The Spatiality of Perceptual Dialectology

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Abstract

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A criticism that has been leveled against modern sociolinguistic research is that “space [has been] carefully controlled out of” studies and that "spatial variation [... is] not examined" (Britain 2010b, p. 3). This dissertation responds to this criticism by using the tools and theories of perceptual dialectology to reincorporate physical space into analyses of sociolinguistic data. This is done through a study that uses the concept of *spatiality* as proposed by David Britain (2010a, 2010b) in the creation of a draw-a-map task (Preston, 1989) and the interpretation of the results. I propose that the three components of spatiality (physical, social, and psychological space) can be used in the analysis of data collected through perceptual dialectology methods when addressing the evaluation problem of language variation and change (Weinreich, Labov, & Herzog, 1968). I further explore how content analysis (Krippendorff, 1989) and critical discursive psychology (Edley and Wetherell, 2001) can aid in the analysis of qualitative data in creating aggregate maps of non-linguists’ perceptions of linguistic variation in their communities. This is accomplished by analyzing the mental maps of dialect regions collected from respondents online. The results are based upon the perceived linguistic variation by individuals in the state of Maine and is analyzed with regards to the sociodemographic and physical geography of the state.

Table of Contents

List of Figures

List of Tables

List of Maps

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It takes a village…

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...to help the village idiot grow.

Dedication

For my sisters: Kim and Amy

Chapter 1: Introduction

Pause, for a moment, and consider your hometown: try to reconstruct the streets you are familiar with in your mind. Then line these streets with the homes, businesses, and parks that you feel represent this town best. Finally, populate these streets and buildings with the people of the town. What do they look like? How do they spend their days? And finally, what do they *sound* like? In answering this last question, you can draw upon many of the social characteristics of the people you know: who they are as individuals. But now try to abstract away from the individuals and consider how groups of people talk. Perhaps you can make a generalization about how the men and the women speak; it's possible that different ethnic groups in your town (or city) had distinct, identifiable ways of speaking. Could you identify someone as coming from your town if you listened to their voice? For some of us, the answer to that question is unclear; it's likely that we think of them as sounding like ourselves. In fact, if we think of our hometown fondly and think of ourselves as being among its representatives, this may be a satisfying answer. Conversely, if we have negative associations with our hometown we may be more critical of the speech patterns or features that we might identify as being distinctly **not** like ours. But we may need to move beyond the town, where we may find everything to be familiar and "as it should be," and talk about a larger geographic area to help us invoke notions of differences and similarities between groups: the county, the state, or region of our country. The level of difficulty in describing how we and our fellow townspeople speak will vary, but we can all likely perform this task to some varying degree.

This dissertation takes a sociolinguistic approach to understanding how we answer the questions posed in the preceding paragraph by examining how we associate linguistic features with non-linguistic, social information when making connections to the "real world." The narrative structure of the opening paragraph is intended to orient the reader towards the research questions and methods that are employed in this dissertation. Important to the research questions of this dissertation is the sense of *space* highlighted in the opening paragraph: the association of linguistic variables to some area, such as a town or city, county, or state. Over the course of this dissertation it will be demonstrated how space represents a social variable that people have access to when performing evaluative judgments of language varieties. This is by no means a new or controversial approach to be taking within sociolinguistics. Where this dissertation is novel is in how it synthesizes several methods and theories already existing within sociolinguistics to perform a more thorough analysis of the ways in which people utilize space in forming and expressing attitudes towards language. This is done by using a conceptualization of space called *spatiality* to inform linguistic analysis. Spatiality, adopted into linguistics by Britain (2002, 2010a, 2010b) from cultural geography, is a means by which we can interpret the interaction of geographic space (a set of coordinates one can point to on a map) and social life (a sense of what a hometown is). When the term spatiality is used in this dissertation it refers to the process whereby individuals jointly construct a shared social understanding of a geographic space. As part of this social understanding, individuals are able to assign social characteristics to a space (and its occupants) in order to form evaluative judgments of linguistic features. The nature of these evaluative judgments with regards to motivation and operationalization will be given in greater depth in the following chapter, but for now it will be pointed out that conceptualizations of space have been successfully employed in sociolinguistic research. Britain (2002) utilizes spatiality to understand differences in linguistic production in a rural community in the United Kingdom where locals and recent settlers maintain different features. Paul Reed's research in Appalachia (2016, 2018, 2020), while not invoking spatiality, likewise asks similar questions (i.e., how people evaluate and judge the perceived local geography and the people who inhabit it) to analyze different uses of linguistic variables among a trio of women raised in the same household. These studies suggest that spatiality can be successfully employed as a means of interpreting variation among linguistic

variables in speech production; other studies have found that speech perception is likewise impacted by knowledge of space.

Niedzielski (1999) found that social information was used in the identification (i.e., perception) of linguistic features. Her study reported that nationality was the deciding social category; however, nationality can be argued to represent geographic space in some contexts (such as along national borders, where Niedzielski conducted her study), an argument I will return to in greater detail in the following chapter. As part of this argument, I will also be invoking the findings of Plichta and Preston (2005) and Chartier (2020) who likewise looked at perception of linguistic variables where the social categories were linked to geographic space, albeit more explicitly than in Niedzielski's study. Both studies asked respondents to place audio samples with manipulated linguistic variables on a map. Plichta and Preston (2005) found respondents were able to reliably place voices on a north-south continuum based on degree of monophthongization of /ay/ ([aɪ]) with an interaction of the social variable of gender. Chartier (2020) found that the respondent's own connection to a region (through Chamber's (2000) notion of *regionality* and a *Regionality Index*) impacted where they placed rhotic and non-rhotic pronunciations in New England. In both cases, a non-linguist's knowledge of geographic space impacted their evaluation of where a linguistic variable was perceived to exist.

These evaluative judgments tie this usage of spatiality from geography to the linguistic framework of *language regard*. Language regard refers to the attitudes towards and beliefs of language held by non-linguists as part of their linguistic knowledge. The term, proposed by Preston (2010), grew out of the tradition of folk linguistics (Niedzielski and Preston, 2003) to address how explicit evaluations of language varieties could be modeled in our understanding of linguistic variation and change. Although commented upon by Britain (2010b), spatiality and language regard have not been incorporated into a single framework even though the two could be united through *perceptual dialectology* (PD). For Britain, this currently missing connection is problematic in that it fails to include geography (*space*) as a variable of theoretical importance in modern sociolinguistics. Instead, geography becomes subsumed under "other" social categories (as in Niedzielski (1999)) and does not receive further development under theories of language variation and change. Chapter Two of this dissertation will further elaborate on this problem, building support for Britain's (2010b) claim that PD can reincorporate geographic space into a theory of language variation and change. The basis for this claim will be in what PD offers as a method for examining social evaluation of linguistic variables, namely in how PD focuses on the knowledge of non-linguists by examining where non-linguists believe different varieties of language exist in (geographic) space. This is accomplished through methods identified by Preston (1989) as the *draw-a-map task*. The draw-a-map task asks non-linguist (or "linguistically naïve") respondents to draw dialect regions on a blank map, often with supplemental commentary such as names for the regions.

Being able to perform the *draw-a-map* task putatively requires knowledge of the space, the people, and linguistic variation; as such, this task presents the perfect opportunity to combine language regard and spatiality. However, there is a question as to what constitutes this knowledge on the part of the respondent. Chapter Two will elaborate upon this by synthesizing several different approaches to attitudes from social psychology, geography (and the psychology of space), and linguistic literature under Preston's (2010) *attitudinal cognitorium*. The attitudinal cognitorium provides a framework for linking different types of stimuli (such as linguistic variables and a map representing space) to the explicit attitudes collected as a part of PD research.

To summarize the preceding pages, it is my goal in this dissertation to join Britain's concept of spatiality as a meaningful sociolinguistic variable into variationist sociolinguistic research through PD. Through this, I will demonstrate how the conceptualization of space contributes to the formation of identity and

how it manifests through perceptions of linguistic variation. The results of this dissertation will contribute to the theory of linguistic variation by expanding upon the under-theorized variable of space. In order to accomplish this, I will be asking a series of questions that motivate the research. The core of these questions is: How can spatiality inform our understanding of evaluations towards linguistic features, as traditionally approached through PD? This question takes up Britain's (2010b) argument that PD can incorporate spatiality into our understanding of language variation and attitudes towards language by creating a practical and replicable use-case. This is accomplished by using the draw-a-map task to examine how individuals socially construct space and express evaluative judgments of these spaces when their attention is focused upon linguistic variation. Chapter Four will demonstrate how the draw-a-map task is a practical resolution to the core research question of this dissertation, as well as laying out how these tasks can be replicated in order to establish scientific validity. To assist in making these tasks replicable, I will be employing the Folk Linguistic Online Mapping Application (FLOM) as a means of standardizing the data collection process; Chapter Four will include a guide to the processes employed, drawing on material discussed in Chapter Two to explain the motivations underlying decisions made to the experimental design. It is in the discussion of the experimental design that additional questions become incorporated into this research, as necessitated by the methods being employed.

The first of the additional questions pertains to the draw-a-map task; that is: what areas do non-linguists of a specified area perceive as being dialectologically distinct? This will provide information about how the respondents are dividing space; in order to understand how the space is the evaluated (i.e., what are the socially constructed meanings of said spaces?), respondents are also asked to provide social information (such as stereotypes and other evaluative judgments) for each region and its inhabitants. This addresses the aspect of social construction of geographic space with regards to spatiality and language variation. The results will then be presented and analyzed to demonstrate how spatiality can inform our interpretations of linguistic variation (Chapters Five and Six).

In the descriptions of the additional research questions raised by the methods employed, I have stated that the non-linguists be of "a specified area." Because spatiality requires that the space in question be socially constructed, it is important that the stimuli used by the researcher be meaningful to the population (or community) being asked to complete these tasks. In order to constrain this dissertation so as to make the findings meaningful, I am constraining the research to an area where I can also discuss the association of identity and place. Therefore, for this dissertation the space being examined is that of the state of Maine in the United States. Chapter Three will provide an overview of Maine, detailing its history, culture, and how Mainers have constructed an in-group identity that will contribute to the analysis of spatiality in the final chapters.

The organization for this dissertation begins with the foundations of variationist sociolinguistics. The next chapter deals with the development of variationist sociolinguistics, focusing on the use of space as a sociolinguistic variable and the importance of evaluative responses in understanding linguistic change and variation. This chapter elaborates on space as a variable, and details how the draw-a-map task fits into addressing spatiality. The third chapter provides additional information on Maine as it relates to how the social construction of space is being applied in this dissertation. Chapter Four provides the specifics of the methods employed in this dissertation, with Chapter Five providing the results of the online deployment of FLOM. These results are taken up in the following chapter, where spatiality and language regard are combined to understand linguistic variation in Maine. Finally, there are concluding remarks and comments made on avenues for future research.

Chapter 2: Linguistic Motivations of this Project: Tying Together Three Threads

In order to understand how this dissertation fits into, and more importantly contributes to, our understanding of society, it is necessary to first consider the traditions of sociolinguistic theory which are invoked in this project. It is outside the scope of this dissertation to outline the entire history of sociolinguistics, but in this chapter, I will provide a curated overview of the development of sociolinguistic theory through the 20th century that situates the work presented in this dissertation within the larger framework of sociolinguistics. I accomplish this by looking specifically at the works of three sociolinguists whose methods and theories have been influential in this work. The first of these is William Labov, who has arguably had the most impact on the development of modern sociolinguistic theory. This will eventually be juxtaposed with the work of Dennis Preston, whose scholarship complements Labov's research and whose methods are used in this dissertation. I will then discuss *spatiality*, a concept that David Britain argues should be included in sociolinguistic work.

2.1 Empirical Foundations and William Labov

To begin, I will turn to one of the (if not *the*) foundations of modern sociolinguistic theory: Weinreich, Labov, and Herzog's 1968 *Empirical Foundations for a Theory of Language Change* (Hereafter, WLH). This book chapter outlined a new approach for researching linguistic variation by emphasizing the importance of creating testable and verifiable hypotheses that could be used to generate theories of how and why language changes over time; in short, it advocated for the application of the scientific method to the field of historical linguistics. In particular, the authors sought to create a *theory* of language change in much the same way that "Chomsky in 1957 proposed to view the grammar of a language as (1) a *theory* of its sentences, and linguistics as (2) a *theory* of correct grammars [author's emphasis]" (WLH 1968, p. 99). According to the authors, this had created a "fresh alliance between linguistics and the exact sciences" (WLH 1968, p. 99) that had resulted in "significant advances" (WLH 1968, p.99) in linguistic research. The purpose of incorporating this new approach (in which the generation of scientific theories was considered as a fundamental motivating factor) was to synthesize the "paradoxical" findings of descriptive historical linguistics. While this chapter was included in a handbook for historical linguists, it became important to sociolinguistics in that the authors considered language to be a tool (or element) related to the social needs of a community. According to Weinreich, Labov and Herzog, "a detailed knowledge of the speech community and considerable sociolinguistic sophistication" (WLH 1968, p. 183) was necessary to understanding how language change occurred. Furthermore, WLH outline a set of five core problems that linguists needed to address- the constraints, transition, embedding, evaluation, and actuation problems- in order to create a theory of language change that had, to varying degrees, a social component. The constraints problem sought to understand how the structure of linguistic systems and social systems (such as stylistic shift, WLH 1968, p. 184) imposed limits on (or conversely, facilitated) the development of linguistic change. The transition problem relates to how linguistic features change between different systems (or dialects) as a change in progress from one language state to another, which requires some understanding of social context (especially with regards to the generalization that "children do not preserve the dialect characteristics of their parents, but rather those of the peer group which dominates their preadolescent years" (WLH 1968, pp. 184-185). The embedding problem is split into two sub-problems: how a linguistic feature becomes a part of the linguistic structure of a language, and how a linguistic feature becomes embedded in the social practice of a community. The evaluation problem is largely social in that it focuses upon "the level of social awareness [as] a major property of linguistic change" that reflects "the ways in which discrete categorization is imposed upon the continuous process of change" (WLH 1968, p. 186); that is to say, how does the community treat linguistic variation and

change, and what are its implications for a theory of language change? The actuation problem refers to how a linguistic change begins: what are the internal and external factors? Here, "internal" refers to how the linguistic system itself facilitates or motivates a need for change in the language. The "external" factors reflect social pressures (related to social embedding and evaluation) likewise lead to language variation and change.

In addition to identifying these core problems to be addressed in generating theories of language change, WLH also provide a set of seven "generalizable principles" based upon empirical observations of language change. For WLH, these generalizations are their "proposals for the empirical foundations for a theory of [language] change" (WLH 1968, p. 187). These generalizable principles are meant to reflect the basic assumptions needed to address the five problems they outlined for (socio)linguistic research dealing with language variation and change. These principles, in some cases in their condensed forms, are as follows (from WLH 1968, pp. 187-188):

1) Linguistic change is not to be identified with random drift preceding from inherent variation in speech (or, in other words, that linguistic change can be identified and predicted based upon principles of linguistic theory and are therefore *not* unstructured in origin).

2) The association between structure and homogeneity is an illusion. Linguistic structure includes the orderly differentiation of speakers and styles through rules which govern variation in the speech community; native command of the language includes the control of such heterogeneous features.

3) Not all variability and heterogeneity in language structure involves change; but all change involves variability and heterogeneity.

4) The generalization of linguistic change throughout linguistic structure is neither uniform nor instantaneous; it involves the covariation of associated changes over substantial periods of time, and is reflected in the diffusion of isoglosses over areas of geographical space.

5) The grammars in which linguistic change occurs are grammars of the speech community.

6) Linguistic change in transmitted within the community as a whole; it is not confined to discrete steps within the [language] family.

7) Linguistic and social factors are closely interrelated in the development of language change.

The principles outlined in WLH require that linguists consider social factors as important contributors to language variation and change (with the seventh principle explicitly saying this).

Labov's individual research has proven instrumental in helping to lend evidence to the requirement of this as a basic assumption in sociolinguistic research; in fact, some of his early research was included as examples in the argumentation of WLH. Labov's research into the patterning of non-rhoticity (discussed in WLH 1968, pp. 176-183) provides some of the strongest evidence available at that time for the inclusion of social factors into the study of language variation and change. His research, according to WLH, demonstrates that "[s]ociological factors, solidly formulated, have now been adduced to explain distributions and shifts in linguistic phenomena which, from a structural point of view, would have been seen as random" (1968, p. 177). But how does Labov's study of non-rhoticity in New York City provide support for these generalizable principles? Let us turn now to Labov's 1972 *Sociolinguistic Patterns*.

In *Sociolinguistic Patterns,* the chapter "The Social Stratification of (r) in New York City" included a detailed examination of the patterning of non-rhoticity. This patterning was related to socioeconomic

status and speech styles. Labov had observed that New Yorkers could be variable in their production of rhoticity (or occurrences of non-rhotic pronunciations) in a manner that did not fit neatly into a structuralist formulation of a phonological rule. That is, the linguistic data on its own could not adequately predict when an individual would pronounce an /ɹ/ in coda position. As such, the non-rhoticity of some New Yorkers was identified as being random "inherent variation of individual speech" (to borrow from the first Principle 1, WLH 1968, p. 187). However, by collecting socioeconomic information about the speakers, Labov was able to construct controlled experiments that demonstrated two external (non-linguistic) predictors of non-rhoticity: the speaker's social class and the type of task in which the speaker was engaged. The correlation of socioeconomic status showed that "inherent variation" could be correlated to social attributes (thus lending evidence for Principle 1; there was no "random" drift). Furthermore, adjusting the types of tasks in which the speakers were engaged showed evidence of stylistic variation; this provides support for Principle 2.

Labov further developed the empirical problems presented in WLH in his multi-volume work, *Principles of Linguistic Change* (1994; 2001; 2011). While the second and third volumes in this series examine the social and psychological (or in Labov's words, cognitive) "factors" of language variation and change, it can be argued that Labov's focus over his career has been on the aspects of linguistics as they relate to *production*. Here I should clarify what I mean in this, as anyone who is familiar with Labov's work may object to my characterization of Labov's work in this way. It can be argued that linguistic production *and* perception are equally valued by Labov (an argument with which I would agree); for example, his discussions of mergers in *Principles of Linguistic Change, Volume One* heavily rely upon the interaction of the perceptual and articulatory systems. What I mean by my characterization of Labov as focusing on production is related to *how* he conducts his studies. Specifically, Labov examines the output of the articulatory system (i.e., the acoustic results of phonetic studies) and correlates the phonetic information with social information. To be clear, my critique is not of this method: it has been demonstrably scientific and has contributed greatly to the growth of sociolinguistics as a science. It also closely aligns with principles presented in WLH. However, as rigorously scientific and principled as Labov's approach is, it is not particularly well suited for addressing the evaluation problem. This is likely a result of how WLH approaches addressing the problems they outline: as an interdisciplinary field uniting linguistics and sociology. Indeed, as WLH (and subsequently Labov) lay out their principles one must consider the social and linguistic; however, the evaluation problem deals with *attitudes* towards social groups and linguistic features. Attitudes, as an object of study, typically falls within the discipline of (social) psychology. It is therefore important that an approach within sociolinguistics be developed that can incorporate elements of social psychology that allows us to address the evaluation problem if we want a detailed theory of language variation and change that encompasses all of the points raised by WLH. Fortunately, we can do this in modern sociolinguistic studies if we look at the work of Dennis Preston, to which I now turn.

2.2. "What the Folk Know" and Dennis Preston

Dennis Preston's work in sociolinguistics has been variously labelled over the course of his career, bearing over-arching titles such as *folk linguistics, language attitudes*, and *language ideology*; currently, it has been referred to as *language regard* in order to disassociate itself from negative connotations of the term *folk* and encompass both *language attitudes* and *language ideology*. *Language regard* is defined "as a term that refers to various methods and data types focused on nonlinguists' [sic] beliefs, evaluative or not, conscious or unconscious, about language" (Evans, Benson, and Stanford, 2018). While language regard as a subdiscipline of sociolinguistics is not solely concerned with evaluations, the inclusion of attitudes, beliefs, and **evaluative** responses to language variation within its paradigm makes it particularly

well-suited for addressing WLH's evaluation problem. Language regard takes an ethnographic approach to language variation by asking non-linguists what they believe (or alternatively, what they claim to know) about language: whether it be in the form of history (folk etymologies), language varieties (dialects) that are similar to their own, or what forms of language are (or are not) prestigious. This, in turn, allows linguists to examine what *social* factors (such as those Labov mentions in Volume Two of *Principles of Linguistic Change*) impact how groups treat different linguistic forms. However, because beliefs and attitudes are collected in this vein of research, Preston has needed to incorporate additional methodologies into the sociolinguistic field kit. This has included working with disciplines other than sociology to accomplish sociolinguistic tasks; Preston has drawn from methods in social psychology and cultural geography in creating language regard as a subdiscipline.

The primary element that Preston has drawn from social psychology into language regard is the concept of *attitudes*. According to the *Dictionary of the American Psychological Association* (APA), an attitude is

> a relatively enduring and general evaluation of an object, person, group, issue, or concept on a dimension ranging from negative to positive. Attitudes provide summary evaluations of target objects and are often assumed to be derived from specific beliefs, emotions, and past behaviors associated with those objects. (VandenBos, 2015)

Within language regard, then, an attitude represents the evaluation of some aspect of language. The strength of the evaluation along some scale determined by the researcher (such as a Likert or Likert-like scale) should inform our understanding of how a linguistic variant is viewed within a speech community, and from there make inferences or further hypotheses about how language will change as a result of these evaluations. However, what aspect of language is queried will be largely reliant upon the researcher and the question that they have posed to their non-linguist respondents. This, in turn, creates a scenario where different questions may address the same linguistic form or different forms are encompassed in the same question. Without a larger framework within which to analyze the data of attitudes, it would become easy for the linguist to become overwhelmed by data or fail to produce a meaningful theory about language variation and change. To address this problem, Preston has, in addition to the use of the attitudes, introduced the attitudinal cognitorium to language regard.

The attitudinal cognitorium was originally proposed by Rosenberg (1965) as a means of modeling the interaction of external stimuli with the internal beliefs and attitudes held by an individual as manifested in their explicit and implicit responses. The current iteration of the attitudinal cognitorium can be seen in the Potentiated Recruitment Framework of Bassili & Brown (2005). Bassili & Brown outline a model where external stimuli are perceived by an individual and then processed within the attitudinal cognitorium. In this model the attitudinal cognitorium is conceived of as a neural network of microconcepts. The microconcepts represent cognitive primitives; that is, they represent the most basic mental representations that can exist without theoretical explanation/motivation. The microconcepts are invoked in processing based upon their emotional and evaluative functions, with reference to prior experience and the conditions in which the stimulus is presented. Preston (2010; 2017) has drawn heavily upon Bassili and Brown's representation of the attitudinal cognitorium to analyze data related to linguistic variation. I will return to the attitudinal cognitorium and its application to sociolinguistics in Section 2.4. However, what should be emphasized here is that this is a model to show how evaluations (which would be necessary to address WLH's evaluation problem) are connected to an attitude object. What remains for the linguist to do is provide an attitude object to the non-linguists to query language variation and change.

To provide an attitude object, Preston has repeatedly drawn inspiration and methods from cultural geography. According to Preston, "the facts of physical geography […] have an influence on language"

(2010, p. 87). The support for his statement is found within the variationist frameworks that follow in the tradition of dialectology, many of which pre-date WLH. Dialectologists conducted their research in such a manner that included geography as a means of representing where synchronic linguistic variation occurred based upon linguistic production or responses to questionnaires. While such an approach could show *where* linguistic variation occurred, it could not address some aspects as to *why* the variation occurred. While physical boundaries and settlement patterns (c.f. Cramer, 2016) could address some variation, there was still no method for addressing the evaluation problem. However, Preston's work that included methods from cultural geography allowed for just that in what has become known as *perceptual dialectology* (hereafter, PD). PD seeks to understand how non-linguists view linguistic variation around them, with an assumption that "perceptions of language and language use […] would have influence on the shape of the language itself, that is, be important factors of change" (Preston 1989, p. 2). To obtain these perceptions, Preston has invoked the method of the *mental map* from the cultural geographers Gould and White (1986).

The mental map is meant to provide insight into the mental organization of space by an individual. Gould and White (1986) used such maps to look at how individuals cognitively represented their neighborhoods, including access to services and prominent landmarks, as well as to identify areas in the south of England that were (and were not) desirous areas in which to live. Preston incorporated this method into PD as the *draw-a-map task*, wherein non-linguists are asked to draw their perceived dialect regions. A modification made in the draw-a-map task is that some form of base map is provided to the individual drawing the map (Gould and White conducted studies where they only provided their subjects with a blank sheet of paper on which to draw). The base map is any sort of static image that serves as a basis upon which the individual can project their mental representation of dialect diversity; in other words, it serves as an object on which to project attitudes about language variation. In the case of the United States, the base map is often an outline of the fifty states, although other representations (such as the outline of a single state or the states of a select region of the United States) have been used (c.f. Benson, 2003; Evans, 2013; Cramer, 2016). Preston has successfully conducted and replicated draw-a-map studies that found trends in how Americans view the larger dialect diversity of the United States (c.f. Preston, 1986).

In addition to the mental map, PD makes use of other methods that rely upon social psychology, cultural geography, or some combination of the two in addition to sociolinguistic theory. The other PD tasks are the *degree-of-difference task* (where non-linguists are asked how similar a dialect is to their own), the *pleasant-correct task* (where non-linguists are asked to rate dialect varieties along some continuum of attributes), and the *voice placement (*or *dialect identification*) task. While the degree-of-difference and pleasant-correct tasks can be done in conjunction with the draw-a-map or voice placement tasks, they can also be done alone. However, the voice placement task is interesting in that, like the draw-a-map task, it often contains a geographic component. Non-linguists are asked to listen to a recording of speech and then identify where the speaker comes from based on a selection from a list or by placing the voice on a map. Niedzielski (1999) found that social information was used in the identification (i.e., perception) of linguistic features when non-linguists were played a voice and told that the speaker was either a Michigander (where her respondents were from) or a Canadian. Based on the information given to the non-linguists based upon nationality they either did or did not associate the speaker with linguistic features, such as Canadian Raising. While her study reported that nationality was the deciding social category, nationality can be argued to represent geographic space in some contexts (such as along national borders, where Niedzielski conducted her study). It was the association of place, social characteristics, and linguistic features that led Preston to increasingly include elements of social psychology into PD; however, the methods of the draw-a-map task and voice placement task have remained largely unchanged over the last thirty years. While the social, cognitive, and linguistic elements of PD (and sociolinguistics

in general) have been further elaborated upon, the geographic component has become increasingly sidelined. How, then, can the geographic component be included back into our analysis?

2.3. Spatiality and David Britain

It was stated in the introduction that one of the novel contributions of this dissertation is the inclusion of *spatiality* in the analysis of the data. Spatiality was introduced as an approach to sociolinguistic work by David Britain, and as such I use his framing of the method as borrowed in from human geography. Within human geography, spatiality is a means of incorporating various aspects of "space" without taking the extreme positions of what Duncan (1989) refers to as "spatial amnesia" ("[trying] to forget spatial differences and [seeing] social processes as […] universal," p. 131) or "spatial fetishism" ("[t]he response [...] to see space as, in some way, an independent entity which influenced-or even determined-social behaviour [sic]", p. 131). In human geography, the goal is to see "that space is not something existing outside society, rather it is produced by society and, we should add, by nature" (Duncan 1989, p. 132). Because the term is used in several disciplines and not currently a regular (explicit) component of sociolinguistic research (in addition to human geography, spatiality is also used in fields such as literary studies (c.f. Tally 2013)), it is important to be explicit in what Britain means by spatiality. Britain (2010a) defines spatiality as

> a tridimensional realization of space- the 'consumption' of distance. It is at once physical (how far is it from the Earth to the Moon?), social (the human mediation and manipulation of space, both in terms of the mundane lifepaths of individuals in their communities interacting with the lifepaths of others, as well as with respect to the institutional structuring of that space), and psychological (our reactions to and interpretations of perceptions of physical and social spaces) (p. 6).

To unpack this definition, it is important to understand what each of these dimensions represents, as well as how each dimension can be related to sociolinguistic work. Fortunately, Britain provides examples of each of these dimensions from existing sociolinguistic literature. To begin understanding how spatiality relates to sociolinguistic analysis, we can turn to the social dimension of space.

The *social* dimension of spatiality according to Britain is how individuals move through space as a social construct. That includes how one might navigate the social hierarchies present in their local communities, including local power structures and interpersonal relationships. The earliest example that Britain cites of this dimension of spatiality being incorporated into sociolinguistics comes from the introduction of social network analysis by Milroy and Milroy (1978). Their study of the phonetic variation in Belfast considered the ways in which their subjects interacted with each other and the environment as *social* space that was reflected in their linguistic variation. Social space was represented through the social networks of the subjects as they moved through the different neighborhoods for work and spending leisure time. This assists us in understanding what Britain means by the *social* dimension in space: it is how the environment and our interactions with it influence our understanding of the spatial world humans inhabit. The diffusion of linguistic changes found in Belfast could be traced through the social networks of individuals as they moved through the city. The social networks represent, then, an abstraction away from *physical* space towards something more social (I will return to this abstraction away from physical space shortly). However, Britain also turns to the work of Penelope Eckert to demonstrate the *social* aspect of spatiality (2010a; 2010b), using her work with high school students in Detroit to highlight how the social dimension of space fits into sociolinguistic analysis. According to Britain, the ways in which the Jocks and Burnouts pattern their lives represent the "lifepaths" invoked in his definition of spatiality in that they have different manners in which they interact with institutional structures (chiefly the school). The combination of this interaction with the institution of school (as well as community expectations and

norms) and social activities (such as the Burnouts choosing to participate in extra-institutional locations in Detroit) was demonstrated by Eckert to be correlated with linguistic variation.

It should be noted that there are also attitudes towards institutional structures that influence the variation found in Eckert (1989); these would fall under the *psychological* dimension of space. Again, under Britain's definition this dimension represents "our reactions to and interpretations of perceptions of physical and social spaces" (2010a, p.6). By this, Britain is referring to processes where a mental association is made between *physical* and *social* space. Britain specifically cites Johnstone, Andrus, and Danielson (2006) in his argument for the treatment of space in sociolinguistic research as illustrating an instance where linguistic markers from social space become utilized in the association of language and physical space. Importantly, he notes that specific linguistic markers "have [been] recycled or reallocated" from "class and gender associations into place-based ones" (2010b, p. 27). This is seen in the commodification of /au/ monophthongization that was once emblematic of working-class men into a feature that is now representative of the city. Britain also mentions, briefly, that mental maps from PD "have provided very valuable insights into the way speakers internalise [sic] the dialect landscape of their own communities" (2010a, p.5-6). That is to say, PD (as discussed in Section 2.2) allows a toolset to examine the *psychological* dimension of spatiality.

One might ask at this point how the research used to exemplify the *social* and *psychological* aspects of space do not, by default, also treat the *physical* dimension of spatiality. Social networks provide a map, of sorts, although not one that is necessarily geographic in nature. PD draw-a-map tasks have subjects interacting with representations of physical space, but the important note to be made here is that the presentation of geographic space is a *representation* thereof and only provides insight into a psychological representation of that space on the part of the respondent. As I interpret Britain's presentation of spatiality, the *physical* dimension of spatiality is one that should be capable of being measured through the tools and techniques developed by geographers; it is, according to Britain, the Euclidean distance between data points (Britain 2010a; 2010b). This can be understood as a quantified, measured variable such as the distance between two major cities along an interstate. According to Britain, the earliest forms of dialectology and linguistic atlases began with this approach by seeking to situate linguistic variables on a map. Dialectologists such as Peter Trudgill then continued to refine geographic approaches to linguistic variables by adopting models from *economic* geography such as the gravity model (Trudgill, 1974). The gravity model, which posits that linguistic features will spread along hierarchies of urban centers (following Christaller's (1934) Central Place Theory), with larger urban areas providing the linguistic features that are eventually passed down to smaller centers, then to smaller towns and villages. This theorizing gave rise to what Britain identifies as *geolinguistics*, where linguistic features were mapped and theorized about with regard to space; however, this particular subfield of linguistics "was virtually non-existent during the days of the quantitative revolution in *socio*linguistics [author's emphasis; discussed in the previous section] (Britain 2010a, p. 11)." Geolinguistic work done during this time was focused on diffusion models for linguistic variables based upon mathematical modeling; modern examples can be seen in work done in dialectometry (Nerbonne & Kretschmar, 2013) or the surface tension models produced by British mathematician James Burridge (2017). Britain notes that some of the work done in geolinguistics "could barely be described as *socio*linguistic [author's emphasis] even in its broadest sense" (2010a, p. 11) due to their treatment of *physical* space as an isolated variable, independent of any *social* or *psychological* factors. That is to say, space in the *physical* sense is the only or primary consideration (or non-linguistic variable) of this work; what is lacking is the *social* interactions of the (real-world) humans from whom the data are derived.

The physical dimension of space, then, appears to be the first one to have been treated in sociolinguistics; however, it lacked the full depth of spatiality in that it failed to account for the social and psychological dimensions. Britain's critique of modern research is that it focuses on the social or psychological dimensions (and to some extent, the intersection of the two) without incorporating the physical. The question this raises is why the three dimensions have been separated. With regards to two of the dimensions of spatiality, Britain (2010a) goes into great detail about the manner in which *physical* space became divorced from *social* space in geography and other scientific disciplines during the 20th century. At the beginning of the 20th century, geographers focused on space with regards to *regions*, resulting in work that was largely descriptive and lacking theoretical motivation (in many ways similar to the earliest dialect atlas projects (Britain 2010a, p. 9)). The middle part of the 20th century saw a shift in the methods of the social sciences (including geography and linguistics) towards more quantitative and theory-based practices (what Britain (2010a, p. 9) terms as the "quantitative revolution,"). As a result of this paradigm shift, geographers began approaching their research in a manner that focused on a search for spatial universals and laws at the expense of other (i.e., social) factors (Britain 2010a, p. 9). This is not dissimilar to what was happening in linguistics, where language as a system was being abstracted away from social contexts in order to find language universals. By the 1970s, it had "[become] commonplace […within geography] to argue that there were no spatial laws/relationships devoid of social content, but simply *social processes which operate over space"* (emphasis in original; Britain 2010a, p. 13). This led to a sense that space itself was of minimal importance to understanding social processes, especially outside the discipline of geography: according to geographer Doreen Massey, other social sciences had begun to write off space (i.e., *physical* geography) as a meaningful variable (Massey, 1985, as cited by Britain 2010a). Britain describes geography, and particularly the subdiscipline of human geography, as having "found a space for itself again" (Britain 2010a, p. 13) through *spatiality*, and in particular the argument of geographers that "spatiality [is] a contingent effect which contributes to the contextual conditions which can effect how or if causal powers act" (2010a, p. 14). That is to say, spatiality (the tridimensional realization of space) can inform our understanding of social process such as language change and variation.

It is at this point that the *social* and *psychological* dimensions of spatiality should be considered for how they have, and have not, been reflected in linguistic research since the "quantitative revolution" of the 1960s and 1970s. As disciplines like linguistics and geography were becoming more insular in their pursuit of quantifiable and empirical models, Britain claims that linguistics, and especially sociolinguistics, began to remove space (predominantly physical space) as a meaningful or examined variable. He begins his argument by returning to Weinreich, Labov, and Herzog (1968) and the establishment of the problems for a theory of language variation and change (mentioned previously in Section 2.1). According to Britain, the (social) *embedding problem* was among the earliest problems to be meaningfully addressed through new quantitative measures (Britain's claim being that the apparent-time model "was one of the most important breakthroughs in these early heady days" (2010b, p. 2)) and has continued to be a driving force for sociolinguistic research today. However, the approaches to social embedding of linguistic features that have been developed, according to Britain, "did not contemplate a need for space" (2010b, p. 3). Instead, the focus was on other sociolinguistic variables such as gender, age, and social class. According to Britain, the focus on these other sociolinguistic variables lead to "space [being] carefully controlled out of" Labov's 1964 study in New York in that factors such as social class and gender were controlled for but "spatial variation within the neighborhood [the Lower East Side…] was not examined" (2010b, p.3). Instead, Britain claims that space "was seen as distinct from the crucial social factors of the day and, if mentioned at all in more theoretical work, was conceptualized as a surrogate for time" (2010b, p.3). There was little interest in addressing *physical* space during this time

(Britain cites Trudgill (1974) as one example). Linguistics, according to Britain, had moved towards primarily examining *social* space in the 1980's (with Eckert (1989) and Milroy and Milroy (1978) being the primary examples). The *psychological* dimension of spatiality was being addressed as well, but primarily in PD (Preston, 1985) and later in the study of Pittsburghese (Johnstone, Andrus, and Danielson (2006)) at the turn of the 21st century.

This should make clear what the components of spatiality are with regards to a (socio)linguistic analysis; what I would now like to draw the reader's attention to is the way these components have been (or rather, have not been) united within the field of sociolinguistics. Britain's call for conceptualizing space as *spatiality* reflects the continued disconnect between *physical* space from *social* and *psychological* space in linguistic research. The connections between *social* and *psychological* space can be seen in the work of Eckert (1989) and Johnstone, Andrus, and Danielson (2006), although one dimension is usually favored at the expense at the other in terms of how Britain has framed the construct (i.e., the social is focused upon in Eckert (1989) with the psychological being left to interpretation; the social dimension, as Britain has framed it, is not explicit in how Johnston, Andrus, and Danielson (2006) treat the psychological)[1]. However, the *physical* is still missing, or not considered as crucially important. Modern dialectometry and some other models (mentioned above) focus on the *physical* dimension with little attention paid to the social and psychological dimensions. As for uniting all three dimensions, Britain identifies his work in the Fens during the turn of the 21st century (Britain 1991; Britain 2001; Britain 2002; Britain 2004a; Cheshire, Fox and Britain 2007) as representing an approach that considers the three dimensions. It should be noted, however, that the three dimensions are united under two decades of Britain's research. This (at least superficially) makes it appear as a very daunting task to successfully unite the three dimensions of spatiality under a single project. Britain (2004b) does what is perhaps the best summary of this work that shows the incorporation of all aspects of spatiality. Britain (2004b) discusses the history of the Fens and how the environment imposed physical barriers to the growth and spread of the population. He then compares this with modern population density maps and bus routes, later superimposing an isogloss to show how the physical environment and subsequent growth of the social environment have impact dialect formation. While this is a masterful example that encapsulates how Britain is suggestion spatiality be incorporated into variationist sociolinguistics, it still is the culmination of several years' worth of research. I would in fact argue that several projects, not necessarily over several decades, would be the most useful in demonstrating the merits of spatiality to a larger sociolinguistic audience. That being said, I believe it is possible for a single project (i.e., this dissertation) to successfully unite the three if we take a slightly different approach from Britain.

Britain's work in the Fens and the preponderance of his examples for how each of the dimensions of spatiality has been treated in sociolinguistic research have all been studies of *linguistic production* meant to address the *embedding problem* (primarily its social component). And while the embedding problem has remained an important aspect of sociolinguistic research, *there are four other problems* for sociolinguists to address in understanding language variation and change. In this dissertation, I will be demonstrating how a *linguistic perception* study meant to address the *evaluation problem* can incorporate the three dimensions of spatiality through the tools made available in PD. Britain sees PD as a means of

[1] It is interesting that Britain focuses so much on Eckert's work for the social aspects of spatiality; indeed, it would be interesting to see Britain's commentary on Eckert (1988). While she does not necessarily explicitly draw out the physical paths the Burnouts use in navigating their social lives, the movement from "neighborhood hangouts to city parks and ultimately to metropolitan parks […] and urban cruising strips" (Eckert 1988, p. 196) is considering, at least in part, the physical geography that the Burnouts are interacting with. And in turn, their interaction with the urban environments becomes a contributing factor to the advancement of the Northern Cities Vowel Shift in their home community.

understanding the *psychological* dimension of space and does not devote much time to it in his treatment of spatiality; I would argue that this is likely a result of a focus on linguistic production and embedding. Several linguistic perception studies using PD methods in the last decade have moved towards uniting, to varying degrees, the psychological dimension with the physical and social dimensions. The earliest example of the joining of the psychological and social dimensions comes from Plichta and Preston's (2010) study of /ai/ monophthongization. This study demonstrated that people had evaluative reactions and judgments for voices that were connected to representations of *physical* space (particularly a north-south continuum in the United States) as well as social characteristics (i.e., gender). Evans, Dunbar, and Chartier (2020) make a rudimentary connection to the *social* dimension in their study of Cardiff in that they ask for the experiences of their respondents with the places that they have identified on their mental maps. While Evans, Dunbar, and Chartier (2020) do not conduct a social network analysis (which would provide greater detail about the social interactions and lifepaths of their respondents), they do capture some information about the exposure to and experience of the reported perceived dialectal regions provided by their respondents. This in turn allows them to begin considering how interaction with physical space, whether through physical presence or psychological projection, impacts attitudes towards linguistic variation.

While the aforementioned studies join either the psychological and the social dimensions or the psychological and physical dimensions, some current research has made attempts to join all three dimensions, albeit without directly invoking spatiality. Chartier and Jones (2019) makes small movements towards an analysis which incorporates all three dimensions of spatiality through the structuring of research questions and particular application of PD methods. Chartier and Jones (2019), in addition to capturing the internalization of "the dialect landscape of their own [the subjects'] communities" (Britain 2010a, p.5-6), begin to treat physical space in how subjects are grouped according to geographic regions (i.e., the state level in a multi-state region). While this is not as precise as a strict Euclidean distance of variables, it does seek to incorporate the physical dimension of space at the level of regions. Chartier (2020) is perhaps the closest to incorporating all three dimensions of spatiality in her research of southeastern New Hampshire. Chartier problematizes the changes of non-rhoticity in the region as an *evaluation problem* to be addressed through language attitudes and PD. Her methods treat the physical dimension by looking specifically at a designated region in New Hampshire, while understanding the social dimension through how deeply embedded her respondents are through a regionality index (Chambers 2000). This provides some insight into the social dimension of the spatiality of her respondents in that it provides information as to how embedded into the local community they are (not too different from how Britain begins to examine the Fens with regards to recent and long-standing residents (Britain 2001; Britain 2002)). She also captures social evaluations of linguistic variables through a voice placement task (in a perhaps loose replication of Plichta and Preston (2010) in that such studies are extremely limited in their appearance in the linguistic literature). All of the elements for a spatiality analysis are there; however, the concept itself is not invoked as the framing narrative. Because of this recent chain of developments in PD research, I feel confident that this dissertation will be able to successfully demonstrate how spatiality can be used to understand linguistic variation and change within a single project. What remains now is to outline how the methods of PD unite the attitudinal cognitorium and spatiality to address the evaluation problem.

2.4. Stitching the threads together

It is now incumbent upon me to outline how I can unify the above sections into a coherent method for analyzing linguistic data. To accomplish this, I will be introducing one more element to this chapter that will allow me to fully explicate my reasoning as to how PD can incorporate spatiality: Social Representation Theory (hereafter, SRT). SRT is a theoretical framework for understanding (social)

cognition within the discipline of social psychology. The theory was first proposed by Moscovici (1961) as a means of understanding how items in both the "real" and "social" worlds can become imbued with meaning. Of interest within this theory is the concept of how some element of an individual's life experience (for this dissertation the relevant case being language and linguistic variation) can be targeted by attitudes and receive different evaluations. One of the underlying assumptions is that regular social interactions by members of specific communities develop norms around how social objects (i.e., linguistic variants) are to be interpreted. As meanings are negotiated within a social group, exemplars of types and schemas of processes are established as social representations. Social behavior is then seen as the result of manipulating outward manifestations of these models, which become representations (or signs) of social attributes. These "social representation[s] […] are held to be major components of social reality and of the social structure of society" (Fraser 1994, p. 3). Furthermore, because these signs become reified, they can become the targets of attitudes (social behaviors) and evaluative processes.

However, this does little to explain how the exemplars and schemas are produced. To that end, SRT has the concepts of *anchoring* and *objectification*. Anchoring refers to the process of repeated exposure (or social communication) of a concept gradually leading to its incorporation into a social representation. Höijer (2011) provides contexts for anchoring that include naming (taking abstract references and giving them relatable identities), emotional anchoring (identifying a concept with a related emotional experience or response), and thematic anchoring. While anchoring allows for some novel concept to be identified, objectification allows for the transference of concepts into experiences that we can approach through our senses. From this, Höijer (2011) provides the examples of emotional objectification (assigning an explicit, or conscious, emotional response) and personification of experiences that have been encountered through social context as representing objectification. Thus, anchoring allows for the formation of exemplars and schemas that become social representations; objectification allows for the appraisal of these social representations with regards to attitudes and beliefs. All of this is accomplished through social interaction; therefore, an individual's understanding of stimuli in the real world will be the result of previous social interactions, as interpreted through the social norms familiar to the individual.

Preston (2017) has brought concepts similar to anchoring and objectification into language regard studies already through a three-step process of *noticing, classifying,* and *imbuing*. In Preston's process, an individual must first notice a linguistic variant (for his example Preston uses /aɪ/-monophthongization, although any variant, such as a non-rhotic pronunciation, would work). In terms of how Labov (1972) discusses salience of sociolinguistic variants, the feature in question would be either a *marker* or a *stereotype*. That is, the linguistic feature is something that has risen to the level of consciousness to the speaker or the speech community in which the speaker is a member. Following the ability to notice the linguistic variable, the individual listening to the speech then classifies the linguistic variant according to some known social variable. The attitudinal response towards the variant is the result of imbuing the variant with some set of beliefs about the social category for which the variant has been classified.

While this helps bring together SRT with Preston's work in language regard, it may be useful to step back and draw comparisons to other, related processes with which linguists may be familiar. To do this, I will turn to the research of Beal (2009), who details the emergence of a Sheffield dialect in England. Beal is primarily concerned with how the knowledge of the dialect rose to prominence through how members of the community began to commodify the dialect through the sale of dictionaries meant to educate outsiders of how the dialect differed from other British varieties as well as the sale of merchandise bearing stylizations of the local vernacular. The dialect itself is comprised of many regional features; however, according to Beal's analysis the features became associated with the city through a process termed *enregisterment*. Enregisterment refers to the reification of the dialect as something that can be socially

valued, made the object of discourse, and related to cultural (or social) practice (Beal, 2009). The process of enregisterment is generally applied to the realization of local speech norms and does not necessarily reflect practices outside of the immediate speech community. Enregisterment was originally proposed within linguistic anthropology (Agha 2003) before being adopted into dialectology, yet it bears a striking resemblance, conceptually, to anchoring and objectification from SRT. The first step then is to translate enregisterment into anchoring and objectification.

This is not an overly difficult task to accomplish. First, we must assume that enregisterment is analogous to both anchoring and objectification. Naming of the dialect provides anchoring to some entity or experience. Objectification can variably be seen as either personification of the dialect through the city and its residents (for outsiders or members of the city) or as emotional objectification (perhaps most salient to members of the Sheffield linguistic community). To illustrate this, we can turn to two examples: Beal's (2009) Sheffield example and Johnstone, Andrus, and Danielson's (2006) Pittsburgh example. Similar to what was reported by Beal (2009), Johnstone, Andrus, and Danielson (2006) noted that the local speech community had begun to commodify local linguistic variants by creating sellable goods such as dictionaries, t-shirts, and other consumer products bearing features of the local vernacular. In both cases, linguistic features of a given area were named (anchored) around a nearby metropolitan area. Once these regions were named, they were objectified by people both within and outside of these cities. The emotional objectification and personification of these perceived dialect regions lead to the formation of social representations that could then be manipulated. And in both cases, it was demonstrated how this new social object could be commodified and sold based upon its new social value. Table 2.4.1 summarizes the connections between SRT, Preston's (2017) terminology, and enregisterment.

Table 2.4.1: Translating concepts between SRT, Preston, and Enregisterment

SRT	Preston (2017)	Enregisterment
anchoring	*noticing + classifying*	*naming*
objectification	*imbuing*	*objectification (commodification)*

While Beal (2009) and Johnstone, Andrus, and Danielson (2006) focus on this process for urban centers, PD research suggests that larger geographic areas can serve as anchors, with their regional dialects objectified (or in Preston's terms, imbued with attitudes). Hartley and Preston (1999) conducted a large-scale analysis of the types of labels that Americans assigned to regions they had provided in draw-a-map tasks. While labels did include linguistic features and cultural stereotypes, many reflected regional identities. While Hartley & Preston primarily considered these reflecting local concepts of standard English, the regions also hinted at larger affiliations suggesting that Americans view dialectal variation as a function of geographic and cultural region. These regions can be narrowly associated with specific urban centers (such as New York City or Boston) or large, multi-state areas (such as New England or the South). This hopefully makes clear how linguistic variation can be incorporated in an SRT framework by drawing comparisons to established research in the field of linguistics that, although using different methods and terminologies, are analogous. Now that we can consider how dialects can be incorporated into an SRT framework, I will turn to the attitudinal cognitorium as outlined by Preston (2010, 2017) and make the connection to Britain's concept of spatiality.

To begin, I will demonstrate how the social representations can be included in the framework of the attitudinal cognitorium. SRT assumes that, after the processes of anchoring and objectification, exemplars and schemas are formed. The exemplars and schemas become the result of repeated exposure to the social

representations, effectively becoming the encoding of social norms and knowledge (Fraser, 1994; Höijer, 2011). Based upon my discussion above, we can assume that as dialect regions go through the process of anchoring and objectification, they eventually form exemplars for the (perceived) distribution of linguistic variants. Thus, repeated social use of concepts such as Sheffield English, Pittsburgh English (or "Pittsburghese"), and a dialect for "the South" eventually become encoded as exemplars that allow for the formation of prototypes of the dialects, including their linguistic features, the characteristics of those who speak the dialect, and where the dialect should be located in geographic space.

Due to the role of frequency in the development of the exemplars, we can postulate that they require some form of experience: either direct experience on the part of the individual or indirect experience through socialization with other members of the social group. In this case of dialects, this can be the result of either direct contact with speakers of the dialect in question, media portrayals of the dialect, anecdotal evidence provided by other members of the social group, or preconceived notions that result from the internalization of social norms. For our purposes, what this ultimately means is that the exemplars represent the prior experience of the individual. This then allows us to incorporate the social representations into the attitudinal cognitorium, which already provides a mechanism for explaining the role of prior experience in the formation of attitudes. The essence of my argument here is that the social representations will be stored in the Prior Experience module of Figure 2.4.1, which is Bassili & Brown's outlining of the process where the attitudes are processed in the attitudinal cognitorium.

Based on this model, prior experience feeds into the microconcepts that comprise the attitudinal cognitorium. The microconcepts themselves will form the basis of responses towards stimuli (which, in the case of PD research, constitute the attitudes towards dialect regions and their perceived existence). This means that the social lives, interactions, and movements of an individual very closely impact their psychological evaluations and realization of linguistic variation. This allows us, in an albeit rudimentary fashion, to unite two aspects of Britain's approach to spatiality: the social and the psychological. In order to truly make the connection between the two, we must be careful in how we as researchers then elicit attitudinal reactions in our research by asking respondents for more information than simply where they believe a region to be (the draw-a-map task in its "purest" form) or where they think a voice is from (the voice placement task, particularly looking to the aforementioned studies of Niedzielski (1999) and Plichta and Preston (2010). This is where current work on PD become very relevant; as mentioned in Section 2.3, Evans, Dunbar, and Chartier (2020) have made headway into incorporating information such as experience with a dialect region into their use of the draw-a-map task and Cramer (2016) has asked for more evaluative judgments on the regions provided by respondents. Without directly invoking (or even responding to) Britain's critiques about the lack of spatiality in sociolinguistics, these researchers have already begun to carve out a research program that incorporates at least two of his three criteria.

What remains for us to address Britain's critique is to incorporate *physical space*, which I will argue is done through the implementation of the draw-a-map task. Returning to Figure 2.4.1, the top portion includes a module for the conditions under which an attitude response is elicited and the object to which the response is directed. To walk through Figure 2.4.1, the top-most portion of the graphic may be considered the "external" reality. Leaving aside for the moment the exiting arrows leading to "Explicit Response" and "Implicit Response," we can start with the "Eliciting conditions: Attitude Object, Question…". For the purposes of PD, we often have both the listed eliciting conditions: an attitudinal object and a question. The question will vary depending upon the research project ("Where are the areas where people speak differently?" in the case of the draw-a-map task) which is meant to get at an underlying attitudinal object: language. However, we have *two* attitudinal objects when we also provide a

map upon which we ask the respondent to project their answer: language (which is arguably more important to the linguist, and likely the goal of their research is to elicit attitudes on that) *and the map*.

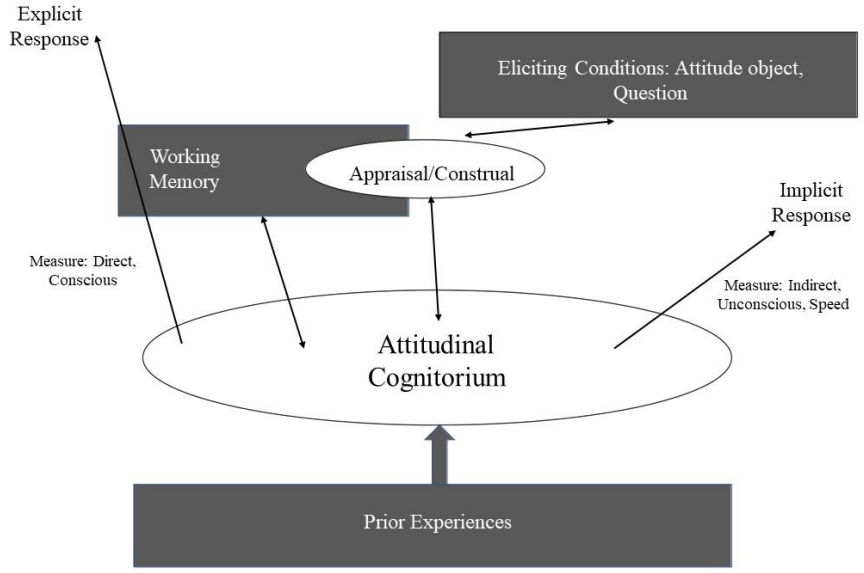


Figure 2.4.1: The Attitudinal Cognitorium (adapted from Bassili & Brown, 2005)

For draw-a-map tasks in particular, the map provided to the respondent is crucial in understanding and processing the results. That is to say that the blank (or "base") map serves as the object upon which the respondent can express their mental representation of dialect variation. With the map as a frame of reference, the respondent will be primed to provide dialect regions with regards to what exists on the base map in terms of geographic elements. The geographic elements (or primes) serve to facilitate the respondent accessing the attitudinal cognitorium and providing a response. Dennis Preston has argued at various points that some form of geographic information must be provided to respondents, although the extent of the information has varied between studies. In the United States, it is typical to include state boundaries for questions looking at the entire nation (Preston, 1984) or for smaller regions (Benson, 2003; Chartier and Jones, 2019). Studies looking at individual states may only include a blank outline of the state onto which the respondents can project their answers (Cramer, 2016). Montgomery (2007) provides blank maps of the United Kingdom to his respondents but primes them by projecting a map with major metropolitan areas at the beginning of the task. Montgomery claims that priming subjects with major metropolitan regions of the United Kingdom does not alter the types and frequencies of perceived dialect regions that his respondents draw; however, Bounds and Sutherland (2018) reports that manipulating the types and quantities of geographic features on the base maps results in very different types of dialect regions provided by respondents in Tennessee for large regions (such as an entire nation) but that smaller locales (such as a state-level map) do not show an appreciable difference. With the map as a frame of reference, the respondent will be primed to provide dialect regions with regards to what exists on the base map in terms of geographic elements. It appears then that the geographic elements (or primes) serve to facilitate the respondent accessing the attitudinal cognitorium and providing a response. The inclusion of some primes (such as state borders or city locations) can improve the accessibility of items within the attitudinal cognitorium or guide what microconcepts are evaluated for expression.

To return to a quote from Preston mentioned in Section 2.2, "the facts of physical geography […] have an influence on language" (2010, p. 87). While the map may be a proxy for physical space, it is still

important to how individuals are anchoring and objectifying language with regards to how they understand linguistic variation. Moving down Figure 2.4.1, it is the map that assists the respondent in appraising their own understanding of linguistic variation in conjunction with their working memory. More detailed studies such as Cramer (2016) and Chartier and Jones (2019) begin to access the attitudinal cognitorium by asking questions about the evaluative characteristics associated with the drawn regions (such as degree of perceived pleasantness or correctness of the dialect or known stereotypes associated with the region). The elements in the attitudinal cognitorium are fed by the respondent's prior experiences (the bottom of Figure 2.4.1) and realized as explicit responses (returning to the top of Figure 2.4.1). While we do not yet have a method for eliciting implicit responses for most PD research, this does not make PD research so different from Britain's own ethnographic view of spatiality in sociolinguistics. Therefore, I would argue that modern approaches to PD do allow us to address all three aspects of spatiality by being more careful in how we incorporate the geographic space.

With regards to incorporating geographic space in a method that would address Britain's critiques listed in Section 2.3, I am detailing two portions of my research project that are tied to the physical and cultural geography beyond linguistic variation and language regard. In the next chapter, 'Chapter 3: Maine,' I will be outlining the geographically-bounded location that I am considering in this project, including its cultural history, current demographics, and attested linguistic variation. In 'Chapter 4: Study Design and Analytic Methods' I will be carefully outlining the map that was provided to respondents. Included in this will be design decisions, why the map was presented as it was, and how different elements may and may not have contributed to the results. While I acknowledge that Maine constitutes a larger geographic area than the Fens, I will discuss how the cultural makeup and sense of identity associated with the state make it an ideal location to conduct a large-scale project that demonstrates how spatiality, the evaluation problem, and PD methods can fit together.

Chapter 3: Maine

In the previous chapter, I outlined the connection of perceptual dialectology methods to Britain's proposal of an approach to sociolinguistics using spatiality. At the end of that chapter I discussed the relationship of physical geography to both the methods and framework, and concluded with a mention that the physical space being examined in this thesis is the U.S. state of Maine. In this chapter I will be discussing Maine as a geographic, socio-cultural, and linguistic space; however, I must first justify how my research site is analogous to Britain's to justify the choice to conduct research in a space so much larger than Britain originally uses and discusses.

Britain (2010b) states that "*perceived* space shapes our social behaviors [emphasis in original]" (p. 4) as he explains the role that spatiality plays in his research site, the Fens. The Fens is located in eastern England (East Anglia) and can be considered a known and bounded geographic area representing a physical space. It is the perceptions of this space, Britain then goes on to argue, that play an important role in the attitudes of the people living in these communities. During Britain's work in the area, an influx of people from more metropolitan areas, such as London, were moving into the area due to cheaper housing prices and that the area "afforded their new owners a piece of England's rural 'idyll' […] where life was considered to be easier, slower, more friendly, [and] less instilling of fear" (Britain 2010b, p.5). However, people who already lived in the Fens came to see these new-comers as antagonistic to the local economy (where, in one village, there was an attempt to stop a local military base from conducting practice drills) as well as importing "'foreign ways' and "[trying] to take over the village" (Britain 2010b, p.5). The long-standing residents began to refer to the new-comers as "Londoners," even though Britain found many of the new-comers did not, in fact, come from London (Britain 2010b, p.5). With London representing an outside, socially different area, Britain concluded that "perceptions of territoriality, 'legitimacy' and ownership […can shape] space more generally" (Britain 2010b, p.5). That is to say that the residents of the Fens saw the new-comers claims on the local customs and practices as illegitimate, and generically classed them as a specific group of people representing "foreign" (i.e., urban or metropolitan) values. They were, as Mainers would say, "from away."

The notion of differing views on a rural area (an "idyll" sought by new-comers versus the lived experiences of the local population) has already been applied to Maine. Lewis (1993) goes in depth into the creation of a mythologized Maine that obscures lived realities of depression and poverty in order to create a marketable image on behalf of Maine's tourism industry. That is to say, locals (i.e., Mainers) "can make money selling the Maine myth" (Lewis 1993, p. 97). And what is that Maine myth? It is that Maine is "[t]his idyllic and romantic image of a 'homeland of the soul,' connecting […] psychic space with geographic location" (Lewis 1993, p. 91). Maine was sold to outsiders as a destination where they could reconnect with nature and escape the rapid urbanization of the 20th century (or "rusticate," according to Woodard (2004)). Much of this was related to Maine's remote and largely rural standing on the east coast, where the local economy was largely tied to lumbering, fishing, and shipbuilding. Lewis notes that, however, Maine's economy (especially with regards to shipbuilding) began to decline in the late 19th century; a new source of revenue was being sought. Starting in the late 1800's, railroads began enticing visitors to Maine in brochures that promised an escape from urban life (Lewis, 1993). Eventually, this would lead to tourism becoming one of Maine's most important industries or, in the words of Lewis: "the dominant industry in Maine" (1993, p. 97). Tourism continues to be important to the state; it generated some five billion dollars from over-night visitors in 2019 ("2019 Maine Office of Tourism Highlights," 2020). While it is difficult to assess the impact that the global pandemic of 2020 had on Maine's economy (being so heavily based upon the income generated by tourists), an observable effect of the pandemic was the increase of housing purchases in the predominantly rural parts of Maine (Wlodkowski, 2021), where Maine's remote and distinctly rural nature was again being commodified. This change in Maine's housing market was atypical in that it reflected a drastic increase in the number of units purchased in Maine's most rural areas by people from outside the state as people fled urban areas during the pandemic ("More people moving to rural Maine during pandemic," 2021). This then creates a

moment in current time where long-established Maine residents are negotiating the use of space with recent arrivals, much like what Britain described in the Fens.

While the adjustments made to Maine's social and cultural geography from these changes will still take time to solidify and be documented, we can expect to see some conflicts arise. The notion of a Maine identity is very strong for locals, so much so that there is a popular Maine joke (with variations) about a man who spent all of his life in Maine but was born in New Hampshire. At his funeral, a group of Mainers gathered and proclaimed him as nearly being "one of us." The notion of who is and is not a "Mainer" is deeply tied to tradition and long familiar roots within the state, and part of this identity is tied to specific cultural practices. For example, Maine has a long-standing tradition of free access to what is considered common land. This includes large swathes of forests historically owned by lumbering corporations as well as access to waterways for local fishermen (Judd 1988). However, rural Mainers often feel that these practices are threatened by out-of-staters (people "from away") who come into the state, purchase property, and then close off access. This has been a recurring issue with the development of the proposed Maine Woods National Park, as many fear that incorporating these rural areas will lead to locals no longer being able to freely access these lands for recreational purposes (as had been the case when several parcels of land were purchased by one of the proposers of the park, Roxanne Quimby, who then did not allow activities such as snowmobiling and hunting on the land (Pérez-Piña, 2016). This may lead to further entrenchment of a Maine identity as locals are forced to advocate for how the geographic space is to be used as new individuals move into the state.

In the next few sections, as I outline the geography, the socio-cultural history, and the linguistic practices of Maine, I will make clear how this state, while representing an area geographically larger (and perhaps more diverse) than the Fens is indeed a good analogue wherein the use of PD methods can be incorporated into spatiality. I will then conclude this chapter by motivating how this knowledge is important to the scientific endeavors of PD in that it allows us to make hypotheses and predictions about what we may find once the mental maps are aggregated.

3.1. Maine's Geography

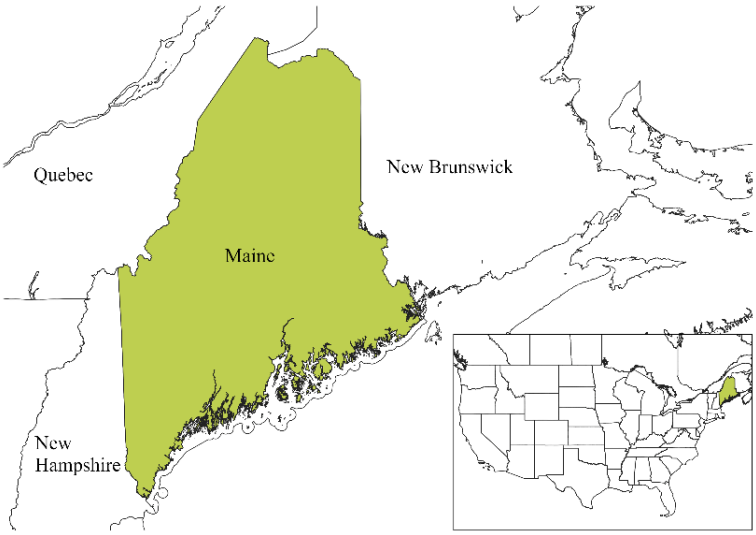
Maine is the northeastern-most state in the U.S., bordering the Canadian provinces of Quebec to the northwest and New Brunswick to the northeast. The only border that Maine shares with another U.S. state is with New Hampshire (see Map 3.1.1); as such, Maine only has one interstate highway (I-95) and five U.S. highways[2] connecting it to the rest of the U.S. Except for U.S. Routes 2 and 201, these highways generally move from a southwest to northeast direction (Map 3.1.2). This mostly coincides with the concentration of Maine's population along the coastline (which likewise goes from the southwest to the northeast) but leaves Mainers without a convenient way from moving across the entire state from west to east (see Map 3.1.2). In fact, the geography of the state generally lends itself to moving either along the coast or from south to north along its rivers. Due to this north-south layout of the state, many coastal towns may only lie a few miles away from each other but take several hours of travel (moving north inland, then east, and then south) to facilitate commerce. Historically, this led to some communities becoming isolated from each other save through the interactions of fishermen or other individuals possessing boats, as roadways would not directly connect the towns.[3]

During Maine's development between the 17th and 20th centuries, this north-south configuration of the state served to power numerous textile and lumber mills. While these mills have largely been shuttered since the late 20th century, the mills were once the cornerstone of non-coastal Maine's economy. This is

2 The longest of these highways, U.S. Route 1, follows the Maine coast and traces parts of the King's Highway, which at one time connected the town of Machias with Boston, MA (Caldwell, 1998).

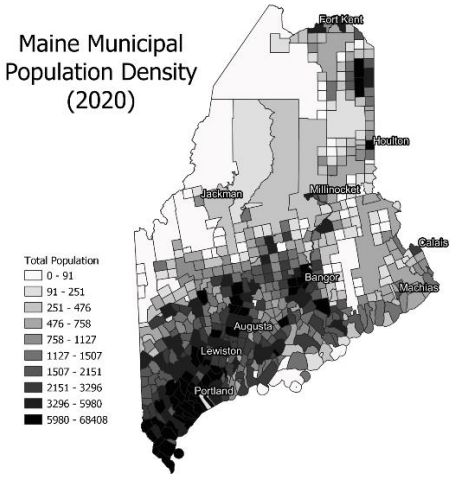
3 The saying "You can't get there from here" is believed to reflect this historic isolation, as motorists would be unable to get to a specific town unless they went back inland some distance.

partially because the soil of Maine is largely unsuitable for large-scale agriculture due to stone deposits from the last ice age, high acidity, and the majority of what would have been Maine's topsoil being deposited into what is now the Gulf of Maine (Caldwell, 1998). The shuttering of the mills has led to many historically larger Maine towns (such as Millinocket, north of Bangor) to drastically reduce in size as younger generations head to the coast or out of state in search of work. The coast is still host to a strong fishing industry, due largely to the ecology of the Gulf of Maine (which benefits from the soil that the mainland is missing). While Maine's fishing industry is largely associated with lobsters, other important fisheries include haddock, cod, alewives, and scallops. The fishing industry in 2018 represented over $600 million dollars in value ("Maine Commercial Landings," 2021). As such, the fishing industry not only represents an important aspect of Maine's economy but also becomes tightly interwoven with the identity of the state. This can be seen in popular culture caricatures of Mainers, such as in the Saturday Night Live Weekend Update sketch "Gay Couple from Maine," where comedians Fred Armisen and Bill Hader play the sketch's titular couple while wearing waders (Meyers & Jost 2013).



Map 3.1.1: Location of the State of Maine

Map 3.1.2: Maine's Highways



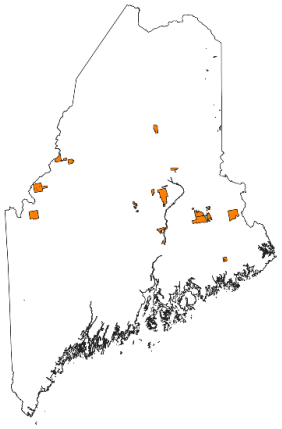
Map 3.1.3: Population Density

Maine's location at the northeast end of the east coast has also made it strategically important for U.S. defense interests. In some ways, this parallels the Fens from Britain's work: one of the points of contention between established residents and recent arrivals is the area's use by the British Royal Air Force and how that impacts the area's economy. Maine used to house a naval air station and an air force base that served P-3 Orion aircraft during the Cold War. These aircraft would patrol the east coast in search of Soviet submarines ("History coming alive at the museum!," 2021). While both of these military installations have since been decommissioned, Maine still has a strong connection to U.S. defense interests in that Bath Iron Works, the fourth largest employer in the state (and largest outside of healthcare and retail), still builds destroyers for the U.S. Navy ("Top 50 Employers in Maine," 2021).

As can be seen in Map 3.1.3, Maine is a largely rural state with large portions of the interior and northwestern part of the state sparsely populated (if at all).[4] The northwestern portion of the state includes the terminus of the Appalachian Mountain Range at Mount Katahdin and vast expanses of woodlands. Much of the woodlands are privately owned, historically by paper companies that began selling off the property in the late 1990's. Despite most of this land (and other land in Maine) being privately owned, Maine has a tradition of public land-use, especially in the undeveloped portions of the central and northwestern portions of the state ("Maine Forest Product Essentials," 2021). As such, many Mainers have a complicated relationship with the physical space of the state and how it is utilized. It is to the Mainers that I now turn.

3.2. Maine's Socio-cultural History and Demographics

A complete and thorough overview of the history of settlement and demographics of Maine would be well beyond the scope of this dissertation. What I present in this section is a small snapshot that will allow for the application of spatiality to the PD data presented in the following chapters. While I will not go into detail on this matter, many such overviews would begin with European contact with the North America. I do wish to recognize that the Penobscot, Maliseet, and Passamaquoddy peoples were in Maine well before European contact. These tribes still maintain a presence in the state, both in the state legislature and their lands (Map 3.2.1).



Map 3.2.1: Tribal lands in Maine

European contact in Maine dates to at least the 16th century, with the first French settlement at the mouth of the St. Croix River established in 1604. This settlement was abandoned the following spring, a practice that was repeated by the British in 1607 when they attempted a settlement further south at the mouth of

4 Maine is home to the "largest contiguous block of undeveloped forestland east of the Mississippi [River]" (Maine Forest Products Council, 2017, p. 4).

the Kennebec River (Caldwell, 1998). European settlement in Maine was largely restricted to small outposts and French missions until the establishment of the Plymouth Colony in Massachusetts in 1620, at which point Maine slowly began to be developed by predominantly English settlers.[5] The general settlement of the state reflects the population centers as seen in Map 3.1.3; that is to say, most of the population started in the southern-most portions of the state and gradually moved northwards (see Figure 3.2.1 from Forbes 1944).

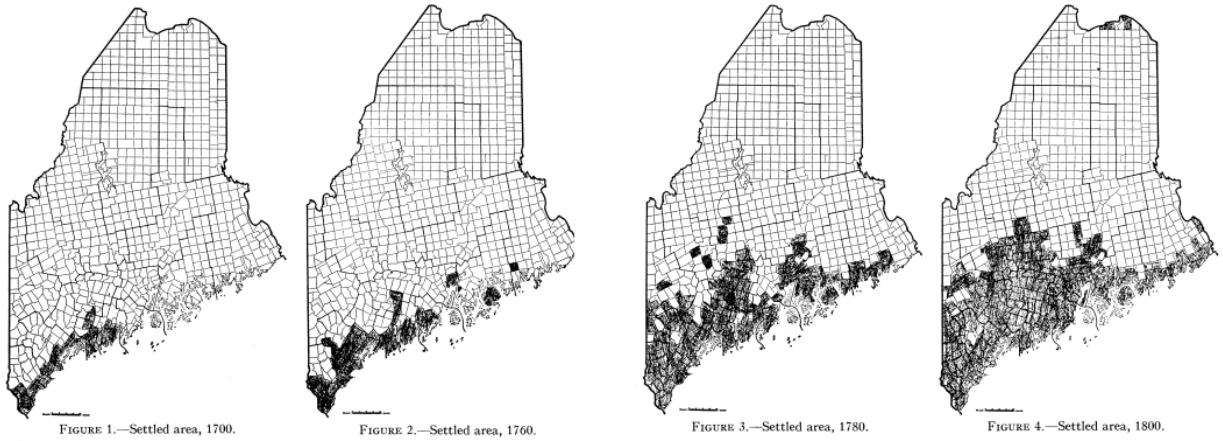


Figure 3.2.2: Maine's settlement history from Forbes (1944), pg. 66

When the U.S. declared independence from Britain, Maine was incorporated as a part of the commonwealth of Massachusetts. However, Maine was not contiguous with the rest of the commonwealth and unsuccessfully attempted to secede from Massachusetts in 1807 due to conflicts on land claims and a sense of underrepresentation in state politics. During the War of 1812, the town of Machias was attacked by the British. Despite pleas by Mainers to intervene and aid the town, no aid was sent by the commonwealth which resulted in increased secessionist sentiments (Woodard 2004). Maine would eventually be recognized as its own state as part of the Missouri Compromise in 1820. The legacy of Maine's secession from Massachusetts can still be seen today in attitudes towards Massachusetts and a sense of what a Maine identity is (a point I will return to later in this section).

During the 19th century, Maine saw an influx of Franco Americans from Quebec who sought economic opportunity at the growing Maine mills. What followed were several decades of discrimination against Francos, especially with regards to the French language, which has arguably continued into modern times (see, for example, a letter to the editor in the Twin City Times (Bilodeau 2012), about the lasting effects of anti-Franco sentiments in the state). However, one legacy of this migration is that Maine has the highest per capita rate of individuals who use French natively at home in the United States, with the largest concentration being in the town of Madawaska in the St. John Valley (the northern-most part of Maine, along the state's border with New Brunswick, CA). Another legacy of French in Maine is its recent resurgence: Maine has seen an increase of refugees from African nations, many of whom speak French. Franco societies in the city of Lewiston have been using French to bridge these new immigrant communities and the established Maine francophone community (Sharon 2017). These recent arrivals from Africa are recognized as being an important factor for Maine's economic growth, as the state had largely been aging and shrinking. As of 2015, international immigrants were recognized as one of the largest contributors to resisting population decline in the state (Governor's Office of Policy and

5 France and England would dispute land claims in Maine for the next 150 years.

Management 2016) and have taken Maine from being the least ethnically and racially diverse state in the U.S. in 2010 to the second least diverse state in the 2020 Census.

Despite Mainers being largely ethnically homogeneous until relatively recently,[6] there are still deep cultural divides within the state. One of the most prominent of these divides is between the inland and rural north and coastal, urban south. The divide can between these two regions can be seen in the two congressional districts that comprise Maine (Map 3.2.2). The northern district, which supported Trump in the 2020 election, is more rural, less economically prosperous, and generally more concerned with maintaining Maine's land-use traditions. The southern district, which supported Biden in the 2020 election,[7] is more metropolitan and houses the majority of the state's population. These two districts can be seen as representing two different states; in fact, it is not uncommon for legislation to be periodically introduced that would split the state in two. The latest attempt (in 2010) meant to divide the state into Maine (the northern, rural part of the state) and Northern Massachusetts (roughly analogous to the southern Congressional district in Map 3.2.2). The bill was introduced by Rep. Henry Joy of northern Maine and shows the complicated notion of what constitutes a Maine identity. While the bill was putatively introduced to protect land-use rights in northern Maine (Associated Press 2010), it clearly distinguishes northern Mainers as residing in the "true" Maine, with the urban southern Mainers representing a non-Maine, Massachusetts identity. This harkens back to the anti-Massachusetts sentiments from pre-secession Maine (and in fact parallels issues of land rights that led Mainers to want to secede from Massachusetts to begin with). The question becomes who are the true Mainers; that is, who are the people who behave in such a way to represent the place from which they derive the demonym?

Map 3.2.2: Maine's two Congressional Districts

3.3. Maine's Linguistic Profile and Folk Linguistic Knowledge

Contemporary research on the Maine dialect is, unfortunately, sparse. When Maine is considered, such as in Stanford (2019) and Kim et al. (2019), it is generally considered as a part of the Eastern New England dialect group without any focus on the features of the dialect within the state. This maintains the classification of the region as established by the Linguistic Atlas of New England (Kurath et al. 1939).

6 And, admittedly, still not very racially or ethnically diverse.

7 Along with Nebraska, Maine is one of only two states that split electoral college votes to reflect voter distribution; as such, Biden received three of Maine's Electoral College votes and Trump one (two votes go to the individual who wins the most votes, and then one vote is awarded to the candidate that wins in each district).

Reid (2007) also provides a good overview of the Maine dialect and sociocultural history of the state, but does not offer much additional information about dialect features. Burnett (2006) considers lexical features of northern Maine but is specifically looking at Canadian youths not adopting American forms. The state gets some treatment in Nagy and Roberts (2004), and Carver (1989) goes on to split Maine into two dialect regions: an Eastern New England and Upper Maine (Figure 3.3.1). Otherwise, there is little contemporary research into the Maine dialect aside from the forthcoming work of Katharina Pabst, a graduate student from the University of Toronto who is looking at dialect features in the Houlton area (i.e., northern Maine; p.c. 2021).

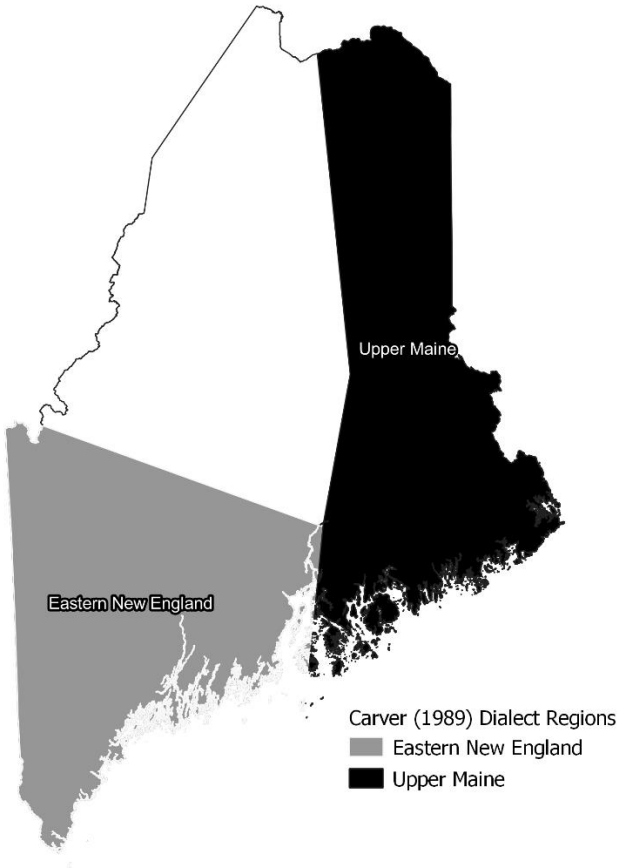


Figure 3.3.1: The New England Dialects according to Carver (1989)

What can be said about Maine's dialect is that it is historically non-rhotic; however, there does appear to be a shift towards rhoticity for younger generations (Reid 2007; Pabst 2021 p.c.). Mainers are also very aware of their dialect, as it has been represented in media. While there is variation about how valid such presentations are seen to be by Mainers as being "authentic" Maine identities (see, for example, the aforementioned Saturday Night Live sketch), Mainers are aware that they have a distinctive way of speaking. In fact, along with the "Maine myth" mentioned at the beginning of this chapter, Mainers have also commodified their dialect. This can be seen in the following excerpt:

> Governor Angus King once said that if he could just strategically position a suitably crusty yet 'Mainah' on the porch of every general store or end of every lobster wharf, giving people asking

> for directions the standard reply of 'You can't get theyah from heyah,' tourism revenue would triple (Brechlin as cited by Reid 2007).

That is to say, the dialect is considered a part of the Maine identity that can be enregistered and commodified in the same way that Beal (2009) described for the Sheffield dialect in England and Johnstone (2009) described for Pittsburghese. Examples of this for the Maine dialect can be seen in the bumper sticker using non-rhoticity (Figure 3.3.2) as well as books such as John Gould's *Maine Lingo: A Wicked-Good Guide to Yankee Vernacular*. The dialect also received national notice in 2019 when Big 7 Travel revealed a nation-wide poll on the "sexiness" of American dialects wherein Maine's dialect was ranked 4th most "sexy" (Koenig 2019). The goal, then, becomes understanding how this mythologizing of Maine dialects is held within the minds of Mainers with an eye towards the use of space. Which brings us to how the information in this chapter, along with spatiality, can inform our pursuit of this knowledge through PD.

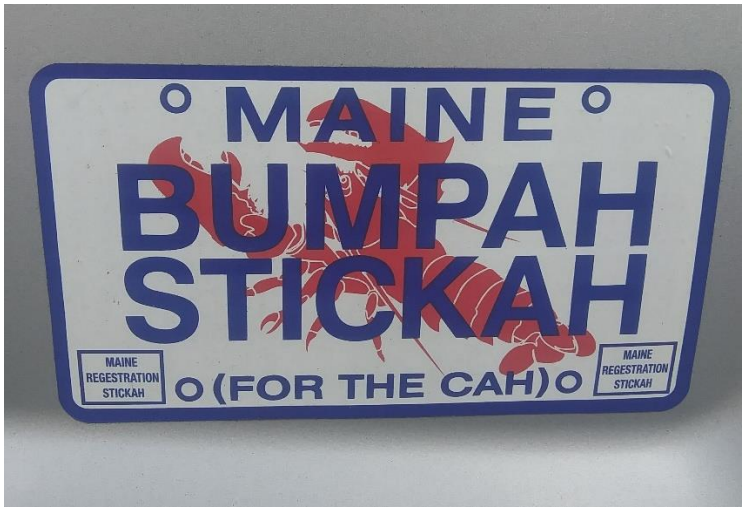


Figure 3.3.2: Novelty bumper sticker purchased in Maine

3.4. How the preceding information interacts with linguistics and spatiality

We collect mental maps in PD and then analyze them with regards to spatial distributions. We do not, generally speaking, form hypotheses about how the maps will look in advance. There is some logic to this in that we as linguists cannot know in advance how people will organize their linguistic perceptions in geographic space. However, if we include Britain's notion of spatiality, we can make some informed predictions about what we can expect to see on the final maps. In the case of Maine, I will offer the following predictions:

1. Given the population density of the state, we should not expect to see many, if any, regions drawn in the north-west region of the state, where there is little to no population.
2. Given the social divisions between northern and southern Maine, we can expect to see northern and southern divisions in the dialect maps that mirror the two congressional districts in the state. This may also reflect the Eastern New England and Upper Maine dialect regions identified by Carver (1989).
3. Given that Maine is reliant upon fishing as an important economic source, we can expect to see more regions identified in coastal Maine than inland Maine (which will also reflect population densities).

The first prediction and the method in which it was tested can be tied into the three components of spatiality in that:

a) It looks at the geographic space in considering the region's relative isolation (see Map 3.1.2 of Maine's highways), small population (see Map 3.1.3 of Maine's population density), and physical location in relation to the rest of the state (physical)
b) It asks about the respondents' interactions with this area (as described in Section 4.4) (social)
c) It asks respondents to perform evaluations of the area (psychological)

For the second prediction, I am largely intending to address the social dimension of spatiality. More specifically, I am investigating the belief of some Mainers in social distinctions that can be seen between the two congressional districts. With regards to physical space, I have argued in this chapter that the elicitation instrument (i.e., the map) in PD encompasses the physical component of spatiality as well as the psychological.

The third prediction incorporates the social aspects of spatiality in identifying an important source of economic opportunity and development in the state. Additionally, it is likely the area that most Mainers have some personal experience with (with regards to life paths) based upon the population density of the state. Like the previous prediction, this prediction leverages the map as a method for dealing with the physical aspects of spatiality but has the advantage of focusing on a geographic area (the coast) that is much more clearly defined on the map and in the real-world (as the coast represents a border that is unlikely to change in most Mainers' lifetimes). This region also incorporates the psychological element of spatiality beyond the elicitation instruments in that it is an area that has become symbolically important in Maine, including having dialect features that have been commodified (see Section 3.3).

What remains then is to consider my methods in collecting the data, performing the analyses, and testing these predictions. I will begin by looking at the methods employed in this dissertation in the next chapter.

Chapter 4: Study Design and Analytic Methods

As stated in Chapter Two, this study utilizes one of the methods set forth in PD: the *draw-a-map task* in order to understand how PD is related to spatiality. In this chapter, I will be going over how this study was designed to collect data that demonstrates this as well as provide an in-depth report of how the data was analyzed.[8] To begin, I will discuss how the sampling method employed to collect the data. From there, I will discuss the demographic questions that were elicited from the respondents to the survey used to gather the data. Section 4.3 will then describe the process of selecting the map that was used to allow respondents to anchor their experiences with linguistic variation to geographic space (as detailed in Section 2.4. Following this, I will discuss the data collection method that was used in this project, the Folk Linguistic Online Mapping Application (FLOM). While this is not the first project which used FLOM to collect and present data (that would currently be Chartier and Jones (2018)), this does provide the first in-depth written account of the project. Section 4.5 goes in-depth into the methods used to analyze the data that are presented in the next chapter. This includes a summary of what has been most traditionally done in PD over the last few decades (namely, employing the prohibitively expensive ESRI product ArcGIS) in addition to a new, free and open-source software (FOSS) approach that was developed in the University of Washington's Center for Studies in Demography and Ecology (hereafter, CSDE). This new approach will be used in the data that is presented in the following chapter. Finally, Section 4.6 will introduce the final theoretical frameworks employed in analyzing the data, that being a combination of content and discourse analyses to create the composite maps presented in Chapter Five. I will now turn to the preliminary aspects of the methods, namely the sampling and study design.

4.1. Sampling

To recruit respondents for this project, a snow-ball sampling method was employed. Initial recruitment was done through social media accounts of the author (Facebook, Twitter, and Reddit[9]). The exact wording of these posts can be found in Appendix A. While this generated some interest, an additional advertisement was posted with the Bangor Daily News online to collect more responses that would come from outside of my social network. The advertisement ran from June 15th through June 21st, 2021 and can also been found in Appendix B. Additional recruitment occurred through word-of-mouth, including through friends and their social networks. The results of this recruitment process will be elaborated upon in Chapter Five.

4.2. Survey Design (Demographic information)

Participants were directed to a website[10] that began with two disclaimers (one about not being able to perform the survey on a mobile phone or device and one providing information about the study) before collecting demographic information. The demographic information collected from participants included the following items: gender, ethnicity, birthyear, if English was the participant's L1, other languages they speak, their level of educational completion, and then a series of questions relating to their geographic background. By geographic background, I mean information that could be used in calculating a Regionality Index (Chambers 2000). The Regionality Index (hereafter, RI) is intended to serve as a proxy of how embedded an individual is in a particular geographic area without collecting detailed social

8 See Section 4.5 for an explanation about this choice of wording with regards to being explicit in my analytic methods.

9 The survey solicitation was posted to the subreddits of r/Maine and r/SampleSize.

10 The survey as administered in this study can be found at https://depts.washington.edu/flom/spdmaine/information.php

network information. This is in some ways very similar to the Rootedness Metric (RM) proposed by Reed (2020). However, the RI is slightly more quantitative certainly less qualitative in how it is applied. Because a series of fewer and simpler questions could be collected through the RI as opposed to the RM, the RI was selected for this study. The reasoning supporting this decision is that fewer, less-invasive questions would reduce respondent fatigue with the survey and help reduce attrition/withdrawal rates. Future iterations of studies that manage to "gamify" the questions may be able to incorporate a version of the RM that allows for more of the qualitative data to be collected while reducing potential fatigue on the part of the respondents. A numeric score is calculated in the RI that is meant to identify *interlopers* and *indigenes* on the two ends of a continuum created by these scores (Chambers, 2000); interlopers are individuals who are recently have recently arrived in an area and have not pre-existing connection to the region, while indigenes are individuals who are considered native to the area and have a connection that goes back at least one generation. RI has been used in previous PD research to understand how one's connection to the geographic area impacts perceptions of language variation and change with regards to the draw-a-map and voice placement tasks (Chartier and Jones 2018, Chartier 2020). To facilitate that creation of a RI score for each participant, the following questions were asked (with responses recorded as the state that the participant selected from a drop-down menu): in what state were you born?, in what state did you grow up (between 8 and 18)?, in what state did your mom grow up?, in what state did your dad grow up?, and where do you live now? This last question was meant to identify individuals who grew up in Maine but who have since left the state that may have participated in the survey (due to its deployment online). This information contributes to this study's goal of incorporating spatiality into the analysis in that it provides information about the social aspects of space. As discussed in Chapter Two, one of the factors that contributed to Britain proposing the incorporation of spatiality into sociolinguistic research was the observation of how long-standing residents of the Fens viewed the area in different ways than recent arrivals. Therefore, this information allows us to examine how individuals in Maine view their linguistic environment based upon their connections to the physical and social spaces as related to their lifespan experiences with the region.

This information is useful for identifying individuals who have a "lifetime" connection to Maine and differentiating them from individuals who are less embedded into Maine communities through lived experience (i.e., growing up in Maine or having a multi-generational connection to the state as opposed to moving to Maine from out of state later in life). For calculating the regionality of each of these individuals, a modified version of Chambers' (2000) RI index was used. This modified version was employed in Chartier and Jones (2018) to provide increased transparency with the calculation of the RI. This stems from Chambers (2000) not providing clear reasoning for the weighting of certain values he assigned to the various components that go into the RI. For this study, the following method was used to calculate the RI:

1. One point was given if the participant was born in Maine;
2. One point was given if one parent who had grown up in Maine[11];
3. Two points were given if the participant had grown up in Maine;

11 Originally, the intention was to consider both parents in the analyses; unfortunately, a problem in the early version of FLOM (discussed in Section 4.4) that was not caught in this version of study resulted in information about the participants' mothers being lost.

4. One point was given if the participant was residing in Maine at the time of completing the survey.

The decision to more heavily weight the childhood experiences of the respondent in calculating the RI (see item 3 above) relates to the importance of childhood and adolescent experiences in sociolinguistic development. This portion of the lifespan has been demonstrated to be important in the production of linguistic variables (e.g., in Eckert's (1989) study of high schoolers in Michigan). It is therefore reasonable to presume that perceptions will also be formed during this period and be reflective of the environment in which one grew up. It is likely that individuals who grew up in Maine will have a different view of linguistic variation in the state than those individuals who grew up elsewhere; therefore, this weighting helps to further identify them with regards to the RI.

I will return to the importance of the demographic factors (including the RI) during the analysis portion of the results in the following chapter. However, other elements of the survey design still need to be addressed; I will therefore now turn to the design of the map utilized in this study.

4.3. Map Design

Because I am arguing that the map serves as a proxy for geographic space with regards to an analysis using spatiality, the design of the base map presented to respondents requires careful consideration. As described in Section 2.4, the base map will serve as the anchor upon which explicit responses to language variation will be projected and therefore the content of the map serves to prime the respondents. While some level of priming for space is necessary for this task, my goal of incorporating spatiality into my analysis is to collect data that reflects what is spatially meaningful for my respondents. This means avoiding any unnecessary priming, or more importantly biasing, in the map. As such, the map that was used consisted solely of a black outline of the state upon an off-white canvas that included an opaque blue for bodies of water (such as the Gulf of Maine). The color choices and inclusion of bodies of water are related to the method creating the map (detailed below). The black outline of the state provides the prime for the geographic space that is being examined in this study (namely, that State of Maine) and meets the basic requirements that Preston has argued for (detailed in Section 2.4, but briefly: while Gould and White (1986) used blank pieces of paper to collect mental maps, Preston has argued that in PD research a minimum of an outline, and ideally detail to the state-level, need to be included in the primes used in the draw-a-map task). This also makes this study comparable to other PD studies (such as Cramer (2016) and Evans (2013)). However, additional factors were also considered in the decision to use an otherwise blank map to minimize the introduction of researcher bias. While Montgomery (2012) briefly exposes his respondents to cities in the UK as part of the priming of his draw-a-map task implementation, he reports that this priming has minimal impact upon the types and numbers of regions that his respondents provide. Similarly, Bounds and Sutherland (2018) both find that additional information provided on the maps at the state-level in Tennessee do not appear to influence the type and number of dialect regions that are provided in draw-a-map tasks. As such, there is support in the literature to support using a blank map as a valid stimulus for the draw-a-map task. Additionally, Maine schools are required by statute to teach "Maine history, including the Constitution of Maine, **Maine geography** [emphasis mine] and environment and the natural, industrial and economic resources of Maine and Maine's cultural and ethnic heritage" (Maine Social Studies Statutes 2021). Curricula in this program are offered roughly every four years during primary schooling (for example, in fourth, eight, and twelfth grades) As such, it can be expected that Mainers will have some working knowledge of Maine's geography provided that they had attended school in the state during any of these particular grades regardless of educational attainment

level.[12] One of the goals of this study is to leverage that knowledge, however it exists mentally, as a means of understanding attitudes to linguistic variation. More importantly, this may give us some means of understanding those individuals who spent their childhoods in Maine and those who did not (as discussed in Section 4.1).

The map used was created using the online service Mapbox. Mapbox allows its users to create online map tiles (or web-readable, interactive map images) that can be hosted on webpages or within web applications (a point I will return to Section 4.3). I created a Mapbox account and created a custom tile set in Mapbox Studio. For my style I used the base option of "Monochrome" with a "light" aesthetic option. I then customized the tile set to remove all visible components except for "Land, water, and sky." In the "Land, water, and sky" component I hid all features except for "land" and "water." I uploaded a copy of the United States shapefile from the U.S. Census to create the state outline for Maine and filtered the file in Mapbox to only display Maine. The resulting map is seen in Figure 4.3.1.

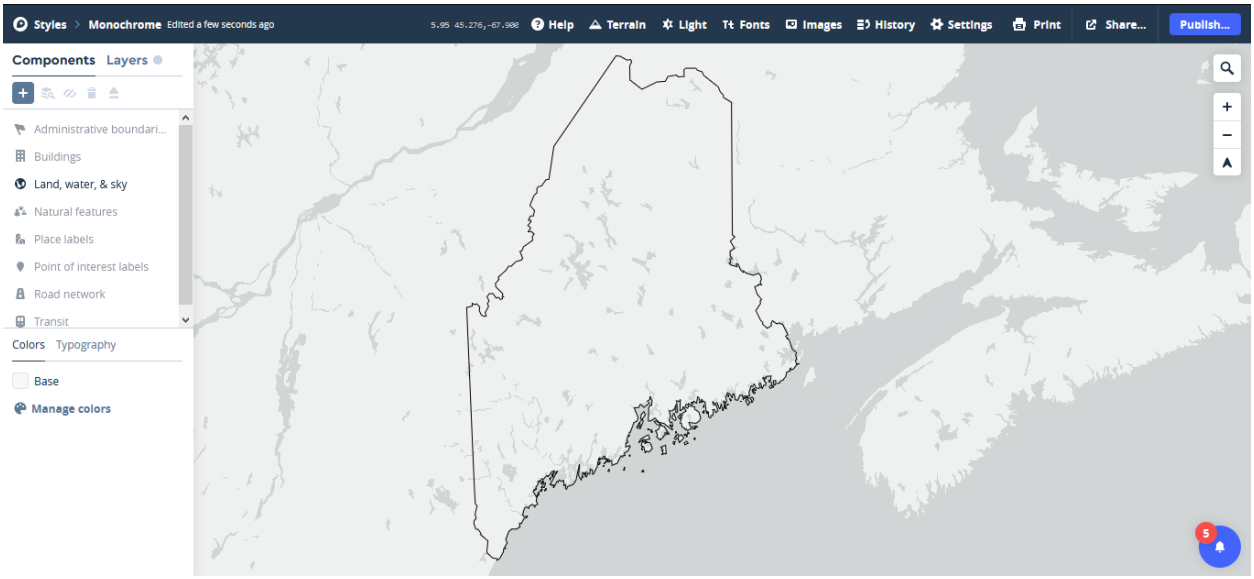


Figure 4.3.1: Map created in Mapbox

4.4. Data Collection: the Folk Linguistic Online Mapping Application (FLOM)

This study was administered online through the Folk Linguistic Online Mapping Application (FLOM), a digital toolset developed to allow for the collection of PD through a digital interface. FLOM, which was first developed by Dr. Betsy Evans of the University of Washington, is an open-source project that uses JavaScript to allow for collection of georeferenced data. This is accomplished by means of the LeafletJS library developed by Mapbox (mentioned in Section 4.3) that allows users to create extensions for interacting with maps on webpages. FLOM leverages a particular package within LeafletJS, FreeDraw (Timberlake 2017), that allows users to freely draw upon the map, albeit with some smoothing of the polygons.[13] FLOM captures the coordinates of the areas drawn on the map (which are georeferenced

12 Furthermore, none of my participants had less than a high school level of education; however, what was not collected in this study was where the individuals attended high school. This would serve as an important consideration in future iterations of this study.

13 Participants are alerted to this fact in the instructions.

polygons) as well-known text (WKT) strings that are then sent to a database via a PHP script.[14] This data is then downloaded via phpMyAdmin from the University of Washington servers to be converted into a file that can be used in a geographic information system (GIS); I will go into greater detail on this process in Section 4.5.

FLOM is extensible and customizable, dependent upon the familiarity of the user with JavaScript. In this study, a workflow in FLOM went as follows: participants were first given information about the study and asked the demographic questions (Section 4.2) before proceeding to a training activity. In this activity, participants were shown a map of the United States and given instructions on how to draw on the map. Following the procedure in Chartier and Jones (2018), participants were asked to draw regions identified as New England, the South, and the Midwest (based upon their own perceptions) on the map before moving on to the draw-a-map task. After the training activity, participants were shown the map in Figure 4.3.1 and asked to identify the areas where they believed "people speak differently;" a full version of the questions and interface can be found in Appendix A. As part of the directions for identifying regions, people were given the following prompt in a sidebar of the interface (visible in Appendix A):

> Is it possible to tell where in Maine someone is from based on the way that they speak? Please draw regions on the map where you believe people speak differently. After drawing a region, please provide a name that you believe represents the way people speak there.

The purpose of these directions was to direct the respondents' attention specifically to notions of place (i.e., geographic location) and linguistic features. Once the participant had drawn all of the regions they believed represented different "manners of speaking" (i.e., dialects), they were prompted to move on to the next portion of the task.

This involved sending them to a new screen, where all of the areas they had drawn were placed upon the map as interactive buttons. Participants were then asked to click through each of their identified regions (which changed color upon completion) and answer some questions about the region. These questions included rating the speech of each region for how correct they perceived the speech to be, how similar they believed it to be to their own speech, how pleasant the speech is to listen to, and how educated they perceive people with this manner of speaking to be[15]. This follows similar PD practices (see, for example, Cramer 2016) which expand upon Preston's (1986) notion of rating the social characteristics of different states but applied to regions that individuals actually identify as having distinct linguistic patterns. The resulting judgments were recorded numerically as a number between 0 (least pleasant/correct/etc.) and 5 (most pleasant/correct), although what respondents saw and manipulated was a sliding bar that they could move between the two extremes of, for example, "Unpleasant" and "Pleasant." In addition to these rating questions, participants were also asked if they had ever (1) lived in the region, (2) visited the region, (3) worked in the region, and (4) know people from this region. This is similar to Evans, Dunbar, and

14 It should be noted that this project, like Chartier and Jones (2018), uses the alpha or prototype version of FLOM; the project is constantly updating and versions that will be made available to future researchers work slightly differently. That is, beta and later versions of FLOM use the latest versions of LeafletJS and FreeDraw; the alpha version uses LeafletJS version 0.7 and an older, modified version of FreeDraw with PHP to transmit the data to a mySQL database. Additionally, future versions of the project will be deployed in self-contained virtual machines made possible through the Docker app.

15 I will return to the notion of correctness and educatedness in Chapter Five; according to Zahn & Hopper (1985), these two qualities should pattern together and represent the same general qualities. Part of the intention of separating the two follows from Chartier & Jones (2018), where we were interested in whether the two qualities could be used to analyze different perceptions of Boston. The core concept is that Boston speech could represent working class speech or the speech of elites (given the number of prestigious universities in the city) and therefore respondents may use the two terms differently in that context.

Chartier (2020), who sought to look at how personal experience factored into the regions people provided during draw-a-map tasks. In this case, the questions were asked as part of factoring in spatiality to the analysis; this information provides us some insight into the interactions that individuals have with these spaces. Thus, we can begin to look at how social and physical aspects of space are incorporated into the psychological representations of space that the participants are providing in the task.

Once participants completed this task, they were redirected to a new map that again displayed all of their drawn regions as interactive buttons on the map. On this screen, participants were asked to optionally provide information about any stereotypes they knew existed about these regions (following Chartier and Jones (2018)). This question is meant to collect additional data that may provide insight into the evaluations of each region provided by the participants. Once this was completed, participants were redirected to the last page where they were given the opportunity to opt out of having their (anonymized) data shared with other researchers, provide any comments on the study, and volunteer to take part in a future planned study that involves the use of FLOM to conduct a voice placement task. Participants were then thanked for their time and the study was considered ended for them.

In the next two sections, I detail how the data was retrieved and analyzed.

4.5. Processing of the geographic data

One of the goals for this section is to outline a replicable and easy-to-follow set of instructions for processing the types of geographic data that are collected in PD draw-a-map tasks. Guides for doing this are generally not available; the only clear example is Montgomery and Stoekle (2013). However, users of this guide will encounter two problems: (1) some steps are unclear (owing, in part, to changes in ArcMap and ArcPro, both produced by ESRI, that have occurred in the intervening years) and (2) the process requires access to any of the suite of GIS products developed and maintained by ESRI. Access to these products can be prohibitively expensive for many individuals if they are not able to get access to them through their university. This limits the accessibility of the methods that have been used in PD research to create and analyze composite maps (i.e., maps made of the perceived dialect regions of multiple individuals). What is lacking in PD research is a free and open-source software (FOSS) solution that makes access to the methods and analyses equitable across researchers, especially those without the support of a large research institution. What follows in this section is a guide to conducting just such an analysis that was developed by Philip Hurvitz (p.c., 2021) at the UW's CSDE. I will start by discussing the gathering of the data as collected by FLOM, moving it into a GIS application (in this case, the freely available QGIS and GDAL, to be described below), and generating visualizations of the data.

As mentioned in the previous section, FLOM stores responses to the survey through PHP code that inserts the data in mySQL tables. These tables can then be downloaded as comma-separated value (CSV) files and combined in R.[16] However, one consideration that needs to be made with regards to the data coming from FLOM is the projection (or coordinate reference system (CRS)) in which the WKT components are being stored. Projections in geography refer to the way in which a three-dimensional object like the Earth are represent as two-dimensional images. LeafletJS, as implemented in FLOM, stores the data in the CRS of EPSG:4326, a CRS that is utilized in many web applications. While this is generally not a problem for GIS processing of data, the process that I will be outlining below requires that the CRS be set to a projected coordinate reference system (also referred to as a Cartesian coordinate reference system; Sutton et al. 2009; Hurvitz pc, 2021) that places coordinates in a two-dimensional X-Y plane (Sutton et al. 2009). The CRS utilized by LeafletJS is a geographic coordinate reference system, which uses

16 Again, as mentioned previously, this is not an issue that researchers using beta and later versions of FLOM will encounter.

longitude and latitude to place coordinates in two-dimensional space using a combination of degrees, minutes, and seconds (Sutton et al. 2009). Fortunately, the data can be easily transformed between the two types of CRS either as a function in R (the code for which can be found in Appendix C) or by uploading the CSV into QGIS. For the former option, you would then add this file to QGIS by adding the resulting shapefile as a vector file.[17] If you choose the latter option, you would follow these steps:

1. Upload the CSV into QGIS by selecting Layer > Add layer > Add Delimited Text Layer… and select your CSV
2. When uploading the file, check the box for WKT under the Geometry Definition section and specify the field that contains the WKT string. Click "Add."
3. When the CSV is loaded, you should see it in the Layers window. Right click the layer to Export the layer as a shapefile. As a default QGIS should then add the shapefile to the Layers window
4. With the new shapefile active in the Layers window, change the CRS of the project by clicking the globe button in the bottom-right portion of the QGIS screen (next to the word bubble) and selecting the appropriate projected CRS for your region
5. Save the shapefile with the new CRS in a folder you have access to on your computer

For this dissertation, I used the first option of using R to transform the data. Once I had the shapefile in an appropriate CRS (which for this project was EPSG:32619 "Maine UTM 19 N") I then turned to the Geospatial Data Abstraction Library (GDAL) to rasterize the data. By rasterize, I am referring to the process of taking the overlapping dialect regions and visualizing the number of regions that respondents agree represent a particular dialect region. To help clarify this statement, I will walk through the process employed in this dissertation to create frequency (or "heat") maps) of the data.[18] Before starting the rasterization process, I edited the shapefile containing the data in QGIS by accessing the file's Attribute Table and inserting a new column, which I called "existence." The name of this column is not particularly important, but it could alternatively be named something like "count," as this field will be used to calculate (i.e., count) the number of overlapping polygons (i.e., perceived dialect regions) for the visualization (i.e., the frequency map). I then inserted the value of "1" in this column for all polygons. After saving these edits, I opened GDAL by accessing the OSGeo4W Shell that is included as part of the installation of QGIS. The OSGeo4W Shell is a command-line interface that allows the user to access GDAL and its associated functions by navigating the shell to the directory containing the researcher's data (i.e., the shapefiles). This is done through the standard "cd" or "change directory" command-line prompt. To generate the frequency map, I then used the following command to create an image file that represented overlapping polygons that could then be opened in QGIS to create a map image (this command is also available in Appendix C):

```
gdal_rasterize --config COMPRESS LZW -a existenceOrWhateverYouNameYourCountField -
add -of HFA -tr 100 100 yourData.shp theRegionInQuestion.img
```

What this command does is tell GDAL to create an image file (theRegionInQuestion.img) by taking vector data (yourData.shp) and converting it into a raster (gdal_rasterize). The raster is created by

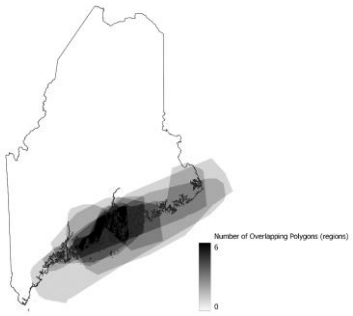
17 QGIS provides a number of excellent tutorials for their software, but you can also find linguistics-specific examples and tutorials from Cramer and Jones (2018).

18 While these frequency maps have an appearance similar to heat maps, they are not technically heat maps. As such, frequency maps seems to be the most accurate way in which to refer to them (Dunbar 2018 p.c.).

counting (-add) the number of vector elements (the perceived dialect regions/polygons) that overlap in any given space based on the value in the "existence" (existenceOrWhateverYouNameYourCountField) field. To help illustrate this process, we can consider the following subsets of the data collected in this project.

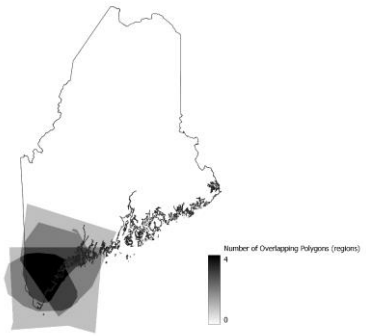
Map 4.5.1 contains seven polygons that were identified as representing a "coastal" dialect. These seven polygons were subset as their own shapefile and then rasterized using the gdal_rasterize command given above. As a result, Map 4.5.2 was created. To interpret this map, we use the provided scale which shows values ranging from 0 (for no polygons being present) to 6 (where the maximum number of overlapping polygons exist). Even though this map was made using seven polygons, not all seven of the respondents who provided this region agreed completely on where this dialect region exists in so far as a centralized or core area; instead, we see a general geographic region that depicts subjective interpretation on the part of the respondents as to where a "coastal" dialect exists. This stands in contrast to Map 4.5.3, which shows a dialect region identified as "urban." This map contains four polygons, and when rasterized shows values ranging from 0 to 4 (Map 4.5.4). In this latter map, all participants who identified this region agreed on some "core" or central area representing an "urban" dialect, but they disagreed on the geographic spread or extent of this dialect region. This allows us to consider then dialect regions that are represented by some "core" area as well as dialect regions that people believe exist, but with less certainty as to where these dialects are used.

Map 4.5.4: Dialect regions identified as "coastal," n = 7



Map 4.5.5: Frequency map of the "coastal" dialect region based on the number of overlapping polygons

Map 4.5.6: Dialect regions identified as "urban," n = 4



Map 4.5.7: Frequency map of the "urban" dialect region based on the number of overlapping polygons

The maps created using this process will be used in the analysis of the data in the following two chapters. What remains to discuss then in this chapter is how these subsets of the data were created through a combination of content and discourse analysis.

4.6. Subsetting the data through Content Analysis and Critical Discursive Psychology

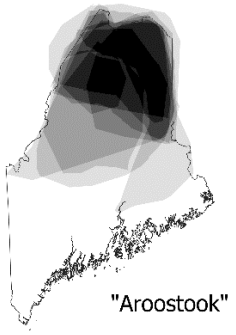
In order to analyze the ways in which Mainers perceive dialect diversity in their state, we need to be able to combine individual maps to create aggregate maps that show us where Mainers agree (or fail to agree) on such dialect regions as existing. However, because we are asking non-specialists to identify these dialect regions we cannot assume that regions will be given the same name. Therefore, we need a principled manner in PD to aggregate regions that represent the perceived dialect areas our respondents. One method of doing this is to use specific types of information provided in these labels to perform an aggregation, following in the tradition established by Preston (1989). This approach to classifying drawn dialect regions has proven both useful and to some extent reliable, with Hartley and Preston (1999) creating a large-scale classification system for commonly named and used dialect regions in the United States. Their classification system includes categories such as the sound of the dialect, the identity of those individuals who speak it, and invoking media portrayals associated with the dialect. However, this particular approach has some drawbacks in that some categories may need to be refined (it is unclear why identity and ethnicity, for example, are separate categories) and require the use of subcategorization when multiple geographic areas, identities, and speech features (i.e., sounds) are represented in the data.

In order to deal with this problem, we can turn to the style of content analysis as proposed by Krippendorff (1989). This approach has been used in some PD studies (such as Evans 2013) to gather dialect regions into groups based upon the terms used in the labeling of the areas. The goal of a content analysis is to classify items "by systematically and objectively identifying specified characteristics of the material" (Smith 2000, p. 314). For the content analysis to be successful, the classification (or coding method; Smith 2000) must result in categories that are "exhaustive [of all material in the sample; there should be no "other" or miscellaneous category], mutually exclusive, and independent" (Smith 2000, p. 321) to maximize objectivity of the classification, which in turn facilitates replicability of the research. This last bit is important, as there can be a great deal of variation in the names which respondents provide their perceived dialect regions that may make it difficult to replicate or interpret results. Due to the replicability of such an approach, I initially started with this style of content analysis for grouping the various dialect regions. What this meant was identifying and quantifying the most frequently used names that respondents gave their dialect regions.

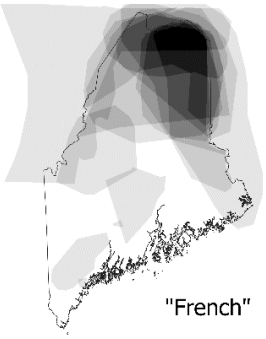
Unfortunately, the content analysis approach was not entirely satisfactory for my data; I ended up with nineteen categories of various sizes and had eighteen dialect regions that could not be included into one of these categories. The regions that could not be included into one of the nineteen categories included those with multiple potential classifications (such as "Downeast/coastal") or that were ambiguous with regards to their meaning (such as the label "Mixed"). One potential avenue for dealing with both the large number of categories and ambiguous regions would have been to appeal to the geographic distribution of the regions (i.e., where the regions occurred on the map of Maine). However, it was soon apparent that this would not be a tenable method. Take, for example, the following set of maps that represent four different dialect regions as identified through the content analysis: an "Aroostook" region, a "French" region, a "Northern" region, and a "St. John Valley" region (Maps 4.6.1, 4.6.2, 4.6.3, and 4.6.4, respectively).

These regions appear to have a fair amount of overlap; the question becomes whether it would be appropriate to combine them. Given that one of the regions (French, Map 4.6.2), is explicitly referring to a language other than English, this would not appear to be appropriate. What then of the "Aroostook,"

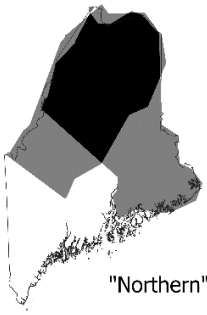
"Northern," and "St. John Valley" regions? Do they represent the same area for respondents or should they maintain a distinct identity in my analysis?



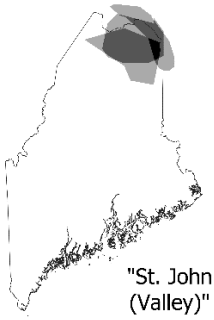
Map 4.6.1: "Aroostook" region



Map 4.6.2: "French" region



Map 4.6.3: "Northern" region



Map 4.6.4: "St. John Valley" region

To address this issue, I turned to Critical Discursive Psychology (CDP; Edley and Wetherell 2001), a form of discourse analysis employed in social psychology. According to Budds et al. (2017), CDP

> advocates an analytic stance whereby attention is paid to the agency with which individuals are able to draw on discursive resources in order to accomplish varying social actions. However, it also recognises [sic] that what is available to say is to some extent shaped by social, cultural and historical context and is limited by the discursive terrain that is available to participants at any one time (p. 6).

Whereas content analysis as proposed by Krippendorff (1989) is meant to be a more quantitative approach, CDP is meant to be more qualitative. The qualitative aspect of CDP comes from the application of the discourse around the names that individuals are using to describe perceived dialect regions. It is this characterization of CDP that I feel makes it attractive as an approach for PD, especially with regards to incorporating PD into an analysis that reflects spatiality. From the perspective of CDP, individuals draw upon socially available resources for describing social interactions; this allows for an approach like that of Hartley and Preston (1999) that finds regions that are used in comparable ways by different respondents. One of the assumptions behind these shared terms is shared by Foucault's (1972) notion that

> discourse does indeed 'construct the objects of which its 'speaks'- that is, it serves to create a 'reality' which is then (that is, historically) both described and sustained/eroded by future discourse (Edley 2001, p. 137).

That is to say, the ways in which individuals talk about social objects (which in this case would be their perceived dialect regions) makes said objects "real" to the individual and is part of how such regions are made "real" across different individuals taking part in a discourse of perceived dialects. CDP has additional features that make it appropriate for use in PD research. These features are the three "components" of a CDP analysis: the interpretive repertoire, the subject's position(s), and the ideological dilemma. The interpretive repertoire can be understood as the shared set of terms or ways of discussing social topics, which in the case of PD are the labels assigned to (perceived) dialect regions, as a means of locating them in social context. The subject position(s) allows us to consider aspects such as the individual's connection to that space (are they, for example, a resident of the state going back several generations, or have they just moved into the area? To what extent do they identify with a "Maine" identity?). Finally, the ideological dilemma allows us to consider that individuals will have differing perspectives on the same topics that are available to them under the interpretive repertoire. More specifically, it allows us to consider that "there is not one singular way in which phenomena are understood, but often contrary or competing ways of making sense of and describing something" (Budds et al. 2017). We can therefore leverage these competing views that individuals have in order to resolve the issue of how to combine Maps 4.6.1 to 4.6.4 by looking at other information that subject provide to us. In this case, I will be using the information provided in the associated stereotypes of the regions (when available) to combine certain categories due to them being discussed in similar ways. So in the instance of Maps 4.6.1 to 4.6.4, some regions assigned to the "St. John Valley" region were recategorized with either the "Aroostook" or "French" dialect regions depending on whether or not the stereotype information the respondent provided referenced a French identity. The reasoning here is that individuals will be using labels for the dialect regions that are available to them based on how these areas have been talked about in their own social interactions, but the ways in which they discuss the areas (such as use "Aroostook County" or "St. John Valley") allows for comparison and ultimately classification of these dialect regions. Additionally, maintaining an understanding that the individuals will have different relationships with these regions can be useful for maintaining distinctions between overlapping regions in cases where attitudes towards the same general area (or perceived dialect) are not shared amongst all participants; I will return to this latter notion in Chapter Five.

My process then was to go back through the labels I had under the content analysis approach and consider how provided stereotypes could help me combine certain categories. From this, I ended up with only one region that could not be placed into any category (the non-descriptively titled "Mixed" region, which had no associated stereotype provided by the respondent) and went from nineteen categories to thirteen categories. Of these thirteen categories, four contained only one dialect region which I could not reliably assign to another category, leaving me with nine categories representing the perceived dialect regions in Maine by my respondents which shared some commonalities in terms of geographic distribution and social categorization. These categories, including the associated dialect region names and stereotypes, can be found in Appendix D.

In the next chapter, I will present the results of the methods described in this chapter, including going into greater depth of how the dialect regions were categorized.

Chapter 5: Results of the study

In this dissertation I will be presenting the results of 32 surveys that were collected during the first half of 2021. These surveys reflect 32 participants who completed the entire survey and who at least grew up in the United States. There are five additional surveys that were excluded from this analysis as they were submitted by respondents who grew up outside of the U.S., and I did not have information on how long they had been in the U.S. Because I am using CDP as part of the classification process of aggregating perceived dialect regions, I could not be sure that these individuals had access to the same labels and concepts in describing their perceptions of Maine's linguistic diversity as those individuals who grew up in the U.S.; instead, I will be returning to these individuals in a later project that further explores CDP as an analytic tool for PD research. There were also seven individuals who started the survey, but due to how FLOM records and stores data it is not certain if they chose not to provide complete information about their maps or had withdrawn from the study. As such, I erred on the side of caution and treated these partially completed surveys as representing the subject withdrawing voluntarily from the study.

The general demographic information of the respondents considered in this dissertation can be seen summarized in Table 5.0.1. Of the 32 participants considered in the analysis following in the next chapter, twelve identified as female and twenty identified as male. This is therefore not reflective of the general population of Maine but rather reflects a bias of the author's social network. When asked about race, twenty-six of these participants identified as "White," four selected "other" (one male, three female), one identified as multi-racial (male), and one identified as "Asian" (male). While not exactly reflective of Maine's racial diversity, this is relatively close to the lack of diversity of the state (see Chapter Three). Year of birth for the participants ranged from 1947 to 1999, with nearly two-thirds of the respondents having been born after 1980. For level of completed education, one individual listed an associate's degree, four listed "some college," fourteen listed a master's degree or higher, and seventeen listed a bachelor's degree. Nearly all of these respondents grew up in Maine (28 of 32), with two of the remaining four individuals having only moved to the state as an adult after being born and raised of state; the other two had spent their childhoods in states other than Maine but had been born in Maine, later moved back to the state, and had generational ties to the state. As such, the respondents largely represent individuals who grew up with access to the interpretive repertoires which one would expect "Mainers" to have (or at least individuals who have a Maine-based component to their formative years). The RI scores ranged from 1 (those individuals who had only moved to the state as adults) and 5 (individuals who were born and raised in Maine, who were still in the state, and who had at least one parent who grew up in Maine). Table 5.0.1 includes a breakdown of the RI scores, and Figure 5.0.1 provides a visual breakdown of the number of perceived dialect regions drawn by each participant relative to their RI. Note that the lowest RI and highest RI scores provided the same number of regions; I will return to this in Chapter Six, but on a cursory observation, the RI does not appear to be significant with regards to the results of number and types of regions drawn.

From the thirty-two maps collected from these respondents, a total of 108 dialect regions were drawn. The number of regions varied by individual; two respondents provided only one region (see Map 5.0.1 for such an example), two respondents provided six regions (see Map 5.0.2 for an example), and the remaining respondents provided between two and five regions. The most commonly provided number of dialect regions was three (from ten respondents). Maps 5.0.3 and 5.0.4 give a broad overview of the areas associated with having a dialect region. Map 5.0.3 gives a general notion as to the clustering of edges of the drawn dialect regions, while Map 5.0.4 shows the frequency with which an area has a different dialect region associated with it. The lightest portions of Map 5.0.4 represent few to no identified dialect regions, while the darkest areas represent the regions that are most commonly associated with having a dialect.

The greatest concentration of regions is centered roughly around the city of Portland in the south, Machias in the east, and the vicinity of Fort Kent in the north (see Map 5.0.5; compare to Map 3.1.3 for population densities in the state). Interestingly, while Maine's largest city (Portland) is well-represented on Map 5.0.4, the next two largest cities (Bangor and Lewiston, respectively), are not. Lewiston is identified by one respondent as part of their name for the region (see Map 5.4.1), suggesting that at least Lewiston is available for discussing dialect differences in Maine. There is a very light band of grey moving across the center of the state through Bangor and along Interstate 95 (Map 5.0.5), suggesting that this region is not readily perceived as being associated with any dialect differences by my respondents.

Table 5.0.1: Summary of respondents' demographic information

Category	Group	N=
Gender	female	12
	male	20
Ethnicity	Asian	1
	Multiracial	1
	Other	4
	White	26
State born	Maine	17
	outside of Maine	15
State where childhood was spent	Maine	28
	outside of Maine	4
Level of completed education	Associate's Degree	1
	Some college	3
	Bachelor's Degree	15
	Master's Degree or higher	13
Regionality Index	*Interpretation*	
	1 ("interloper")	3
	2	0
	3	10
	4	11
	5 ("indigene")	8

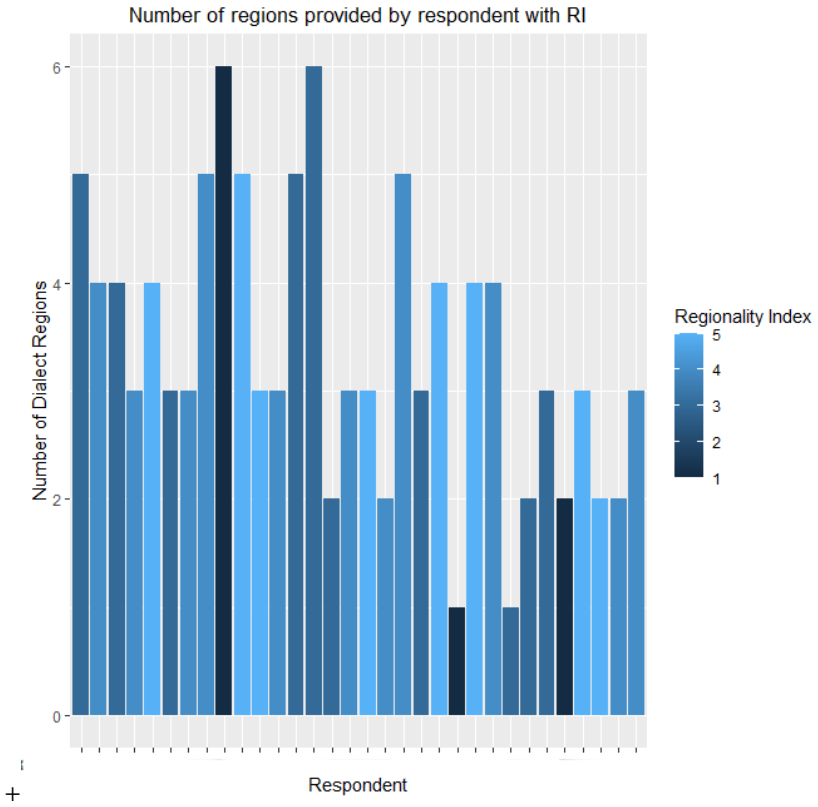
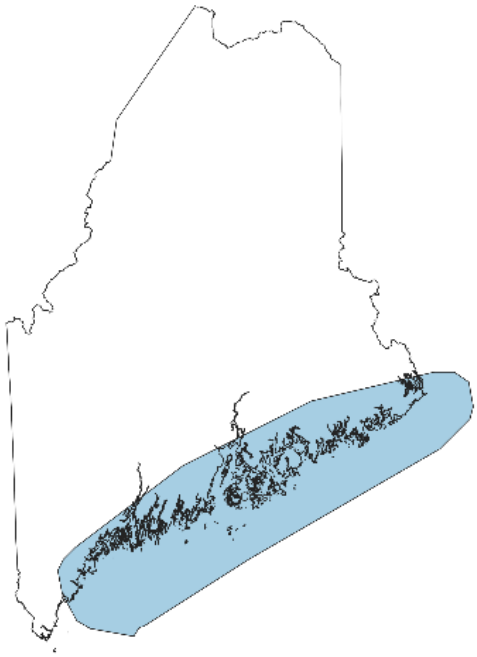
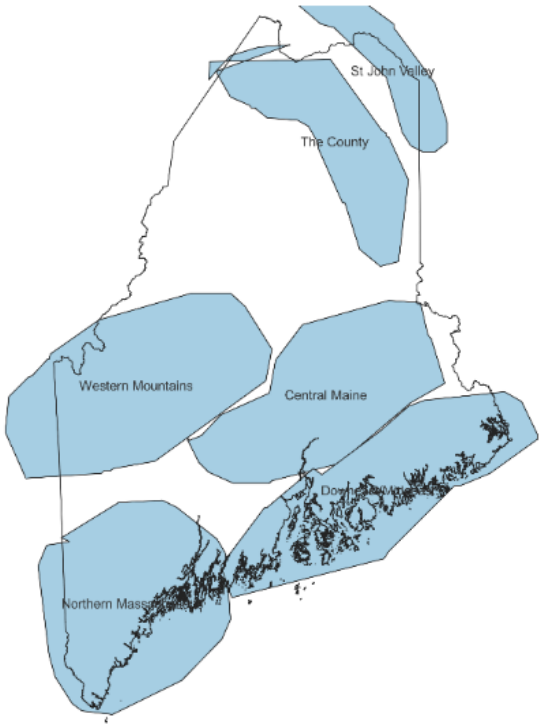


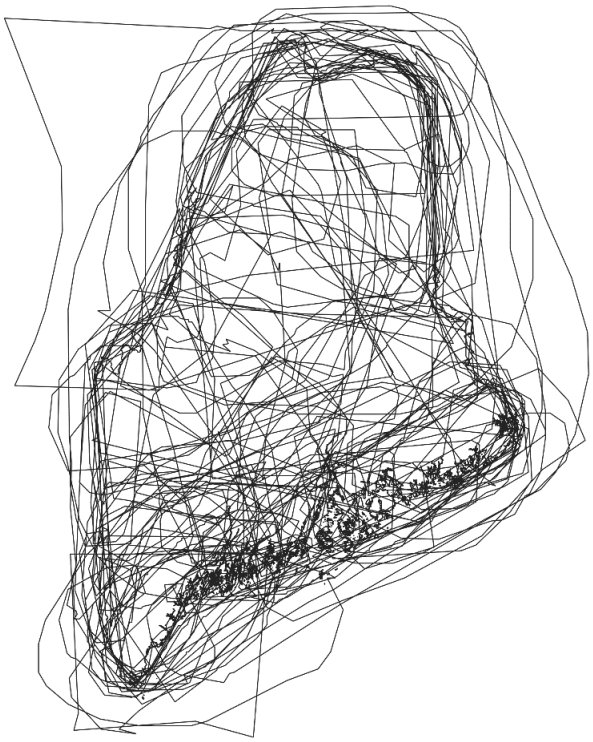
Figure 5.0.1: Distribution of RI relative to number of provided dialect regions



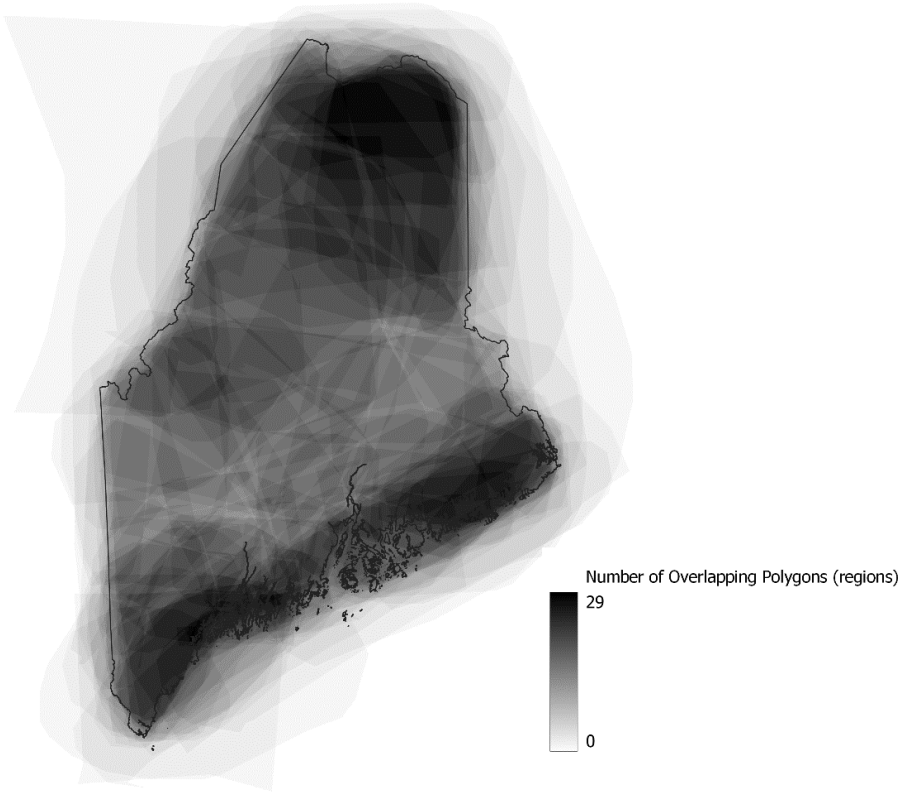
Map 5.0.1: Map with only one region, female born 1953 who grew up outside of Maine



Map 5.0.2: Map with six regions, female born 1954 who grew up in Maine



Map 5.0.3: Map showing edges of all polygons representing perceived dialect regions



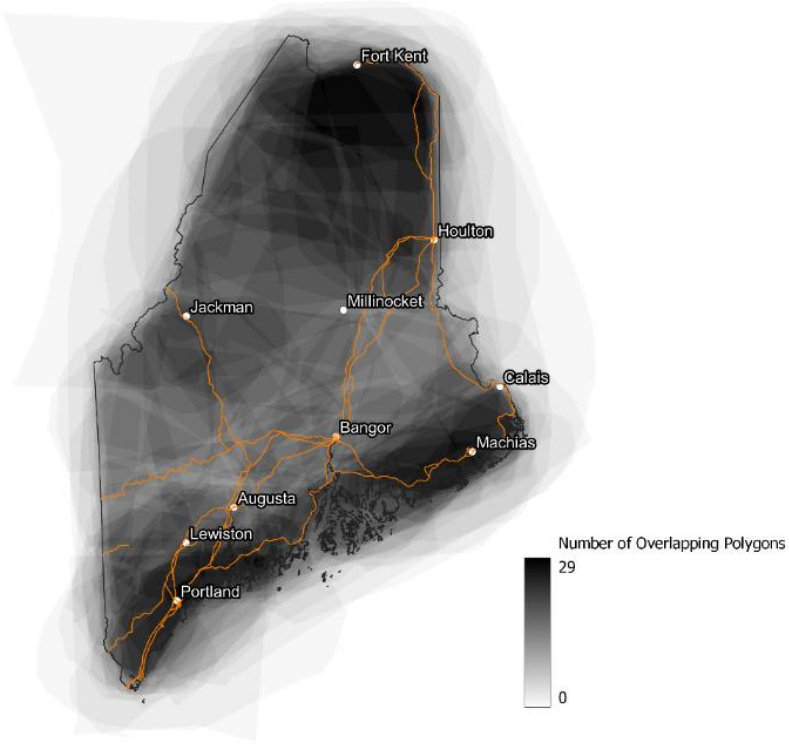
Map 5.0.4: Frequency map showing number of polygons that overlap in any given region that are associated with a dialect

In Map 5.0.4 we see that nearly every part of the state has at least some association with a dialect, with the greatest amount of agreement between my respondents being twenty-nine regions in any one place. Unfortunately, this map does little to tell us about how these regions are perceived, nor does it tell us anything about how people are evaluating those dialects. So I will now turn to the results of the content and CDP analyses outlined in the preceding chapter and look at the regions that respondents named.

Before going further, it is important that I specify the terminology that I will be using going forward. Up until this point, I have used dialect region and polygon interchangeably to refer to the areas where respondents perceived a dialect or an identifiable way of speaking. I will continue to refer to the spatial areas drawn by respondents as *dialect regions*. After respondents drew these dialect regions, they provided a *name* for the dialect region. I will be using the term *name* in reference to any words or phrases that respondents used to identify their dialect regions. Likewise, I will use the term *stereotype* to refer to information that respondents provided in the last portion of the survey (as outlined in the previous chapter). Finally, I will use the term *label* to refer to categories that I used to aggregate dialect regions based upon the name and the stereotypes provided by my respondents. *Composite map* will refer to the heat-like maps (or frequency maps) that I created for the visualizations of the data. The composite map represents my labels as the researcher based on my aggregation of the dialect regions, names, and

stereotypes. I will use *area* to generically refer to the geographic space visualized on the composite maps when needing to refer to experiences that respondents had with a dialect region within that label.

Of the 108 provided dialect regions, only twelve had no associated stereotypes; this resulted in one dialect region (labeled “Mixed”) being excluded from the composite maps. From the application of CDP, I arrived at thirteen total labels that I treated as representing distinct aggregates based on their names, how respondents described these regions (i.e., the stereotype), and their geographic overlap (where I could visualize the dialect regions). These labels can be found in Appendix D and are also summarized in Table 5.0.1 along with the mean values for the evaluative ratings that respondents provided for their individual dialect regions. Numbers closer to five represent more positive evaluations, while numbers closer to zero represent more negative evaluations. In the number of regions column (n(dialect regions)), some of the numbers are accompanied by an asterisk; I will discuss these instances when I discuss those labels in detail in



Map 5.0.5: Reference cities and highways of Maine overlaid on Map 5.0.4

the following sections. For now I will comment that the asterisk represents cases where, as a result of the content and CDP analysis, there was a complication in the analysis that bears discussion. Additionally, some individuals have more than one dialect region that was classified into one of these labels; I will discuss these in the following sections as well. The column of N(RESPONDENTS) represents the number of individuals (out of 32) who identified a dialect region associated with the label.

Table 5.0.2: List of labels and mean values for evaluative characteristics

Label	n (dialect regions)	N (Respondents)	pleasantness	correctness	educatedness	similarity
Aroostook	12*	10	4.01	3.20	2.83	1.46
Coastal	7	7	3.19	2.99	2.05	2.58
Downeast	18*	16	3.33	2.0	1.69	0.77
French	19*	15	3.46	2.71	2.64	1.06
Liberal	1	1	4.75	4.62	4.47	4.74
Northern	1	1	2.5	2.5	2.5	5
"Not Mainers"	15	14	2.64	3.37	3.18	3.05
Rural	12	11	2.31	2.12	1.2	1.72
Southern	1	1	2.5	2.5	2.5	5
Standard	7	7	2.43	3.12	3.18	3.45
"True Mainer"	9*	8	2.09	2.21	2.14	2.39
Urban	4	4	3.52	4.24	3.72	4.58
Western	1	1	1.16	2.5	2.5	0.75

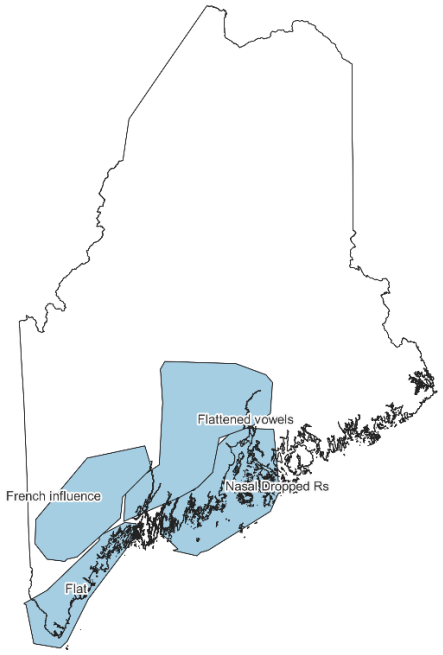
A quick review of the labels I generated through the CDP analysis shows a striking pattern: the labels reflect categories associated with area, identity, and standardness (using the typology of names non-linguists provide for their perceived dialect regions in Hartley & Preston (1999)). While we can certainly gain insight into non-linguists' perceptions of language variation based on these categories, we would be much more interested in the categories of sound and intelligibility. Did any of the respondents in this study provide such information, and if so, what did they provide? Of the 108 names respondents gave their perceived dialect regions, only seventeen invoked the term "accent." However, only two of these dialect regions had accompanying stereotypes that provided any detail on the sounds of the accent. One of these described the accent as "sound[ing] like a heavier/slower version of a Boston accent" with no additional information; the other dialect region only mentioned that speakers were "able to affect the 'hick' or 'lumberjack' accent especially around tourists." Eight of the dialect regions respondents identified had names that were more informative of the sounds of the perceived dialects. Two of these relied on a phrase stereotyped for its non-rhoticity ("Woods Men, can't get there from here" and "Mainah, Can't Get Theyah From Heeyah"). Four of the others drew attention to non-rhoticity as well: "Nasal Dropped Rs," "True Mainah Talk," "Bah Habah," and "Impropah Bohstonian." Clearly, non-rhoticity is a salient feature of Mainers in describing linguistic variation around them. There were a few other instances of sounds being invoked in the names and stereotypes provided by respondents, but it is unclear to me how best to interpret these descriptions. Map 5.0.6 includes several names for dialect regions that refer to a "Flat" or "Flattened vowel" quality. While not used in a name, another individual described their "Aroostook" dialect region with the following:

> They have "flat" vowels, sounding almost more like Southern U.S. than Maine. (For instance, "insurance" is pronounced "IN-shor-ance", "potatoes" are "p'daydahs", etc.) There is somewhat of a French-accent influence. (Male born 1947, identified ethnicity as "Other" and grew up in Ohio).

It would be interesting to follow up with studies about what is perceived as a "flat vowel" in Maine and further explore how this plays a role in variation within the state. Another association was with the perception of a "Boston accent," although beyond rhoticity only a few descriptions provided more information. One is the aforementioned "Impropah Bohstonian" name (which had no further information about the sound in the stereotype, although there appears to be a perception that something is perceived as incorrect in the initial vowel of Bostonian). One individual described a dialect region they named as "The 'Other' Maine" in the southern part of the state as follows:

> North Bawston. A Massachusetts "affected" influence. I just "kahnt" understand why they say some of the things they say in the manner in which they say them! (Male born 1947, identified ethnicity as "Other" and grew up in Ohio).[19]

Although these represent a small number of comments, they do indicate that in addition a perception of "flat vowels," some individuals perceive there being salient qualities in the lower part of the vowel system. This warrants further investigation in both production and perception studies in the state.



Map 5.0.6: Map drawn by a white male, born 1985, who grew up in Maine

There are a few ways to interpret the lack of linguistic features provided by the respondents to this study. One of the first is that names and labels based on space or standardness are more readily available to Mainers. Nearly half of all dialect regions (51 of 108) used only area names to identify that dialect region. If we assume under CDP that there are particular labels that are socially available to us in constructing our perceived world, this would mean that referring to dialect region by a geographic name is the manner that this is done in Maine. This is something that could be tested with further research and a larger sample of

[19] This particular individual provided the previous insight into their "Aroostook" dialect region and is also the author of the stereotype referenced for the "Downeast" label in Section 5.3.1. It would be interesting to further explore the linguistic perceptions of this individual; unfortunately, these represent the total dialect regions that they provided.

Mainers. But why not then still provide some information about the sounds in the stereotype when the first question posed to respondents was about identifying someone by the manner in which they speak? This very likely has to do with how the term stereotype was interpreted by each respondent. While some did provide additional information about the sounds of the dialects, most respondents provided identity or attributive (i.e., qualitative) information about the social groups in that area. It may then be beneficial in future iterations of FLOM that use this question to rethink think how stereotypes and information on linguistic features are elicited from respondents. This, in turn, would give use greater insight into the labels that we generate as we aggregate maps. This becomes important for when we wish to analyze these aggregates in that it will allow us to better understand what non-linguists are telling us about their perceptions of linguistic variation and diversity. However, even with a smaller sample with fewer data points including information about linguistic structures, we can still analyze our data to understand non-linguists' perceptions.

Before turning to a breakdown of each of these individual labels, one question we should ask ourselves is if the mean scores of the evaluative elements of the labels are meaningfully different. Following the practices of Cramer (2010), I employed a Tukey Honestly Significant Difference (HSD) test to the data. The purpose of the Tukey HSD test is to determine if the mean values between different groups represent a statistically significant difference between said groups. Due to the nature of PD data, where there are not a set number of regions that respondents are providing on their maps, the data must be normalized through an aligned rank transformation (ART) that places the different variables (in this case, the dialect region names) in a hierarchical relationship before testing the means of the different groups in a pair-wise fashion to see if the scores are statistically distinct. The code I employed to conduct the Tukey HSD test can be found in Appendix E, along with the output of the tests. Most of the regions did not have statistically significantly different mean values for evaluative scores; in fact, the scores for the mean "pleasantness" were not statistically significant at $p < 0.05$ between any of the regions. While I conducted a Tukey HSD for the similarity scores, it is important to note that respondents were evaluating the similarity of the dialect region to their *own* speech; as such, it is difficult to justify an interpretation of those results in this study using the method applied to the other judgments. I am therefore only reporting on the statistically significant distinctions that exist between labels for correctness and educatedness ratings, which are summarized in Table 5.0.3. For differences of correctness, only the means of the labels "Not Mainer" and "Downeast" were significant at $p < 0.05$. For evaluations of educatedness of the labels, the pairings of "Rural" and "Aroostook;" "Not Mainer" and "Downeast;" "Rural" and "French;" "Rural" and "Aroostook;" "Rural" and "Not Mainer;" "Standard" and "Rural;" and "Urban" and "Rural" were significant at $p < 0.05$.

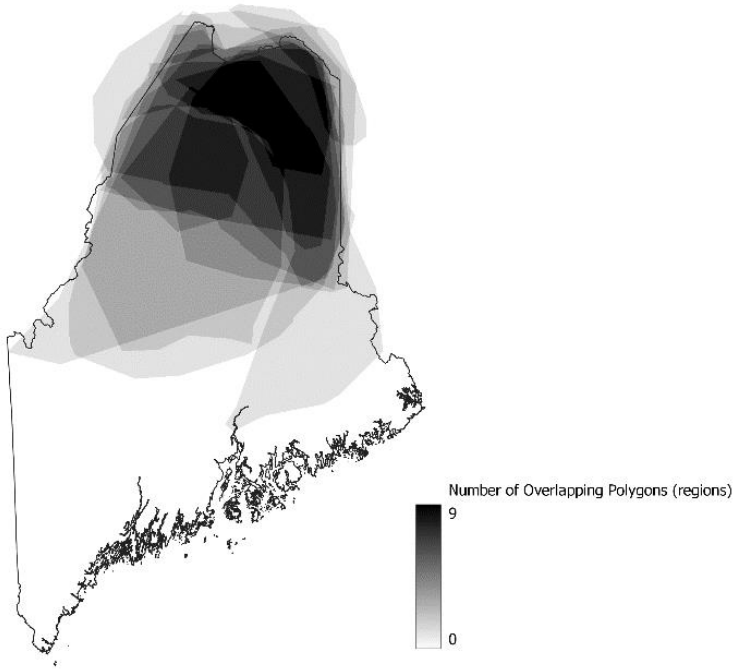
The results of correctness and educatedness being the only statistically significant categories, and that they were different in how they were significant, is somewhat puzzling. Generally, these two attributes (being seen as "correct" and "educated") are generally classified as representing the same evaluative judgments or qualities. According to Zahn and Hopper (1985), these two traits reflect a dimension of perceived "superiority" (i.e., competence, social standing, and being well-spoken). It is possible that the two terms mean something different for Mainers; it may be that someone is not seen as speaking "correctly" while still being highly educated. However, in this study to the two questions were presented nearly back-to-back (perceived correctness was the second evaluative question, educatedness was the fourth; perceived pleasantness was between them). This may have prompted respondents to treat them as different categories in an unnatural way. Therefore, there is no reliable way in a sample this small (with so few evaluative ratings) to see to what extent the design of the questionnaire influenced respondents in treating the labels differently. Future studies could like further into whether these labels are used in different ways in Maine or potentially benefit from condensing the two categories together.

With these preliminary results having now been presented, I will turn to a detailed presentation of each of the nine labels that contained more than one drawn and identified dialect region.

Table 5.0.3: Summary of statistically significant ($p < 0.05$) differences between mean scores

Evaluative measure	Labels compared	Tukey HSD results (p-value)
Correctness	"Not Mainer" ~ Downeast	0.04099
Educatedness	Rural ~ Aroostook	0.046499
	"Not Mainer" ~ Downeast	0.011688
	Rural ~ French	0.023882
	Rural ~ "Not Mainer"	0.000796
	Standard ~ Rural	0.012134
	Urban ~ Rural	0.01114

5.1. The “Aroostook” Label (identified by 10 respondents)

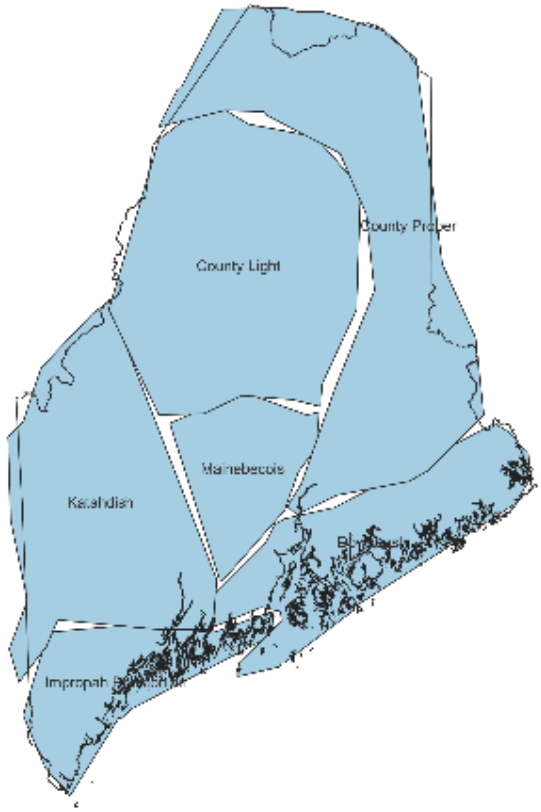


Map 5.1.1: The “Aroostook” Label and its overlapping dialect regions (n = 12)

The “Aroostook” label (Map 5.1.1) comprises the northern-most part of the state and was rated as the most “pleasant” of the dialect regions by those who identified it as shown in Table 5.0.2. Components that went into the determination of this label included the geographic spread and stereotypes about French influence (without explicitly being French), being “outdoorsy,” conservative attitudes, and poverty. Names for this label include “The County,” “Aroostook County,” and some of the “St. John Valley” dialect regions. One individual identified the dialect region twice (Map 5.1.2); this respondent identified a

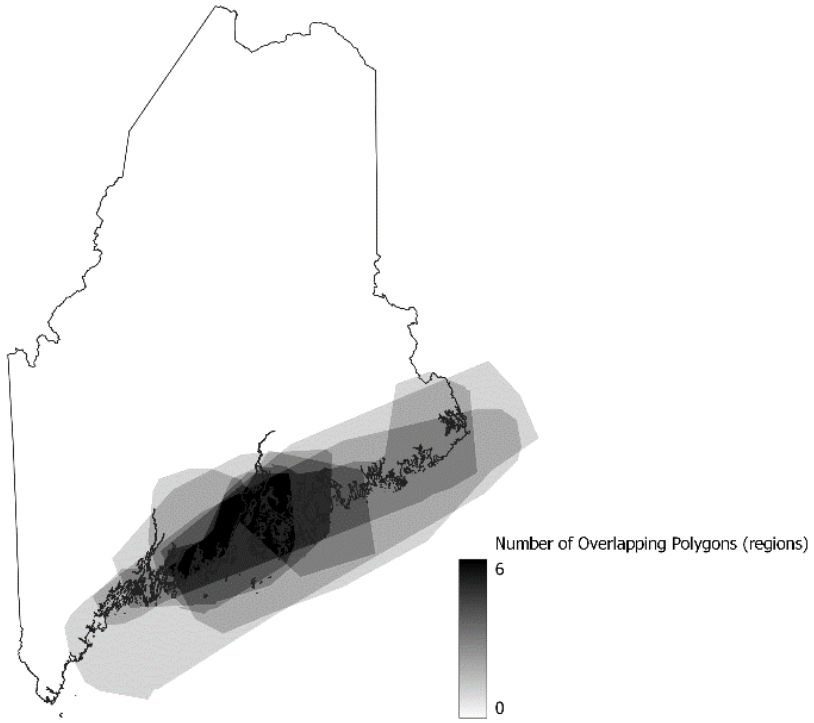
"County Proper" and "County Light" pair of dialect regions. However, both regions received similar evaluative judgments and had identical stereotypes; as such, it was decided to include them both in this label.

With regards to experiences that individuals had with this label (provided they identified it on their map), only one had ever lived in the area, two had never visited the area, but only one person did not claim to know anyone from this area. As such, it appears that most respondents identifying an "Aroostook" label had some familiarity with the area through personal contact.



Map 5.1.2: Map provided by a white male, born 1970, who grew up in Massachusetts

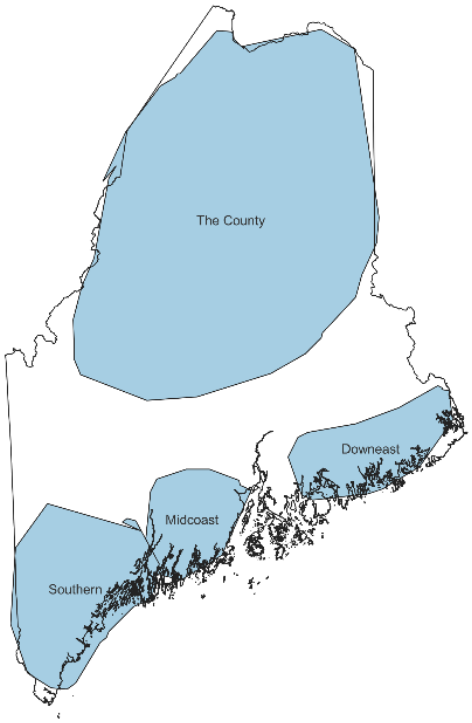
5.2. The “Coastal” Label (identified by 7 respondents)



Map 5.2.1: The “Coastal” label (n=7)

The “Coastal” label (Map 5.2.1) represents dialect regions that were associated with Maine’s coast in terms of geography, so long as they were not explicitly names as “Downeast” (see Section 5.3). While it will become apparent that the “Coastal” and “Downeast” labels have much in common, they were also separately identified on the same maps of two respondents (Map 5.2.2 and Map 5.3.2). Because respondents used different names for discussing these dialect regions, I maintained them as distinct labels for the following analysis, but I will return to this in Chapter Six. Names for this region included “Coastal,” “Midcoast,” and linguistic features (“Bah Habah” for non-rhoticity (for the Maine town of Bar Harbor) and “Nasal Dropped Rs”). Stereotypes included invoking connections to the lobstering industry, some level of rurality, and a dichotomy between being “hardworking or rich, red necks or from away.[20]” Only one individual said that they had never lived in the area, but everyone who identified the “Coastal” label had either worked in or visited the area in addition to knowing people from that area.

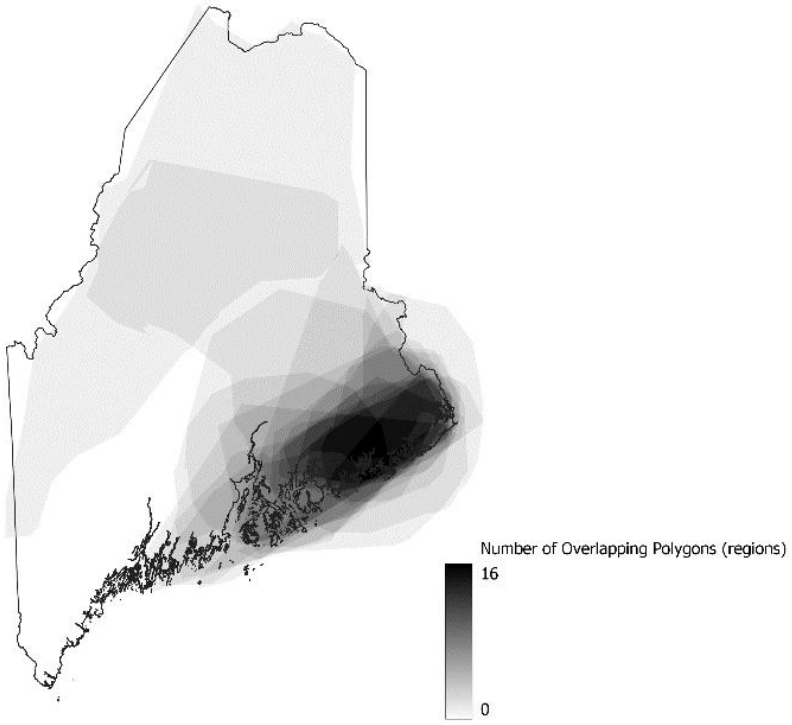
20 “From away” is a common way of phrasing that someone is not from Maine.



Map 5.2.2: Map drawn by a white female born 1998 who grew up in Maine

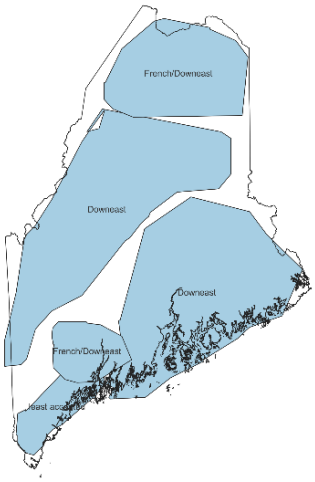
Map 5.2.3: Map drawn by a white male born 1994 who grew up in Maine

5.3. The “Downeast” Label (identified by 16 respondents)



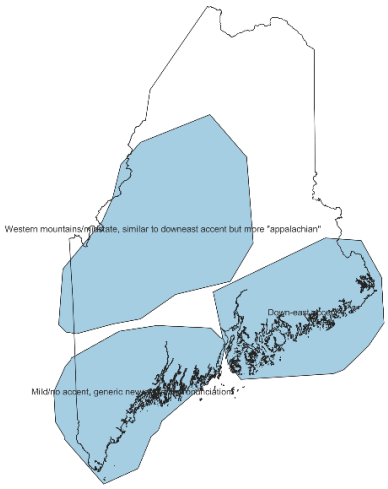
Map 5.3.1: The “Downeast” label (n=18)

The “Downeast” label is concentrated in the eastern part of the state and represents the most frequently identified dialect region outside of the “French” label (Section 5.4) and was recognized by the greatest number of respondents. One individual, however, placed it as being both part of the eastern part of the state as well as the western part of the state (Map 5.3.2).



Map 5.3.2: Map provided by white male born 1965 who grew up in Maine

The question then is whether to represent the dialect region that is further west as being either anomalous, representing a completely different dialect of the same name, or an area that shares the same dialect without being connected geographically. Unfortunately, it is not clear based upon the ratings and stereotypes provided by the respondent who drew Map 5.3.2 that the dialect regions should be considered as different dialects. There is also some support that other Mainers view this western portion of the state as being related to the "Downeast" dialect region (see Map 5.3.3). To remain consistent with how I classified other labels, including the dialect regions that comprise the "Aroostook" label (Section 5.1), I included this western "Downeast" dialect region into the composite map (Map 5.3.1).



Map 5.3.3: Map drawn by white male born 1997 who grew up in Maine

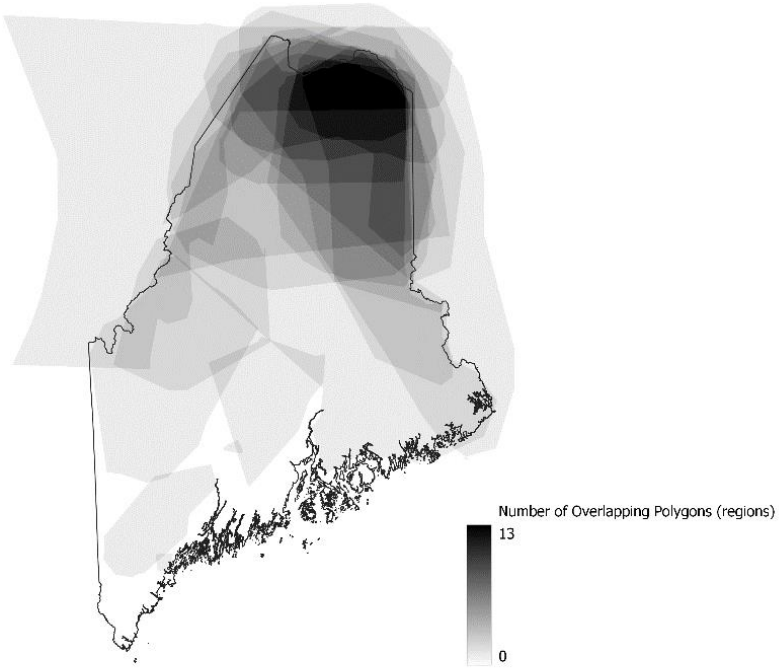
All dialect regions identified as "Downeast" included "Downeast" as part of the name that respondents provided the dialect region. These dialect regions shared many stereotypes with the "Coastal" label (such as invoking lobstering and residents being hard-working). However, "Downeast" stereotypes also included comments on conservative attitudes and poverty. Respondents generally had more to say about the sound of this perceived dialect region, with one respondent referring to it as "hard to understand." One particularly colorful stereotype of a Downeast dialect region came from a respondent who had the following to say about their perceptions of the region:

> Independent, haahd workin', droppin' "Gs" from the endin' of nearly any word endin' in "ing". Wicked gooud sense of humah; dry. LOTS of colloquial comments and sayin's. LOTS of "aspirated agreement" ("Ayuh! - Yessuh!, Well theyuh!").(Male born 1947, identified ethnicity as "Other" and grew up in Ohio)

While this quote does provide more insight into the sound of the Downeast label, one of the primary features appears to be non-rhoticity. Interestingly, this was also the only inclusion of the term "ayuh" as a form of agreement in this data. "Ayuh" as a lexical item has been commodified in Maine (similar to elements of Sheffieldish and Geordie described in Beal (2009)) and can be purchased emblazoned on clothing and postcards. It is in many ways odd then that it is largely absent from this data given its status in Maine, but perhaps appropriate that it is related to a perceived dialect region that is strongly tied to stereotypes of Maine life (as discussed in Section 3.3). However, respondents reported less personal experience with the "Downeast" label than they did with the "Coastal" label. Nearly all respondents know

someone from the area or had visited there, but only seven had worked in the area and six had lived in the area.

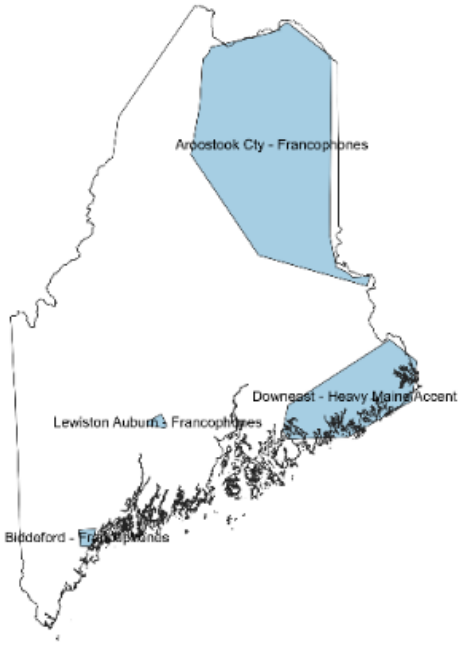
5.4. The “French” Label (identified by 15 respondents)



Map 5.4.1: The “French” label (n=19)

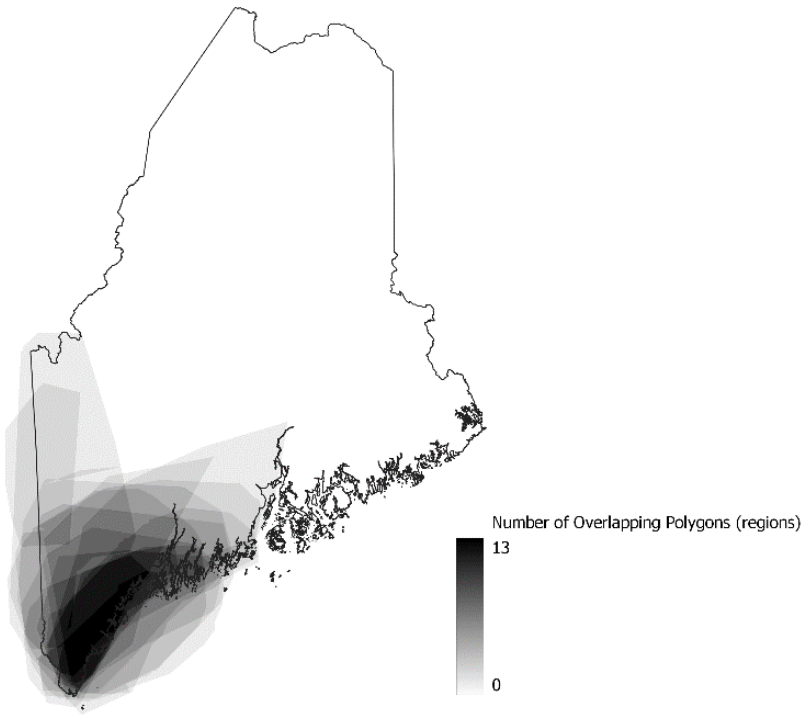
The “French” label was the most frequently identified dialect region across all respondents. Most of the geographic component of the label is concentrated up in the northern part of the state, alongside the “Aroostook” label. However, the “French” label covers more parts of the state and includes some representation along the southern portion of the state. Some individuals also felt it important to represent discontinuous “French” regions (Map 5.4.2), meaning that the label is more represented on the maps of some individuals. Names and stereotypes for this region include invoking a Canadian (or Quebecois) identity, and like the “Aroostook” label, the “French” label absorbed some of the “St. John Valley” dialect regions identified by some respondents. The fact that the means for the evaluative judgments between these labels is not statistically significant does suggest that it may be possible to combine them; however, it would be useful to have more data to suggest such a combination as the different uses of names and stereotypes may have consequences for how Mainers interact with their conceptualizations of language in this part of the state.

Of the respondents who identified a “French” label, only two individuals did not know anyone from the area, one individual had never visited the area, but only five had ever worked in the area and only six had ever lived in the area. This means that nearly everyone who identified a dialect region within this area had some personal experience with someone they perceived as representing this dialect. However, most did not have personal experience with the geographic space to which they were referring.



Map 5.4.2: A map drawn by a white male born in 1957 who grew up in Maine

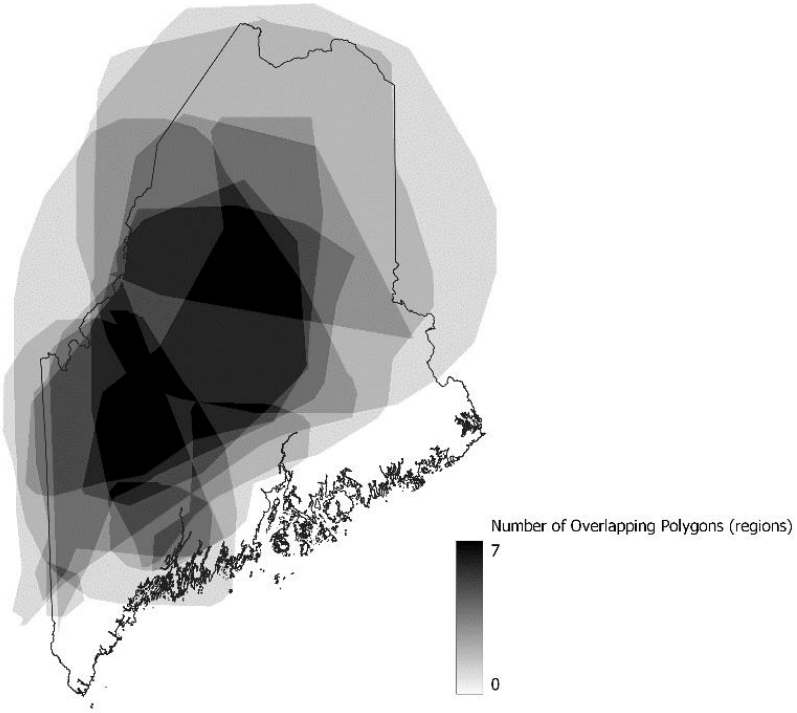
5.5. The "Not Mainers" Label (identified by 14 respondents)



Map 5.5.1: The "Not Mainers" dialect region (n=15)

The “Not Mainers” label (Map 5.5.1) represents an area in the southern-most portion of the state. Names for this label include “The ‘Other’ Maine,” “out-of-stater land,” “From Away,” and “Northern Massachusetts.” The stereotypes are largely similar and often comment on individuals who don’t “count as real Mainers” and often have more liberal attitudes (with one respondent providing the self-censored comment that they are “liberal f***tards”). Interestingly, this label largely overlaps with Maine’s First Congressional District (Map 3.2.2). Only five respondents who identified this area had never lived there, four had never worked there, but all respondents identified that they had either visited the area or knew someone from that area.

5.6. The “Rural” Label (identified by 11 respondents)



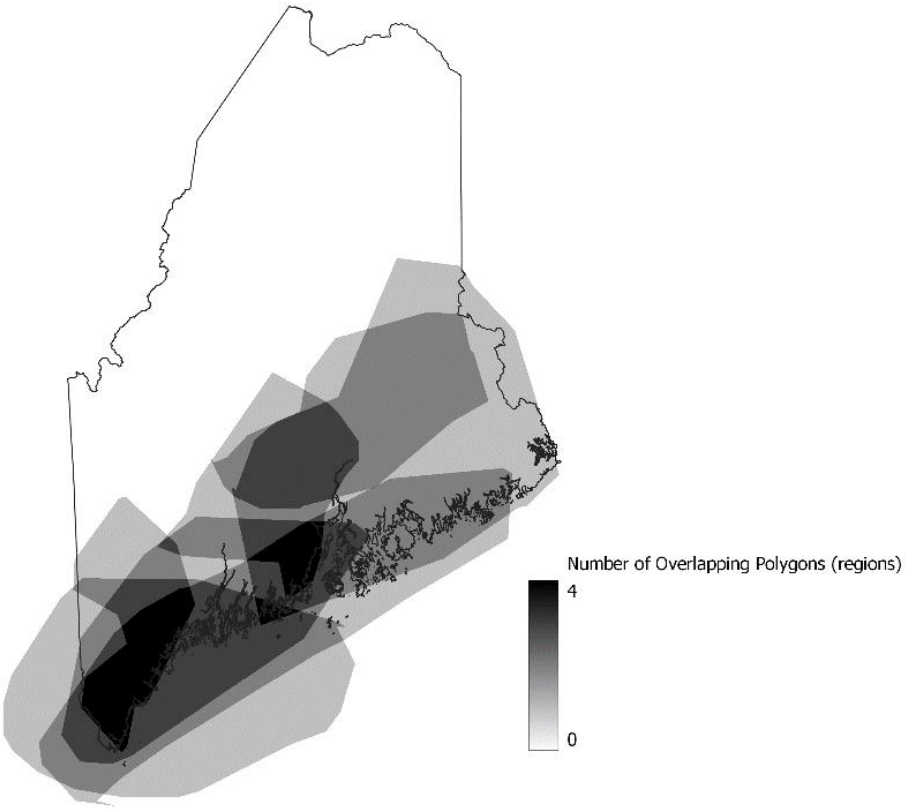
Map 5.6.1: The “Rural” label (n=12)

The “Rural” label (Map 5.6.1) is largely concentrated in the western and north-western portions of the state, which are sparsely populated (see Map 3.1.3). Stereotypes of this region included notions of “red necks,” an outdoors lifestyle, and some tendencies towards conservative views. Nearly half of all respondents who identified this area had either lived or worked in this area (seven had worked in the area, five had lived there). All individuals who identified this area claimed to know someone from there.

5.7. The “Standard” Label (identified by 7 respondents)

The “Standard” label (Map 5.7.1) represents an area, predominantly along the coast, where respondents identified a “normal” or “American” accent; three individuals referred to the area as “Central Maine.” There were few stereotypes provided for the region, with comments about the area being where younger

individuals lived and the presence of larger companies and corporations. All individuals who identified a dialect region under this label had claimed to have lived in the area at some point in time in the past or were living there at the time of completing this survey.

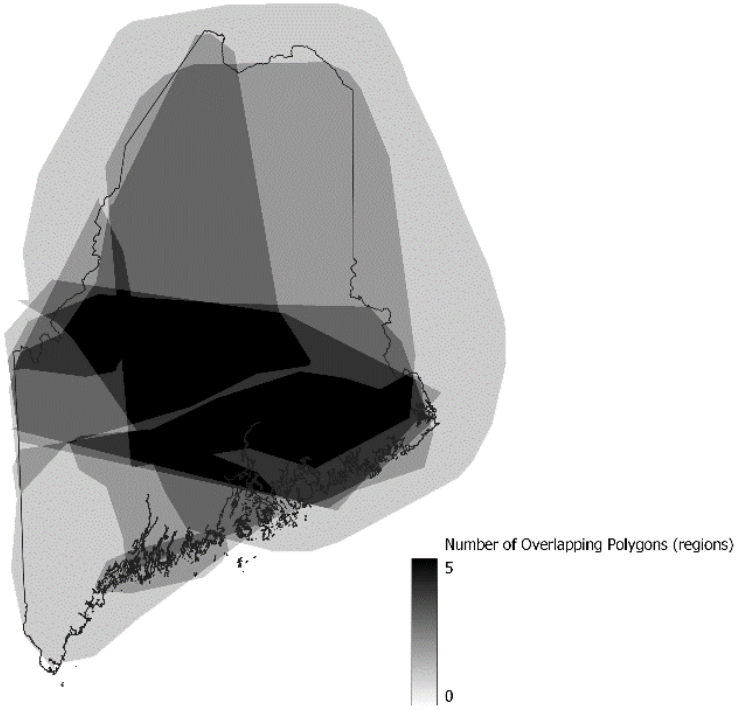


Map 5.7.1: The "Standard" label (n=7)

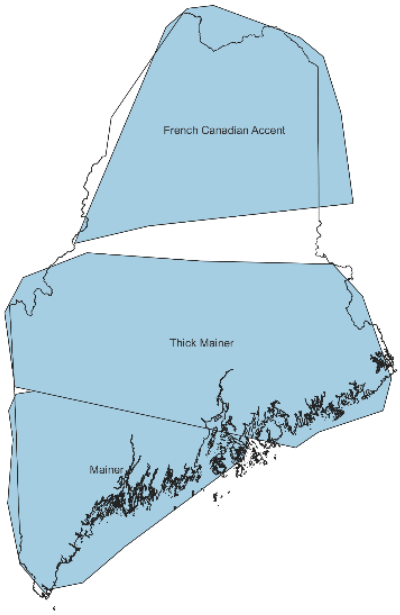
5.8. The "True Mainer" Label (identified by 8 respondents)

The "True Mainer" label (Map 5.8.1) is spread throughout the northern part of the state and is largely consistent with the area of Maine's Second Congressional District (see Map 3.2.2). The only exception to this generalization is one dialect region drawn in the southern part of the state (Map 5.8.2). This particular dialect region is problematic because, based solely on a content analysis, it should be part of this region due to its name of "Mainer;" however, the stereotype provided for this region ("It's hard to find a word for Liberal cowards that's more nice than Liberal cowards.") suggests that it should be placed in the "Not Mainer" label based on its similarities to the discourse around that label. Additionally, this respondent also appears to be making a distinction between a "Mainer" and a "Thick Mainer" dialect; however, the "Thick Mainer" dialect also appears to be associated with negative stereotypes for this individual ("Overweight, White trash, With bits of wealthy here and there."). Because it is unclear what other features this respondent is drawing upon to differentiate these dialect regions with regards to language, I have elected for Map 5.8.1 to leave this region in this grouping. There is some support for this decision based upon two other stereotypes of this label provided by two other respondents that reference more liberal attitudes within their "True Mainer" dialect region, although there appears to be disagreement

amongst respondents as to whether “True Mainers” are liberal or conservative (I will return to this in Chapter Six). All individuals who identified a “True Mainer” label had visited the area, although only one had ever lived in the area and two had ever worked in the area.



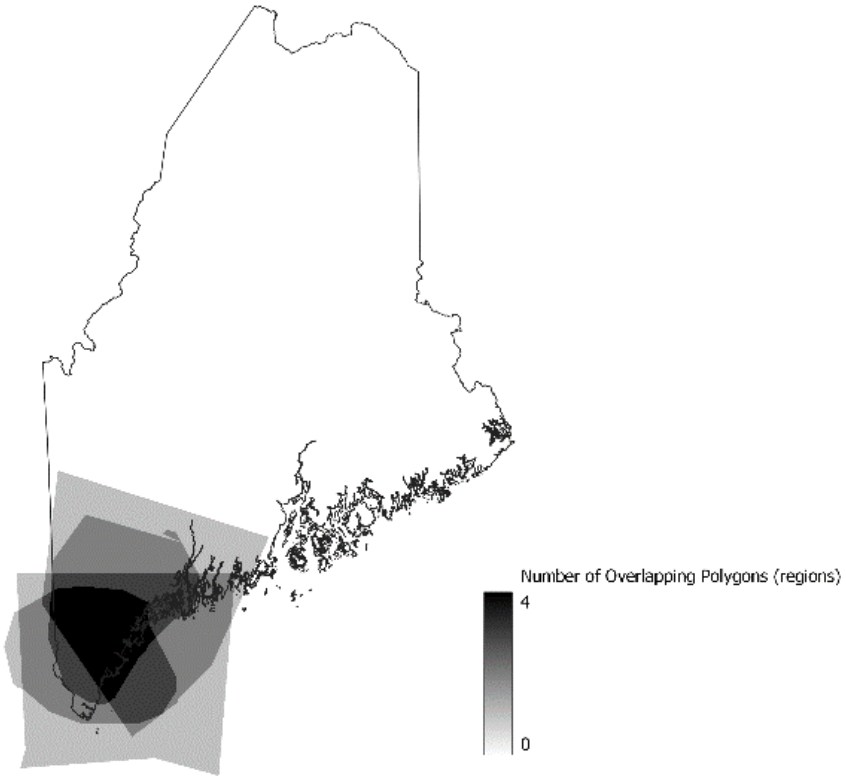
Map 5.8.1: The “True Mainer” label (n=9)



Map 5.8.2: Map drawn by a white male born 1985 who grew up in Maine

5.9. The “Urban” Label (identified by 4 respondents)

The “Urban” label (Map 5.9.1) is concentrated in the southern portion of the state, again in the general area of Maine’s First Congressional District. Names for this label included information about prosperity (or at least economic capital) and an urban or cosmopolitan environment. All individuals who identified this label had lived there in the past. This label was maintained as distinct from the “Not Mainer” label due to some of the different wordings that individuals used to describe this region (such as a speakers being “more likely to be from away” rather than outright calling them outsiders). The different ways of talking about these regions will become important in the analysis presented in the next chapter, especially with regards to how CDP aids us in understanding dialect perceptions through spatiality.



Map 5.9.1: The “Urban” label (n=4)

With the results of the study having been presented, I will now turn to an analysis and discussion of the data in the next chapter.

Chapter 6: Discussion of the Results

In this chapter, I will be discussing the results of the study conducted through FLOM that were presented in the previous chapter. As such, I will regularly be invoking information from that chapter as well as Chapter Three. As part of this, I will be reintroducing some components of the analysis (primarily maps) to illustrate the analysis being conducted. Furthermore, as a means of structuring this analysis I will be going through specific components before wrapping things up and moving to the final thoughts and conclusions to be presented in Chapter Seven. Following conventions laid out in the previous chapter, I will be using the term dialect region to refer to an area that was identified by a singular respondent. However, dialect region will occasionally appear in this chapter preceded by one of my labels from the previous chapter to discuss hypothetical instances of an individual providing a dialect region that would fall under this label. The structure of my analysis will begin with a discussion of the role of the RI and personal experience in the maps that respondents provided. I will then move to a discussion about the results of the composite maps, and how content analysis and CDP play a role in how certain regions are grouped from an analytic perspective. I will then return to the notion of spatiality, and how this study demonstrates a link between PD and spatiality when approaching the evaluation problem.

6.1. The role of the RI and personal experience

Table 5.0.1 contains the basic demographic information of respondents, and as can be seen under the "Regionality Index" section, the data here is unbalanced. There are very few "interlopers" or individuals with a score of 1 (a total of three individuals in this study), and most respondents have scores of 3 (ten) and 4 (eleven). There are a total of eight "indigenes" (individuals with a score of 5) represented in this sample. It is therefore difficult, given this imbalance and size of the sample, to make any strong claims about the role of the RI in PD draw-a-map tasks. Figure 5.0.1 to some extent visualizes this problem, as there is no clear distinction between RI groups and the number of regions they provided on their maps. Nonetheless, there are some observations that can be made in the data, the first of which raises questions about what is considered an authentic "Maine" identity with regards to dialect. The "True Mainer" label (Map 5.8.1) was identified by one interloper but was **not** a region identified or described by any of the eight indigenes. With regards to a "True Mainer" or "Not Mainer" identity the indigenes were largely quiet, with only three of the eight indigenes identifying a "Not Mainer" dialect region. Based upon this sample, it could then be argued that the most geographically embedded respondents (the indigenes) do not feel a need to identify the "authentic" Mainers (or Maine dialects) in the same ways as individuals who are not as strongly embedded in Maine. That is to say, the respondents who are not indigenes are the ones most often pointing to who the "authentic" Mainers, who have the "authentic" Maine dialect, are and where they are located. In addition, a higher proportion of individuals with RIs of 3 and 4 identified a "Not Mainer" dialect region (a total of five and six individuals, respectively). As can be seen by the stereotypes provided for that region in Appendix D, this region is largely associated with recent transplants from other states (namely Massachusetts, a point I will return to in Sections 6.2 and 6.3). This may indicate that for the non-indigenes, the status of being an "authentic" Mainer or someone "from away" is a particularly important characteristic for understanding the linguistic diversity in Maine.

If the non-indigenes are concerned about Maine identity, what can we observe as being the important dialect regions from the perspective of the indigenes? The indigenes most frequently identified the "French" label (Map 5.4.1; seven of the eight indigenes), the "Downeast" label (Map 5.3.1; six of the eight indigenes), and the "Aroostook" label (Map 5.1.1; five of the eight indigenes). It appears then that for the indigenes, it is most important to recognize Maine's francophone population as well as the extremes of the northern and eastern parts of the state. Note that these two areas fall within the "Upper

Maine" isogloss identified by Carver (1989) that was mentioned in Chapter Three. For aid in comparison, I am including all three maps below in Figure 6.1.1.

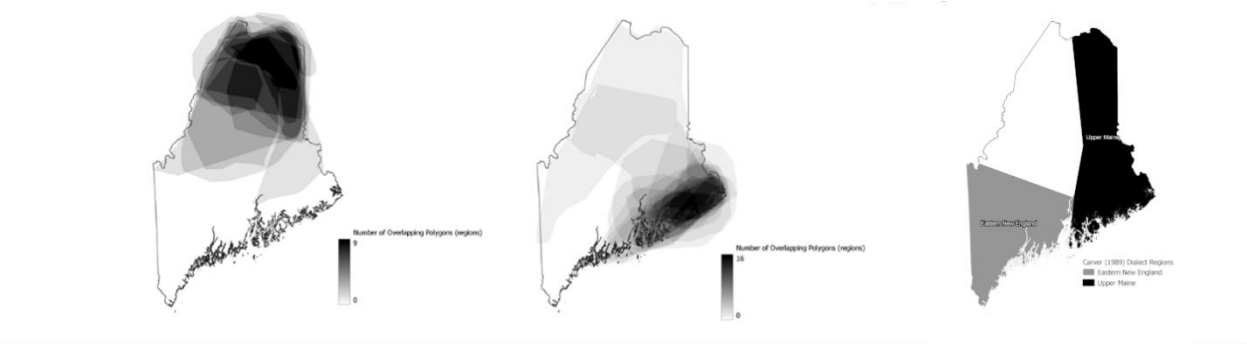


Figure 6.1.1: Comparisons of Aroostook (left) and Downeast (center) labels with Carver's "Upper Maine" dialect region (right; adapted from Carver 1989)

This indicates that the indigenes are aware of a distinction in the dialects (at least as historically observed by linguists) between the more central and southern part of the state (the Eastern New England dialect) and the eastern and northern portions of the state (Carver's "Upper Maine") that is being communicated through the maps that they have drawn. However, if these are the notable regions, we must ask ourselves how the indigenes are describing the area associated with the Eastern New England dialect area on Carver's map. This is not quite as clear, as there is less agreement amongst the indigenes about what to label that area. One approach we might take in addressing this question is to see where a "Standard" dialect is identified. This would assume as sense of linguistic security on the part of the respondents, but it may give us an idea as to what is perceived as being the common dialect in Maine. However, only one indigene identified a "Standard" dialect region; most of the respondents who drew a "Standard" dialect region had a RI of 3 (four of the seven individuals who had such a region). Another approach may we can adopt is to compare their aggregate maps to the aggregate maps for individuals with RIs of 3 and 4 (Figure 6.1.2). This southern area seems to be shared across groups, and with differing names. Because of this, the RI may not be sufficient for providing an analysis of this region without other considerations.

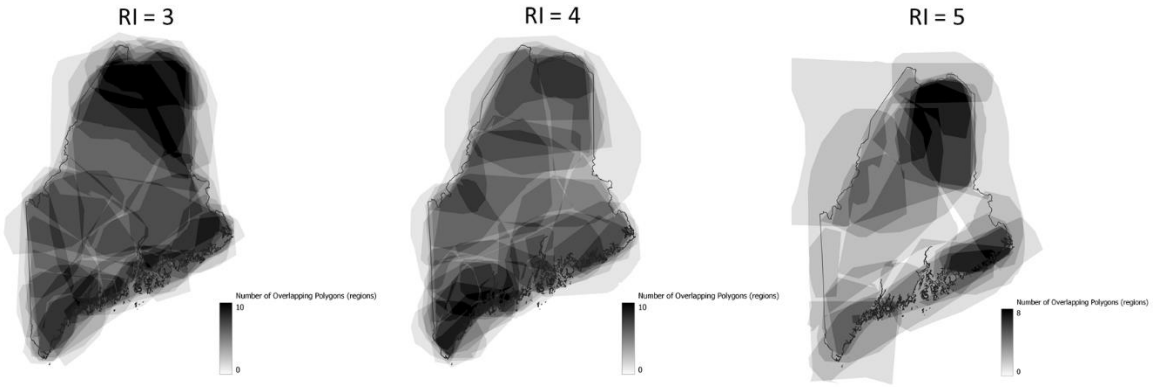


Figure 6.1.2: Comparison of frequency maps produced by individuals with an RI of 3 (left), 4, (center), and 5 (right, the "indigenes")

Another way in which we might seek to analyze the regions would be to consider the experiential information that respondents were asked to provide about the regions they had drawn. However, this is not particularly useful based on this sample; of the 108 regions that people provided, only two regions

(provided by two different respondents) were reported to be dialect regions with which the respondent had no personal connections (i.e., they had never lived, worked, or visited the region, nor did they report to know anyone from that region). Of the other 106 regions, only four were places where a respondent reported that they had never personally visited, and seven regions were reported as being areas that the respondent know of and had visited, but they did not personally know anyone from that dialect region. From this, I would argue that these respondents are basing their perceptions of dialect areas on personal experiences and interactions. And given the small sample, it is difficult based solely on the information collected through the evaluative portions of the survey that the self-reporting of these interactions can distinguish differences between groups and their evaluations of dialects. To address this, we must turn to other forms of analysis, in this case the utilization of CDP in understanding the maps that I collected.

6.2. Analyzing the aggregated maps through CDP

While I argued for the inclusion of CDP in Chapter Four as a means of classifying the different dialect regions provided by my respondents, CDP also plays a crucial role in now analyzing the results. Based on the design of this study, I can use some of the collected information (such as the RI) to provide some insight into the positionality of the respondents. Furthermore, I can look more closely at the categories that I created in this analysis with regards to the ways in which these regions were discussed (i.e., the interpretive repertoire) and how different individuals experience the same regions (the ideological dilemma). It is the ideological dilemma with which I will begin this portion of my analysis.

Based upon the results of the Tukey HSD tests reported in Chapter Five along with the comparison of the various frequency maps, where very few evaluative judgments were found to be statistically significant, it might be argued that I still had too many distinct categories in my analysis. It may have been possible to combine certain labels such as “Coastal” and “Downeast” that had similar judgments, names, and stereotypes. Additionally, it may have been possible to combine labels that shared geographic space (such as “Urban” and “Not Mainer”). However, I will maintain that there is a value in keeping them as separate categories. As mentioned in Section 5.2, two of the respondents had both a “Downeast” and a “Coastal” dialect area; this suggests that the two areas have real meaning for these respondents. The “Downeast” label is also more geographically constrained than the “Coastal” label, which further suggests that individuals with a “Coastal” dialect region are interacting with the geographic space differently than those individuals who have a “Downeast” dialect region. The same can be said about the multitude of ways in which the southern portions of the state are being named (“Urban,” “Not Mainer,” and “Standard” among them). My reasoning then is to keep these as available categories for discussing how Mainers view dialect diversity in the state, especially for purposes of comparisons to be made in future studies that have a larger (and more diverse) sample size. With additional views of the areas, as well as further explorations of Mainer’s differing experiences and evaluations of dialect regions, we may gain more meaningful insight into perceptions of dialects in Maine.

This does not mean, however, that a further combination of the labels generated in the content and CDP analyses should not be attempted in analyzing the data in this study. Based upon the data I have, I can consider the geographic distributions of the dialect regions, their labels, and their stereotypes to propose some generalizations about how Mainers perceive dialect distributions in their state. The first of these generalizations would be that there is a consensus that there is something distinct between the inland dialects of the state and the coastal region (as represented jointly by the “Coastal” and “Downeast” labels). Based on the information my respondents provided as well as the results of the Tukey HSD tests, this dialect (especially the “Downeast” component of it) is considered different in terms of its perceived correctness and “educatedness” from how a non-Mainer (the “Not Mainer” dialect) speaks. From this, we can begin to ask what a “non-Mainer” is and what they represent linguistically. The non-Mainers are

perceived as being more correct in their language usage as well as having a greater perceived level of education. They also appear to concentrate in the state's southern corner, which has also been identified as the "Urban" dialect region. From this, we might conclude that individuals who are introducing non-traditional Maine linguistic features into the state are those who are urban, "from away," and liberal. Additionally, these individuals are perceived as speaking something closer to a "Standard" dialect, although respondents will vary to what extent they view this dialect as a standard (i.e., is it "like New England" or "American"?). This would then contrast with the perception of the "true" Mainer- an individual who is rural, more conservative in their views, and perceived as generally being less educated. This does appear to be how respondents spoke of "true" Mainers with regards to their dialects (with some exceptions). Mainers are then perceiving the rural portions of the state (predominantly the labels of "Aroostook," "Downeast," and "Rural") as being more closely tied to a Maine dialect. The southern portion of the state then is seen as not being as characteristically "Maine" in its use of language and is the site of, as one respondent put it in their stereotype of a 'From-Away' dialect region, "Change."

While CDP has been useful in aggregating the dialect regions, the main purpose of this study was to demonstrate how the methods of PD allow us to address spatiality. It is to this point that I now return.

6.3. The Spatiality of Perceptual Dialectology – Did it work?

It is my hope that in Chapters One through Three I was able to convince you, the reader, that PD can incorporate spatiality as defined by Britain. It is now incumbent upon me to demonstrate how this is the case. In Chapter Three, I proposed three predictions about the data based upon information about Maine as a socio-geographic locale. Again, these predictions incorporate the components of spatiality in different ways, which will be made clear in the following analysis. I will now walk through each of these predictions and analyze my results through spatiality to show how reliable these predictions were based upon the information provided in Chapter Three.

6.3.1 The First Prediction

The first prediction that I made in Chapter Three was that "given the population density of the state, we should not expect to see many, if any, regions drawn in the north-west region of the state, where there is little to no population." What was expected was that this region of the state would appear as a "nowhere trough" (Preston, 1989), or a region that was not regularly identified and associated with a dialect region. Map 5.0.4 makes it clear that this region was identified with a dialect, and that, in fact, many of my respondents included this area in the state with some region with which they had familiarity. If anywhere in the state comes close to representing a nowhere trough, it would be a band that runs roughly through the center of the state from (south) west to east (refer back to Map 5.0.4). Why then did this prediction fail? There are a few reasons I can propose.

The first reason I will propose for why this prediction was not reliable was that several respondents explicitly pointed to this region for its rurality (the "Rural" label, Map 5.6.1). That is, despite this being a more geographically isolated region with a very sparse population, it was important to respondents to identify it as the site of a "particular way of speaking" which might allow identification of from where an individual in Maine hails. It is as though the very reasons this region was expected to be under-represented on the map may have influenced why it was drawn by some respondents. However, this is not the only possible reason for why individuals may have included this area on their maps. This region of the state borders the francophone province of Quebec, Canada, and inspection of the "French" dialect region (Map 5.4.1) shows that this region was included as part of that perceived dialect area for some respondents. This suggests that the presence of the Maine-Quebec border is an important anchoring feature for some Mainers with regards to areal dialect classification.

Ultimately, this prediction was not very reliable given the results of this study. However, instead of showing a failure of the combination of spatiality and PD, I would argue that the prediction failed to account for the salience of the Maine-Quebec border for individuals identifying francophone regions as well as the desire of some individuals to draw attention to more remote and sparsely populated regions when asked where they believe dialect regions to be located. This is a subject which merits further research.

6.3.2 The second prediction

The second prediction was that "given the social divisions between northern and southern Maine, we can expect to see northern and southern divisions in the dialect maps that mirror the two congressional districts in the state. This may also reflect the Eastern New England and Upper Maine dialect regions identified by Carver (1989)." This prediction was somewhat more reliable than the first prediction in that there are clear areas that are centered around Maine's First Congressional District. Figure 6.3.2.1 compares the map of the congressional districts to the "Not Mainer," "Urban," and "Standard" labels. If we also consider the information we have about the "Not Mainer" label and conceptualizations about an "authentic" Maine identity as discussed in Section 6.2, we can see a parallel to the existence of this dialect area and the ways in which some Mainers discuss splitting the state between "Maine" and "Northern Massachusetts" (as discussed in Section 3.2).

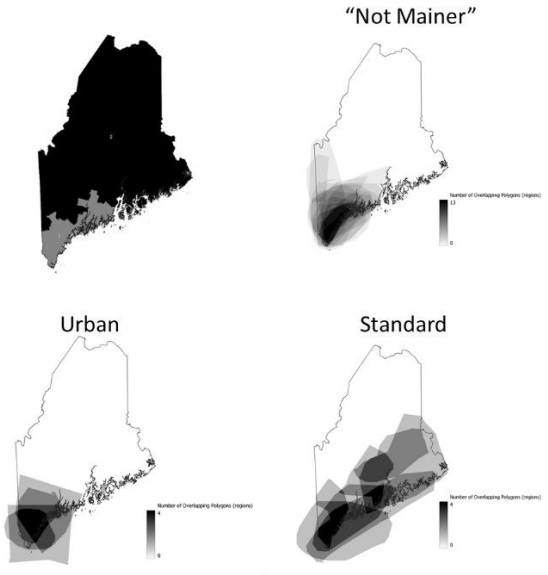


Figure 6.3.2.1: Comparison of Maine's congressional districts and the "Not Mainer," "Urban," and "Standard" labels

However, it should be noted that this prediction only functions as a means of identifying the southern portions of the state; what we do not see as a binary distinction between a southern dialect region and a northern dialect region that corresponds with the congressional districts. It would appear then that what many of my respondents are doing is drawing attention to the portion of Maine whose authenticity as "True Mainers" is in dispute. Otherwise, most Mainers are focusing on areas such as the "Aroostook," "French," and "Downeast" labels (which exist within Maine's Second Congressional District). Put simply, when they are not calling attention to the area that does not have the "authentic" Maine dialect, they are providing information on the "authentic" dialect regions on their maps.

6.3.3 The third prediction

The final prediction I made in Chapter Three was "given that Maine is reliant upon fishing as an important economic source, we can expect to see more regions identified in coastal Maine than inland Maine (which will also reflect population densities)." Of the three predictions, this one proved to be the most reliable. As can be seen in Map 5.0.4, there are a number of overlapping dialect regions that respondents drew along Maine's coast. Further, the "Downeast" label on the coast was the most frequently identified dialect region based upon the number of respondents including it on their maps. The inclusion of the "Downeast" label is not unexpected, given that it appears to be part of the commodified aspects of the Maine dialect as described in Chapter Three.

This prediction was likely the most reliable of the three due to a few factors. With regards to the physical aspects of spatiality, Maine's coast is a geographic element that greatly impacts the lives of many Mainers. This can be through its impact on their ability to access neighboring communities, the role that coast-related (and predominantly maritime-related) practices have on their economic well-being, and the way in which the state has historically grown around the coast. This means that the coast is also a regular part of the life paths for many Mainers and therefore plays an integral role in the development of their social world. Finally, because of the strong associations of Maine's maritime history and existing tourism industry, aspects of coastal life (including its linguistic practices) have become part of the psychological reality for many Mainers. In summary, what made this prediction successful was that it managed to incorporate all three aspects of spatiality in its conceptualization, and the tools of PD allowed for an analysis of the evaluative perceptions of the dialect it was associated with by respondents.

6.4. Summary

The utilization of PD methods allows sociolinguists to conduct and analyze studies that incorporate all elements of Britain's proposals for spatiality if one is addressing the evaluation problem. This is accomplished by using theories from social psychology, such as SRT, and expanding the methods to include CDP as part of the analysis. This serves as a response to Britain's critique that sociolinguistics has failed to address the importance of geographic space as part of the discipline's scope by providing a framework by which physical space can be reintroduced to language regard studies. While this may not address the shortage of studies dealing with the embedding problem utilizing geographic space as a variable, it is my hope that showing how it can be successfully done in addressing the evaluation problem will spark renewed interest in using physical space as a component to sociolinguistic analysis. In time, this would lead to further enrichment of sociolinguistic methods that are informed by spatiality.

While this study has been concluded, there are still considerations that should be made about the analytic framework and how research into the spatiality of perceptual dialectology should proceed. I will take those issues up in the next (and final) chapter.

Chapter 7: Concluding Remarks

As stated in the conclusion of the previous chapter, I believe that sociolinguistic theory can (and will) be enriched through the combination of spatiality and PD. It is my hope to continue working within these frameworks to understand how individuals evaluate their linguistic environment and how this leads to the diversification and reification of dialects. I also hope to be joined by enthusiastic collaborators. To that end, there are aspects of what has been presented in this study that naturally lead into a conversation about directions for future research.

In my mind, the conversation about future research should begin with how we can use CDP and the RI in future projects. This would not be the first instance of a research calling for the use of CDP in linguistics research (see for example Wetherell 2007). But I hope to have shown that for PD researchers, incorporating CDP allows for a very systematic approach to categorizing the types of labels we receive for dialects provided by non-linguists in the draw-a-map task. This does require that additional information about the labels be collected (either through an online question such as the one about stereotypes included in this study or other, innovative ways in which to engage non-linguists in talking about dialect regions), but it can aid us as researchers in understanding how people are interacting with their beliefs and perceptions about dialects. This is especially useful when we consider the ideological dilemma component of CDP as it allows us a scaffolding upon which to place analysis of dialect regions that share geographic space on a map and a label, but which have very different evaluative judgments. Factoring in the position of the respondent will also prove beneficial, as it may help in explaining the ideological dilemmas encountered in analysis of perceptual dialect maps. It is in the positionality of the respondent that I suspect the RI will become helpful in explaining peoples' relationships with space. While it did not provide much insight into the analysis of this study, a more balanced sample could look at the relationship of the RI to the data collected in draw-a-map tasks. This could then provide us more ethnographically rich analyses of PD data.

Speaking of PD data, another avenue for future research would be to incorporate additional PD methods into a spatiality framework. One future project that I have in mind would be to conduct a voice placement task. Given advances in technology, this could easily allow for comparisons of where people construct dialect regions during a draw-a-map task with where they place voices (or individuals) relative to those regions. This would be based upon carefully controlled phonetic criteria that the researcher would have reason to suspect plays a role in local dialect perceptions. FLOM is already including the capability to perform voice placement tasks into its architecture, and so hopefully this is a field of research that will soon see increased interest.

Finally, I hope that the type of analysis and study I presented here will be applied to more diverse areas. By this I mean areas with different types of geographic constraints. For this study, the Maine-Quebec border and coast appeared to be useful as anchoring points for my respondents in discussing different dialect regions. How would this compare to individuals in a mountainous yet land-locked state such as Colorado? What aspects of geography would non-linguists use in projecting their perceived dialect regions upon the map? This could give us deeper insight into how people anchor linguistic features to space given different physical environments.

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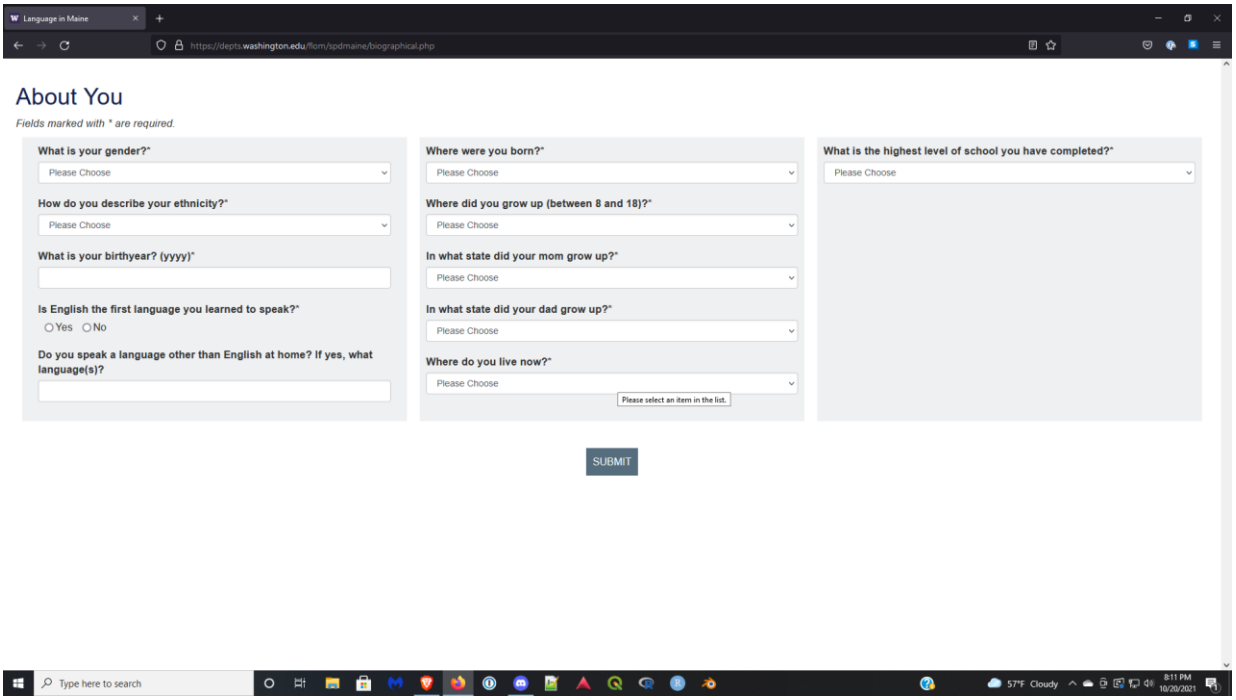
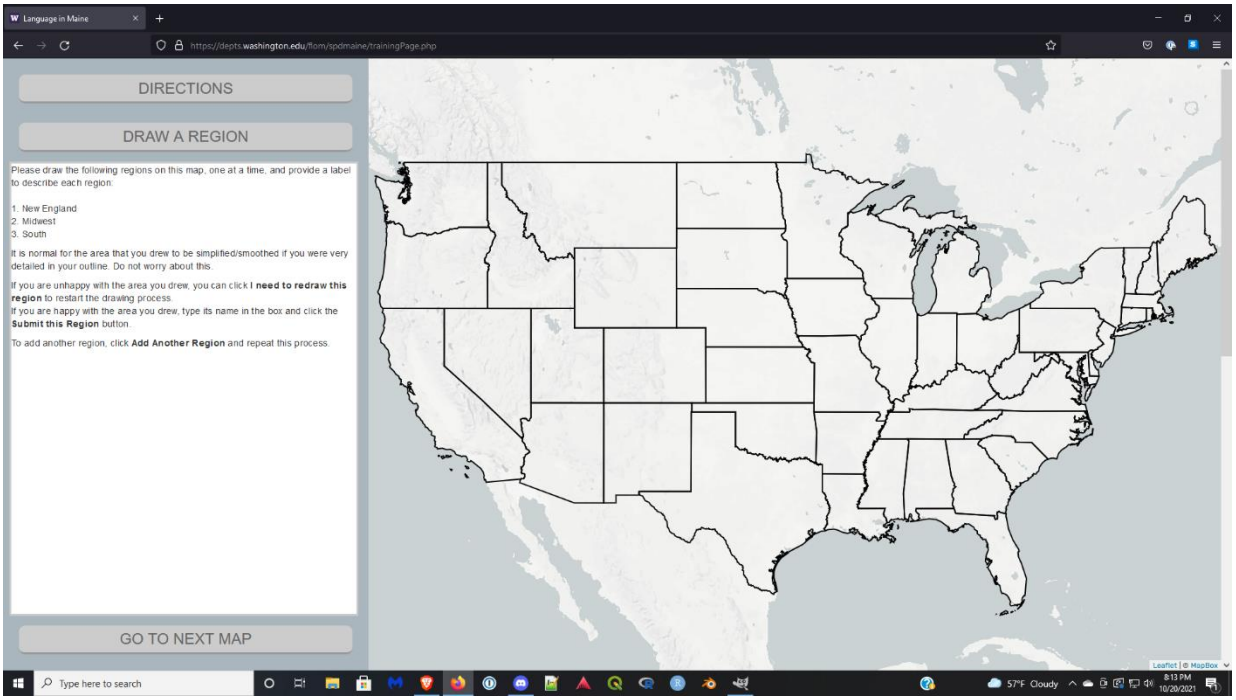
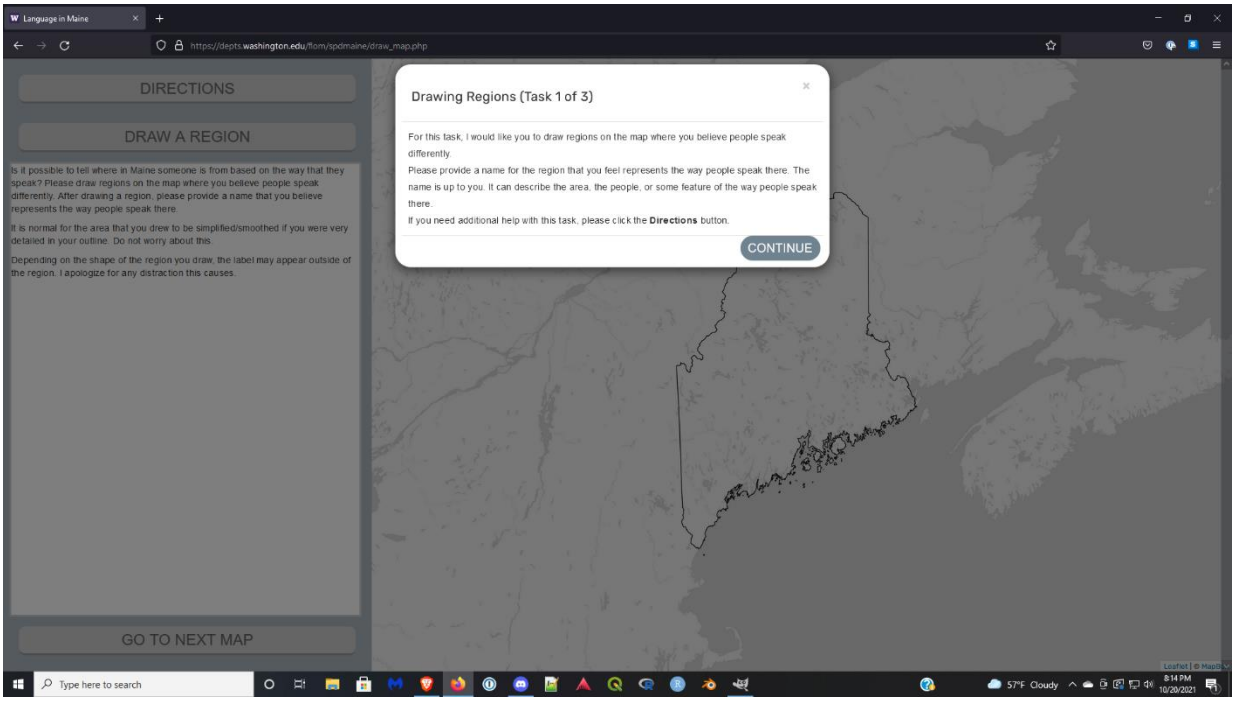
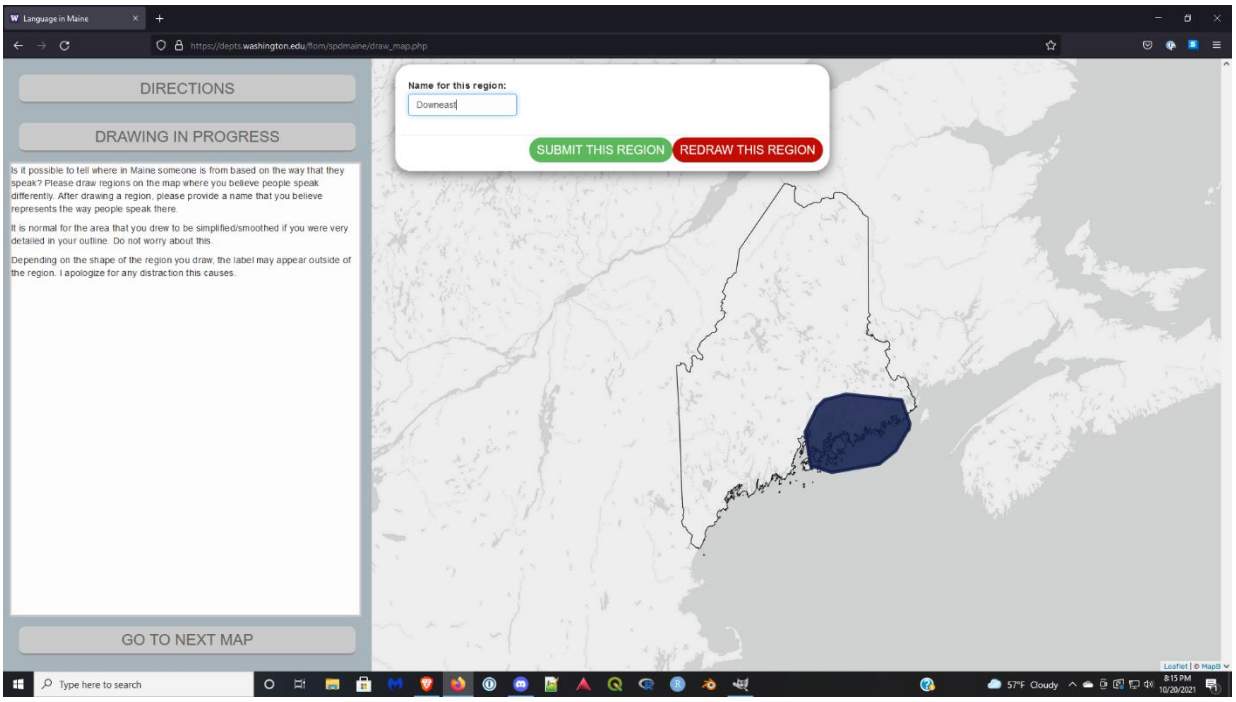
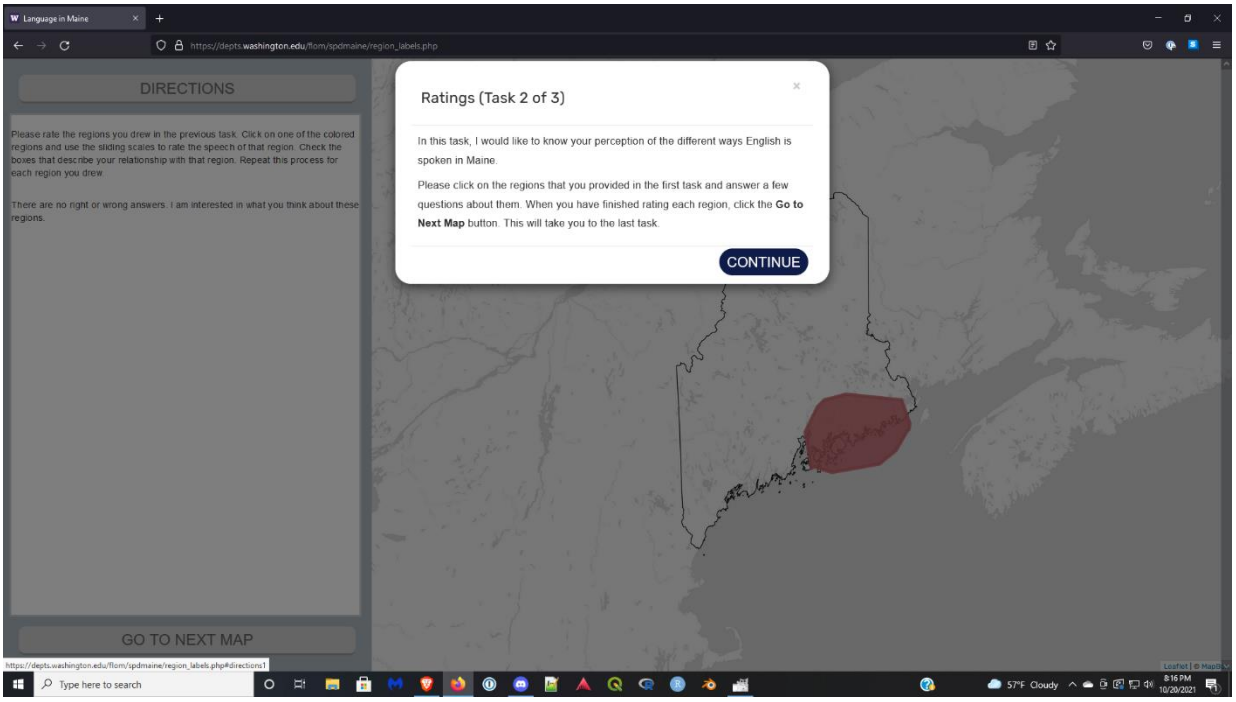
Appendix A: Administration of the survey through FLOM (which can be seen at https://depts.washington.edu/flom/spdmaine/information.php)

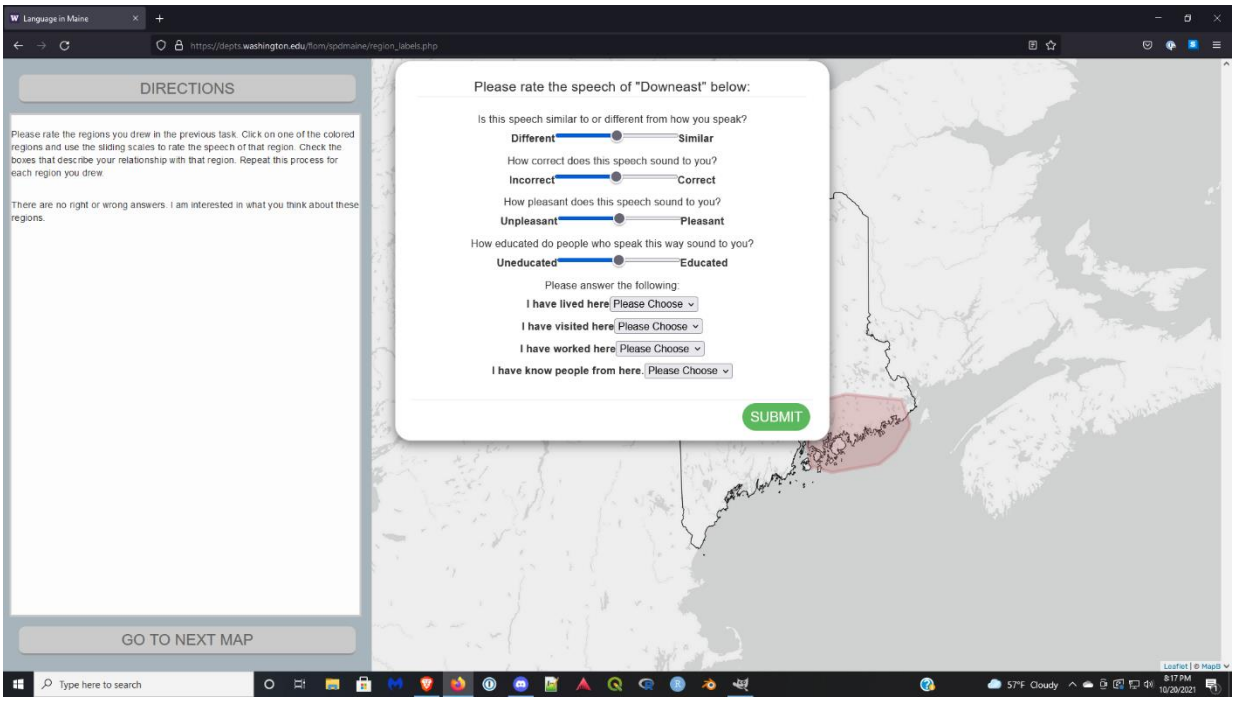


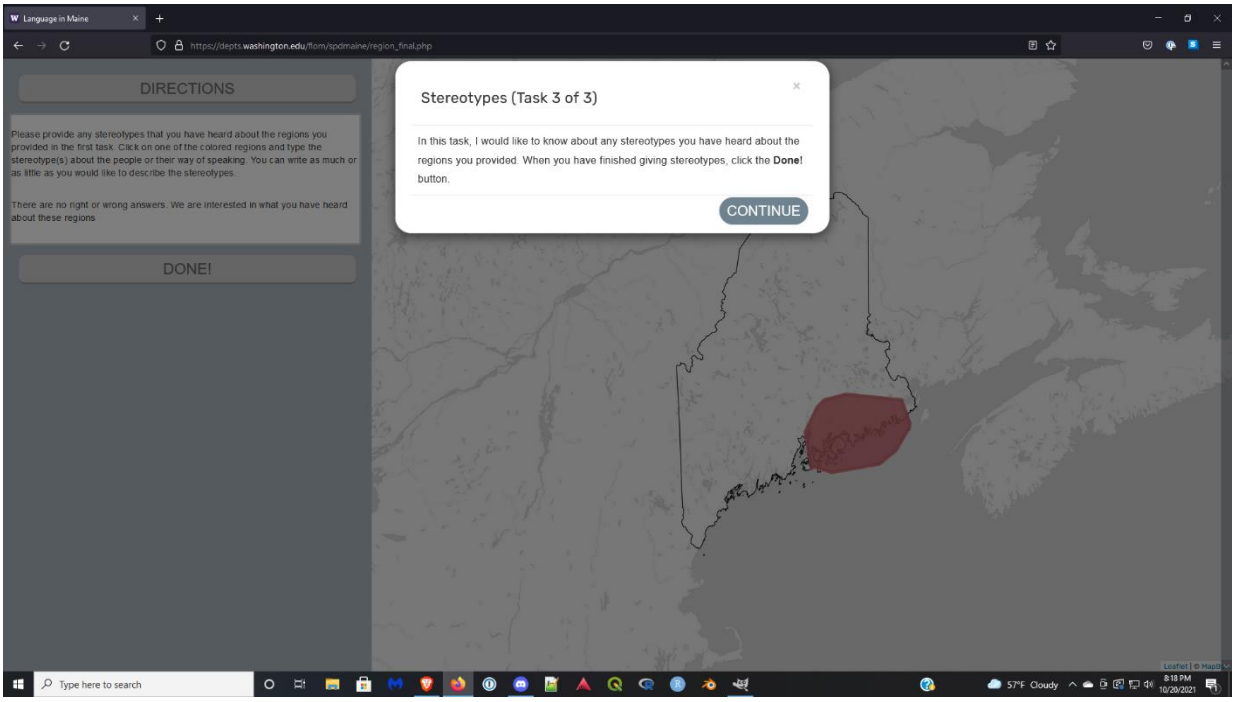


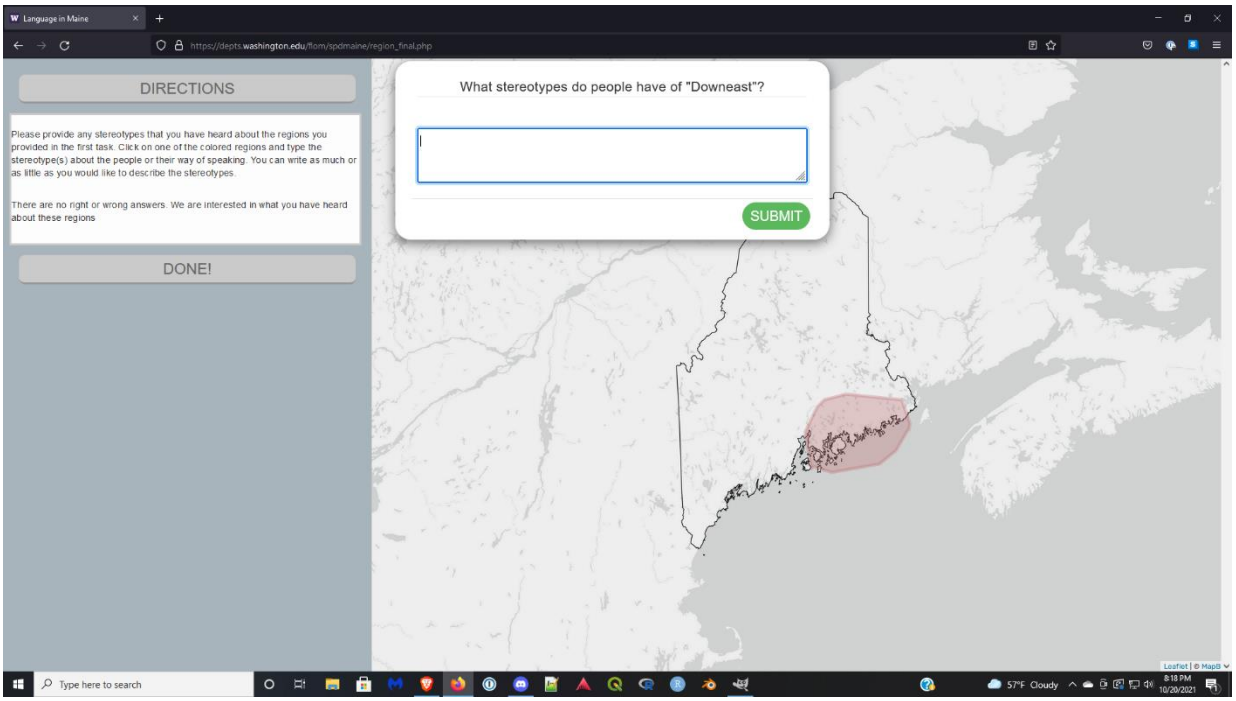

Language in Maine
https://depts.washington.edu/flom/spdmaine/draw_map.php
DIRECTIONS
DRAW A REGION
Is it possible to tell where in Maine someone is from based on the way that they speak? Please draw regions on the map where you believe people speak differently. After drawing a region, please provide a name that you believe represents the way people speak there.
It is normal for the area that you drew to be simplified/smoothed if you were very detailed in your outline. Do not worry about this.
Depending on the shape of the region you draw, the label may appear outside of the region. I apologize for any distraction this causes.
GO TO NEXT MAP
Drawing Regions (Task 1 of 3)
For this task, I would like you to draw regions on the map where you believe people speak differently.
Please provide a name for the region that you feel represents the way people speak there. The name is up to you. It can describe the area, the people, or some feature of the way people speak there.
If you need additional help with this task, please click the Directions button.
CONTINUE
Type here to search
57°F Cloudy
8:14 PM
10/20/2021

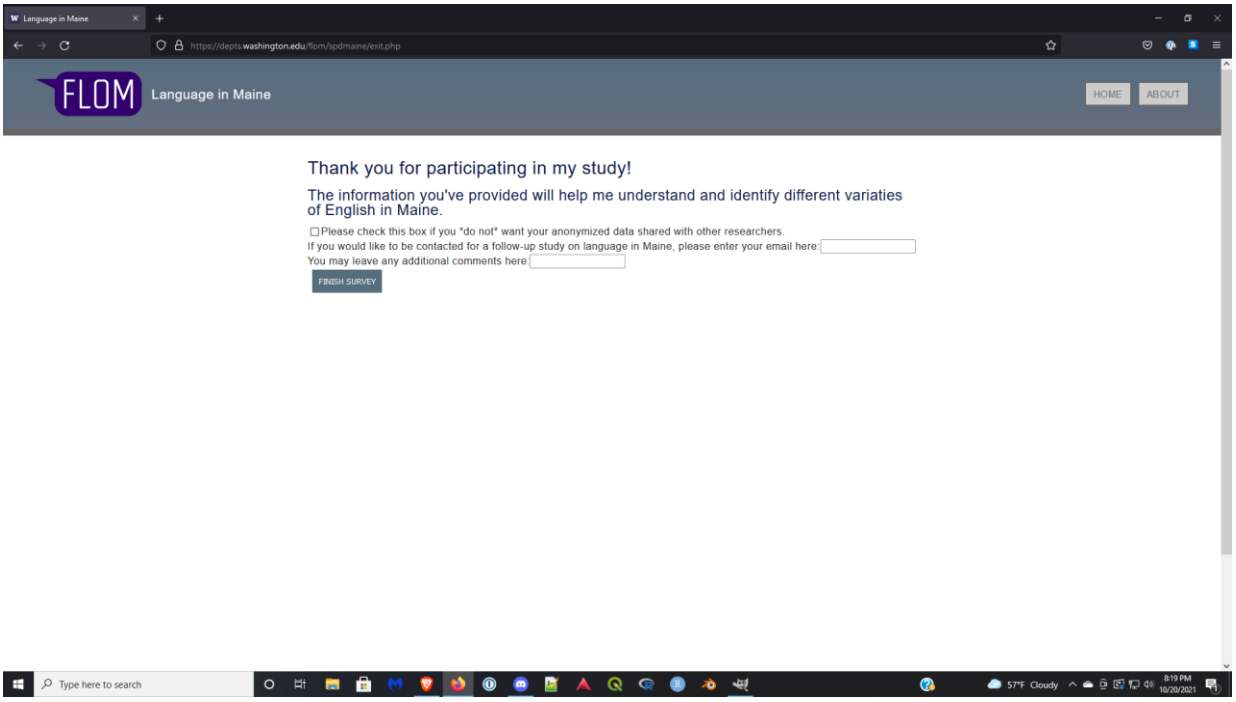

Language in Maine
https://depts.washington.edu/flom/spdmaine/draw_map.php
DIRECTIONS
DRAWING IN PROGRESS
Is it possible to tell where in Maine someone is from based on the way that they speak? Please draw regions on the map where you believe people speak differently. After drawing a region, please provide a name that you believe represents the way people speak there.
It is normal for the area that you drew to be simplified/smoothed if you were very detailed in your outline. Do not worry about this.
Depending on the shape of the region you draw, the label may appear outside of the region. I apologize for any distraction this causes.
GO TO NEXT MAP
Name for this region:
Downeast
SUBMIT THIS REGION
REDRAW THIS REGION
Type here to search
57°F Cloudy
8:15 PM
10/20/2021


Language in Maine
https://depts.washington.edu/flom/spdmaine/region_labels.php
DIRECTIONS
Please rate the regions you drew in the previous task. Click on one of the colored regions and use the sliding scales to rate the speech of that region. Check the boxes that describe your relationship with that region. Repeat this process for each region you drew.
There are no right or wrong answers. I am interested in what you think about these regions.
GO TO NEXT MAP
Ratings (Task 2 of 3)
In this task, I would like to know your perception of the different ways English is spoken in Maine.
Please click on the regions that you provided in the first task and answer a few questions about them. When you have finished rating each region, click the Go to Next Map button. This will take you to the last task.
CONTINUE
Type here to search
57°F Cloudy
8:16 PM
10/20/2021


Language in Maine
https://depts.washington.edu/flom/spdmaine/region_labels.php
DIRECTIONS
Please rate the regions you drew in the previous task. Click on one of the colored regions and use the sliding scales to rate the speech of that region. Check the boxes that describe your relationship with that region. Repeat this process for each region you drew.
There are no right or wrong answers. I am interested in what you think about these regions.
GO TO NEXT MAP
Please rate the speech of "Downeast" below:
Is this speech similar to or different from how you speak?
Different
Similar
How correct does this speech sound to you?
Incorrect
Correct
How pleasant does this speech sound to you?
Unpleasant
Pleasant
How educated do people who speak this way sound to you?
Uneducated
Educated
Please answer the following:
I have lived here Please Choose
I have visited here Please Choose
I have worked here Please Choose
I have know people from here. Please Choose
SUBMIT
Type here to search
57°F Cloudy
8:17 PM
10/20/2021


Language in Maine
https://depts.washington.edu/flom/spdmaine/region_final.php
DIRECTIONS
Please provide any stereotypes that you have heard about the regions you provided in the first task. Click on one of the colored regions and type the stereotype(s) about the people or their way of speaking. You can write as much or as little as you would like to describe the stereotypes.
There are no right or wrong answers. We are interested in what you have heard about these regions
DONE!
Stereotypes (Task 3 of 3)
In this task, I would like to know about any stereotypes you have heard about the regions you provided. When you have finished giving stereotypes, click the Done! button.
CONTINUE
Type here to search
57°F Cloudy
8:18 PM
10/20/2021


Language in Maine
https://depts.washington.edu/flom/spdmaine/region_final.php
DIRECTIONS
Please provide any stereotypes that you have heard about the regions you provided in the first task. Click on one of the colored regions and type the stereotype(s) about the people or their way of speaking. You can write as much or as little as you would like to describe the stereotypes.
There are no right or wrong answers. We are interested in what you have heard about these regions
DONE!
What stereotypes do people have of "Downeast"?
SUBMIT
Type here to search
57°F Cloudy
8:18 PM
10/20/2021


Language in Maine
https://depts.washington.edu/flom/spdmaine/exit.php
FLOM
Language in Maine
HOME
ABOUT
Thank you for participating in my study!
The information you've provided will help me understand and identify different variaties of English in Maine.
Please check this box if you *do not* want your anonymized data shared with other researchers.
If you would like to be contacted for a follow-up study on language in Maine, please enter your email here:
You may leave any additional comments here:
FINISH SURVEY
Type here to search
57°F Cloudy
8:19 PM
10/20/2021

Appendix B: Recruitment Materials

Posted to social media accounts (Facebook, Reddit):

Hey everyone!

I am looking for some help with my research. I'm studying perceptions of Maine, and the different ways people speak English in the state. The study involves drawing regions in Maine and providing some information about the regions that you drew. Completing the study should take at most 30 minutes.

If you're from Maine, and you're interested in helping me out, please follow this link: https://depts.washington.edu/flom/spdmaine/ . Also, feel free to share this post or pass this link along to anyone you know from Maine. If you have any questions, please message me or email me at jonesb28@uw.edu. I should add- the nature of the survey requires a larger screen for the use of the map. You can access it from a tablet, but not a cell phone.

Thanks!

Run as an advertisement on the Bangor Daily News website between June 12th and June 15th, 2021:

MAINE LANGUAGE: SEARCHING FOR VOLUNTEERS

I am looking for somehelp with an academic research project. I'm studying perceptions of Maine, and the different ways people speak in the state. The study involves drawing regions in Maine and providing some information about the regions that you drew. Completing the study should take at most 30 minutes. Unfortunately, I am unable to pay participants so this is solely voluntary. If you're interested in helping me out, please use this link: http://depts.washington.edu/flom/spdmaine . If you have any questions, please message me or email me at jonesb28@uw.edu. Thanks!

Appendix C: Command-line processing of the geographic data

R code for converting the CRS of a CSV file to a projected coordinate reference system (as provided by Hurvitz, pc, 2021):

The following assumes that you have these R packages and their dependencies installed: sf, tidyverse, magrittr

R code:

```
library(sf)
library(tidyverse)
library(magrittr)

# read CSV
y <- read.csv("C:/users/locationOfYouData/yourData.csv") # or
read.csv(file.choose()) if you do not know the location

# Maine UTM 19 N; this is the CRS used in this dissertation, so you would
select the CRS appropriate to your locale
myCRS <- 32619

# as sf data for R to make the CSV “spatial”
y %<>% st_as_sf(wkt = "fieldContainingWKT")
st_crs(y) <- 4326 #the CRS of the LeafletJS implementation


# project for Cartesian space

y %<>% st_transform(myCRS)


# write a shapefile

st_write(obj = y, dsn = "C:/locationForYourShpFile/yourData.shp", delete_layer = TRUE)
```

GDAL rasterize command:

gdal_rasterize --config COMPRESS LZW -a existenceOrWhateverYouNameYourCountField -add -of HFA -tr 100 100 yourData.shp theRegionInQuestion.img

Appendix D: Region Classifications

Content Analysis Categories:

Researcher label:	Provided names:
aroostook	The County
	County Light
	County Proper
	The County
	Aroostook ("The") County
	The County
	The County
	The County
	The County/northern Maine
	The County
central	Central Maine
	Central Maine
	Central Maine
coast	Coastal
	Coast
	Coastal Maine
downeast	Downeast
	Downeast
	Downeast
	downeast thick accent
	Downeast
	Downeaster land
	Down-east accent
	Downeast
	Downeast
	Downeast
	Downeast
	Downeast - Heavy Maine Accent
	Downeast
	Downeast
	Downeast
french	French influence
	French
	French Canadian
	Mainebecois
	Frenchie
	French-canadian land
	Franco-American
french (continued)	French Canadian Accent
	French-American
	French-Canadian
	Biddeford - Francophones
	Aroostook Cty - Francophones
	Lewiston Auburn - Francophones
	Acadian French
	French
mainer	Mainer
	True Mainer
	Mainer
	Thick Mainer
	Maine Accent
	Maine Accent
	True Mainah Talk
	Mainer/Maine accent
midcoast	Midcoast
	Midcoast
new_england	New england english with maine slang
	Mild/no accent, generic new-england pronu
	Slight New England
	Yankee, 'normal',
	Slight Maine accent/general New England ac
nh_me	New Hampshire - Maine
no_me	Northern Maine
	Northern Maine
non_me	From Away
	out-of-stater land.
	The "Other" Maine
	The Other Maine/north Boston
north_ma	Impropah Bohstonian
	Northern Massachusetts
rural	Limington/Redneck
	The Boondocks, Borderline Southern
	Woods Men, can't get there from here
	northern hicks
so_me	Southern Maine

Researcher label:	Provided names:
so_me (continued)	Southern Maine
	Southern
	Southern Maine
st_john	St. John's Valley
	St John Valley
	St. John Valley
standard	As "American" as you could ask
	least accented
	fairly neutral
urban	Metro
	Wealthy/Proper English
we_me	WEstern Maine
	Western mountains/midstate, similar to downeast accent but more "appalachian"
	Western Mountains
problematic (uk)	Bub-land
	Nasal Dropped Rs
	Flattened vowels
	Flat
	"Mainah, Can't Get Theyah From Heeyah"
	Bah Habah
	French/Downeast
	French/Downeast
	PFA Territory
	Mostly hardscrabble
	Mixed
	Downeast/Midcoast
	down east and north
	DownEast/The Coast
	Katahdish
	Forester
	lumberjack
	southern and western maine

CDP Analysis Categories:

(note- if the respondent provided no stereotype information, the corresponding space is left blank. Input such as "None" represents information provided by the respondent.)

Researcher label:	*Provided names:*	*Provided stereotypes:*
aroostook	The County	Working class, conservative, outdoor work and recreation
	County Light	Poor. Isolated. Conservative. Uneducated.
	County Proper	Poor. Isolated. Conservative. Uneducated.
	The County	
	Aroostook ("The") County	They have "flat" vowels, sounding almost more like Southern U.S. than Maine. (For instance, "insurance" is pronounced "IN-shor-ance", "potatoes" are "p'daydahs", etc.) There is somewhat of a French-accent influence.
	The County	Hardworking, lovers of winter, potato farmers, give you the shirt off their backs
	The County	Considerable Franco-American influence to both speech and culture.
	The County	Potato Farmers, Lumberjacks, Acadians.
	The County/northern Maine	Hard working, farmers/woodsmen, outdoorsy, few opportunities, people stay close to home.
	The County	Potato farmers, some of the nicest people you'll meet
	St John Valley	
	St. John Valley	Hardworking, large families, Catholic backgrounds, lumberjacks, hunters
coastal	Coastal	Understated
	Coast	Hardworking or rich, rednecks or from away.
	Coastal Maine	Dropped r's, fisher/lobstermen.
	Midcoast	Lobstermen / fishermen, Lots of rich summer homes on islands
	Midcoast	Middle class, educated, suburban
	Nasal Dropped Rs	Fisher/lobstermen, maritime tradition
	Bah Habah	Fishermen/lobstermen. Usually easy going. Lots of tourism. The men seem to be more of the "I get up at the crack of dawn, clock in, work hard all day, and come home" working man.
downeast	Downeast	lobstermen, drugs, rural, uneducated, no future

downeast (continued)	Downeast	Working class, fishermen, divide between working class and coastal elites
	downeast thick accent	Lobster, fishermen, truck drivers, loggers (blue collar jobs)hard working, not bright, nice people
	Downeast	Hard to understand. Standoffish. Hard-working. Parochial.
	Downeaster land	Poor, uneducated, etc.
	Down-east accent	Deep familial rootsQuaint, pastoralHardworkingOld-fashioned
	Downeast/Midcoast	
	down east and north	slow moving, slow changing, conservative, traditional
	Downeast	less educated, unsophisticated
	Downeast	hard-working, "salt-of-the-earth" type folks, less educated
	Downeast	Independent, haahd workin', droppin' "Gs" from the endin' of nearly any word endin' in "ing". Wicked gooud sense of humah; dry. LOTS of colloquial comments and sayin's. LOTS of "aspirated agreement" ("Ayuh! - Yessuh!, Well theyuh!").
	Downeast	Hardworking, non swimmers but make living on the water, less educated due to start work young,
	Downeast - Heavy Maine Accent	Hard working, stubborn, Fishermen, lobstermen, Republican, Live off the land and sea, perservering.
	DownEast/The Coast	Damn near everyone says 'wicked' a lot, ultra-dry humor as well.
	Downeast	Hard working, ÃƒÂ¢Ã¢?Â¬Ã…?down homeÃƒÂ¢Ã¢?Â¬Ã‚Â, mostly fishermen, outdoorsy, stay close to home, insular.
	Downeast	Big fishing and lobstering community. Not very much higher education levels
	Downeast	Lobsterman/fisherman
french	French influence	Old mill towns, Quebecois, working class
	French	Jokes about all being related to each otherIts Canada not Maine
	French Canadian	As the title says, French Canadian. A lot of people down from Canada. Haven't really been over there, except what I've heard from others further southern Maine. People seem to keep to themselves for the most part over there and there really isn't much of
	Mainebecois	French.
	Frenchie	Arrogance
	French-canadian land	they are French Canadian, hicks, rednecks, older people in general etc.

french (continued)	Franco-American	Lots of potato farmers. It's so close to Canada that the culture here is a sort of "Mainah"/Canada hybrid. People are usually kind here, tend to be more accepting.
	French Canadian Accent	More backwoodsey, if that's a word. Quiet, friendly, most of them have a French heritage which is a nice change once in a while.
	French-American	
	French-Canadian	Catholic, large families, lumbering jobs, outdoorsmen, Registered Maine Guides, right wing politics
	Biddeford - Francophones	Franco Americans, Catholic, Family oriented,
	Aroostook Cty - Francophones	French Canadian ancestry. Farmers. Catholics. Elderly / aging population. Rural. Large families.
	Lewiston Auburn - Francophones	Franco Americans, Catholic, Family oriented,
	Acadian French	Lower socioeconomic status , lower education status
	French	Dumb, backward, uneducated, gaudy,
	Northern Maine	Potato eaters, French, Hick
	St. John's Valley	"Frenchies", Old people, potato farmers, Memere French, super Catholic, basically Canadians, agricultural folks
	French/Downeast	unsophisticated, hard working, french descent
	WEstern Maine	Potato eaters, French, Hick
liberal	southern and western maine	educated, liberal, progressive, irreligious
northern	Northern Maine	None
not_Mainer	New england english with maine slang	Southern mainers are all from out of statethe democrats are all here in the state
	Mild/no accent, generic new-england pronunciation	Not "real" Mainers, from awayWealthier, educatedLiberal/centrist
	New Hampshire - Maine	Trashier version of bubland, more transplants instead of "Mainers"
	From Away	Change

not_Mainer (continued)	out-of-stater land.	Yuppies, Granolas, hipsters, etc.
	The "Other" Maine	North Bawston. A Massachusetts "affected" influence. I just "kahnt" understand why they say some of the things they say in the manner in which they say them!
	The Other Maine/north Boston	Basically Boston or Massachusetts, stuck-up, rich, donÃƒÂ¢Ã¢?Â¬Ã¢?Â¢t think there IS a Maine above Portland, not really true Maine.
	Impropah Bohstonian	Not real Mainers. Wealthy. Liberal. Superficial.
	Northern Massachusetts	
	Southern Maine	Northern Mass, Crunchy/Preppy at the same time, Like if rich Mass kids went to public school instead of boarding school
	Southern Maine	Too many Hipsters, North Mass
	Southern Maine	Basically massholes, Northern Massachusetts, liberal f***tards, disgustingly rich, don't count as 'real' Mainers
	least accented	Mostly people "from away", more educated, white collar workers
	Flat	Out-of-staters, 'North Boston', Yuppies
	PFA Territory	Annoying as hell. They move here from a place they're trying to escape and then piss and moan because the lifestyle and services aren't like back home. They drive too fast and post everything with no trespassing signs.
rural	Limington/Redneck	Pure redneck city here. Four wheeling, hunting, big trucks and country music. A little too extreme for my tastes. They can be a bit racist in places too so we try not to associate the state with them. Definitely still some nice people here as well, but a
	Katahdish	Mountain people. Backwoods.
	Forester	Stagnant
	The Boondocks, Borderline Southern	There aren't many people here to begin with. Highest meth lab per capita here. People are generally nice, though are stuck in their ways. Mostly right-leaning, less educated.
	Woods Men, can't get there from here	Lots of Hunting and Fishing. Back woods lifestyle.
	northern hicks	live in the wilderness in towns with numbers instead of names; rarely get to the big city; live off the land; blue collar
	lumberjack	live in the woods in log cabins; rarely get to a big town; can lay the accent on think depending on who they're talking to, especially tourists

rural (continued)	Bub-land	Hunting, more culturally conservative, guns, uneducated
	Flattened vowels	Farm towns
	French/Downeast	industrious, blue collar, less-educated
	Mostly hardscrabble	Trump country, more teeth than tattoos, gun nuts, but if you take time to know them, most are decent and make good neighbors.
	Western mountains/midstate, similar to downeast accent but more "appalachian"	"Redneck" or "Hick" speakEmphatic use of onomatopoeiaUneducatedDeep familial rootsPolitically/socially conservative/libertarian
southern standard	Southern Maine	None
	Central Maine	None come to mind
	Central Maine	None
	Central Maine	
	Slight New England	
	Yankee, 'normal',	Hipsters, younger
	Slight Maine accent/general New England accent	Often associated with hostility and a short temper.
trueMainer	As "American" as you could ask	This is where I live currently and the most populous area. It's mostly families and a fair few wealthy cities here too (Cape Elizabeth and Falmouth especially). Any large company in Maine is here with the exception of Bath Iron Works further East in Bath
	Mainer	These are more traditional Mainers where a lot more people live than up north. Of course, Portland is the most populous city/area, this area takes a pretty close second. Hard workers, families, older folks, people just trying to make a living.
	True Mainer	Hunting, fishing, shotguns, rifles, cabins, simple living, pure Mainers. A lot of really friendly, welcoming people here though and some of the best people I've met. Hardest working region in my opinion, but they won't tell you that and not many people k
	Thick Mainer	Overweight, White trash, With bits of wealthy here and there.
	True Mainah Talk	Backwoods, uneducated, woodsy, what "Mainahs" are, almost no one lives here
	Maine Accent	Conservative, Maine accent, rednecks

trueMainer (continued)	Maine Accent	Lobsterman, diggers, liberal, dangerous drivers
	Mainer/Maine accent	It sounds like a heavier/slower version of a Boston accent. It's often associated with people who do manual labor, are likely less educated, and might not welcome outsiders or people who are different.
	"Mainah, Can't Get Theyah From Heeyah"	The people from mid-Maine are kind of in two categories. There are the people who went to UMaine or Husson and stayed in the area, generally more environmentally conscious, left-leaning, and more accepting of people and their lifestyle/culture/beliefs. T
	Mainer	It's hard to find a word for Liberal cowards that's more nice than Liberal cowards.
southern urban	Southern	urban, diversity in religion, sexuality, race and ethnicity
	fairly neutral	higher education than other parts of the state; more cosmopolitan; more white collar workers; more likely to be "from away"; more likely to move elsewhere; able to affect the "hick" or "lumberjack" accent especially around tourists
	Metro	Sprawl
	Wealthy/Proper English	Usually, the more wealthy Mainers live here, the culture is more industrialized and urbanized. The average person here is more educated. Usually more left-leaning politically.
western problematic (uk)	Western Mountains	
	Mixed	

Appendix E: TukeyHSD results

In order to perform the Tukey Honestly Significant Differences tests, the following bit of code was used to perform the prerequisite aligned ranks transformation analysis of variance (ART ANOVA) (example for computing means for similarity means):

```
> modelSimlrty <- lm(rank(simlrty, ties.method = "average")~categories_diss_d_class, statData)

> anovaSimlrty <- aov(modelSimlrty)
```

This model was then fed into the TukeyHSD function of R and written out into a .csv file:

```
> anovaSimlrtyData<-TukeyHSD(anovaSimlrty, conf.level = .95)

> frameSimilarity <- as.data.frame(anovaSimlrtyData[1])

> write.csv(frameSimilarity, "SimilarityTukey.csv")
```

Below are the results of the Tukey HSD tests.

(Significant results highlighted where p < 0.05)

Correctness means:

	diff	lwr	upr	p.adj
coastal-aroostook	-1.5	-45.1621	42.16208	1
downeast-aroostook	-25	-59.2138	9.213777	0.356747
french-aroostook	-9.02632	-42.878	24.8254	0.997157
not_Mainer-aroostook	7.8	-27.756	43.356	0.999385
rural-aroostook	-19.5417	-57.021	17.93765	0.798351
southern-aroostook	-11	-106.554	84.55388	0.999997
standard-aroostook	1.142857	-42.5192	44.80494	1
trueMainer-aroostook	-19.5556	-60.0378	20.92673	0.860988
urban-aroostook	24.125	-28.8788	77.12876	0.898524
downeast-coastal	-23.5	-64.3933	17.39329	0.693725
french-coastal	-7.52632	-48.1172	33.06453	0.999845
not_Mainer-coastal	9.3	-32.7227	51.3227	0.99934
rural-coastal	-18.0417	-61.7037	25.62041	0.941685
southern-coastal	-9.5	-107.644	88.64389	0.999999
standard-coastal	2.642857	-46.4291	51.7148	1
trueMainer-coastal	-18.0556	-64.321	28.20992	0.958913
urban-coastal	25.625	-31.917	83.16695	0.910055
french-downeast	15.97368	-14.2227	46.17008	0.784552
not_Mainer-downeast	32.8	0.704632	64.89537	0.04099
rural-downeast	5.458333	-28.7554	39.67211	0.999956
southern-downeast	14	-80.3209	108.3209	0.999976
standard-downeast	26.14286	-14.7504	67.03614	0.551575
trueMainer-downeast	5.444444	-32.0349	42.92376	0.99998
urban-downeast	49.125	-1.62223	99.87223	0.066157

not_Mainer-french	16.82632	-14.8828	48.53544	0.781493
rural-french	-10.5154	-44.3671	23.33637	0.991188
southern-french	-1.97368	-96.1638	92.21646	1
standard-french	10.16917	-30.4217	50.76002	0.998241
trueMainer-french	-10.5292	-47.6783	26.61985	0.995494
urban-french	33.15132	-17.3525	83.65516	0.513395
rural-not_Mainer	-27.3417	-62.8977	8.214334	0.286281
southern-not_Mainer	-18.8	-113.616	76.016	0.99973
standard-not_Mainer	-6.65714	-48.6798	35.36556	0.999959
trueMainer-not_Mainer	-27.3556	-66.064	11.35291	0.404983
urban-not_Mainer	16.325	-35.3367	67.98667	0.99004
southern-rural	8.541667	-87.0122	104.0955	1
standard-rural	20.68452	-22.9776	64.3466	0.874312
trueMainer-rural	-0.01389	-40.4962	40.4684	1
urban-rural	43.66667	-9.33709	96.67042	0.201321
standard-southern	12.14286	-86.001	110.2867	0.999995
trueMainer-southern	-8.55556	-105.327	88.21562	1
urban-southern	35.125	-67.5163	137.7663	0.982636
trueMainer-standard	-20.6984	-66.9639	25.56706	0.907716
urban-standard	22.98214	-34.5598	80.5241	0.952561
urban-trueMainer	43.68056	-11.4875	98.84861	0.24859

Educated means:

	diff	lwr	upr	p.adj
coastal-aroostook	-13.5357	-54.3195	27.24802	0.985937
downeast-aroostook	-23.6944	-55.6527	8.263851	0.336159
french-aroostook	-1.17105	-32.7912	30.44905	1
not_Mainer-aroostook	10.78333	-22.4287	43.99537	0.987936
rural-aroostook	-35.2917	-70.3002	-0.28311	0.046499
southern-aroostook	0.75	-88.5047	90.00466	1
standard-aroostook	11.46429	-29.3195	52.24802	0.995764
trueMainer-aroostook	-13.0278	-50.8413	24.78579	0.981819
urban-aroostook	21.875	-27.6346	71.38458	0.913942
downeast-coastal	-10.1587	-48.3562	28.03874	0.997213
french-coastal	12.36466	-25.5503	50.27963	0.987558
not_Mainer-coastal	24.31905	-14.9334	63.57148	0.595723
rural-coastal	-21.756	-62.5397	19.02778	0.776265
southern-coastal	14.28571	-77.3882	105.9596	0.999964
standard-coastal	25	-20.837	70.83696	0.753336

trueMainer-coastal	0.507937	-42.7076	43.72344	1
urban-coastal	35.41071	-18.3379	89.15932	0.50805
french-downeast	22.52339	-5.68236	50.72914	0.238053
not_Mainer-downeast	34.47778	4.498239	64.45732	0.011688
rural-downeast	-11.5972	-43.5555	20.36107	0.97426
southern-downeast	24.44444	-63.6585	112.5474	0.996159
standard-downeast	35.15873	-3.03874	73.3562	0.098244
trueMainer-downeast	10.66667	-24.3419	45.67523	0.992333
urban-downeast	45.56944	-1.83237	92.97126	0.070049
not_Mainer-french	11.95439	-17.6644	41.57315	0.949412
rural-french	-34.1206	-65.7407	-2.50051	0.023882
southern-french	1.921053	-86.0598	89.90188	1
standard-french	12.63534	-25.2796	50.55031	0.985531
trueMainer-french	-11.8567	-46.5568	22.84338	0.982815
urban-french	23.04605	-24.1284	70.22052	0.852821
rural-not_Mainer	-46.075	-79.287	-12.863	0.000796
southern-not_Mainer	-10.0333	-98.5988	78.53209	0.999998
standard-not_Mainer	0.680952	-38.5715	39.93338	1
trueMainer-not_Mainer	-23.8111	-59.9678	12.34557	0.508643
urban-not_Mainer	11.09167	-37.1643	59.34764	0.999107
southern-rural	36.04167	-53.213	125.2963	0.94926
standard-rural	46.75595	5.972215	87.53969	0.012134
trueMainer-rural	22.26389	-15.5497	60.07745	0.663539
urban-rural	57.16667	7.657088	106.6762	0.01114
standard-southern	10.71429	-80.9596	102.3882	0.999997
trueMainer-southern	-13.7778	-104.169	76.61393	0.99997
urban-southern	21.125	-74.7499	116.9999	0.999363
trueMainer-standard	-24.4921	-67.7076	18.72344	0.710308
urban-standard	10.41071	-43.3379	64.15932	0.999777
urban-trueMainer	34.90278	-16.6284	86.43398	0.467422

Pleasantness means:

	diff	lwr	upr	p.adj
coastal-aroostook	-17.7798	-61.3702	25.8107	0.946068
downeast-aroostook	-15.0139	-49.1715	19.14376	0.916426
french-aroostook	-12.6557	-46.4519	21.14048	0.968404

not_Mainer-aroostook	-29.7417	-65.2393	5.756008	0.182795
rural-aroostook	-37.3333	-74.7512	0.084501	0.051018
southern-aroostook	-33.2083	-128.605	62.1888	0.980499
standard-aroostook	-34.2798	-77.8702	9.310696	0.257162
trueMainer-aroostook	-39.7639	-80.1798	0.651991	0.05767
urban-aroostook	-11.3333	-64.2501	41.58348	0.999493
downeast-coastal	2.765873	-38.0603	43.59208	1
french-coastal	5.12406	-35.4002	45.64832	0.999994
not_Mainer-coastal	-11.9619	-53.9157	29.99186	0.99529
rural-coastal	-19.5536	-63.144	24.03689	0.906343
southern-coastal	-15.4286	-113.411	82.55432	0.999961
standard-coastal	-16.5	-65.4914	32.49144	0.984436
trueMainer-coastal	-21.9841	-68.1737	24.20545	0.871219
urban-coastal	6.446429	-51.0011	63.89399	0.999998
french-downeast	2.358187	-27.7887	32.50505	1
not_Mainer-downeast	-14.7278	-46.7705	17.31494	0.892984
rural-downeast	-22.3194	-56.4771	11.83821	0.520035
southern-downeast	-18.1944	-112.361	75.97171	0.999782
standard-downeast	-19.2659	-60.0921	21.56033	0.876851
trueMainer-downeast	-24.75	-62.1678	12.66783	0.502231
urban-downeast	3.680556	-46.9834	54.34454	1
not_Mainer-french	-17.086	-48.7431	14.57115	0.764362
rural-french	-24.6776	-58.4738	9.118555	0.357743
southern-french	-20.5526	-114.588	73.483	0.999403

standard-french	-21.6241	-62.1483	18.9002	0.775963
trueMainer-french	-27.1082	-64.1963	9.979968	0.356333
urban-french	1.322368	-49.0986	51.74336	1
rural-not_Mainer	-7.59167	-43.0893	27.90601	0.999499
southern-not_Mainer	-3.46667	-98.1271	91.1938	1
standard-not_Mainer	-4.5381	-46.4919	37.41567	0.999998
trueMainer-not_Mainer	-10.0222	-48.6672	28.62275	0.997702
urban-not_Mainer	18.40833	-33.1686	69.98526	0.976941
southern-rural	4.125	-91.2721	99.52213	1
standard-rural	3.053571	-40.5369	46.64403	1
trueMainer-rural	-2.43056	-42.8464	37.98532	1
urban-rural	26	-26.9168	78.91681	0.84852
standard-southern	-1.07143	-99.0543	96.91146	1
trueMainer-southern	-6.55556	-103.168	90.05688	1
urban-southern	21.875	-80.598	124.348	0.999507
trueMainer-standard	-5.48413	-51.6737	40.70545	0.999997
urban-standard	22.94643	-34.5011	80.39399	0.952536
urban-trueMainer	28.43056	-26.647	83.50812	0.807562

Similarity means:

	diff	lwr	upr	p.adj
coastal-aroostook	22.95833	-15.2041	61.12075	0.635556
downeast-aroostook	-14.0139	-43.9181	15.89033	0.881289
french-aroostook	-7.33114	-36.9189	22.25662	0.998386
not_Mainer-aroostook	27.125	-3.95237	58.20237	0.142029
rural-aroostook	4.291667	-28.4668	37.05009	0.999992
southern-aroostook	54.45833	-29.0596	137.9763	0.523082
standard-aroostook	33.52976	-4.63265	71.69218	0.136015

trueMainer-aroostook	18.40278	-16.9804	53.78592	0.800667
urban-aroostook	49.33333	3.005921	95.66075	0.027396
downeast-coastal	-36.9722	-72.7146	-1.22985	0.036538
french-coastal	-30.2895	-65.7675	5.188559	0.163301
not_Mainer-coastal	4.166667	-32.5629	40.8962	0.999998
rural-coastal	-18.6667	-56.8291	19.49575	0.851894
southern-coastal	31.5	-54.2817	117.2817	0.972178
standard-coastal	10.57143	-32.3194	53.46228	0.998451
trueMainer-coastal	-4.55556	-44.9934	35.88233	0.999998
urban-coastal	26.375	-23.919	76.66898	0.792918
french-downeast	6.682749	-19.7101	33.07561	0.99809
not_Mainer-downeast	41.13889	13.08625	69.19153	0.000298
rural-downeast	18.30556	-11.5987	48.20977	0.612235
southern-downeast	68.47222	-13.968	150.9125	0.192264
standard-downeast	47.54365	11.80128	83.28603	0.001578
trueMainer-downeast	32.41667	-0.34176	65.17509	0.054852
urban-downeast	63.34722	18.9921	107.7023	0.000482
not_Mainer-french	34.45614	6.741088	62.17119	0.00428
rural-french	11.62281	-17.965	41.21057	0.957196
southern-french	61.78947	-20.5365	144.1154	0.319134
standard-french	40.8609	5.38287	76.33893	0.011486
trueMainer-french	25.73392	-6.73588	58.20372	0.247366
urban-french	56.66447	12.52209	100.8069	0.002709
rural-not_Mainer	-22.8333	-53.9107	8.24404	0.348941
southern-not_Mainer	27.33333	-55.5397	110.2063	0.986535
standard-not_Mainer	6.404762	-30.3248	43.13429	0.999907
trueMainer-not_Mainer	-8.72222	-42.555	25.11054	0.997804
urban-not_Mainer	22.20833	-22.946	67.36271	0.847756
southern-rural	50.16667	-33.3513	133.6846	0.637593
standard-rural	29.2381	-8.92432	67.40051	0.291183
trueMainer-rural	14.11111	-21.272	49.49426	0.952991
urban-rural	45.04167	-1.28575	91.36908	0.063801
standard-southern	-20.9286	-106.71	64.85313	0.99857
trueMainer-southern	-36.0556	-120.637	48.52634	0.929913
urban-southern	-5.125	-94.8376	84.58765	1
trueMainer-standard	-15.127	-55.5649	25.3109	0.968617
urban-standard	15.80357	-34.4904	66.09755	0.990432
urban-trueMainer	30.93056	-17.2885	79.14966	0.546735