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11 Sociophonetics

Abstract: In this paper we review current findings in the inter-disciplinary field of socio-phonetics, focusing on fieldwork- and corpus-based analyses of speaker- and group-specific phonetic and phonological variation in selected Romance languages. We show how multiple sources of allophonic variation represent a rich potential for the expression of social-indexical meaning in both wider and lesser known varieties of Romance.

Keywords: non-referential meaning, social variation, identity

1 Introduction

Sociophonetics is the study of social-indexical meaning conveyed by the sounds of speech. Its inception as *Lautstilistik* (*phonostylistique*) can be traced back to the Prague School (Troubetzkoy 1939) and the French functionalist tradition (Léon 1971, 2009; Fónagy 1983) as a thematic label for expressivity in speech. In North America, 'socio-phonetics' (Deshaies-Lafontaine 1974) appeared as an innovative methodology combining phonetic analysis with field methods from dialectology to study patterns of synchronic variation as underlying mechanisms of sound change in the community. The bulk of studies that followed focused on longitudinal ('real time') and synchronic ('apparent time') variation and change, using increasingly more diverse auditory and acoustic phonetic techniques. Over the course of the next four decades, methods and research questions have expanded and diversified. Traditional fieldwork and interview techniques have been enriched by ethnographic methods linking phonetic variation to social practice (Eckert 2000, Mendoza-Denton 2008), new acoustic and articulatory phonetic techniques have been deployed to synchronic phonetic variation relevant to sound change (Lawson et al. 2013, Mielke et al. 2017), and computational techniques have been tested in simulations of diffusion and transmission of innovations and change across large communities (Fagyal et al. 2010, Stanford and Kenny 2013, Harrington at al. 2018) [1]. While there is still no consensus whether sociophonetics is merely a methodological "interface" between two subfields (Thomas 2011:2) or a full-blown "methodological approach within variationist sociolinguistics" (Baranowski 2013:403), researching the social significance of phonetic variation continues to be the unifying theme in the "loose confederation of industries" (Foulkes & al. 2010:704) recognized as sociophonetics today. If visibility is a

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[1] For additional reviews of past and present scholarship, see Thomas 2011, Dipaolo & Yaeger-Dror 2011, and Baranowski 2013, among others.

measure of success, it is probably fair to say that sociophonetics 'had made it' to a full-fledged subfield of scientific inquiry[2].

The "social life of phonetics and phonology" (Foulkes & Docherty 2006:409) is rooted in multiple sources of indexical information stemming from speakers' geographical origins, ethnicity, social class, interactional stance, footing, speech styles, and register, to name a few. In the variationist sociolinguistic tradition, it is customary to present methodologies tackling these complex sources of indexical meaning as epistemologies that succeed to and build on each other. We adopt this framework as the guiding thread of this chapter.

The first tradition, so-called *first wave* studies of variation (Eckert 2012:93), proposes to model social meaning in speech and language as a result of interactions among social factors. It seeks to establish meaningful correlations between certain speech phenomena (e.g. allophonic variation in plosives, lingual articulations in nasals, etc.) and pre-established sociological categories (e.g. age, gender, ethnicity, socioeconomic class, social networks, regional origin, etc.). *First wave* studies consider sociophonetic variation a reflex of social factors that influence individuals' actions within a given socio-economic hierarchy and their speech patterns as representative of practices in a larger speech community. Following in the footsteps of Weinreich, Herzog, and Labov (1968), these studies seek to identify patterns of synchronic variation as diagnostics of ongoing language change[3]. Thus *first wave* studies bridge the gap between today's methodological traditions focused on instrumental phonetics and auditory analyses of vernacular speech in early 20th century dialectology, and accordingly represent the building blocks of sociophonetic knowledge in most Romance languages.

In so-called *second wave* studies, sociophonetic variation is conceptualized as locally-relevant stylistic practice. Studies following this methodological tradition are typically ethnographic and fieldwork-oriented and continue to model social-indexical meaning as conditioned by sociological factors, but additionally underscore how observed patterns of variation are the results of meaningful actions by central figures of communities of practice (e.g. adolescent peer groups, neighborhood, workplace, etc.). Studies of sociolinguistic variation in the Romance languages, both in monolingual and multilingual settings, have been informed by many influential *second wave* studies, some of which will be reviewed here.

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[2] The yearly variationist sociolinguistics conference, NWAV, has been featuring workshops in sociophonetic methods for nearly two decades and ICPhS in Melbourne (2019) has had different sessions focusing on the production, perception, and acquisition of social-indexical variation in speech.

[3] Of course, linguistic variation and language change are not synonymous. The former is a requisite for the latter, but is not absolutely predictive: "Not all variability and heterogeneity in language structure involves change; but all change involves variability and heterogeneity" (Weinreich, Herzog, & Labov 1968:188).

In the last two decades, following similar developments in the social sciences (Carter 2013), many sociophonetic studies have embraced constructivist views of social life and, thus, social-indexical variation in language These studies are collectively referred to as *third wave* approaches to variation (Eckert 2012:93-97). In their conceptions, social-indexical meaning in speech is the dynamic result of self-expression and self-differentiation of individuals who actively shape, rather than just reflect, their own social worlds by the speech styles that they adopt. More interpretative than experimental and primarily focused on select individuals and small communities of practice, *third wave* studies currently represent a minority in Romance sociophonetics.

In this chapter, we report on *first* and *second wave* studies using fieldwork and survey-type methodologies[4]. Rather than foregrounding social categories, some of which could be disputed on methodological or epistemological grounds, our review is organized in terms of phonetic categories and historically attested phonological processes associated with these categories. Following Eckert and Labov (2017), we consider that social-indexical meaning in speech is expressed through language-specific allophonic variation that provides a rich "indexical potential" for "register[ing] distinctions in the collective co-existence that is the social world" (idem: 469). We first turn to social-indexical variation in the consonant systems of Romance, as cued by voicing/devoicing, gemination/degemination, palatalization, velarization, assibiliation, and rhoticization. We then review selected studies of socially meaningful allophonic variation in oral and nasal vowel systems and end on social-indexical meaning cued by prosodic variation. In conclusion, we briefly summarize the contribution of sociophonetics to the study of Romance languages.

2   Sociophonetics of consonantal variation

2.1   Variation and change in the consonant systems of Romance

Numerous, historically well-attested, phonological processes in the consonant systems of the Romance languages have been shown to convey social-indexical meaning synchronically. While these processes are sometimes classified in terms of 'fortition' and 'lenition', we prefer the terms 'strengthening' and 'weakening'

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[4] Approaches to social meaning as a continuum of decreasing reference and increasing performativity (Eckert 2019) or a signaling game within game-theoretic pragmatics (Burnett 2019) represent emerging new avenues that cannot be reviewed here.

to center our discussion on the segments rather than possible articulatory movements that can be difficult to identify.

All non-geminate obstruents inherited from Latin underwent some degree of weakening or loss in all subgroups of Romance (Brandão de Carvalho 2008). However, the outcome of these changes was variable and depended on many factors, including the type of consonant, phonetic environment, prosodic position, and external factors such as language contact. In short, while historical changes affecting the consonant system were rule-governed, they generally lacked uniformity across types of consonants and groups of languages. As Scheer and Ségéral (2008) put it with respect to weakening ('lenition'): "the only generalization we can see is relative for a given input in a given language and regarding a given phenomenon" (140). We adopt this motto in our presentation of consonantal variation and changes most typically featured by *first* and *second wave* studies.

2.1.1 Intervocalic voicing and devoicing

Word-medially, especially in intervocalic positions, weakening was particularly strong in northern Gallo-Romance that included the ancestor varieties of today's standard French. In these varieties, bilabial plosives /p/ and /b/ weakened to /v/ (e.g. PIPER (Lat.) > *poivre* (Fr.) 'pepper' and DEBERE (Lat.) > *devoir* (Fr.)) while other intervocalic consonants disappeared, leaving no trace and, therefore, no sources for allophonic variation in place or manner of articulation. A different process resulted in a similar outcome in nearly all varieties of Italo-Romance where non-geminate plosives remained stable in intervocalic positions yielding relatively limited allophonic variability for instance in Tuscan Italian, the ancestor of today's standard Italian (e.g. FOCU (Lat.) > *fuoco* (It.) 'fire'). Corsican was, and remains, an exception to this tendency.

Voiced vs. voiceless consonants in intervocalic positions show a relatively clear split between northern (Cismontano) and southern (Oltramontano) varieties of Corsican that together form the basis of a flexible, so-called 'polynomic', spelling standard (see Blackwood 2011). The social-indexical meaning of these variations has been analyzed in terms of educational attainment, participation in rural vs. urban social networks, and more or less adherence to normative language ideologies. In Jeffe's (2003) fieldwork in bilingual Corsican village and town schools in the central dialect areas of the island, for instance, both voiced and voiceless plosives appeared in elementary school children's spellings of target words such as 'friend' and 'brother' that are conventionally spelled *amica* and *fratellu* but variably pronounced [amiga] or [amika] and [fradellu], [fratellu] or [frateddu]. In Jaffe's study, children from towns tended to be more categorical in their choices of variants than children from rural areas who seemed to be more aware of local variation. Flexible 'polynomic' norms were not apparent in central

and northern Corsican-speaking teachers' responses who, despite target words evoking well-known pronunciation differences, did not accept any spelling alternatives reflecting southern pronunciation (Jaffe 2003:529).

Beyond plosives, the production of intervocalic sibilants has been, both historically and synchronically, quite variable in Ibero-Romance varieties. A prime example of this process concerns the alveolar fricative series, which in the evolution of Spanish has exhibited both voicing (e.g. /s/ > /z/ as in CASA (Lat.) > *casa* (Old Sp.) 'house') and devoicing (e.g. /z/ > /s/ as in *casa* (Old Sp.) > *casa* (Sp.) 'house') (Hualde & Prieto 2014:111). Though modern Spanish voiceless /s/ has been claimed to exhibit sporadic voicing as a generalized casual/fast speech phenomenon in all speech communities (Clegg & Strong 1992:32), social indexation and systematic, heightened frequency have been attested in Costa Rican Spanish (Chappell 2016, Chappell & García 2017), Catalonian Spanish (Davidson 2019a, forthcoming a) and Ecuadorian Spanish (Davidson 2019b, García 2019) using both production and attitudinal data obtained through a combination of fieldwork interviews and matched guise techniques. Costa Rican /s/ voicing is favored by younger male speakers in accordance with an asymmetrical access to positive social evaluations: though /s/ voicing across genders indexes lower social class and less education, additional positive attributions of local identity, friendliness, and confidence are exclusively available for male speakers (Chappell 2016:371, Chappell & García 2017:31). Somewhat analogously for Ecuadorian Spanish, /s/ intervocalic voicing is favored by younger male speakers from less urban areas, and exhibits a gender asymmetry with respect to its social perception: negative associations of lower status and pleasantness are afforded exclusively to female speakers (García 2019:144), consistent with traditional accounts of female speech being more subject to social scrutiny and penalized than males' (Trudgill 1972). In stark contrast, however, is the case of Catalonian Spanish. In Barcelona, Spanish /s/ voicing is favored by younger female speakers from less urban areas and is covertly positively associated with Catalan-Spanish bilingual identity and pleasantness, ultimately consistent with a change in progress from below as an increasingly vitalic feature of an emerging regional variety of Spanish in contact with Catalan (Davidson 2019a:72, forthcoming a). Taken together, these studies plainly illustrate that the social life of Spanish intervocalic /s/ (indeed, any speech feature) is wholly context- or community-dependent, rather than inherently imbued with any one particular social meaning.

An additional case of socially stratified intervocalic sibilant production is that of the devoiced alveolar and post-alveolar fricatives in Central/Eastern Catalan. Prescriptively voiced /z/ and /ʒ/ are variably devoiced as [s] and [ʃ] in a Barcelonan sociolect known as *xava*, which while traditionally associated with lower class urban male youth, is now popularly considered to be a Spanish way of

speaking Catalan.[5] Social correlates of gender, social class, and first language were found for the devoicing of each of /z/ and /ʒ/ (though the latter was additionally often realized as a palatal approximant /j/) in a group of 60 middle- and high-school Barcelonan youth, with devoicing being favored by Spanish-L1 working class males (Ballart Macabich 2013: 149). Ballart Macabich highlights first language as the strongest source of sibilant devoicing in *xava* Catalan, followed by social class, which corroborates the aforementioned trajectory of *xava* Catalan as stereotypical of the urban lower class, and now members of the Spanish-L1 population. The results of a larger (120 informants) study examining the devoicing of /z/, as well as the post-alveolar affricate /dʒ/, across speakers ages 3-40 from specific Barcelona neighborhoods (*Nou Barris, Gràcia, Eixample*), corroborates the stratification of /z/ devoicing according to first language (via neighborhood as a proxy, favoring devoicing in *Nou Barris*) (Benet, Cortés, & Lleó 2012:397). Beyond additional devoicing favored by younger speakers, the authors highlight the lack of first language (via neighborhood proxy) effects on /dʒ/ devoicing, accounted for by the greater import of language-internal factors, such as markedness and frequency (idem:402). Together, these studies illustrate the complex interplay between both social and linguistic factors, uniquely foregrounded in language contact settings.

2.1.2 Word-final obstruent devoicing

In the Romance languages, non-assimilatory obstruent devoicing is rather rare and, if present, it tends to have substrate or contact origins. One such example comes from Eastern Regional French spoken in Alsace and Lorraine where devoicing has a substratal origin from the local Germanic dialects in which word-final obstruents are categorically voiceless. Devoicing, on the other hand, is variable in the superstrate and interacts systematically with vowel lengthening and schwa epenthesis. For instance, in some varieties of Lorrain French, the monosyllabic *table* /tabl/ 'table' is realized as a bisyllabic word, in which the vowel preceding the consonant cluster is lengthened, the voiced obstruent is devoiced, and an epenthetic schwa between the obstruent and the liquid is inserted: [ta:pəl] (Montreuil 2010:159).

Pipe's (2014) sociolinguistic fieldwork in the city of Strasbourg and a village in northern Alsace also revealed classical signs of dialect leveling, i.e. a decrease in apparent time of emblematic local pronunciation, including word-final devoicing, in favor of supra-local features. For instance, as expected in situations of dialect leveling, rural working class speakers between 18-30 years of age de-

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[5] For further information on the origins of and linguistic ideologies associated with *xava* Catalan, see Ballart Macabich 2002.

voiced less than their elders, but those who reported to speak the local dialect and had a strong attachment to the region tended to show some degree of resistance to the standard and preserved this local pronunciation feature in their speech (idem: 219). Gender differences also revealed the importance of locally-relevant social distinctions. In words such as 'garage', a true shibboleth of local speech, middle-class urban female speakers showed higher rates of devoicing than working class rural women. Beyond individual variation that might have obscured group-based differences, one can hypothesize that this signals an "iconization of devoiced /ʒ/" (Armstrong & Mackenzie 2018:184): while rural speakers tend to shift to supra-local pronunciation standards, some members of the urban community display, and thus sporadically preserve, iconic indexes of local speech "as distinct from the surrounding rural one" (idem) to reassert their distinct position in the socioeconomic hierarchy.

One Romance language in which non-assimilatory word-final obstruent devoicing does exist and can convey social-indexical meaning is Catalan. All varieties of Catalan, voicing contrasts in fricatives, stops, and affricates are systematically neutralized in favor of voicelessness in coda position (Wheeler 2005:145, see also Hualde & Eager 2016:333 for a more comprehensive review). Accordingly, contact with Catalan has likely motivated the presence and rise of word-final /d/[6] devoicing in neighboring Spanish varieties (Hualde & Eager 2016:331), coined Catalan Contact Spanish (CCS) by Davidson (2015, 2019a). Though the production frequencies and social correlates of CCS word-final /d/ devoicing have yet to receive exhaustive empirical attention, a dissertation by Pieras (1999) on 31 Majorcan Catalan-Spanish bilinguals revealed that devoicing was sensitive to habitual language use and predominant language of exposure via primary social networks, favoring increased CCS /d/ devoicing with greater use of and exposure to Catalan (idem:247-248). Subsequent attitudinal studies suggest that this feature may likely cue positive affiliations with bilingual Catalan-Spanish identity. Perception interviews conducted by Sinner (2002) and Davidson (2019a) revealed that overt awareness of word-final /d/ devoicing as a feature of CCS was restricted to bilinguals. Figure 1 shows that explicit awareness of word-final /d/ devoicing as a feature of CCS fell precisely in the middle of four other phonetic features readily identified by participants prompted to name all features of CCS they knew to be typical of this contact variety. Overt commentary toward CCS speech was generally positive amongst the bilinguals, with frequent themes of solidarity toward a shared bilingual identity alongside the notion that save for an exaggeratedly strong Catalanized accent, CCS speech positively indexes knowledge of Catalan, which is highly esteemed in Catalonia (Davidson 2019a:71).

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[6] Voiced dental /d/ is the only voiced obstruent in Spanish with a robust distribution word-finally (Hualde 2014:140).
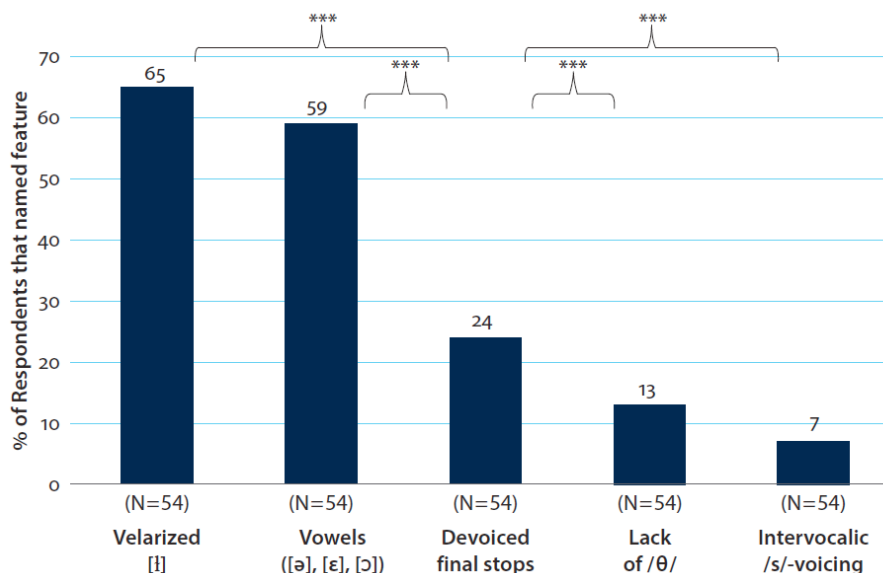
Figure 1. Degree of overt awareness of phonetic features of Catalan Contact Spanish (Davidson 2019a:69) reported to be typical of this contact variety.

2.1.3 Spirantization

The unique evolution of the Latin intervocalic voiceless plosive series is a hallmark feature of Western Romance, illustrating a diachronic continuum of weakening in the form of voicing (e.g. SAPERE (Lat.) > sa[b]er (B.Port., Northern E.Port.) 'to know' ; VITA (Lat.) > vi[d]a (B.Port., Northern E.Port.) 'life' ; AMICA (Lat.) > ami[g]a (B.Port., Northern E.Port.) 'friend')) to spirantization (e.g. sa[β]er (Southern E.Port., Sp., Cat., Gal.), sa[v]oir (Fr.); vi[ð]a (Southern E.Port., Sp., Cat., Gal.); ami[ɣ]a (Southern E.Port., Sp., Cat., Gal.)), to elision (e.g. vie, amie (Fr.)) (Boyd-Bowman 1980:30, 107, 129). Though variation in this series' production appears most frequently researched through the lens of dialectology and laboratory phonetics, without attention to extralinguistic factors or possible social indexation, there exists a relatively recent interest in sociophonetic and attitudinal studies with regard to /b/ production in U.S. Spanish, where the voiced labiodental fricative [v] is often attested in conjunction with the bilabial approximant [β] and bilabial stop [b]. While there is ongoing debate as to whether or not U.S. Spanish [v] in words like *vaca* 'cow' and *banco* 'bank' is the product of language contact with English or an endogenous relic feature from Medieval Spanish (see for example Torres Cacoullos & Ferreira 2000), evidence from both production and attitudinal studies have confirmed that the social indexation of [v]

for select U.S. Spanish varieties involves bilingualism with English. In a production study on 17 El Paso, Texas Spanish-English bilinguals, Trovato (2017) finds that the spirantization of /b/ to [v], explored both acoustically via relative intensity measurements as well as auditorily via rater judgments of [v] vs. [β], is favored by female speakers for whom English was the predominant language in their formal education, and in contexts of orthographic <v> over <b> (idem:271-272). As for attitudes toward U.S. Spanish [v], Chappell (2019) conducted a matched guise test with 75 U.S. Spanish-English bilinguals (predominantly from Texas), revealing that the social evaluation of [v] was sharply divided based on speaker gender: in female speech, [v] indexed positive attributes of being hard-working and intelligent, competent in Spanish, and of older age, whereas male [v] voices were penalized across these same attributes (i.e., less hard-working and intelligent, less competent in Spanish, younger age) (idem:256). Taken together, the production and attitudinal results suggest that U.S. Spanish [v] exists as a prestige variant indexing higher bilingual literacy and educational/professional status, and not unexpectedly, access to the sociolinguistic benefits of a hyper-articulated variant asymmetrically favors female speakers. Regardless of the historical, endogenous motivations for /b/ spirantization to [v] in U.S. Spanish, its contemporary social status in the North American context is deeply rooted in Spanish-English contact. This perhaps is reason enough to approach continued examinations of this feature not as categorically either contact-induced or endogenous, but instead as a product of intertwined linguistic and social effects.

2.2   Gemination and degemination

Geminate consonants, originating in long consonants in Latin, degeminated in all but Italo-Romance varieties. In the latter, they convey phonemic distinctions and appear both in word-medial and word-initial positions.

The stable phonemic status of geminates in Italian and Sardinian, however, does not mean that there is no potential for socially meaningful allophonic variation. In fact, the variable length of geminates in Italian has been linked to new indexical meaning in North-South migration and dialect contact situations. Cerutti (2011) reports that syntactic doubling (*raddoppiamento sintattico*), the gemination of word-initial consonants after proclitics and oxytons in contexts such as *vado a Roma* 'I go to Rome' ['vaːdo aˈrːoːma], has been 'imported' from central and southern regional varieties of Italian into northern Turin Italian. In these communities, gemination functions not only as a marker of age and adolescent group membership, but also as a highly salient index of shared local identity with "native speakers of Italian, whose parents come as much from Southern Italy as from Turin as from non-native speakers, whose parents have recently immigrated to Italy" (idem:23). Dialect contact between multiple dialects of Italian in immigrant contexts has also led to variable realizations of geminates in English loans

of American Italian, i.e. a variety "spoken by Italian immigrants to North America whose native language is/was an Italian dialect" (Repetti 2009:223). Although variable gemination in American Italian does not seem to be tied to any particular social practice, it is considered one of the defining *first wave* indexical features of this contact variety.

In other Romance languages, such as French that is altogether devoid of lexical quantity distinctions, secondary geminates can occur due to the so-called 'spelling pronunciation' of learned borrowings from Latin. Words such as 'grammaire', 'illégal' and 'irréel' can index style distinctions between a type of 'bookish' (geminate) pronunciation considered "an elegant, extraphonological variant of the singleton" (Meisenburg 2006:2). When tested in a series of production and perception experiments, however, geminate realizations were neither systematically produced nor perceived as distinct from singletons (idem).

The degemination of intervocalic alveolar trills, such as in *birra* 'beer' ['bi:ra] in Roman Italian and ['bir:a] in Standard Italian has been largely attributed to dialect leveling. However, findings since the early 1990s have also showed that degeminate trills, an emblematic trait of Roman Italian, did appear in the speech of teenagers who moved to Rome from other regions of Italy in their early childhood, despite the fact that regionally marked phonetic features were continually receding and became rare in the speech of their peers born in Rome (Conti and Courtens 1992 cited in Cerutti 2011:23).
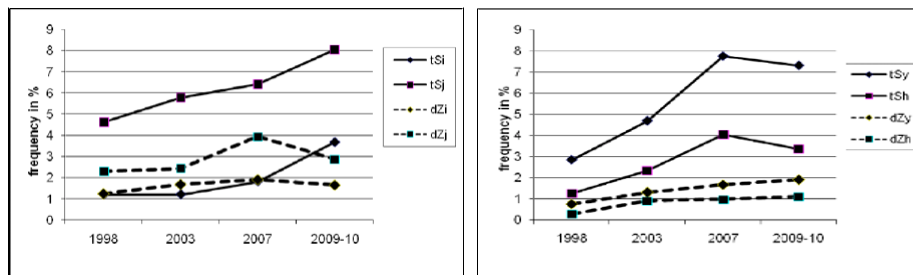

2.3   Palatalization and affrication

Allophonic variation due to the coarticulation of stops with following vowels represents a rich potential for indexical meaning. Palatalization is one such coarticulatory process triggered by a following front vowel or palatal glide causing dental or alveolar plosives to be retracted and velars to be moved forward towards the palatal region (Ladefoged and Maddieson 1996). Historically, front vowels [i], [e] and [ɛ] only palatalized velar plosives (Pope 1934:125-129), but this no longer applies to contemporary French where palatalization, given the right conditioning environment, can affect all plosives.

Traditionally considered a working class feature (Léon 1993:203-204), the palatalization of velars word-medially (e.g. *paquet* 'package' [pake] > [pak^{j}e] > [pat^{j}e]) and word-finally (e.g. *sac* 'bag' [sak] > [sak^j] >[sat^j]) has become widespread in contemporary French. However, its use remains associated with working class youth of immigrant descent in urban areas of the North and South of France (Jamin et al. 2006, Vernet and Trimaille 2007, Spini and Trimaille 2017). Gender identity might also play an important role. Hansen (2012:162) reports that young male speakers of diverse social origins who have never lived in the *ban-*

lieues[7] of the French capital used more palatalized velar stops than female speakers who did live in multiethnic working class neighborhoods in their childhood. In Hansen's (idem) corpus, palatalization was prevalent in high-frequency words, including discourse particles (*donc* 'so') and relative pronouns (*que* 'that').

Palatalized alveolar plosives can also be accompanied by affrication (*PalAff*), i.e. the coupling of friction noise with consonantal release before glides and close vowels. The combination of the two, so-called secondary, articulations yields highly salient voiced and voiceless allophones (*dix* 'ten' [dˑis] and *petit* 'little' [pətˑi]) that in contemporary European French tend to be associated with working class speech. However, using matched guise samples portraying the speech of a radio announcer, Trimaille et al. (2012) found that *PalAff* itself "is not sufficiently salient to trigger stigmatizing reactions" (idem:1): when no other lexical or phonetic cues of non-standard speech were present, *PalAff* did not necessarily elicit overt social evaluations from the listeners. Evidence that *PalAff* might be a weak cue of social class, possibly because it is spreading to styles and registers other than working class vernaculars, comes from a longitudinal, force-aligned, and automatically analyzed broadcast news corpus (Candea et al. 2013), in which the use of voiceless palatalized affricates before /i/ and /y/ has shown a clear increase in the last two decades.

Figure 2. Longitudinal evidence of the increasing use of palatalized affricates before /i/ and /y/ in French national broadcast media (from Candea et al. 2013:414).

PalAff also seems to help the identification of regional dialects in France. Woehrling et Boula de Mareüil (2006) tested the recognition of regional accents by listeners in France and found that palatalized affricates in high-frequency constructions such as *tu as* 'you have' ([tya] > [tʲa] > [tˑa]) improved significantly the rate of identification of the local vernacular in Marseilles. They also pointed out, however, that the association appeared to be stereotypical: "the rather strong accent of the Languedoc speakers, which is the best identified as 'Southern' [was] more often associated with Marseilles than Marseilles itself (idem:1513)." Thus *PalAff* could be part of a bundle of phonetic features associated with certain im-

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[7] 'suburbs', structural equivalents of racialized inner-city neighborhoods

ages of youth, masculinity, and affect (e.g. toughness) and also linked to various geographical and cultural stereotypes. In the case of urban working class areas, *PalAff* appears to evoke racial conflict and violence in the ethnically mixed *banlieues* 'suburbs' of Paris and *les quartiers du Nord* 'the northern districts' of Marseilles[8]:

> (1) « Votre cousin conduit une "voitchure" et adore le "melong" ? [C'est] un Marseillais »[9] (Spini and Trimaille 2017:59 citing Gasquet-Cyrus).

In sum, while in North American varieties of French noisy releases of plosives, such as in *dix* 'ten' [d^{z}is] and *petit* 'little' [pət^{s}i], are categorical indicators of dialectal origin, in European French they are phonetically conditioned and seem largely dependent on individual speaker characteristics (Berns 2013:274). Given these differences, one can expect *PalAff* in European French to readily take on certain social-indexical meanings whose origins remain to be determined in each setting and each community.

Another interesting case of sociophonetic variability concerning palatalization is that of Buenos Aires, Argentina Spanish. Beyond the rather renowned case of fronting and fricativization of the Spanish palatal obstruent /ʝ/ to post-alveolar /ʒ/ in Argentinean and Uruguayan Spanish, which in Buenos Aires Spanish has since undergone devoicing to /ʃ/[10], an additional sound change concerning the palatal inventory is the merger of the nasal palatal /ɲ/ and the sequence of an alveolar nasal + glide (/nj/). The variable loss of contrast between minimal pairs such as *uranio* 'uranium' and *huraño* 'unsociable' was the focus of recent empirical study by Bongiovanni (forthcoming), who collected production data across 33 Buenos Aires Spanish speakers stratified for gender and age. While varying degrees of acoustic distance (via a combination of duration measurements, formant trajectory analysis, and static formant analysis) between each of /n/, /nj/, and /ɲ/ were observed across all speakers, the encroachment of the palatal /ɲ/ onto the nasal + glide sequence was found to be sensitive to effects of age and gender, such that younger female speakers were leading the merger in apparent time relative to older males (idem:16-18). Bongiovanni posits that the production of /ɲ/ as /nj/ is most likely a change in progress from below, operating below speakers' conscious awareness, as there were no task effects (as a proxy for attention to speech

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[8] One the many examples in the national news is: *Marseille: Déchainement de violence dans deux cités des quartiers du Nord* 'Marseille 'Outburst of violence in two projects of the northern districts', Sud Ouest, 09/15/2019. https://www.sudouest.fr/2019/09/15/.

[9] 'Your cousin is driving a "car" (*voiture* [vwat^{ʃ}yʁ]) and he loves "cantaloupe" (*melon* [məloŋ])? He is from Marseille.'

[10] This change is fortunately well-tracked using variationist sociolinguistic methodologies (Fontanella de Weinberg 1978, Rohena-Madrazo 2013, 2015).

and 'formality') indicating acoustic differentiations between the two variants. Curiously, however, she notes that a popular Argentinean TV comedy show aired a sketch in which local, non-standard pronunciations are explicitly corrected, which poked fun at a stereotypically Argentinean production of *mañana* 'morning' being produced as with /nj/ instead of /ɲ/ (idem:18). Accordingly, it is possible that this feature may already index Argentinean identity and may soon show greater explicit awareness in the speech community, warranting further investigation.

As regards sociophonetic variability for Romance affricates, the variable (de)affrication of Catalan post-alveolar voiced /dʒ/ (e.g. *diumenge* 'Sunday') and voiceless /tʃ/ (e.g. *anxova* 'anchovy') is characterized by Veny (1982) and Recasens (1991) as a primary isoglossic feature distinguishing Eastern dialects of Catalan, which have undergone deaffrication to /ʒ/ and /ʃ/ respectively, from Western dialects that conserve affrication. Carrera-Sabaté (2009) explored affricate production in the less careful speech of 30 Catalan speakers of Lleida (Lleidatà), a Western variety, alongside a 22-hour Lleidatà corpus of more careful, newscaster and debate speech. Additionally, a perception task was administered in order to elicit explicit reactions to the variable productions of both affricates. While affrication was observed as the majority variant in less careful speech and even in more careful debate speech (notably where a presentation of local identity is perhaps more valuable for recruiting voters than using more socially exogenous features), deaffrication was the majority variant in newscaster readings. Carrera-Sabaté (idem:103) suggests that this finding illustrates influence from the prestige afforded to Eastern Catalan. Perception results showed considerably lower discrimination of deaffrication vs. affrication for the voiced series relative to the voiceless one. These differences were stratified by education level and degree of written proficiency in Catalan, favoring evaluations of deaffricated [ʃ] as more 'correct' with higher proficiency and education levels (idem:100). Ultimately, Carrera-Sabaté (2009:103-104) argues that younger, more formally educated speakers are leading a change toward the deaffrication of voiceless /tʃ/ as motivated by the explicit prestige afforded to Eastern Catalan, yet they maintain affrication for /dʒ/ since (de)affrication for the voiced series is not as acoustically, and perhaps socially, salient. In this way, Lleidatà speakers can, on the one hand, adopt more salient Eastern Catalan features that afford them upward social mobility as more educated and competent speakers of Catalan, whilst simultaneously maintaining local features that index in-group solidarity without noticeably distancing them from the more prestigious Eastern norm. The effects of standard language ideologies via the media on linguistic variation, alongside the interplay between acoustic salience and accommodation strategies, constitute a promising avenue for future investigations of Romance variation and change.

2.4   Laterals and approximants

Through their multiple allophonic realizations, laterals and approximants, especially so-called rhotics ('r-like' sounds), participate in a number of socially meaningful distinctions in the Romance languages. With respect to laterals, sounds distinguished by lateral airflow due to tongue blockage of central airflow out of the mouth, the Latin origins of modern alveolar /l/ and and its various allophones vary considerably across Romance varieties, evidencing a wide array of sound changes including geminate reduction (e.g. CABALLU (Lat.) > *cavalo* (Por.), *cabalo* (Gal.) 'horse'), palatalization (e.g. LACUS (Lat.) > *llac* (Cat.) 'lake' ; FILIA (Lat.) > *figlia* (Ital.), *filha* (Por.) 'daughter'), spirantization (e.g. MULIERE (Lat.) > *mujer* (Span.) 'woman'), vocalization (e.g. FOLIA (Lat.) > *feuille* (Fr.) 'leaf' ; TALPA (Lat.) > *toupeira* (Por.) 'mole'), and elision (VOLORE (Lat.) > *voar* (Por.) 'to fly') (Boyd-Bowman 1980:45, 78, 81, 84).

As the presence of an alveolar lateral phoneme /l/ is common to all Romance varieties, a particular point of sociolinguistic interest is the phonetic quality of /l/, which has been described as velarized or 'dark' in select varieties of Catalan, Portuguese, and Romance varieties in contact with them (Davidson forthcoming b, Recasens 2012, Recasens & Espinosa 2005). The presence of a velarized lateral category ([ɫ]) in these varieties and a non-velarized lateral ([l]) in the rest of Romance has been argued to result from divergent evolutions from Latin, which exhibited both categories in complementary distribution: [ɫ] in coda contexts and [l] in onset contexts (Allen 1989:33, Badia i Margarit 1984:199, Rasico 1981:200, Recasens 2014:20-21). Accordingly, the present by-language distribution of [l] and [ɫ] evidences, for [ɫ] varieties, a historical velarization of once non-velarized onset laterals (e.g. LIQUIDUS (Lat.) > *liquid* (Cat.), *líquido* (Port.) 'liquid'), and for [l] varieties, both the loss of [ɫ] through vocalization and/or elision (e.g. FALSU (Lat.) > *faus* (Provençal) 'false' ; SALTU (Lat.) > *sautu* (Sicilian, Ligurian) 'jump' ; INSULSU (Lat.) > *soso* (Sp.) 'tasteless' ; ALTERU (Lat.) > *autre* (Fr.) 'another') and the historical fronting of once velarized coda laterals (e.g. ANIMAL (Lat.) > *animal* (Sp., Fr.) 'animal') (Pope 1934:81-83, Recasens 1996:66, 84, 86, 2014:20-21).

There is also empirical evidence of the social and linguistic conditioning of the lateral velar [ɫ], as well as overt and covert attitudes towards its realizations in Catalan Contact-Spanish (CCS) in Barcelona (Davidson 2019a, forthcoming b)., Linguistic constraints favoring velarization included coda contexts and adjacent to non-front vowels and/or velar consonants, as well as Spanish-Catalan cognates. Social constraints favoring velarization included male and less urban speech, greater dominance in Catalan, as well as more casual speech. The combination of style and gender correlates, suggestive of the status of CCS [ɫ] as a sociolinguistic marker, was ultimately contextualized within a community-level discourse of Spanish-Catalan bilingualism. Specifically, despite positive covert and overt soli-

darity associations with in-group bilingual identity, covert and overt social stigmas of CCS [ɫ] as "improper Spanish", "ugly-sounding", and "rural" also exit. They jointly indicate that while the aggregate clustering of all CCS speech features can index upper class social status in Catalonia, this social evaluation is a generalization made across a composite of social indices that can include ridicule and even disdain:

(2) Bueno, la ele catalana, sí... yo intento no usarla cuando hablo castellano porque quiero hablarlo bien, pero bueno, me sale como me sale.[11]

(Davidson 2019a :68, SP 12)

(3) No no, yo no uso la ele catalana cuando hablo castellano. Hablo correctamente y cuando hablo en castellano, uso la ele castellana, y en catalán, pues sólo allí la catalana.[12]   (Davidson 2019a :69, SP 42)

Lateral velarization as a linguistic stereotype has been explored simultaneously in Majorcan Spanish and Majorcan Catalan (Pieras 1999, Simonet 2010). In both varieties, decreased velarization led by younger female speakers was attested as an ongoing change from above. The unique distribution of velarized and non-velarized laterals in different varieties of Catalan (and indeed Spanish), coupled with the acoustic and social salience of this feature (Hickey 2012:405), offers ample opportunity for continued cross-Romance comparisons highlighting the confluence of linguistic and social effects.

In contrast to laterals, rhotics are not easily identified based on phonetic or phonological criteria. In fact, it has been argued that the grouping of 'r-like' sounds has more to do with language-specific diachronic and literacy traditions than acoustics or physiology (Chabot 2019). In French, rhotics show particularly rich allophonic variation. Although the IPA (2015) specifies only one allophone, /ʁ/, at least four others have been attested to cue sociophonetic distinctions.

The general conclusion from *first wave* sociophonetics studies focusing on rhotics as markers of geographic origin is that alveolar trills [r] and taps /ɾ/ have become vestigial variants that are gradually replaced by uvular allophones, such as the voiceless uvular fricative [χ] (*frais* [fχɛ] 'costs' and *après* [apχɛ] 'then') and its voiced counterpart [ʁ] (*bras* [bʁa] 'arm', *adresse* [adʁɛs] 'address'), depending on the preceding phonetic context. As the uvular place of articulation becomes prevalent, alveolar rhotics have been receding in usage even in the speech of older speakers' regional French in contact with Occitan in the South of

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[11] 'Well, the Catalan /l/, yes... I try not to use it when I speak Spanish, because I want to speak it well, but well, it comes out how it comes out'
[12] 'No no, I don't use the Catalan /l/ when I speak Spanish. I speak correctly and when I speak in Spanish, I use the Spanish /l/, and in Catalan, well only then the Catalan /l/'

France (Lonnemann and Meisenburg 2009, Eychenne 2009) and in North America (Canac-Marquis and Walker 2016). The velar approximant [ɰ] is also attested in inter-vocalic positions in French spoken in Belgium (Demolin 2001), but its use can be more widespread, as indicated by its rendition by a thirty year old middle-class, male speaker born in Paris shown in Figure 3. Such heavily vocalized variants of 'r' have also been associated with 'parigot', working class French spoken in the early 20th century, although their status in French cinema of that era remains uncertain (Abecassis 2005:116-117).
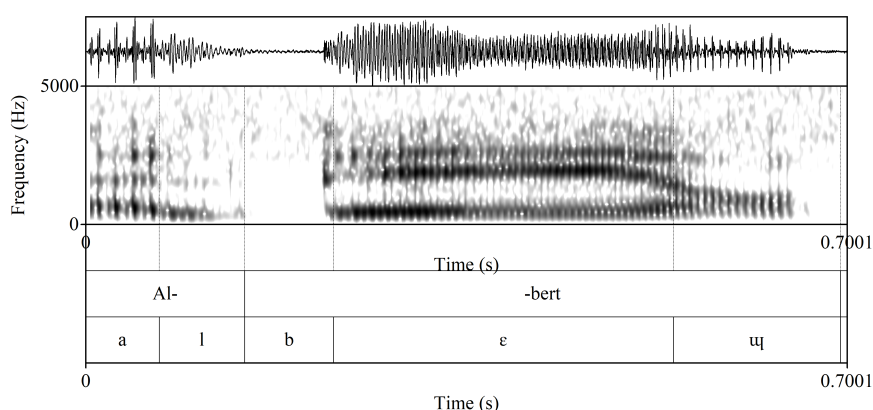
Figure 3. Velar approximant as allophone of 'r' in the first name Albert, pronounced by a thirty-year old, male, middle-class speaker of Parisian French (Fagyal et al. forthcoming).

In Montreal, the replacement of alveolar allophones by their uvular counterparts has been tied to changes in local identity, following rapid political, economic, and societal changes affecting Quebec society since the late 1950s. Although the first French colonists arriving in the Gulf of Saint-Lawrence were likely users of alveolar allophones (Morin 2002:51) that remained the local norm in Montreal and Western Quebec until the early 20th century[13], between 1950 and 1970, the local variant was set into rapid regression. Longitudinal studies in the 21 century show that nearly four decades later, Montreal as a community has undergone a rapid shift away from the local forms and have been, in many cases, categorically replaced by the incoming uvular and velar variants (Sankoff and Blondeau 2007). The joint, cognitive and social, significance of the rapid replacement of 'r' in Montreal remains a test case for possible changes affecting aging adults' language use across the life span (Sankoff 2019).

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[13] Uvular and velar allophones were already the categorically preferred allophones in the eastern parts of Quebec, including Trois Rivières and Quebec City.

An additional intriguing case of rhotic sociolinguisic variation is that of word-final alveolar rhotic production in the Spanish of migrant workers from Moroleón, Mexico. In several Spanish varieties (Peninsular, Mexican, Guatemalan, Costa Rican, Colombian, Ecuadorian, Bolivian, Chilean, Paraguayan, Argentinean), the alveolar trill /r/ and/or tap /ɾ/ are variably realized as assibilated [ř], with devoicing and syllable position as additional metrics of variation (Hualde 2014:187, Mazzaro & González de Alba 2019:289). With respect to Mexico City Spanish. Perissinotto (1972) offered perhaps the earliest empirical attestation of a change in progress from above, led by upper and high class female speakers and favoring the production of assibilated [ř] word-finally, from sociolinguistic interview data from the 1960s. The assibilated rhotic has consequently diffused outward to other urban centers in Mexico, eventually reaching Moroleón, a large industrial center in Guanajuato. Moroleón attracts internal migration from smaller, rural neighboring towns in Mexico, and is also home to a sizable community of migrant workers that move to the United States for the majority of each year in order to work on mushroom farms in a rural Pennsylvania town (Matus-Mendoza 2004:19-20). Consequently, this urban center offers unique insights into the role of local social networks and societal structures on linguistic variation via the comparison of assibilation rates between migrants to Moroleón and Pennsylvania.

The quantification of word-final rhotic assibilation production in the previous two studies underscores the importance of social mobility as a locally constrained aspect of individual speech communities. Findings revealed that whereas assibilation was favored by younger female speakers with higher levels of education in Moroleón, in parallel with the change in progress from above originally observed in Mexico City, gender stratification by migrants in Pennsylvania was comparatively diminished. This asymmetry seems to be a reflection of the unique social circumstances of each group of migrants (Matus-Mendoza idem: 23-26). The social ecology of Moroleón consists of a wide range of social classes and socially salient differences therein, which facilitates social (and consequently linguistic) mobility, hence the faster adoption of incoming prestige norms like the production of [ř]. For migrant workers in Pennsylvania, the social ecology is completely distinct: socially salient distinctions of class are nearly absent, as social mobility for migrant field-laborers in the U.S. is extremely limited. Though female speakers produced more assibilated allophones than males, they did so rather modestly, which can be taken as a reflection of their inability, in that setting, to aim at significant social mobility through linguistic and other types of differentiation.

3 Variation and style in the vowel systems

3.1 Social-indexical meanings of Romance vocalic variation

Most sociophonetic studies of vowels in Romance languages have investigated dialectal variation and historical change in oral and nasal vowels. In keeping with the inter-disciplinary nature of the enterprise, methodologies of data collection tend to borrow both from experimental and fieldwork-driven investigations and methods of analyses typically use the standard toolkit of acoustic and perceptual analyses of the speech sciences.

Though the bulk of sociophonetic work on Romance vowels consists of *first wave* studies of phonetic detail, phonological description, and dialectal variation, in this section we highlight three topics that hold particular interest for social-indexical meaning: the devoicing of mid-vowels in Paris French, vowel shifting in São Miguel (Azorean) Portuguese, and nasal vowels in Quebec French.

In European French, front-mid and high vowels /e/, /ɛ/, /ø/, /œ/, /i/, /y/, and /u/ can undergo devoicing at the right edge of major prosodic phrase boundaries (see chapter 20). In such cases, the last portion of the vowel becomes devoiced and is followed by a sustained fricative-like noise that can form a full-length, excrescent coda consonant (Fónagy 1989; Fagyal and Moisset 1999). This phenomenon, called phrase-final vowel devoicing (PFVD), has been linked to the production of finality in discourse (Smith 2002) and to social factors influencing speakers' speech styles and socioeconomic status. It has been argued that it represents a classic Labovian case of a new, vigorous, and overtly prestigious sound change led primarily by young, upwardly mobile, educated female speakers (Fagyal and Moisset 1999). PFVD has also been attested among working class adolescents orienting towards the majority society and the predominant use of standard French (Fagyal 2010:146). Figure 4 shows the spectrogram of the word *Aubervilliers* in which the utterance final /e/ is devoiced and followed by a fricative-like noise in the speech of a male adolescent recorded near Paris.

PFVD can be found in formal and informal registers, many situational styles, including readings of texts (Smith 2003, Bern 2013), and can affect an even wider range of vowels than previously thought (e.g. the back nasal vowel /ɔ̃/). Although it has not yet been extensively studied as a source of individual styles in fieldwork investigations, role play experiments using prompts that simulated changes in audience design demonstrated that native speakers of European French showed higher rates and enhanced degrees of devoicing in pragmatic contexts favoring "either slower or more formal speech or both" (Dalola and Bullock 2016:28).

Plosive releases in the speech of eighty-four speakers selected from the PFC (*Phonologie du Français Contemporain*) corpus, tracking contemporary phono-

logical variation in French (Durand et al. 2002, 2010), indicate that PFVD is very likely not a working class feature in European French. Rather it appears to be part of a hyper-articulated style that speakers can take on "to add emphasis, or to highlight a particular message" (Berns 2013:256).
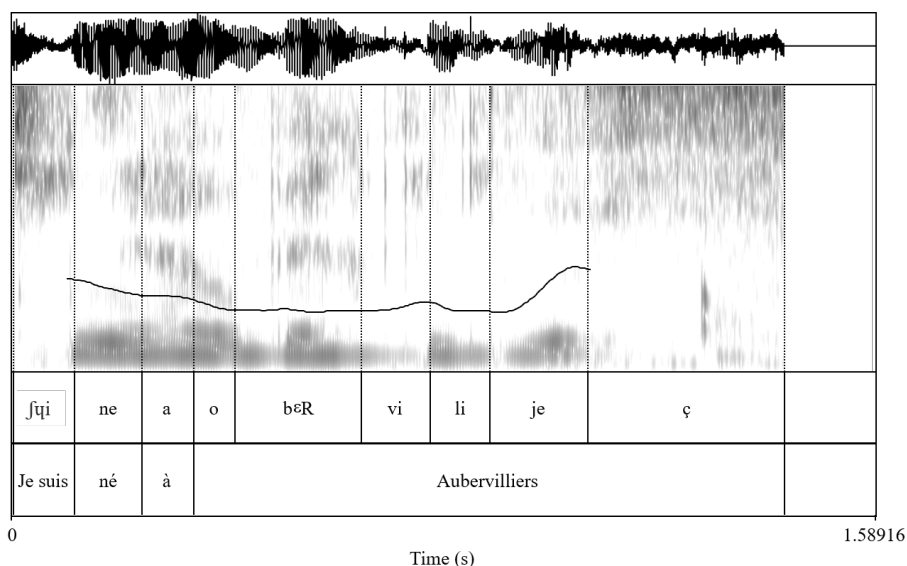
Figure 4. Devoicing of /e/ at the end of the utterance 'I was born in Aubervilliers' by a male adolescent in a working class suburb '*banlieue*' near Paris (Fagyal 2010:146).

The following excerpt recorded with a Parisian upper-class female speaker is particularly revealing of how the strengthening of the fricative-like noise [ç] following the devoiced close vowel /i/ can convey sentence-finality and affect (i.e. indignation over the lack of preparedness of the speaker's son for the French *baccalauréat* exam):

(4) Là, j'ai vu mon fils c'est bien simple, /il a/ les cours se sont terminés. Un, c'était quand, un **mardi** [maʁdiç]. Il passait la philosophie le **jeudi** [ʒœdiç]. Il avait rien commencé à réviser le **mardi** [maʁdiç]. Et il a alors il a des facilités.[14]   (PFC, SP 75clb1)

In stressed syllables, two series of allophone are typically distinguished for each of the three mid vowels: 'tense' or 'half-close' [e], [ø], and [o] and 'lax' or

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[14] 'I have seen my son, it's easy, he has, classes were finished. On a, when was it again, on a Tuesday. His philosophy exam was on Thursday. He hadn't started studying at all on Tuesday. And well he learns with ease.'

'half-open' [ɛ], [œ], and [ɔ]. The latter are more lowered and retracted towards the back of the oral cavity, which is manifest acoustically in higher F1 and lower F2 frequencies. With phonemic distinctions between the two series receding since the early 20th century, phonetic conditioning has become more prevalent and the corresponding allophones are now regarded as positional variants of each other: 'tense' allophones tend to appear in open syllables and 'lax' vowels are usually found in closed syllables. The many exceptions to this 'open/closed syllable adjustment rule' (*loi de position*) represent emblematic dialectal differences (infra), but *first wave* sociophonetic studies in recent years have also uncovered some intriguing cases of social convergence. Hansen and Østby (2016), for instance, report that the use of the tense allophone [e] in closed syllables (e.g. *élève* [elev] 'pupil') has been observed among upper-class speakers of the Parisian *bourgeoisie*, even though just about a decade ago this phenomenon was still "typically a phenomenon observed among the young MC/UWC speakers (idem: 413). Speakers of all three social classes featured in their study also showed a general loss of allophonic distinctions in unstressed syllables, with working class speakers leading the change. Among the most surprising contemporary tendencies, is the halting of a once vigorous change: the fronting of the back mid vowels [o] and [ɔ] to [ø] and [œ]. Once famously recorded in the emblematic sentence 'C'est j*eu*li le Mar*euc* !'[15] by Martinet (1958), this widely attested change in the late 1950s and early 1960s seems have become marginal in the French capital, while in the same time it continues to be documented elsewhere in the territory (Woehrling and Boula de Mareüil 2006, Armstrong and Pooley 2010). The general conclusion is that while all groups seem to be engaging in the above ongoing changes, upper-class speakers appear to be lagging behind; together with the generalization of some pronunciation across all social classes, their peculiarly conservative linguistic behavior deserves further investigation.

A second socially-meaningful vocalic phenomenon of interest is that of an ongoing vowel shift in São Miguel Portuguese, a unique variety of European Portuguese spoken by the approximately 5,000 residents of the island of São Miguel, Azores. The vowel shift, first attested in the 1930s and depicted below in Figure 5, distances this insular variety considerably from the European Portuguese Standard used in popular media (Silva 2005:2).

The production of these shifted vowels is far from categorical, however, leading Silva (2005) to empirically explore the underpinnings of the vowel shift to social conditioning. The results of variable rule analysis on more casual (picture-naming) and more careful (word-list reading) speech samples from 11 speakers from the village of Nordeste reveal that vowel shifting is favored by lower-class speakers and in more casual speech, suggesting that style-shifting toward the

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[15] The sentence plays on the fronting of [o] to [ø] in the words *joli* 'pretty' and *Maroc* 'Morocco' in the French equivalent of 'How pretty is Morocco!'.

European Standard is an active linguistic tool in the community (idem:12). Style-shifting is argued to be a reflex of islanders' linguistic insecurity, as revealed by a near-absolute incidence of speakers' initial reluctance to participate on the basis of their self-proclaimed "terrible Portuguese" (idem:16). Silva concludes that speakers' accommodation toward the European Standard, precisely for only half of their vocalic inventory rather than all vowels, evidences the unique duality between local identity and exogenous prestige: on the one hand, speakers cling to some shifted variants so as to not risk dissociation from the local vernacular and the islander indexation it holds, while on the other hand, they also closely adhere to the European Standard for some vowels as a means of perceived sociolinguistic mobility and 'educated manner of speaking'.
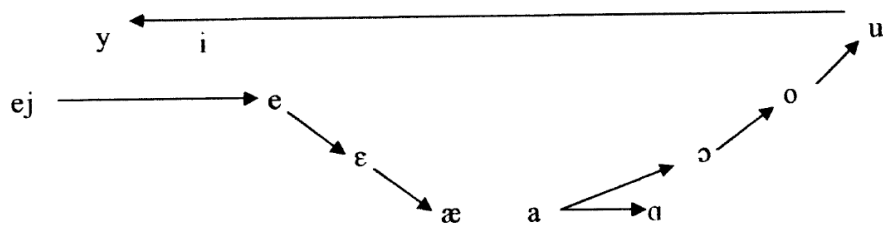
Figure 5. São Miguel Portuguese Vowel Shift (Silva 2005:4).

Variation in the nasal vowel systems of French, our final vocalic case study, remains a puzzle in sociophonetics as it has ellicited surprizingly little empirically documented social evaluation. However this might be changing in some contemporary urban varieties of Quebec French. While nasality is contrastive in every dialect of French, different nasal sub-systems have different vowel invento-ries whose phonetic realizations vary considerably. Varieties of French spoken in Paris and its surrounding areas (Northern Metropolitan French, NMF) represent a subsystem that had lost the distinction between rounded and unrounded front nasal vowels and operates with only three phonemes: /ɛ̃/ as in *pain* 'bread', /ɑ̃/ as in *paon* 'peacock', and /õ/ as in *pont* 'bridge'. The same is true for southern French, while dialects of Quebec French (QF) retain all four historically attested nasal vowel phonemes. There are also important differences in lingual articula-tions underlying these nasal vowel distinctions (Carignan 2014), which carries potential for social-indexical meaning in variation. As a result of the merger of the two front nasal vowels, /ɑ̃/ and /õ/ in NMF have been involved in a counter-clockwise change shift, lowered and retracted along the peripheral tract of the vowel space, since at least the early 1980s (Fónagy 1989). The shift has led to the lowering of /ɛ̃/ which, in turn, has triggered the retraction and raising of /ɑ̃/ and /õ/. The opposite scenario seems to characterize vowels in QF: the phonetic reali-zations of the three vowels along the peripheral tract have been attested as more

fronted and raised than in NMF (Figure 6). Perception studies indicate that these differences are perceptible and can create serious challenges in same- and cross-dialectal identifications of nasal vowels (Nicholas et al. 2019).
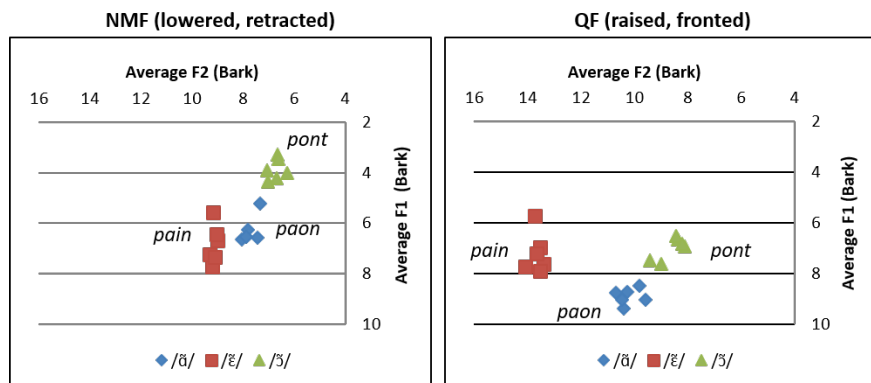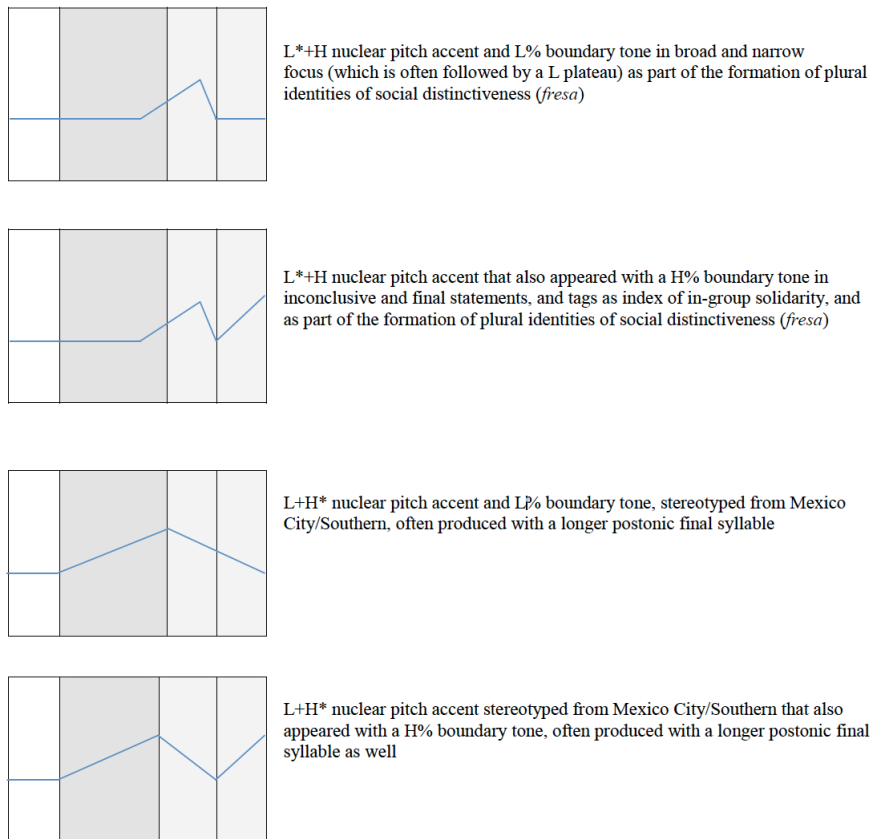

Figure 6. Realizations of three nasal vowels in Northern Metropolitan French (left) and Quebec French (right) from a production experiment (Nicholas et al. 2019:2 based on Carignan 2014).

As mentioned above, few studies, to date, have examined possible social-indexical meanings associated with these distinctions. One recent exception is Remysen's (2014) production and perception studies of /ɑ̃/ in Montreal that show that young female speakers living in the outskirts of Montreal perceive the retracted – NMF-like – realizations of this vowel as typical to Montreal, and tend to place the fronted allophones (Figure 6, right) in rural Saguenay–Lac-Saint-Jean et la Gaspésie. What is more, the same listeners also tend to associate the fronted allophones of /ɑ̃/ with lesser educational atteinment. The rate of identification along these lines if higher when the listeners are from Montreal, clearly demonstrating that the lingual articulatio of this nasal vowel phoneme might be on its way to become a marker of regional identity in Montreal.

4   Prosody and social information

The study of suprasegmental features, primarily rhythm and intonation, has a vast literature in most major Romance languages and other chapters in this volume clearly show their innovative contributions to the phonetic and phonology litera-ture. Until about the last decade, however, prosodic cues were the neglected step-children of *second wave* sociophonetic studies attempting to link prosodic varia-tion to local social practice and identity construction. In this sub-chapter, we pre-sent a couple well-known exceptions to this tendency.

A widely renowned binary of stereotypical group identities in Mexican Spanish is that of *naco y fresa* 'hick and strawberry.' Respectively associated with laziness, peasantry, and a lack of cultural refinedness on the one hand, and superficial vanity and elitism on the other, the linguistic performance of either *naco* or *fresa* identity has been linked to a complex union of features, including discourse and pragmatic markers, the use of English borrowings and code-switching, taboo slang words, popular Spanish words, and of course, unique intonation patterns (Holguín 2011:219-220, Martínez Gómez 2014:88). Holguin (2011) conducted a meticulous ethnographic study of, among others, *naco* and *fresa* identity construction in the social networks of three young Mexican women along the El Paso (U.S.) and Ciudad Juarez (Mexico) border, which evidenced speakers' fluid control of intonational cues to index *naco* or *fresa* identities in conversations with friends and family, a sampling of which appears below in Figure 7.

L*+H nuclear pitch accent and L% boundary tone in broad and narrow focus (which is often followed by a L plateau) as part of the formation of plural identities of social distinctiveness (*fresa*)

L*+H nuclear pitch accent that also appeared with a H% boundary tone in inconclusive and final statements, and tags as index of in-group solidarity, and as part of the formation of plural identities of social distinctiveness (*fresa*)

L+H* nuclear pitch accent and L% boundary tone, stereotyped from Mexico City/Southern, often produced with a longer postonic final syllable

L+H* nuclear pitch accent stereotyped from Mexico City/Southern that also appeared with a H% boundary tone, often produced with a longer postonic final syllable as well

Figure 7. Prototypical intonational contours for each of *fresa* and *naco* (Mexico City/Southern) identity construction (Holguín 2011:222).

Intonational contours were additionally included as stimuli for a matched guise technique in order to elicit listeners' covert awareness of prosodic cues as indices for *naco* and *fresa* identities, which bore out quite transparently (idem:61-63). Furthermore, a subsequent virtual ethnography (via a corpus of online blog posts and video submissions) of *fresa* and *naco* identity construction was conducted by Martínez Gómez (2014), revealing that these intonational cues are in fact salient enough to warrant significant overt social commentary as linguistic stereotypes.

In French, sociophonetic studies of rhythm and intonation have almost exclusively focused on dialectal variation. In few cases, however, speaker-specific prosodic variation has been linked to age, ethnicity, segregation, and degree of embeddedness in youth social networks. The prosodic rhythms of twenty-four female and male adolescents recorded in the Multiethnic Paris French corpus (Gardner-Chloros et al., 2014), for instance, were examined for characteristics of stress-timed rhythm, as previously attested for many multiethnic urban vernaculars in Europe Fagyal and Torgersen 2018). Canonical rhythm metrics, among them the normalized Pairwise Variability Index (nPVI), showed that there was no clear effect of gender and only a small effect of cultural background on the variability of adjacent vocalic and consonantal duration intervals, both previously correlated with more or less syllable-timed rhythm in French. However, male and female teens with multicultural background who clearly dominated in conversations with their peers – for instance in longer overall talk time – and also used multiple segmental phonetic features attributed to adolescent urban-vernaculars in French also tended to show more variability in interval durations. In addition to pointing more stressed-timed rhythm, these results also underline the crucial role that interactional factors might play in socio-prosodic variation.

Sociophonetic studies of intonation in French have also primarily focused on multiethnic speech styles. In a web-based experiment where listeners placed recordings with stress patterns ranging from clearly penultimate ('non-standard') to clearly phrase-final ('standard') in more or less socially desirable urban areas of Paris, Stewart (2012) found that the most numerous and strongest cues to penultimate prominence were associated with neighborhoods that also scored low in perceived linguistic correctness and urban poverty. Following up on prosodic cues to ethnic identity, Paternostro and Goldman (2014) showed that some of the intonation contours associated with multiethnic working class youth have context-bound pragmatic interpretations and additional phonetic, linguistic, and semiotic information is required for a 'banlieue accent' to be perceived (idem:6). The interactional aspects of these prosodic cues have been further examined in micro-sociolinguistic studies of peer-group interactions that showed that intonation phrase-final contours are routinely modified according to the participants present in the interaction. Members of adolescent peer groups facing an outsider, such as a fieldworker, rather than their peers, negotiate their stance and index their affilia-

tion with members of their audience through the variable use of standard and stylistically marked intonation contours (Fagyal and Stewart 2011:95).

5 Conclusion and discussion

In this chapter, we focused on *first* and *second wave* studies of social-indexical meaning in speech in selected topics in the Romance languages. Rather than foregrounding social categories, we organized our review in terms of phonetic categories and historically attested phonological processes associated with these categories. We showed that that social-indexical meaning in speech is expressed through different kinds of language-specific allophonic variation that allowed cross-linguistic comparisons and detailed language-specific discussions. While this chapter could not do justice to the wide array of studies constantly emerging in our fields across multiple Romance varieties, it is our hope that it encourages more work on lesser-studied Romance varieties and hitherto less explored aspects of sociophonetic variation. Given the meticulous documentation of the historical evolution of modern Romance from Latin, a notable area of continued contribution of Romance to the advancement of sociophonetics concerns linguistic variation linked to the unique linguistic and political statuses of different Romance varieties in their respective modern territories, where complex and often hegemonic negotiations of linguistic capital (Bourdieu 1991) are ever-increasingly at the forefront of daily life. Such research will continue to serve as a bridge between the wealth of previous dialectological approaches to variation in Romance and the recent vanguard of variationist *waves* of sociolinguistic study.

6 References

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