words of Slavic origin, with pre-antepenultimate stress (Roca, 1999: 686; Chitoran, 2002: 84-85; Loporcaro, 2011: 82):

(6) Words with pre-antepenultimate stress (exhaustive list, monomorphemic)

ˈlubenitsʌ	'water melon'	ˈʃlibovitsʌ	'brandy'
ˈprepelitsʌ	'quail'	ˈrʌzmeritsʌ	'rebellion'
ˈveveritsʌ	'squirrel'	ˈgʌrgʌritsʌ	'ladybird'

All six words are monomorphemic feminine nouns, but share the same unstressed ending [itsʌ]. This ending has, through reanalysis, led in turn to the emergence of a feminine derivational suffix [itsʌ] (Chitoran, 2002: 84-85), which has formed another exhaustive list of masculine-feminine pairs (7):

(7) Words with pre-antepenultimate stress (exhaustive list, morphologically complex)

Masculine	Feminine	
ˈbivol	ˈbivolitsʌ	'buffalo'
ˈdoktor	ˈdoktoritsʌ	'doctor'

ˈkelnʌr	ˈkelnʌritsʌ	'waiter / waitress'
ˈspiker	ˈspikeritsʌ	'anchor man / woman'
kʌˈlugʌr	kʌˈlugʌritsʌ	'monk / nun'
ˈtrɨntor	ˈtrɨntoritsʌ	'lazy man / woman'

In other varieties of Romanian, the location of prominence does not seem to differ from the standard variety. However, the question of stress is not addressed explicitly in the descriptions of these varieties. A study that is yet to be done, that is of special interest to Romance typology, concerns the phonetic realization of prominence across varieties of Romanian. Depending on the close contact with languages from other families, it is expected that the actual realization of stress may vary among varieties, even if the location of prominence does not, and remains consistent with the one inherited from Balkan Romance.

The intonation patterns of standard Romanian and of its varieties have received relatively less attention than segmental variation. However, this situation is rapidly changing with the development of the AMPRom project (Atlas multimedia prozodic român – Turculeț et al., 2008), as part of the larger AMPER project (Contini, 2008). Descriptive studies of intonation in several regional varieties are now available, including, among varieties spoken south of the Danube, a study of question intonation in Aromanian (Turculeț, 2010).

Existing studies report significant differences in intonation patterns among different varieties of Romanian (Turculeț et al., 2008). All the varieties that have been studied share a low nuclear accent (Ladd, 2008; Jitcă et al., 2015), marked as L* in the ToBI notational convention (see Beckman et al., 2005 for a review). Important differences are found, however, in question intonation. In standard Romanian yes/no questions, the L* nuclear accent is carried by the finite verb (Ladd, 2008), followed by either a H% rise, or a rising-falling contour. A similar pattern is

found in Moldavian varieties. In Transylvanian varieties, the L* is followed by a rise, then by a L% fall (Jitcă et al., 2015).

A characteristic feature of Romanian is a difference in intonation patterns between yes/no questions and WH-questions. In WH-questions, the nuclear accent is H*, and falls on the WH-word. Studies of contrastive vs. broad focus in statements suggest little difference among the studied varieties of Romanian. In general, there is no evidence for a clear interaction between contrast and accent (Swerts, 2009; Manolescu et al., 2009). Instead, prominence patterns primarily mark the right edge of a speech unit.

6. Sociolinguistic variation

The preceding sections have presented phonological change in Romanian from a historical perspective, and phonological variation across dialects. Linguistic research in these two domains developed uninterrupted in Romania through the restrictive decades of communism (as attested by the list of references). One relevant area, however, was avoided for a long time: the study of sociolinguistic variation, especially in the Labovian approach, did not develop because it was inconsistent with the communist ideology which promoted a socially homogenous society. It would have been difficult to study, in particular, the role of socio-economic factors, or of gender, and Romanian variationist linguists tacitly set these topics aside for several decades. Inevitably, the situation persisted for a while after the fall of communism, because there was no previous sociolinguistic tradition to build on. Even post-1990 reviews and bibliographies on variation and sociolinguistic research on Romanian (Borbély, 1995; Olariu, 2016), still do not report on work in a truly Labovian tradition, because there was none.

Nevertheless, awareness of the need for sociolinguistic studies of Romanian has gradually built up, and published work is now emerging. Thus, the recent study by Oancea (2016) reports on gender-related variation in the speech of adolescents. Chapter 4 of his book presents the results of a quantitative study of a phonological variable, the vowel of the preposition *pe* 'on', pronounced either [pe] or [pʌ]. The methodology combines sociolinguistic questionnaires and corpus-based acoustic analysis, and reveals that gender, age, and speech style are relevant factors in understanding the vocalic variation. An entirely different corpus-based acoustic analysis of [pe] vs. [pʌ] (Chitoran et al., 2018) also reported a difference in speaking style, with the central vowel favoured in less formal speech styles. The latter study further shows that phonetic context – the presence of a preceding labial – also plays a role in this alternation, thus relating the question back to the historical change /e/ > /ʌ/ after a labial, which was discussed in section 4. The role of the phonetic context is revealed by comparing *pe* 'on' to the preposition *de* 'of'. The alternation between [de] and [dʌ] in the same large-scale speech corpora does not follow the same pattern as [pe] vs. [pʌ]: fewer instances of the central vowel are found in *de* relative to *pe*. Taken together, the two studies confirm how important it is to consider the role of sociolinguistic variables in understanding language change, and how language use and language structure are inseparable and inform one another.

Also in the category of sociolinguistic studies, the role of gender and age in code-switching in Romanian-Hungarian bilingual communities in Hungary has been studied by Anna Borbély and colleagues (Csilla and Borbély, 1995), along with more general questions of language shift and language identity (Borbély, 2016).

It is very likely that sociolinguistic studies of phonological variation in Romanian are currently under way, as well as studies of bilingual communities, of code-switching, of

Romanian as a heritage language, and a future edition of this encyclopaedia will no doubt include an article entirely devoted to sociolinguistic research.

7. Future lines of research on variation and change

The present article has outlined the specific conditions of the historical development of Romanian, in isolation from other Romance languages, and in continuous contact with non-Romance ones. It has presented the main consonantal and vocalic changes that characterize standard Romanian, and, whenever possible, their outcomes in regional varieties. The most salient consonantal changes include palatalization from different sources, the emergence of labial-coronal clusters and other patterns classified under "the labial conspiracy" (Alkire and Rosen, 2010), and rhotacism, which serves as a criterion in the definition of dialectal groups. The vowel changes that are most representative of Romanian involve diphthongization patterns. The emergence of the central vowels /ɨ/ and /ʌ/ highlights important differences among regional varieties, as does the morphologization of vowel alternations. At the suprasegmental level, the stress pattern of modern Romanian is known to be consistent with that of Balkan Romance. Intonation patterns, instead, depart from a Romance scenario, fitting in with a more general Balkan pattern (Greek, Serbian). Among regional varieties of Romanian, intonation patterns differ primarily in the case of yes/no questions.

Additional work is still needed on any topic involving phonological change in Romanian, particularly in comparing the standard language and regional varieties. Experimental work is especially welcome. Studies of large-scale speech corpora informing synchronic variation and its implications for understanding historical change have recently been initiated (Chitoran et al., 2015; Renwick et al., 2016; Chitoran et al., 2018; Vasilescu et al., 2019). Analyses of

conversational speech in parallel with controlled, laboratory speech (Niculescu, 2018) are particularly useful for understanding variation and change in progress. The new time and space in which Romanian and its varieties are now evolving – multi-lingual, multi-diverse, multi-mobile Europe – are over-ripe for systematic sociolinguistic studies.

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