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Article

Locating *place* in variationist sociolinguistics: Making the case for ethnographically informed multidimensional place orientation metrics

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Abstract

Variationist research has much to gain from deepening engagement with theories about place, defined as space imbued with social meaning. One challenge that variationists face is how to adapt the complex and multifaceted aspects of place orientation into a single measure that can be included in models of sociolinguistic variation. In this paper, I advocate for an ethnographic approach to place, providing an example from Greater New Orleans, where post-Katrina displacement has highlighted individual connections to place. Using an ethnographically informed multidimensional place orientation metric (MPOM), I examine two local linguistic features among speakers from the suburban town of Chalmette, Louisiana according to place orientation. Via statistical modeling and case study of individual speakers, I demonstrate the value of MPOMs in quantitative analysis of sociolinguistic variation, arguing for further theorization of place orientation in our research and providing a model for variationist sociolinguists interested in engaging more with place theory.

Keywords: variationist sociolinguistics; place identity; place attachment; place orientation; sense of place; mobility

1. Introduction

From the beginning of variationist sociolinguistic research, with its roots in dialect geography, place has been used as an explanatory factor for linguistic variation (Johnstone, 2004). The mapping of regional dialects reveals information about settlement patterns, contact with speakers of other varieties, and social developments within a given community. Likewise, certain regional linguistic variants can tie a speaker to a locale, echoing that place's particular history and development. Human geographers conceive of "place" as a physical space that has been imbued with social significance and "sense of place" as the subjective and emotional attachment people have to place (Cresswell, 2015). But not all speakers share the same sort of connection to a given place. And within sociolinguistics, the question of place orientation traces back to Labov's (1963) work with Martha's Vineyard and Islanders' feelings of belonging. Recent research has demonstrated the value of developing more complex measures of place orientation and engaging with place as an abstract, socially constructed concept rather than a static geographic location (Carmichael, 2017; Reed, 2018, 2020).

As sociolinguists complexify our ideas about social factors, drawing from theories in sociology, anthropology, psychology, women and gender studies, and education, among other fields of study, I call on us to turn that same depth of attention toward place theory across allied fields. And this work is not, in fact, separate from the work being done to improve our theories about other social factors like gender, sexuality, and ethnicity. For example, Podesva and Van Hofwegen (2014) note how performance of gender and sexuality is necessarily *emplaced* in rural California—that patterns of /s/-realization in Redding, California cannot be understood using a framework that does not account for the intersection of gender, sexuality, and place. Moreover, King (2021) has demonstrated that understanding place-specific racial(ized) identities and the ways individual speakers orient to these personae is key to predicting patterns of variation among African American English speakers in Rochester, NY; King argued that analyses that focus merely on African American participation in broader regional sound changes without consideration of *emplaced* racial identity result in an imperfect picture of why and how language change is progressing within African American communities.

Another crucial motivation to engage more with place theory is that it will become increasingly difficult to continue from a research model that assumes nonmobility of speakers. In today's globalized world, humans are more mobile than ever. Moreover, not all mobility is the same. Researchers in human geography have noted the emotional significance of displacement or loss of homeplace (Fried, 1963). Refugees, migrant workers, and those displaced by natural disasters, climate change, and gentrification have complex relationships with where they are from, and where they have settled, relationships that are crucial to interrogate in our work on sociolinguistic variation (see Tseng & Hinrichs, 2021). And indeed, recent scholarship in second language acquisition has demonstrated that consideration of speakers' orientation toward where they come from, and where they have relocated to, can be predictive of their linguistic practices (Nycz, 2018, 2019).

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Thus, understanding speakers' subjective relationships with *place* is key to understanding their *emplaced* and place-linked linguistic practices. I therefore echo Montgomery and Moore (2017:5) who write, "to gain a more nuanced understanding of the relationship between language and place, sociolinguists need to consider place to be symbolic, socially constructed, and culturally defined, as much as it is physically delimited." I argue that the best way to accomplish this is via employment of ethnographic approaches to understanding place identity—uncovering what potentially conflicting definitions of place exist in the research site and how locals might orient to them. I further assert that the ideal way to include these inherently qualitative and multifaceted insights about a given individual's place orientation within statistical models of linguistic variation is by the development of multidimensional place orientation metrics (MPOMs). MPOMs are quantified metrics for scoring speakers in terms of behaviors and beliefs that tie them to specific places. MPOMs are flexible and should be tailored to the specific locale under consideration. But crucially, MPOMs allow for researchers to fold multiple insights about speakers' place orientations into a single measure that can be accounted for in statistical models of variation.

I illustrate the value of ethnographically informed MPOMs via examination of local linguistic variation in post-Katrina Greater New Orleans. In Greater New Orleans, the white, working-class variety of English has been undergoing shift away from some of the traditional linguistic features, such as nonrhoticity and the split short-a system (Labov, 2007; Carmichael, 2014). A stronghold for these features has been the insular white, working-class suburb of Chalmette, located just downriver of New Orleans (Mucciaccio, 2009; Carmichael, 2014). Chalmette residents are locally stereotyped as closed-minded, unworldly, uneducated, and lower class—and their speech is too. Following the destruction of Hurricane Katrina in 2005, many Chalmette residents were displaced, and some "Chalmatians" permanently relocated to areas of Greater New Orleans where the marked traditional features are not in use. As a result, individual relationships with Chalmette as a place, and Chalmatian English as a dialect linked to that place, have become underscored after the storm as speakers' physical and emotional connections with Chalmette have shifted. In this paper, I present a variationist analysis of two key features in this community, nonrhoticity and the split short-a system, demonstrating the predictive value of an MPOM in the models of variation. In both cases, speakers oriented toward Chalmette demonstrate greater usage of traditional features, which I demonstrate both in the aggregate and in case studies of specific speakers. I describe in detail the development of this MPOM based on ethnographic insights and the methods by which I quantified this measure, providing strategies targeted at variationist sociolinguists as I echo the call for more meaningful engagement with theories about place.

2. Place and language

2.1 Theories of place

The simplest definition of place is a "meaningful location" (Cresswell, 2015:12), with the meaning derived from people's emotional and subjective attachments to it. Central to this definition is the idea that place is a social construct and not just a physical setting. And indeed, many human geographers believe there is no objective description of place, only our subjective experiences of it. The ways in which we move in these spaces and conceive of our relationships to these places are rooted in our human experiences. We have ideologies about places, many of which are informed by the geopolitical structures that define them (borders, citizenship, statehood). We have biases about what kinds of people belong in certain places, and we continually police this ownership of and right to a place. And crucially, we know what places *we belong to*—what places define our own identity. Environmental psychologists consider place attachment to be a healthy and essential component of human behavior and community-building, which provides a sense of belonging and purpose (Lewicka, 2008). Springing from these attachments, one can develop a *place identity*, which is one's personal identification with a place. When proclaiming oneself a New Yorker, a Southerner, or an EastEnder, we are defining ourselves in relation to a place and expecting our interlocutor to accept a socially constructed version of what that means to belong to that place.

But place is not static. Places change over time, and individuals may shift in what locales they consider to be "home" over the course of their lives—especially individuals who move (voluntarily) or are displaced (involuntarily). When one's physical connection to a place is ruptured, one may experience grief or loss (Fried, 1963), and these feelings can affect an individual's connection with new and old homes alike as they become "unrooted." Tuan (1980:3–4) defines rootedness by a combination of longterm habitation in and "a feeling for and attachment to place." He notes that rootedness is typically viewed as "harmonious stability" rather than "dynamic progress" (1980:3). More rooted individuals have been shown to experience a stronger sense of longing for home when away (McAndrew, 1998; Lewicka, 2008). And rootedness has in turn been linked to linguistic practices (Reed, 2018, 2020), suggesting that sociolinguists would benefit from consideration of these—at times evolving—emotional connections to place.

If rootedness implies a temporal stillness, mobility is that dynamic force of movement across space, over time. Global mobility is currently at an all-time global high, with much hand-wringing about the loss of distinctiveness of places due to mass production, technology providing connections that are virtual and not emplaced, and broader forces of globalization and homogenization (Relph, 1976; Tuan, 1980; Arefi, 1999). If we are biologically programmed to build connections with places (McAndrew, 1998), with our bonds to home tied inherently to our mental health (Lewicka, 2008), then how can we retain our humanity in an increasingly mobile and globalized world? This concern further fuels a nostalgia for rootedness as the "irretrievable Eden" (Tuan, 1980:4), and, in the case of language practices, for the kinds of accents that only "rooted" speakers might employ. Mobile speakers are often viewed as "inauthentic" due to their language practices being less place-marked, less emplaced (Bucholtz, 2003; Silverstein, 2014). Thus, rootedness and mobility are implicated in the very definition of what language practices, and which speakers, are allowed authentic claim to a given place.

Though many researchers have theorized about what place is, its presence within empirical research has not often benefited from what Tuck and McKenzie (2014) call *critical place inquiry*. They write:

> [I]n much social science research, place is just the surface upon which life happens (and from which data are collected) (Massey, 1994). If mentioned at all, it is usually as the backdrop of the inquiry, described briefly beneath headings like "the research site", or "the research context". Consider the number of studies that use designations such as "urban", "rural", "Southern", or "small", to describe where the work has taken place. Such

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> terms are used frequently, but rarely are further examined through the research (Tuck and McKenzie, 2014:9).

Further reflection on these issues would greatly benefit our theories about how place as a social construct influences language variation and change, as speakers orient toward these ideas about what a place is and what kind of speakers—and language practices—might fall under some of these labels. Methodologically, it is also worth reflecting on how we as researchers define communities and community membership vis à vis these subjective ideas that we *ourselves* hold (Bucholtz, 2003; Eckert, 2004).

2.2 Place and sociolinguistic variation

Early research in variationist sociolinguistics, such as Labov's (1963) Martha's Vineyard study and Eckert's (2000) Jocks and Burnouts study, have focused on speaker orientation to locally significant identities and have drawn from nuanced participant observation to determine these categories. Though neither Labov nor Eckert necessarily focused on the construction of place identity itself; extralocal/supraregional orientation was key to their analyses—and indeed, the patterns of variation were not interpretable without the socially nuanced understandings of local identity and how speakers oriented toward locally defined categories.

Sociolinguistics has arguably seen a "place turn" in recent years (Montgomery & Moore, 2017; Cornips & de Rooij, 2018), driven initially by Barbara Johnstone's work on Pittsburghese (e.g., Johnstone, 2004; Johnstone, Andrus & Danielson, 2006), which has captured the ways that class-based linguistic variables in the city of Pittsburgh have come to index place identity over time. Though much sociolinguistic research on place is discursive in nature (e.g., Modan, 2007; Ilbury, 2021), there is evidence that variationist research can benefit from further theorization about place as well. For example, in Becker's (2009) study of the Lower East Side, she found increased rates of nonrhoticity—an iconic New York City feature—when participants discussed neighborhood-specific topics. Both Schoux Casey (2013, 2016) and Carmichael (2014, 2017) found that rates of nonrhoticity in New Orleans English were higher for more locally oriented residents, arguing that nonrhoticity has become central to post-Katrina performance of place identity. Similarly, Reed (2018, 2020) employed a rootedness metric borrowed from research on tourism, finding that /ai/-monophthongization rates in an eastern Tennessee town were highest for speakers who rated themselves as most rooted in the community. Barnes (2016) examined the use of Asturian linguistic features in the Spanish of residents of Gijón, Spain, arguing that speakers drew on these indexically rural features in order to construct a place-based identity emphasizing their hybrid urban-rural status as residents of the major metropolitan center within a largely rural region. And King (2021) has noted the significance of a locally defined "mobile Black professional" persona in Rochester, New York, which African American speakers in the region index via BAT-retraction—indicating an orientation *away* from the area and its fronted BAT realizations. In each of these studies, place-based identity and/or place attachment played a significant role in understanding these linguistic behaviors and the social meaning of these linguistic choices. Notably, as variationists further theorize indexicality, agency, and style, these socially meaningful linguistic moves must be considered in tandem with the places that speakers orient to and construct their identity in relation to.

Considerations of place as a multifaceted and contested social construct can also inform research on ethnicity and nationality in an increasingly globalized world (Hoffman & Walker, 2010; Newlin-Łukowicz, 2015; Hua, 2017; Tseng & Hinrichs, 2021) and open up inquiries about mobile populations in second dialect acquisition research (Nycz, 2018, 2019). And, crucially, as sociolinguists expand on our intersectional considerations of race, gender, sexuality, and social class, examining the ways that different cross-sections of society interact with—and position themselves with respect to—the places they live will make our analyses more informed, more nuanced, and more accurate. It is with these hopes and this lens that I present the following analysis of language and place within the post-Katrina landscape of greater New Orleans, as a model for variationists who wish to engage with these questions in a locally meaningful way (via ethnographic methods) that can also generalize beyond the community in question (via statistical modeling).

3. Place identity in post-Katrina greater New Orleans

3.1 Setting the scene

Located on the Mississippi River, New Orleans has historically represented a crucial site for the import and export of goods, frequently changing hands between colonial powers before Louisiana became a US state in 1803. While New Orleans is known primarily for its French and African roots, large groups of Irish, Italian, and German immigrants arrived throughout the nineteenth century (Campanella, 2006). These groups worked on the docks in the shipping industry, settling in nearby neighborhoods such as the Irish Channel and the Ninth Ward, where a distinct dialect of English developed (Dillard, 1985). In the fifties and sixties, in response to school integration, many of these white, working-class residents relocated downriver to the low-lying suburban town of Chalmette in neighboring St. Bernard Parish. Chalmette is thus viewed as the current site of the iconic white, working-class dialect sometimes called Yat (Mucciaccio, 2009). Yat is characterized by features shared with New York City English such as nonrhoticity and a split short-a system (Carmichael, 2017, 2020). Coles (2001:81) writes, "while the Yat dialect may be recognized as containing negative connotations from outsiders, it also has covert prestige which gives it the desirable characteristics of authenticity, history, and solidarity to its speakers." Chalmette was particularly hard hit by Hurricane Katrina, which flooded wide swaths of greater New Orleans in 2005. The population in Chalmette and surrounding areas of St. Bernard Parish decreased by nearly 50% in the years after the storm (US Census, 2000, 2010), with the majority relocating to other areas of greater New Orleans with more effective flood prevention measures (Lasley, 2012). Thus, many Chalmatians have experienced a rupture in their connection to their hometown, as they have become displaced to parts of greater New Orleans that look down upon the Yat accent.

3.2 The value of ethnographic methods in the study of language and place

The goal of ethnography is to describe cultural systems and develop an emic, or insider, understanding of locally meaningful behaviors. Ethnographic methods have proven to be central in the "Third Wave" (Eckert, 2012) of sociolinguistics, which focuses on the social meaning of linguistic variation and treats the individual speaker as an agent in constructing social meaning. As Eckert explains:

> Because meaning is made in day-to-day practice, much of it tacitly, the study of social meaning requires access to this practice. Surveys, questionnaires, and experiments all have important places in the study of language

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in society. But they generally presuppose and test categories and meanings, rather than discovering them (2000:74).

Similarly, if the goal is to capture speakers' subjective connections to the places they live and move through, it is crucial to determine the locally significant beliefs about those places, and how those ideologies might influence linguistic behavior.

With this in mind, I took an ethnographic approach to data collection for this study. I lived and worked in Greater New Orleans as a participant observer from February to October 2012, recording interviews with 57 participants from Chalmette (full demographic information and linguistic patterning summary in Appendix A). During interviews, I elicited each participant's oral history, including their Hurricane Katrina story, which was analyzed for rates of key New Orleans English features. At the end of the interview, we discussed their views on Chalmette before and after the storm and their perceptions of local language practices. The participant pool was balanced across age and gender groups. Reflecting pre-Katrina demographics for Chalmette (Census, 2000), all participants identified as white. Half of the participants lived in Chalmette at the time of the study, having moved back after the storm (returners), and half had permanently relocated to other areas of Greater New Orleans outside of the linguistically and culturally marked "Yat" suburb of Chalmette (relocators). Qualitative analysis of interviews and other interactions resulted in the identification of key themes in participants' definitions of a Chalmette-based identity: *loyalty to Chalmette, distrust of places/people outside of Chalmette, valuing of local/proximal resources in Chalmette,* and *embracing of a marked Chalmatian identity*. Though these themes were repeated across many interviews, participants positioned themselves toward these beliefs and behaviors in varied ways; that is, their orientations toward a Chalmette-based identity varied.

One frequent characterization of Chalmette was as a "bubble"—a sheltered community in which residents usually stayed within their neighborhood for multiple generations. Below, we see participants describe this multigenerational *loyalty* interwoven with *distrust*—even fear—of unknown, nonlocal elements:

Acilie: "People from St. Bernard[1] [Parish] are very much homebodies, and stayed within their Parish, and had this accent, and kind of stuck together."

Savannah: "In our neighborhood it was so important to stay close with the people that you were going to live along side of, because the idea was like, well these are going to be your neighbors forever, you know. These are going to be the people that you're living next-door to, and your kids are going to be playing together."

Bella: "The unknown kind of scares a lot of people here [in Chalmette], you know."

Capturing the other side of the spectrum, there were other speakers who discussed bursting that "bubble," leaving Chalmette and having an epiphany about how sheltered their lives had been before, shifting their orientation toward Chalmette somewhat as a result:

Big G: "I feel like I had the best of both ends because I got to see both [Chalmette and elsewhere]. Even my relatives didn't see both of them because they didn't go to college. And they still living in that St. Bernard world. And they don't want to let go. I kind of let go but yet stayed in it. My heart's in Chalmette, it will always be in Chalmette. I love it. I realized it's not perfect like I thought it was. I thought we was the center of the universe. [But then] I realized they got other things in the world. Where, a lot of my friends [back in Chalmette], they just shallow. And I mean shallow in the sense that they haven't experienced everything else."

Notably, Big G describes himself as more worldly, experienced, and deep than his sheltered Chalmatian friends. In work on place attachment, researchers broach the issue of worldliness and curiosity about new places. Tuan (1980:4) characterizes rootedness, or strong emotional and chronological links to home, as marked "by an incuriosity toward the world at large." Chalmette, as a locale, can thus be described as a place where rootedness is the default—both in terms of intergenerational community members remaining in close geographic proximity throughout their lives and in terms of individual behaviors and movements being restricted to Chalmette-specific activities. This makes it particularly marked when individuals opt out of this multigenerational tradition of staying in the Parish, when they seek out new experiences and "escape the Chalmette bubble." Reed (2018) similarly focused on this factor of worldliness or individual drive to experience new and different places and perspectives. Appalachian English speaker Suzanne, who described herself as "a citizen of the world" with a "broader outlook" than many from her small mountain town (Reed, 2018:420), made notable changes in her rates of /ai/-monophthongization after leaving her hometown and beginning a professional career in another region. While one could adopt a more simplistic claim that education, or exposure to other dialects, was the source of her linguistic changes, Reed argued that because /ai/-monophthongization is an iconic, place-linked feature, Suzanne is doing identity work with respect to her Appalachian roots. She is orienting away from her hometown, and her language practices reflect that. Similarly, in Chalmette, rootedness is the default, and thus an orientation away from this rooted identity is a significant and socially meaningful move.

One of the ways that outsiders derogate residents of Chalmette is through the label "Chalmatian." Notably, this toponymic descriptor is multivalent, as Benjamin describes: "If another person from Chalmette's calling you that, then it's a compliment, and if someone from outside the area's calling you that, it might not be considered that way." The way the word is used indexes one's stance toward Chalmette: either an insider stance in which the term is used as an expression of solidarity and valuing of Chalmette ideals or an outsider stance in which the term is derogatory. All participants in this study were asked what a Chalmatian was, and whether they considered themselves to be a Chalmatian, thereby *embracing a marked Chalmatian identity*. Max notably linked language practices and self-reference as a Chalmatian, explaining that a Chalmatian is characterized by "that accent, that temperament, that um, mindset—like when you live in Chalmette, [. . .] how it's just like the whole world pretty much." Even participants who enthusiastically identified as a Chalmatian acknowledged awareness of the external judgment. Molly said, "Some people say 'you're such a Chalmatian'—yeah I am, but I love it!" Here, Molly identifies others ("some people") applying the label to her and then goes on to use the contrastive conjunction "but" when explaining that she loves being a Chalmatian—suggesting that she is aware that it would not be assumed to be a thing one would love. Thus, identifying as a "Chalmatian" (and, as I will argue below, using stigmatized Chalmatian English features linked to that identity) indirectly indexes a positive stance toward Chalmette and orientation toward Chalmette's linguistic and cultural values rather than those of broader Greater New Orleans.

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Figure 1. New Orleans Neighborhoods Tee Shirt. https://www.fleurtygirl.net/nola-neighborhoods-tee.html. Last accessed August 5, 2020.

Notably, orienting away from a given place—especially a locally stigmatized locale like Chalmette—also means orienting *toward* external assessments of that place. Externally, Chalmette is viewed negatively, both socially and linguistically (Mucciaccio, 2009; Carmichael, 2014). Cultural geographers like Cresswell (2015) have argued that people who do not fit the norm of a place—he used the examples of homeless individuals in the cityscape and transgender members of society—are either punished for existing or rendered invisible within the space in question. And indeed, in marketing New Orleans authenticity, Chalmette is frequently erased from the picture, literally. One example of this is in the tee shirt in Figure 1 in which "New Orleans neighborhoods" are colorfully outlined according to local designations (not official boundaries), with a gaping hole toward the bottom right, where Chalmette is located.[2] Despite this erasure, many of the other products at Fleurty Girl, the upscale boutique that sells these shirts, feature local phrases and sayings used by Chalmatians, commodified and marketed to an upper-middle-class clientele (Carmichael & Dajko, 2016). Notably, Fleurty Girl has eight locations within New Orleans and in its suburbs—including one as far away as Bay St. Louis, Mississippi, which is sixty miles from downtown New Orleans; none are within St. Bernard Parish.

While the erasure represented above is visual, erasure of certain groups can also be accomplished discursively (Irvine & Gal, 2000). In the neighborhood of Mt. Pleasant in DC, for example, discourse about cleanliness and hygiene identified white homeowners as the deictic center of the neighborhood, casting drunk, homeless, and nonwhite individuals as transgressive and inherently "out of place" and thus excluded from being considered ratified members of the community (Modan, 2007). And there is ample evidence that Chalmatians—despite being viewed as quintessential Yats, a New Orleanian stereotype—are considered not to be "true" New Orleanians, as Mucciaccio (2009:94) demonstrates:

> [Interviewer]: So are Chalmatians New Orleanians too?
>
> [Participant]: I don't think so. They're from Chalmette!

This process of identifying those who do and do *not* belong in a given place can amplify one's place identity—which can in turn be expressed through language practices.

4. Analyzing place: arguing for the use of multidimensional place orientation metrics (MPOMs)

4.1 The extra-Chalmatian orientation measure

The MPOM I developed for this community, the extra-Chalmatian orientation measure, was developed based on the key themes about Chalmette/Chalmatians described above. While qualitative analysis of these themes is valuable in its own right, my goal was to turn these complex ethnographic insights into a measure that could be included in a statistical model of the linguistic variation observed. This necessarily meant combining and quantifying a series of indicators related to the themes of *valuing of local/proximal resources in Chalmette, distrust of people/places outside of Chalmette,* and *loyalty to Chalmette over external locales*; these indicators are listed below (full metric provided in Appendix B):

1. Identification as a Chalmatian
2. Stated desire to leave Chalmette before the storm
3. Residential history
4. Schooling location
5. Workplace location

Measure (1) captures whether participants self-identified as Chalmatians and thus whether the individual *embraced a marked Chalmatian identity*; (2) identified whether participants said they wanted to leave Chalmette before the storm (regardless of their returner-relocator status following the storm)—linked to the Chalmatian identity factors of *distrust of people/places outside of Chalmette,* and *loyalty to Chalmette over external locales.* Measures (3), (4), and (5) on the face of it may seem straightforwardly indicative of exposure to other non-Chalmette dialects.

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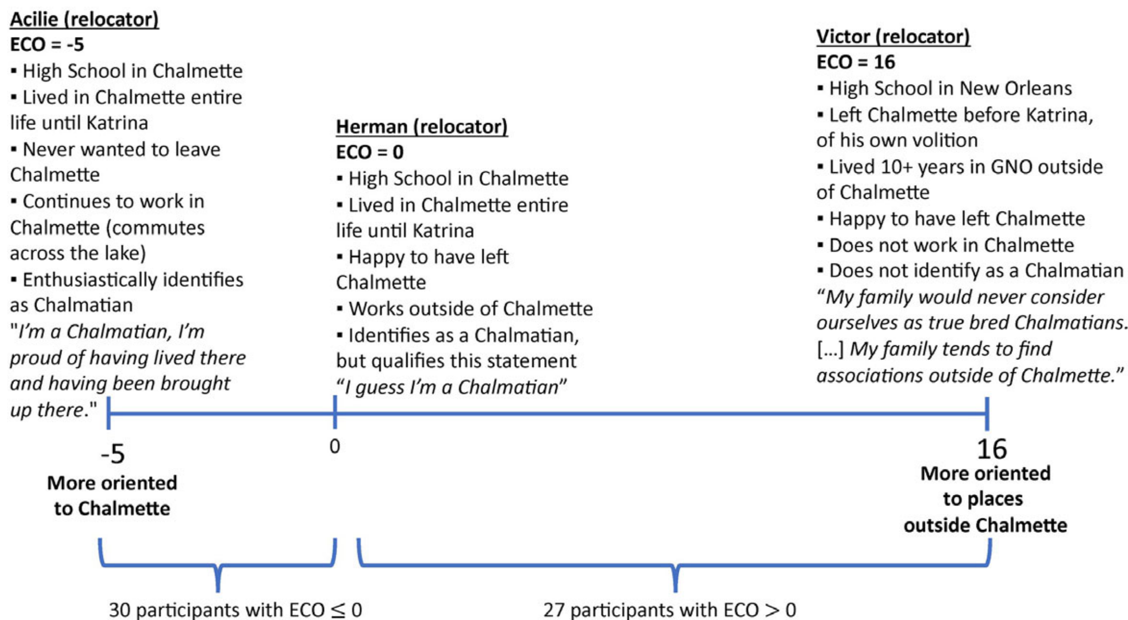

Figure 2. Extra-Chalmatian Orientation (ECO) measure.

However, since it is marked to leave Chalmette or participate in external social structures at all, these measures in fact represent ways that participants may have quite consciously opted to participate in communities outside of Chalmette, which is a marked practice within this speech community.

Participants were assigned points based on their responses to (1)–(5), with individual scores ranging from −5 (very oriented toward Chalmette) to 16 (very oriented to places outside of Chalmette). The majority of participants scored in the −5 to 0 range, reflecting the default "rootedness" discussed above. Figure 2 provides a schema for the range of orientation scores in my sample, providing examples of participants along the orientation continuum in terms of the measurements. Notably, all the participants featured in Figure 2 are relocators, demonstrating that place orientation is independent of relocator/returner status, confirmed by a Fisher's Exact Test that found no significant correlation between these factors ($p = 0.37$).

One may notice that the indicators included in the extra-Chalmatian orientation measure could apply to a number of communities. One could simply lift this measure wholesale for any speech community of interest; however, the intent of this study was *not* to generate a standardized measure that applies equally to any speech community. I would argue that such measures, while broadly informative, do not account for the locally significant behaviors and meanings within a given community—the very features that ethnographic methods target. MPOMs, such as the extra-Chalmatian orientation measure, capture the fact that "although members of a population defined as living in the same community may all agree that they live in a particular area or political unit, they do not orient in a homogeneous way to that that area or unit or its surroundings. [. . .] Categories, groups, and networks may, as a result, embody differences in spatial orientations and practices, with important consequences for patterns of linguistic variation" (Eckert, 2004:109). Below, I illustrate the value of the extra-Chalmatian orientation measure within statistical models of variation as well as in a zoomed-in case study of two speakers from the study.

4.2 Making the case for MPOMs via statistical modeling

As a means of demonstrating the value of this measure within a variationist paradigm, below I present the models for two key features of Chalmatian English, nonrhoticity and the split short-a system, for the 57 speakers from this sample. Thirty-minute portions of conversational speech from interviews were transcribed and force-aligned with the Montreal Forced aligner (McAuliffe et al., 2017). Tokens of the two variables were coded for linguistic factors as described below as well as the social factors of speaker age, gender, returner-relocator location status (whether they returned to Chalmette or relocated after the storm), and extra-Chalmatian orientation. All speakers were white, working-class, and originally from Chalmette, thus these factors were not tested for in the models.

Variable nonrhoticity is perhaps the most iconic feature of the local New Orleans dialect, frequently performed and pointed to in caricatures of Chalmette speech in particular, though nonrhoticity rates are on the decline over time in Greater New Orleans (Schoux Casey, 2016; Carmichael, 2017). A total of 2,854 tokens of (r) from interviews (~50 per speaker) were auditorily coded for presence or absence of /ɹ/ as well as preceding/containing vowel (START /ɑ/, SQUARE /e/, NEAR /i/, FORCE /ɔ/, NURSE /ɝ/, and LETTER /ɚ/) and morphological environment (word-final preceding a pause, "I don't care"; word-final preceding a vowel, "I don't care about that"; word-final preceding a consonant, "I don't care to go"; morpheme-internal in a closed syllable, "girl"; morpheme-internal in an open syllable, "early"; morpheme-final in a closed syllable, "cares"; and morpheme-final in an open syllable, "careful"). Only stressed syllables and only the first three tokens of a given word were coded. I generated a logistic mixed effects regression model in R, including the random variables of speaker and word. Fixed variables were each added to the model—linguistic factors first, then social factors—and a stepwise model comparison was conducted via ANOVA. The final model presented in Table 1 featured significant predictors of preceding/containing vowel, morphological environment, gender, age, and extra-Chalmatian orientation. Only returner-relocator location status was not significant.

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Table 1. Regression table for (r)

	Estimate	Std. Err.	P value
(Intercept)	3.530	0.918	0.000121
Vowel *(reference point: ɚ 'LETTER')*			
ɝ 'NURSE'	2.961	0.358	<0.001*
ɔ 'FORCE'	0.089	0.319	0.781
e 'SQUARE'	−0.883	0.441	0.045*
i 'NEAR'	0.669	0.533	0.210
ɑ 'START'	−0.002	0.357	0.996
Morphological environment *(reference point: word-final preceding a pause)*			
Word-final preceding a consonant	−1.683	0.219	<0.001*
Word-final preceding a vowel	0.510	0.252	0.043*
Morpheme-internal, closed syllable	0.468	0.363	0.198
Morpheme-internal, open syllable	−0.844	0.365	0.021*
Morpheme-final, closed syllable	−0.418	0.388	0.282
Morpheme-final, open syllable	−2.588	0.626	<0.001*
Gender *(reference point: men)*			
Women	1.652	0.600	0.006*
Age	−0.077	0.017	<0.001*
Extra-Chalmatian orientation	0.279	0.058	<0.001*

Random effects: word (N = 506; std dev: 1.251); speaker (N = 57; std dev: 2.068)

Table 2. Results of multinomial regression on short-a system types

	Coefficient	std error	*p*-value
split-continuous *(n = 27)*			
intercept	1.9407	1.0783	0.0719
age	−0.0272	0.0198	0.1696
extra-Chalmatian orientation	0.1257	0.092	0.1722
nasal-continuous (n = 5)			
intercept	−0.4588	2.1441	0.8306
age	−0.0311	0.042	0.4591
extra-Chalmatian orientation	0.3449	0.1243	**0.0055***
nasal (n = 8)			
intercept	6.9683	2.3588	0.0031
age	−0.2331	0.0859	**0.0067***
extra-Chalmatian orientation	0.2229	0.1327	0.0929

Reference point: *split system* (n = 17)

Compared to unstressed schwa, the NURSE vowel is significantly more likely to be rhotic, while the SQUARE vowel is significantly more likely to be nonrhotic. Compared to word-final, prepausal environments, nonrhoticity is significantly more likely in word-final position preceding a consonant ("I don't care to go"), morpheme-internally in an open syllable ("early"), and morpheme-finally in an open syllable ("careful"), and rhoticity is significantly more likely in word-final position preceding a vowel ("I don't care about that"). Women are significantly more rhotic than men, younger speakers more rhotic than older speakers (reflecting the change in progress toward increased rhoticity), and those more oriented to places outside of Chalmette are more rhotic than those oriented toward Chalmette. Crucially, then, even if all other social and linguistic predictors are accounted for, there is still significant predictive value to the ethnographically informed place orientation measure tested in this model. And indeed, the direction of the effect signifies that the speakers who use the lowest rates of the traditional nonrhotic variable are those who are least oriented to a Chalmette-based identity.

Similar to nonrhoticity, a shift is also underway in Greater New Orleans away from the historic split short-a system toward a nasal system (Carmichael, 2020). The nasal system, in which tensing is only triggered by a following nasal sound, is more common throughout the US, and many locales with split systems—like New York City and Philadelphia (Becker, 2009; Sneller, 2018)—are undergoing similar shifts. In Greater New Orleans, a transitional "continuous" system between split and nasal is common. What's more, some speakers with this transitional system seem to feature tokens that patterned a bit closer to a nasal system (nasal-continuous) and others that patterned a bit closer to a split system (split-continuous). In order to model short-a system type, formant values from interview speech were extracted via Praat script, and outliers at three times the standard deviation from the mean were checked and removed if they represented formant tracking errors. The data was plotted in F1-F2 space, then visually categorized as split system (defined by a visual "split" between tense and lax categories); nasal system (identified by a visual "split" between tensed prenasal closed syllables and lax short-a realizations elsewhere); and a split-continuous or nasal-continuous system (depending on the level of overlap between tensing environments and nontensing environments; speakers with significant overlap between these categories were considered nasal-continuous while those with less overlap were categorized as split-continuous).

To test which social variables best predicted the four system types, a multinomial regression model was generated for short-a system type by speaker. Since each speaker featured an individual token as dependent variable (short-a system type: split, split-continuous, nasal-continuous, and nasal), no random effects were included in this model. Similarly, since the linguistic constraints on testing were visually assessed, only social factors were tested in the model. As with the nonrhoticity model, social factors were added one at a time, and stepwise model comparisons were completed via ANOVA. Table 2 presents the final model, in which age and extra-Chalmatian orientation significantly predicted short-a system type; gender and returner-relocator location statuses were not significant predictors.

Nasal systems were more likely among younger speakers, reflecting the change in progress toward a nasal system. In comparison with the split short-a system reference point, nasal-continuous systems were more common among participants with higher extra-Chalmatian orientation scores. In Carmichael (2020), I interpreted this pattern as representing the early shifters toward the nasal system, since nearly all speakers under age thirty in my sample featured a nasal system, and no speaker over age 31 demonstrated a nasal system (see Appendix A). Thus, while the shift toward a nasal system was so age-graded that no extra-Chalmatian

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orientation effects predicted the nasal system type compared to the split system, this MPOM *did* significantly predict which speakers featured the transitional nasal-continuous system, in contrast with the split and split-continuous systems that are more traditional and more dominant in the sample (44 out of 57 speakers featured split or split-continuous systems). That is, it is the speakers most oriented outside of Chalmette who were early adopters of a more nasal-like system.

Thus, we see for both nonrhoticity and split short-a systems that extra-Chalmatian orientation is a significant predictor of the variation observed, and in both cases it is the speakers who are most oriented *away* from Chalmette who feature lower rates of traditional variants. The analyses above demonstrate the predictive power of an ethnographically informed MPOM in models of sociolinguistic variation. However, in order to make arguments about the social meaning of these language patterns, below I present a case study of two speakers and their views on their Chalmatian identity and language use.

4.3 Making the case for MPOMs via case study

Roger and Luke represent two ends of the continuum in terms of extra-Chalmatian orientation. Luke scored the lowest possible score of -5 on the scale, indicating that he is very Chalmette-oriented, and Roger featured the second-highest externally oriented score in the sample at 15.[3] In most other ways, however, Luke and Roger are demographically similar. Both attended Catholic high schools—Roger in New Orleans and Luke in Chalmette—and then went on to get bachelor's degrees at the University of New Orleans, a regional public university located about ten miles from downtown Chalmette. Luke was 31 at the time of the interview and finishing up his MBA while working and living in Chalmette. Roger was 29, working and living in New Orleans.[4]

In addition to scoring at opposite ends of the place orientation spectrum, these speakers also described their relationship with Chalmette quite differently during the interview. Roger called himself a "Chalmette escapee" and openly made fun of Chalmette residents, past and present. He was strongly influenced by the experience of attending an elite Catholic high school in New Orleans, on scholarship, and the discovery that Chalmette-linked behaviors and language practices were stigmatized outside of St. Bernard Parish, as he describes below:

> It was a rude awakening for me [. . .] The first day at lunch [during orientation] I immediately—while I'm still waiting in line to get my food, on a day before school even started—I was already hearing Chalmette jokes. For the first time in my life. I had never realized that the place that I came from was this object of ridicule for people in surrounding areas. [. . .] I started trying to piece things together. You know, just quietly observing these jokes that were being told about the, just, general stupidity, and 'they sleep with their sisters' [. . .] It was kind of a devastating day for me.

Roger goes on to explain that this watershed moment for him led him to avoid making any friends at his high school who were also from Chalmette and to try as hard as possible to disprove the negative stereotypes about his hometown. We see, in this story, the ways that Roger began to develop an externally oriented identity in his acceptance of these stereotypes about Chalmette as a place and in his subsequent attempts to distance himself from these ideas. Chalmette-oriented Luke certainly seemed to be aware of outside judgment about Chalmette. In particular, he told stories about lying about where he was from when meeting girls at bars in uptown New Orleans, because "once they find out you're from Chalmette, it's over!" However, he did not overall speak disparagingly about Chalmette from his own voice.

Table 3. Features of Chalmatian English in Luke and Roger's speech

	Luke (Chalmette-oriented)	Roger (Externally oriented)
Nonrhoticity (percent r-lessness)	69% r-0 100/145	2% r-0 3/143
Short-a system	Split-continuous	Nasal-continuous

Luke and Roger are also strikingly different from each other linguistically. Luke indicates awareness of his accentedness, saying: "I always get told I have a thick accent." In contrast, Roger is significantly less vernacular and openly mocks the accents of his extended family in Chalmette. We can see this in Table 3, which presents Luke and Roger's rates of nonrhoticity and their short-a system type, the variables of interest in this study. In both cases, Chalmette-oriented Luke presents more traditional features than externally oriented Roger.

As mentioned, in Chalmette rates of nonrhoticity are on the decline across generations, with many young speakers categorically rhotic (Carmichael, 2017). Roger nearly fits that description, with only three nonrhotic tokens out of 143. Luke, in contrast, is highly nonrhotic, thus he makes use of this locally salient feature that is doubly salient for someone as young as he is. Figure 3 demonstrates that both Luke and Roger feature continuous short-a systems without clear phonemic distinctions between tense, lax, and nasal environments. However, Luke's realizations tend more toward a split system, the traditional Chalmatian system in which tense environments are more raised than lax environments, and Roger's is nearly a nasal system, the nonlocal norm, since the tense and lax tokens are almost completely overlapping.

Roger's adoption of less-marked, less place-linked linguistic features may reflect his attitude toward being stereotyped as a "typical Chalmatian" in a negative way during his adolescence. As he explained, "I felt like I was under this microscope for at least my first year and a half in high school, because I felt like I had to prove myself quite a bit. And I think that I did my best, at least, to kind of quell some of the stereotypes about Chalmatians." That is, Roger viewed himself as a representative for external judges about what qualities were associated with his hometown. Roger is not alone in this sentiment. Other participants also indicated their embarrassment at being identified as a Chalmatian according to their accent—emphasizing their orientation toward the external, negative judgments of Chalmatian identity. In contrast, while Luke tells stories about being identified by his accent, he never includes negative evaluative descriptors in his characterization of these encounters. Thus, it is not that he is unaware of his accent being linked to Chalmette as a place, nor even that he is unaware of negative judgment about Chalmette as a place, but rather he continues making use of linguistic practices tying him to Chalmette despite this awareness. I argue that his usage of Chalmatian linguistic features is an identity move, demonstrating a pro-Chalmette stance and rejecting outside stigma associated with his accent and hometown. Thus, via Chalmette-oriented Luke and externally oriented Roger, we see the reflection of their place-linked ideologies in their language practices.

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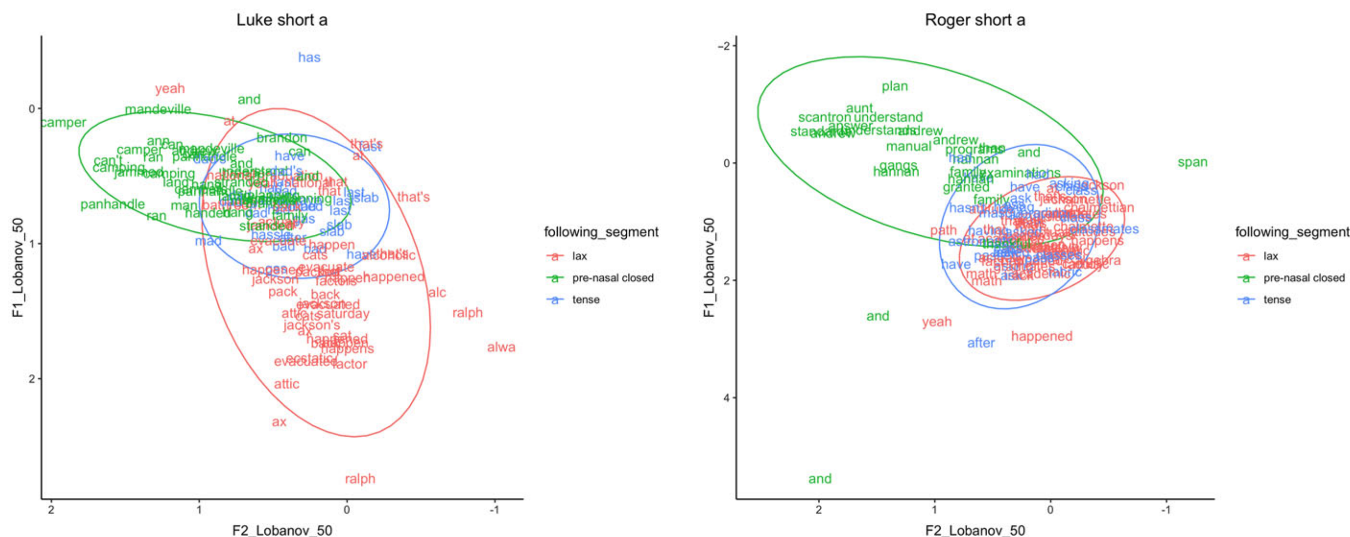

Figure 3. Short-a systems for Luke and Roger's interview speech in Lobanov normalized space.

6. Summary and discussion

I have provided a description of the MPOM developed for this paper based on ethnographic insights about what it means to orient toward or away from a Chalmette-based identity in Greater New Orleans. An ethnographic approach to the social meaning of place identities, and speakers' orientation toward them, improves on static views of place by providing key theoretical backing for analyzing subjective constructions of place. And operationalization of these insights into MPOMs allows for inclusion of these forces within models of sociolinguistic variation. Both in the aggregate in statistical modeling of variation and in the analysis of specific speakers, I have presented evidence that place-based identity plays a role in the linguistic choices among Chalmatians.

Part of the reason an MPOM is so well suited to this community is because of the widespread displacement of the speakers from their hometown of Chalmette, which before Hurricane Katrina was an incredibly insular locale. But notably, returner-relocator status did not significantly predict either nonrhoticity or short-a system type. Rather, speaker *orientation* to new and old homes was a key predictor of the variation observed. We see here explicitly that a static consideration of place would not have provided the same insights as the MPOM did. And the usefulness of MPOMs is not limited to communities with mobile speakers. Rather, because ethnographically informed MPOMs center on locally distinctive practices that reflect place orientation, these measures can provide key insights even in situations with longstanding population stability (rootedness). Especially in situations in which the speakers being examined are themselves rooted in place, but an influx of outsiders occurs—as in the case of inward migration or neighborhood gentrification—one's expression of place-linked identity may become highlighted and authentic claims to that place challenged. For example, in Pittsburgh, Johnstone et al. (2006) found that mobility in and out of the region following World War II was essential to the process of enregisterment that ultimately linked traditional working-class linguistic features to local authenticity. Thus Pittsburghese indexes a place, to be sure, but also a certain *type* of resident—an insider with multigenerational claims to the city. Given that a regional dialect is inherently a marker of being "from somewhere"—generally having grown up there, and thus having claims to being an authentic or ratified resident of that place—one's accent becomes a key tool for expressing one's claim to a place.

Post-Katrina mobility of Chalmatians has drawn increased attention and increased scrutiny toward their language practices. As mentioned, participants report being identified as Chalmatian by their accent, in particular those who spent significant time displaced to other areas. This increased awareness of "the Chalmette accent" by Chalmatians themselves has also led to the availability of these linguistic resources as socially significant interactional moves. Like self-identifying with the term "Chalmatian," these moves can be seen as multivalent, with an understanding that their evaluation is dependent on the insider-outsider status of the listener. I would assert that this very awareness of the stigma of Chalmatian ways of speaking makes the use of these linguistic features by speakers in the post-Katrina landscape all the more clearly agentive and identity-driven. That is, for those oriented toward Chalmette and toward an insider conception of Chalmette as a place, using these features indirectly indexes a rejection of outsiders' characterizations of Chalmatians as uneducated, lower-class, and undesirable. It indexes a Chalmette-centric worldview, one in which the opinions and values of Chalmette as a place are set at the deictic center. Without consideration of place orientation or the local significance of places within Greater New Orleans, we might derive these conclusions via established concepts in sociolinguistics like exposure or covert prestige, however we lose some of the socially meaningful understandings of place, space, and language that the speakers themselves are orienting toward in their linguistic choices. And, in the case of mobile speakers, we could lose the nuance of their emotional connections to places and how those links are expressed through language.

7. Conclusions and broader implications

Johnstone (2004:65) calls attention to the fact that "[p]lace, in one form or another—nation, region, county, city, or neighborhood—is one of the most frequently adduced correlates of linguistic variation." That is: place matters in studies of language. Place need not be conceived of in merely geographic or spatial terms—every place has a history, a significance that is specific to individual inhabitants. As theories of place are becoming more commonly explored in studies of identity, it grows all the more important to better

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understand the relationship between place-linked ideologies and the sign systems used to express them (whether linguistic, visual, or otherwise). To echo Gieryn (2000:466), "place is not merely a setting or backdrop, but an agentic player in the game—a force with detectable and independent effects on social life." In order to have fully fleshed out models of sociolinguistic variation, the force and effects of place must be accounted for. In this paper, I have argued for the value of ethnographic methods and the inclusion of these ethnographically derived insights in multidimensional place orientation metrics (MPOMs) in accomplishing this task. While ethnographic methods tackle the challenge of varied experiences with and definitions of places (Eckert, 2004; Modan, 2007), MPOMs provide an operationalization of these *qualitative* insights into a single *quantitative* measure that can be included in statistical models of variation. Montgomery and Moore (2017:9) point out that "the idea that we might want to focus on different kinds of speakers and their diffuse experiences of place is antithetical to many of the practices that have been typically employed in traditional variationist research." I propose MPOMs as a way of overcoming this challenge. While the specific metrics included in the MPOM in this study, extra-Chalmatian orientation, could be used wholesale across communities, I argue that its value is *not* in its broad applicability but rather in its localized, ethnographically conceived design. Since "[d]ifferent people in a given community view the boundaries differently, use different parts of the community, and participate in the surroundings differently," (Eckert, 2004: 109), these subjective understandings of place, and orientations to them, are best understood via nuanced ethnographic examination.

While this paper examines the issue of mobility in a US-specific, post-disaster context, the question of physical movement across space and how this impacts personal identity and language practices is, of course, significantly broader than this. Consideration of movement across national borders, multilingual contexts, and refugee experiences will be essential to our linguistic theories moving forward, because these are the realities of our globalized world, which at any given time is experiencing political upheaval, climate crises, and other large-scale motivations for migration, and for shifting allegiances to the place(s) one calls home (see Tseng & Hinrichs, 2021). And dedicating attention to place identity and place orientation is not simply relevant to transnational examinations (e.g., de Fina & Perrino, 2013; Hua, 2017) but informs any examination of speakers who live in places. Lastly, as we increasingly devote energy to considering the intersection of identity factors, we must consider the ways that linguistic performance of gender identity, sexuality, ethnicity, and so on are always necessarily emplaced. It is for these reasons, and in search of these insights, that I urge variationists to engage with and reflect upon the "place" of place in sociolinguistic research.

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Competing interest. The author declares none.

Notes

1 Note that locals typically use "Chalmette" and "St. Bernard" and "The Parish" interchangeably to refer to Chalmette and surrounding areas.

2 It is likely that this map is capturing Orleans Parish specifically, which is why distant downriver neighborhoods on the West Bank are included; but this is a marked and purposeful choice in terms of the visual representation of what "counts" as New Orleans.

3 Though Roger had only the second highest extra-Chalmatian orientation score (Victor features the highest extra-Chalmatian orientation score in the corpus at 16), he was chosen for the case study comparison because of his similar demographic background to Luke, making these two participants more feasibly comparable without confounding social variables. The other participants who were tied with Luke on being most Chalmette-oriented at −5 on the scale (N= 6) were women and/or notably different in age and social background from Victor. That said, the most closely comparable speaker to Victor with a −5 extra-Chalmatian orientation score is Ed, who is ten years older than Victor. Ed features a split-continuous system in contrast with Victor's nasal-continuous system and is 25% r-ful to Victor's 92% r-fulness, demonstrating that overall strength of the extra-Chalmatian orientation measure as a predictor of linguistic choices extends beyond the specific comparison of Roger and Luke. That said, because there is a change over time to more r-ful and a more nasal short-a system, the age confound between Victor and Ed makes the case less compelling that place orientation represents the key driver of linguistic difference. Moreover, the fact that Roger and Luke are younger and thus part of a cohort of Chalmatians in which the norm is to shift away from traditional features, Luke's continued use of marked Chalmatian features represents all the more compelling evidence of the significance of this identity move on his behalf.

4 Although Roger is a relocator and Luke is a returner, this factor is not a significant predictor of linguistic variation in the sample as a whole, and their similar demographics otherwise make them a key point of comparison when examining the role of extra-Chalmatian orientation in the sample.

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Appendix A. Participant information

Pseudonyms were selected by participants. Participants are sorted in order of age, from youngest to oldest, here.

Pseudonym	Returneror relocator	Gender	Age	Birth year	Extra-local orientation	Per-cent [R-1]	Short-a system type
Daisy	returner	female	18	1994	−1	100%	nasal
Ellie	returner	female	18	1994	−2	100%	nasal
Dave	returner	male	19	1993	−2	79%	split
McKenzie	relocator	female	20	1991	0	97%	nasal
Chris	returner	male	21	1990	1	85%	nasal-continuous
Haylie	relocator	female	22	1990	2	94%	split-continuous
Paul	returner	male	22	1989	−3	99%	nasal
Molly	returner	female	23	1989	−2	71%	split-continuous
Buckaroo	relocator	female	25	1987	9	96%	nasal
Max	relocator	male	27	1985	6	100%	nasal
Roger	relocator	male	29	1982	15	98%	nasal-continuous
Justin	returner	male	29	1982	−2	32%	split
Lance	relocator	male	30	1982	12	97%	split-continuous
Benjamin	relocator	male	31	1981	1	89%	split-continuous
Sandra	relocator	female	31	1981	3	37%	split-continuous
Greg	returner	male	31	1981	5	94%	nasal
Luke	returner	male	31	1981	−5	31%	split-continuous
Sara	returner	female	31	1981	1	100%	nasal
Savannah	returner	female	32	1980	−4	94%	split
JuAllison	relocator	female	33	1979	−3	95%	split-continuous
Mark	relocator	male	34	1977	6	90%	split-continuous
Jennifer	relocator	female	41	1970	0	29%	split-continuous
Allie	returner	female	41	1970	0	61%	split
Chastity	relocator	female	42	1969	0	42%	split
Parrain	returner	male	42	1969	−4	21%	split-continuous
Sugar Magnolia	returner	female	42	1970	11	97%	split-continuous
Mandy	relocator	female	45	1967	−3	76%	split
Yoda	relocator	male	45	1967	10	90%	split-continuous
Bella	returner	female	46	1966	−5	33%	split
Victor	relocator	male	47	1965	16	92%	nasal-continuous
NiceNHappy	returner	male	47	1964	−3	77%	split-continuous
Momma B	returner	female	48	1964	−5	55%	split
Christian	returner	male	49	1963	4	74%	split-continuous
Big G	relocator	male	50	1962	−1	19%	split-continuous
Herman	relocator	male	50	1962	0	31%	split
KillaB	returner	female	50	1961	−3	57%	split-continuous
Rayne	returner	female	50	1961	−5	86%	split-continuous
Rosalee	returner	female	50	1962	−3	24%	split-continuous
Chocolate	relocator	female	53	1959	−4	69%	split-continuous
Peaches	returner	female	56	1956	8	99%	nasal-continuous
Katherine	relocator	female	57	1955	11	98%	split-continuous
Ed	returner	male	57	1955	−5	25%	split-continuous
Margaret	relocator	female	59	1953	5	71%	split

(*Continued*)

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(*Continued*)

Pseudonym	Returneror relocator	Gender	Age	Birth year	Extra-local orientation	Per-cent [R-1]	Short-a system type
Frank	relocator	male	60	1952	0	61%	split-continuous
Acilie	relocator	female	62	1949	−5	87%	split-continuous
Sam	relocator	male	62	1950	1	88%	nasal-continuous
Super	returner	female	62	1950	−3	48%	split
Dayle	relocator	female	66	1945	−1	40%	split-continuous
Pauly	returner	male	67	1945	−3	13%	split-continuous
Mr. B	relocator	male	68	1943	3	25%	split-continuous
Rosie	returner	female	69	1943	−3	52%	split
Cecilia	returner	female	70	1942	−2	64%	split
Maria	relocator	female	71	1940	−3	61%	split-continuous
Nunu	returner	male	75	1936	−2	20%	split
Mary	relocator	female	76	1936	−2	31%	split
Gaston	relocator	male	85	1927	1	14%	split
Ronda	returner	female	85	1927	−1	21%	split

Appendix B. Calculation of Extra-Chalmatian Orientation Scores

Category	Measure	
(a) Identification as Chalmatian	−2	Identifies enthusiastically as Chalmatian
	−1	Qualified identification (e.g. “I guess”)
	0	No data
	+1	Qualified non-identification (e.g. “I guess”)
	+2	Identifies enthusiastically as non-Chalmatian
(b) Desire to leave Chalmette	−1	Never wanted to leave
	0	No explicit statement about desire to leave
	+1	Wanted to leave
(c) Residential history	+5	Left Chalmette before Katrina
	+1	Lived in Greater New Orleans outside of Chalmette for <5 years
	+2	“ “ for >5 years
	+5	“ “ for >10 years
	+5	Lived outside of Greater New Orleans <5 years
	+7	“ “ >5 years
	+10	“ “ >10 years
	+1	Evacuated and spent >1 year outside of Greater New Orleans
(d) Schooling	−1	Attended HS in Chalmette
	+1	“ “ outside of Chalmette
	+1	Attended college outside of Chalmette, but in Louisiana
	+2	“ “ outside of Louisiana
(e) Workplace	−1	Currently works in Chalmette
	+1	“ “ outside of Chalmette

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