

Phonological variation and the construction of regional
identities in New Zealand English

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Abstract

This thesis addresses the ongoing evolution of New Zealand English phonology. In particular it explores the links between phonological variation and the social identities of speakers. The thesis investigates the possible emergence of regional dialects in the ongoing development of the variety. The investigation contributes to theories of dialect development, especially in relation to linguistic varieties described as “postcolonial” English.

Since the onset of linguistic research on New Zealand English, scholars have highlighted the remarkable geographical uniformity of the variety. However, recent research concerning the development of postcolonial Englishes suggests that regional diversity is inevitable, but that its occurrence is tied to the construction of sociocultural identities.

In this thesis I apply a holistic approach to investigating phonological variation and the construction of regional identities in modern New Zealand English. My aim in this thesis is twofold: firstly, to investigate current trends in 21st century New Zealand English phonology and secondly, to gain insights into the linguistic, social and cultural processes associated with the birth of new regional dialects.

I view the ongoing evolution of Englishes as involving a composite of wide-ranging factors from the linguistic, historical, social, cultural and ideological domains. In order to address the full complexities of the issues I track variation and change in one influential and important dimension of English phonological systems: rhoticity. I explore the social life of this variable throughout the history of the English language since the 17th century and investigate in detail its manifestation in the speech of 21st century New Zealand teenagers.

I consider evidence for contemporary regional diversification by comparing variation in rhoticity in two distinct New Zealand locations; a small rural community in the lower North Island and a small rural community further north in the central North Island. I take a social constructionist approach, paying close attention to local contexts and speakers’ constructions of their local identities. Quantitative and qualitative approaches to the analysis of the data are utilised. Observations of general trends in rhoticity in modern New Zealand English are enhanced through the examination of the social meanings underlying individual linguistic behaviour.

The findings demonstrate the historical and inherent variability of /r/ and reveal changes underway in modern New Zealand English rhoticity. The findings suggest that change involving linking /r/ is associated with a combination of social identity and attitudinal issues. The analysis of non-pre-vocalic /r/ demonstrates the value of exploring innovative features

during their onset of use. The findings suggest that the onset of increasing non-pre-vocalic /r/ use in modern New Zealand English may be involved in the utilisation of globally accessible phonological features in the construction of both locally and globally relevant identities.

The thesis identifies geographical mobility, transience and changing ethnolinguistic diversity as key factors in ongoing dialect developments in New Zealand English. It concludes that the emergence of ethnically-based identities may hold significance for the emergence of localised identities. The absence of distinctive regional linguistic varieties reflects the absence of recognised regional identities, but the thesis provides tentative evidence that evolving identity constructions in 21st century New Zealand may fuel regional diversification.

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Preliminaries

(i) List of abbreviations

AAVE	African American Vernacular English
AusE	Australian English
BrE	British English
BNC	British National Corpus
GLM	Generalised Linear Model
MNZE	modern New Zealand English (i.e. NZE in the 21 st century)
NZE	New Zealand English
ONZE	Origins of New Zealand English
OE	Old English
SAfE	South African English
ScotE	Scottish English / Scots
SED	Survey of English Dialects (Orton and Barry 1969-1971)
StBrE	Standard British English

(ii) Transcription

In this thesis I make frequent use of lexical sets established by Wells (1982). I also adopt the phonemic transcription system set out in a. The transcription system is a means of referencing abstract sound units without the implication of any specific pronunciation. These reference transcriptions appear in the slash brackets: /. Where specific phonetic realisations of phonemes are intended I place these in square brackets: [].

a. Phonemic transcription system

Vowels

KIT	ɪ	NEAR	ɪə
DRESS	e	SQUARE	eə
TRAP	æ	FACE	eɪ
STRUT	ʌ	PRICE	aɪ
LOT/CLOTH	ɒ	MOUTH	aʊ
FOOT	ʊ	CHOICE	ɔɪ
FLEECE	iː	CURE	ʊə
START/BATH/PALM	aː	GOAT	əʊ
NORTH/THOUGHT/FORCE	ɔː	letter/comma	ə
GOOSE	uː	happy	ɪ
NURSE	ɜː		

Consonants

Voiceless plosives

p	as in	<i>pin</i>
t	as in	<i>tin</i>
k	as in	<i>kin</i>

Voiceless fricatives

f	as in	<i>fin</i>
s	as in	<i>sin</i>
θ	as in	<i>thin</i>
ʃ	as in	<i>shin</i>
h	as in	<i>hip</i>

Voiceless affricates

tʃ	as in	<i>church</i>
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Voiced plosives

b	as in	<i>bin</i>
d	as in	<i>din</i>
g	as in	<i>gig</i>

Voiced fricatives

v	as in	<i>van</i>
z	as in	<i>zip</i>
ð	as in	<i>this</i>
ʒ	as in	<i>measure</i>

Voiced affricates

dʒ	as in	<i>judge</i>
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Nasals

m	as in	<i>map</i>
n	as in	<i>nap</i>
ŋ	as in	<i>thing</i>

Approximants

w	as in	<i>win</i>
l	as in	<i>lip</i>
j	as in	<i>yet</i>

Rhotics

r ¹	as in	<i>rip</i>
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¹The sound segment /r/ has many possible places and manners of articulation (see Ladefoged & Maddieson 1996: 215). In this thesis I follow the IPA convention (cf. IPA 1949: 11) of using ‘/r/’ as an inclusive label for any sound treated as /r/ in this thesis, e.g. [ʋ], [ɹ], [ɻ] and [ɹ̥] are /r/. Sounds considered to be rhotacised phonemes are transcribed according to the phonemic system above with the addition of the right hook, e.g. /ɹ̥̰/.

Chapter 1: Introduction

1.1 Motivation

My motivations for carrying out this thesis stem from my profound interest in the way language is utilised in the construction of social meaning. New Zealand English (NZE) is an ideal variety for exploring such issues. It is one of many varieties of English which have been transported from the British Isles to different locations worldwide (Schneider 2007).

Literature in the field of *World Englishes*, established as a subdiscipline of Linguistics in the 1980s, covers a range of theoretical issues in relation to the terminology, codification, standardisation, proficiency, prestige and domains of use of different Englishes (e.g. Melchers & Shaw 2003, Bruthiaux 2003; Schneider 2007: 2-3; Pennycook 2007: 21-22). I do not address these theoretical issues in this thesis. I refer to NZE and other “postcolonial” Englishes (cf. Schneider 2007) as *varieties* or *Englishes*. I adopt an innovative holistic approach to investigating the ongoing development of NZE.

NZE is identified as a *Southern Hemisphere* variety (Wells 1982; Trudgill 2004). It contrasts, primarily on a geographical basis, with *Northern Hemisphere* varieties. As Lass (2004: 369) points out, this distinction reflects two main waves of British colonisation; firstly in the Northern hemisphere, from approximately the 17th to the 18th century, and from the 18th century, in the Southern hemisphere. NZE was established relatively recently during the 2nd wave and is now the dominant language across all domains for indigenous and immigrant populations in New Zealand.

From a chronological perspective, NZE is closely related to Australian English (AusE) and South African English (SAfE), which also developed between the late 18th and mid-19th centuries. The common derivation of these varieties from (primarily) British English (BrE) dialects spoken in the British Isles during the 18th and 19th centuries has led Trudgill (2004) to assert that the phonological similarities in such varieties are to be expected. However, there is also considerable diversity between NZE and other postcolonial Englishes established during the same chronological period.

There is an established body of published work on NZE. This includes general descriptive works such as Turner (1966), Bauer (1994a), Gordon & Deverson (1998), Bell & Kuiper (2000), Hay et al. (2008) and Warren 2012, as well as detailed treatments of syntax and morphology (e.g. Hundt 1998; Hundt et al. 2004; Bauer 2007), the lexicon (e.g. Orsman 1999; Bardsley 2003, 2009) and phonetics and phonology (e.g. Bauer 1986, 1994a; Easton &

Bauer 2000; Bauer & Warren 2004; Warren & Daly 2005; Bauer et al. 2007; Nokes & Hay 2012; Warren 2012).

Corpora of spoken and written NZE have been established (Bauer 1994b; Holmes et al. 1998; Maclagan & Gordon 1999; Warren 2002), and various examples of variation and change in the variety have been addressed (e.g. Holmes et al. 1991; Britain 1992, 1999; Holmes 1995a,b, 1997; Maclagan 2000; Quinn 2000; Gordon & Maclagan 2004; Warren 2005). For an extensive bibliography of NZE works see Hay et al. (2008).

The topic of the origins and development of NZE has received a significant degree of attention. I address this research in chapter 2. NZE is the only variety of English for which recorded speech data is available from the relatively early stages of its development. Scholars involved with the Origins of New Zealand English (ONZE) project (see Gordon et al. 2004) obtained data recorded between 1946 and 1948 by the National Broadcasting Corporation of New Zealand's Mobile Disc Recording Unit. The data is described in Gordon et al. (2004: 3-4). It consists of recorded interviews and oral histories from (usually elderly) first or second-generation born New Zealanders. 19 interviews were recorded in Wanganui, New Plymouth and rural Taranaki on the west coast of the North Island in late 1946, 55 interviews were recorded in the Waikato and Thames valley area of the North Island in 1947, and 127 interviews were recorded in the Otago region of the South Island in 1948.

Although the data has some limitations in relation to the ages of speakers and the selective geographical locations, the recordings provide examples of the speech of some of the first New Zealand born Europeans (Maclagan & Gordon 2004: 42). Their parents were among the first British settlers to the country following the onset of organised settlement in the mid-1800s. The ONZE project combines this Mobile Unit data with data from speakers born in New Zealand since the 1890s. It provides a diachronic perspective on spoken NZE starting in the mid-1800s and is a precious linguistic resource. I refer to this data throughout the thesis as the *ONZE data*.

Considering the youth of NZE relative to other Englishes, as well as the data available, there is no question that the variety provides important opportunities for theories of new-dialect formation. My own interest in NZE was stimulated by references in descriptions of the variety to its *regional homogeneity*, such as the following:

The blending of the original British dialects (the so-called “melting pot” effect) has left behind remarkable regional homogeneity” (Burridge & Kortmann 2004: 568).

The view of linguists is that regional phonological variation in New Zealand (apart from Southland) has so far not been demonstrated” (Gordon & MacLagan 2004: 605).

While classifiable regional dialects might not yet be apparent in NZE, it seemed surprising that four million individuals residing in distinct geographical locations across two separate islands could have such uniform local cultures. It seemed more reasonable to assume that geographically separate communities of speakers in New Zealand, as in the world over, would construct local cultural identities based on locally distinct sociohistorical factors, and that this would be reflected in local varieties of speech.

Reasons offered in the literature for the apparent regional uniformity of NZE include:

1. the founder effect (Mufwene 1991, 1996) – the development of a language introduced to a new place for the first time is heavily influenced by the first group of settlers. Their linguistic variety is treated as a canonical form, which is accommodated to by those who follow;
2. the determinism of new-dialect formation (Trudgill 2004) – new-dialect formation leads primarily to the levelling of dialect distinctiveness and these homogenising effects are predictably similar in similar, yet geographically separate, locations;
3. the insufficient time-depth (Burridge & Kortmann 2004: 568) – the development of regional variation takes an amount of time that has not yet elapsed (NZE is approximately 200 years old);
4. the dynamics of identity construction (Schneider 2007) – the development of regional dialects in postcolonial Englishes is dependent on the development of regional identities and that until now, the identity constructions of NZE speakers have focused on building a national collective identity.

My research is motivated particularly by Schneider’s (2007) theory of the development of postcolonial Englishes. Schneider argues that 5 main phases of linguistic development are each inextricably tied to the evolving dynamics of identity constructions of indigenous and settler populations as they negotiate a newly shared environment. Schneider also asserts that the eventual (regional) linguistic diversification of such Englishes is inevitable, but this diversification is contingent upon the reconstruction of sociocultural identities. Importantly,

Schneider hypothesises that NZE has reached a point in its evolution when the sociocultural conditions are favourable for such regional diversification to occur.

I was keen to investigate Schneider's hypothesis of imminent regional diversification in modern NZE (MNZE). From a theoretical viewpoint, sociolinguistic research (Labov 1963; Llamas 2000; Dyer 2002) suggests that sociolinguistic variables interact with social factors (e.g. gender, ethnicity), in locally specific ways. Community specific sociolinguistic variation is only beginning to be addressed in the New Zealand context (e.g. Holmes et al. 1991; Ainsworth 2004). The majority of dialectological research in NZE has focused primarily on the transformation of the variety from dialect mixture to relative homogeneity (e.g. Gordon et al. 2004). Bauer & Bauer (2002: 171-172) draw attention to the danger of failing to capture the onset of regional diversification in NZE due to a preoccupation with the emergence of homogeneity.

Recent research provides tentative support for Schneider's hypothesis of imminent regional divergence. Bauer & Bauer (2002) identified differences in the vocabulary of New Zealand school children according to the location of schools across the country. Ainsworth (2004) found differences in the intonational contours of speakers in Wellington versus Taranaki. Kennedy (2006) found support for Bauer & Bauer's (2002) geographical vocabulary differences in the geographical distributions of some phonological features. In addition, AusE, which was born some 50 years earlier than NZE, is showing increasing evidence of regional divergence in lexis and phonology (Bradley 1989, 2004; Bryant 1989).

When combined, these issues provide motivations for a more detailed investigation of phonological variation in MNZE, with particular attention dedicated to the social identity constructions which underpin patterns of variation in specific speech communities.

1.2 Aims

My primary aim in this thesis is to investigate the links between the construction of local / regional identities and the development of regional dialects. In particular I explore the interplay between linguistic variation, sociocultural factors and speaker attitudes. This aim addresses Schneider's (2003, 2007) hypothesis of imminent regional variation by seeking evidence that variation in the phonological system of MNZE is connected to the expression of local or regional identities.

The thesis contributes to theoretical knowledge in the area of dialect convergence and divergence, and especially to theories of new-dialect formation. There are already several comprehensive theoretical accounts of new-dialect development in the literature (for example

Trudgill 1986, 2004; Kerswill 1996a, Kerswill & Williams 2000; Schneider 2007), including specific treatments of NZE (Trudgill 2004; Gordon et al. 2004). However, the issue of the ongoing development of new Englishes subsequent to their recognition as autonomous varieties has only been considered in Schneider's theoretical treatment. It has not yet been explored in any detail within a specific variety. This research may provide insights into the sociocultural processes involved in the emergence of new dialects within recently emerged Englishes.

1.3 Structure

The thesis describes my investigation of phonological variation and the question of emerging local / regional identities in two distinct New Zealand communities. An attempt is made to provide a holistic view of dialect development which combines different perspectives on linguistic variation and change. I employ historical, synchronic and social constructionist approaches to the examination of NZE phonology.

In chapter 2 I provide a review of the field of dialectology and describe recent advances which address the connections between linguistic variation and social identities, styles and meanings. I outline sociocultural processes involved in new-dialect formation and draw from contemporary dialectological research to suggest factors which are of importance for the formation of new regional dialects. I describe recent developments in the MNZE phonological system and identify several variables which could potentially contribute to regional diversification.

In chapter 3 I describe my approach to investigating phonological variation and regional identity construction in MNZE. I explain my choice of locations for fieldwork and describe in detail my data collection procedures. My data consists of interviews with teenagers in two geographically distinct communities as well as adults in one of the communities.

Based on the *Uniformitarian Principle*, Labov (1994: 21-25) advocates the use of synchronic linguistic analyses to explain past processes and principles of linguistic variation and change. Recently Beal (2007) has also emphasised the benefits of using historical evidence to illuminate present linguistic data. Aiming to consolidate a historical linguistic perspective with an analysis of 21st century phonological variation and change, I outline a proposal to track the dynamics of a sound change as it evolves through time.

In chapter 4 I commence an investigation of the social life of a particular linguistic variable, /r/. I show that rhoticity has always played a key role in English dialect distinctiveness and in the manifestation of regional identities. The sociohistorical

investigation of rhoticity in chapter 5 demonstrates that variability in /r/ holds significance for the ongoing convergence and divergence of dialects.

Saville-Troike (1982: 10) asserts that “qualitative and quantitative approaches to the study of culturally situated communication are not mutually exclusive and ... each can inform the other.” In chapter 5 I utilise modern statistical techniques of quantitative analysis. Mixed effects regression models reveal age, gender, and regional differences in patterns of rhoticity in the MNZE data. In addition to indicating apparent time variation and change in MNZE rhoticity, the statistical models also identify differences in individual speakers’ linguistic behaviour.

Llamas (2000: 142) emphasises that “by gaining access to speakers’ opinions and overt discussion and awareness of what their language and area mean to them, we gain insight into the symbolic function of the dialect.” In chapter 6 I seek insights into the social meanings underlying individual speaker differences in relation to the current trends in rhoticity. I examine the nature of speakers’ local identities evidenced in their talk about their towns, their social lives, their experiences and their aspirations. The discourse provides insights into the sociocultural contexts of linguistic variation and identifies factors relevant to the ongoing evolution of the variety.

In the discussion of the findings in chapter 7 I evaluate the evidence for regional diversification in MNZE. I also consider key factors highlighted in the research, such as geographical mobility, transience, ethnolinguistic mixing and the social evaluation of linguistic features, which are likely to play an important role in the future evolution of NZE and other new Englishes. MNZE rhoticity is currently a source of instability in the NZE phonological system which appears to be contributing to interesting diversification in speakers’ linguistic behaviour and their evolving social identities. The thesis demonstrates that a full consideration of changing sociocultural identities is paramount in determining whether patterns of linguistic variation are representative of regional dialects.

In exploring the processes underlying the formation of new regional dialects I do not aim to predict the future course of development of NZE or any other variety. An element of unpredictability is a fundamental characteristic of living languages since human evolution is also unpredictable. However, it is possible to attempt to identify and describe some general principles and patterns of language evolution and that is what this thesis aims to achieve.

Chapter 2: Dialect development – convergence and divergence

In this chapter I take a close look at the field of dialectology. Traditional dialectology played a significant role in identifying the inherent variability of linguistic systems. Research on new-dialect formation has provided theoretical insights into processes which have impacted on the evolution of new varieties such as NZE. The variationist literature is also informative in relation to factors contributing to dialect development. Contemporary dialectological research is providing insights into the social meanings underlying individual speaker linguistic variation. There is considerable research to be considered and my purpose is to draw from the literature in order to identify components that are relevant to linguistic convergence and divergence and especially, the birth of new regional dialects.

2.1 Dialectology: background

Awareness of dialect variation is evident from at least as far back as the ancient Greeks (Robins 1967: 11; Allen & Linn 1986: 3). The word *dialect* originates in the Greek word *διάλεκτος* (Robins 1967: 15) in reference to the Attic dialect which functioned as a lingua franca. In 1284 the terms *langue d'oïl* and *langue d'oc* were coined by Bernart d'Auriac, (Chambers & Trudgill 1998) based on his observation of the French geographical dialect split between the north, where the word *yes* was *oïl*, and the south, where the word was *oc*. Trevisa described a dialect continuum in England as early as 1387. Yet dialect variation itself was not studied formerly until the late 19th century.

In relation to English varieties specifically, while there was clearly awareness of linguistic diversity in the late 18th and throughout the 19th century (see Bailey 1996: 71ff; Beal 1999), language scholars tended to be influenced by an emerging standard variety which was associated with increasing literacy and spelling reforms. Commentary on linguistic differences was typically prescriptive and corrective (e.g. Walker 1794). Bailey (1996: 82) describes the 19th century as one of “steadily increasing linguistic intolerance.” A romanticised view of “folk speech” evident in “vernacular literature” (Bailey 1996: 263ff) has been interpreted as a reaction to a developing prestige variety. This romanticised view of folk speech was influential on the way in which theories and methods of dialectology evolved.

In terms of general linguistic theory, Neogrammarian attempts to explain correspondences between Proto-Indo-European and Germanic phonological features in the 19th century had

established the importance of studying historical sound changes in language evolution. However, the belief was that sound changes apply across linguistic systems without exception (Osthoff & Brugmann 1878, cited in Labov 1981: 268). Under this hypothesis, the comparison and description of the linguistic units (phrases, words, sounds), that comprised different linguistic varieties was relevant to demonstrating uniformity, for establishing cognate forms and for specifying sound laws.

The realisation that there were regional differences in the manifestation of sound changes both within and across linguistic systems presented a considerable challenge to the Neogrammarian view. This unexpected absence of uniformity stimulated descriptions of the differential use of features of geographically distinct varieties (Carver 1998: 5-6).

The discipline of *Dialectology* (or *Dialect Geography* / *Linguistic Geography*) thus evolved out of historical linguistics (McDavid et al. 1998: 88). The practice of collecting, describing and comparing the features of different regional dialects has continued to be its main endeavour (Kurath 1972; Carver 1998: 5). In the United States the tradition was especially motivated by anxieties that dialects associated with original European settlement might be lost due to ongoing resettlements (Bailey 1996: 71; Wolfram & Schilling-Estes 2006: 23-24). English dialectology was also concerned with recording the ‘authentic’ and ‘original’ dialects.

As the discipline of dialectology developed, the complexities of the social, cultural and linguistic phenomena involved in dialect variation were illuminated, but theoretical explanations for such linguistic complexity and diversity were beyond the scope of traditional dialectology due to the focus on isolated words and phonetic features. The structural relations between them were not addressed (Milroy & Gordon 2003, Labov et al. 2006). Contemporary dialectology has adapted to address fine-grained aspects of dialect variation and tends to incorporate findings from the related field of sociolinguistics.

2.2 Dialectology: methods

The first systematic dialect survey appears to have been Georg Wenker’s (1876) study of lexical differences in northern Germany (Allen & Linn 1986: 3; McDavid et al. 1998). The survey invited schoolmasters, by means of a postal questionnaire, to transcribe a list of sentences. Wenker’s research resulted in the first Linguistic Atlases (*Sprachatlas des Deutschen Reichs*) and his use of a postal questionnaire to collect dialect data has been repeated (with modifications) in many subsequent dialectological projects (see examples in Milroy & Gordon 2003). Wenker obtained transcriptions of forty sentences of High German

from 44,000 schoolmasters, demonstrating the breadth of data achievable with his method. The obvious drawback was Wenker's reliance on schoolmasters' interpretations of local speech. Attempting to replicate Wenker's example in France, and addressing this drawback, Jules Gilliéron (1896) employed the fieldworker Edmond Edmont who collected data first-hand from informants in six hundred localities in France (Kurath 1972: 1). Gilliéron's methods have since been described as "the basis of modern fieldwork" (Carver: 1998: 6). Gilliéron's work led to the *Atlas Linguistique de la France*. Students and associates of Gilliéron, especially Jaberg and Jud (Jaberg & Jud 1928a, b, cited in Kurath 1972), contributed to the design of subsequent surveys in Italy and other parts of Europe.

In Britain, the *English Dialect Society* was established in 1873 to address anxieties concerning the loss of local regional dialects (Bailey 1996: 71). Similarly, an *American Dialect Society* was founded in the United States in 1889 (Grandgent 1889). In England Joseph Wright commenced work on the *English Dialect Dictionary* (Wright 1889, 1905). Later work in the British tradition led to *The Survey of English Dialects* (SED) (Orton & Dieth 1962-1971). In the United States, after initially working towards the goal of an American dialect dictionary, work on the *Linguistic Atlas of the United States and Canada* (LAUSC) was launched in 1928 (Cassidy 1985: xi). This project has produced atlases for geographical areas across the United States and continues today (e.g. Kurath 1949, 1972; Pederson 1965; Cassidy 1985; Labov et al 2006, see McDavid et al. 1998 for details of linguistic atlases and surveys).

The various dialectological surveys since Wenker's and Gilliéron's early achievements span a century of fieldwork. The tradition of using questionnaires for data gathering has remained constant. While it is still undoubtedly the favoured tool for dialectological fieldwork, the questionnaire method has evolved over time to incorporate new technologies (see Kretzschmar & Schneider 1996). Although postal questionnaires are still useful in contemporary dialectological research (e.g. Bauer & Bauer 2002), having the fieldworker administer questions personally is arguably the most common method of data collection employed in contemporary dialectological research, as well as in sociolinguistic fieldwork.

There are obvious advantages associated with the fieldworker's presence during data collection. Responses can be recorded directly and the fieldworker can obtain important additional information. Self-reporting of language behaviour is often unreliable due to speakers' misrepresentations of their own language behaviour. In addition, administering questionnaires face to face promotes comparability of results across lengthy time spans and locations and is useful for historical purposes (Cassidy 1985: xii). More recent technological

advances have increased the systematicity and consistency achievable during data collection (Labov 1994: 25). Larger amounts of spoken language data can now be collected and stored more efficiently. Computer technologies have significantly improved the systematic identification and analysis of chosen linguistic features (see Kretzschmar & Schneider 1996).

The questions utilised in interviews and questionnaires are of course directly influential on the types of responses that are obtained. The questions asked of informants were initially unspecified in traditional dialectology. However a need to obtain data for specific items and to achieve consistency led to the evolution of more fixed questionnaire frameworks. Kurath (1972: 3ff) describes the complex procedures involved in designing an appropriate questionnaire. The construction of Orton and Dieth's SED questionnaire took five years to complete (Orton 1962: 44).

Recognition of the advantages of posing indirect questions rather than direct questions is attributed to Jud and Jaberg (1928a, b) who, for example, asked their informants to count rather than asking them explicitly "How do you say *ten*?" By eliciting items from informants rather than modelling them, Jud and Jaberg removed another source of potential bias from data collection methods. Informants might be asked to complete a gap-fill exercise, or provide a definition, such as "*What nicknames do people have around here for a 'policeman'?*" (Carver 1998: 9).

In terms of a continuum of *breadth* and *depth*, questionnaire methods tend towards satisfying *breadth* (since the aim may be to cover extensive geographical areas) at the expense of *depth* (e.g. to explore one speech community in detail). Questionnaires do not necessarily lack depth however. Fieldworkers often write extensive field notes (see Kurath 1972) and obtain detailed biographical information (Kretzschmar et al. 1993). Kurath (1972: 6) emphasises the need for:

a knack of dealing with personalities of all kinds so as to gain their confidence, of guiding them gently through the inevitable "dry" stretches [...] of humouring them when their interest lags ...

Traditional dialectological methods laid the foundations for more modern sociolinguistic interview techniques. However, despite the often detailed information collated during traditional dialectological surveys, the absence of comprehensive descriptions of intradialect variation associated with given regional areas remained an unavoidable consequence of the theoretical aims that underpinned traditional dialectology.

2.3 Dialectology: aims

Traditional dialectological research tended to focus on isolated rural areas in order to identify historically older dialect forms. Informant questioning was oriented towards rural vocabulary and only later began to address urban lifestyles. For example, Orton (1962: 44) suggested that “[d]ialect to-day is best preserved by the farming community.”

The output was therefore descriptions of speech forms associated with specific geographical locations. Many maps and linguistic atlases have been produced to illustrate the geographical limits or boundaries of individual phonological features or lexical items. The respective distributions of particular linguistic features are categorised as used or not, as used in varying degrees of frequency (e.g. regularly, rarely), or as representative of a *transition zone*, where a bundle of features show complex distributions of greater or lesser use.

These research goals directly influenced the choice of informants for the provision of data. In turn the choice of informants directly influenced the data treated as a representative sample of the speech characteristics associated with a given location. A notion of ‘pure’ (i.e. genuine, original, authentic) dialects which represented earlier stages of the language was upheld (Kurath 1972: 13; Bailey 1996). This viewpoint reflected the historical linguistic foundations of the field as well as societal attitudes towards language at the time.

The ideal informant was the oldest, most remote, rural and typically male speaker to whom the acronym NORMs: *non-mobile, older, rural males*, has since been applied (Chambers & Trudgill 1998: 29). For example, the SED data was collected between 1950 and 1961 and focused exclusively on male speakers owing to the perception that (Orton 1962: 15):

in this country men speak vernacular more frequently, more consistently, and more genuinely than women

Orton’s comment shows an early recognition of a link between women and innovative speech forms. Despite their bias towards rural *folk speech* dialectologists could not avoid noticing the social dimension of dialectology (see especially Kurath 1972: 164-184 and Kretzschmar & Schneider 1996).

From the 1960s there was a gradual move towards addressing social and ethnic linguistic variation in dialectological surveys (McDavid 1946; McDavid & McDavid 1951; Kurath 1972: chapter 11). For example, DARE (Cassidy 1985) exemplifies the gradual incorporation of urban speech styles. The data for DARE was collected from 1965 to 1970 and charted the

distribution of vocabulary items across 1000 communities. The aim was to achieve a representative description of regional dialects across the United States but the project also surveyed urban areas and respondents of different ages, sexes, educational levels and ethnicities. Since urban areas were included, questions were not exclusively orientated towards rural topics (Carver 1998; Wolfram & Schilling-Estes 2003: 135). However, the preference for older informants was retained; 66% of informants were over sixty (Cassidy 1985: xiv, 9).

Milroy and Gordon (2003: 16-17) provide examples of early studies which attempted to address social as well as rural dialects but nevertheless perpetuated the traditional preoccupation with the ‘genuine dialect’ speaker. However, from the 1960s onwards studies demonstrate a gradual transition away from the original preoccupation with rural speech and an increase in attempts to describe dialect features at different societal layers (cf. Sivertsen’s 1960 description of Cockney phonology; Houck’s 1968 study of speech in Leeds). These studies increasingly drew attention to the complex linguistic diversity evident within linguistic systems even within a single geographical location.

2.4 Dialectology: findings

Due to its geographical and cartographic focus, dialectology is also referred to as *Linguistic Geography* or *Dialect Geography*. The field has been criticised for its lack of attention to the *patterns* of distribution of linguistic features (e.g. Weinreich 1954; Labov 1998; Chambers & Trudgill 1998), i.e. linguistic heterogeneity. After all, the aim was to obtain examples of homogeneous spoken varieties. Yet traditional dialectological surveys provided precisely the important observations and data that brought linguistic heterogeneity into focus, as well as highlighting a range of factors associated with such diversity.

The sociocultural histories of dialect areas were not overlooked in traditional dialectology. The significance of contact and settlement histories was acknowledged. Carver (1998: 11) refers to dialectology as a form of *cultural geography* and McDavid (1946: 169) describes language as “a mirror of culture.” A range of social factors were identified as influential on the use of linguistic forms. Discussing the “social forces” influencing dialect variation, McDavid (1946: 169-171) makes reference to transportation, popular media, education, attitudes, social prestige, style-shifting, language contact and the distinction between urban and rural lifestyles.

The importance of ethnicity and intercultural transmission for linguistic variation was also noted. McDavid & McDavid (1951) discussed structural linguistic tendencies common to

AmE speakers of African American descent across different geographical locations. They drew attention to “social contacts and economic opportunities” (1951: 11) when discussing differences in the English used by African Americans within the same dialect area.

Throughout the 20th century there was increasing reference to the standardising influence of social and geographical mobility in relation to individual informants’ use of speech forms which diverged from traditional features of a dialect area (e.g. McDavid 1946; Pederson 1965; Kurath 1972).

Linguistic diffusion also began to be apprehended in later traditional dialectology surveys. Kurath observed (1972: 122-125) that the social and geographical diffusion of linguistic features is influenced by contact and by attitudes and he highlighted the relevance of intercommunication and sociocultural boundaries (i.e. social networks). Kurath (1972: 125) also recognised the role that major urban centres play in the diffusion of features into less dominant urban areas and also between speakers of higher versus lower socioeconomic status.

Although such issues were not always conceptualised in ways that were compatible with later theoretical developments in the field of sociolinguistics, sociocultural influences (e.g. social networks, social mobility, communities of practice) which form the basis of current models of language variation were identified as important for distributions of dialect features.

Explicit acknowledgements of intradialect variation were a natural consequence of the accumulation of dialect descriptions. However, Kurath (1972: 166) emphasises the lack of techniques available for addressing “the bewildering complexity of the linguistic situation in the major cities...” Indeed, the rapid and significant urbanisation of populations in the 20th century was a phenomenon that dialectologists did not have to address within their 19th century framework.

It is important to recognise that the fieldwork methods developed in traditional dialectology, especially with regard to data collection, laid the foundations for later approaches to dialect variation. The findings of dialectological surveys made a significant contribution to theoretical advances in descriptive and explanatory accounts of language variation and change. The complexities which were brought to the fore in dialectologists’ endeavours to establish dialect boundaries are often the very issues that contemporary variationist researchers continue to focus on.

From the late 1960s, the field of sociolinguistics began to emerge out of structural linguistic scholarship. *Sociolinguistic* studies provided an alternative and enhanced approach to dialectological inquiry. The traditional approach to dialectology was transformed by the

quantitative approach to linguistic variation initiated by scholars such as Labov (1966) and Wolfram 1969). Developments in the field of sociolinguistics have revolutionised the field of dialectology. In the next section I consider these important advances.

2.5 Dialectology and sociolinguistics

Dialectology and structural linguistics remained quite separate pursuits until the latter half of the 20th century (Kretzschmar & Schneider 1996; Chambers & Trudgill 1998). Structural linguistics developed in Europe and America in the early 20th century and was concerned with establishing rules affecting linguistic features within systems. The relationships between linguistic units within a system were not addressed within traditional dialectology as linguistic units were treated as isolatable (see Labov 1998; Chambers & Trudgill 1998: 15).

Dialectology provided a diachronic perspective on historical and sociocultural (i.e. extralinguistic) sources of non-structured differences *between* systems. Structural linguistics provided synchronic accounts of structured variation *within* systems (i.e. intralinguistic differences). The two discrete disciplines had continued in parallel throughout the first half of the 20th century. Weinreich (1954) described the relationship between the two disciplines as an “abyss.”

The two areas of scholarship could not be reconciled. On the one hand structural linguists worked with ideologised homogeneous linguistic systems in which the interaction between units was organised and governed by *laws* which applied categorically. On the other, dialectologists worked with ideologised bundles of features in which the functional and structural nature of systems was overlooked. In the mid 20th century neither the dialectological nor the structural linguistic approach to language description had begun to account for the idiolectal and stylistic variation within linguistic systems. However, Weinreich’s studies of language contact scenarios (e.g. Weinreich 1953) drew his attention to sub-systems within linguistic systems (i.e. “diasystems” Weinreich 1954: 390). Weinreich (1954) observed bilingual speakers’ use of (functionally) separate but interrelated linguistic systems and argued that structural linguistics needed to begin to account not only for differences between systems in the linguistic features used (i.e. phonemic inventories), but also for differences in the functions of respective variants of phonemes, i.e. differences between systems in the associations and oppositions existing between allophones of phonemes.

Weinreich called for a *structural dialectology* in which the study of functional distinctions between and within varieties would reap the benefits of an *external dialectology*, which

attended to the sociocultural contexts of linguistic systems. The sociocultural considerations could shed light on the historical and cultural sources of the lack of clinical orderliness observed in the distribution of structural and functional differences and similarities. The speech communities and their cultural histories as described by dialectologists were relevant to the absence of absolute structure. It was Weinreich's call for a unification of the structural and external dimensions of dialectological inquiry that Labov responded to when he initiated novel *sociolinguistic* approaches to exploring structured linguistic variation.

Weinreich (1954: 395) explicitly identified an important focus for the study of "diachronic dialectology," which is of particular significance for this thesis. He refers (his capitalisation) to:

DIVERGENCE, the study of "increasing partial differences at the expense of similarities," and

CONVERGENCE, the study of "partial similarities increasing at the expense of differences."

Understanding the social and linguistic pressures and processes which drive linguistic change in either of these two directions, linguistic divergence versus linguistic convergence, holds great significance for addressing how new dialects might form. The question of how degrees of convergence and divergence in linguistic systems impact on the formation and recognition of distinct dialects is an important one.

A short time before his death Weinreich and his colleagues (see Labov 1966, Weinreich, et al. 1968) identified an important theoretical disjunction between the uniformity of linguistic systems, which permits mutual comprehensibility and functionality on the one hand, and on the other hand, the inherently unstable, heterogeneous and constantly changing nature of linguistic systems. With particular reference to the theories of Hermann Paul (1880), and based on their own observations of linguistic variation and change (e.g. Labov 1963, 1965, 1966), Weinreich et al. (1968: 100) suggested that linguistic heterogeneity is the normal condition of any given linguistic system and that "orderly heterogeneity" must be part of the linguistic competence that native speakers acquire. Weinreich et al. (1968: 100) asked:

if a language has to be structured in order to function efficiently, how do people continue to talk while the language changes, that is, while it passes through periods of lessened systematicity?

Such questions are particularly relevant for this thesis, for example:

1. How do people construct homogeneous varieties of speech while maintaining heterogeneity within their linguistic systems?
2. How do heterogeneous linguistic systems become recognised as homogeneous in relation to specific groups of speakers?

Clearly, heterogeneity and homogeneity are relative to each other. It is not clear to what extent a group of speakers must (collectively) converge towards particular linguistic choices in order to be recognised as using a distinctive and homogeneous variety. It seems likely that a certain degree of heterogeneity is needed in order for a linguistic system to be functional. The interplay between linguistic homogeneity and heterogeneity, convergence and divergence, is an interesting, but difficult question in relation to the development of identifiable linguistic varieties. According to Weinreich et al. (1968: 130) any theory of language evolution must aim to account for the manner in which a community undergoes change without losing the functionality of its linguistic system.

Weinreich et al.'s (1968) "empirical foundations for a theory of language change" raised a number of important theoretical questions related to dialect development, such as the "actuation" of sound changes, the "embeddedness" of changes within the system and the "evaluation" of linguistic variation by speakers.

These complex issues of linguistic divergence and convergence (leading to heterogeneity versus homogeneity) and speakers' evaluations of linguistic variation are of fundamental concern for theories of how new dialects emerge. Understanding such processes is likely to provide insights into how the evolution of a linguistic system manifests in newly distinctive varieties of speech.

By drawing attention to the challenges of orderly heterogeneity, Weinreich et al. (1968) provided the springboard for a new era of dialectological scholarship. The search for pure dialects was replaced by a focus on the relationship between transitional dialect areas and language variation and change. A new Labovian sociolinguistics emerged to provide a framework for studies of patterns of variation along a continuum from the broadest (i.e. macro) to the most fine-grained (i.e. micro) linguistic differences. The field of sociolinguistics today incorporates this whole continuum (see Mesthrie 2011; Holmes 2013). Within the variationist paradigm specifically, fundamental advances have been made in

understanding the nature of dialect development. In the next section I outline factors which have been found to be significant in dialect convergence and divergence.

2.6 Sociolinguistic sources of dialect development

The linguistic system is a source of flexibility and redundancy. In relation to phonological systems specifically, phonological variation may be influenced by a variety of internal (i.e. linguistic) and external (i.e. social) factors. In this section I consider a variety of important influences on the direction and consequences of variation. Though I am dealing with phonology specifically in this thesis, these influences apply to the linguistic system more generally.

2.6.1 Language acquisition

Processes of language (and dialect) acquisition are an important carrier of phonological changes across successive generations of speakers (Kerswill 1996b; Labov 2001: 422-436). The identification of systematic linguistic differences in the distribution of features between successive generations of speakers has come to be accepted in variationist research as a reliable indication of language change (cf. Weinreich et al. 1968: 150; Labov 1972a, 2001). Intergenerational change is recognised as a significant factor in the development of new dialects (see 2.7.9). Research suggests that from a young age, children are developing sociolinguistic competence. Adolescents have become an important focus for research on intergenerational language change (cf. Eckert 1988, 2000; Kerswill 1996b) as well as in studies of the linguistic manifestation of identity construction (Eckert 1996; Mendoza-Denton 2008; Drager 2009; Lawson 2011).

2.6.2 Contact, accommodation and diffusion

Language change follows the trajectory of an S-shaped curve (cf. Weinreich et al. 1968: 113; Bailey 1973; Labov 1994). Innovations appear to diffuse slowly at first and have minority status, but then exhibit a stage of rapid increase in frequency. As the innovative feature reaches majority status the change appears to slow. The relative frequencies and patterns of distribution of linguistic features are therefore an integral component of processes of linguistic change. Changes do not progress to completeness. Rather, changes replace one heterogeneous distribution of linguistic features with an altered, yet still heterogeneous new set of distributions.

Contact between speakers is a prerequisite for language change, since linguistic features diffuse via contact (Weinreich et al. 1968: 155; Kerswill & Williams 2002a: 82). Therefore, changes in the dynamics of the sociocultural networks that bring people into contact have a profound impact on the distribution and frequency of linguistic features. Significantly reduced contact between certain speaker groups is a condition favourable for linguistic divergence between the separated groups. This is not a simple matter however, since distinct (and geographically distant) dialects may also undergo parallel developments (Weinreich et al. 1968; Trudgill 2004).

Alternatively, when speaker groups are brought into contact anew, interaction takes place in conditions relatively more favourable to linguistic convergence. There may be transmission and borrowing of phonological features, reduction of similarities and *focusing* (see 2.7.6). Dramatic cultural changes such as colonisation are not necessary for linguistic convergence and / or divergence to take place and the results of contact in relation to convergence and divergence are influenced by a variety of factors (see Jones and Esch 2002).

Psychological and linguistic accommodation (see 2.7.2) is understood to play an influential role in the degree to which speakers diverge or converge in their use of linguistic features (see Trudgill 1986; Auer & Hinskens 2005) but the relationship between speakers' attitudes and linguistic accommodation is not fully understood (see Hinskens et al. 2005: 7; Drager et al. 2010; Hay et al. 2010). Psychological accommodation does not necessarily result in linguistic accommodation since there is influence from a variety of additional linguistic and social factors.

Contact and accommodation clearly impact upon the degree to which dialect features diffuse socially and geographically and converge versus diverge (Britain 2009). As observed by Kurath (1972) the spread of linguistic features is often particularly vigorous in geographical sites of dense contact, such as urbanised centres (cf. Trudgill's 1983 *gravity* model of geolinguistic diffusion). The socioeconomic hierarchies of speech communities are also relevant to contact and diffusion. Vernacular speech styles among speakers within the lower strata of the socioeconomic hierarchy have been identified as the primary locus of linguistic innovation, change and diffusion (Labov 1972a; Milroy 1987). Eckert (2012: 90) notes that patterns of linguistic variation in relation to gender, ethnicity and other social categories have traditionally been interpreted from the perspective of socioeconomic divisions. The facts now appear to be more complex, as I discuss in 2.6.3.

2.6.3 Evaluation and social meaning

The adoption or acquisition of linguistic features does not involve precise reduplication. Features adopted from one variety into another take on their own localised social significance (see Weinreich et al. 1968: 157; Britain & Trudgill 1999; Meyerhoff & Niedzielski 2003; Pennycook 2007; and see 2.7.5).

Speakers evaluate each others' use of linguistic features. Language is a cultural practice subject to the influences of creativity and identity construction. Just as people evaluate each others' clothes, beliefs and other cultural practices, so too they evaluate each others' linguistic practices. Linguistic variation carries *social meaning*.

Phonological variants which are sufficiently salient (i.e. noticeable, see 2.7.10) may become associated with certain speaker groups. Research using matched guise experiments (e.g. Lambert et al. 1960), in which subjects evaluate different pronunciations produced by the same speaker, and other experimental studies of language perception (e.g. Babel 2010; Hay & Drager 2010; Hay et al. 2009, 2010) demonstrate complex symbolic connections between sociocultural stereotypes and language variation.

Eckert (2012) arranges variationist research into "three waves" with respect to its treatment of social meaning. An early recognition of the importance of the social evaluation of linguistic features in Labov's Martha's Vineyard study (1963) was relegated to a subsidiary role by the "first wave" concern with macrosociological levels of variation such as age, gender, ethnicity, and socioeconomic class in particular. In the "second wave" it became apparent that linguistic features were an integral part of speakers' constructions of styles and identities, rather than simply indicative of category membership. Phonological variation reflects speaker characteristics as well as speaker group membership.

In the current "third wave" of variationist research, the indexical and symbolic nature of the link between language and social meaning is receiving close scrutiny. It now appears that the utilisation of linguistic variation in relation to speaker characteristics involves interconnected and multilayered social meanings (cf. Kiesling 2005; Eckert 2008; Zhang 2008).

Eckert (2008) suggests that linguistic variables symbolise social meanings and personal styles by referencing "indexical fields." Any one of a range of potential meanings associated with a linguistic variable can potentially be activated during a given interaction depending on the particular *stance* (cf. Ochs 1993; Kiesling 2005) that a speaker adopts in the context of the interaction. A *stance* is "a socially recognised point of view or attitude" (Ochs 1993:288).

The concept of linguistic *style* has evolved throughout variationist research (cf. Labov 1966; Coupland 1980; Bell 2001; see Coupland 2007 and Eckert & Rickford 2001 for a comprehensive treatment of style within sociolinguistics). Here I treat a style simply as a particular “way of speaking” (Coupland 2007: 2) within a given context. Styles are context dependent and personal (i.e. individual) but are also associated with particular speaker groups or characteristics. In this thesis I consider the social meanings attached to linguistic variables to be inclusive of stances, styles and speaker identity characteristics. When I refer to *evaluation* I refer to all aspects of social meaning.

Kiesling (2005) describes a particular linguistic style used by Greek migrants in Sydney, Australia. Kiesling found that an open and lengthened pronunciation of word-final <er>, e.g. in *better*, articulated as [a] and with HRT, is indexical of the “Australian Greek migrant experience.” Its use facilitates an “authoritative connection” (Kiesling 2005: 23) which references shared understanding and establishes solidarity between speakers.

Similarly, Zhang (2008) investigated the rhotacisation of syllable rimes in Mandarin Chinese, a stereotypical vernacular feature which is highly salient and used to invoke Beijing culture in literature and in discourse. Zhang (2008) uses metapragmatic discourse data (written and verbal sources of commentary) to explore the social meaning attached to this feature. Rhotacisation receives a variety of descriptions in reference to a distinctive Beijing style. Certain descriptive labels may themselves be rhotacised in order to enhance the indexical effect (Zhang 2008: 208). Beijing speech itself is perceived as “smooth” and this is partly attributed to rhotacisation, which is interpreted as “making the speech sound smooth” (Zhang 2008: 210). This association is also applied to a Beijing character style: the “Beijing Smooth Operator” who is stereotypically an urban male professional. Interestingly it is professional male businessmen who make use of this feature significantly more than professional women (cf. Zhang 2005).

The discursive practices of speakers thus play a role in establishing the social meanings associated with linguistic variation. Johnstone et al. (2006) provide a historical account of the evolution of social meaning for an emerging regional variety: “Pittsburghese.” They trace the metadiscourse associated with this variety as linguistic features shift across three “orders of indexicality” (cf. Labov’s taxonomy of social meanings 1972: 178-180 and Silverstein’s 2003 “orders of indexicality”). In Johnstone et al.’s (2006: 82-83) classification, characteristics of features at each stage / order of indexicality are:

3. First-order indexicality:
 - (i) correspond to Labov's "indicators"
 - (ii) are below the level of speaker awareness
 - (iii) are recognised by linguists as associated with particular sociodemographic groups (age, class, region)
 - (iv) do not display stylistic variation

4. Second-order indexicality:
 - (i) correspond to Labov's "markers"
 - (ii) beginning to enter speaker awareness as associated with a particular style, locality, class, etc.
 - (iii) display stylistic variation

5. Third-order indexicality:
 - (i) correspond to Labov's "stereotypes"
 - (ii) explicitly commented on by speakers
 - (iii) used to perform (local, regional) identity

During first-order indexicality a feature is not noticed or used by speakers consciously for identity purposes since they are not aware of the sociodemographic differentiation of its use, though linguists may draw attention to variation through analysis and overt description. The feature is not yet imbued with social meaning.

As the feature passes into second-order indexicality, speakers become aware of its socially differentiated use and begin to use it stylistically themselves. At this point features have become ideologically significant although speakers may not have sufficient awareness to be able to refer to the features in question.

In third-order indexicality features become explicitly identified as characteristic of local speech. Speakers refer to them explicitly in performing local identities or identities associated with other speaker groups and characteristics.

Johnstone et al. (2006: 80) describe this as a process of "standardization of a "non-standard" regional variety." The sociocultural conditions which surround the linguistic variation influence this process. The shifting evaluations of linguistic features are connected to sociocultural contexts and histories. This recent literature suggests that in order to understand how new regional dialects develop out of a relatively new variety such as NZE,

attention must be paid not only to linguistic variation, but also to the sociocultural conditions and to speakers' awareness of and attitudes towards linguistic features.

In the next section I describe the social and linguistic processes involved in new-dialect development which have moulded NZE into its present form. I then consider how similar processes might lead to diversification in the variety.

2.7 Social and linguistic processes of new-dialect development

New-dialect development, also referred to as *koineisation*, has been studied in a variety of contact situations (e.g. Omdal 1977; Siegel 1985; Mesthrie 1993; Britain 1997; Kerswill & Williams 2000; Sudbury 2002; Kerswill & Trudgill 2005; Schneider 2007). Two major publications have addressed this topic in depth in NZE specifically, employing the ONZE data to inform processes in the development of NZE (Gordon et al. 2004; Trudgill 2004).

This literature addresses the outcomes of first contact between different, but mutually-comprehensible linguistic varieties, where the language has not existed previously. Siegel (1985) describes a range of types of koineisation. In the context of NZE the relevant literature is that which focuses specifically on new-dialect formation in contexts of immigration (cf. immigrant koine, Siegel 1985). In such contexts immigrant communities provide the only, or dominant, linguistic input dialects in the new geographical setting. A new linguistic variety, or koine, develops which functions as a shared variety for the immigrants and subsumes the previous input dialects. New-dialect formation theories describe the social and linguistic processes via which the new variety develops. Some such processes have foundations in the wider variationist / sociolinguistic framework (Milroy 2002; Kerswill 2002) and are relevant to dialect development more generally.

2.7.1 Dialect mixing

Dialect mixing refers to the expansion of the available pool of linguistic features that individuals are exposed to due to dialect contact. Siegel (1993: 6) refers to this as a “prekoine” stage. Mixing gives rise to competition and choice between multiple variants available for a given linguistic variable. In NZE, dialect mixing would have occurred as soon as settlers from disparate social and regional backgrounds were brought into contact during the journey to the new colony. There is direct evidence of dialect mixing in NZE courtesy of the ONZE data (Trudgill 2004; Gordon et al. 2004), for Milton Keynes, established as a new English town from 1967 onwards (Kerswill & Williams 2000) and less directly for AusE in

non-linguists' written descriptions of the early colony (see Blair 1975). Dialect mixture subsequently leads to processes of accommodation and levelling.

2.7.2 Linguistic accommodation

Linguistic accommodation refers to speakers' respective orientations towards the linguistic behaviour of others. This sociolinguistic phenomenon has been investigated in detail from both socio-psychological and linguistic perspectives (e.g. Coupland 1980; Bell 1984; Trudgill 1986; Giles et al. 1991; Kerswill 2002; Auer & Hinskens 2005). Linguistic accommodation applies to all contexts of social interaction and is central to sociolinguistic theories of language variation and change.

Linguistic accommodation motivates the short-term or long-term adoption of linguistic features. In the long-term, linguistic accommodation in new-dialect formation contexts tends to contribute to a reduction in the variability inherent in the dialect mixture situation (see Kerswill & Trudgill 2005), i.e. convergence towards the same features. Exactly how this occurs is a complex matter. The precise role that accommodation plays at different points of the new-dialect formation process is unclear and there is dispute concerning whether accommodation is motivated by social factors or is a more automatic human response (see discussion in Kerswill 2002; Trudgill 2004 and in *Language in Society* 2008, 37 (2)). Speakers may also accommodate towards absent language models or styles (cf. Bell's *referee design* 1990). This point does not appear to have been considered in descriptions of new-dialect formation (though Lass's 1990a concept of *swamping* is relevant). Leaving these more detailed issues aside, acts of accommodation in new-dialect formation contexts lead to convergence and dialect levelling.

2.7.3 Dialect levelling

Through the process of accommodation during new-dialect formation there is convergence towards the same linguistic variants and a reduction of variability. It seems that some phonological features may be more susceptible to levelling than others. Socially or regionally *marked* features (Trudgill 1986, 2004) tend to be avoided, i.e. *not* accommodated to, as do more structurally complex features. Structural simplification occurs in the linguistic system (Kerswill 2002 provides examples). Majority features are favoured and there is a complex interplay between markedness and demographics. Trudgill (2004: 120) argues that in certain cases a minority variant may be maintained over a competing majority variant if it is less marked. Levelling thus subjects the linguistic feature pool to structural (e.g. phonological,

morphological) simplification and reduces the heterogeneity of the original dialect mixture. Subsequent generations of language learners are confronted with a less variable system than the original immigrant population (see Kerswill & Williams 2000: 85).

Dialect levelling has been widely discussed in relation to language variation and change more generally (Watt & Milroy 1999; Milroy 2002; Torgerson & Kerswill 2004; Kerswill & Williams 2005; Watson 2006; Britain 2010; Cheshire et al 2011). I discuss the role of levelling in 21st century dialect developments in 2.8.

2.7.4 Interdialect features

An additional possible consequence of speakers' conflicting choices between multiple variants is the development of innovative features referred to as "interdialect" forms (Britain 1997; Kerswill & Trudgill 2005: 199). Trudgill (2004: 94) suggests that such forms can usually be attributed to "partial accommodation and / or misanalyses on the part of adult speakers". They may be phonetically intermediate between the originally competing features or structurally simpler than the original variants, or they may result from hypercorrection towards forms that are attributed social prestige. Trudgill (2004: 95) describes a high use of hyperadaptive initial /h/ in the ONZE data, which did not survive the new-dialect formation process, as one such form.

2.7.5 Reallocation

There may also be cases during new-dialect formation in which more than one competing variant in the dialect mixture endures the levelling process. In such cases the variants may undergo structural and / or socio-stylistic *reallocation*. This process assigns the features new social, stylistic or allophonic roles within the developing (i.e. reorganising) phonological system (see Britain 1997, Britain & Trudgill 1999; and also the concept of "exaptation" cf. Lass 1990b: 80, which has been *reallocated* or adopted into linguistics from the field of evolutionary biology!). Britain (1997) appeals to reallocation as an explanatory factor in his investigation of "Canadian raising" affecting PRICE vowels in Fenland English.

2.7.6 Focusing

In order for a new structured variety to emerge it is necessary for the linguistic features and sociolinguistic norms of the variety to become shared. Speakers must gradually reach agreement on the linguistic system, including the sociolinguistic variation associated with it. This process has been referred to as *focusing* (cf. Le Page & Tabouret-Keller 1985: see also

discussion in Kerswill & Trudgill 2005: 199-201). Trudgill (2004: 112) defines focusing as the “crystallisation” of the variety. Features which have been reorganised and renegotiated via accommodation, levelling and reallocation emerge as a focussed and relatively uniform linguistic system. Trudgill (2004: 111) hypothesises that Europeans born in New Zealand around 1890 would have acquired a relatively focussed NZE. However, Kerswill (2002) notes that while the koineisation process may occur within 3 generations, the focusing process may continue for many generations. Schneider (2007: 40-48) describes linguistic, social and political aspects of focusing in his discussion of postcolonial Englishes. The process involves increasing recognition of the new variety and an emerging complaint tradition.

2.7.7 Inherited change

Processes of levelling, focusing, etc., may be complicated by processes of language changes apparently already set in motion prior to contact. Trudgill (2004: 132) applies the notion of “drift” (cf. Sapir 1921) or inherited change, to explain parallel developments which have occurred (perhaps in localised ways) in distinct Southern Hemisphere varieties. Some features in the new dialect cannot be explained with reference to levelling and it has been suggested that particular changes or a “tendency” for a change (cf. Wells 1982: 593; Trudgill 2004: 132) is shared in languages which share linguistic typology. A change in one or more of the input dialects may be inherited into the newly forming dialect and progress further subsequent to contact, or the same change may simply occur in two geographically distant, but related, dialects in parallel. Trudgill (2004: 132) suggests that loss of rhoticity in NZE is one such change.

2.7.8 Founder effect

The *founder effect* (cf. Mufwene 1991) is proposed to account for differences in the relative influence of successive immigrant populations on the development of the new linguistic variety. This principle suggests that the initial immigrant population has a greater influence overall on the development of the variety, while subsequently arriving cohorts of settlers tend to accommodate towards the norms and habits that are already established. There is some uncertainty in the literature concerning the relative impact of the founder effect (see Kerswill 2002; Gordon et al. 2004: 244-247). It seems likely that the relative importance of the first wave of settlers compared to subsequent newcomers will depend on sociocultural factors idiosyncratic to the contact situation. Kerswill (2002) describes cases of new-dialect

formation in different types of contact settings and demonstrates that local conditions, especially the geographical origins of the original migrants, shape similarities and differences in the evolution of even geographically close linguistic varieties.

2.7.9 The role of children

Children are considered to play a crucial role in new-dialect development since it is children who first begin to speak the new variety (Kerswill & Williams 2000; Kerswill & Trudgill 2005). However, issues of maturation, the availability of schools and other situational factors, impact on children's contact with other children. Parental influence on the speech of children born into new-dialect formation contexts may be stronger if there is less exposure to children's models (Kerswill & Williams 2000; Trudgill 2004: 101). The development of a new dialect within children's speech is therefore likely to vary according to the local conditions and within different developmental stages (e.g. young children versus adolescents). However, it is clear that language acquisition plays a primary role in the construction of any new (or modified) linguistic system (as in other contact situations).

2.7.10 Additional theoretical considerations

There is general agreement in the literature regarding the outcome of the processes described in 2.7.1 to 2.7.9. Interaction between these processes and the evolving societal and cultural dynamics leads fairly rapidly, within two or three generations, to the emergence of a shared linguistic variety that is relatively uniform and distinct from its original input dialects. The variety naturally exhibits evidence of its linguistic origins. NZE for example, shares many features with BrE and AusE, but with sufficient exposure individuals are able to identify NZE as distinct from either AusE or BrE. The variety is a badge of New Zealand identity.

One factor that is often overlooked in discussions of new-dialect development in the New Zealand context is language contact between English and Maori¹ (but see Schneider 2007). The literature suggests that the effects of the Maori language on English were limited to the borrowing of lexical items (e.g. Trudgill 2004: 4-5; Gordon et al. 2004: 69; Schneider 2007; but see Bauer 1994a: 386-387). Schreier (2003) has also analysed consonant cluster reduction and concluded that any substratum effects did not persist for long.

¹ The word *Maori* is often written with a macron (i.e. Māori) in order to emphasise its Maori language pronunciation. However, the word is used extensively in NZE and receives a variety of pronunciations. Since I am writing in English, I do not use the macron in this thesis.

There is insufficient evidence available to evaluate the extent of Maori language influence on NZE during its formation. Maori people were settled in New Zealand several centuries before Europeans arrived in the late 1700s. Familiarity with the Maori language and culture would have facilitated negotiations around trade and shared occupation of the land (Belich 1996; Sinclair 2000). By the early 1800s a Maori grammar and vocabulary was being compiled by missionaries (Rusden 2006 [1883]: 108). Gordon et al. (2004: 69) note that “a good number of Europeans became more or less fluent in Maori” but suggest this did not influence NZE, other than lexically. Sidney Baker (1941) suggests that Maori did influence NZE and Benton (1985: 111) also claims that:

up to the early 1960s at least Maori had a much bigger impact on the way most Maori children spoke English when they were young, than English did on the way they spoke Maori.

There are also suggestions of a pidgin-like language in the early 1900s (Clark 1990) but no descriptions of it are available.

There was significant language shift towards English for Maori people once the numbers of Europeans began to exceed those of Maori (Spolsky 2003). Using English provided social advantages for Maori in a social climate that was changing dramatically under the influence of Europeans. Efforts towards Maori language revival since the 1970s appear to be slowing this language shift. However, in the 21st century Maori is seldom heard outside of traditional Maori events and English is the first language of the majority of Maori people (Kuiper & Bell 2000).

Increasing Maori cultural awareness in present day New Zealand society is accompanied by an increasing use of Maori greetings and lexical items in the media, in advertising and in workplaces. The incorporation of Maori vocabulary into MNZE is contributing to its distinctiveness as an English variety. In addition, certain MNZE features have come to be associated with Maori cultural identity (Holmes 2005). There is debate concerning whether such features comprise a distinct *Maori English* (see Benton 1985; Bauer 1994a; Holmes 2005; Warren & Bauer 2004). It has been suggested that the variety is a nonprestigious social dialect of MNZE rather than an ethnic one (cf. Bell 2000; Warren & Bauer 2004) since such

features are also frequent in Pakeha² speech. I discuss phonological features associated with Maori ethnicity in 2.9.2.

It seems unlikely that the Maori language has not been influential on NZE from the start. Given what is known about the “messy reality” of language contact (Thomason 2001: 60; Hickey 2010) and the challenges associated with identifying contact induced change after the event (Thomason 2001: 91-95), present-day Maori influence on NZE may reflect a continuation of historical contact interference. As Bell (2000: 224) notes, some Maori influence is intergenerational transmission of Maori speakers’ L2 acquisition of English. Hickey (2010: 8) refers to “delayed effect contact” in which “gradual and imperceptible” influence occurs. Maori influence on NZE may have progressed unnoticed due to a focus on homogeneity (Bauer & Bauer 2002a: 171-172). In addition, features could have been influenced by Maori language contact and subsequently undergone reallocation within general NZE.

Issues of identity (such as ethnicity) are acknowledged to be important in dialectological research. However, within the new-dialect formation literature, different models attach different levels of importance to sociocultural processes. Trudgill’s model for example, attaches primary importance to the “demographic strength” of features in the mixture. The linguistic input determines the outcome. Mufwene’s (2001, 2008) theory of language evolution provides some support for this deterministic account.

Gordon et al. (2004) take a more flexible approach. They provide considerable information on the socio-cultural context surrounding the development of NZE. They acknowledge (2004: 36) that “[t]he connections between language, history and social setting are important and complex...” and argue (2004: 257-258) that there is insufficient evidence to draw conclusions about the relative influence of social factors during the emergence of NZE.

Britain (1997: 40-42) on the other hand, provides a compelling discussion of “regrounding,” a process during which locally based identities are (re)established in dialect contact contexts. Schneider’s (2007) model (described in 2.9) places the negotiation of identities at the core. He describes changes to the ideological outlook and identities of the restructured population and mutual influence between the evolving society and the evolving linguistic variety. Kerswill (2002: 673) agrees that:

² *Pakeha* is a term used in New Zealand to refer to New Zealanders of European descent.

for a koine to form, the speakers must waive their previous allegiances and social divisions to show mutual solidarity. Where they do not, koineisation is slowed, or may not result at all

It seems reasonable to assume that speakers' attitudes and identity constructions play a role in attaching social meanings to variables within the evolving variety. This would support the development of a new collective sociolinguistic competence.

However, Trudgill (2004: 93, 127) asserts that issues of salience and social meaning are not relevant in "*tabula rasa*" situations such as new-dialect formation. This seems unlikely. As Holmes & Kerswill (2008) point out, settlers would have brought a variety of preconceptions about language with them. These would have had to be readjusted in light of the dramatic changes to the sociocultural dynamics (e.g. the presence of an indigenous population). Trudgill (2004: 20) employs the following cake-baking analogy in relation to the formation of new dialects in colonial situations:

If you bake cakes, I suggest, from roughly the same ingredients in roughly the same proportions in roughly similar conditions for roughly the same length of time, you will get roughly similar cakes.

However, I would like to suggest an alternative perspective on this analogy; that cakes with roughly the same ingredients in roughly the same proportions can become quite dissimilar due to even small differences in the ovens in which they are baked and the cooks which bake them.

The issue of salience is an important one for dialect development more generally, but it is problematic. There is no clear definition of salience. Some features appear to have greater psychological or cognitive significance (see Trudgill 1986; Britain 2010 and especially Kerswill and Williams 2002a). However, it is not clear how linguistic features become salient. The phonetic discreteness, frequency, pragmatic and semantic / semiotic properties of features may all play a role.

Salience of a linguistic feature does not by itself determine adoption versus avoidance. Furthermore, it is not necessary for features to be salient in order for people to use them in accordance with their appropriate social meanings (Johnstone et al. 2006: 80). However, explicit reference to features seems more likely to occur when social meanings are firmly

established. Kerswill and Williams (2002a) suggest that speakers' responses to variants which are salient are affected by their social evaluation of those features.

The salience of a linguistic variable may also involve incorrect judgments about it. Kerswill and Williams (2002a: 101) show that speakers may consider a particular feature to be a local speech characteristic when in fact, it is not. Perhaps this phenomenon applies to variables which become stereotypes (i.e. the 3rd indexical order) in relation to particular speaker groups, but then subsequently undergo change. The development of salience may involve a gradual evolution of shared agreement on the connection between a linguistic variable and its social meaning. Likewise, it may also take considerable time for entrenched connections and stereotypes to be discarded (research by Dyer 2002, 2010 supports this view, see 2.8). I return to issues of salience and social evaluation in chapter 6. In the next section I consider the findings of contemporary dialectological investigations which take into account speakers' social evaluations of dialect variation.

2.8 Contemporary dialectology

Variationist research which probes convergence and divergence in 21st century BrE dialects reveals complex patterns of supralocalisation, levelling and ethnolinguistic variation.

“Supralocalisation” involves linguistic features becoming more widely distributed at the expense of local dialect distinctiveness (see Beal 2010; Britain 2010). If the diffusion involves innovative linguistic features it is sometimes referred to as “innovation diffusion” rather than supralocalisation (Britain 2010). The phenomenon is connected to increased contact between speakers who in the past have been relatively more socially and geographically separated. Increasing transience provides opportunities for contact between speakers whose social networks are relatively loose (cf. Milroy & Milroy 1985; Milroy 2002).

The linguistic consequences of contemporary language and dialect contact have been investigated in several BrE varieties, e.g. London, Reading, Milton Keynes and Hull (Kerswill & Williams 2002b; Torgersen et al. 2006; Cheshire et al. 2011), East Anglia / the “Fens” (i.e. Britain 1997, 2005), Middlesbrough (Llamas 2000, 2007), Corby in the English Midlands (Dyer 2002, 2010), Leeds (Marsden 2006), Liverpool (Watson 2006), Newcastle (Docherty & Foulkes 1999; Watt 2002), see also chapters in Foulkes and Docherty (1999). Similar sociolinguistic phenomena have been described for European and other language varieties (Britain 2010: 193 provides useful references, and see Gregersen et al. 2011). One

important question is whether or not local dialect differences are maintained despite supralocalisation.

Well-established London features which are diffusing into wider geographical areas of the southeast and more recently, into Northern cities as well, include /t/ glottalisation, /θ, ð/ replacement, /l/ vocalisation and labiodental /r/ (see Britain 2009). However, not all southern features are accommodated to (cf. Kerswill & Williams 2002a). Supralocalisation is not a case of wholesale levelling. Studies suggest that where the same variant diffuses across local varieties, it may not be socially (re)evaluated in the same way in each location (for examples see Llamas 2000; Watt 2002; Stuart-Smith et al. 2007; Britain 2009: 140; Dyer 2010).

Dyer (2002, 2010) describes the reallocation of social meaning to linguistic variables imported into an English Midlands town when Scottish English speakers migrated there. Dyer's (2002) study shows that features which are markers of particular regional or social groups are not always avoided in dialect contact situations. Speakers in Corby have adopted variants which are salient markers of Scottish ethnicity, e.g. merged FOOT and GOOSE. Interestingly, Dyer (2010: 209) says that "the proportion of Scottish-born Corby inhabitants reached a maximum of around 30 per cent," suggesting that the Scottish variants were also not the majority variants.

Dyer's study takes into account speakers' comments about language use. The discourse of the oldest speakers seems to reflect negotiation and conflict in relation to ethnolinguistic identity and illustrates ethnically based divisions within the town, e.g. "...the Scots complained about their reception in the town by the English; the English complained that the Scots were taking over the town" (Dyer 2010: 214). The youngest speakers, maintaining the variants with Scottish English origins, deny the relevance of Scottish identity and instead contrast their local Corby identities with a neighbouring town.

Similarly, research in towns close to the Scottish-English border (e.g. Watt 2002; Llamas et al. 2009; Llamas 2010), shows that the effects of supralocalisation are shaped by local conditions. Llamas (2010) describe patterns of non-pre-vocalic /r/ in four towns, two on each side of the border in the east and west respectively. On the west side, they found convergence towards reduced use of /r/ in both the Scottish and English town, but on the east side, there is an increase in /r/ for the Scottish town only. Questionnaire data suggested that speakers' orientations towards Scottish versus English national identity influence the prestige that is assigned to the use of /r/. These studies demonstrate that attitudinal data provides useful insights into the links between regional dialects and speakers' perceptions.

Another component of contemporary dialectological research is that which focuses on multicultural linguistic variation in modern cities. Such studies have identified the emergence of English varieties which are associated with immigrant populations. Such varieties are only recently being described and it is not yet clear how they should be categorised, e.g. as youth speech styles or as ethnic dialects. These emerging dialects are only beginning to be named by linguists and lay persons, e.g. “Kiezdeutsch” [neighbourhood German] (cf. H. Wiese 2006); “Glaswasian” (Stuart-Smith et al. 2011). The variety that Cheshire et al. (2011: 164) describe is currently referred to as “black” speech by laypeople.

Cheshire et al. (2011, see also Torgersen et al. 2006), observe that these varieties are typically emerging in “group second language acquisition” scenarios within working class communities. Khan (2006) describes similar variation in Birmingham and Stuart-Smith et al. (2011) in Glasgow. Cheshire et al. (2011) describe “non-Anglo” speakers with distinct linguistic backgrounds (Bangladeshi, Afro-Caribbean, Pakistan) in different locations (i.e. North London, East London) converging on the same linguistic variants (and also in Birmingham, based on Khan’s 2006 research).

Individual features of *Multicultural London English* (MLE) have potentially different sources. Some are diffusing more widely across BrE dialects (e.g. fronted variants of GOOSE) while others seem to have appeared under contact between speakers with typologically distinct linguistic heritage languages (e.g. certain variants of PRICE, MOUTH, GOAT, FOOT and a particular quotative marker using “this is + SPEAKER”).

Cheshire et al. (2011: 178) note that in this context of linguistic heterogeneity, salience may influence which features are selected from those available. They also make a distinction between a parcel of particular features which are diffusing widely across varieties via relatively loose networks, and features which emerge within particular, more tightly bounded, social networks. A similar distinction is made by Milroy (2007) between “off the shelf” and “under the counter” features. The former seem more susceptible to change and more readily accessible to different speaker groups, while acquisition of the latter appears to require a greater degree of exposure.

This section has drawn attention to complex relationships between speakers’ identities, their conceptualisations of *place* and their linguistic choices. A common theme is the localised effects of dialect convergence and divergence. Meyerhoff and Niedzielski (2003) and Pennycook (2007) describe localisation also for linguistic variables which are transported across much wider geographical distances as a consequence of the globalisation of cultural practices in modern societies.

Britain (2010: 203) encourages researchers to “look more readily to spatial practices, wherein we will find differing intensities of local, supralocal and regional engagement.” A thorough investigation of regional linguistic variation must look at the nature of local identities as well as the linguistic variation itself.

In the next section I consider the implications of the above review for the emergence of new dialects in MNZE. I then consider the evidence from recent variationist findings in relation to regional variation in MNZE.

2.9 Regional diversification in NZE?

2.9.1 NZE as an autonomous national variety

According to the new-dialect formation research, NZE began with extreme linguistic heterogeneity and was followed by a period of major linguistic convergence. This thesis probes how the variety will develop from here on. Schneider (2007) predicts increased diversification for MNZE in relation to phase 5 of his model. Schneider’s 5 phases are briefly summarised in 6:

6.

- (i) Foundation: the settler and indigenous population, viewing themselves as separate societies, come into contact and begin to negotiate for utilitarian (e.g. trade) purposes. This marks the onset of koineisation and a lingua franca may emerge.
- (ii) Exonormative stabilization: a transition into a hybridised cultural identity for the settler population (e.g. “British New Zealanders”) as the colony becomes more permanent, influences a localised form of English. The indigenous population experiences language shift.
- (iii) Nativization: as settler dependence on the homeland is reduced, a reconstructed identity begins to conjoin the settler and the indigenous population. The newly formed identity is represented more explicitly by the increasingly localised variety.
- (iv) Endonormative stabilization: as cultural and political independence grows, the language and identity of all inhabitants become recognised as autonomous, e.g. “English in New Zealand” becomes “New Zealand English” and “Europeans in New Zealand” becomes “New Zealanders.”
- (v) Differentiation: there is a stable unified self-dependent national identity represented by an officially recognised linguistic variety. Linguistic diversification begins to emerge in association with identities constructed at the group and individual level.

Schneider suggests that these phases are not distinct, but overlapping. Characteristics of previous stages may still be evident in later stages. He considers NZE to exemplify properties of both stages 4 and 5. There is an established and codified linguistic variety, a relatively secure national identity and linguistic diversification is beginning to take hold.

There is good evidence that MNZE phonology is presently a dynamic system involving significant variation and change as I describe below.

2.9.2 The dynamics of MNZE phonology

As I noted in chapter 1 there are already several thorough descriptions of NZE phonetics and phonology. An additional detailed description here would be redundant. However, it is useful to highlight aspects of MNZE phonology which are of potential relevance for the current research. I consider change affecting MNZE vowels first followed by change involving consonants.

2.9.2.1 Vowels

The short front vowels have frequently been commented on in the literature (see Bauer 1979, 1992; Trudgill et al. 1998; Watson et al. 2000; Langstrof 2006; Maclagan & Hay 2007). DRESS and TRAP have raised realisations in comparison to BrE, while the KIT vowel is centralised and often indistinguishable from schwa. This causes confusion for speakers of other (especially Northern hemisphere) varieties. The NZE DRESS vowel is similar in quality to BrE or AmE realisations of KIT, while the NZE TRAP vowel is similar to BrE DRESS. In AusE the KIT vowel has become increasingly raised (Cox 1996) and KIT functions as a well-known shibboleth distinguishing AusE and NZE speakers. Bell (1997, 2000: 242) has suggested that closer and less centralised NZE variants of KIT may be appropriated as a Maori ethnic marker.

In the 21st century there is often overlap in the articulatory positions for NZE DRESS and FLEECE. Some younger speakers are now producing diphthongised variants of FLEECE, using a centralised on-glide (Maclagan & Hay 2004; McKenzie 2005). McKenzie's (2005) analysis indicates that the encroachment of DRESS on the space inhabited by FLEECE is stimulating instability for this long vowel.

The merger of the centering diphthongs NEAR and SQUARE is a distinctive characteristic of MNZE. This change is well-documented (see Gordon & Maclagan 1985, 1989; Holmes & Bell 1992; Maclagan & Gordon 1996; Batterham 2000). Analyses of NZE data since the 1960s show a gradual change towards a close starting point for both EAR and AIR. Gordon et

al. (2004: 31) note that some speakers now use only one diphthong for this pair. The first element of the NEAR and SQUARE diphthong(s) now overlaps somewhat with the vowel space of FLEECE and DRESS.

Warren (2006a) describes a qualitative merger of STRUT and START. The MNZE START vowel is often as front as [ɛ:] (cf. Bauer & Warren 2004: 582; Hay et al. 2008: 23). Since the MNZE STRUT vowel has become front and open, the distinction between STRUT and START is now based on length rather than quality (Bauer & Warren 2004; Warren 2006; Warren 2012).

The GOOSE vowel is currently a site for diphthongisation. This vowel is characteristically front in MNZE and Bauer & Warren (2004a: 582) give the transcriptions [æ:] and [ɥ:] for the fronted variants and [ɪə] and [eə] for diphthongised articulations. Some degree of fronting and diphthongisation of GOOSE is not uncommon in various modern BrE varieties (see Wells 1982). In MNZE front realisations of GOOSE have been associated with Maori influence. Hall (1976) and King (1993) observed that back vowels tended to be fronted more by Maori than by Pakeha speakers. Warren and Bauer (2004: 621) also found GOOSE to be more front for a Maori speaker than for a Pakeha speaker. Acoustic analyses by Easton and Bauer (2000: 111) indicated that Pakeha speakers are more progressive than Maori in GOOSE diphthongisation.

The MNZE NURSE vowel has a relatively raised and noticeably rounded quality. Due to the fronting and centering of GOOSE described above, GOOSE and NURSE are becoming increasingly similar in quality. Confusion may arise for word pairs such as *noose* and *nurse*; *her* and *who*. There are also cases of NURSE rhotacisation as discussed in 2.9.2.2.

A more recent development appears to be centralisation of the FOOT vowel, which is particularly noticeable in the phrase *giddy* (*good day*). Articulations can vary between [ʊ ~ ɪ] (cf. Bauer & Warren 2004: 581; Warren 2012).

It is interesting to speculate on the potential consequences of these vowel changes for the system when they are viewed in combination as in 7-12:

7. FLEECE is developing a centralised on-glide and becoming diphthongised
8. The first element of NEAR / SQUARE impinges on the vowel space for FLEECE and DRESS
9. FOOT is becoming centralised towards KIT / schwa
10. STRUT is relatively front and may overlap with START or with KIT / schwa
11. NURSE is becoming raised and rounded

12. GOOSE is becoming fronted and centralised

It is apparent that there is some convergence of vowel realisations around the central to front and central to high region of the vowel space. Bauer (1979) has in fact suggested previously that NZE may be developing a series of rounded front vowels. These interesting developments indicate the present-day fluidity of the MNZE vowel system.

2.9.2.2 Consonants

The consonant system of NZE does not differ markedly from the consonant systems of other English varieties (Bauer and Warren 2004; Bauer et al. 2007; Hay et al. 2008; Warren 2012). There is therefore less to describe in this section.

As in many varieties of English, NZE has allophonic use of clear and dark variants of /l/. However non-pre-vocalic /l/ vocalisation has increased significantly in NZE in recent decades (MacLagan 2000; Horvath & Horvath 2002; Bauer & Warren 2004; Hay et al. 2008: 35). It also affects the vowel system, resulting in reduced contrasts and homophony in relation to vowels before /l/ (see Bauer & Warren 2004: 595).

MNZE plosives are subject to widespread sociolinguistic variability. Tapped realisations of intervocalic /t/ and /d/ are common. Glottal or glottalised realisations of syllable final /t, p, t, k, tʃ/ are increasing rapidly (Holmes 1995a; Gordon & MacLagan 2004; Docherty et al. 2006; Warren 2012). Unaspirated or deaspirated variants of syllable initial /t/ occur and may be Maori influenced realisations (Bell 2000; Holmes 2005). The Maori language /t/ is less aspirated than in English (Harlow 2001). However, the relative influence of the Maori language on English and vice versa is unclear. Bauer (1993) and Bell (2000) suggest that the non-aspiration of NZE /t/ may be decreasing among younger Maori speakers while Maori plosives may be gaining aspiration (Harlow 2005; Warren & Bauer 2004: 618; Warren 2012). Ongoing change in relation to syllable initial and phrase final variants of /t/ and the realisation of plosives more generally is of interest for contemporary NZE dialectological research.

Variation involving the dental fricatives /θ/ and /ð/ is common across varieties of English (see for example Foulkes & Docherty 1999; Kerswill & Williams 2002a; Clark & Trousdale 2009). This has arisen only recently in NZE where it is linked to both socioeconomic class and ethnicity. Where [θ] and [ð] become [f] and [v] respectively this is commonly referred

to as “TH-fronting” (e.g. Campbell & Gordon 1996; Wood 2003) though I prefer the term *dental fricative replacement*. Dental fricative replacement appears to be spreading among lower class speakers of both sexes in casual MNZE speech (Campbell & Gordon 1996; Maclagan 2000) but these articulations seem to be stigmatised for higher social class speakers.

Since the dental fricatives do not occur in many languages, variation in the realisation of these phonemes may become appropriated as ethnic identity markers. Maclagan and Gordon (1999) and Bell (2000: 240) highlight θ / δ variation in NZE as a worthy area for future research. Differences involving these consonants in different English varieties is an interesting issue for the divergence and convergence Englishes.

Notably, regional variation has been identified in NZE for voiced versus voiceless versions of the dental fricative in the word *with* (see 2.9.2.3).

NZE is traditionally described as *non-rhotic*, i.e. with /r/ pronounced only before vowels (Wells 1982; Bauer & Warren 2004; Hay & Sudbury 2005, but see chapter 4). The south of Southland appears to be an exception since there is variable (semi)rhoticity there with non-pre-vocalic /r/ realised predominantly after the NURSE vowel (Bartlett 1992, 2003; Kennedy 2006). Bartlett (2003) has noted that young Southlanders may be increasing non-pre-vocalic /r/ articulation in the NURSE context. There is also evidence that NURSE rhoticity is not limited to Southland (see 2.9.2.3).

As in many English varieties, sandhi /r/ is variable in MNZE (see chapter 4). There is both social and linguistic variation for this aspect of rhoticity (Hay & Maclagan 2006).

Another very recent consonantal development in NZE which appears to be spreading rapidly is the affrication of /stj/ and /str/ consonant clusters, such that /str/ sounds similar to /ʃtr/ (see Hay et al 2008; Warren 2012). This can be heard in the speech of John Key, New Zealand’s Prime Minister. More research is needed to track the progress of this innovative feature.

There are also dynamic changes occurring in the prosody of MNZE. High Rising Terminals (HRTs) are a well-documented feature of the variety and research on other aspects of NZE suprasegmentals is ongoing (e.g. Warren 1999, 2005; Daly & Warren 2001; Warren & Daly 2005; Szakay 2008). In particular, the rhythm of MNZE may be diverging from its typical stressed-timed patterns under the influence of the mora-timed (or syllable-timed) system of Maori (Holmes & Ainsworth 1996; Warren 1999; Szakay 2008). These prosodic

differences may be connected with a greater use of full vowels in unstressed syllables than is typically the case in other varieties of English (Warren 1999; Warren & Bauer 2004: 619).

2.9.2.3 Regional variation

Recent research provides tentative evidence of regional variation in MNZE. A study of speakers' perceptions of regional dialects (Nielsen & Hay 2006) invited participants to annotate regions of New Zealand on a map and to provide pleasantness and correctness ratings for individual locations. Participants provided annotations (though Nielsen & Hay note that there were few) which included comments about:

13. Southland/Otago Scottish influence and the use of /r/
14. Maori influence especially in Northland and Gisborne/Hawke's Bay
15. Relaxed and lazy speech in Northland, Gisborne/Hawkes' Bay and Westland
16. Rural and isolated character of Westland
17. English and "proper" speech style in Canterbury
18. Official and business-like speech in Wellington and Auckland
19. Slow / farmer speech in Taranaki

The comments indicate that New Zealanders assign certain stereotypical characteristics to particular regions. The pleasantness and correctness ratings in Nielsen & Hay's study also revealed linguistic stereotyping. Auckland, Wellington and Canterbury were perceived as most correct, and more correct than pleasant, while the other regions were rated more highly for pleasantness than for correctness. Northland was identified as least correct. Nielsen & Hay identify a connection between the much lower pleasantness of Auckland and the negative metadiscourse which occurs among laypeople in relation to this city.

Bauer and Bauer's (2002) study of 11 and 12 year old New Zealand school children's playground vocabulary identified a North versus South Island division as well as three main linguistic regions on the basis of the distribution of vocabulary items such as *tiggy* (northern) *tag* (central) and *tig* (southern). The northern region was the most distinctive of the three regions identified. It extends from the far north of the North Island southwards to the central volcanic plateau. The central region covers the remainder of the North Island, including Hawke's Bay in the east as well as most of the South Island, as far south as Queenstown. The

southern region encompasses Southland and east and south Otago³. Smaller regional subdivisions were also identified (West Northland; East Northland; Auckland; Central North Island; Hawke's Bay/Wairarapa; Wellington; Nelson/Marlborough; South Island West Coast; Canterbury; Timaru/Central Otago Lakes District; Southland/East and South Otago). Public responses to a *New Zealand Listener* article on Bauer and Bauer's research (Taylor 2000) suggested that "regionalised names ... have existed for at least the last sixty years, and largely in the same regions we find today" (Bauer & Bauer 2002: 181).

Kennedy (2006) analysed phonological variation in data elicited during Bauer and Bauer's study. Kennedy's analysis indicates that certain phonological features are also regionally variable. In particular, rhotacised variants of the NURSE vowel occur in higher frequencies in both the Southland-Otago region and in four schools in Northland.

Unexpectedly, Kennedy found that the rhoticity associated with Southland affected a larger area than expected. Coupled with Bartlett's (2003) findings of potentially increasing NURSE rhoticity noted above, this indicates that the geographical reach of this variant has expanded northwards towards Queenstown (Kennedy 2006: 77-78).

At the Northland schools where rhotic NURSE tokens were most frequent, there was a higher proportion of Maori or Pacific Island students. Schools in other geographical areas with similar proportions of Maori or Pacific Island students did not exhibit NURSE rhoticity.

Kennedy (2006) also found regional variation associated with voiced versus voiceless variants of the dental fricative in the lexical item *with*. There was a clear north-south divide for this feature with a large transition area in between. Children in the South Island appeared to favour the voiceless variant, while children in the north of the North Island favoured the voiced variant. Bauer and Bauer's central region appeared to comprise a large transition area for this feature, with the lower North Island and upper South Island exhibiting similar percentages of voiced versus voiceless variants.

Kennedy's (2006) results thus provide support for Bauer and Bauer's (2002) vocabulary based regional boundaries. Southland NURSE rhoticity has been linked to historic settlement patterns and Kennedy (2006: 79) suggests that the pattern for *with* voicing may also reflect the same Scottish origins as are hypothesised for non-pre-vocalic /r/ pronunciation in Southland.

Kennedy's study also draws attention to interactions between ethnicity, region and socioeconomic class. For example, a lower use of linking /r/ tended to occur in schools with

³ These three "linguistic regions" are indicated on the map in figure 3.1, chapter 3.

significant Pacific Island and Maori students. Populations of speakers of Maori and Pacific Island descent are more prominent in the North Island and are also more concentrated within lower decile⁴ (i.e. lower socioeconomic status) schools. These connections provide scope for ethnicity related variation to become re-interpreted as regional variation in the future.

Neither Bauer and Bauer nor Kennedy had access to any information about their individual informants. Kennedy's results are for individual schools, not speakers, with the data for individual participants at the same school combined. It is therefore not possible to probe the more subtle aspects of identity construction involved in these apparent region and ethnicity related lexical and phonological differences. Yet these studies provide a firm foundation for further exploration of potential linguistic regions.

Ainsworth (2004) has employed a social network approach to geographical variation in NZE, comparing intonational patterns of speakers in Taranaki dairy farming communities with speakers in Wellington. This analysis indicated that differences in intonation patterns were related to differences in speakers' social networks as well as the expression of a local Taranaki identity. The looser network ties of young Taranaki women, which afforded them relatively higher degrees of external contact with speakers in the urban areas of New Plymouth and Wellington, may have accounted for their apparent accommodation towards more level intonation. Young south Taranaki dairy farming men appeared to use relatively dynamic pitch patterns more typical of their elders. Ainsworth (2004) suggests that this may reflect maintenance of a local Taranaki identity. More research is needed to clarify whether these intonation patterns are unique to Taranaki or Wellington, or whether the differences reflect a wider rural versus urban divide.

Bauer and Bauer's vocabulary data for Taranaki usually, but not always, grouped Taranaki with their northern region. Taranaki may therefore represent a transition area between Bauer and Bauer's northern and central vocabulary patterns.

These studies suggest that alongside tentative indications of regional variation, ethnicity related variation is also a fruitful line of investigation. The situation in relation to Maori and Pacific Island speakers' versus Pakeha speakers' use of NZE may draw parallels with Khan's (2006) findings for Birmingham. There is increasing consensus that Maori (and Pacific Island) styles of speech facilitate the expression of solidarity (King 1999; Bell 2000; Holmes 2005; Starks et al. 2008). Yet both Maori and non-Maori New Zealanders are reported to use some of these same features according to the social context.

⁴ Deciles are measures of socioeconomic status in New Zealand schools (see chapter 3).

The dynamism of the MNZE phonological system described above is of importance for issues of dialect diversification. Ethnicity related linguistic differences in the phonology of MNZE in particular have the potential to impact on regional divergence, depending on the sociocultural conditions. Thus, Kuiper and Bell (2000: 21) have identified that

The development of ethnically-based varieties, particularly in areas such as South Auckland or certain suburbs of Wellington, is one of the most interesting unresearched areas remaining to scholars of NZE

While there are clearly several interesting cases of phonological diversification in MNZE, it is not clear how this variation might come to represent distinctive regional dialects. I contemplate this question below.

2.9.3 The emergence of regional dialects

It is not clear whether variation in MNZE at the present time differs in any significant ways from variation in MNZE at previous times. Apart from the extreme linguistic heterogeneity which occurs in new contact situations (e.g., colonisation), it seems likely that linguistic varieties always have considerable heterogeneity in terms of the number of variants available within the feature pool (cf. “orderly heterogeneity,” Weinreich et al. 1968). Urbanised areas in particular experience a constant mixing of people with diverse cultural and linguistic backgrounds due to a variety of social influences (e.g. migration, war, urbanisation, etc.). Perhaps then, what is different about Schneider’s phase 5, is the way in which linguistic variation is appropriated and conceptualised in accordance with sociocultural conditions.

Based on the literature review above I suggest that, along with “orderly heterogeneity,” “disorderly heterogeneity” (i.e. chaos in the linguistic feature pool) may also be an inherent component of linguistic systems. These two faces of linguistic variation (orderly and disorderly heterogeneity) may coexist within varieties. On the one hand, orderly heterogeneity is associated with social structure, stratification and social meaning. On the other hand disorderly heterogeneity reflects the disruption of these social structures and networks due to factors such as mobility, migration, conflict, and various other influences.

Disorderly heterogeneity loosens the structure of established orderly heterogeneity, which must then be (re)established via processes of accommodation, (small scale) koineisation and focusing. Schneider (2003, 2007) proposes that the evolution of postcolonial Englishes is best viewed as cyclical. This might also apply to social and geographical varieties within larger

national varieties. For example, Cheshire et al.'s (2011) description of MLE suggests a variety which is undergoing dramatic social restructuring as contact between speakers from diverse cultural and linguistic backgrounds leads to the kinds of identity reconstructions described by Schneider (2007). This may represent a situation of linguistic disorderly heterogeneity. As group identities become more firmly established, orderly heterogeneity may become more apparent. In 20, with these observations in mind, I outline theoretical considerations which, based on the literature review, seem likely to be implicated in the formation of new local / regional dialects within a recently established autonomous variety of English, such as NZE.

20.

- (i) **Orderly heterogeneity:** orderly heterogeneity within a linguistic system is associated with its social status as a unified national variety, representative of a unified national identity (e.g. "New Zealanders"). This orderly heterogeneity includes sociolinguistic competence, i.e. structured sociolinguistic variation.
- (ii) **Disorderly heterogeneity:** disorderly heterogeneity also exists within the system due to ongoing linguistic innovations and disruption of the feature pool associated with changing sociocultural dynamics (e.g. migration).
- (iii) **Salience:** linguistic features associated with disorderly heterogeneity may not be salient. They operate at the level of first order indexicality.
- (iv) **Social networks:** certain social network structures provide opportunities for the diffusion of linguistic features, which leads to either divergence or convergence across the lines of contact. Increased contact provides opportunities for accommodation and also raises awareness of sociocultural differences.
- (v) **Accommodation:** sociocultural conditions, including speakers' attitudes and ideologies, influence degrees of convergence / divergence. Speakers' responses to linguistic differences are influenced by linguistic factors and by their evaluations of social and linguistic differences.
- (vi) **Evaluation:** certain features become recognised (i.e. salient) as corresponding to certain sociocultural characteristics. Particular features may come to be used collectively by speakers with shared social attributes and stances. The same linguistic feature may be evaluated differently by different speaker groups.
- (vii) **Reallocation:** the social meanings of features evolve according to connections made between different social characteristics, e.g. speakers with similar ethnic

backgrounds who live predominantly in a particular area may use features which first index ethnicity. These features may later come to be reallocated a social meaning associated with *place* (cf. Dyer 2002).

- (viii) Dialect recognition: linguistic features which are used collectively by a particular speaker group may become the source of comment and metadiscourse in relation to speaker characteristics. This metadiscourse facilitates the emergence of relatively more orderly / structured heterogeneity. Linguistic differences which originally contributed to disorderly heterogeneity are assigned structured social meaning and may contribute to stereotypes. Disorderly heterogeneity (new innovations) continues to arise and depending on the sociocultural dynamics, may contribute to existing identity constructions or newly emerging ones.

The observations in 20(i) to (viii) provide a tentative outline of how regional variation might arise in MNZE. Theoretical significance is placed on the recognition of linguistic features and the attribution of local / regional meaning to linguistic diversity. Khan's (2006, personal communication) study of adolescent speakers of English, Pakistani and Caribbean descent in Birmingham, draws attention to the subtle differentiation in social meanings that can occur in relation to linguistic diversity within the same speech community.

Pakistani and Caribbean informants in Khan's study appeared to use local variants to express their British identities while simultaneously using other variants to index ethnicity. English informants used the same variants but in a manner which was more strongly correlated with social network structure (i.e. ethnicity was not relevant to these speakers). It seems a reasonable hypothesis that across subsequent generations, these same features might come to represent a local collective identity irrespective of ethnic ancestry (this is what appears to have occurred in Corby, cf. Dyer 2002).

Across decades of dialectological research it has become apparent that regional dialects are not only determined by physical boundaries (e.g. mountains and other features of topography, see Britain 2010). They are also perceived by people as unified entities due to complex associations between linguistic variation and social practice. On the one hand, in order for a dialect to be recognised as distinct from another, it must be sufficiently linguistically divergent. On the other hand, in order for a group of speakers to be sufficiently linguistically divergent, they must display sufficient convergence on their use of linguistic features in accordance with certain speaker characteristics, and they must be recognised as converging. There appears to be a complex relationship between linguistic variation, the

salience of linguistic features and the social evaluation of features (see Kerswill & Williams 2002a).

It is likely that dynamic sociolinguistic variation has existed throughout the history of the evolution of NZE. The apparent regional homogeneity of NZE may therefore be related to issues of salience and identity construction. What has not yet been explored in the NZE dialectological research is the connections between degrees of regional (phonological) variation in different places and the social meanings underlying variation for particular communities of speakers.

2.10 Chapter summary

I take it as given that there is linguistic diversification occurring within NZE phonology. The important question for this thesis is how this variation is being conceptualised by NZE speakers. The research question which I aim to explore in this thesis is therefore:

21. Is phonological variation in MNZE associated with speakers' constructions of regional (or local) identities?

The literature review in this chapter has outlined important factors to be taken into account in a hypothesised process of new regional dialect development within an established national linguistic variety. I aim to explore these factors in this thesis by investigating the relationship between phonological variation and local / regional identity. I do not aim to find definitive answers to the questions raised in this chapter, but seek further insights into the theoretical points that have been raised and which may be worthy of inclusion in theories of new-dialect development.

The literature suggests that an adequate theoretical explanation for the evolution of a new linguistic variety must consider speakers' evaluations of linguistic variables and of their own and others' sociolinguistic identities. As stated by Saussure (1916: 128):

in order to know the extent to which a thing is reality, it will be necessary and sufficient to investigate the degree to which it exists in the consciousness of the speakers.

In the chapter which follows I describe the methodology which I utilised to explore regional phonological variation in MNZE. My methodological approach addresses not only the purely

phonological data, but also the degree to which regional variation exists in the consciousness of the speakers who provided the data.

Chapter 3: Methodology

In this chapter I describe my methods of data collection and analysis. In the first section I describe the sample design and explain how this design relates to the research question and the theoretical points outlined in chapter 2. In section 3.2 I focus on the fieldwork process, describing in detail the locations, informants and tools involved in data collection. In 3.3 I provide a detailed description of the data obtained. Due to the characteristics of the data set, a number of possible options are available for investigating regional phonological variation in MNZE. In section 3.4 I describe the analytical methods adopted in this thesis and outline a more specific set of research questions in relation to the primary research goal.

3.1 Sample design

3.1.1 Quantitative versus qualitative?

Milroy and Gordon (2003) describe two primary methodological approaches to sociolinguistic / variationist research. One type of approach takes the linguistic system as its point of departure and focuses on describing variability in the linguistic system. Such an approach has been characterised by the hallmark sociolinguistic studies of Labov (1972) and Trudgill (1974). A second approach is a social constructionist approach and takes as its point of departure the behaviours of speakers. Speaker behaviour approaches are exemplified by the studies of, for example, Milroy (1987) and Eckert (1995, 2000). As I noted in chapter 2, contemporary dialectological research is increasingly combining aspects of these two approaches (e.g. Dyer 2002; Johnstone et al. 2006; Llamas 2007).

A second distinction between different dialectological methodologies is one of “breadth” versus “depth.” These opposite ends of the methodological continuum “operate in inverse proportion to each other, and influence sampling as well as data collection” (Milroy & Gordon 2003: 72). Ethnographic methodologies such as participant observation (e.g. Eckert 2000) lean decidedly towards greater depth. In these speaker based approaches, rich linguistic data is complemented by extensive local knowledge about speakers, their speech communities and the structures and practices which influence linguistic behaviour. Linguistic variation is viewed from the perspective of the speech community. Such studies demand extensive time and input from the researcher. Since the quest for a deeper insight into linguistic variation is too intensive to be applied on a large scale, the greater depth incurs limitations on the breadth that can be achieved.

A broader approach may focus on a specific group of linguistic features and sample as large a set of these features as possible from a substantial population of speakers and / or a wide geographical range. While the scope of such a study is substantially increased, there must be a compromise in terms of the potential qualitative gains in relation to the sociocultural conditions of use.

In the present thesis, achieving an appropriate balance between breadth and depth in relation to the research goal was the key consideration in the methodological design. The theoretical findings outlined in chapter 2 warranted an investigation of phonological variation that was sufficiently qualitative to also address social meaning and speaker identity. In order to complement previous approaches to investigating regional variation in NZE, it was considered important to achieve as much depth as was feasible. As I discussed in chapter 2, studies such as Bauer and Bauer (2002) and Kennedy (2006) had provided tentative evidence of regional variation by taking a broad geographical perspective, but the data were unsuitable for exploring individual speakers or locations in any detail. It therefore seemed that a more in-depth account was needed to build on the foundations provided by those findings. The research design thus leaned towards an ethnographic methodology which would address the social meanings associated with phonological variation and speakers' perceptions of their local / regional identities. In order to explore regional differences however, a comparison of regions would be necessary and this automatically impacted on the depth that could be achieved. I therefore aimed to strike a balance between a quantitative variationist study which provided a regional comparison of phonological variation, and a qualitative approach which probed regional identity from the perspectives of the speakers themselves. In the following sub-sections I outline the sample design, describing each of the factors considered important to address and the methods adopted to incorporate them.

3.1.2 Geographical locations

The decision concerning the geographical locations in which to carry out the research was an important one and was informed by previous research findings and by sociocultural considerations. The map in figure 3.1. collates the linguistic evidence for NZE regional linguistic differences based on studies discussed in chapter 2.

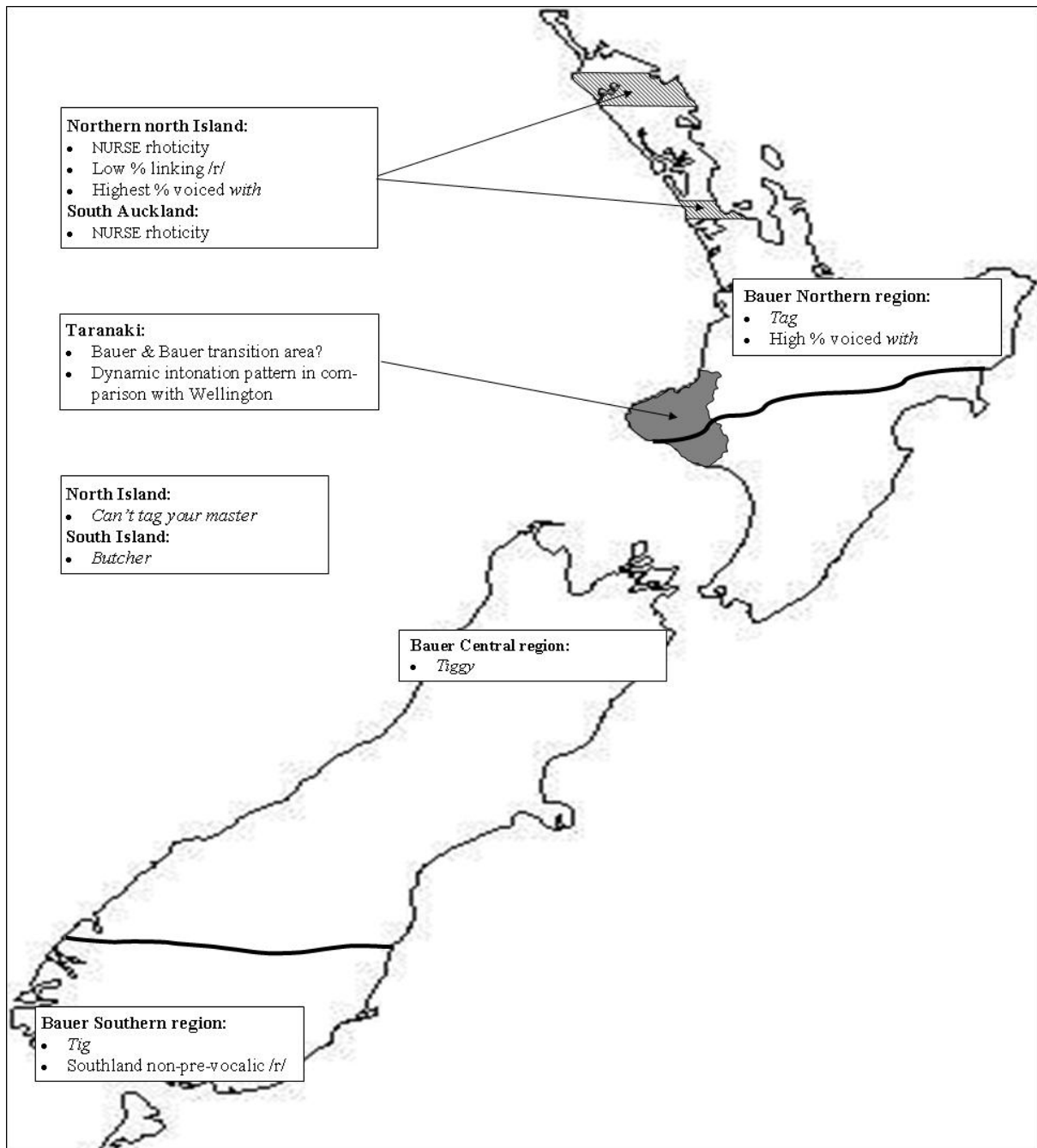


Figure 3.1: Regional linguistic differences in NZE (cf. Bauer & Bauer 2002; Bartlett 2003; Ainsworth 2004; Kennedy 2006).

The three linguistic regions (northern, central and southern) identified in the Bauer and Bauer (2002) vocabulary study (henceforth the “Bauer” regions) are tentatively supported by some of Kennedy’s (2006) phonological data and seemed worth pursuing further. However, linguistic data for individual speakers and speech communities in relation to these regions had yet to be examined. I decided to seek phonological and qualitative data in relation to the Bauer regions. Southland phonology has already been investigated in some detail (cf. Bartlett 2003). In addition, the South Island outside of the Southland area appeared quite variable in its vocabulary and phonology in the Bauer and Bauer and Kennedy studies. I therefore decided to focus on regional phonological variation within New Zealand’s North Island by comparing two locations which corresponded to the Bauer northern versus central division. A bonus of focusing on the North Island was the greater logistical feasibility of the fieldwork. Ideally I would have liked to collect data from each of the three Bauer regions, or from multiple locations within the northern versus central region, but there were limitations on the depth and breadth of fieldwork that could be achieved within the scope of the PhD thesis. For the remainder of the thesis, I use the terms “northern” versus “central,” referring both to the Bauer regions, as well as to the locations where data for the present thesis was collected.

In order to maximise the potential for regional variation to be identified I decided not to collect data in any main urban areas. I reasoned that locations with relatively greater degrees of geographical isolation from an urban centre might be more likely to display linguistic idiosyncracies due to reduced contact. Secondly, although the focus would be on relatively rural locations / small towns, I decided to compare two locations which had different closest urban centres. My reasoning here was that phonological variation within any particular non-urban location might differ under the influence of contact with different urban centres.

Taranaki had already been explored by Ainsworth (2004) and in comparison with Wellington, appeared to display intonational differences. This provided a potentially fruitful line of research. However, I dismissed Taranaki as an appropriate location due to suggestions in the Bauer and Bauer study that Taranaki was an apparently ambiguous / borderline area in relation to the northern-central division. I also decided to avoid Auckland due not only to its identity as a major urban / business centre, but also due to the potentially significant influence of ethnicity there. While I did want to address ethnicity in the research, I did not want issues of ethnicity to overshadow the focus on region. Research is already being carried out in relation to ethnically-influenced phonological variation in South Auckland (Starks & Reffell 2006; Starks et al. 2007).

After consultation with a Victoria University of Wellington New Zealand Geography scholar and preliminary research into the demographic characteristics of distinct geographical areas in the North Island, a small town in the central North Island was identified as an appropriate location within the Bauer northern region. This small town (henceforth “town N”), is situated in a relatively isolated rural location approximately two hours away from any significant city or urbanised area. Situated within an area referred to as the Ruapehu or “King Country” district, the town preserves an important local history in which Maori culture plays a significant role. It seemed possible that a strong locally or regionally based identity might have relevance to the town N community. Due to its rural and relatively geographically isolated characteristics and with the added bonus of significant Maori cultural influence, I decided that town N was a suitable site for a reasonably in-depth exploration of phonological variation and local / regional identity.

The investigation would entail extensive fieldwork in town N. In order to avoid the complicating factor of rural versus urban linguistic differences, and since I resided in Wellington, I decided that a rural location within the Bauer central region relatively close to Wellington would be ideal. Several small towns within the lower North Island were potentially suitable. My decision to focus on adolescent speakers impacted on my identification of a central region location, as well as on the actual data collection points, as I discuss in 3.1.3.

3.1.3 School-based adolescent spoken data

As noted in chapter 3, adolescent speakers have been identified in many sociolinguistic studies as constituting an informant group whose linguistic behaviour exhibits progressive forms of vernacular speech (Kerswill 1996b; Eckert 2000). Innovative sound changes can typically be identified in the speech of young people. Since my focus was on current variation and change in NZE phonology I hypothesised that adolescent speech data provided a potentially profitable source of linguistic variation.

My “outsider” status in terms of age, nationality and spoken language variety presented challenges for my opportunities to approach New Zealand adolescent speakers. I decided that schools were likely to provide the most convenient data collection point. I therefore obtained ethics approval for a research project in which I outlined my research goals, my proposed participants and my intended methods of data collection. A copy of my ethics approval is provided in appendix 1a.

Since I lacked insider contacts at any New Zealand schools there was a high risk of school resistance to the research. In town N only one high school was available from which data could be collected. Following initial email and telephone contact with the Deputy Principal of this school (henceforth “school N”), the school willingly agreed to accommodate the proposed research. The decile 2 status of school N was considered an advantage for carrying out fieldwork there.

In New Zealand, schools are classified by New Zealand’s Ministry of Education according to a decile rating of 1 to 10. Deciles provide an indication of the socioeconomic status of the school. Decile 1 corresponds to the lowest socioeconomic status and 10 to the highest. Decile ratings are revised according to each 5-yearly Census of Population and Dwellings (cf. Statistics New Zealand: <http://www.stats.govt.nz/>). The decile calculations are based on 5 characteristics of students’ residential address locations. The 5 characteristics are:

1. Household income: the percentage of households with income in the lowest 20% nationally.
2. Occupation: the percentage of parents at the 2 lowest of 5 occupational skills levels on the Australia and New Zealand Standard Classification of Occupations (ANZSCO).
3. Household crowding: the percentage of parents who surpass a particular “crowding index” level.
4. Educational qualifications: the percentage of parents with no tertiary or school qualifications.
5. Income support: the percentage of parents receiving a support allowance.

According to the New Zealand’s Ministry of Education website (<http://www.minedu.govt.nz/>):

A school’s decile indicates the extent to which the school draws its students from low socio-economic communities. Decile 1 schools are the 10% of schools with the highest proportion of students from low socio-economic communities, whereas decile 10 schools are the 10% of schools with the lowest proportion of these students. A school’s decile does not indicate the overall socio-economic mix of the school.

School N is a decile 2 school, which indicates that a high proportion of its students are from the lower end of the New Zealand socioeconomic continuum. This was considered an advantage in relation to phonological variation. Although socioeconomic class is not an uncomplicated factor in sociolinguistic variation (cf. Labov 2001), the findings of many sociolinguistic studies demonstrate that vernacular / casual speech styles are more readily encountered amongst lower socioeconomic communities. Several of the MNZE sound changes identified in chapter 2 show greater frequencies of use amongst speakers of relatively lower socioeconomic status. It seemed a reasonable expectation that a low decile school would provide better opportunities for identifying locally specific vernacular variants and / or sound changes than a higher decile school.

I decided that as far as possible, it would be useful to exclude social class as a differentiating factor in any phonological variation identified in the research. It was therefore important to identify a central region school / location with a similarly low decile for comparison with town N. In addition to its low decile, school N had a relatively large proportion of students identifying as Maori. In order to isolate region and regional identity as a variable influencing phonological variation as much as I could, I aimed to compare 2 schools with the same decile and with a similar ethnic composition.

The identification of an appropriate school in the central region was more challenging than in the case of the northern region. In the lower North Island the response from schools was considerably less accommodating than it had been for the one school in the northern region. The initial response from school N was one of interest in the research and a willingness to provide assistance. There was very little anxiety expressed about the presence of a researcher at the school. Schools closer to Wellington however, did not respond enthusiastically to initial enquiries. This issue demonstrates the value of social network contacts when embarking on such research (cf. Eckert 2000). In fact, an introduction to one central region school was made possible through a mutual contact. However, following initial consultation, it was decided by the principal that there was little benefit for the school in participating in the research. There was also a degree of anxiety about the level of interference that the research might have on the educational routine of the students. This draws attention to the need for linguists to consider the potential benefits of data collection from the participants' perspective. Volunteering beneficial services within the research environment is a reasonable approach in order to establish the mutual benefits of the research. However, some schools did not respond to initial contact attempts and following my repeated enquiries, eventually stated that they were too busy to discuss the research.

It is possible that these differences in school responses reflect a difference in outlook between schools located closer to a major urban centre (i.e. Wellington) and schools with a more rural outlook. My first approach to a school situated in the Horowhenua-Manawatu area, approximately 100 kilometres north of Wellington, responded in a similar positive manner to that of school N. This school was situated in a semi-rural area within the central region and was a highly compatible match for school N. The school principal was willing to accommodate the research project.

The map in figure 3.2 shows the approximate locations of the data collection points in relation to the Bauer northern and central region division. Since I am dealing with small community populations in this thesis, in order to protect the anonymity of my participants, I avoid identifying the specific data collection points or town names throughout.

The central region school (henceforth “school C”) was comparable with the northern region school in terms of population size and the ethnic mix of the student populations (demographic information for the schools is provided in appendix 1b). Both schools were decile 2 schools. It seemed that a comparison of phonological variation involving the teenagers at these two schools provided an opportunity to explore regional phonological variation in MNZE as well as seeking additional evidence for the Bauer regions. Since both school communities were situated in rural areas, any phonological differences identified between the adolescents at these two schools could potentially provide strong evidence of regional differences since such differences could not be attributed to a rural versus urban distinction.

The main difference between the two schools is that school N has a larger student population than school C. This difference does not reflect an actual difference in the size of the two community populations. Table 3.1 shows population information for the two towns. The population of town C is larger than that of town N. One reason for the larger student population in school N is that town N is situated a greater distance way from a major urban area than town C. Consequently, families living in and around town N have more limited options for their children’s secondary school education (school N is the only secondary school in town N and its surrounding suburbs). In contrast, town C parents have the options of enrolling their children at a school in a neighbouring town, or in the nearest city, which is approximately 30 minutes away by car or bus. The substantial difference between the two towns in terms of distance from a major city is potentially significant for any phonological differences found between the two communities.

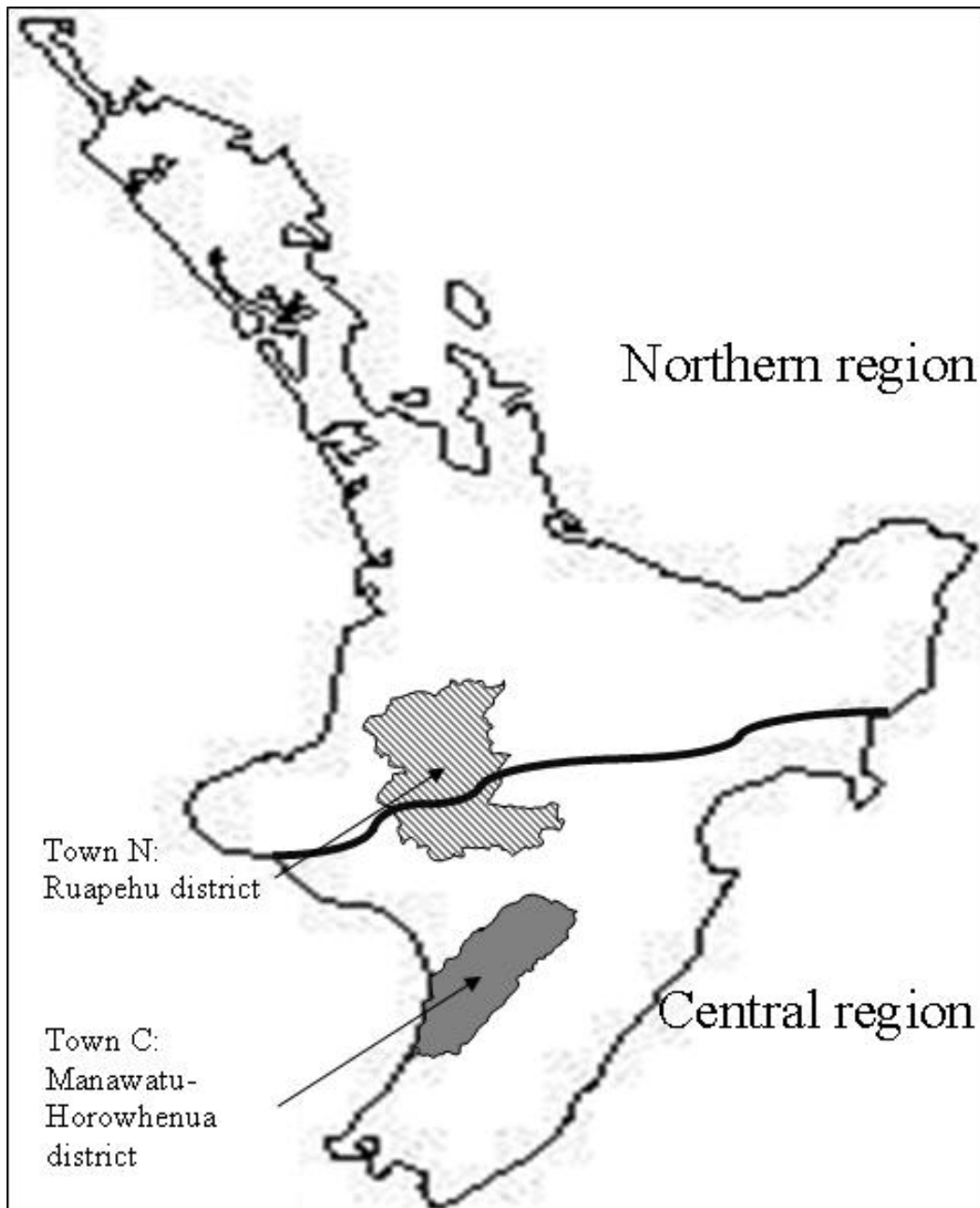


Figure 3.2: Data collection points within the Bauer northern and central regions (the shaded areas show the district in which the towns / schools are located).

Table 3.1: Population information for town N and town C

Population characteristics	Town N	Town C
1996 usually resident population [†]	3003	2874
2001 usually resident population [†]	2640	2724
2006 usually resident population [†]	2619	2715
Distance from closest city	160km	40km

Population figures obtained from Statistics NZ (2006,
<http://www.stats.govt.nz/Census/2006CensusHomePage.aspx>)

It is important to consider how far any data collected from adolescents in the two schools is representative of the two speech communities as a whole. A number of qualitative sociolinguistic studies focusing on adolescents' linguistic behaviour have collected data in a school setting (e.g. Eckert 1988 and in New Zealand, Drager 2009). Eckert's research illustrated the influential role that adolescent social networks and social identities play in the trajectory of linguistic changes through space and time. An analysis of distinct adolescent friendship groups at Belten High School in a suburb of Detroit revealed that recent and ongoing vowel changes in the wider community had been adopted predominantly by adolescent "burnouts" who were most strongly oriented away from the values of their educational / institutional systems and most strongly oriented towards city life. Conversely, adolescent "Jocks" who were more educational / institution oriented, tended to be the least likely to adopt these changes. Although concerned with a limited set of individuals within a single school, Eckert's findings highlighted the significant contribution that adolescents make to the dynamic patterns of linguistic variation in the wider community.

Schools often play an important role in local community life, especially in rural areas. For school age children (and arguably for school staff also), school comprises the focal point of their daily lives. This is where young individuals use language to develop important friendships, to construct their individual identities and to develop interpersonal communication while negotiating their social group membership. A student's linguistic behaviour at school is unlikely to be identical to her or his linguistic behaviour at home. Nevertheless school going individuals do the majority of their socialising at school and school provides the primary arena in which local linguistic norms are negotiated and established. Outside of school hours, schools are often also the focal point of students' social activities and friendship groups. School trips within and outside of the local area serve to facilitate school based social relationships. In addition, relatives of school age children often have frequent contact with schools and older members of the local community who do not have school age children may be involved in community related meetings, employment at the school or may voluntarily support the school. Especially in small towns schools often play an important role within the local community and it became evident during fieldwork that this was the case for school N and school C.

Providing they do not leave the area prior to the onset of secondary education, the vast majority of young people residing in town N and its surrounding areas attend this high school until they are at least sixteen. A few families who are fortunate to have the financial means

may send their children to a private boarding school some distance away from the town, but this is not a typical choice.

The school N students who participated in this study are therefore treated as representative of younger speakers in the town N community in general and their linguistic behaviour is considered a good representation of 21st century MNZE phonological variation in town N.

Although school C is also the only secondary school available within town C, students also have the option of attending a secondary school in a neighbouring town, or alternatively, travelling to a school in the nearest city approximately thirty minutes distant (by car / bus). However, this was not usual. Ethnographic research at the school (discussions with the principal and other staff members and with students) revealed that school C was a desirable educational choice. It had high standards of educational achievement which often surpassed higher decile schools. School C had a good reputation and parents from the neighbouring town often chose to send their children to school C, rather than vice versa. In addition, some students who had previously resided in town C and had subsequently moved with their families to the nearest city, continued to attend school C despite the daily 40 kilometre bus journey.

School C is thus also considered to provide a representative sample of the town C adolescent community. Nevertheless, there is a difference in the geographical composition of the two school populations that has potential consequences for any patterns of phonological variation identified in the two communities. The student population at school N is comprised almost entirely of students who reside either in town N itself or in slightly more remote rural suburbs very close by. School C is located at a greater proximity to surrounding urban areas than school N (including the capital, Wellington city). The school C population, while also primarily comprised of individuals who reside in town C, includes students from a wider geographical range of locations, which also tend to be less remote / rural. These are social and geographical mobility issues which may impact on the social network dynamics of the participants and, in turn, have consequences for their use of MNZE phonological variables. It is important to attend to these community specific factors during the interpretation of the linguistic results.

I do not claim that the two towns represent the linguistic behaviour of the wider geographical regions as a whole. A more detailed comparison of individual towns throughout the regions would have to be made in order to make such a claim. However, if linguistic differences between the two towns were identified in the study, this would lend additional

support to a hypothesis of linguistic differences between a northern versus central region of New Zealand. Further research would be needed to determine the geographical extent of the differences.

3.1.4 Sample size

I considered it important to attempt to address the potentially complex relationship between any regional variation and ethnicity-related phonological variation in MNZE (discussed in chapter 2). I therefore also decided to take into account differences between Maori and non-Maori New Zealanders in the study. The two schools had substantial and similar populations of both Maori and non-Maori students (see appendix 1b).

Although I wished to explore phonological variation among adolescent speaker groups, I also considered it important to incorporate an apparent time analysis of language change into the investigation. This would enable me to identify phonological variables involved in current change which could be potentially relevant for regional diversification in NZE phonology. Ideally, this would entail data collection from at least two generations of speakers. However, since the research aimed to be relatively ethnographic and fieldwork would be time consuming, it was decided that adult data would only be collected in town N (the adult data is discussed below). This would allow comparisons of region C and region N adolescent data; comparisons of region N adult data with region N adolescent data; comparisons of region N adult data with adolescents from both towns combined.

Finally, in acknowledgement of the important influence of speaker sex / gender on language change which has been identified in many prior sociolinguistic studies (e.g. Holmes 1997; Chambers 2002), speaker gender was included as a social variable. I note that the distinction between speaker *sex* (i.e. biologically-determined) and speaker *gender* (culturally-determined) is less straightforward than it was initially perceived to be in dialectological and sociolinguistic research (see Eckert & McConnell-Ginet 1992). Throughout this thesis I use the term *gender*. I explore the relevance of gender for speakers' identities in chapter 7. Taking these preliminary considerations into account, the proposed data sample for the research was as in table 3.2.

Table 3.2: Sample design (cells indicate numbers of speakers)

	Northern region				Central region				Total
	Maori		Pakeha		Maori		Pakeha		
Age	Male	Female	Male	Female	Male	Female	Male	Female	
15-16	5	5	5	5	5	5	5	5	40
32+	5	5	5	5					20
Total	10	10	10	10	5	5	5	5	60

In the following section I describe the fieldwork carried out for the study and discuss the methods and challenges involved in collecting the data sample.

3.2 Fieldwork

Fieldwork was carried out between June 2007 and July 2008 in town N and between May 2008 and August 2008 in town C. I commence with a description of fieldwork in town N.

3.2.1 Fieldwork in town N

On the first visit to school N I was introduced to staff at the morning staff briefing as a researcher investigating language patterns in New Zealand. I was encouraged to gain familiarity with the organisation and layout of the school, the daily routine and the main points of assembly for students during intervals between classes. I was provided with copies of timetables, a map of the school grounds and a list of staff and their respective subjects and locations. I was encouraged to move freely around the school. I spent most of my time in outdoor areas occupied by students during intervals introducing myself to groups of students. I presented myself as a University researcher trying to find out about differences between small towns in New Zealand and distributed an information sheet introducing the research and inviting volunteers (appendix 1c).

Even on my first visit students voluntarily approached me and enquired about the purpose of my visit. As it became common knowledge that I was not a teacher and that I was not interested in monitoring the conduct of individual students, the students became more relaxed in my presence. It is not possible to evaluate the actual degree to which the students' behaviour was as natural as it would have been if I had not been present. While Labov's (1966) "observer's paradox" can never be completely eliminated, students frequently engaged in behaviours or discussions in my presence that they would not have engaged in had a teacher been present. This included behaviours that were explicitly not permitted at the school. Students also frequently provided me with information that was unlikely to be shared

with teachers. I encouraged this relationship by reassuring students that my motivation was not to moderate their behaviour, but simply to find out about their lives in their local community.

I made regular visits to school N, of 3 days' duration, approximately once each month during school term times, over a period of 12 months. Throughout this period I gathered with students outside of classroom time and interacted with them informally. As students became increasingly familiar with me and the type of research being undertaken, they began to volunteer themselves as participants and it became appropriate to ask individuals if they would like to take part.

I invited friendship pairs to take part in the research. This had at least two advantages in terms of obtaining participants. Firstly, individuals presumably felt more secure and more willing about participating in the research together with a friend than they may have felt about participating alone. Secondly, when one individual volunteered to take part, asking that person to suggest a friend who might like to participate with them was a useful method of obtaining additional informants. This approach also provided an insight into friendship networks within the school. Thus when participants were asked about their school friendships during their interviews, they described the friendship networks that I had already observed in the playground. In total, 26 adolescent informants from school N participated in the research.

I found that the town N community in general was friendly but close-knit. It was apparent that contacts between members of the community were relatively dense. On my first visit I made contact with one resident whose work in the travel industry entailed a wide social network. This contact was friendly and accommodating and offered to help me obtain adult participants. I met with this same contact on each subsequent visit, was invited into her home and was introduced to several other members of the community as a researcher investigating language and local history in the town. I was made to feel welcome as a participant observer in the town and there appeared to be genuine interest in the research among the people whom I spoke with. Some of the adult individuals who I met in this way became participants in the research. However, although many individuals expressed an interest in the research, I found it a considerable challenge to persuade people to commit to a recorded interview. Individuals were generally eager to suggest potential participants but not to be participants themselves.

As a secondary approach to obtaining adult participants, I designed and distributed an information leaflet in the local community. The leaflet introduced a research project about regional identity and invited comments about the local area, including comments about any distinctive characteristics of the area or its local history. Individuals were invited to volunteer

their contact details if they had an interest in participating in the project and wished to be contacted. A copy of the leaflet is provided in appendix 1d with references to the town's name blanked out. The leaflet was made available at the local library and at the lottery counter of the local supermarket at the start of the fieldwork, accompanied by a box where leaflets could be deposited on completion. I also placed leaflets in the school foyer hoping that school N might serve not only as a data collection site for adolescent participants, but also as an initial point of contact for adult participants and / or as a springboard for networking in the wider community.

There was a high uptake of the leaflets at the supermarket. However, none of the leaflets were returned. Leaflets were seldom removed from the school foyer and the only leaflet completed and returned at the school was completed by a member of the school teaching staff. There were only two responses from the library based leaflets. I contacted one interested respondent and she expressed a willingness to participate in the research and indicated that she had a network of additional potential participants. Despite this initially positive result, the participant proved unreliable when the time came to collect the data and did not take part. The second response was from a member of the community involved in a local enterprise who expressed an interest in the research results. This contact would not agree to participate in the research but provided valuable background information about the local community. Overall, the use of leaflets to obtain adult informants in town N was unsuccessful. Individuals appeared willing to chat about their town, but despite my efforts at reassurance, did not want to go "on record."

In relation to adult Maori informants in particular, I had been forewarned by colleagues that obtaining data from Maori informants could prove challenging if I did not have a respected member of the Maori community who could facilitate contact. At school N, the Maori language teacher was a well-respected member of the Maori community with an active interest in maintaining the Maori language and Maori cultural practices. He was extremely interested in my research and offered to identify suitable Maori adult participants. However, despite many visits to school N and regular communication with this teacher, the adult Maori participants did not eventuate. The teacher was apologetic and explained that despite his attempts to coax them, the Maori adults felt too shy and embarrassed to be interviewed.

Carrying out my own networking proved to be by far the most valuable method of obtaining adult participants in town N. This networking approach, often appropriately referred to in the literature as "snowballing," requires nothing more than a willingness to approach individuals in the speech community. While these random interactions with

members of the community do not always lead to success, often only one successful interaction is needed in order to obtain several potentially useful contacts. All of the adults who participated in my research were obtained as a result of my initial approaches to strangers. A researcher who I met during my own research, who was carrying out a survey of economic / employment issues in town N, also noted that leafleting tended to be an unsuccessful method of obtaining informants in town N and that researchers needed to utilise community networks. Despite considerable effort, I was frustrated in my attempts to obtain sufficient adult data. The total adult data obtained comprised 9 adults in town N, all of whom were non-Maori, 7 of whom were female and 2 who were male. With hindsight, this result may reflect the close-knit nature of the town N speech community (see chapter 7).

Perhaps the adult speakers were suspicious of outsiders, or felt that discussing their community with a researcher would be disloyal, or did not consider themselves sufficiently knowledgeable to comment. In such close-knit communities, being an inside member of the community provides significant advantages for anyone wishing to obtain linguistic data (see Milroy 1987). Data collection for a master's research project in my own local area using the networking approach had been straightforward and mutual contacts had proved an effective means of obtaining willing participants (Marsden 2006).

3.2.2 Fieldwork in town C

In school C I endeavoured to follow the same methods that I had employed in school N as far as was possible. However, since I was not collecting adult data in town C the fieldwork was less intensive and there is less to report here. Since school C was reasonably close to Wellington, I was able to visit the school twice weekly over approximately a four month period. (The different frequencies and lengths of time I spent in each town may also have affected the data collection). I made a point of familiarising myself with the layout and characteristics of the town and took opportunities to speak to local residents about my research whenever I visited.

The school students were initially made aware of my presence during an announcement in an assembly and I was introduced to staff in the staff room. After these initial introductions I was again left to roam the school freely and obtain informants without any assistance. I approached groups of students in outdoor areas during intervals, talked to them about my research, provided them with information sheets and invited them to participate.

On each visit to school C I also caught the school bus with some of the students at the end of the school day to travel to a neighbouring town where I could catch my return bus to

Wellington. This provided an insight into the geography of the community and students' residential locations and it provided an additional topic of communication as familiarity with mutual contacts were built up.

Fieldwork was completed much more quickly at school C due to my more frequent visits there and because I was not recording adult data. In school C I obtained data from 25 adolescents. In the next section I describe the nature of the data sample that was obtained.

3.2.3 Methods of data collection

The first step in collecting data from adolescents in both towns was to obtain consent forms from participants. School students were either 15 or 16 years of age. As a condition of my ethics approval students who were younger than 16 were required to obtain consent to participate from a parent or caregiver. Students aged 16 or over were permitted to provide their own consent. A copy of the consent form is provided in appendix 1e. The consent form often presented an obstacle to collecting data from the 15 year old students. Students were frequently unreliable in returning the consent form but I could not proceed with recording data from an individual until a consent form was returned. I often had to supply several copies of a consent form to an individual student and wait several visits for the signed form to be returned. There was one case where a student intended to participate but the caregiver would not supply consent and (unfortunately) the student had to be rejected.

The data collected included interview and questionnaire data. As discussed previously, the aim of the present research was to explore both a) correlations between region, other social factors, and phonological variation and b) the extent to which participants' local / regional identities appeared to be influential on the phonological variation. This involved obtaining data suitable for both quantitative and qualitative dimensions of analysis. There were several possible approaches that could have been taken to collecting the data. Since I was performing research in two separate, geographically distant locations, there were also constraints on the extent to which a fully ethnographic study could be achieved in relation to the qualitative dimension. I decided that a semi-structured interview would be a useful method of combining the quantitative and qualitative dimensions into the same data collection procedure. I constructed an interview schema in which questions focused on the town itself, what, if anything, made the town or region distinctive, important aspects of its history and speakers' attitudes towards it. Beal (2006: 10) provides examples of a variety of questions which may be used by researchers who wish to probe language in relation to local and regional identity. The majority of the interview questions were modelled on Beal's examples as far as they

were relevant to the New Zealand context. The topics addressed individuals' social networks, their geographical mobility and their attitudes to the local community, to ethnicity and to language. Occasionally, questions were specifically designed to suit teenagers but in general, the same questions were used for adults and teenagers but were phrased in a way that suited the age of the participant. A copy of the interview schema is provided in appendix 1f.

Each participant was interviewed individually by me. At each school an appropriate room was made available where I could record students. Adult participants were interviewed at a convenient place within the local community suggested by them. Several adult interviews took place in the workplace office of a friendly local contact. Another took place in the back room of a participant's shop. In order to put participants at ease I explained that there were no right or wrong answers since I was simply interested in finding out about life in their town. Any nervousness expressed by students was related to whether or not the questions would be "difficult" and I made it clear that they did not have to know the answer. One useful strategy for the sociolinguistic interviewer (suggested by Labov 1984: 40) is to acknowledge the "position of the interviewer as learner, in a position of lower authority than the person he is talking to," and this is a strategy that I employed, emphasising to students that they had the knowledge and insight that I did not have. In addition to being an outsider of the towns in question, I had also not been living in New Zealand for very long and I expressed a genuine naivety and interest in relation to the interview questions. I provided comparisons with aspects of life in England and tried to make the interviews relaxed and informal by volunteering personal information about my own life and background. I adopted a Labovian approach (see Tagliamonte 2006) of asking questions at an appropriate point in the conversation while allowing the interviewee to lead the discussion in any particular direction, aiming for an atmosphere of friendly discussion (although I ask most or all of the questions). The interviews therefore vary substantially in their content and length depending on how easy it was to establish a rapport with the participant. I found this most challenging for the teenage boys who were the most likely to appear uncomfortable with the situation.

Being interviewed by a visiting university researcher was clearly not a daily event for any of the teenagers in this research, much less by a middle aged Yorkshire woman. I was concerned that my own spoken variety might impact on the speech styles of the students (although Trudgill 1986 has demonstrated that the interviewer may be more likely to accommodate to the interviewee). In order to address this issue, I asked my teenage participants to take part in a recorded discussion with a selected friend in my absence. The primary purpose of these paired discussions was to provide a means for checking the extent

to which speakers departed from the speech patterns they would typically use with their peers in their interviews with me, due to accommodation towards my own, or towards a more formal variety due to the interview context. It has been noted that peer presence exerts a norm-enforcing pressure which is useful for obtaining more relaxed and natural speech data (Milroy & Gordon 2003).

Obtaining the paired discussion data allowed me to investigate whether teenagers' interview speech appeared to deviate much from what they used when they were chatting with friends, albeit in slightly unusual circumstances. I did not consider it necessary to obtain paired discussion data for the adults since I considered that a relatively more conservative adult speech style would in fact provide a useful comparison for the teenage data. Adult interviews were also generally longer and tended to be more relaxed.

Pairs of teenagers were shown how to use the recorder and were left alone to record themselves. I had anticipated that speakers would be more willing to record themselves together in my absence than alone with me but in fact, speakers expressed more nervousness in relation to speaking with a partner in my absence, because they did not know what to talk about. I encouraged the teenagers to talk freely and about their town in general. Unexpectedly, many students asked for more specific guidance about what to discuss. I therefore provided students with a discussion guide using questions on the topic of local identity similar to those used in the interview. I asked participants to use the sheet as a general guide but emphasised that they were not obliged to stick to those questions. They were invited to talk about any other topics if they wished. The paired discussion question guide is provided in appendix 1g.

The data collection procedures seemed suited to the main research focus on regional phonological variation and regional identity. The aim was to investigate the relevance of "place" to the adolescent members of the local community. It was not considered necessary to carry out ethnographic work with the aim of investigating speakers' social networks or communities of practice in detail (although this would in itself have formed an interesting investigation), but it was considered important to obtain data which provided a sufficient insight into speakers' social networks, geographical mobility, social aspirations, issues of contact, etc. The procedures elicited data which was fit for quantitative analytical purposes while simultaneously eliciting speaker discourse in relation to their local town, Maori language and culture, geographical mobility, social networks and future aspirations.

It is worth noting that schools are not an ideal environment for recording spoken data. The researcher has no control over the environment and schools are frequently noisy places. The interview data includes interruptions from teachers and students, noises from the corridor

during breaks between class periods, the noise of the class bell, loud music from various rehearsals taking place in the school hall and in one case, heavy rain falling outside the room.

In addition, collecting data from teenagers is a notoriously unreliable business. Systems put in place in consultation with school staff permitted me to identify particular students that I wanted to record (based on the consent forms obtained) on a given visit day. This involved locating the whereabouts of that student on the day in question (not always a straightforward matter) and requesting the permission of the class teacher for the student to miss the class. (Indeed, a successful method of obtaining teenage participants was to ask them which class they would prefer to be taken out of!). Teachers were more than happy to cooperate with me as they were enthusiastic to assist in my research. However, there were occasions when a teacher felt that a particular class was too important for a particular student to miss (leading up to an exam for example). On other occasions, having arranged with a teenager to record them on the next visit, they might be absent (due to sickness, work experience or more rarely, truancy).

Obtaining the paired discussion data proved particularly challenging. The paired discussions were recorded in the latter stages of data collection when I had almost completed the individual interviews. By this time, some teenagers had lost interest and if one friend decided that they did not want to continue, this typically affected the pair. Finding an alternative companion involved starting the process again with a new informant, i.e. obtaining the consent form, carrying out a new first interview (and this is what had to happen in some cases). There were also two instances where I returned on a subsequent visit to find that a teenager had unexpectedly left the school, coincidentally between the interview and the paired discussion. However, paired discussion data was obtained for six female pairs and four male pairs in town N, and for five female and three male pairs in town C.

In addition to the recorded speech data, I asked participants to complete a questionnaire which had a Maori Cultural Integration (MCI) component and a Social Network component. The MCI component was designed to address speakers' degrees of integration into Maori culture (i.e. how involved the participant is in Maori cultural practices such as visiting the marae⁵, awareness of tribal ancestry and using the Maori language). The MCI questions were based on factors identified as significant in previous research in which Maori ethnicity was measured according to social networks (Boyce 1992; Robertson 1994). Speakers were allocated scores for their responses to the MCI questions in order to obtain a rough measure

⁵ A marae is a meeting place which is central to Maori culture and community activities.

of MCI. The eight MCI questions and associated scores are shown in table 3.3. Speakers obtained MCI scores which increased in relation to their greater involvement in Maori cultural practices. I discuss the MCI scores in detail in section 3.3.

The social network component of the same questionnaire was used to provide supporting information in relation to information provided by speakers during interviews. Scores were not allocated to social network questions.

The fieldwork and data collection procedures described above resulted in a data set (henceforth “MNZE data”), which would allow me to perform quantitative statistical analysis on phonetic / phonological data in order to investigate regional variation. In addition, due to the nature of the interviews, the data provided an opportunity to explore speaker discourse in relation to speakers’ sense of place and / or region. I would therefore be able to evaluate in my data the relationship between phonological variation (a quantitative perspective) and speakers’ local / regional identity constructions (a qualitative perspective), thus addressing not only the evidence for regional variation in MNZE, but also a point of overlap between quantitative and qualitative methods of linguistic analysis. In the following section I describe important characteristics of the MNZE data set in more detail, discuss the analytical options available for addressing the research goal and identify the analytical approach that was applied in this thesis.

Table 3.3: Maori Cultural Integration questionnaire

Question	Score
1. Do you know your tribal affiliation?	
Yes	1
No	0
Not relevant	0
2. Do you know your sub-tribal affiliation (hapu)?	
Not relevant	0
No	0
Yes	1
3. Do you ever go to your local Marae?	
No	0
Yes	1
4. If yes, which Marae is this?	
Does not name Marae	0
Names the Marae	1
5. If yes, how often do you go there?	
Zero if does not answer	0
Occasionally (eg, once a month)	1
Frequently (eg, once a fortnight)	2
Regularly (eg, every week)	3
6. What is your first language?	
English only or other only	0
Maori and English or other	1
Maori only	2
7. How well do you understand spoken Maori?	
Not at all	0
Basic greetings, introductions and farewells	1
Understand basic information	2
Understand everyday conversations	3
Understand everything	4
8. How well can you speak Maori?	
Not at all	0
Can give basic greetings, introductions and farewells	1
Can give some basic information	2
Can take part in everyday conversations	3
Fluent in all situations	4

3.3 The data set and the methods of data analysis

In section 3.1.4 I set out a proposed data sample for my investigation of phonological variation (cf. table 3.2). The actual MNZE data set approximates that set out in table 3.3 but is different in certain ways, which I discuss in this section.

Interview data was obtained from 25 teenagers in the central region and from 26 teenagers in the northern region. The adult data was from 9 adults in the northern region, somewhat less than had originally been anticipated. The interview data was transcribed using the freely available transcription software package “Transcriber” (see: <http://trans.sourceforge.net/en/presentation.php>), and as a result of preliminary analysis during transcription, the data set was modified as follows:

- Data for one South African teenager in town C who moved to New Zealand within the last 5 years was transcribed but is not included in this thesis due to the potential complicating issues associated with this speakers’ SAfrE language background.
- Data from two male teenagers in town N was not utilised due to its poor audio quality.
- I decided not to include the data for the two male adult speakers as I felt that any adult gender comparison based on seven females and two males would be untenable. In addition, one male identified as Maori and one as non-Maori and this would have further complicated age and gender comparisons.
- Data for one adult female was of inadequate audio quality and was not utilised in the thesis.
- The smaller data set obtained from paired discussions is quite variable. Some pairs used the sessions to fool around with the recorder. Other pairs engaged in a question-answer session (i.e. one teenager reads out the questions on the sheet while the other answers). It is often difficult to identify which of the two participants is speaking. I decided to limit the quantitative analysis to the informal, semi-structured interviews. I plan to find an appropriate way to utilise the paired discussion data more systematically in future research.

The MNZE data set subjected to analysis in this thesis consists of 54 speakers as shown in table 3.4. It comprises approximately 1350 minutes of interview data (or 22 hours) and approximately 152,255 words.

Table 3.4: The MNZE data set

REGION	AGE	GENDER	Total data	MNZE thesis data
Northern	Adult	Female	7	6
Northern	Adult	Male	2	
Northern	Teenager	Female	14	14
Northern	Teenager	Male	12	10
Central	Teenager	Female	14	13
Central	Teenager	Male	11	11
Total			60	54

The MNZE data set differs from the proposed data set in two important respects. The first of these concerns speaker ethnicity, i.e. “Maori” versus “Pakeha” ethnicity. Maori versus Pakeha ethnicity has been identified as a potentially significant factor for phonological variation in this thesis. In order to be able to investigate ethnicity thoroughly I attempted to obtain data from sufficient participants of each ethnicity. The aim was to collect data from 40 adolescents, 10 in each region / town would be Maori and 10 in each town would be Pakeha, and with an approximately equal gender distribution within these two ethnic categories.

The first question on the participant questionnaire asked informants to identify their ethnicity. I had provided 3 options for specifying ethnicity, which allowed participants to identify themselves as “Maori,” as “Maori and Pakeha,” or as “other.” I reasoned that the Maori only option would provide participants with the opportunity to disassociate themselves from “Pakeha” identity if they wished, while the “Maori and Pakeha” option allowed participants to express a mixed ethnicity. The “other” option was accompanied by a space for participants to state their own ethnicity labels. Non-Maori participants might dislike being referred to as “Pakeha” and I therefore gave them the opportunity to choose an alternative term. This option also allowed me to identify other ethnicities that were relevant to my participants.

Participant responses in relation to the question of ethnicity were particularly insightful. Despite the considerable time and energy invested in the fieldwork it proved impossible to collect equal numbers of Maori and non-Maori participants owing to the fact that the majority of participants viewed themselves as both Maori and Pakeha. With a greater investment of time it may have been possible to achieve equal cell numbers in relation to the ethnicity factor (in the later stages of data collection I specifically sought participants who were Maori only or Pakeha only). However, in doing so, an important characteristic of the participants in the thesis would have been overlooked; the majority of participants considered themselves as

having mixed ethnic identities and did not separate their peers according to this particular ethnic boundary.

Participants provided 8 different ethnicity labels, shown in table 3.5. There are unequal numbers of speakers represented by each of the labels and this is potentially problematic for quantitative data analysis. Interview discussions had established that the participants who identified as “Kiwi,” “New Zealander,” “European” and “Dutch” could appropriately be treated as Pakeha / non-Maori. However, it seems less appropriate to treat the Tokelauan-Pakeha speaker as Pakeha. However, if I attempted to categorise participants according to a Maori / Maori-Pakeha / Pakeha division (with the Tokelauan-Pakeha speaker categorised as Pakeha), the corresponding data set (as shown in table 3.6) still results in a problematic cell distribution in relation to quantitative analysis. A categorical treatment of speaker ethnicity thus does not seem appropriate in these two communities.

Table 3.5: Ethnicity labels provided by participants

Ethnicity labels	Speakers
Maori and Pakeha	26
Pakeha	12
European	6
Maori	6
Tokelauan and Pakeha	1
New Zealander	1
Kiwi	1
Dutch (came to NZ age 5)	1
Total	54

Table 3.6: Data set based on the ethnic categorisation: Maori, Maori-Pakeha, Pakeha

	Town C		Town N			Totals
	Teenagers		Teenagers		Adults	
	Male	Female	Male	Female	Female	
Maori	1	1	1	3		6
Maori-Pakeha	7	9	4	6		26
Pakeha	3	3	5	5	6	22
Totals	11	13	10	14	6	54

The MCI scores may provide a measure of ethnicity that is more suited for quantitative analytical purposes than the ethnicity labels, while the ethnicity labels may be more useful for

qualitative analytical purposes. Tables 3.7a and 3.7b show the speaker scores on the MCI component of the questionnaire alongside their ethnicity labels⁶.

Table 3.7a: Participant MCI scores 0-2

Speaker	Identifies as	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Total
NRYFP3	Pakeha	0	0	0	0	0	0	0	0	0
NRYFP4	Pakeha	0	0	0	0	0	0	0	0	0
NRYMP1	Pakeha	0	0	0	0	0	0	0	0	0
NRAFP1	Pakeha	0	0	0	0	0	0	0	0	0
CRYFP2	European	0	0	0	0	0	0	0	0	0
CRYMP1	European	0	0	0	0	0	0	0	0	0
NRYFP5	European	0	0	0	0	0	0	1	0	1
NRYFMP2	Maori and Pakeha	0	0	1	0	0	0	0	0	1
NRYFMP4	Maori and Pakeha	1	0	0	0	0	0	0	0	1
NRAFP6	Pakeha	0	0	0	0	0	0	1	0	1
CRYMP3	Pakeha	0	0	1	0	0	0	0	0	1
NRYMP2	Pakeha	0	0	0	0	0	0	1	1	2
NRYFP1	European	0	0	0	0	0	0	1	1	2
NRYMP3	European	0	0	0	0	0	0	1	1	2
NRYMP4	Pakeha	0	0	0	0	0	0	1	1	2
NRYMPT1	Tokelaun and Pakeha	0	0	0	0	0	0	1	1	2
CRYFP1	Dutch ⁷	0	0	0	0	0	0	1	1	2
CRYFP3	Pakeha	0	0	0	0	0	0	1	1	2
CRYFMP1	Maori and Pakeha	1	0	0	0	0	0	1	0	2
CRYFMP5	Maori and Pakeha	0	0	0	0	0	0	1	1	2
CRYFMP6	Maori and Pakeha	0	0	0	0	0	0	1	1	2
CRYMMP7	Maori and Pakeha	0	0	0	0	0	0	1	1	2
CRYMMP3	Maori and Pakeha	0	0	0	0	0	0	1	1	2
CRYMMP1	Maori and Pakeha	0	0	0	0	0	0	1	1	2
CRYFMP8	Maori and Pakeha	0	0	0	0	0	0	1	1	2

⁶ Two male participants in town N provided information about their ethnicity during the interview but for logistical reasons did not complete the participant questionnaire.

⁷This Dutch speaker came to New Zealand at age 5.

Table 3.7b: Participant MCI scores 3-12

Speaker	Identifies as	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Total
NRYFMP5	Maori and Pakeha	1	0	0	0	0	0	1	1	3
NRYMMP4	Maori and Pakeha	1	0	0	0	0	0	1	1	3
NRAFP2	New Zealander	0	0	1	1	1	0	0	0	3
NRAFP5	Kiwi	0	0	0	0	0	1	1	1	3
CRYFMP4	Maori and Pakeha	1	0	0	0	0	0	1	1	3
CRYFMP9	Maori and Pakeha	0	0	0	0	0	0	2	1	3
CRYMMP4	Maori and Pakeha	0	0	0	0	0	0	2	1	3
CRYMMP5	Maori and Pakeha	0	0	0	0	0	0	2	1	3
CRYMMP6	Maori and Pakeha	0	0	0	0	0	1	1	1	3
NRAFP3	Pakeha	0	0	1	1	0	0	1	1	4
NRYFM3	Maori	1	0	0	0	0	1	1	1	4
NRYFP2	European	0	0	1	1	1	0	0	1	4
CRYMMP2	Maori and Pakeha	1	0	0	0	0	0	2	1	4
NRAFP4	Pakeha	0	0	1	1	1	0	1	1	5
CRYMP2	Pakeha	0	0	1	1	1	0	1	1	5
CRYFMP2	Maori and Pakeha	1	0	1	0	0	0	2	1	5
CRYFM1	Maori	1	1	0	0	0	0	2	2	6
CRYMM1	Maori	0	0	1	1	1	1	1	1	6
NRYFM1	Maori	1	1	1	1	1	0	1	1	7
NRYFMP3	Maori and Pakeha	0	0	1	1	3	0	1	1	7
NRYMM1	Maori	0	0	1	1	2	0	2	1	7
NRYFM2	Maori	1	0	1	1	1	1	1	1	7
CRYFMP3	Maori and Pakeha	1	0	1	1	0	0	2	2	7
CRYFMP7	Maori and Pakeha	1	1	1	1	1	0	1	1	7
NRYFMP6	Maori and Pakeha	1	1	0	0	0	1	3	3	9
NRYFMP1	Maori and Pakeha	1	0	1	1	3	0	2	2	10
NRYMMP3	Maori and Pakeha	1	1	1	1	3	1	2	2	12

Some observations which can be made about the MCI scores may be relevant for the analysis of linguistic variation. The MCI scores range from 0 to 12. Most people score within the lower half of this score range. 43 people score 0 to 6 and only 9 people score 7 or more. There is no clear correspondence between MCI scores and ethnicity labels. It is true that the majority of speakers who identify as “Pakeha,” “European,” or “New Zealander” score within the 0 to 2 range, but this is not a consistent trend. Similarly, all of the six “Maori” informants score 4 or above, but the three highest scoring individuals identified as “Maori and Pakeha”. Individual “Maori and Pakeha” speakers can achieve very high or very low scores.

The total score that could be attained on the questionnaire is 17. In order to obtain this score a participant would have to know their tribal and sub-tribal affiliation, name their local marae, visit the marae regularly and speak and understand the Maori language fluently (see table 3.3). It is perhaps not surprising that participants did not obtain this score. However, a

score of 14 could have been obtained if a participant spoke Maori as well as English and could understand and take part in everyday Maori conversations.

Participants with no Maori connections whatever can score 2 by being able to give and understand basic greetings, introductions and farewells (cf. questions 7 and 8). Thus scores from 0 to 2 may indicate some basic Maori language awareness, but this does not imply any involvement in Maori cultural practices.

Participants who score between 3 and 5 have at least a tentative involvement in Maori cultural practices. They may visit their marae occasionally or have awareness of their tribal affiliation. They may also have slightly better competence in Maori than those who score 2 or less. However, a score of 5 does necessarily indicate that individuals are actively involved in Maori cultural practices. A participant (e.g. NRYFP2) can score 4 by going to the marae occasionally and having some basic Maori language skills. This reflects greater engagement with Maori culture than for participants scoring 2 or less, but is not representative of significant involvement in Maori culture.

In order for participants to score 6 or more they must have either a) a reasonable level of competence in the Maori language, i.e. understand and take part in everyday conversations, or, b) more active involvement in Maori cultural practices (e.g. regular visits to the marae and a deep awareness of tribal ancestry, or c) a combination of these. Table 3.8 shows the distribution of speakers according to this score range.

Table 3.8: Number of speakers within each of three score ranges

MCI scores	0-2	3-5	6-12
Number of speakers	25	16	11

The two methods of addressing ethnicity in this thesis (ethnicity labels and MCI scores) can be further supplemented by the discourse data since speakers' attitudes towards Maori culture and ethnicity were probed during the interviews. The present thesis therefore provides opportunities to explore the relationship between these three different perspectives on ethnicity: speakers' chosen ethnicity labels, speakers' scores in relation to MCI, and speakers' comments about their ethnicities and about Maori language and culture. These preliminary considerations of ethnicity show that ethnicity needs to be treated as a social

construct in this thesis. Speakers may orient towards or away from Maori / non-Maori ethnic identities to different degrees.

A second challenging issue for the data set was the factor of age. Age was considered an important variable in the thesis because age differences could facilitate the identification of phonological change. As I noted in section 3.2.1 it had proved difficult to obtain sufficient adult data. The MNZE adult sample is comprised of 6 female speakers from town N with ages: 46, 48, 49, 53, 54 and 61.

The primary aim of the thesis was to examine phonological variation amongst the adolescent members of the two towns. The spoken data obtained from the six female adult speakers in town N can be assumed to provide a reasonably representative sample of more conservative speech in that town, i.e. the speech of older female community members within an interview context. In their NZE social dialect survey, Holmes et al. (1991) utilised a subset of middle class adult female Pakeha data as a control / comparison group in an investigation of phonological variation among younger speakers of a lower socioeconomic class and of both Maori and Pakeha ethnicity. I felt that the small subset of adult female data could be utilised in a similar way, providing a useful comparison with female teenagers in the same town or (more tentatively) across both regions and perhaps facilitating the identification of any phonological changes taking place in NZE. When all of the above data characteristics are taken into consideration, the MNZE data provided an approximately equal distribution of female and male teenagers in each town which would allow me to pursue the five dimensions of phonological variation listed in 6-10:

6. an investigation of regional phonological variation by comparing data from two regions / towns
7. an investigation of age-related phonological variation and change by comparing teenagers against adult females
8. an investigation of the relevance of gender for phonological variation within and between the two regions / towns
9. an investigation of ethnicity related phonological variation utilising three different approaches to ethnicity differences
10. an investigation of speaker discourse utilising a social constructionist approach to probe the relevance of each of the factors above (region, age, gender, ethnicity) as well as social network dynamics, geographical mobility and other sociocultural issues for MNZE phonological variation in the two towns investigated

In the final section of this chapter I discuss the different possible approaches to analysing phonological variation that I could have applied to the MNZE data and outline the particular direction which I have taken in this thesis.

3.4 Analytical approach for the investigation of MNZE phonological variation

A wide range of possible analytical approaches were available for exploring phonological variation and the construction of regional identities in the MNZE data set. It would be impossible to address all possible avenues of analysis in detail and important decisions had to be made in relation to how best to address the primary research question outlined in chapter 2 and repeated in 11:

11. Is phonological variation in MNZE associated with speakers' constructions of regional (or local) identities?

The data set provided two main approaches that I could take towards examining phonological variation in relation to regional identities. One possible approach was to analyse a large number of individual phonological variables and to carry out a broad comparison of the relative use of these variables in both regions. A second approach was to focus on a specific phonological variable or a smaller set of variables that I considered to be of particular interest and to explore the use of the specific variable(s) in fine detail from a number of different perspectives. Depending on which of these two approaches I took, the outcome would differ according to the relative breadth and depth that my analysis would achieve. I therefore had to weigh up the benefits and limitations of choosing one option over another.

Option one, to examine differences between the two regions in the use of a wide variety of phonological features, would provide an insightful overall description of the phonological variation that currently exists in MNZE in certain semi-rural areas. It would also identify evidence for or against regional differences between the northern and central region in relation to certain phonological variables. The findings would provide a useful comparison for future and current sociolinguistic data collected in New Zealand and would have benefits in relation to research into the ongoing dialectal development of NZE.

One drawback for option one would be that the amount of breadth covered in terms of the number of phonological variables included in the analysis would limit the depth that could be

achieved in terms of probing the social meanings of individual variables in detail. As outlined in chapter 2, there are currently many phonological variables in NZE which are of interest in terms of sociolinguistic variation and change. During transcription I observed variation associated with a range of phonological features that was potentially worthy of further investigation. Some examples are listed in 12:

12.

- (i) Voiceless plosives, e.g. glottal reinforcement / replacement of /t, p, k/, de-aspiration of /t/
- (ii) Use of “ink” for “ing” in the words *something, anything, nothing, everything*
- (iii) Variation in the dental fricative in the word *with* between /ð, θ, v, f/ articulations
- (iv) Replacement of dental fricatives with labiodental fricatives (i.e. using /f/ and /v/ for /θ/ and /ð/ respectively)
- (v) Variation in rhoticity:
 - a. variation in the use of linking and intrusive /r/
 - b. occasional rhoticity in some non-pre-vocalic contexts, especially after NURSE, but also in other vowel contexts
- (vi) Variation in the degree to which GOAT and GOOSE sounded similar
- (vii) Variation in relation to fronted variants of GOOSE
- (viii) Variation in the degree to which MOUTH and PRICE were more diphthongal versus more monophthongal
- (ix) Variation in degrees of stress-timing

An analysis which included most or even several of the variables listed above would be a huge undertaking and there was a risk that little more would be achieved than a surface description of distributional differences. Although such surface distributions would be interesting, as I emphasised in chapter 2, I was particularly keen in this thesis to take a social constructionist approach to regional identities and to probe the relationship between phonological variation and the social lives of the teenagers themselves. My aim was to avoid making claims based solely on the quantitative distributions of phonological features, even if these did demonstrate clear patterns of variation. I particularly wanted to avoid a situation in which I identified interesting phonological variation but, due to the constraints of time and space, was not able to probe the underlying social functions associated with the variation.

Option two, to focus on one, or a very small choice of, specific phonological variables which appeared worthy of in-depth investigation, and to analyse the chosen variable(s) in great detail, also had both advantages and disadvantages. Clearly, if I focused on a smaller number of appropriate variables I would not only be able to compare the use of the phonological variable(s) between the two towns, but I would also be able to examine variation within each community in much more detail. In particular, I would be able to probe differences between the communities in relation to a collection of sociocultural factors and evaluate the extent to which certain factors contribute differentially to phonological variation in the two towns. This approach would provide a greater theoretical insight into:

- the relative influence of and interactions between social variables such as age, gender, ethnicity and region in relation to phonological variation in different New Zealand communities
- the relevance of the chosen phonological variables for regional phonological divergence and ongoing phonological change in MNZE
- the relative influence of speaker attitudes towards local and regional identities on ongoing dialect development in NZE

It seemed to me that I would be more likely to uncover the underlying relevance of phonological variation for regional identities using this second approach. This is because, if I found evidence of regional variation in the distribution of certain variables, then I would be able to probe in more depth the degree to which region actually played a role in the participants' identities and whether or not this appeared to influence their use of a specific phonological variable.

However, option two would nevertheless force constraints in relation to the breadth of analysis that could be achieved. The obvious drawback in taking the second approach would be the extent to which I would be able to provide an overview of the range of phonological variation that is evident in the two distinct regional areas. In particular, it would be difficult to explore the interaction between individual phonological variables and how such patterns of variation might differ between the two areas.

Although the question of which approach to take was a daunting one, as the research project evolved, the data itself appeared to present the answer. One particular variable stood out both during fieldwork and while subsequently transcribing the data. That variable was

rhoticity. While recording teenagers in semi-structured interviews I became aware of their occasional use of rhotic pronunciations in non-pre-vocalic contexts. At that time and later when transcribing the data, I made a note to include rhoticity as a variable in my analysis. However, when I subsequently began to review the background literature in order to provide a basic outline and summary of rhoticity in NZE, I found that the topic of rhoticity as a whole was extremely complex and presented a number of challenges for fundamental issues of language variation and change.

Further research of the literature revealed that the amount of historical information available for exploring rhoticity diachronically was overwhelming and, as a result of attempting to unravel the details, I became aware of a number of factors in relation to rhoticity and dialect variation that are often (justifiably) simplified. Furthermore, I found that the historical evidence on rhoticity in English varieties, as well as more contemporary research on rhoticity, presented challenges that were of significance for specifically the topic of dialect development that my thesis is concerned with.

The literature suggested that rhoticity is of considerable importance not only for dialect variation in NZE in recent times, but that this has been the case since the beginning of English in New Zealand. The historical literature suggested that ongoing developments in MNZE rhoticity were connected to variation and change in British English before and at the time of the settlement of New Zealand by English speakers.

Beal (2007) has emphasised the benefits of viewing language change from a historical perspective and furnishing the “apparent-time” data with a greater time-depth. It seemed that rhoticity, as a variable feature of all English varieties, offered an opportunity to explore the development of one aspect of a phonological system in a multidimensional way, adding a certain time-depth to the contemporary perspective. There were clearly complexities associated with rhoticity in English varieties generally and historically. In addition there was interesting variation in rhoticity in my MNZE data set. The issue of variable rhoticity therefore presented a unique opportunity to explore and document change over time in the social life of a specific linguistic variable. This was an opportunity to explore the relationship between historical change and change in the same linguistic variable in relation to the social lives of its present-day users. I decided that such an opportunity could not be ignored. I thus decided to pursue a more focused set of research questions, relating to the ongoing development of rhoticity in MNZE, which I set out in 13-17.

13. Are there differences between the two regions / towns in variation involving rhoticity?
14. Which sociocultural factors appear to be influential on variation in rhoticity and how do these social factors interact?
15. What role does variation and change involving rhoticity play in New Zealand teenagers' constructions of their sociocultural identities?
16. What is the relationship between variation in MNZE rhoticity and ongoing variation and change in the phonological system of MNZE as a whole?
17. What do the findings suggest about the ongoing development of MNZE in relation to the theories of dialect development discussed in chapter 2? That is, how does current variation in rhoticity relate to the ongoing development of NZE as a variety?

3.5 Chapter summary

In this chapter I described the methods of fieldwork and data collection carried out to obtain the MNZE data set. I also discussed specific characteristics of the data set and options for its utilisation in an analysis of the relationship between phonological variation and the construction of regional identities. I have identified a particular analytical goal: to explore variation in rhoticity in rural New Zealand towns in order to evaluate phonological evidence for regional linguistic differences between a northern and central region identified in previous NZE research. The aim is to explore the overlap between a quantitative and qualitative perspective on dialect development, taking into account not only what the distributional evidence shows, but also what speaker discourse suggests about the social identities and social meanings associated with phonological variation. In addition, by exploring rhoticity on a grand scale, I aim to consider how 21st century NZE rhoticity relates to historical and ongoing developments in rhoticity both in NZE and in English varieties more generally. My intention is to provide a holistic and diachronic perspective on developments involving one particular dimension of a phonological system. In the next chapter then, I take a historical direction in order to provide a sociolinguistic history of rhoticity in NZE.

Chapter 4: A sociolinguistic history of rhoticity

In this chapter I provide a detailed historical and sociolinguistic description of rhoticity in English varieties. This provides necessary background for my analysis of rhoticity in MNZE in subsequent chapters. In the first section of this chapter, I draw attention to difficulties associated with describing rhoticity in English varieties. In section 4.2 I utilise historical (i.e. written) sources of evidence to trace variation and change in rhoticity in the history of BrE, focusing on the period leading up to the transportation of English to New Zealand. The review of the historical data draws attention to important issues concerning the nature of /r/ as a phonological variable. The review provides an opportunity to re-evaluate traditional approaches to describing rhoticity in English varieties in light of the detailed examination of the historical evidence. In section 4.3 I consider the findings of studies of rhoticity in present-day varieties of English, which are relevant for the analysis of rhoticity in the MNZE data.

4.1 Describing rhoticity in phonological systems

Rhoticity is an important dimension along which English phonological systems may differ. Indeed Schneider (2004: 1125) states that rhoticity “is generally considered one of the major features distinguishing varieties of the English-speaking world.” Phonological systems vary in relation to the distribution of /r/ as a segment (see Harris 2012). In addition, /r/ is known to exhibit extreme variability in its range of possible phonetic realisations, including trills, taps, fricatives and approximants (Lass 1983; R. Wiese 2001). The potential realisations of /r/ are so diverse in terms of auditory, articulatory and acoustic properties as to provide cause for debate about the identity and unity of rhotics as a class (Lindau 1985; Ladefoged & Maddieson 1996; Widdison 1997). Not surprisingly R. Wiese (2001: 24) describes /r/ as “a chameleon in terms of segmental features, which change frequently and quickly.”

/r/ is a sound segment that has shown susceptibility to variation and change throughout the documented history of English (Lass 1997; McMahon 2000: 230ff). In addition, the literature indicates that changes to /r/ have often had dramatic consequences for phonological systems, especially in relation to vowel phonemes (Strang 1970; Wells 1982; Lass 1983; McMahon 2000: 234-241). /r/ is also known to exhibit sociolinguistically meaningful patterns of variation within individual varieties of English (e.g. Labov 1966; Foulkes & Docherty 2000; Irwin & Nagy 2007; Lawson et al. 2011). It is therefore important to take rhoticity into account in the description of the phonology of any variety of English, including the details of

its distribution within the phonological system, its range of possible articulations and any sociolinguistically meaningful variation that may be associated with this sound segment.

The traditional and accepted practice when describing rhoticity in varieties of English is to refer to speakers and their spoken varieties as either “rhotic” or “non-rhotic” (Ladefoged and Maddieson 1996: 216). This method of description implies that there are two major types (or groups) of English varieties. For example, NZE is a variety which is described as non-rhotic in the literature (Wells 1982; Hay & Sudbury 2005; Bauer et al. 2007), except for certain parts of Southland (as noted in chapter 2). In NZE /r/ is generally only pronounced before vowels, such as in *random*, *burrow*, *hurry* or *crown*, or when followed by a syllabic /l/ such as in *coral*, which in MNZE may be realised as [ˈkɒɹl], [ˈkɒɹəl], or as [ˈkɒɹu] when /l/-vocalisation occurs (see Bauer et al. 2007). Since NZE speakers are described as non-rhotic, they are not expected to pronounce word-final /r/, as in *car*, *more* (at least when such words are spoken in isolation, or before a pause), or pre-consonantal /r/, as in *cart*, *horse*. Thus in NZE, as with other varieties of English described as ‘non-rhotic,’ the phonological distribution of /r/ is considered to be restricted to pre-vocalic contexts.

In contrast, Scottish/Scots English (ScotE) is described (cf. Wells 1982: 393ff; Stuart-Smith 2004) as a rhotic variety of English (but see 4.3). According to the literature, rhotic speakers generally pronounce /r/ wherever an /r/ historically occurred, as evidenced in the orthography (i.e. pre-consonantly, pre-vocalically and word-finally). Thus Lass (1997: 281) states, with regard to varieties of English overall, that:

There are two generally recognized types:

1. *Rhotic*: /r/ appears in all syllable positions, e.g. in *red*, *very*, *fart*, *far*.
2. *Non-rhotic*: /r/ appears only before vowels, so /r/ in *red*, *very*, but not in *fart*, *far*

According to such descriptions, speakers described as non-rhotic limit their /r/ articulations to syllable onset positions only, while speakers described as rhotic articulate /r/s in both syllable onsets and syllable codas.

It is important to understand the origins of the distinction between rhotic and non-rhotic varieties. The dichotomy is understood to be the consequence of a historical sound change (Bailey 1996; Lass 1997; Beal 1999; C. Jones 2006). During this sound change, some speakers ceased to pronounce /r/ in pre-consonantal and pre-pausal contexts. The change is

considered to have resulted in distributional (or phonotactic) differences in the range of phonological contexts in which /r/ is realised in different phonological systems. Specifically, speakers affected by the change are described as “non-rhotic” and as having undergone “r-loss” in syllable codas. R-loss is also referred to as “r-dropping” (Wells 1982) and varieties described as rhotic and non-rhotic may also be referred to as “r-ful” and “r-less” respectively (Wells 1982: 220; Trudgill 1990: 55).

The distinction that is often made between rhotic and non-rhotic systems is not as straightforward as it may first appear. There are a number of complicating factors which must be taken into account when describing rhoticity in this way. The first such complication is that there are accounts in the literature of varieties of English which do not conform readily to these two “generally recognized types” (Lass 1997: 281). Wells (1982: 221) for example, acknowledges that there are speakers who may not pronounce /r/ before consonants but who do so word-finally, or who may pronounce /r/ in certain vowel contexts but not in others. For these speakers, the particular pattern of /r/-use may vary in degrees of consistency. It is important to note then, that although there are many examples in the literature where scholars refer to non-rhotic or rhotic varieties, this is a (understandable) simplification of the issues. The terms are not precise descriptive labels which apply inclusively to all speakers of the variety in question. Therefore, when Lass (1997: 281) states that

[g]eographically, Scotland, Ireland, Southwest England, a portion of West Lancashire, and most of the United States are rhotic, and the rest of England, parts of the United States eastern seaboard and Gulf coast, and South Africa, Australia and New Zealand are non-rhotic,

he also takes care to recognise that the situation is “more complex, much messier and more variable” (Lass 1997: 284).

Lass (1997: 288) draws attention to “the micro-stories [which] are of enormous theoretical importance.” In other words, while the dichotomous approach may be a good approximation of the facts it is nevertheless a rather broad (macro-) perspective and may not accurately reflect the variation that speakers utilise within a given variety. Although a dichotomous representation of rhoticity may be useful as a technique for categorising the general types or tendencies of English varieties, in this thesis it is the “micro-story” referred to by Lass (1997: 288) that I am concerned with in relation to MNZE rhoticity. I aim to scrutinise patterns of variation in MNZE rhoticity that have resulted from the historical sound

change described above and to investigate what the non-rhotic label actually entails for MNZE phonology.

A second complicating factor for the description of rhoticity is the fact that speakers of varieties which have been affected by r-loss may in fact pronounce word final and morpheme final /r/s when they occur in intervocalic contexts. Hence Foulkes' (1997: 74) comment about "the slightly misleading label 'non-rhotic' for these varieties."

It is widely noted in the literature (e.g. Wells 1982; Brown 1988; Foulkes 1997; Gick 1999) that in connected speech, speakers considered non-rhotic often pronounce word-final /r/s which are immediately followed by a word which commences with a vowel, such as in *more apples* or *near enough*. This also applies to morpheme-final /r/s within a word. For example, a speaker described as non-rhotic may produce *star* without the morpheme-final /r/, i.e. /sta:/, but pronounce the same morpheme with the /r/ when it occurs in the word *starring* /stɑːrɪŋ/, where it is intervocalic and precedes another morpheme which commences with a vowel. This particular use of /r/ is frequently referred to in the literature as a "linking r" (Wells 1982: 219; Bauer 1984; Brown 1988; Cruttenden 2008: 305).

The pronunciation of /r/s in this particular context is often considered to be a liaison feature (Wells 1982: 219; Cruttenden 2008: 305) otherwise known as a *sandhi phenomenon* (Andersen 1986; Foulkes 1997; Hay & Sudbury 2005). Sandhi phenomena are those which affect "the junctures between segments, variation and alternations at the boundaries of constituents" (Andersen 1986: 1). The articulation of /r/ in this context may be motivated by the syllable structure with the /r/ serving a function as "a hiatus breaker" between two vowels (Lass 1997: 282). McCarthy (1993: 171) explains that "it is generally agreed that *r* is inserted to resolve hiatus, separating two adjacent heterosyllabic vowels."

To complicate matters further, the use of sandhi /r/s by speakers described as non-rhotic is not limited to word and morpheme final /r/s which were historically present and articulated before the sound change is considered to have occurred. /r/s may also be articulated in pre-vocalic contexts where they have no historical foundation and are thus not present in the orthography. For example, in the utterance *a big area of*, a speaker described as non-rhotic, who articulates linking /r/, may also articulate an /r/ between the syllable-final schwa in *area* and the syllable-initial LOT (or schwa) vowel in *of*, e.g. /ɛəɾɪə r ɒv/. In such cases the /r/ is referred to as "intrusive /r/" or as "epenthetic" /r/, see Gick (1999). In this thesis, I refer to linking /r/ and intrusive /r/, or to both collectively as sandhi /r/.

With regard to the distinction made in the literature between rhotic and non-rhotic varieties noted above, sandhi /r/ is considered to be applicable exclusively to those varieties described as non-rhotic and this is stated explicitly in the literature. Brown (1988: 146) states:

the concepts of linking and intrusive /r/ do not apply to rhotic accents. Rhotic speakers always pronounce the /r/ of *pour*, and never pronounce an /r/ in *thaw*

Hay et al. (2008: 19) also state that

Rhotic varieties of English, like most of American English, do not use intrusive /r/,

and Sóskuthy (2010: 4) claims that

intrusive-r only appears in non-rhotic dialects

This is because the phenomenon of sandhi /r/ is understood to be a direct consequence of the process of r-loss. Trudgill (1990: 55) explains that sandhi /r/

is a process which occurs only in the r-less [i.e. non-rhotic] accents. R-ful accents (as they are sometimes called), in places like the south-west, USA and Scotland, do not have this feature, because they have not undergone the loss of ‘r’ which started the whole process off in the first place

The phenomenon of sandhi /r/ thus provides an additional dimension to the description of rhoticity. Speakers of varieties described as rhotic in the literature are also described as pronouncing all orthographic coda /r/s. This is because the historical sound change referred to as r-loss has apparently not affected the articulation of coda /r/s in those varieties. Speakers of varieties who are described as non-rhotic on the other hand, are described as having a different underlying phonology. Coda /r/s are not expected to be articulated and word final or morpheme final /r/s are only pronounced when they occur in intervocalic contexts, in which case they are understood to have undergone resyllabification and are reanalysed as pre-vocalic (or ambisyllabic) /r/s. These speakers are understood to have undergone a process which restricts the articulation of /r/ to orthographic syllable onsets and sandhi contexts, but

which (somewhat paradoxically) expands potential contexts of /r/ articulation to non-orthographic sandhi contexts also.

At this point it may be worthwhile to provide a clear definition of rhotic and non-rhotic **based on the descriptions in the literature** which I have discussed thus far. I present this statement in 1 below. It should be understood that I do not necessarily hold this statement to be true. It is simply a working statement, to be revised on consideration of additional evidence.

1. Rhotic speakers pronounce /r/ in both syllable onsets and syllable codas wherever those /r/s are historically present.

Non-rhotic speakers pronounce /r/:

- a) in syllable onsets wherever those /r/s are historically present and
- b) word finally and morpheme finally when they occur pre-vocalically (or are ambisyllabic) in sandhi contexts (this may also include /r/s which were not historically present).

In relation to statement 1 above, it is useful to clarify what exactly is meant by “sandhi contexts”. The articulation of linking /r/ and intrusive /r/ are distinct from the point of view that the former is founded on a historically present sound segment while the latter is not. However, the surface phonetic contexts in which sandhi /r/s are articulated are the same for all sandhi tokens. Sandhi /r/s are articulated in a specific set of vowel contexts: after the vowel phonemes: /a:, ɔ:, ɜ:, ə/. Note that the phonetic realisations of these phonemes may be variety-specific (Foulkes 1997: 74, note 2) and that, as will become clear in the next section, /ɜ:/ (NURSE) is a vowel phoneme which only occurs before historical (i.e. orthographic <r>) (see Wells 1982: 137-140).

In this thesis I refer to rhoticity as a phenomenon encompassing all aspects of /r/-pronunciation. Individual speakers exhibit different degrees of rhoticity in relation to the phonetic and phonological contexts in which /r/s are articulated. I use the term “non-pre-vocalic /r/” to refer inclusively to /r/s which occur a) in pre-consonantal positions and b) word final or phrase final /r/s. The term “pre-consonantal /r/” means before consonants only. I use the term “pre-vocalic /r/” to refer to all /r/s which occur before vowels and are not followed by a pause or phrase boundary, i.e., word initial, word medial, linking and intrusive /r/s. Note however, that this thesis is not concerned with those /r/s which occur word initially

or word medially between vowels, since these /r/s are considered to be categorically present for both rhotic and non-rhotic speakers (though see chapter 7 with regard to the non-articulation of /r/s in word-medial intervocalic positions in some varieties).

It has already been noted above that one potential problem for a statement such as that set out in 1 above, is that some varieties of English do not conform strictly to either rhotic or non-rhotic criteria. With this in mind it is worth noting also that linking /r/ and intrusive /r/ are both variable, rather than categorical, features of varieties described as non-rhotic (Wells 1982: 224; Bauer 1984; Hay & Sudbury 2005: 801; Harris 2012). As noted by Foulkes (1997: 76), there has been little research carried out on this variability across varieties of English and as a result, theoretical accounts of sandhi /r/ often fail to incorporate this variation into their explanations.

One further complexity associated with descriptive statements regarding rhoticity concerns the influence of /r/ on vowels which can occur before /r/. The distribution and articulation of /r/ may also affect the status and realisation of preceding vowels. Harris (1994: 231) notes for example, that “the set of vocalic contrasts in this context is radically different from those encountered before other consonants, from the viewpoint of both length and quality.” Lass (1997) describes a range of vowel changes apparently influenced by /r/. Any clear descriptive statement of what rhotic and non-rhotic mean then, must also pay attention to what these labels entail for relevant vowel phonemes.

In this section, I have established that there are complex issues involved in describing the dimension of rhoticity in English phonological systems. Ideally, a descriptively adequate account of (non)rhoticity in any given phonological system must attend to the aspects of rhoticity set out in 2-4:

2. the phonological distribution of /r/ within the system
3. articulatory variability associated with /r/ within the system
4. the effects of rhoticity on vowels before /r/

It seems that variation in rhoticity across (and within) English varieties, and the way that variation is described, is deserving of some close, critical inspection. As I have indicated here, the phonetic and phonological variation associated with rhoticity is rather less categorical and rather more messy than the traditional dichotomous view implies. Despite its usefulness as a basic, descriptive tool from a macro-perspective, the dichotomous view does not attend to complex variability which could have important implications for descriptive and

theoretical accounts of English phonological systems. This is an important theoretical issue for this thesis because it raises the question in 5:

5. Is it accurate to categorise MNZE as a non-rhotic variety of English?

Rhoticity in the 21st century NZE system is the consequence of historical changes affecting /r/. The evidence suggests that the relevant change(s) originated in part(s) of south-east England and spread out to other BrE varieties from there (Wells 1982; Beal 1999; Bailey 1996; Trudgill 2004; Hughes et al. 2005). The changes affected spoken varieties of English throughout the 17th, 18th, and 19th centuries and had dynamic effects on their phonological systems.

R-loss was occurring precisely at the time of the colonisation of New Zealand by English speakers. The extent of r-loss would have contributed an important component to the basic ingredients from which NZE evolved. The extent of r-loss would no doubt have also played a role in what was considered to be correct or prestigious speech among groups of English settlers whose individual and group identities were in a state of flux (cf. chapter 2).

Thus in order to pay justice to the question in 5., it is necessary to consider what precisely is meant by *r-loss*. In particular: What was the consequence of r-loss for the foundations of NZE, and how has NZE rhoticity developed subsequently? In the next section, I adopt a historical linguistic approach and probe the details of the history of variation in /r/ in English prior to and at the time of its transportation to New Zealand.

4.2 Rhoticity: historical variation and change

4.2.1 The nature of the evidence

Perhaps with the exception of the NZE ONZE recordings, the evidence for r-loss is comprised of written sources. There are two main types of written evidence available for a historical linguistic investigation of rhoticity in English. The first and primary source is the writings of orthoepists. The orthoepists were writers who, especially during the 18th and 19th centuries, were preoccupied with providing instruction on the pronunciation (and grammar) of English and instigating reform of the English spelling system through the medium of self-improvement style pronouncing dictionaries and grammar books (Beal 1999, 2004a; C. Jones 2006).

Although the orthoepists provide direct evidence of English phonetics and phonology at particular points in time, caution is needed when evaluating their descriptions (Wyld 1936;

Dobson 1968; Beal 1999, 2004a). As MacMahon notes (1998: 375) orthoepists were typically elocutionists or actors rather than objective phoneticians (e.g. Thomas Sheridan and John Walker). Orthoepists had varying degrees of (self-proclaimed rather than peer-evaluated) expertise in relation to English pronunciation and often lacked adequate skills in systematic and objective description.

Orthoepic sources of evidence are in particular subject to the prescriptive attitudes of the day. They were composed in a sociocultural context of “almost obsessive concern” (C. Jones 1989: 196) for rectifying perceived “errors” of speech. C. Jones (2006: 117-136) identifies the mid-1700s as a “sea-change” in which societal attitudes towards spoken English became focused on improvement. In a letter to the High Treasurer, Swift (1712: 6, italics in original) writes:

nothing would be of greater use towards the improvement of knowledge and politeness, than some effectual method for *correcting, enlarging and ascertaining* our language

Language was viewed as something to be cemented and the orthoepists facilitated moves towards standardisation throughout the 1700s and 1800s with titles such as:

James Buchanan (1766). *An essay towards establishing a standard for an elegant and uniform pronunciation of the English language,...*

However, orthoepic sources of evidence are not without merit. MacMahon (1998: 381) observes that such works often made use of basic principles of phonemic analysis even if these were not stated formally (see for example Fogg 1792). C. Jones (1989: 198-201) describes dramatic developments in the sophistication of linguistic descriptions and the classification of speech sounds from the 16th century onwards (e.g. Hart 1551; Cooper 1687) .

The orthoepists provide valuable indicators of what was considered the correct pronunciation of the time. As with modern-day language complaints, they point to what was innovative, since they were in general agreement that London was the model to be emulated (MacMahon 1998: 385). Beal (2004a: 128) suggests that the orthoepic evidence provides good evidence at least for a “proto-RP”.

From the mid-1800s, more empirically-based, or scientific, descriptions of pronunciation become available, for example Ellis (1869-1889); Sweet (1873-1874); D. Jones (1917) and

Wyld (1927). (Beal (2004a: 133) comments that even the later more scientific descriptions were predominantly focused on describing the standard variety that had been established in the preceding centuries of orthoepy).

Daniel Jones' Cardinal Vowel system was not established until the early 20th century. Throughout the 18th to late 19th century period that I am concerned with, the orthoepists provide the major source of evidence for rhoticity.

A less direct source of historical linguistic evidence for phonological change is provided by the rhymes and spellings used in the prose, puns and anecdotes of writers and poets, the language complaints that appeared in the press, and other miscellaneous comments on matters of pronunciation which were documented only incidentally (see MacMahon 1998: 379ff; 2004a). This more indirect type of evidence provides clues rather than actual descriptions of pronunciations. Beal (2004a: 127) considers this type of evidence less reliable. Yet such sources often provide useful supplementary evidence.

In the following sections, I evaluate the historical evidence in relation to rhoticity. I start with the orthoepists' evidence. I present this evidence in the form of original quotations. This is because it is important to demonstrate the nature of the descriptions which I am attempting to interpret. In 6-13 below I set out examples of orthoepists' descriptions of /r/ from the 1600s onwards and discuss the potential implications of these descriptions. I follow the review of the orthoepists' evidence with a review of the evidence for changes to /r/ in phonetic descriptions of English.

4.2.2 Orthoepists' descriptions of /r/: 1600-1800s

6. **Ben Jonson (1640**, cited in Jespersen 1909-1949: 318; Bailey 1996: 100; Beal 1999: 112): Jonson states that /r/ is:

the *Dogs* Letter, and hurreth in the sound; the tongue striking the inner palate, with a trembling about the teeth. It is sounded firme in the beginning of the words, and more *liquid* in the middle, and ends

Jonson's terms are vague. However, the idea of the tongue striking the palate and "trembling" about the teeth may suggest the coronal trill [r]. The hypothesis that English /r/ was once the coronal trill [r] is often assumed in the historical literature (Jespersen 1933: 39; Kökeritz

1961: 8; Schlauch 1959: 90; Barry 1997). However this view continues to be debated (e.g., Lass 1983; Catford 2001; Erikson 2003; Gąsiorowski 2006; C. Jones 2006 and see discussion below). I take this possibility into account while contemplating possible interpretations of the evidence from the historical literature below. However, we do not know what it is that Jonson means by “firme” and what he means by “more liquid.” It is also not possible to know if Jonson’s use of the phrase ‘in the middle’ is meant to refer to intervocalic /r/ (e.g. *mirror*), pre-consonantal /r/ (e.g. *martyr*), or both. The usual interpretation of this comment in the literature (e.g. Beal 1999: 113), is that Jonson indicates a weakening of /r/ in pre-consonantal contexts. However, this should not be taken for granted. Despite the ambiguity, Jonson’s statement points to allophonic variation in the articulation of English /r/.

7. **J. Jones (1701:** 134, italics in original), explains how to “rightly sound” words:

(III) *L and r double in the End of Words of more Syllables than one, when they sound remarkably short, and smart, as it were with a sudden stop; as in compel, fulfil, impell, &c. abborr, demurr, interr, Navarr, &c. The Difference between this sudden smart sound, which causes them to double, and the other sound, is distinctly observable in revill (to pull back) and revel (or rout, or Gaming) – in interr (to bury) and enter (to go in.)*

J. Jones here appears (although there is no certainty of this) to describe a tap or flap (Ladefoged & Maddieson 1996: 230-231) realisation of /r/ ([ɾ]) which occurs syllable-finally in stressed syllables, and a contrasting pronunciation in unstressed syllables. This seems to contradict Jonson’s (1640) claim of a more “liquid” sound word-finally. Although he gives no indication of the quality of the “other [unstressed] sound,” J. Jones’s comment implies allophonic variation but not ‘r-loss’ at the time of his writing.

8. **Arnold (1718,** cited in Jespersen 1909: 360): describes a ‘mute r’ in *mart*, *borough*, *parlour*, *scarce*.

The word *borough* is problematic in Arnold’s statement as it is not compatible with the idea of changes to /r/ in pre-consonantal or pre-pausal positions. However, perhaps “mute” /r/ does not mean ‘loss’ or ‘absence’ of /r/. The word *mute* has historically been used to refer to

sounds articulated as (voiced or voiceless) stops, e.g. “nothing but Breath stopt” (cf. Holder 1669: 38-39; Buchanan 1762: 19; Fogg 1792: 7-8). Buchanan (1762: 19) states that “A Mute is a Letter which cannot make a Sound without a Vowel.” ‘Mute r’ here could thus feasibly refer to a tap or flap realisation of /r/ (from this point on I refer to both tap and flap realisations as ‘tap /r/’ or as ‘[r]’ unless it becomes necessary to make a distinction).

9. **Mather Flint (1740)** (see Kökeritz 1944: 75; Beal 1999: 112; C. Jones 2006: 110-111), observes that in for example, *hard, harm, barn, quart, warm*, /r/ contrasts with word-final /r/ (e.g. in *war*). He used italic transcription for the former ‘r’ as “a signal that a consonant is ‘adouci’ [soft]” (Beal 1999: 112).

Flint’s observation is perhaps the first clear reference to variation (i.e. weakening) associated with pre-consonantal /r/. However, the fact that Flint contrasts the ‘soft’ pre-consonantal /r/ with word-final /r/ implies that word-final /r/ continues to be pronounced and not as ‘softly.’ This seems to contradict Jonson’s (1640) statement that the /r/ is ‘liquid’ at the ends, but does tally with J. Jones’s (1701) assertion of a “doubled” stressed word-final /r/ (perhaps a tap). However, as with ‘mute,’ it is difficult to interpret the use of terms such as “soft” and “liquid” in the 18th century from a perspective of contemporary articulatory phonetics.

10. **James Buchanan (1762)** describes /r/ in his grammar book as follows:

“R, a palatal; it is expressed by a Concussion, or Quivering of the Extremity of the Tongue, which beating against the Breath as it goes out, produces this horrid dog-like Sound” (Buchanan 1762: 22).

There are several points to note here. One is that, as with Jonson’s (1640) quotation earlier, there is a reference to dogs. A second point is that the description of /r/ as a “palatal” may support a coronal articulation of /r/ but, since ‘palatal’ is unlikely to have had the same meaning at that time that it has in articulatory phonetics today, it could have been a reference to almost anywhere on the roof of the mouth. The third point is that the reference to the “extremity of the tongue” could have meant either the tongue tip or the tongue root, so that this description might also support a uvular place of articulation. Finally, the tongue “beating against the breath” could imply a trill or fricative articulation. Although this description

seems more aligned with a trill, it is notable that while such descriptions were no doubt intended to be clear, due to the absence of any systematic methodology for describing speech sounds, they were in fact often ambiguous.

11. **Abraham Tucker (1773)**: describes the articulation of /r/ in relation to /t/, /d/, and /l/. He states:

On opening from “t” or “d” at the sides of the tongue, still holding the tip close, there issues forth an “l”, upon the rendering the end of the tongue limber, so that it will shake like a rag with the bellows, it will rattle out “r”, but this requiring a strong stream of breath to perform, makes it the most laborious letter of all, and consequently as much out of our good graces as I said “v” was in them; you shall find people drop the “r” in “suz, patial, savants, wost, wosted, backwad,” and many other words, and whenever retained we speak it so gently that you scarce hear a single reverberation of the tongue.

Tucker’s reference to shaking like “a rag with the bellows” could imply a trill articulation. The reference to /l/ could also imply a coronal place of articulation, though of course since understanding each sound that is described is dependent on understanding precisely how a previous sound is articulated, this also cannot be assumed.

Tucker also refers to “r-dropping” and a “gentle” articulation pre-consonantly in some words. He also attributes this /r/ dropping to the “laboriousness” of performing the “shaking” or “rattling” which may indicate a trill. Details in relation to the “many other words” in which /r/ is (nearly) lost might help to determine if pre-consonantal /r/ is the only environment in which Tucker has observed this phenomenon. It is also not clear if people continue to use the “laborious” variant of /r/ in other contexts or not. However, Tucker’s (1773) description is compatible with Flint’s (1740) and, considered in relation to J. Jones’s (1701) description of r-loss or weakening in unstressed pre-pausal environments, it seems that change to /r/ may have spread from unstressed word-final contexts to (stressed and unstressed) pre-consonantal contexts between the mid-1600s and late 1700s.

12. **Thomas Sheridan (1790: viii)**: provides support for a coronal trill articulation.

He writes that /r/

is formed by a vibrating motion of the tip of the tongue between the upper and under jaw, without touching either, and at about the same distance from the teeth as *el* is formed.

Sheridan also applies a dog analogy, saying (1790: lx, my emphasis) that /r/ is an unpleasant sound if it is continued for any length of time:

R, when continued, is also a harsh sound, like **the snarling of curs**.

Interestingly, Sheridan also claims (1790: xxii) that /r/ is “always the same sound and is never silent.”

Sheridan’s description is interesting. Given that there are descriptions prior to this which indicate variability (Jonson 1640; Flint 1740; Tucker 1773), it may be intended rather as an imperative than as an observation. It is also contradicted by Fogg (1792, see early phoneticians’ evidence below) and by Walker (1791) both writing at the same time.

13. John Walker (1791: 50): describes two possible articulations of /r/ in his *Pronouncing Dictionary*. A “rough” variant occurs “at the beginning of a word” and is “formed by jarring the tip of the tongue against the roof of the mouth near the fore teeth”. The “smooth r” occurs “when it ends a word or is followed by a consonant in the same syllable” and is “a vibration of the lower part of the tongue, near the root, against the inward region of the palate, near the entrance of the throat.

Walker clearly indicates allophonic variation here which agrees with Tucker’s (1773) description but not with Sheridan’s (1790). The “rough” pre-vocalic sound may be a trill, but seems just as compatible with a tap [ɾ] realisation. The non-pre-vocalic “smooth” /r/ could be compatible with a trill or fricative uvular or velar articulation. Walker says that the “smooth” /r/ “...marks the pronunciation of England” (i.e. in contrast to the former /r/ which he considers a characteristic of Ireland). Walker (1791: 50) also implies regional variation within England, stating that /r/ is “often too feebly sounded in England, and particularly in London, where it is sometimes entirely sunk.”

This evidence points to a change towards weakening of /r/ in pre-consonantal and pre-pausal contexts which is more progressive in London, at least as far as Walker is aware.

Unlike other orthoepists mentioned thus far, Walker also draws attention to the influence of /r/ on preceding vowels. He writes (1791: 50) that /r/ is:

the most imperfect of all the consonants; and, as its formation is so indefinite, no wonder, when it is not under the accent, that the vowels which precede it should be so indefinite in their sounds; as we may perceive in the words *friar*, *lier*, *mayor*, *martyr* which, with respect to sound, might be written *friur*, *liur*, *mayur*, *martur*.

I return to the issue of the influence of /r/ on vowels in section 4.2.4. However, an important point to note about the variation that Walker describes, is his claim that it is “never noticed by any of our writers on the subject”.

The descriptions of /r/ discussed above include contradictory statements alongside references to allophonic variation. The descriptions indicate sound changes in progress (cf. Labov 1972b) and suggest that /r/ use was highly variable.

From the mid-19th century (and occasionally earlier), more objective and systematic descriptions associated with phoneticians take over from the orthoepists’ descriptions. I review examples of these descriptions below in 14-21 and compare them with the earlier orthoepic descriptions.

4.2.3 Early phoneticians’ descriptions of /r/: 1600-1900s

One early, but detailed phonetic description of English speech is provided by William Holder.

14. **William Holder (1689):** writes in his *Elements of Speech* in 1689 that /r/ is “Gingival,” i.e. of the gums, a term which he also applies to /t/, /d/, and /n/. He says (1689: 48-50) that it is made:

by a Pervious [i.e. allowing passage of breath] Appulse [i.e. obstruction] of the end of the Tongue, with its edge to the Goums, The Tongue being held in that posture, onely by the force of the ... Muscles, and not resting any where upon the Teeth; except onely touching them loosely, so as to close the passage of Breath every where by the sides, and conduct it to the end of the Tongue. And

this with a strong Impulse of Breath vocalized, so as to cause a trembling and vibration of the whole Tongue; which vibration being slow, does not tune the voice, but make it jarred; the Tongue not resting but [...] agitated by strong impulse of Breath.

Holder's application of the term "gingival" to /t/, /d/, and /r/ suggests that the /r/ he describes is coronal. He also seems to identify the tip of the tongue, since the breath is "conducted to the end." His use of the term "jarred" seems to be applied to the airflow rather than to the tongue gesture itself. This complicates orthoepic comments in which 'jarring' is a term applied to the tongue (e.g. Walker, 1791 above). Nevertheless Holder's description does seem to indicate a coronal trill. However, Holder (1689: 51) also seems to suggest that not everybody articulates it this way in his comment that "they, whose Muscles are weak or flacid, are unapt to pronounce this Letter R."

15. Cooper, Christopher (1687:20): In *The English Teacher*, Cooper set out the "rules" of English letters in an attempt to clarify the inconsistencies between letters and sounds for learners. His description of /r/ at that time is as follows:

R is framed by the tip of the Tongue moved toward the middle of the Palate, while the breath passing out on all sides, causes a tremulous motion: *hr*

It is not clear in Cooper's description where precisely the "middle of the palate" is, but the reference to "tremulous motion" and the use of <*hr*> to represent the sound orthographically suggests a fricative or trill articulation.

By the mid-19th century, when early phoneticians began to write their descriptions of English phonetics and phonology, /r/ is no longer described as a trill.

16. Peter Walkden Fogg (1792): In his *Principles of English grammar*, Fogg describes /r/ as a semivowel, a category of sounds which he defines (1792: 7-8) as: "sounding of themselves but imperfectly." He also writes (1792: 40) that /r/ is silent in *worsted* but articulated "after *e*, though written before it" in for example, *acre*, *children*, *hundred*, *lustre*, *meagre*, *metre*, *mitre*, *theatre*.

Other than *children* and *hundred*, all of the words in which Fogg says /r/ is articulated have a word-final orthographic <re>. It is interesting to note that the /r/ in *children* and *hundred* may at one time have been articulated after the vowel. Walker (1791: 50) also makes this observation but says that in “solemn” speech the /r/ is pronounced before the vowel. One important observation in relation to Fogg’s description is that he does not describe word-final /r/ as “silent” in these <re> words, especially since he does state (1792: 39-40) that the /h/ in words such as *catarrh* and *myrrh* is “silent and useless”. Apart from the absence of /r/ in *worsted*, Fogg’s claims contradict Tucker’s (1773) description twenty or so years earlier. Perhaps these descriptions reflect some incidental lexical variation in the articulation of /r/ in pre-consonantal positions, especially since both Tucker and Fogg give *worsted* as an environment where /r/ is not pronounced. As I discuss below, before /s/ (and also /ʃ/) is identified very early in the historical literature as a phonetic context in which /r/-pronunciation declined.

17. Alexander Ellis (1869:196): In his book *On early English pronunciation ...*, Ellis explains that:

at the present day *r* has at least two sounds, the first, when preceding a vowel, is a scarcely perceptible trill with the tip of the tongue ... The second English *r* is always final or precedes a consonant. It is a vocal murmur, differing very slightly from (ə).

It is not clear what Ellis means by a “barely perceptible trill.” Perhaps he assumes that it should be, or once was. As for the pre-consonantal or pre-pausal allophone, this is clearly described as vocalised and similar to schwa.

Sweet (1890: 79), twenty years later, explicitly states that the trill articulation of /r/ is a defect or affected pronunciation:

18. Henry Sweet (1890:79): writes in his *Primer of phonetics*:

Trilling – ‘rolling one’s *rs*’ – [is] a defect of pronunciation, which is however often affected on the stage and in recitation

Sweet (1890:79) describes /r/ as a voiced consonant articulated with the tongue tip which is:

practically a vowel, there being no buzz in it, even when emphasized and lengthened. It never occurs except before a vowel.

Sweet (1890:32, 79), also describes a velar articulation “formed by the root of the tongue and the soft palate” which is “sometimes trilled [and] is a frequent individual peculiarity”.

At the end of the 19th century then, /r/ is no longer described as shaking, rattling, or dog-like. Daniel Jones nevertheless recognises at least four possible articulations of /r/.

19. Daniel Jones (1909): At various points in *An Outline of English Phonetics*, D.

Jones describes:

- (i) A “voiced dental rolled” /r/, which is “formed by a rapid succession of taps made by the tip of the tongue against the upper gums”. Jones notes that this variant is “regarded by teachers as the correct pronunciation of the letter *r* when followed by a vowel” even though it is not actually articulated this way in Standard Pronunciation (1909: 24). D. Jones states that this sound is common in the North of England however.
- (ii) A “*semi-rolled r*, i.e. one which is formed like the fully-rolled sound, but consists of one single tap of the tongue is commonly used between two vowels, as in *period*, [...] and] also frequently used after *θ, ð* [...] as in *three*” (1909: 24-26). D. Jones states that this (what appears to be a tap [r]) variant is used in Standard Pronunciation or “StP”.
- (iii) A voiced dental fricative (transcribed by D. Jones as [ɹ]), which is used by “Many S.Eng. [South of England] speakers [...] in all cases [who] “are said not to “roll their *r*’s”” (1909: 25).
- (iv) A labiodental /r/, i.e. “the substitution of a semivocalic *ɱ* for *ɹ*” (1909: 27), which D. Jones describes as “a common fault”.

While D. Jones describes up to four potential variants in prevocalic position, he says that the fricative can be used “in all cases”. He describes the trill as a realisation that teachers consider correct but also states that this is common in the North of England. It is not clear why D. Jones describes the place of articulation of these variants as dental. We would expect

them to be alveolar. It is also not clear why he describes a “fricative” /r/ as the majority variant in the South of England. This does not agree with the description given by Sweet (1890: 79). However, D. Jones is not the only phonetician to refer to a fricative. Dobson, much later in the 20th century, also refers (1968: 946) to a “fricative continuant like the PresE [r].”

References to a fricative could possibly be influenced by an assumption of a previous trill. In support of this argument note that D. Jones suggests (1909: 25) that the fricative is used by speakers who do not “roll their *r*’s.” Furthermore, in D. Jones’s (1967 [1964 reprint]) description of /r/ almost sixty years later, he:

- a) describes /r/ under the chapter-heading “The English Fricative Consonants” (1967: 179),
- b) refers to “the most usual English *r*-sound” as “a fricative lingual *r*”,
- c) uses the symbol “/ɹ/” to represent it (1967: 194), but,
- d) clarifies that:

Many English people pronounce *r* as a frictionless continuant instead of a fricative. The tongue-position required for this variety of *r* is almost identical with that of fricative *r* ... but the aperture between the tip of the tongue and the teeth-ridge is slightly wider and the sound is produced with less exhaling force than fricative *r*. The sound is equivalent to a weakly pronounced ‘retroflexed’ ə (D. Jones 1967: 205).

It is possible that the discrepancy between D. Jones’s 1909 description of a fricative /r/ and his later 1964/67 description of a fricative that is usually pronounced as an approximant, is evidence of an ongoing weakening of /r/. It is also possible that D. Jones is not entirely objective in his descriptions, a point I discuss further in the next section.

D. Jones also indicates regional variation in relation to /r/, suggesting that a trill articulation is common in the North of England. But he also observes (1909: 25-26), in relation to pre-consonantal and pre-pausal /r/ that:

the letter *r* is not pronounced as a consonant at all in StP, e.g. *farm* [...], *poor*, [but] In N [Northern dialects (Lancashire, etc.)], the letter *r* is either pronounced ɹ in this position, or is heard as a peculiar modification of the preceding vowel

Here D. Jones seems to refer to r-colouring (i.e. retroflexion). He also notes (1909: 26) that the word-final and pre-consonantal /r/ is articulated as a retroflexed vowel “not only in N but also in W [Western] dialects (Devon, etc), (where it is very marked) and many other parts, including L [London dialect].”

20. **Henry Wyld (1936: 298)**: in his description of *colloquial English*, Wyld clearly observes regional variation in 20th century English /r/:

The quality of the sound itself varies in different dialects. In Received Standard, at any rate in the South, the sound has a very weak consonantal character - that of a weakly articulated point-open consonant [...] in the true regional dialects of the South from East to West - it is, or was until quite latterly, an inverted point-open, rather more strongly consonantal than in Received Standard; in Northumberland, and among isolated individuals all over the country, a back -r, with slight trilling of the uvula is heard; in Scotland the sound is a strong point-trill.

Wyld’s description indicates an approximant in the south of the country by the early 1900s, which may previously have been a trill, or some other variant, while in the “true regional dialects of the South” retroflexion is described. This seems highly suggestive of a sound change operating outwards from the prestigious south, in the direction of gradual weakening towards r-loss (e.g. trill > flap > fricative > approximant), in pre-consonantal and pre-pausal contexts. The result may have been allophonic variation which was regionally variable also.

Regional variation is not typically discussed by the orthoepists (but see Walker’s 1791 description above and also Kenrick 1773, Sheridan 1790 and Adams 1799 discussed below). However, there is certainly awareness in the historical literature of a difference between northern English and southern English pronunciations of /r/. For example:

21. **Daniel Defoe (1724-7:iii.232-233)**: narrating his travels through England, Defoe (not an orthoepist) wrote:

I must not quit *Northumberland* without taking notice, that the Natives of this Country, of the antient original Race or Families, are distinguished by a *Shibboleth* upon their Tongues in pronouncing the Letter *R*, which they cannot utter without a hollow Jarring in the Throat, by which they are plainly known, [...] this they call the *Northumberland R*, or *Wharle*; and the Natives value themselves upon that Imperfection, because, forsooth, it shews the Antiquity of their Blood.

This “hollow jarring in the throat” is likely to be the uvular fricative which continues to be a characteristic feature of the traditional dialect of Northumberland speakers in England (Pålsson 1972: 20). D. Jones (1909: 27) also comments on the use of a uvular /r/ “in parts of Northumberland and Durham ...” It is not clear how far back in time this uvular variant existed or how widespread it may once have been. Beal (2004b: 129-130) suggests that the traditional Northumberland uvular /ʁ/ was also evident in Durham and Newcastle in the 18th century.

References to the uvular /r/ complicate the hypothesis of an English coronal trill. A uvular variant may have been innovative and established and maintained in a limited geographical area in and around Northumberland. But it may also have been a much older and more widespread variant in English previously and subsequently lost in some areas. Wyld (1936: 298) refers to its sporadic use throughout the country, for example. There is no clear evidence to verify either of these hypotheses and it is not clear how far back chronologically a uvular variant of /r/ extends or how widespread it became in England.

The evidence provided by the historical literature in relation to a hypothesised process of r-loss is complex. The descriptions are not only difficult to interpret, they also often appear contradictory. There is clearly evidence of quantitative and qualitative variation associated with social and regional factors. Several authors describe allophonic variation. The discrepancies occur in relation to the degree of quantitative loss that is acknowledged and in relation to the qualitative nature of the /r/, as well as the phonotactic distribution of respective variants. The evidence is such that more detail leads to more confusion, rather than more clarity (C. Jones 1989:197). In the next section I consider possible interpretations of the historical evidence.

4.2.4 Interpreting the historical evidence

It is clear from the historical evidence that many possible articulations of /r/ could have been in use throughout the period 1600 to 1800, including [r], [ʀ], [ʁ], [r̥], [ɹ], [ɻ]. Some of these phonetic realisations may have been in use simultaneously due to allophonic, social and regional variation. One possible interpretation of this variability is that English /r/ was once a coronal trill (at least in some pre-vocalic positions) but underwent a lengthy process of weakening which eventually resulted in the alveolar approximant [ɹ] pre-vocalically and in the apparent pre-consonantal and pre-pausal r-loss that is common in Standard BrE (StBrE) and MNZE. However, in order to verify that this hypothesis is correct it is necessary to ascertain that English /r/ was indeed a coronal trill at some earlier stage.

Several scholars have debated the phonetic identity of /r/ in the history of English (and Germanic languages more generally). There is an assumption that the coronal trill [r] is the dominant /r/ sound in Germanic and other Indo-European languages (see for example Barry 1997; Erikson 2003). Erikson (2003: 185) provides an account of articulatory processes in a process of lenition, i.e. from [r] > [r̥] > [ɹ] > [ɻ]. This hypothesis is based on an assumption of changes between articulations of /r/ which all have coronal places of articulation. The hypothesis of a coronal trill [r] might account for frequent descriptions of /r/ as dog-like, since the vibration associated with a coronal trill might be perceived as similar to a growl. However, the historical evidence above indicated that velar or uvular constrictions may also have been involved in the articulation of (at least some variants of) English /r/. Some of these variants might also be interpreted as dog-like.

A number of scholars in the field of historical linguistics have addressed the subject of the likely phonetic identity of an original Old English (OE) or Germanic /r/ consonant by considering vowel changes which are influenced by a neighbouring /r/ (i.e. coarticulatory effects) and the type of /r/ that is likely to influence such effects. In examples 22-27 I list several changes which are reported to have affected English vowel systems historically and which are considered to have been specifically influenced by /r/ (see Wells 1982; Lass 1983; Denton 2001).

22. Lowering or retraction, or both, of vowels preceding /r/
23. Raising of vowels before /r/
24. Rounding of vowels before /r/
25. Diphthongisation (also known as “breaking”) of front vowels

26. Monophthongisation of diphthongs between /w/ and /r/ (i.e. w_rC)

27. Mergers of vowels before /r/

Lass (1983) does not support the hypothesis of a coronal trill for earlier periods of English. He suggests instead (Lass 1983: 84) that a “pharyngealized velar approximant” has phonetic properties that could potentially elicit the full range of historically attested vowel changes. Lass’s (1983) argument is not incompatible with the references to trembling and vibration in the throat observed above. Hogg (1992: 40) suggests that a fricative or tap articulation is likely for Old English pre-vocalic /r/ but that some velarisation may have occurred pre-consonantly. This is based on the assumption that OE “breaking,” a process of diphthongisation of front vowels, was conditioned by velar or velarised consonants, which at the time, (Hogg 1992: 84-85) suggests, included /r/ and /l/. Hogg’s claim is not incompatible with Lass’s (1983) proposal.

Catford (2001: 184) considers the possibility of a “molar” r (first described by Uldall 1958) for “late Proto-Indo-European.” This variant is also not incompatible with a velar or velarised variant since it involves, bunching the tongue up towards the upper back molars (Uldall 1958: 103). Catford (2001: 173) notes that molar articulations of /r/ tend to incorporate some velar-uvular constriction. C. Jones (2006: 259-260), discussing references to “roughness” in the historical descriptions of /r/, also suggests a uvular articulation.

The vibration associated with velar or uvular articulations of /r/ is compatible with descriptions of a dog-like sound. It seems that uvular, velar / molar and coronal trills are all potential candidates which could fit the historical descriptions of English /r/, but it is not at all clear which variant is likely to have been most dominant throughout the 1600-1800 period that I am discussing.

Gąsiorowski (2006) suggests that there were different variants of OE /r/ occurring in different OE dialect areas. He finds evidence for this hypothesis in the historical distribution of distinct vowel changes associated with /r/ in OE (see Gąsiorowski 2006: 70-74 for details). For example, “pre-r-breaking” does not appear to have had the same effects in West Saxon and Anglian dialect areas. There also appear to be vowel changes associated specifically with a Northumbrian dialect area. J. Smith (2007: 100) also argues for an early distinctive “Old Northumbrian” variety. This opens up the possibility that a uvular /r/ variant diffused from Northumbrian into other Anglo-Saxon varieties.

The assumption of a long history of dialectal variation for English /r/ may reconcile the contradictions between hypotheses of a front (e.g. apical, coronal) articulation on the one

hand, and arguments for a back (e.g. velar, uvular) articulation on the other. A selection of historical vowel changes is more easily accounted for by positing multiple possible articulations of /r/ in use simultaneously, perhaps within the same dialect, with differing coarticulatory effects. The historical evidence reviewed above provides reports of, in 28-34:

28. weakening and subsequent loss of (possibly a trill) variant of /r/, possibly commencing word-finally in unstressed syllables
29. regional variation such that a uvular variant was associated particularly with speakers in the north of England, and was stigmatised by ‘outsiders’ to some degree, but may previously have been a more widespread variant
30. qualitative variation and change to /r/ that may have been phonologically- and lexically-conditioned, or both, since several orthoepists refer to different allophones of /r/ and word-specific (non)usage of /r/
31. changes to vowels influenced by a following /r/
32. differences in the salience of certain positional variants, since there is a greater tendency to identify pre-consonantal and pre-pausal articulations of /r/
33. an apparent loss (i.e. vocalisation) of syllable-final /r/ for some speakers (probably in London) between J. Jones’s (1701) and Sweet’s (1890), descriptions, which may have originated in unstressed word-final contexts
34. a potentially wide range of /r/ variants in use throughout an extended period of time, including potentially [r], [ʀ], [ʁ], [r̥], [ɹ], [ɻ], with some of these variants occurring simultaneously in the same time period.

This evidence overwhelmingly indicates:

- quantitative and qualitative variation between syllable-onset and syllable-coda /r/ from at least the mid-1600s
- quantitative and qualitative variation between pre-consonantal syllable-coda /r/ and pre-pausal syllable-coda /r/s
- social and regional variation in how /r/ allophones were realised

The evidence thus does not support a straightforward hypothesis of a single original variant of /r/ which gradually weakened in its phonetic quality and then ceased to be pronounced in

pre-consonantal and pre-pausal contexts. Rather, it seems that change to /r/ has affected different positional variants of /r/ differently at different points in time.

When attempting to reconcile the evidence provided by the orthoepists with that of the more objective phoneticians and historical linguists, the only consistently clear point is that there is variation, some of which may be free variation, some allophonic and some regional.

Lass (1997: 287-288) notes that the historical literature often represents the decline of rhoticity as a singular occurrence of /r/ loss. There is clearly evidence for a gradual qualitative change (i.e. weakening) to /r/ in pre-consonantal and pre-pausal positions for. For many English speakers this has indeed resulted in the loss of articulation of /r/ in non-pre-vocalic contexts. However, the dynamic range of /r/ variation across the 200 to 300-year period considered in this chapter poses a number of challenges for identifying an original /r/ segment and for relating the historical variation to a straightforward process referred to as “r-loss.”

First of all, there is no evidence of a single stable variant of /r/ at any given time throughout the period. In fact, there is contradictory evidence of back articulatory configurations of /r/ and more front articulatory configurations.

A second problem, closely related to the first, is that even an approximate point in time at which r-loss began, cannot be identified. The earliest evidence I refer to above is Ben Jonson (1640), but there is in fact evidence of changes occurring much earlier than this. Comments about pre-consonantal r-loss in specific contexts (i.e. before /s/ and /ʃ/) appear as early as the 14th century (see Dobson 1968: 966; Wyld 1927, 1936; Lass 1997: 284-285). However many scholars do not consider this change to be part of the same historical change referred to as r-loss in the literature. In particular, observations of loss of /r/ which are not accompanied by evidence of lengthening of the preceding vowel are treated as separate from and irrelevant to the r-loss that is described from the 1600s onwards which *is* accompanied by vowel-lengthening. Wyld (1927: 213-214) suggests that loss of /r/ “before –s, –sh, –ch” took place before any vowel lengthening occurred.

Wells (1982: 222) describes 14th century /r/ loss as a “quite separate loss of /r/” as do Dobson (1968: 992), Jespersen (1909: 191, 228) and Beal (2004a). Each of these scholars associates a notion of an “/r/-loss *proper*” with vowel-lengthening. Beal (1999: 165) states explicitly that there are two different changes, one in which vowels are not affected (i.e. occurring before /s/ or /ʃ/) and a later change in which the preceding vowel is lengthened.

There is some agreement in the literature then that an r-loss of a “later” kind is associated with vowel-lengthening before /r/ (cf. Wells 1982: 213-218; Lass 1997: 283-287; Beal 1999: 105-118), while an “earlier” r-loss occurred before any such vowel lengthening took place. The assumption of two quite distinct changes in the history of /r/ on the basis of a particular process of vowel lengthening may be an effective descriptive strategy employed for dealing with some highly complex historical linguistic variation and change. However /r/ is connected to many vowel changes in the history of English.

Wells (1982) describes two vowel changes in particular that he considers to have occurred before /r/. The first he terms “Pre-R Breaking” (1982: 213) and the second is “Pre-R Lengthening” (1982: 201). The latter is the same vowel-lengthening that is referred to in the hypotheses of two distinctive r-loss events. Wells (1982: 214-218) argues that Pre-R breaking occurred “as early as the fifteenth or sixteenth century” while Pre-R Lengthening occurred in the 17th century and “R-Dropping” (i.e. “later” r-loss) is dated by Wells to the 18th century.

Pre-R Breaking involved the epenthesis (insertion) of schwa after close or half-close vowels (when followed by /r/) and led to a change in the pronunciation of words such as *fear*, *sure*, *more*, *bare*, *fire*, *tower*.

Although Wells seems certain that Pre-R Breaking preceded r-loss it is also possible that Pre-R Breaking and change to /r/ were mutually influential processes. Qualitative change(s) to a particular variant of /r/ may have provided an appropriate trigger for schwa insertion.

Wells (1982) dates the *onset* of Pre-R Breaking to around the 1400s or 1500s. Walker draws attention to the “indefiniteness” of vowels before /r/ in the late 1700s. It may be that Walker makes this observation simply because the pronunciations do not match the spellings, but it is equally possible that the pronunciation of vowels before /r/ and the pronunciation of /r/ itself have been susceptible to variation for this same lengthy period.

A similarly ambiguous ordering of historical events exists in relation to Pre-R Lengthening. For example, Lass (1997: 285) acknowledges that /r/ loss is “for a time apparently coterminous with lengthening” (see also Beal 1999: 163). Other authors do attribute vowel changes before /r/ to changes to /r/ itself (e.g. Dobson 1968: 724ff). Certainly, the emergence of RP vowels such as /ɪə/ and /ɜ:/ are understood to have emerged as a consequence of post-vocalic /r/-vocalisation (e.g. Wells 1982; Hughes et al. 2005: 102; Scobbie 2006). Therefore the issues with regard to vowel changes such as Pre-R Breaking and Pre-R Lengthening only seem to add strength to a hypothesis of intertwined and mutually influential variation and change affecting /r/ and its preceding vowels throughout the history

of English. A third point then is that variation involving /r/ is closely intertwined with vowel changes.

A final point is that it is not possible to identify a point in time at which the hypothesised process of r-loss ended. Although many speakers of English have ceased to articulate syllable coda /r/s in the majority of contexts, many speakers retain them. There are also cases where /r/ has been weakened, vocalised and perceived as “lost” in certain contexts, but has since been reinstated. I discuss such cases in section 4.3.

The four points I have raised here are not easily accounted for by assuming a process of r-loss commencing c.1800s, which affected a singular variant of /r/ (e.g. coronal trill). The evidence is more easily explained if we assume that variation in the articulation of /r/ has historically been the norm. This variation may also have involved different (allophonic) variants of /r/ for different individuals and groups of speakers. It is possible for example, that a process of weakening and eventual vocalisation of what may once have been a trill for some speakers, but may have been more or less fricated for others, became innovative in the south of England. Simultaneously, at least in areas further north (or in a wider geographical area) a traditional uvular variant may have been used by some speakers. As I show in the next section, multiple possible articulations for /r/ within a single dialect are not unusual.

Denton (2001) has suggested dialectal differences in relation to both vowel changes and the quality of /r/ historically. For example, dialects in which coda /r/ was articulated with a greater degree of constriction may have been more susceptible to for example, vowel epenthesis, while vowel mutations may have been more likely to occur in dialects with relatively less-constricted variants of /r/ (see Denton 2001: 171). Discussing efforts to identify an articulatory variant for early West Germanic /r/, Denton says that (2001: 165)

Given the variability of modern rhotics, both across and within languages, there is no reason to assume that the rhotic of early West Germanic was any less variable [...] Therefore, it would likely be misguided to try to reconstruct a single articulation of /r/ at a stage of Germanic which evidenced any dialectal diversity.

Denton’s suggestion is in line with the *Uniformitarian Principle* (Labov 2001: 21-25), i.e. it is reasonable to assume that variation and change which operates in contemporary English varieties is likely to also have been influential on the development of English in the past. It seems then that the most appropriate question to ask in relation to historical variation and change involving /r/ is not the one that is most frequently asked (e.g. Erikson 2003: 184):

What realization of /r/ is original in Germanic in general and English in particular?

but rather, the one which is asked by Catford (2001: 184):

Why did belief in the primacy of trill become so popular, particularly among Indo-Europeanists?

Catford's (2001: 184) answer is that the myth of an original trill /r/ may have been passed down from the writings of classical Greek and Roman authors. Along similar lines, Sweet (1888: 264 [§901]) comments that

the mention of the vibration seems to be nothing but a part of the traditional definition of *r*. It is remarkable how people cling even now to the idea that the E. *r* is trilled, probably confounding trilling with the voice-vibration in the glottis.

The review of the historical evidence in this section covers only a sample of the descriptions which refer to r-loss. Nevertheless the evidence clearly supports Lass's (1997: 288) view:

If this change is to be described as a 'historical event', it is surely one with enormous extension, not a 'point' ..., more like 'the Renaissance' than the execution of Charles I.

This section draws attention to the fluid nature of /r/ as a variable. Since at least the 1600s, it has not been unusual for /r/ in BrE to fluctuate between a range of variants and for /r/ to interact with a range of vowel changes. I argue here that this is in fact, the "default" situation with respect to /r/. In the following section I summarise the evidence from contemporary dialectological studies, which highlight the ongoing variability of /r/ in today's English phonological systems.

4.3 Rhoticity: variation and change in contemporary English varieties

Historical change(s) involving rhoticity have had consequences for the way that rhoticity is manifested in 21st century English phonological systems. In this section I provide an overview of some of the manifestations of rhoticity in contemporary English varieties.

4.3.1 The fluidity of /r/

The historical literature /r/ highlights the “chameleonic” nature of /r/ (R. Wiese 2001: 24). This variability has been commented on in many analyses of the sound (e.g. Lindau 1985; Ladefoged & Maddieson 1996; Widdison 1997; Catford 2001; Scobbie 2006). Catford (2001: 183-184) observes that a category of Indian ‘rhotic’ sounds was acknowledged (and named “*raṣṛuti*” cf. Deshpande 1978: 282-283) as early as 150BC. The fluidity associated with /r/ makes this feature susceptible to utilisation as a socially meaningful variable.

An articulatory or acoustic property that is common to all rhotics has not yet been identified. There is a diverse range of articulations that can manifest as /r/. Since there are similarities between individual /r/ sounds, but not between all, Lindau (1985) proposes a family relationship pattern of class membership based on properties shared between different /r/ sounds. Scobbie (2006: 338) describes /r/ as an “elsewhere” category since the rhotic label is typically applied to “lingual sonorant consonants that are not specifically palatal, lateral or labial.”

Approximant articulations of /r/ in the dental-alveolar region are common in contemporary English varieties, e.g. [ɹ]. These involve approximation between the tongue and the post-alveolar region, with the tongue tip pointing varying degrees upward towards the alveolar ridge or backward in a more retroflex position (Ball and Rahilly 1999; Ladefoged & Maddieson 1996; Scobbie 2006). Tongue shape is speaker-specific and may be more hollowed / concave or more bunched with the tongue tip down (Uldall 1958; Delattre & Freeman 1968; Lindau 1985; Westbury et al. 1998; Catford 2001). The articulatory dimension of lip-rounding also varies in extent from one speaker to the next and velar or pharyngeal constrictions can occur (Scobbie 2006). Delattre and Freeman (1968) describe eight articulatory types of (American and / or British) English /r/. MNZE /r/ is typically articulated with an approximant. However, Maori words are often articulated with a tap / flap variant.

A continuum of relative degrees of constriction is a dimension along which variation and change to /r/ can take place (see Barry 1997). The constriction for an approximant /r/ may progressively weaken and result in increasingly more vowel-like articulations. The /r/ may merge with a preceding vowel. For vowels preceding /r/, the vowel transitions into /r/ may increase in salience, thus influencing a reduction in the relative degree of constriction for the /r/ (see Scobbie 2006: 339-340).

This is not a straightforward continuum. Multiple constrictions, i.e. double and secondary articulations, can also occur. At the least-constricted end of the continuum for example, labiodental articulations of /r/ ([ʋ]), which involve approximation between the lower lip and the upper front teeth, often without any lingual gesture, may nevertheless have accompanying velar or pharyngeal constriction (Foulkes & Docherty 2000; Scobbie 2006). Catford (2001) describes velar constrictions associated with molar /r/ and K. Johnson (2012: 140) identifies three simultaneous constrictions (labial, coronal and pharyngeal) for American English [ɹ].

There is a range of tongue shapes / configurations involved in /r/-production. Tongue configurations may be influenced by coarticulation (see Boyce & Espy-Wilson 1997). /r/s may undergo varying degrees of devoicing, frication, retroflexion, tongue-bunching and lip-rounding, especially in particular phonetic contexts (Ball & Rahilly 1999; Scobbie 2006).

The issue of syllabification adds an additional dimension of variability for /r/. The influence of syllable structure on /r/ appears is a complex issue (see Denton 2001; Harris 2012). For example, /r/ may take the position of a syllable nucleus if the vowel becomes heavily rhotacised (*bird* as [bɜːd] or as [bɹd], *better* as [betə̃] or [betɹ]). As the historical evidence suggests, the /r/s of syllable codas seem particularly susceptible to weakening of their phonetic realisation and reduction to vowels or to Ø. Recently Harris (2012) has noted that attempts to account for the effects of /r/ across a variety of phonological domains based on syllable structure are inadequate. I do not address issues of phonological theory in this thesis, but simply aim to emphasise the complexities associated with /r/ as a phonological feature.

The fluidity of /r/ involves complex, subtle and finely-detailed variation across several phonetic and phonological dimensions, as in 35-38:

- 35. tongue configuration
- 36. degree of constriction
- 37. presence of additional (co)articulatory gestures
- 38. phonetic realisation according to syllable structure / position

With the exception of 38, these dimensions of variation are largely non-distinctive.

Different /r/ variants are often impressionistically similar and may be heard as the same target segment. There is ample phonetic motivation for variation and change involving /r/ in

phonological systems, especially in relation to misperception and the imperfect transmission of the target sound (see Scobbie 2006: 339).

In addition /r/ is acquired late relative to the acquisition of other sounds (Widdison 1997), which further enhances the potential for variation and change. Given the fluidity of /r/ as a variable and the inter and intraspeaker variation involved in its production, and since such variation is often not salient, it is not surprising that variation involving /r/ is often sociolinguistically significant.

Studies which have examined variation involving /r/ in contemporary English varieties are directly relevant to my investigation of MNZE rhoticity. I summarise the findings of some such studies below.

4.3.2 The consequences of “/r/-loss” in 21st century Englishes

The historical changes which have affected /r/ have had ongoing implications for the status of rhoticity in 21st century English phonological systems. /r/ in England is described (Wells 1982; Trudgill 1990; Upton & Widdowson 2006) as having an increasingly restricted phonological distribution for an increasing number of English speakers, with small pockets of variable rhoticity remaining (see Britain 2002: 52-54). Wells (1982: 220) states that there now tends to be only variable rhoticity even where rhoticity remains. The situation is illustrated in map-form in figure 4.1.

Across most of the United States of America the articulation of /r/s in syllable coda contexts has prestige status (Wolfram & Schilling-Estes 2006: 105-107). The geographical distribution of non-pre-vocalic /r/ across America is understood to be a consequence of the relative degrees of /r/-use by English speakers migrating to different geographical areas of America at particular time periods (Wells 1982; Wolfram & Schilling-Estes 2006). Different degrees of contact between England and respective settler communities also played a role in the establishment of patterns of rhoticity, as well as differential degrees of dialect mixture. Although American English (AmE) favours a high degree of rhoticity overall (in comparison to English English), there are social and regional dialects in which non-articulation of non-pre-vocalic /r/ is a characteristic feature, such as in New England, New York, Boston; South Carolina (e.g. McDavid 1948; Labov 1966; Nagy & Roberts 2004). Wells (1982: 220) notes that non-rhoticity is primarily associated with the Atlantic seaports such as Boston, New York and Norfolk, while “[t]he pioneers who had already pushed westwards remained unaffected by the new development.”

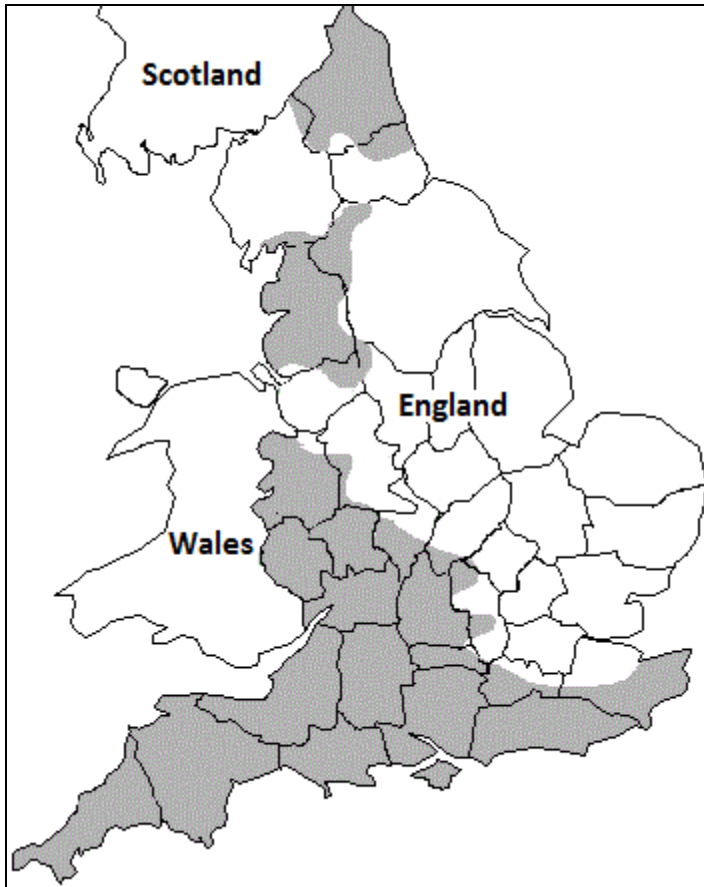


Figure 4.1: contemporary distribution of rhoticity in England (i.e. for more conservative mid-20th century speakers, based on Chambers & Trudgill 1998: 95; Britain 2002: 52-54; Upton & Widdowson 2006: 42). Shaded areas show approximate areas of non-pre-vocalic /r/-articulation.

In African American Vernacular English (AAVE) (see Labov 1972a) and varieties of English with creole origins such as Bahamian English (Childs & Wolfram 2004) and Jamaican English (Devonish & Harry 2004), /r/-use is also increasing for some groups of speakers and decreasing for others. The complex patterns of variation described in the historical literature prevail in the 21st century.

I summarise a sample of studies below, firstly in English varieties where /r/ is decreasing in use (section 4.3.3) and secondly, in varieties which there is an apparent increase in /r/-use (4.3.4).

4.3.3 Decreasing rhoticity

The traditional view of an apparently “monolithic r-pronouncing speech community” in ScotE has been challenged in recent studies of ScotE varieties. Romaine (1978) investigated the /r/-use among 24 Edinburgh school children and found evidence of decreasing rhoticity.

Romaine (1978) investigated frequencies of /r/ in three phonological environments (word-finally followed by \emptyset , word-finally followed by a word beginning with a vowel and word-finally followed by a word beginning with a consonant). Pre-consonantal /r/s within individual words were not analysed.

The results indicated a decrease in the constriction of pre-pausal coda /r/s (e.g. *far*) with the more constricted variant (a tap) maintained before vowels. There was also evidence of a lessening of the constriction of /r/s pre-consonantly. Romaine found clear gender stratification with boys leading the trend towards less rhotic pronunciation (Romaine 1978: 148-149). Females were “almost always rhotic” (Romaine 1978: 148-149). Romaine’s findings demonstrated a relationship between phonetic realisation, phonological context and the gender of the speaker in the beginnings of an apparent change towards decreasing rhoticity.

More recently, Stuart-Smith (2007) also found patterns of derhotacisation in data for male working class ScotE speakers in Glasgow. The speakers used a wide range of /r/ variants including a) vowels lacking any secondary articulation, b) vowels accompanied by pharyngealization / uvularization, c) vowels which constituted weak uvular/ pharyngeal approximants and d) more obviously constricted variants.

The youngest speakers used the least rhotacised variants and the oldest speakers used the most. Interestingly, the reduction in rhoticity involved different articulations of /r/ with same-age, same-sex speaker groups. There were also differences in vowel duration, illustrating a complex interplay between /r/ variants and vowel length. Speakers nevertheless continued to maintain a distinction between potentially homophonous pairs such as *hat-heart*, using fine-grained differences in the phonetic realisation of such pairs. Recently, Lawson et al. (2011) have employed Ultrasound Tongue Imaging (which involves attaching an ultrasound probe to a speaker’s chin) to investigate the small articulatory differences in /r/. Lawson et al. (2011) examined the /r/ articulations of ScotE adolescent speakers and found that the auditory identification of different degrees of rhotacisation correlated with a continuum of different tongue configurations for /r/. Thus the phonetic quality of /r/ can vary in diverse and subtle ways for individual speakers within a given speech community.

Phonetic context is also influential on /r/ articulation. Asprey (2007) investigated the relationship between the phonetic quality of /r/ and phonetic context using data from 39 speakers aged between 16 and 71+ in BrE in the West Midlands.

Asprey's data revealed a decline in rhoticity since Orton and Barry's (1969) Survey of English dialects (SED). As with the SED reports the quality of /r/ varied between [ɹ] and [ɹ̥]. The maintenance of /r/ was most frequent where /r/ followed the NURSE (or stressed schwa) vowel (e.g. *fur*). The SQUARE vowel appeared to be the next most favoured phonetic context for /r/-retention.

Asprey's study also illustrates that individual speakers may continue to articulate non-pre-vocalic /r/s in 21st-century varieties of English which are considered "non-rhotic."

4.3.4 Increasing rhoticity

The most renowned study of increasing rhoticity is Labov's (1966, 1972b) research in New York at a time when the articulation of /r/ in coda contexts was gaining prestige among speakers who had previously tended towards non-rhoticity. Labov observed (1972b: 144-145) that the articulation of /r/ was having far-reaching consequences for the vowel systems of New York City speakers.

Labov's analysis of the speech of sales assistants in New York City department stores identified a new prestige pattern of /r/-articulation gaining ground among younger upper middle-class speakers. Listeners' subjective reactions to /r/-use in matched guise experiments confirmed the growing prestige attached to /r/-articulation.

A similar situation exists in Alabama. Based on data collected in the Anniston area between 1968 and 1972, Feagin (1990) described "an enormous change" evident between older upper class speakers with categorical non-rhoticity and younger generations who displayed high levels of rhoticity.

Feagin's data also revealed an association between articulation and phonetic context, in addition to social factors. /r/ was most likely to be articulated after a stressed NURSE or schwa vowel, particularly if that vowel was followed by a consonant, e.g. in *work* or *first*. The least favoured environment for /r/-articulation was after an unstressed vowel, e.g. *letter*. Feagin also identified a variety of realisations of /r/ involving different degrees of constriction.

Irwin and Nagy (2007) have also investigated an apparent (re)introduction of /r/ in AmE in Boston. Irwin and Nagy (2007) were particularly interested in whether the patterns of (re)emergence would parallel those identified by Feagin (1990). They performed auditory and acoustic analysis on reading data collected in 2006 from 24 male and female participants aged between 19 and 81. The younger speakers pronounced /r/ more than the older speakers.

Irwin and Nagy took a variety of factors into account which might influence variation in /r/, including phonetic context, lexical item, word length, word frequency, morphological position and the presence of another /r/ within the same word. The phonetic context exhibited the greatest influence on /r/. The study confirmed previous findings that NURSE is a favoured context for /r/ articulation. Other linguistic factors identified as relevant included, in 39-41.

39. Word boundary: word-final /r/ most favoured and non-final /r/ least favoured. This was the next most-significant factor after the phonetic context: /ɜ_C/ and matches Labov's (1966, 1972b) New York City data in which the word-final /r/ in *floor* was articulated more than the pre-consonantal /r/ in *fourth*.
40. Word type: lexical words were favoured slightly more than function words.
41. Word length: an increase in the number of syllables appeared to reduce the likelihood of /r/ pronunciation.

Factors which Irwin and Nagy did *not* find to be significant were the presence of another /r/ in the same word, morpheme (word-internal) boundaries and lexical frequency.

These findings suggest that several different linguistic factors may simultaneously influence speakers' articulations of /r/. Although there was no particular trend for phonetic contexts in the Boston data overall, the findings supported previous studies which have identified a preceding NURSE vowel as significant for /r/ articulation.

The results of contemporary studies of English /r/ in the 21st century confirm that /r/ has continued to be involved in dynamic variation and change. Along with its apparent sensitivity to various linguistic factors, /r/ is also particularly susceptible to sociolinguistic variation and change. Across these studies the use of /r/ exhibits variation according to age, gender and region. /r/ is a phonological feature which has the potential to be implicated in the construction of identities in complex ways. Indeed, Labov's (2001) analysis of /r/-use by Italian New Yorkers and by AAVE speakers (Labov 1972a) and Stuart-Smith et al.'s (2007) analysis of the construction of identities in modern Glasgow speech communities confirms that /r/ is a variable worth investigating in relation to the construction of regional identities in MNZE.

4.3.5 Sandhi /r/

An additional important dimension to rhoticity which I have not yet discussed here is sandhi /r/. Due to space constraints I am not able to provide a detailed overview of sandhi /r/. The literature dealing with sandhi /r/ demonstrates that the phenomenon is an unresolved area for phonological theory (see Wells 1982: 222-227; McMahon et al. 1994; Harris 1994; Giegerich 1999). Sandhi is generally treated as being a direct consequence of the loss of non-pre-vocalic /r/ (e.g. Wells 1982; Hay & Sudbury 2005; Hay & Maclagan 2010), however there are several possible different accounts of the processes involved and I do not address these issues here.

Studies of variation and change involving sandhi /r/ are much less frequent than studies involving non-pre-vocalic /r/, but also demonstrate that, although linking /r/ was traditionally treated as a categorical variable, this aspect of rhoticity is also influenced by a variety of social and linguistic factors (Bauer 1984; Foulkes 1997; Watt & Milroy 1999; Hay & Maclagan 2010). The much lower usage of intrusive /r/ than linking /r/ tends to be associated with influence from orthography, i.e. the absence of an <r> in the writing for intrusive /r/ (Gimson 1970: 209; Wells 1982: 224; Brown 1988: 145; Crystal 2000: 36-44; Cruttenden 2008: 305). Sociolinguistic variation involving intrusive /r/ has been difficult to evaluate due to its scarcity in the data (see Hay & Maclagan 2010).

Hay and Sudbury (2005) have investigated linking and intrusive /r/ in the context of late 19th century NZE specifically. Their analysis suggested that linking and intrusive /r/ arose as phonological processes as overall rhoticity declined. Of course, it is only in varieties that are perceived to be “non-rhotic” that /r/s occurring word-finally before vowels are treated as “linking.” Hay and Sudbury (2005) found that as rhoticity declined the /r/s in “linking” contexts also declined in frequency but were nevertheless retained (variably) as linking /r/s. Intrusive /r/ appears to have been a much later development however, arising only after non-pre-vocalic /r/ had declined substantially. Thus, there appears to have been a gradual move towards a preference for non-rhoticity in NZE.

Combined with the historical literature illustrating the variation involved in BrE /r/ at the time of settlement and evidence from the ONZE data (Gordon et al. 2004; Trudgill 2004; Hay & Sudbury 2005), there is support for the hypothesis that rhoticity in NZE has always had an ambiguous status. However, apart from Bartlett’s (2003) examination of rhoticity in Southland, and Kennedy’s (2006) observations of NURSE rhoticity in the far north of the North Island, there has not been additional research to investigate how firmly established the preference for non-rhoticity may be in different geographical areas of New Zealand.

4.4 Chapter summary

Each of the dimensions of rhoticity described above has important implications for English phonological systems, for dialect divergence and convergence and for speakers' utilisation of linguistic variation for identity purposes. Importantly, there is good evidence in both the historical and contemporary literature that /r/ as a variable was not completely "lost" (i.e. in non-pre-vocalic contexts) at any point in the history of BrE. The historical evidence shows that there is likely to have been considerable variability in rhoticity when New Zealand was first settled by BrE speakers. This is supported by the ONZE data. The ongoing consequences of this variability are of considerable relevance for this thesis. In chapter 5 I describe my quantitative analysis of rhoticity in the MNZE data and in chapter 6 I provide a more fine-grained qualitative treatment of the relevance of variation in rhoticity for New Zealand teenagers' regional identities.

Chapter 5: Quantitative analysis of MNZE rhoticity

This chapter describes the quantitative analysis of the MNZE data. The analysis addresses the influence of linguistic and social factors on the distribution of articulated tokens of /r/ in order to evaluate whether there is evidence for regional variation. A qualitative analysis of the data is presented in chapter 6. Given the complexity involved in the number and nature of the variables available for analysis, it is important to employ statistical methods which are best suited to addressing the research goals. In the first section of this chapter I provide a background for the statistical procedures adopted in the quantitative analysis, before proceeding in subsequent sections to a description of the analysis and results.

5.1 Background to statistical procedures

5.1.1 Statistics in sociolinguistics

Since the 1970s, the field of sociolinguistics has incorporated the theory of probability into its quantitative data analysis techniques (see Sankoff & Labov 1979; Bod et al. 2003a; Sankoff 2005). Probabilistic approaches began to be developed following the introduction of the “variable rule” by Labov et al. (1968 see also Labov 1969), which was invoked to account for the application of rules specifying the occurrence of particular language forms (e.g. the deletion of the copula verb BE) in Black English Vernacular. The premise behind the concept of variable rules is that speaker competence and performance involves knowledge of systematic linguistic variation, i.e. the application of a given “rule” is influenced by a variety of factors. The concept of variable rules was subsequently expanded to encompass probabilistic modelling of linguistic data within the VARBRUL programme (see Sankoff & Labov 1979; Paolillo 2002: 32-35).

The notion of frequency has long-since played a fundamental role in sociolinguistic analyses (Bod et al. 2003b: 3), but the inherently gradient nature of linguistic variables and linguistic variation must also be acknowledged. Probability-based approaches have become valuable analytical tools for the quantitative investigation of the variant, gradient and frequency-based properties of both sociolinguistic competence and sociolinguistic performance (e.g. Mendoza-Denton et al. 2003; Gorman 2010).

There are considerable challenges involved in the development of statistical techniques which can effectively address the complex relationship between linguistic behaviour and the many factors which influence language use in subtly different ways within and across individual speakers. Mendoza-Denton et al. (2003: 104-106, see also Sankoff & Labov 1979;

Sankoff 2001: 830) identify some of the particular challenges which variationist data poses for conventional statistical techniques, especially where data is natural speech data collected in the field. Examples include:

1. Raw frequency or percentage counts of linguistic variables may be unfairly biased. There may be an unfair distribution between individual speakers' actual opportunities of production due to extraneous factors, such as word frequency effects.
2. The numbers of speakers within categories may be unevenly distributed (in chapter 3 I identified a number of challenges for obtaining equally distributed speaker categories for this research).
3. The target variable may exhibit a low occurrence within the sample data due to the inability to control precisely the content and context of natural language data (this is discussed further in the analysis of rhoticity which follows).
4. There may be unbalanced or empty cells within the data sample due to an uneven distribution of particular linguistic variants within specific linguistic contexts.

Probabilistic modelling is well-suited to the challenges associated with sociolinguistic data, because for sociolinguistic data it is never possible to capture the full range of potential influences (or sources of “noise”) on the variability inherent in language production (see discussion in Sankoff 2001; Gorman 2010).

While it is never possible to account for all potential influences on linguistic variation, especially in non-experimental conditions such as fieldwork, a probabilistic approach does enable the analyst to model and predict conditional probabilities involving multiple variables in complex data samples. Such models can be utilised to probe the relative influence of an explanatory (i.e. independent) variable on a given response (i.e. dependent) variable and to explore interactions between respective multiple variables. A modelling approach, referred to in the statistics literature as “regression,” enables the analyst to compare alternative models (with different respective model parameters) with respect to which model best fits the data. Such models evaluate the relative predictive value of each of a set of explanatory factors with regard to the response variable.

Regression models can deal with complex data sets. The predictive nature of regression modelling is a notable advantage of this statistical technique. Once a model is successfully fitted to the data sample, the model can then be used to make predictions about the probabilities of occurrence of a response variable, given the presence versus absence (or

degree of input) of other relevant explanatory factors. Such modelling procedures acknowledge the element of chance in the social world. The models of the relationships between variables are thus understood to be “reasonable guesses” (Paolillo 2002: 3) about the tendencies of the population, based on the observed sample. There are a variety of different regression models which can be applied to the data, as I discuss below.

5.1.2 Regression models

The choice of regression model employed in a statistical analysis is driven by the nature of the data sample and the research goals. Comprehensive descriptions of different types of regression models can be found in, for example, Baayen (2008), Zuur et al. (2009), Horton and Kleinman (2011). The simplest form of regression model is a straightforward linear regression. The basic premise of simple linear regression is that there is a linear relationship between an explanatory variable x and a response variable y such that for each 1-unit change in x , there is a corresponding set amount of change in y . The values of coefficients, which range from -infinity to +infinity, denote the direction and strength of the relationship.

When a correlation is identified between two variables the linear regression model can be used to estimate a “line of best fit” between the two variables. The line of best fit represents values estimated for the population of interest based on the observed values of the sample data (drawn from the population). The best fitting line minimises the deviation between the line (predicted values) and the observed sample values. A good model has a line which fits the data with small errors / residuals (i.e. differences between observed and predicted values). When a suitable regression model is identified, the value of a response variable can be extrapolated from the value of the explanatory variable and vice versa. Predictions can be made about wider population values based on the sample data values.

Note that regression models do not establish correlations between variables. It is the analyst’s role to establish which explanatory variables should be entered into the model, based on preliminary, exploratory analysis and / or basic correlation tests. The analyst can then attempt to fit an appropriate model in order to evaluate the nature of the correlations and interactions between those variables. An advantage of regression modelling is that correlations between the response variable and several explanatory variables can be explored simultaneously. Multiple regression models can be applied and compared in order to establish which combination of explanatory variables provides the best predictive model of the response variable.

Since there are often multiple explanatory variables involved in sociolinguistic studies, regression modelling has been found to be particularly well-suited to sociolinguistic variationist data (see discussion in Sankoff 2001; Paolillo 2002: 15-17). Regression modelling techniques are utilised in the analysis of variable rules within the VARBRUL programme. In relation to NZE phonological variation specifically, Kennedy (2006) employed regression procedures to analyse correlations between NZE phonological variables (e.g. /r/ and /θ/) and various social factors. Drager (2009) employed “mixed effects” regression modelling in her sociophonetic analysis of NZE adolescents’ speech (see also Hay et al. 2009, 2010; Drager & Hay 2012). I describe mixed effects models below.

Depending on the nature of the data, different regression models are appropriate. Linear regression is appropriate for fitting models of continuous / interval data, where the response variable is a linear function of the explanatory variable. The calculations used in analyses of variance in a linear regression model are least squares estimations (LSEs), which are average squared deviances of the mean. LSEs are not appropriate for correlations which do not take a linear form, such as cases where the response variable is categorical / binary data, expressed in probabilities / proportions (see Paolillo 2002: 157-158; D. Johnson, under review).

Logistic regression has been widely adopted as a statistical technique within the fields of sociolinguistics and laboratory phonology (Paolillo 2002; Hay 2011; Baayen 2012; Gorman & Johnson 2013) where data is often counts of applications of respective variants (i.e. yes versus no occurrences). A binary response variable cannot be modelled as a linear function of its explanatory variables and logistic regression is used to calculate variance using maximum likelihood estimations (MLEs). These are the log odds of occurrence of a particular category value, see Baayen 2008: 195-196; Jaeger 2008: 437-438).

The type of regression model (logistic versus linear) utilised and the type of data are interrelated. The logistic regression models utilised by VARBRUL have the requirement that variables which are not categorical must be categorised (Gorman 2010: 67; Hay 2011: 208). Where data is non-categorical, categorisation (otherwise known as “binning”) essentially involves data reduction. There is a loss of detail which is potentially important and influential. This increases the chance of Type II error, in which the statistical analysis leads to the acceptance of the null hypothesis erroneously (Gorman & Johnson 2013). The categorisation of continuous data should therefore be avoided if possible.

Since different types of variables in a data sample warrant different types of regression models, Nelder and Wedderburn (1972, see also McCullagh & Nelder 1989), developed a “Generalised Linear Model” (henceforth GLM) to unify different regression procedures. The

GLM can accommodate different data types by utilising a set of mathematical functions referred to as “link functions.” These allow a response variable of a particular type to be transformed into a numerical format suitable for the regression modelling procedure. A different link function is utilised according to its suitability for a particular type of response variable (e.g. continuous, count, binomial proportion, etc., see Paolillo 2002: 176-179). GLM procedures have been welcomed within sociolinguistics due to the advantages they provide for exploring the effects of multiple explanatory variables. The GLM avoids the need for the categorisation of continuous explanatory variables. However, GLM also has limitations due to assumptions which are made about the data (especially homogeneity of variance and the independence of x -values). Recently the “mixed effects” approach to regression modelling (described in Pinheiro & Bates 2000), is increasingly identified in the literature as having particular benefits for sociolinguistic data (see Gorman 2009, 2010; Drager & Hay 2012). These mixed effects models extend the GLM and provide several important advantages over the basic “fixed effects” (i.e. GLM) models. I describe the important advantages of the mixed effects approach in the next section.

5.1.3 The benefits of “mixed effects” models in sociolinguistics

In a fixed effects GLM regression procedure involving multiple explanatory variables, the model treats the respective explanatory variables as mutually independent. The model estimates the different respective amounts of change in the response variable y for each explanatory variable x_i , independently from the other explanatory variables included in the model (i.e. with the other explanatory variables held constant).

Gorman (2010: 67) notes that an “omitted variable bias” frequently arises in statistical analyses of sociolinguistic data. While it is preferable to take into account as many explanatory variables as are potentially relevant in the regression model, some individual explanatory variables may “nest” each other. In nesting, the values of one explanatory variable may be subsumed (duplicated) within the values of another (see discussion in D. Johnson, under review).

Treating explanatory variables which are not independent (i.e. variables which are nested) as independent variables in a fixed effects regression model causes problems for the mathematical calculations and estimations of the model (Gorman 2010: 67; Gorman & Johnson 2013). In order to avoid the consequences of nesting, a particular (nested) variable can be excluded from the model. This is typically the case in fixed effects models, but this

incurs the omitted variable bias. For a fixed effects model then, either excluding or including a nested variable will have unwelcome consequences for the statistical calculations (D. Johnson, under review, provides useful examples of such consequences, see also D. Johnson 2009).

One aspect of sociolinguistic data for which the omitted variable bias is particularly relevant is individual speaker variation. While it has long since been acknowledged that individual speaker identity is an important contributor to linguistic variation (Labov 2001), the variationist approach to statistical analyses has typically been to group speakers according to, for example, gender, region, ethnicity, etc. Linguistic variation is then modelled on such group differences. While these social group differences are clearly an important component of linguistic variation and such analyses are insightful, variation at the level of individual speaker identity has been difficult to address in the antecedents of present-day regression techniques due to the nesting issues described above (see Gorman & Johnson 2013). The values associated with an explanatory variable “speaker x_i ” are nested / duplicated within other explanatory variables (gender, ethnicity, etc). Since fixed effects models cannot effectively address this nesting, speaker, as a candidate explanatory variable is typically excluded from the quantitative analysis (see Tagliamonte 2006: 182). This poses an omitted variable bias.

Mixed effects (also referred to as “hierarchical”) regression models provide a solution to nesting by incorporating “random” effects alongside the fixed effects included in the model. A random effect is an additional explanatory variable with multiple possible values / levels. A random effect is “random” because it comprises only a sample of the total possible values / levels that could be associated with it, i.e. it does not exhaust its possible population values and each level cannot be repeatedly sampled (Drager & Hay 2012: 212). Random effects contrast with fixed / unchanging effects which can be sampled repeatedly with the same exhaustive set of possible values (e.g. the fixed effect “gender” is comprised of the levels / values “male” and “female” and repeated samples of the population will also produce the values male and female for the gender variable). The variable “speaker” is an appropriate random effect to include in a mixed effects model. It is comprised of a selection of values (e.g. speaker codes) and is only a selection of the total possible population of speakers.

A model which includes a random effect for the variable “speaker” caters for variation in the individual input probabilities of respective speakers. This interspeaker variation is then mapped onto a normal distribution so that its effects do not overly disrupt the fixed effects,

for example gender or ethnicity, etc. The interspeaker variance is included in the model's evaluation of the effects of other explanatory variables. The model is able to calculate variance associated with the fixed effects irrespective of the interspeaker variance as well as calculating the degree to which individual speakers diverge from the fixed effects patterns.

An example is Drager and Hay's (2012) use of a mixed effects model to evaluate variation in /k/ release in utterances of the lexical item *like* among teenage girls in a New Zealand school. A mixed effects model was used to examine both the relative influence of different fixed effects such as phonological context and social network group (common room girls versus non-common room girls) and the random effect of individual speaker variation. The inclusion of speaker as a random effect provided insights into individual speakers' degrees of conformity to particular network norms. While the common room group versus non-common room group displayed different trends in /k/ articulation, the individual girls within each group differed in the degree to which they adhered to the trend of their group.

A mixed effects model thus allows speaker variation and group variation to be evaluated simultaneously. As noted by Drager and Hay (2012: 60) mixed effects models allow a qualitative dimension of analysis to be incorporated into quantitative analysis. This is particularly important in relation to outliers. Outliers (or particularly large / small values which are not outliers) can greatly influence the significance calculations for models in which individual speaker variance is overlooked (Gorman 2010: 67-68). An apparently significant between-groups effect may in fact be due to the influence of outliers. A common approach to dealing with outliers / extreme values in traditional inferential statistical analyses is to perform data transformations. This process effectively reduces the influence of extreme values but, unfortunately, also removes potentially important distributional characteristics of the data (K. Johnson 2008: 18). Such transformations are therefore not desirable. Catering for the influence of individual speaker variance in a mixed effects model reduces the likelihood of a Type I error (i.e. when the null hypothesis is erroneously rejected). In addition, because the mixed effects model provides a more conservative estimate of variance, there is an increase in the possibility of a Type II error (i.e. erroneously accepting the null hypothesis). However, due to this increased conservatism, when the null hypothesis is rejected, there is greater reliability in the result (see discussion in D. Johnson, under review). Gorman and Johnson (2013) also note that a mixed effects model is also more accurate.

Mixed effects models allow the analyst to overcome a variety of issues which are not addressed in regression models with fixed effects, e.g. violations of sample normality and homoscedasticity, omitted variable bias, individual speaker (or word) variation (see Pinheiro

& Bates 2000; Zuur et al. 2009: 19-21). These are common issues in sociolinguistic data. In addition, Drager and Hay (2012) have found that the random intercepts associated with the results of a mixed effects model can themselves be further utilised in beneficial ways in subsequent sociolinguistic analyses.

One challenge which does exist for mixed effects models (as well as other regression models) is collinearity between explanatory variables (see Baayen 2008: 181-182; K. Johnson 2008: 166; Gorman 2010). If two explanatory variables (e.g. “occupation” and “social class”) are independently correlated with a response variable (e.g. the use of [ɪn] versus [ɪŋ]), but are also correlated with each other, it becomes difficult to ascertain their relative significance in a model which includes both variables. Gorman (2010: 69) states:

multicollinearity among predictors makes model estimates extremely unpredictable, unstable, and often contrary to the empirically observed trend.

In order to evaluate the relative effects of collinear variables, K. Johnson (2008: 167) suggests testing the effects of individual variables independently. Variance Inflation Factors (VIFs), which “measure how much multicollinearity has increased the variance of a slope estimate” (Stine 1995: 53) may be used to assess whether (multi)collinearity is a problem (see Jaeger 2008). Collinearity can be counteracted by “centering” variables (Jaeger 2008: 440) or through a process of “residualization” as demonstrated by Gorman (2010).

It is clear that a mixed effects regression model has much to offer for the analysis of the MNZE data sample in this thesis, which involves the analysis of multiple potential explanatory variables in relation to /r/ articulation. The remainder of the chapter presents the analysis of the MNZE data and the results, utilising the mixed effects model techniques. I start by outlining the structure of the data set.

5.2 Modelling the MNZE data

5.2.1 The response variable: /r/

I identified all potential instances of /r/ in each speaker’s interview transcription (i.e. all orthographic <r>s which could potentially be articulated, excluding pre-vocalic word-initial (e.g. *red*) or intervocalic word-medial (e.g. *ferry*) /r/s. Each token was identified as pre-vocalic or pre-consonantal. Within each of these two categories I also identified whether the tokens were a) “phrase-final” (i.e. followed by a phrase or utterance boundary) or b) non

phrase-final. I identified tokens as phrase-final based on a combination of linguistic cues. For example a silent interval of at least 250ms signalled a definite phrase or utterance break (cf. Robb et al. 2004: 6). Where silent intervals were between 50 to 250ms audible respiration before the onset of the next word and / or prosodic cues often signalled an utterance or phrase boundary. I also identified a category of “absolute final” tokens, which were neither pre-vocalic nor pre-consonantal tokens. In this category of tokens, the /r/ was word final and the participant completed a turn and I took the next turn, or the tokens were followed by a lengthy period of silence.

I analysed tokens auditorily and coded each token as either /r/ or not /r/. For pre-vocalic /r/ tokens (i.e. occurring word finally before a vowel), when the token was not an /r/ I also identified the variant that was produced. These variants were: glottal stop, vowel elision (where the potential /r/ occurred between vowels) or zero (e.g. when there was a clear pause between the potential token and subsequent speech). In the quantitative analysis which follows I treat the response variable as a binary response with all non-/r/ variants subsumed into a zero category. The different possible articulatory realisations which may alternate with sandhi /r/ between vowels is not addressed in this thesis.

With regard to the pre-consonantal tokens, categorisation was more challenging. As noted in previous studies the presence versus absence of an articulated /r/ is qualitatively gradient and this has consequences for data categorisation. Pre-consonantal tokens were coded as articulated, as indeterminate, or as zero. Tokens coded as indeterminate were not clearly identifiable auditorily and / or acoustically as an articulated /r/, nor were they perceived to be purely vocalic or zero articulations. There was no particular phonetic description that could be applied to these variants. It was often difficult to decide if such indeterminate tokens were an /r/ or not but they often seemed to be characterised by auditory and / or acoustic properties conducive to perceiving an /r/-like articulation. I did not have space in this thesis to explore the articulatory and acoustic properties of these tokens further. However, there was evidence of variability which would be worth pursuing at a later date.

For the purposes of quantitative statistical analysis I again treated the response variable as a binary variable in which /r/ was either articulated or not. The articulated and the indeterminate tokens of pre-consonantal /r/ were both combined and treated as “articulated.” One justification for categorising the tokens in this way is that NZE, as a variety described as “non-rhotic,” is expected to have zero articulations in pre-consonantal contexts. Variants which appear to be somewhere on a continuum between no /r/ and a definite /r/ may therefore be indicative of a change involving pre-consonantal /r/s. This is supported by studies which

find a variety of variants occurring when /r/ is undergoing change (see chapter 4). I therefore treat non-zero articulations which are /r/-like to even a small degree as variants which may indicate movement towards an /r/ in pre-consonantal contexts. This is clearly an assumption which requires further confirmation, but it seems reasonable to assume that these variants constitute something “more than” a zero articulation

An additional justification for categorising the pre-consonantal response variable in this way is that it could potentially be counterproductive to analyse the indeterminate tokens and the definite /r/ tokens separately. It is not clear if logistic regression models are able to deal reliably with a response variable which has more than 2 possible outcomes at the present time (Warren, personal communication). Furthermore, potential tokens of /r/ are often low in the MNZE data set within specific phonological contexts and articulated and / or indeterminate tokens are especially infrequent. As noted above (see also Paolillo 2002: 29-30), sparse data is a frequently-occurring obstacle in the analysis of sociolinguistic fieldwork data and it is important to utilise the data obtained as effectively as possible. Combining the articulated and indeterminate pre-consonantal tokens into one variant and treating the response variable as binary, maximised the potential for obtaining valid statistical results. Finally, the distributional patterns in the data for the pre-vocalic and pre-consonantal tokens are more comparable when the response variable has the same structure in both contexts.

The disadvantage of this strategy is that it glosses over an important issue in relation to the gradient nature of /r/ as a phoneme, namely: *What is an /r/ versus what is a non-/r/?* In the analysis which follows “not /r/” subsumes all variants of /r/-tokens (pre-vocalic, pre-consonantal or absolute final) which were clearly **not** /r/-like (i.e. a vowel, a glottal stop, or Ø). “/r/” subsumes all variables which were perceived by myself and by colleagues as a possible /r/ or as auditorily /r/-like to some degree.

Table 5.1 shows the proportions of /r/ tokens articulated in each of the phonological contexts.

Table 5.1: Numbers and proportions of articulated tokens of pre-vocalic, pre-consonantal and absolute final /r/ tokens in the MNZE data.

	Number potential tokens	Number articulated tokens	Proportion articulated tokens
Total pre-consonantal	10251	113	0.011
(i) Non-phrase final / pre-pausal pre-consonantal	9693	110	0.011
(ii) Phrase final / pre-pausal pre-consonantal	558	3	0.005
Total pre-vocalic	2221	1215	0.547
(iii) Non-phrase final / pre-pausal pre-vocalic	1825	1208	0.661
(iv) Phrase final / pre-pausal pre-vocalic	396	7	0.017
Absolute final	599	8	0.013
Total all contexts	13071	1336	0.102

The specific word form / item in which the /r/ occurs is a potential influence on the realisation of an /r/. Certain lexical items may be affected by phonological changes earlier than others. In the present analysis the potential explanatory variable “word” refers to the specific word forms in which the potential /r/s (i.e. orthographic <r>s) occurred. In order to be able to identify the relevance of the syllable position for an /r/ within a word with multiple orthographic <r>s, each different orthographic <r> within a word with multiple <r>s was allocated a separate identifier. For example, the word form *corner* was listed as “corner1” when referencing the <r> in the first syllable and as “corner2” when denoting the <r> in the second syllable.

I also identified the preceding vowel phoneme for each potential (i.e. orthographic) token of /r/. The full range of vowel phonemes which preceded /r/ tokens in the data is shown in table 5.2 along with examples of word forms in each phonological context.

Table 5.2: Preceding vowel contexts for /r/s in the data

Preceding vowel Phoneme	Pre-consonantal	Pre-vocalic
NURSE	<i>word, her parents</i>	<i>were about</i>
letter	<i>advertised, older kids</i>	<i>soccer and</i>
NORTH	<i>course, before that</i>	<i>you’re allowed</i>
START	<i>party, car full</i>	<i>are always</i>
NEAR	<i>weird, years ago</i>	<i>deer and goats</i>
SQUARE	<i>there’s, care class</i>	<i>they’re all</i>
FIRE	<i>fireworks, choir group</i>	<i>fire in</i>
OUR	<i>ourselves</i>	<i>our age</i>

The two lexical items FIRE and OUR in table 5.2 are not used by Wells (1982). I decided to use these labels due to the idiosyncratic nature of the lexical items within the PRICE and MOUTH sets respectively. The total number and range of lexical items corresponding to these two respective sets was very small. It comprised:

- FIRE: *fire, fires, fired, fireworks, tired, choir, entire, retired, retirement, tyre, desire*
- OUR: *our, ours, ourself, hour, hours*

I excluded all word-final /r/ tokens followed by /h/ (e.g. *car hire*) from the analysis. The /h/ was articulated almost without exception and the /r/ never was. I also excluded word-final /r/s which were followed by a word commencing with another /r/ (e.g. *they're really nice*).

An additional variable which I took into account was word frequency. I initially considered obtaining word frequencies according to the spoken component of the British National Corpus (BNC). However, this method seemed inappropriate. Word frequencies provided by the BNC are unlikely to be representative of frequencies for the same words for adolescent NZE speakers living in small New Zealand towns. The BNC frequencies are based on word frequencies across a number of different subsets of spoken data. These include certain domains of speech (e.g. legal) which the majority of my speakers would almost certainly not have experienced. Using the BNC frequencies would have involved choosing which specific subsets of frequencies to include and which to exclude. In addition, the range of words produced by my speakers was limited by the semi-structured interview context. Discussion was elicited on the same topics across interviews and this would have constrained the range of words likely to arise across the data set to a certain extent.

I decided to calculate word frequencies based on the range of <r> words which occurred across the data set as a whole. The disadvantage of this approach is that the word frequencies provided in this analysis are not comparable with word frequencies used in other research studies. However, one premise of the present thesis is that as far as possible language use should be analysed according to local conditions.

An additional dilemma in relation to calculating word frequencies was whether to count separate word forms as individual items, or whether to treat different word forms as a single lemma. There are arguments to support either of these approaches. Research has found both word families and word forms to have frequency effects. I therefore based this decision on my research goals. I was interested in the extent to which the co-occurrence of particular

word forms with other words or their occurrence within particular syntactic structures or routinized phrases might influence the articulation of an /r/. An /r/ might be more likely to be articulated within one particular (e.g. common / formulaic) phrase than another. If I calculated the number of different “words” according to word families, then I might not be able to examine any such effects.

I divided the number of occurrences of each word form (e.g. *corner*, *corners*, *cornered*), by the total number of word forms with an orthographic <r> produced across the data set. 933 different word forms were produced. When repetitions of each word form are accounted for, there is a grand total of 12,936 items with <r>. When calculating the total number of different word forms, a word with multiple orthographic <r>s was counted only once. Thus “corner1” and “corner2” received the same word frequency value, since each of these specific items occurred with the same frequency across the words in the data. The 12,936 word forms provided 13,071 potential tokens of /r/.

5.2.2 The speakers

Table 5.3 shows the MNZE data speaker sample. The individual speaker cells are largely evenly distributed, with the exception of the 6 adult female speakers in the Northern Region. There are 24 teenage speakers in each region. However, 2 male town N teenagers did not provide the questionnaire data⁸. Since the statistical models employ only complete observations in their calculations the models described below include only 8 town N male speakers. The data from the 2 male town N teenagers with absent questionnaire data is included in the qualitative analysis in chapter 6.

Table 5.3: Speaker sample

	Northern		Central		Total
	Female	Male	Female	Male	
Teenagers	14	10	13	11	48
Adults	6				6
Total	20	10	13	11	54

⁸ This was due to challenges associated with obtaining teenage male informants in town N.

5.2.3 The explanatory variables

There are a number of explanatory (i.e. independent) variables in the data set which may be explored in relation to their effects on /r/ use. The explanatory variables and their analytical types are summarised in table 5.4.

The majority of the explanatory variables are categorical variables with speakers classified as belonging to a particular level of that category or not (e.g. Region N or Region C, Teenager or Adult). The term “levels” in relation to the categorical variables does not imply any incremental scaling.

MCI is a continuous variable. Unlike the categorical variables it is measured on an incremental scale. A speaker who scores 8 displays MCI to a greater degree than a speaker who scores 5. However, this scale is non-metric, i.e. the distance / difference between a speaker who scores 5 and a speaker who scores 8 on the one hand, and between a speaker who scores 8 and a speaker who scores 11 on the other, is not equally meaningful, even though both cases exhibit a difference of 3. Methods used to address the non-metric aspect of the MCI variable are described below.

Table 5.4 Sample explanatory variables

Variables / factors	Factor levels	Data type
Speaker	54 levels: Individual speaker identification codes	categorical
Age	2 levels: A (adult) T (teenager)	categorical
Gender	2 levels: F (female) M (male)	categorical
Region	2 levels: N (Northern) C (Central)	categorical
MCI	17 levels: Scores in 1-unit increments on a scale from 0 (lowest) to 17 (highest)	scalar

As described in chapter 3, information was also collected on speaker ethnicity. Speakers chose from the available labels (Maori, Maori-Pakeha, Other) or provided their own. A total of 8 different labels were provided by the speakers: Dutch, European, Kiwi, Maori, Maori-Pakeha, New Zealander, Pakeha and Tokelauan-Pakeha. There are unequal numbers of

speakers represented by each of these labels. The thesis aimed to explore the influence of Maori cultural identity on MNZE phonological variation. For the statistical models I decided to utilise MCI scores as a more insightful measure of Maori identity than ethnicity labels. I investigate the relevance of the ethnicity labels in chapter 6.

5.2.4 The research questions

The primary aim of the thesis is to investigate whether there is evidence for regional phonological variation in MNZE with a particular focus on rhoticity. In order to address this question, the quantitative analysis aimed to address the research questions identified in 6:

6.
 - (i) Are there identifiable patterns of variation in rhoticity in the data in relation to any of the potential explanatory variables?
 - (ii) If patterns of variation are evident in the data, are any of these patterns indicative of regional differences in rhoticity?

5.2.5 Tools for analysis

All statistical procedures of analysis were carried out using “R” (Becker et al. 1988), a computer programming language freely available at: <http://cran.r-project.org/>

For useful descriptions of how to use R see Dalgaard (2002); Zuur et al. (2009); Horton and Kleinman (2011).

5.2.6 Models of the MNZE data

There were 12,922 complete observations available in the MNZE data for the mixed effects models. With regard to following context, the /r/ tokens are categorised as pre-vocalic (non-phrase final and phrase final), pre-consonantal (non-phrase final and phrase final) and absolute final. Because the data is interview style talk there are relatively few potential phrase final and absolute final tokens of /r/ (591 potential absolute final tokens, 941 potential phrase final tokens and 11,390 potential non-phrase final tokens). It is apparent in table 5.1 above that hardly any phrase final or absolute final tokens of /r/ were actually articulated.

The differences between the probabilities for phrase final, absolute final and pre-consonantal tokens (i.e. all of the non-pre-vocalic contexts of /r/) may appear trivial at first glance. However, the fact is that some of these tokens were articulated. For a variety of English which is described as non-rhotic, articulation of /r/ in these contexts either refutes the

traditional descriptions of rhoticity, or indicates a possible change in NZE rhoticity. I take the view in this thesis that, despite the extremely low proportions of articulated tokens of non-pre-vocalic /r/s, the fact that some are articulated should not be dismissed. Any articulated non-pre-vocalic /r/ tokens are of significant interest for the present thesis, which focuses on new and / or recent phonological developments in the variety. The articulated final tokens are also of importance for theoretical descriptions of rhoticity. The question which must be asked is whether these very small numbers of articulated non-pre-vocalic /r/ tokens represent simply the sporadic, unusual and insignificant non-pre-vocalic /r/ use of individual speakers, or, a recent change in NZE patterns of rhoticity, or, variable patterns of rhoticity which have been present historically but which have not previously been acknowledged or investigated in detail.

Even using sophisticated modelling techniques, statistical validity could not be obtained for the phrase final and absolute final tokens when several potential explanatory factors were included in the model. These model attempts induced a model fitting error known as “complete or quasi-complete separation” (see Heinze & Schemper 2002). This occurs when the value for a given variable is the same across all or almost all observations. This no doubt occurred due to the high number of zeros involved in observations for phrase final and absolute final tokens. I therefore decided to fit the first model to only the non-phrase final pre-consonantal and pre-vocalic tokens of /r/ (i.e. all phrase final and absolute final tokens were excluded). I investigate the phrase final and absolute final tokens in later sections of this chapter.

The probability of articulating non-final pre-consonantal /r/s is also extremely low. However, compared with final /r/ tokens, the sample of potential tokens of pre-consonantal /r/ is much larger. It seemed possible that models could successfully be fit to the non-phrase final pre-consonantal data. However there was a potential risk that insightful results would not be obtained in relation to some of the explanatory variables. The number of /r/ articulations would be low, while the number of explanatory variables used to subdivide this small number of events would be high. There was a concern that there would be too few articulated tokens of pre-consonantal /r/ for meaningful patterns of variation to be observed. I decided that a useful strategy was to first model the pre-vocalic and pre-consonantal (non-final) tokens together. I then attempted to model data for the pre-vocalic and pre-consonantal contexts separately in order to confirm and investigate further the observations identified in the first model.

I provide a comprehensive description of the model fitting process for the initial model (referred to as *Model 1* below) in order to demonstrate the statistical procedures. In the interests of coherence, the subsequent context-specific models and results are described in a more abbreviated format.

5.2.7 Model 1

Combining the pre-vocalic and pre-consonantal tokens in the first model provided a means of evaluating the influence of all potential explanatory variables on /r/ articulation regardless of the following context, whilst also observing any differential effects of the explanatory variables for the pre-consonantal *versus* the pre-vocalic tokens. *Following context* was included in this model as an explanatory variable and the model estimated the effects of each explanatory variable whilst also identifying interactions between each of them and the following context. Given the low number of articulated pre-consonantal tokens the patterns identified for these particular tokens are viewed in this thesis as indicative of patterns of rhoticity which warrant further exploration and not as conclusive findings.

5.2.7.1 Model 1 variables

It is important to consider the model's treatment of the variables entered into the model. The model estimates a baseline intercept value which represents the probability of /r/ (calculated in log odds) in the hypothetical situation where all variables have their default treatment values or conditions.

For any continuous variables entered into the model, the model treats zero as the default condition for that variable and estimates a coefficient (slope value) for a 1-unit increment of the variable. The coefficient represents the degree to which the model's baseline intercept changes as the value of that variable changes. For the categorical / factor variables in the model, the model treats 1 factor level as the default / reference condition and estimates coefficients (slopes) for the other level(s) based on a contrast / alternation with this default condition. Automatically, the model assigns the default condition to the factor level that is numerically or alphabetically first. However, the default condition can be set manually according to the theory-driven assumptions and research goals. For the models fit to the MNZE data (with the phrase final and absolute final tokens removed), the available explanatory variables which I could utilise in the models (with the default condition listed first) were (as in 7):

7.

- (i) following phonological context: *vowel* versus *consonant*
- (ii) preceding vowel context: START versus FIRE versus letter versus NEAR versus NORTH
versus NURSE versus OUR versus SQUARE
- (iii) word frequency: a continuous variable (default = 0)
- (iv) age: *adult* versus *teenager*
- (v) region: *central* versus *northern*
- (vi) gender: *female* versus *male*
- (vii) MCI: a continuous variable⁹ (default = 0)

In order to take into account variation with regard to individual speakers and individual word forms over and above these explanatory (grouping) variables, each of the models described below also included the random effects:

- (i) speaker
- (ii) word form

Many descriptions of how to fit regression models (e.g. Gries 2009; Gorman & Johnson 2013), advocate starting with a “full” model (i.e. a model with all potentially relevant factors and interactions included) and subsequently removing variables which are not identified as significant in the model. Non-significant variables or interactions between variables are removed sequentially and models are compared. The aim is to identify the simplest model which best fits the data in accord with the principle of Occam’s razor (Gries 2009: 260). This necessitates an avoidance of model over-fitting, i.e. not creating too complex a model with too many variables in the data. While a complex model with many variables may perfectly predict the actual data sample, it is not useful for predicting behaviour in the wider population. The aim is to strike a balance between a “good fit” and an “over-fit” model. As expressed by K. Johnson (2008: 90) the aim is to “get as good a fit as possible with a minimum of predictive variables.”

The model returns several measures of “goodness of fit” which can be used to identify a best fitting model. These are the AIC (Aikake Information Criterion), the BIC (Bayesian Information Criterion), the deviance for the maximum likelihood criterion and the log-

⁹ An alternative approach in which MCI is treated as a factor is also described below.

likelihood. With the exception of the log-likelihood, smaller values for each of these criteria indicate a better fit. A greater log-likelihood value represents a better fitting model. It is not clear which of these respective values should be attributed the greatest importance. For example, Starkweather (2010a) recommends using BIC values for model comparison, Gorman (2010: 70) uses the AIC. A useful alternative method is to employ a likelihood ratio test (i.e. Anova) to compare the degree of improvement between related (i.e. nested) models (see Jaeger 2008: 439; Gries 2009: 261).

In order to verify that a combination of variables and interactions included in the model contribute significantly to the model fit (and should be retained), it is good practice to compare the fitted model with a null model, i.e. one that includes only the intercept and the random effects. It is also insightful in relation to specific variable and interactions, to compare the model with the apparently significant variable or interaction included against the same model minus that specific variable or interaction. The results of anova comparisons of respective models indicate whether the removal of a given variable is significantly detrimental or beneficial to the model fit.

As noted earlier, collinearity can create difficulties for model fitting. In order to counteract potential complications from collinearity in the present models I checked the correlation matrices provided by model outputs, performed Pearson correlation tests and examined Variation Inflation Factors (VIFs) for potentially collinear explanatory variables. I performed centering (see Gries 2009: 121) on variables with VIF values of 3 or more.

For each of the full models described below I first entered into the model all of the relevant potential linguistic and social explanatory variables listed in 7 above, as well as any appropriate interactions between factors. I then removed items sequentially in the following order: 1) interactions between variables identified as non-significant (least significant first), 2) variables identified as not having any significant effect (least significant first), unless the variable was implicated in a significant interaction. After each removal I checked the BIC value for goodness of fit and applied Anova. At each stage I retained the best fitting model (i.e. if a model was a better fit with a non-significant variable included then I retained the non-significant variable).

Model 1 included the fixed effects: Following context, Preceding vowel, Word frequency, Age, Region, MCI and Gender. It also included interactions between Following context and each of Region, Age, MCI and Gender. It included the random effects: Speaker and Word form.

The best fit for *Model 1* retained the variables: *following context*, *preceding vowel*, *region*, *age*, *MCI* and interactions between *following context* and each of *region*, *age* and *MCI*. The intercept and estimated coefficients for *Model 1* are provided in table 5.5. I discuss the effects of the linguistic factors first, followed by the social factors.

Table 5.5: Best-fitting model estimates for *Model 1* (pre-vocalic and pre-consonantal /r/).

	Estimate	Std. Error	z value	Pr(> z)
Intercept / baseline	2.55073	0.52186	4.888	<0.001
Vowel FIRE	0.85468	2.32057	0.368	0.71265
Vowel lettER	0.25421	0.42699	0.595	0.55161
Vowel NEAR	0.63274	0.56038	1.129	0.25884
Vowel NORTH	-0.03923	0.47624	-0.082	0.93435
Vowel NURSE	2.84125	0.45550	6.238	<0.001
Vowel OUR	-0.34305	0.75967	-0.452	0.65157
Vowel SQUARE	0.17363	0.47581	0.365	0.71517
Following C	-11.26990	0.59385	-18.978	<0.001
Region N	-0.49862	0.18863	-2.643	<0.01
Age Young	-1.20441	0.30188	-3.990	<0.001
MCI	-0.20386	0.03458	-5.895	<0.001
Following C: Region N	1.97274	0.27844	7.085	<0.001
Following C: Age Young	2.79910	0.51742	5.410	<0.001
Following C: MCI	0.31827	0.04270	7.454	<0.001

5.2.7.2 Model 1 results

Unsurprisingly, *Model 1* identified the following phonological context as a highly significant factor influencing /r/ articulation. The default condition in the model was *vowel* and tokens of /r/ with a following consonant were estimated to have a much lower likelihood (log odds) of articulation than tokens with a following vowel. Figure 5.1 shows the log odds of /r/ articulation according to whether a vowel or a consonantal follows the /r/.

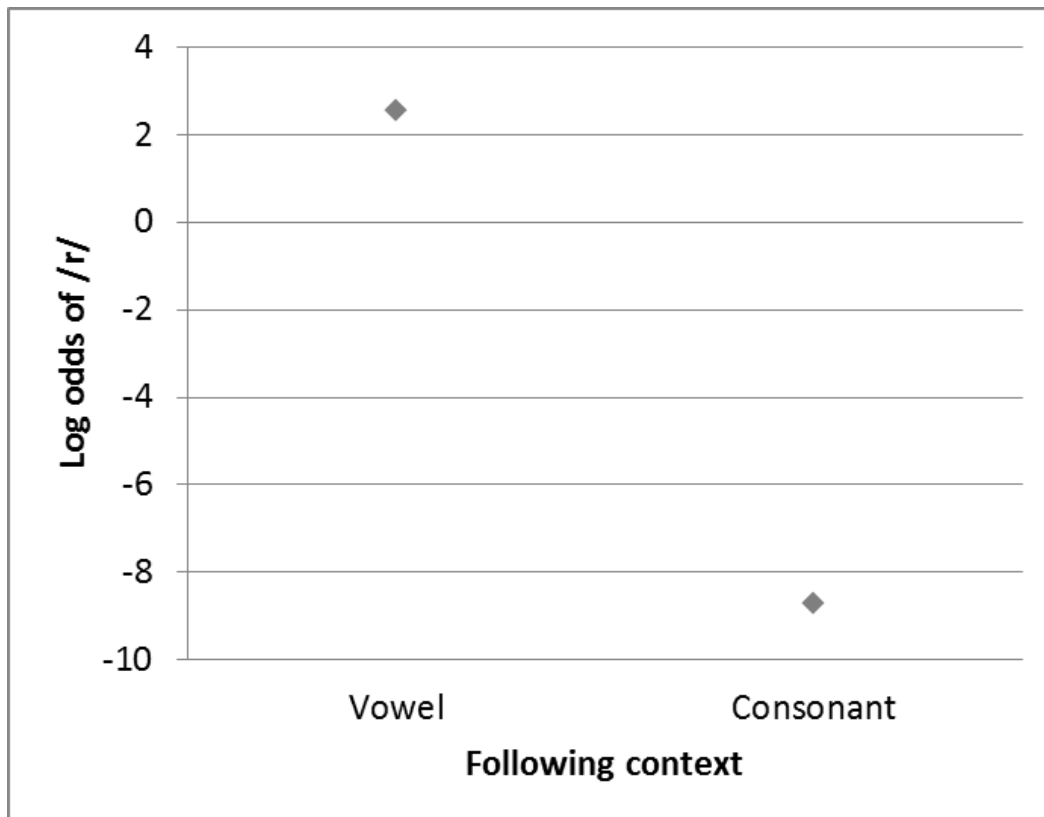


Figure 5.1: Log odds of /r/ articulation according to following context

The non-directional hypothesis in relation to the influence of the vowel phoneme preceding /r/ was that:

H_1 : there will be a difference in the likelihood of /r/ articulation for different preceding vowel contexts

Model 1 returned different coefficients for each of the 8 different vowel contexts. However, only a preceding NURSE vowel was estimated to have a significant effect on the intercept. The default condition was the START vowel. For categorical variables in regression models it is considered best to avoid using a category level which has an extreme coefficient value as a default condition (cf. Starkweather 2010b). The START vowel was not expected to have an extreme value. In order to assess whether this was indeed the case I also obtained estimates for each vowel using 3 different default conditions. This approach also provided a reliable indication of the relative ordering of the different vowels in relation to their effects on /r/ articulation. Regardless of which of the three vowels were used as a default, the only vowel which was identified as exhibiting a significant difference is NURSE. Figure 5.2 shows

the log odds of /r/ articulation in the different preceding vowel contexts as predicted by *Model 1*.

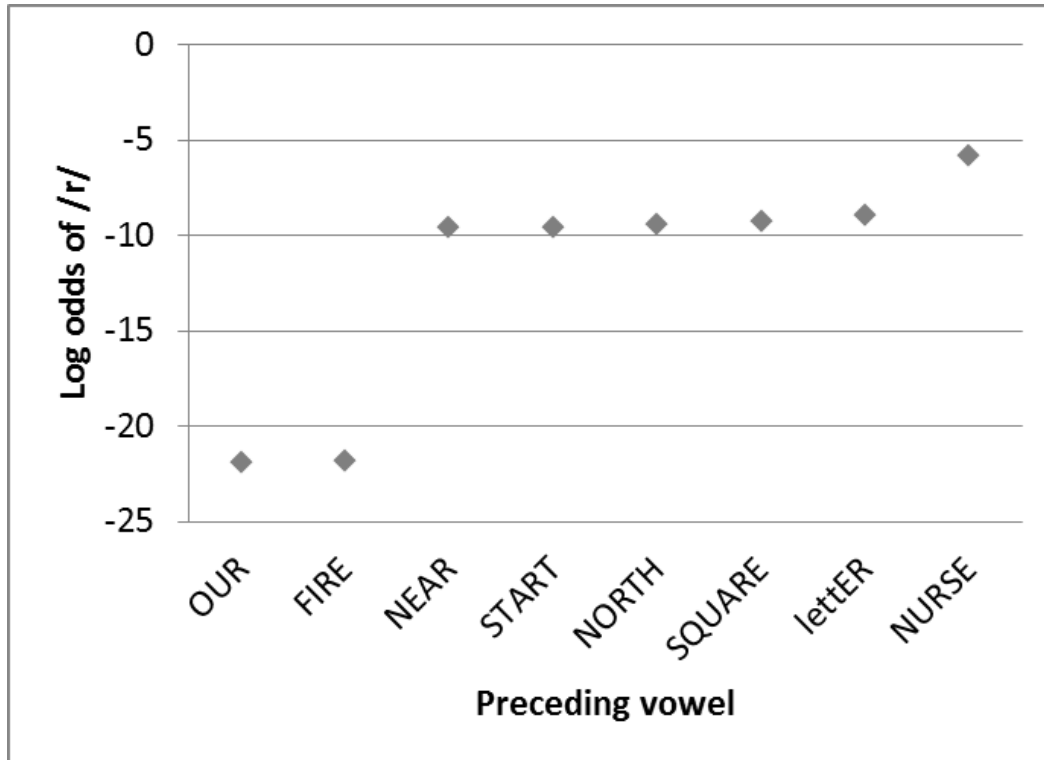


Figure 5.2: Log odds of /r/ articulation according to preceding vowel context

In relation to word frequency I hypothesised that:

H₂: the likelihood of /r/ articulation for different word forms will be influenced by the frequency of the word form

Word frequency was not identified as having a significant effect on the intercept in *Model 1* and the model achieved a better fit with word frequency removed. It is probable that reliable estimates cannot be obtained for word frequency due to the very low frequency values and small differences between the frequency values of individual word forms. Many word forms occurred only once or twice and the total sample of words is small compared to a corpus such as BNC. The influence of word frequency on the /r/ tokens when all phonological contexts are included is therefore inconclusive. I explore word frequency further in subsequent models.

Based on my fieldwork observations I hypothesised that there would be age-related variation in /r/ articulation as follows:

H_{3i}: teenagers will articulate /r/ more than adults in pre-consonantal contexts and:

H_{3ii}: teenagers will articulate /r/s less than adults in pre-vocalic contexts

Model 1 appeared to confirm the hypotheses with respect to age. The model identified a significant effect for age. Teenagers were estimated to be *less* likely to articulate /r/ than adults overall in the default condition: /r/ followed by a vowel. For the pre-consonantal tokens, there is a reduced likelihood of articulation across speakers regardless of age, but the model identifies an interaction between age and following context. Teenagers have a greater likelihood of articulating pre-consonantal /r/ than adults. This is shown in figure 5.3.

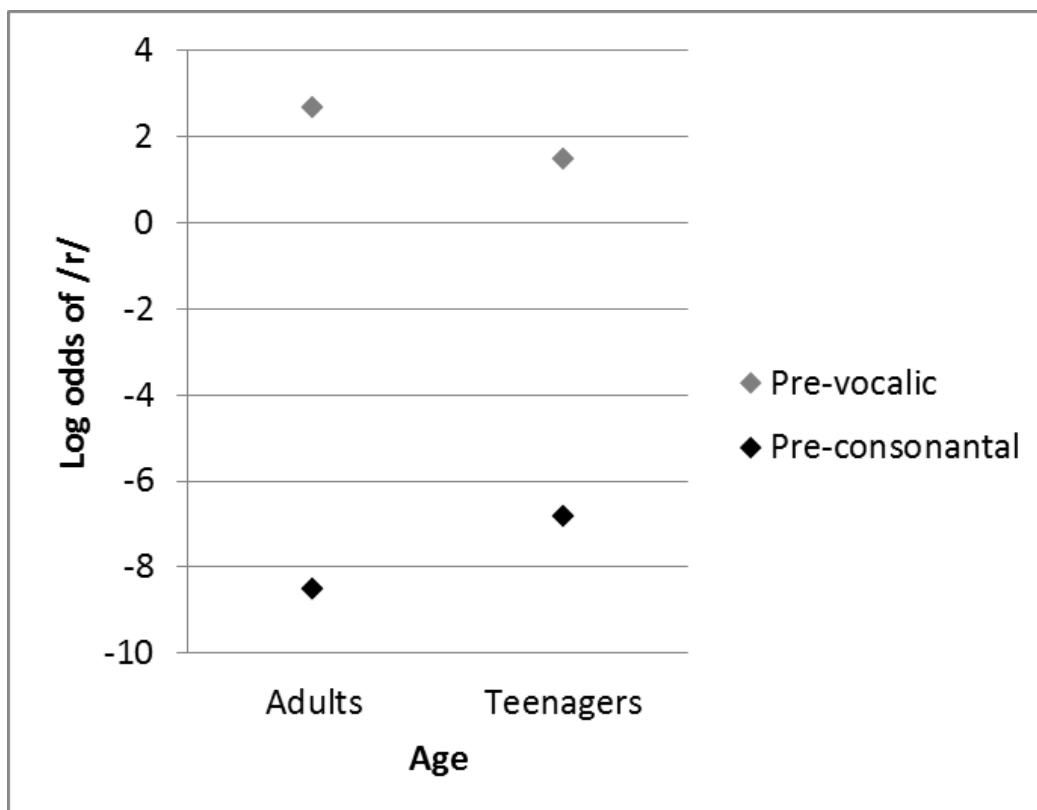


Figure 5.3: Log-odds of /r/ articulation of pre-vocalic and pre-consonantal /r/ by age

The differences between adults' and teenagers' log odds of /r/ articulation are not large, but there are effects for both pre-vocalic and pre-consonantal tokens. The effects for the two

following contexts are in opposite directions: the younger age group is less likely to articulate pre-vocalic /r/ but more likely to articulate pre-consonantal /r/. Together these observations tentatively indicate possible changes in MNZE rhoticity. If the changes are recent, the differences between age groups may not yet be considerable.

In relation to region as an explanatory variable, my fieldwork observations had led me to the hypothesis that:

H₄: Region N speakers would be more likely to articulate pre-consonantal /r/s than region C speakers

I did not have any prior expectations of regional differences in relation to pre-vocalic /r/. *Model 1* indicated a slight regional difference for the default pre-vocalic /r/ tokens, with speakers in region C having a greater likelihood of articulation than speakers in region N. However, this effect is mild and may not be linguistically significant.

In relation to the hypothesised effect for the pre-consonantal tokens, *Model 1* confirmed H₄. There was an interaction such that, while pre-consonantal tokens are less likely to be articulated overall, region N speakers have an increased likelihood of articulation for those pre-consonantal tokens. The regional effects are displayed in figure 5.4.

The results from *Model 1* indicate that the regional differences are worth investigating further. It is not clear that there is any considerable difference between the 2 regions in relation to the pre-vocalic tokens, while the regional effect for pre-consonantal /r/ is stronger. While pre-consonantal tokens are rarely articulated in either region, the model predicts that speakers in region N are more likely to do so.

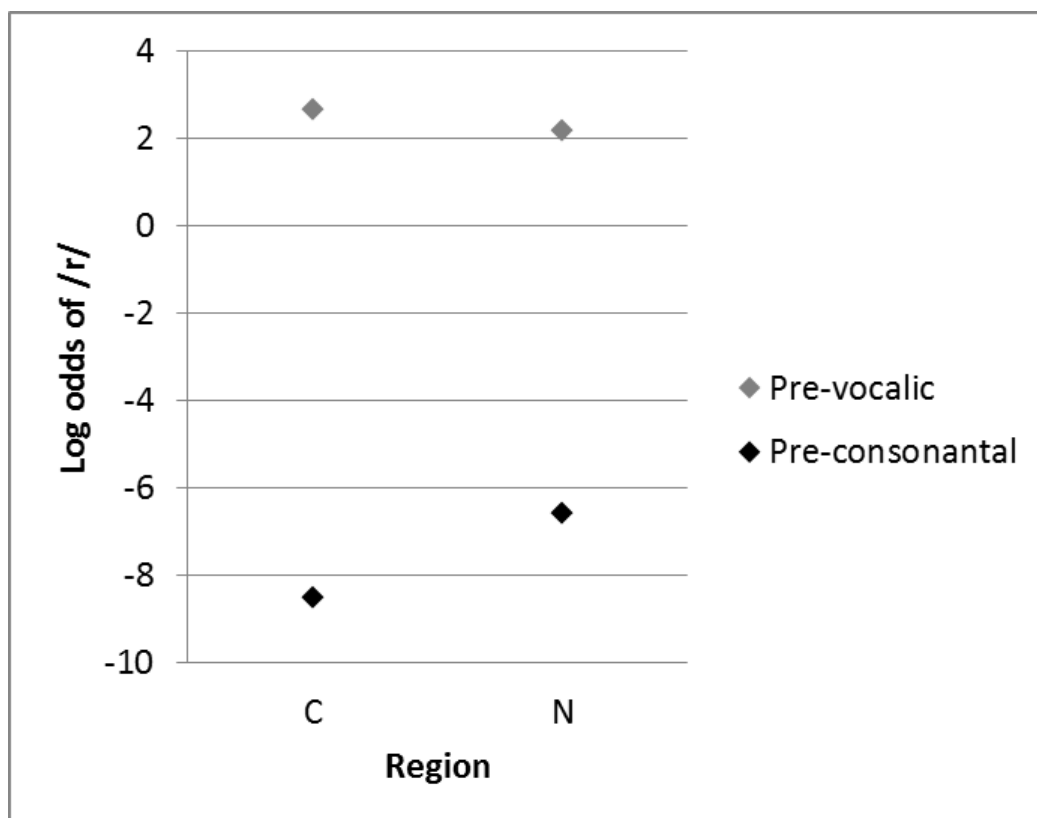


Figure 5.4: Log-odds of /r/ articulation of pre-vocalic and pre-consonantal /r/ by region

Most studies of sociolinguistic variation identify differences in variant use associated with gender. Since females often lead in the use of innovative variants which are below the level of awareness I hypothesised that:

H₅: female speakers would be more likely to articulate pre-consonantal /r/s than males

In relation to the pre-vocalic tokens I did not have any prior hypothesis regarding the direction of a gender difference and the models were therefore an exploratory analysis of gender differences within this phonological context.

According to *Model 1* there was no significant main effect associated with gender and the model was a better fit when gender was removed. This finding was unexpected and led me to explore gender differences further in subsequent models of pre-consonantal and pre-vocalic /r/, which are discussed below.

Maori phonology has fuller vowels than NZE and allows VV sequences. I therefore hypothesised that this could have consequences for speakers' articulation of linking /r/s. Linking /r/s may be less likely to be articulated by speakers who are more integrated into

Maori culture. Non-Maori speakers might be more likely to pronounce an orthographic /r/ in situations of vowel hiatus.

In relation to pre-consonantal /r/, my fieldwork observations and others' recent research findings (e.g. Kennedy 2006), indicated that articulating pre-consonantal /r/s, especially in the context of a preceding NURSE vowel, could be related to ethnicity. I therefore hypothesised that:

H_{6i}: speakers who are more integrated into Maori culture would be less likely to articulate non-final pre-vocalic /r/s (i.e. sandhi /r/s) than speakers who are less integrated into Maori culture

H_{6ii}: speakers who are more integrated into Maori culture would be more likely to articulate pre-consonantal /r/s than speakers who are less integrated into Maori culture

Model 1 appeared to confirm the hypotheses in H_{6i} and H_{6ii}. There is a predicted decrease in the likelihood of articulation of pre-vocalic /r/ for each 1-unit increase in speakers' MCI scores. However, for pre-consonantal tokens, the increase in MCI scores leads to an increase in the likelihood of articulation. The estimated log odds of articulation for scores of 0, 5 and 10 are shown in figure 5.5.

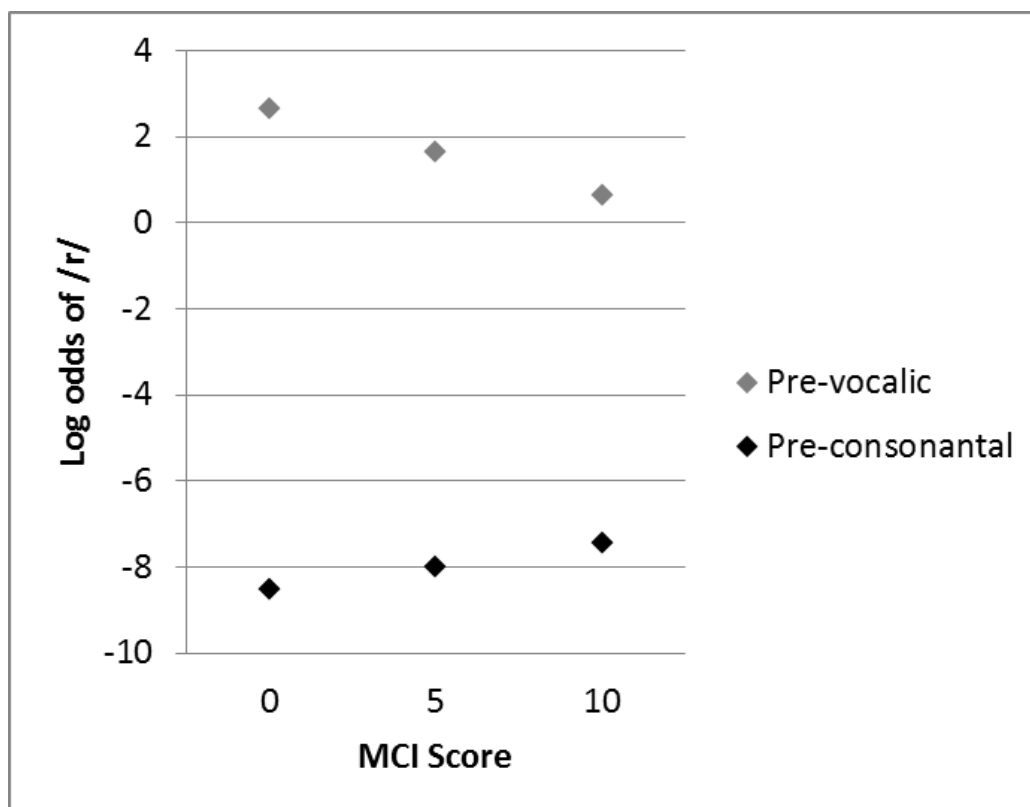


Figure 5.5: Log odds of /r/ articulation for 3 different MCI score values

The difference in articulation associated with MCI scores does not appear as great for pre-consonantal tokens as it does for pre-vocalic tokens. It may not be significant. It is worth investigating this further.

Model 1 treats MCI as a continuous variable and estimates coefficients for each 1-unit increase in the MCI scores. However, it is not clear that each 1-unit increase in MCI is equally meaningful. It therefore seemed worthwhile to also explore a model in which MCI is treated as a categorical variable. In this treatment, the MCI scores become 11 distinct and ordered category levels with 11 discrete scores obtained by the speakers. Table 5.6 shows the 11 category levels which are labelled according to their score values (i.e. level A0 = a score of 0, etc).

Table 5.6: MCI as a category variable with 11 levels

MCI category	A0	B1	C2	D3	E4	F5	G6	H7	I9	J10	K12
Number of speakers	6	5	14	9	4	3	2	6	1	1	1

A model in which MCI is treated as a categorical variable returns a coefficient for each category which represents how much that category deviates from the default condition. As with the preceding vowel contexts, there was an issue concerning which level to treat as a default. The lowest possible score value is 0 (category A0, with 6 speakers). As described in chapter 3, a zero score indicates the lowest possible degree of integration into Maori culture. While it may not be appropriate to employ an extreme value as a default condition for modelling many variables (cf. Starkweather 2010b) it seemed appropriate in this case. This category level provided a meaningful contrast condition because it represented speakers who asserted that they had no affiliation with Maori culture. The coefficients for each of the remaining 10 category levels could be compared in order to evaluate how the speaker groups associated with the other 10 scores differed from these apparently “non-integrated” speakers. If the findings for the continuous MCI variable were correct, the expectation for the categorical MCI variable would be that:

8:

- (i) for pre-vocalic /r/ the coefficients for the individual score levels would decrease consistently as each score level increased
- (ii) for pre-consonantal /r/ the coefficients for each score level would increase consistently as each score level increased

Table 5.7 shows the MCI score coefficients for articulating /r/ in the default context of a following vowel.

Table 5.7: Score level estimates for pre-vocalic /r/

Score Level	Coefficient	Std. Error	z-score	Pr(> z)
Intercept (default = A0)	2.93786	0.37642	-1.805	0.071008
B1	-0.67959	0.37642	-1.805	0.071008
C2	-0.20103	0.30267	-0.664	0.506562
D3	-0.33684	0.32682	-1.031	0.302701
E4	-0.77572	0.38161	-2.033	0.042076
F5	-1.48418	0.39304	-3.776	0.000159
G6	-1.49220	0.51902	-2.875	0.004040
H7	-1.52220	0.34648	-4.393	<0.0001
I9	-1.22575	0.65327	-1.876	0.060610
J10	-0.48666	0.74647	-0.652	0.514431
K12	-2.69042	0.70766	-3.802	0.000144

For the pre-vocalic tokens of /r/ all score level coefficients were negative in contrast to the default condition of A0. Overall, the estimates for the scores became increasingly negative as scores increased, though not in a directly linear manner. Score level J10 was an exception to this trend. Score levels I9, J10 and K12 each have only 1 speaker and the estimates for these 3 score levels are to be viewed cautiously. 5 score levels which show an increasingly negative effect as their values increase were identified as significant in the model. These are: E4, F5, G6, H7 and K12.

Model 1 with MCI treated as a category also identified interactions between the following context and MCI scores. Table 5.8 shows the estimates for the /r/ tokens in the pre-consonantal context. All score levels except for E4 have a positive effect on the intercept. The E4 speaker group has an unusually large negative value for the pre-consonantal tokens as well as a large standard error. This unusual result seems to be due to insufficient pre-consonantal data in relation to the 4 speakers within this group. If there are insufficient tokens available then the model will not produce effective calculations. None of the 4 speakers within the E4 group articulate any pre-consonantal tokens of /r/ and the model is therefore unable to make predictions of rates of /r/ use in relation to an MCI score of 4. Positive effects on articulation are identified as statistically significant for all score levels except C2 and E4.

Table 5.8: Score level estimates for pre-consonantal /r/

Score Level	Coefficient	Std. Error	z-score	Pr(> z)
Intercept (default = A0)	2.93786			
Following C	-11.70223			
B1	1.69089	0.66455	2.544	0.010946
C2	0.64955	0.58745	1.106	0.268853
D3	1.27308	0.63614	2.001	0.045365
E4	-13.72293	607.58962	-0.023	0.981981
F5	2.06078	0.76286	2.701	0.006905
G6	2.63864	1.02173	2.583	0.009808
H7	2.84029	0.59759	4.753	<0.0001
I9	3.13940	0.85951	3.653	0.000260
J10	2.01893	0.97911	2.062	0.039206
K12	3.82992	0.88623	4.322	<0.0001

Figure 5.6 shows the differences in the log-odds of articulation for the 11 score levels.

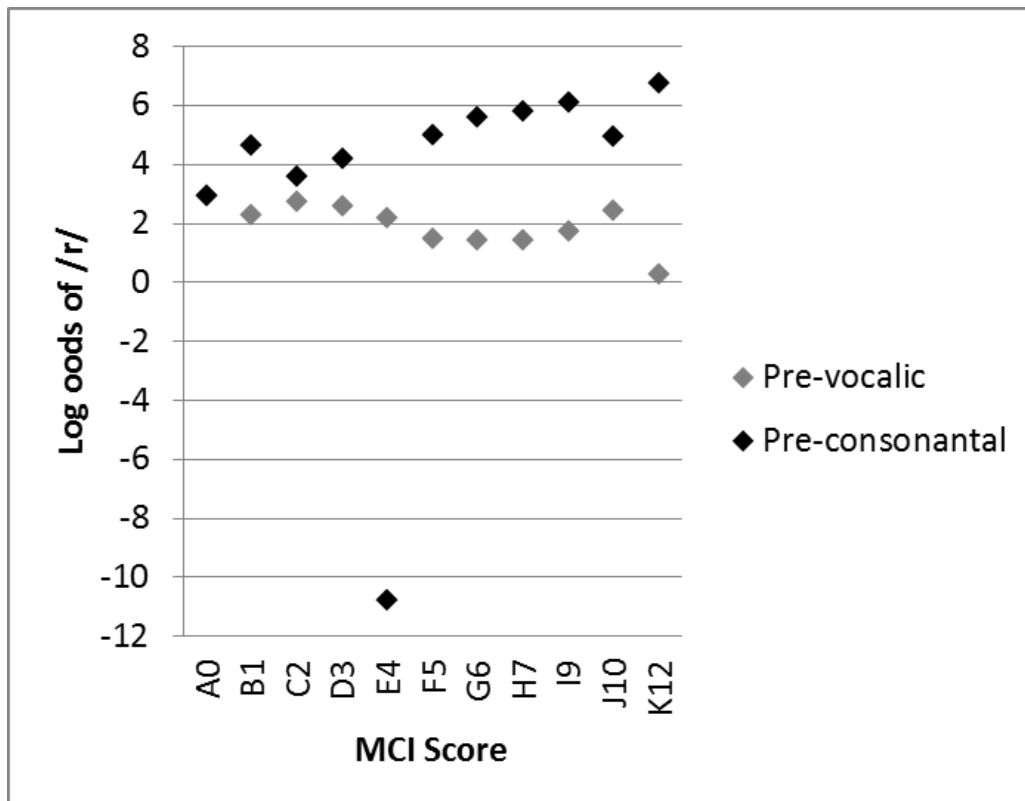


Figure 5.6: Differences in the log odds of /r/ articulation for 11 MCI score levels

It is difficult to ascertain whether MCI is a significant factor in relation to /r/ articulation based on these results. There is certainly an indication that greater Maori cultural integration may have a disavouring influence on pre-vocalic /r/ articulation and a favouring effect on pre-consonantal /r/ articulation. However the estimates for the 3 highest scores are unreliable since they are based on only 1 speaker per score category. Nevertheless, the observation of tentative general trends, again in opposite directions for pre-vocalic versus pre-consonantal /r/ suggested that it was worthwhile to continue to probe the relevance of this sociocultural factor in subsequent models.

The contribution of the random effects for speaker and for word forms in *Model 1* can be evaluated by considering the model's estimates of the variance attributed to each random effect. The total variance associated with the random effects is:

$$\text{word variance: } 0.60 + \text{speaker variance: } 0.22 = \text{total random effect variance: } 0.82$$

The proportion of variance attributable to each random effect is that effect's variance divided by the total random effect variance. Thus speaker variance is: $0.22 / 0.82 = 0.26$. 26% of the random effect variance can be attributed to interspeaker variation. 73% of the random effect

variance is attributable to word form differences. Both speaker and word contribute significantly to the model. Anova comparisons confirm that a model with either 1 of the random effects included is a better fit to the data than a model which does not include any random effects. There is no significant difference between 2 models which differ only with respect to which 1 of the random effects is included.

The variance attributable to differences in word forms seems considerable. The model provides intercepts for each individual word form. I explore word form intercepts in relation to specific phonological contexts in the following two sections. Speaker intercepts indicate individual speaker differences in relation to the model's baseline intercept value. I explore the individual speaker differences in chapter 6.

5.2.7.3 Model 1 summary

A model fitted to non-phrase final pre-consonantal and pre-vocalic tokens of /r/ provided an overview of factors influencing MNZE speakers' articulation of /r/. *Model 1* confirmed that /r/ articulation in pre-vocalic non-phrase final contexts is variable and that MNZE speakers do articulate some /r/s in pre-consonantal environments. The patterns of articulation identified for the two following contexts of /r/-use indicate that pre-vocalic and pre-consonantal /r/s are best treated as 2 different dimensions of rhoticity with opposing patterns of use. With regard to the pre-consonantal dimension of rhoticity, there is a tendency towards zero likelihood of articulation. However, the exploratory data analysis revealed that some pre-consonantal /r/s were articulated and *Model 1* suggested that these pre-consonantal /r/ articulations may be associated with younger speakers, with speakers in region N and with speakers with higher MCI scores (i.e. relatively greater involvement in Maori culture).

For the pre-vocalic dimension of rhoticity (i.e. linking /r/), the same social factors appear as relevant, but with inhibitory effects on articulation. Younger speakers, speakers in region N and speakers with higher MCI scores seem less likely to articulate linking /r/s. The effects identified in *Model 1* could potentially reflect recent diversification in rhoticity in opposite directions for each phonological dimension. In order to probe these effects more directly I decided to fit models to the pre-vocalic and pre-consonantal subsets of data separately. In the next section I describe the results of the model for pre-vocalic /r/.

5.2.7.4 Model PreV

A model fit to the pre-vocalic non-phrase final tokens (i.e. linking /r/) initially included the linguistic variables: *preceding vowel* and *word frequency*, the social variables: *age*, *region*,

MCI and *gender*, interactions between *region* and *MCI*, between *region* and *gender*, between *MCI* and *gender* and between *region*, *MCI* and *gender*. It also included the random effects: *speaker* and *word form*.

Neither the preceding vowel nor the word frequencies were estimated to be significant effects in the model and both were dropped. Gender is not significant but is retained due to a significant interaction between region and gender. The best fitting model (*Model PreV*) was one which included the social factors: *region*, *age*, *MCI* and *gender* and an interaction between *region* and *gender*. The random effects for speaker and for word form were retained. Estimated coefficients for *Model PreV* are shown in table 5.9. I discuss each of the significant effects in turn.

Table 5.9: Estimates for best-fitting *Model PreV*

	Estimate	Std. Error	z-score	Pr(> z)
Intercept / baseline	3.21631	0.37828	8.502	< 0.0001
Age Young	-1.45595	0.31751	-4.586	<0.0001
Region N	-0.86313	0.24016	-3.594	0.000326
MCI	-0.19533	0.03413	-5.724	<0.0001
Gender M	-0.35065	0.24670	-1.421	0.155208
Region N:Gender M	0.81875	0.38051	2.152	0.031418

Model PreV confirmed that the teenagers are less likely than the 6 female northern region adults to articulate linking tokens of /r/ as shown in figure 5.7.

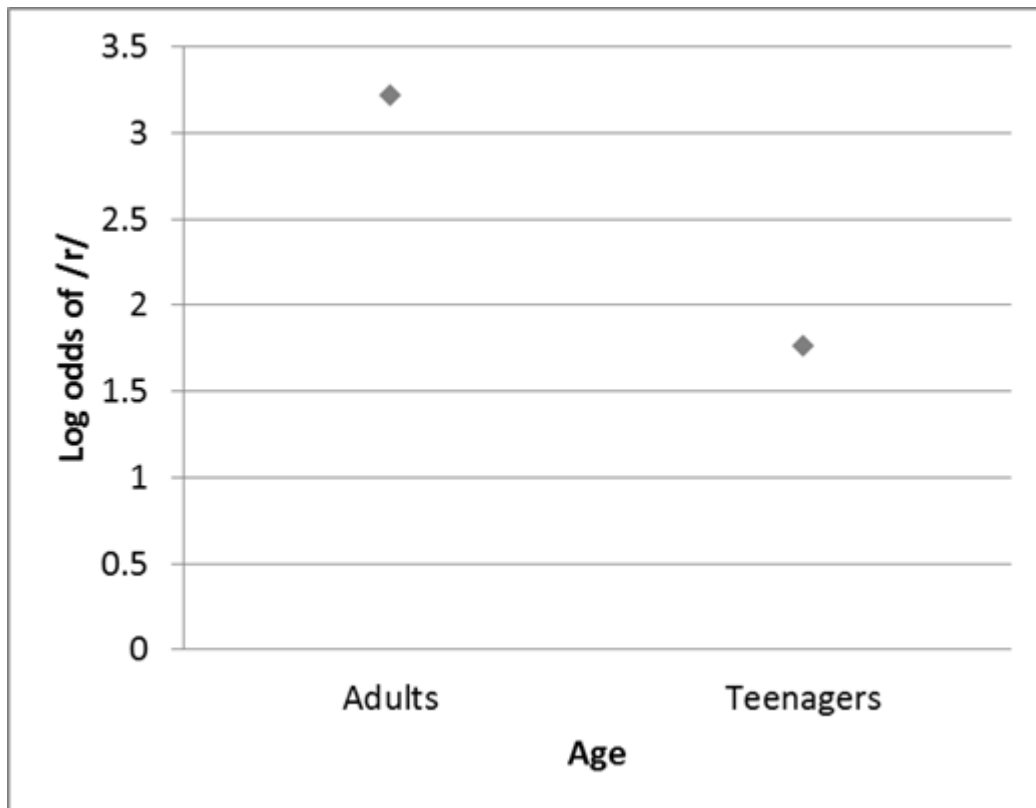


Figure 5.7: Log odds of pre-vocalic /r/ articulation by age

The 6 female adult speakers in region N are significantly more likely to articulate pre-vocalic /r/ than the teenagers. However, more of the adult population would need to be sampled in order to evaluate how widespread this effect may be, especially since the adults are all female town N speakers. While the age differences identified here must be treated as only suggestive, this is certainly an interesting finding which is worth pursuing in future research.

The effect of region on the likelihood of /r/ articulation is also slightly more robust when the pre-vocalic tokens are modelled separately. The regional difference in the articulation of the pre-vocalic tokens is shown in figure 5.8.

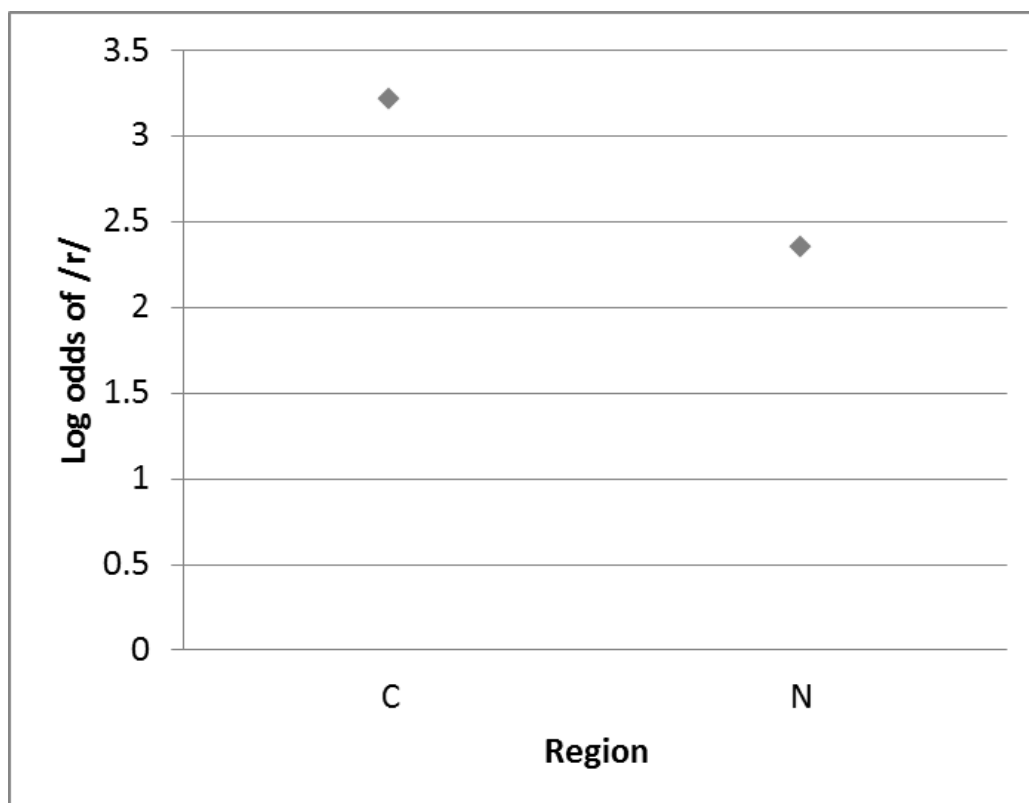


Figure 5.8: Log odds of pre-vocalic /r/ articulation by region

The regional difference in linking /r/ has particular relevance for this thesis with its focus on regional differences in rhoticity. While regional differences in pre-consonantal /r/ articulation had been hypothesised on the basis of fieldwork observations, regional linking /r/ differences were not. It is not clear that the difference between the 2 regions is of great significance but it could be indicative of a relatively recent change in the sandhi dimension of NZE rhoticity. The model's estimates in relation to gender lend some tentative support to the possibility that there is a change underway.

Model 1 did not identify any gender effects for rhoticity. In *Model PreV* gender is identified as a significant predictor for pre-vocalic /r/. The model coefficients predict that males in region N will articulate more linking /r/s than the model's default value (based on region = C and gender = F). It is not clear what interactions, if any, actually hold between region and gender. Attempts to include more complex interactions in the models resulted in complications with overfit models. The model tentatively indicates that females may be slightly less likely to articulate linking /r/s than males (though perhaps only in town N). If this is the case then this finding would lend support to the idea that there is a change in progress involving a reduction in sandhi /r/ articulation, since females are often more closely

associated with innovative non-salient changes than males. I explore this hypothesis more directly in subsequent models. Figure 5.9 displays the potential gender difference predicted by *Model PreV*.

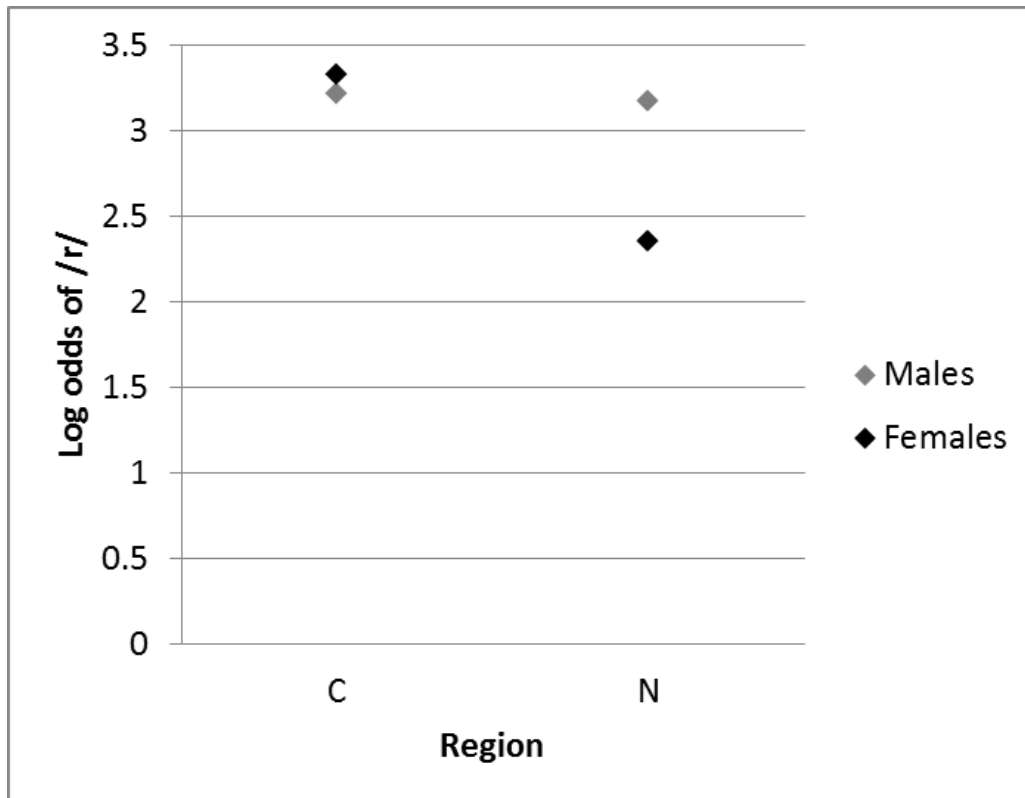


Figure 5.9: Log odds of pre-vocalic /r/ articulation by gender (the data points for region C have been jittered slightly to improve the visualisation of the data, but there is no actual difference in the values).

Model PreV confirms that MCI is a relevant factor for the variation in pre-vocalic /r/. When treated as a continuous variable MCI has a significant disavouring effect. Articulation is predicted to decrease considerably in line with increasing scores (see figure 5.10).

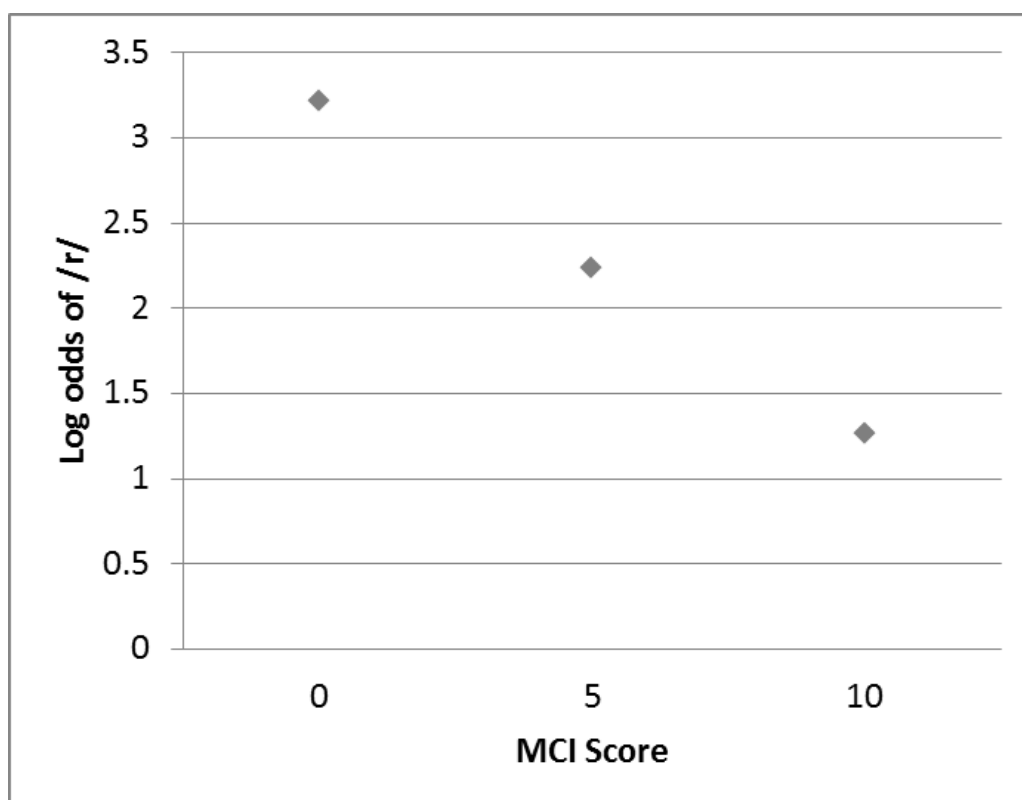


Figure 5.10: Estimated log odds of pre-vocalic /r/ articulation for 3 MCI scores

In order to explore whether the MCI effect holds across all score levels I compared coefficients for the 11 score levels in 5 conditions. In each condition a different score category was used as a default condition for the model's estimates. The 5 conditions are as shown in table 5.10.

Table 5.10: 5 MCI category conditions

Default condition	Category description
A0	6 speakers who scored 0
B1	5 speakers who each scored 1
C2	14 speakers who each scored 2
D3	9 speakers who each scored 3
E4	4 speakers who each scored 4

A comparison of the coefficients in the 5 different conditions confirms that higher MCI scores have a disfavoured influence on linking /r/ articulation. However, the trend is not a straightforward linear pattern. The score levels fall into 2 groups: a group of lower score

levels and a group of higher score levels. 1 score level was an exception to this division (see table 5.11).

Table 5.11: Division of MCI scores based on model estimates in 5 conditions

Groups	Category levels
Lower scoring group:	A0, B1, C2, D3
Higher scoring group:	E4, F5, G6, H7, I9, K12
Exception:	J10

The division of the MCI scores as in table 5.11 was motivated by the observations described in 9-13:

9. When the default condition is any 1 of the scores in the lower scoring group the coefficients for each score in the higher scoring group is negative. The same 4 scores (F5, G6, H7 and K12) are consistently identified by the model as significant.
10. When the default condition is any 1 of the scores in the lower scoring group the coefficients for that group change between positive and negative values depending on which of the 4 scores is the default. For example, D3 only has a negative coefficient when contrasted with A0, while B2 is consistently negative when contrasted with any of its group members.
11. When the default condition is E4 (the first member of the higher scoring group), the coefficients for all scores in the lower scoring group are positive.
12. As the lowest score in the higher scoring group, E4 seems to represent a demarcation point between the 2 groups. When E4 is the default, all score levels below E4 retain positive coefficients and all score levels higher than E4 retain negative coefficients. Furthermore, G6, which is identified as having a significant negative effect when contrasted with any lower level, ceases to be significant when contrasted with E4, while F5, H7 and K12 still are.
13. The category level J10 is an exception. This score involves only 1 speaker and the coefficient for this speaker is consistently positive across all contrast conditions, including E4.

Figure 5.11 Shows the log odds for different MCI scores when MCI is treated as a categorical variable and the default condition is E4¹⁰.

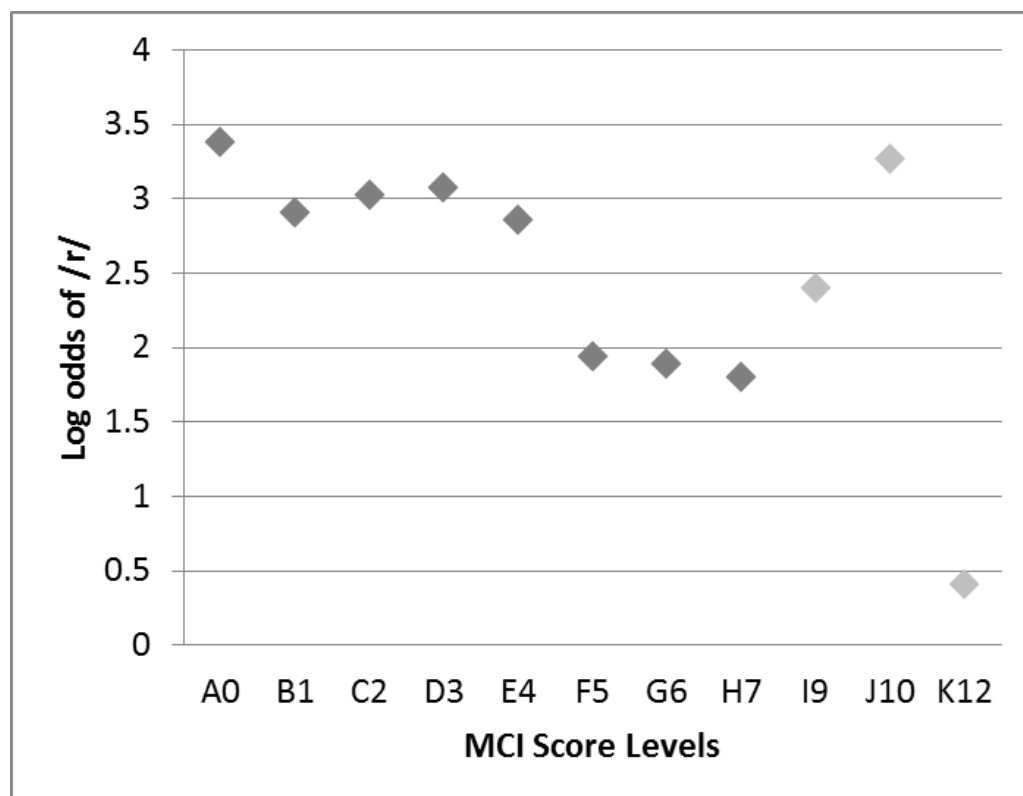


Figure 5.11: Log odds of pre-vocalic /r/ articulation for 11 MCI scores (scores I9, J10 and K12 have only 1 speaker each).

It is interesting that all of the statistically significant effects are for scores above E4, i.e. scores of F5, G6, H7 and K12. The highest scoring individual also has the strongest disfavoured effect.

K12 has a particularly low coefficient. In fact both of the 2 speakers with the 2 highest scores show relatively extreme behaviour, K12 in the expected direction for their score level and J10 in the opposite direction. These 2 speakers can be considered outliers.

On the questionnaire, a score of 4 could be achieved without any genuine involvement in Maori culture (e.g. simply knowing some Maori greetings). 38 speakers scored 4 or lower on the questionnaire and only 14 speakers achieved a score of 5 or more. It seems then that the

¹⁰The *PreV model* calculations for E4 are not significantly divergent from other speakers. This confirms that the unusual result for E4 in table 5.7 relates specifically to the absence of articulated pre-consonantal tokens for these speakers.

MCI scores have captured a socio-cultural effect that is relevant to variation in sandhi /r/. The MCI scores are not a wholly reliable predictor of articulation however, since individual speaker variation is also apparent. It will be interesting to compare the MCI findings with findings for a model of MCI influence on the pre-consonantal tokens.

Model PreV does not identify any preceding vowel effect for the articulation of pre-vocalic /r/. However, it is worth considering whether any individual word effects are apparent. The mixed effects model provides individual intercepts for each of the different word forms in which the non-phrase final pre-vocalic /r/ tokens occurred. The intercepts represent the estimated adjustment to the baseline intercept value for each word form irrespective of the patterns identified in the model. In total, there are 163 different word forms in which linking /r/ tokens occurred. The great majority of /r/ tokens are preceded by a letter vowel. It is probable that this uneven distribution is the primary reason why the model was unable to identify any predictive patterns for the preceding vowel context.

5.2.7.5 Model PreC

Model PreC was fitted only to the non-phrase final pre-consonantal /r/s. The model initially included *preceding vowel*, *word frequency*, *age*, *region*, *MCI*, *gender*, interactions between *region* and *MCI*, *region* and *gender*, *MCI* and *gender* and between *region*, *MCI* and *gender*. The random effects for *word form* and *speaker* were also included.

In this model collinearities were identified between *MCI* and *region* and between *MCI* and *gender*. This is because there are more region N speakers with higher MCI scores than region C speakers and because there are more female speakers with higher MCI scores than male speakers. This issue was solved by re-running the model using centred variables. The best fitting model for the pre-consonantal tokens excluded the interactions, as well as *gender* and *word frequency*, but it included *MCI* even though *MCI* was not identified as a significant predictor.

The best fitting model retains *vowel*, *age*, *region* and *MCI* plus the random effects for *speaker* and for *word form*. Although the pre-consonantal tokens have a very low likelihood of articulation, the model identifies several effects as significant on articulation of /r/. The coefficients for *Model PreC* are provided in table 5.12.

Table 5.12: Estimates for the best fitting *Model PreC*

	Estimate	Std. Error	z-score	Pr(> z)
Intercept / baseline	-9.57767	0.95387	-10.041	< 0.0001
Vowel FIRE	-12.17702	2709.91489	-0.004	0.99641
Vowel lettER	0.32038	0.77820	0.412	0.68056
Vowel NEAR	-0.37012	1.35651	-0.273	0.78497
Vowel NORTH	-0.17507	0.82874	-0.211	0.83270
Vowel NURSE	3.43358	0.65838	5.215	<0.0001
Vowel OUR	-12.28837	807.94189	-0.015	0.98787
Vowel START	-0.33024	1.05708	-0.312	0.75473
Age Y	1.86176	0.64577	2.883	0.00394
Region N	1.66048	0.37695	4.405	<0.0001
MCI	0.09239	0.05971	1.547	0.12178

In contrast to *Model PreV*, the model for pre-consonantal /r/ identifies an effect for the preceding vowel. A preceding NURSE vowel is a significant predictor for pre-consonantal /r/. The model identifies a hierarchy of preceding vowel contexts in which pre-consonantal /r/ tokens are most likely to be articulated. The difference in likelihood of articulation for NURSE compared with other preceding vowel contexts is apparent in figure 5.12.

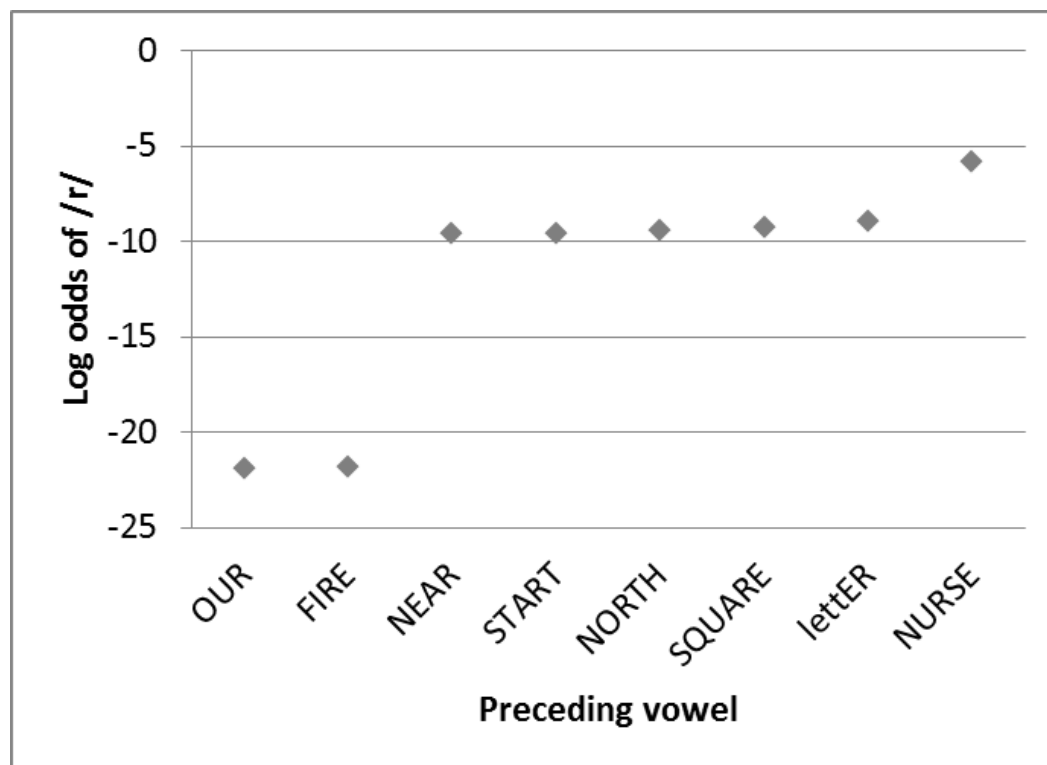


Figure 5.12: The effect of a preceding NURSE vowel on pre-consonantal /r/ articulation

As shown in table 5.12 and figure 5.12, the letter tokens have the second highest coefficient value. /r/s with a preceding FIRE and OUR vowel have the lowest.

As with the pre-vocalic /r/ tokens age is identified as a significant factor in the model of pre-consonantal /r/. Although the likelihood of articulation is very low for pre-consonantal tokens, it increases for teenagers in contrast to adults (see figure 5.13). This lends support to a hypothesis of change. Perhaps younger speakers are beginning to exhibit a slight tendency to articulate some pre-consonantal /r/s.

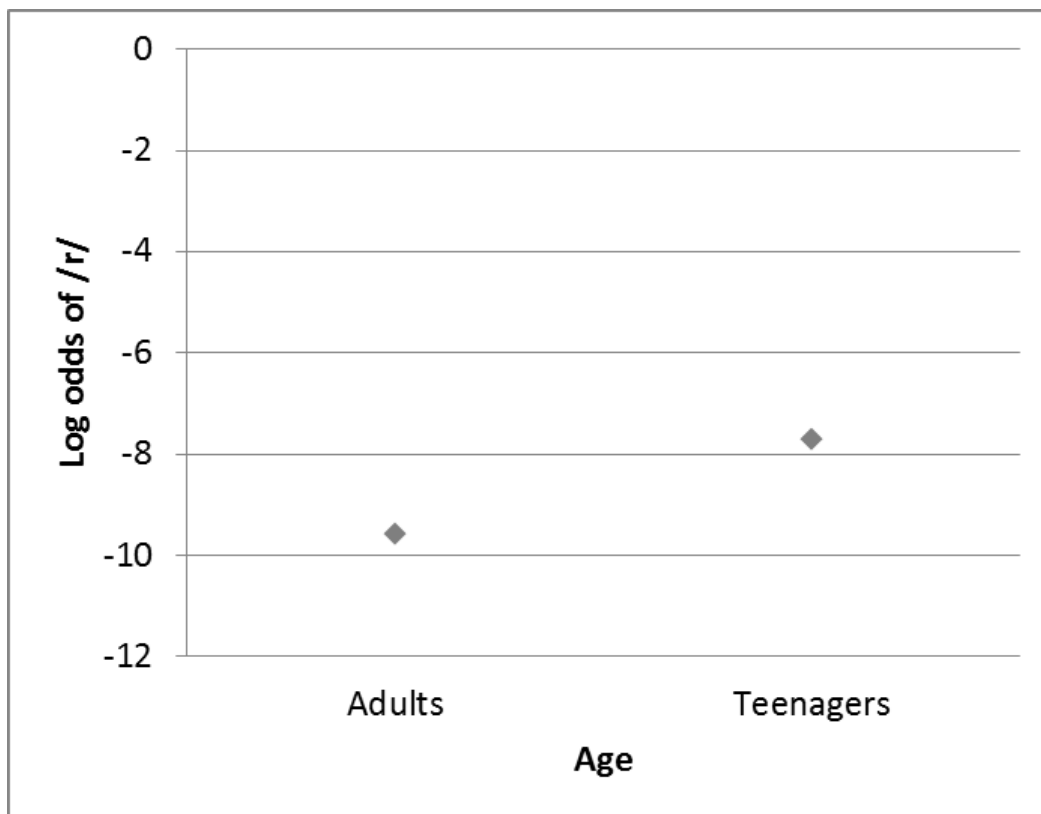


Figure 5.13: Log odds of pre-consonantal /r/ articulation by age

As noted previously, it is important to be cautious about the age results for the MNZE data, given that there are only a few adults available for analysis and especially since in this model, all teenagers, regardless of their town, are being compared with adults from only 1 town.

Model PreC predicts an effect for region such that pre-consonantal /r/ has a higher likelihood of articulation for the speakers in region N when compared to region C (shown in figure 5.14).

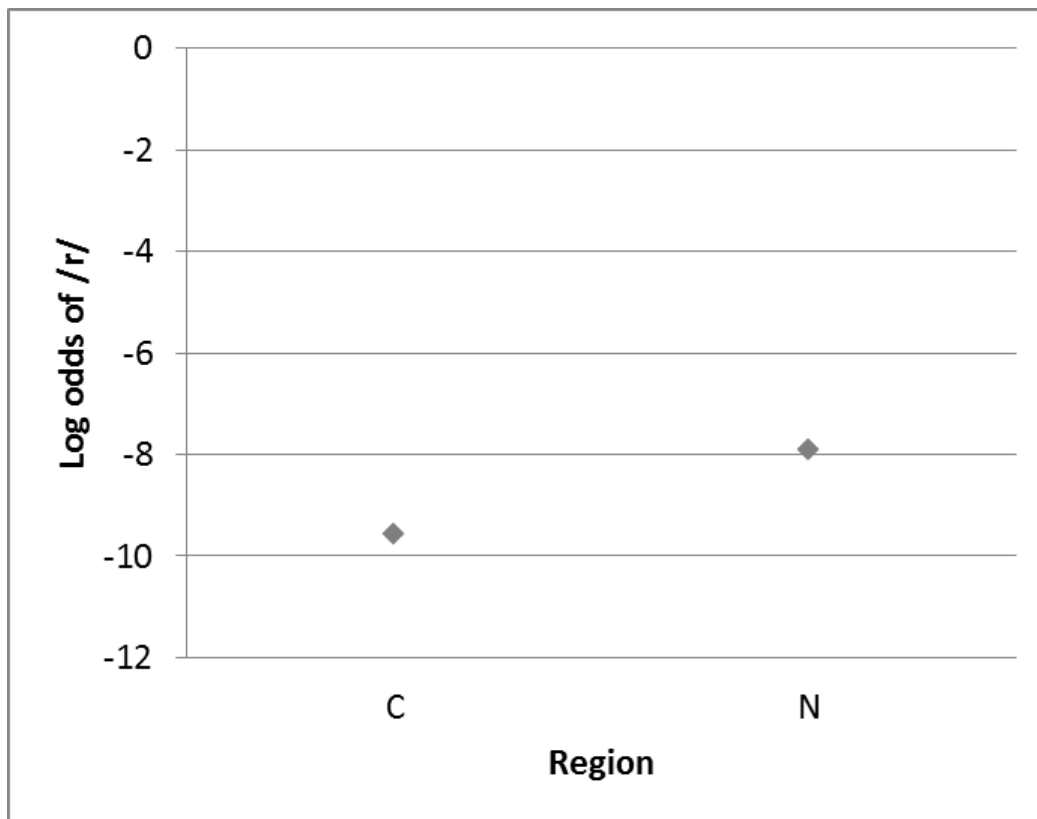


Figure 5.14: Log odds of pre-consonantal /r/ articulation by region

The difference between the region N and region C log odds of pre-consonantal /r/ is not huge, but it is important to take into account that pre-consonantal /r/ is seldom articulated across the data set. A higher likelihood of pronunciation in this context for a particular region may be indicative of an innovation in its early stages of adoption, especially in light of the corresponding age difference.

In contrast to the model of pre-vocalic tokens, MCI does not appear to have a significant effect in *Model PreC* although the model is a better fit when it is included than when it is not. It is possible that MCI has some relevance but that it is not identified as statistically significant due to the low number of articulated tokens. It seems surprising that gender does not appear to be a significant predictor of pre-consonantal /r/ articulation in this model and I explore the relevance of gender further below.

The influence of individual word forms on the articulation of pre-consonantal /r/s can be probed by considering the individual word item intercepts provided by *Model PreC*. The intercepts represent the estimated adjustment to the baseline intercept value for each word

form when the general trends / fixed effects identified in *Model PreC* are taken into account (i.e. word frequency is not influential but a preceding NURSE vowel is).

There are 936 different word items for the pre-consonantal tokens in *Model PreC*. The majority of these word items have negative intercept values. This is to be expected given that pre-consonantal /r/ is seldom articulated. However, 41 of the word forms have positive intercepts. These 41 word forms are shown in table 5.13a, in order of highest to lowest intercept value (i.e. most likely to least likely to be articulated). Table 5.13b shows the 40 word forms with the lowest intercept values.

Tables 5.13a also includes the numerical position of each word form on an ordered list of most to least frequent across the 936 word items. Both tables also show, where appropriate (i.e. if the following consonant occurred within the same word), the phonological target of the consonant which immediately follows the /r/ (though this is not necessarily how the following consonant was articulated).

There may be individual word effects beyond preceding vowel context on the words with the highest intercepts. Although *Model PreC* identified a preceding NURSE vowel as a significant predictor, tables 5.13a and 5.13b indicate that there may be additional factors affecting the likelihood of articulation for different lexical items. Different word items with a NURSE vowel adhere to the model's trend to different degrees.

Model PreC did not identify word frequency, when calculated in relation to the whole data set, as having a significant predictive effect. Looking at the frequency of items in relation to other pre-consonantal /r/ word forms specifically there is again no identifiable effect on the likelihood of articulation. Words items with positive intercepts are some of the most frequently occurring as well as some of the least frequently occurring pre-consonantal /r/ words, although most of the words are positioned within the top (i.e. most frequent) half of the word items.

It is also apparent from a comparison of tables 5.13a and 5.13b that different forms of the same lemma can have quite different intercept values. For example, *work* is amongst the 40 highest intercept values, while *works* is amongst the 40 lowest.

Table 5.13a: 41 word forms with positive intercept values in *Model PreC*

Word forms	Intercepts	Vowel	Position	Following phonological target
for	1.20	NORTH	2	
burning	1.07	NURSE	397	alveolar nasal
are	0.911	START	8	
burnt	0.780	NURSE	153	alveolar nasal
weren't	0.670	NURSE	109	alveolar nasal
work	0.633	NURSE	14	voiceless velar plosive
higher	0.615	letter	287	
permission	0.614	letter	486	bilabial nasal
performing	0.611	letter	199	voiceless labiodental fricative
perform	0.606	letter	197	voiceless labiodental fricative
air	0.602	SQUARE	152	
turn	0.593	NURSE	103	alveolar nasal
worst	0.584	NURSE	232	voiceless alveolar fricative
other	0.576	letter	12	
nerdy	0.568	NURSE	765	voiced alveolar plosive
thirty	0.546	NURSE	58	voiceless alveolar plosive
workplace	0.538	NURSE	934	voiceless velar plosive
before	0.536	NORTH	29	
birthday	0.525	NURSE	95	voiceless dental fricative
person	0.507	NURSE	43	voiceless alveolar fricative
better	0.503	letter	30	
births	0.500	NURSE	387	voiceless dental fricative
purple	0.495	NURSE	814	voiceless bilabial plosive
shirt	0.495	NURSE	855	voiceless alveolar plosive
murders	0.489	NURSE	470	voiced alveolar plosive
years	0.459	NEAR	20	voiced alveolar fricative
heard	0.448	NEAR	81	voiced alveolar plosive
prefer	0.429	NURSE	124	
persons	0.428	NURSE	356	voiceless alveolar fricative
we're	0.419	SQUARE	19	
third	0.410	NURSE	87	voiced alveolar plosive
where	0.395	SQUARE	17	
workers	0.389	NURSE	181	voiceless velar plosive
her	0.343	NURSE	13	
first	0.330	NURSE	25	voiceless alveolar fricative
terms	0.279	NURSE	225	bilabial nasal
christchurch	0.256	NURSE	167	voiceless (post)alveolar affricate
worked	0.202	NURSE	87	voiceless velar plosive
they're	0.0178	SQUARE	6	
learning	0.117	NURSE	82	alveolar nasal
or	0.0850	NORTH	4	

Table 5.13b: 40 word forms with the lowest intercept values in *Model PreC*

Word forms	Intercepts	Vowel	Following phonetic context
were	-0.898	NURSE	
university	-0.659	NURSE	voiceless alveolar fricative
learnt	-0.628	NURSE	alveolar nasal
theres	-0.532	SQUARE	voiced alveolar fricative
alternative	-0.384	NURSE	alveolar nasal
there	-0.355	SQUARE	
works	-0.355	NURSE	voiceless velar plosive
thirteen	-0.317	NURSE	voiceless alveolar plosive
sir	-0.303	NURSE	
birth	-0.272	NURSE	voiceless dental fricative
term	-0.262	NURSE	bilabial nasal
worker	-0.238	NURSE	voiceless velar plosive
over	-0.233	letter	
sort	-0.215	NORTH	voiceless alveolar plosive
certain	-0.204	NURSE	voiceless alveolar plosive
nurse	-0.204	NURSE	voiceless alveolar fricative
circle	-0.197	NURSE	voiceless velar plosive
learners	-0.194	NURSE	alveolar nasal
hurt	-0.193	NURSE	voiceless alveolar plosive
word	-0.191	NURSE	voiced alveolar plosive
here	-0.190	NEAR	
turned	-0.168	NURSE	alveolar nasal
prefers	-0.168	NURSE	voiced alveolar fricative
services	-0.163	NURSE	voiced labiodental fricative
words	-0.163	NURSE	voiced alveolar plosive
perfect	-0.157	NURSE	voiceless labiodental fricative
personal	-0.156	NURSE	voiceless alveolar fricative
Thursday	-0.155	NURSE	voiced alveolar fricative
furtherest	-0.147	NURSE	voiced dental fricative
dirty	-0.143	NURSE	voiceless alveolar plosive
earth	-0.127	NURSE	voiceless dental fricative
percent	-0.123	letter	voiceless alveolar fricative
brothers	-0.122	letter	voiced dental fricative
their	-0.113	SQUARE	
learn	-0.112	NURSE	alveolar nasal
sisters	-0.111	letter	voiced alveolar fricative
nursing	-0.111	NURSE	voiceless alveolar fricative
you're	-0.109	NORTH	
murdered	-0.107	NURSE	voiced alveolar plosive
worth	-0.104	NURSE	voiceless dental fricative

It is also worth considering the relevance of the following phoneme. For both the positive and the negative intercept values, a range of different consonants follow the /r/ across the word forms (note that the contexts are phonemes and the precise articulations are likely to differ).

In table 5.13a there are 28 word forms for which information about the following phoneme is available. For table 5.13b there are 33. In all other word forms the /r/ was followed by another word beginning with a consonant and information about the following word was not entered into the model. In table 5.13a, 9 of the 28 (32%) word items have a following fricative consonant. In table 5.13b, there are 16 out of 33 (48%). It is possible then that there is a slight tendency for a following fricative consonant to have a disavouring effect on the articulation of pre-consonantal /r/¹¹. In chapter 4 I noted that there are comments in the historical literature suggesting that pre-consonantal /r/ declined at a very early date in some words where it appeared before /s/ and /ʃ/. This observation therefore warrants further scrutiny in any future analyses.

It is important to also consider whether there are simply more /r/ tokens with a preceding NURSE vowel relative to other preceding vowel contexts across the data set. Table 5.14 shows that this is not the case.

Table 5.14: Number of word forms for each preceding vowel context

Vowel context	FIRE	OUR	NEAR	START	NURSE	SQUARE	letter	NORTH
Number of items	23	191	682	1033	1483	2103	2299	2503
Pre-consonantal and pre-vocalic	25	243	1132	1195	1579	2815	2927	3155

It is clear that in addition to a statistically higher likelihood for pre-consonantal /r/s to be articulated in the context of a preceding NURSE vowel, there are word form specific effects (perhaps especially the following context) on /r/ articulation. It is not unusual for changes to commence in a lexically specific way, progressing from 1 lexical item to another.

¹¹ I would like to thank Jen Hay for bringing this to my attention.

5.2.8 More specific models of rhoticity

Some of the results obtained from the models described above seemed worthy of more detailed scrutiny. In particular, there was a lack of clarity in relation to the relevance of gender for the articulation of both the pre-vocalic and the pre-consonantal tokens. It therefore seemed worthwhile to explore the effect of gender, as well as MCI scores, by fitting models to the data for each town separately. A more specific model would also verify whether there is indeed a clear age difference between the town N adults and teenagers when the town C speakers are not included in the model. In addition, I wanted to verify whether the regional differences identified in the models described thus far, would hold for the teenage data once the adults were removed.

The aim of the first more specific model¹² (*Model Teenage PreV*), was to probe the robustness of the main social predictors identified in *Model PreV* (i.e. linking /r/) when the town N adult data was removed. I therefore fitted a model to the teenage data only and entered the variables: *MCI*, *region* and *gender*. The estimated coefficients for *Model TeenagePreV* are presented in table 5.15 with none of the variables dropped from the model. *MCI* continues to be a significant predictor of linking /r/ articulation in this model. *Region* is also identified as a predictive factor. Town N teenagers are estimated to produce less linking /r/ than town C teenagers ($p < 0.001$). This regional difference is shown in figure 5.15. The model does not identify gender as influential on linking /r/.

Table 5.15: Model estimates for *Model TeenagePreV*

	Estimate	Std. Error	z-score	Pr(> z)
Intercept / baseline	1.583580	0.231460	6.842	< 0.001
MCI	-0.190877	0.038590	-4.946	< 0.001
Region N	-0.559603	0.208204	-2.688	0.00719
Gender M	0.008239	0.209181	0.039	0.96858

¹² The random effects for word and for speaker continued to be included in all of the specific models described in this section.

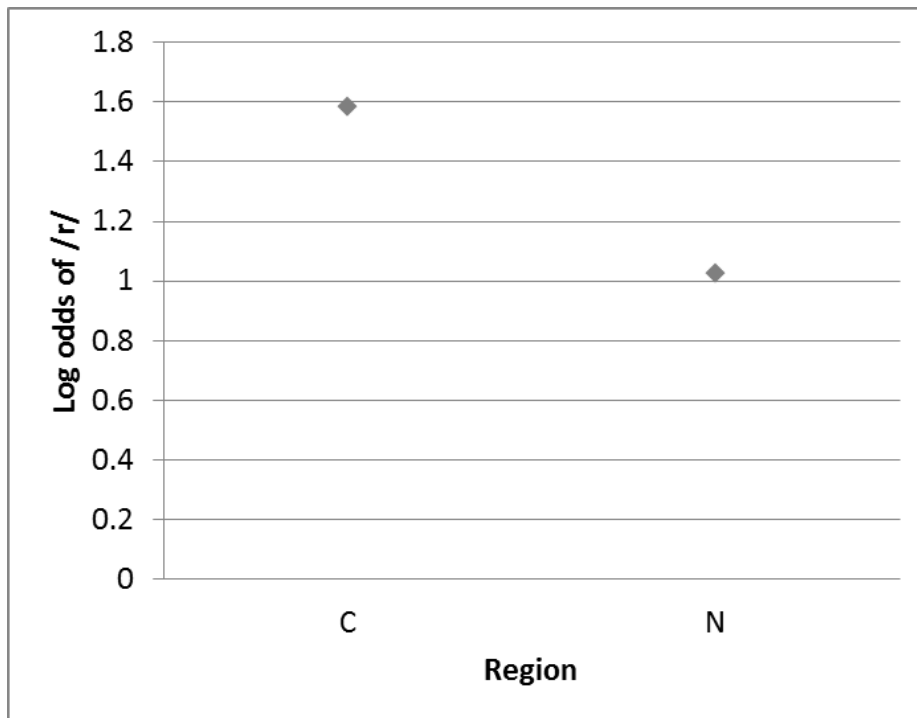


Figure 5.15: Log odds of pre-vocalic /r/ for teenagers by region

In the next more specific model I tested the predictive value of *MCI*, *age* and *gender* for linking /r/ within region N only, in order to see if age and other social fixed effects would hold constant when only the town N speakers were considered. I entered only *age*, *MCI* and *gender* into this model (*Model RegionNPreV*) and display the results in table 5.16 with none of the variables removed.

Table 5.16: Model estimates for *Model RegionNPreV*

	Estimate	Std. Error	z-score	Pr(> z)
Intercept / baseline	2.21073	0.29633	7.460	< 0.001
Age Y	-1.48556	0.30832	-4.946	< 0.001
MCI	-0.16565	0.03889	-4.818	< 0.001
Gender M	0.48102	0.27958	1.721	< 0.1

As with previous models, MCI remains a factor which predicts linking /r/ use. Speakers with higher MCI scores are estimated to produce less linking /r/. Age is also identified as significant in *Model RegionNPreV* with the teenagers predicted to produce less linking /r/ than adults. Once again, gender is not identified as a significant factor ($p=0.08$). In order to be

sure of the absence of a gender effect, I repeated the model with the adults removed. *Model RegionNTeensPreV* includes only *MCI* and *gender* as explanatory factors. The outcome is shown in table 5.17. Only *MCI* is identified as significant. Gender is apparently not a significant predictor of /r/ for the teenagers' use of linking /r/ in town N, though the male teenagers are predicted to articulate slightly more /r/ than the females.

Table 5.17: Model estimates for *Model RegionNTeensPreV*

	Estimate	Std. Error	z-score	Pr(> z)
Intercept / baseline	0.6862	0.2799	2.452	< 0.1
MCI	-0.16565	0.0450	-3.626	< 0.001
Gender M	0.5101	0.3162	1.613	0.106645

A similar model, with only *MCI* and *gender* included, was fitted to the data for the town C speakers only. The model estimates for this model (*Model RegionCTeensPreV*) are shown in table 5.18.

Table 5.18: Model estimates for *Model RegionCTeensPreV*

	Estimate	Std. Error	z-score	Pr(> z)
Intercept / baseline	2.02491	0.29769	6.802	< 0.001
MCI	-0.27279	0.06413	-4.254	< 0.001
Gender M	-0.38669	0.24850	-1.556	0.12

The model for the town C teenagers also predicts that *MCI*, but not gender, is a significant predictor of linking /r/ use. What is interesting with respect to gender is that the direction predicted for males in town C is opposite to that for males in town N. In town N male speakers are predicted to use slightly more linking /r/ and in town C males are predicted to use slightly less. It would seem then, that because the males and females show trends in a different direction in each town with respect to linking /r/, the model is unable to identify a clear trend for gender in the data overall. Figure 5.16 shows the estimated log odds of articulation for males and females in each region, though I emphasise that the model does not identify these gender differences as having statistical significance.

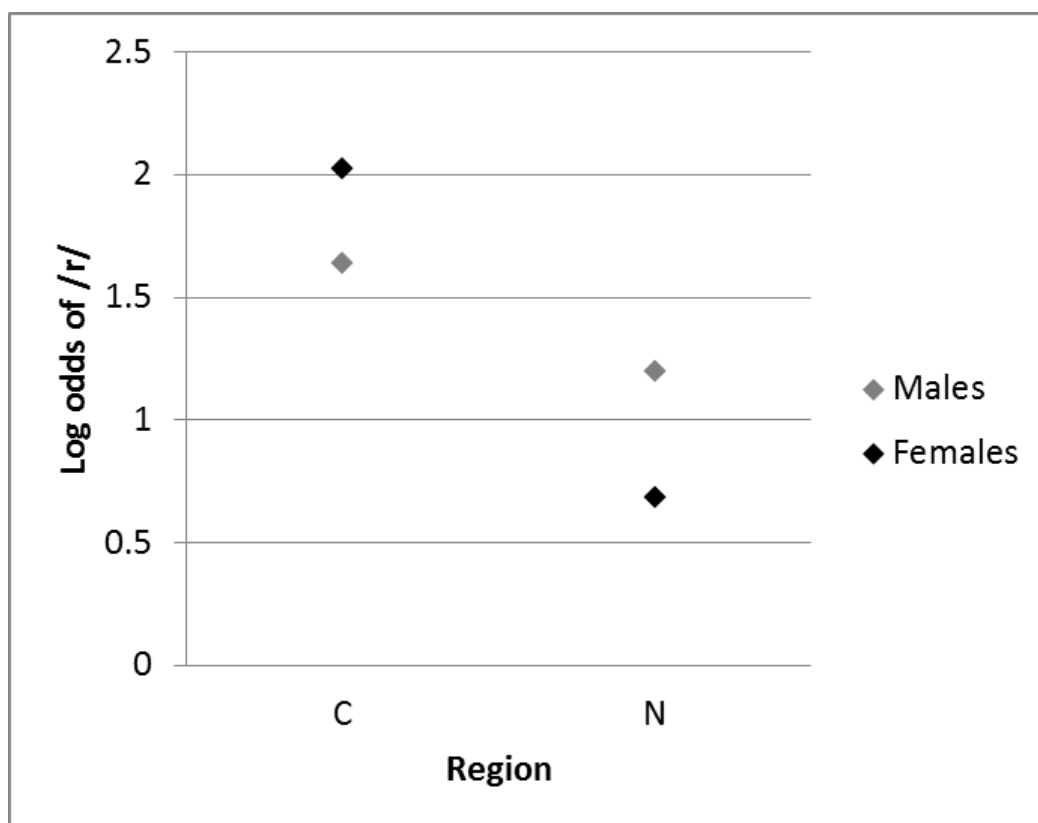


Figure 5.16: Log odds of pre-vocalic /r/ by for males versus females in each region

In light of this complicated patterns of distribution with respect to gender, the individual speaker data may be particularly informative with respect to linking /r/.

I also fitted more specific models to the non-pre-vocalic /r/ data. In all previous models, only pre-consonantal tokens were considered because the inclusion of phrase final and absolute final tokens caused complications for the models. However, if the models are fitted with a much smaller set of explanatory variables, it is possible to include all of the non-pre-vocalic phonological contexts of /r/ use (i.e. pre-consonantal non-phrase final tokens of /r/ plus all pre-vocalic and pre-consonantal phrase final tokens of /r/ plus all absolute final tokens of /r/).

I decided to test whether the influence of the social factors identified as significant in the models of pre-consonantal /r/ would also hold when all non-pre-vocalic tokens were included. I fitted the first such model (*Model TeenageNONPreV*) to the teenage data only and included only the variables *region*, *MCI* and *gender*. The results are shown in table 5.19 with none of the variables removed. The model confirms the regional difference that was

identified in *Model PreC*. Region N teenagers are predicted to produce more non-pre-vocalic /r/ than region C teenagers.

Table 5.19: Model estimates for *Model TeenageNONPreV*

	Estimate	Std. Error	z-score	Pr(> z)
Intercept / baseline	-10.24241	0.82082	-12.478	< 0.001
MCI	0.05908	0.06911	0.855	0.393
Region NR	1.67078	0.41642	4.012	< 0.001
Gender M	-0.38326	0.42477	-0.902	0.367

This model also confirms the *Model PreC* finding that neither MCI nor gender is influential on /r/ use. This finding holds with all non-pre-vocalic /r/ tokens included. Figure 5.17 shows the model's estimated regional difference in the log odds of non-pre-vocalic /r/.

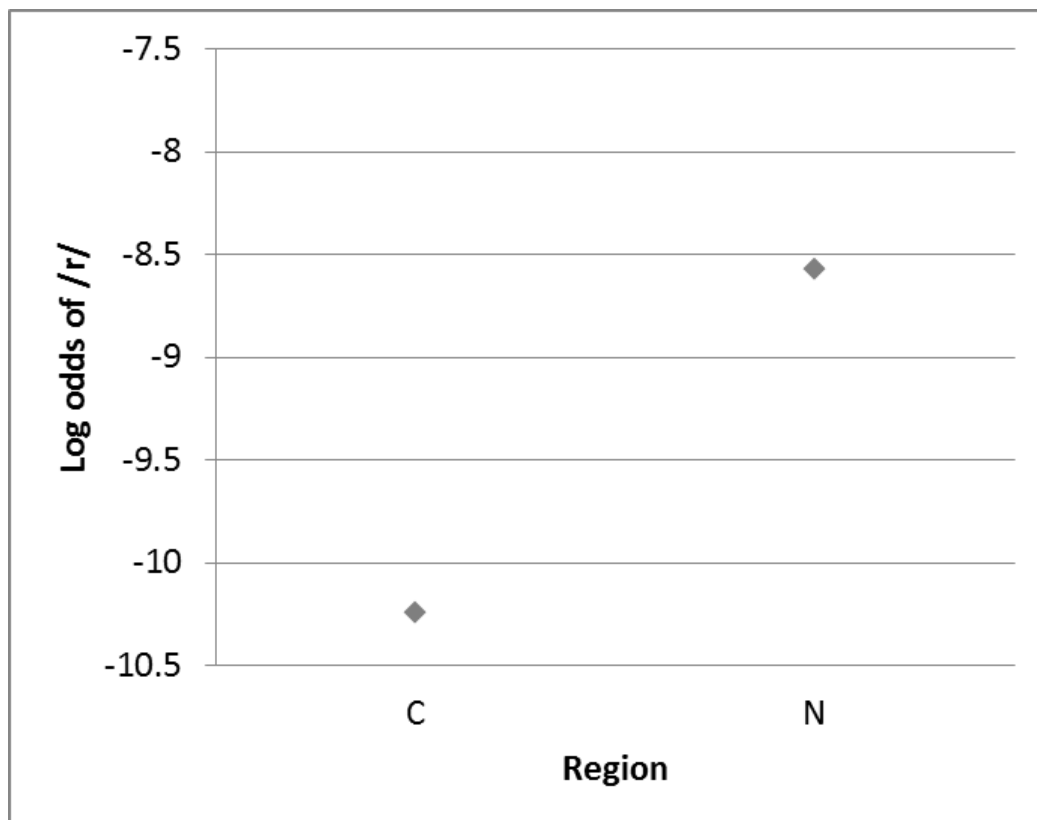


Figure 5.17: Log odds of non-pre-vocalic /r/ for teenagers by region

In order to test whether MCI or gender would become relevant for all non-pre-vocalic /r/ tokens when only the data for town N was considered, I fitted a model to the town N data, including the variables *age*, *MCI* and *gender* only. According to this model (*Model RegionNNONPreV*), teenagers are predicted to have a higher log odds of articulation than adults. Again, MCI and gender are not identified as influential. The model estimates are provided in table 5.20 with none of the variables removed. Figure 5.18 shows the age difference in the log odds of non-pre-vocalic /r/ articulation within town N.

Table 5.20: Model estimates for *Model RegionNNONPreV*

	Estimate	Std. Error	z-score	Pr(> z)
Intercept / baseline	-12.19577	1.36903	-8.908	< 0.001
Age Y	2.20504	0.79409	2.777	< 0.01
MCI	0.11777	0.07716	1.526	0.12693
Gender M	-0.69893	0.59230	-1.180	0.23799

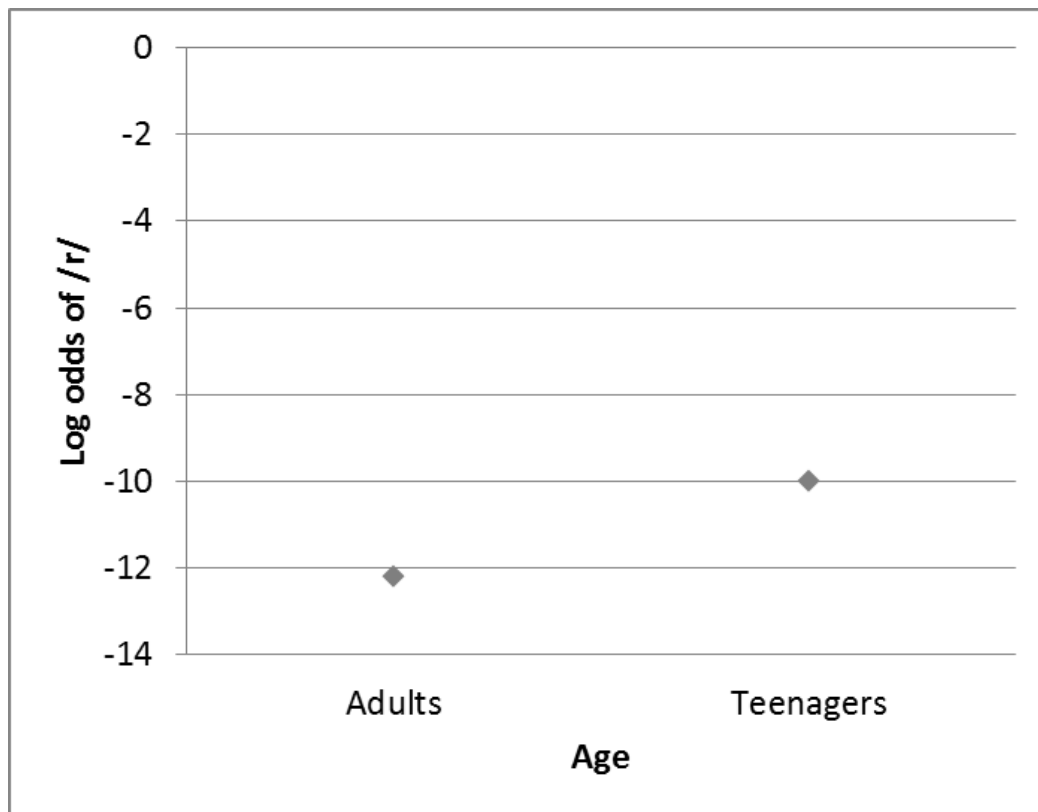


Figure 5.18: Log odds of non-pre-vocalic /r/ by age for region N speakers only

A corresponding model was fitted to the town C data. Again, this was to check the relevance of gender and MCI when only town C speakers are considered. Only age, MCI and gender were included in the model. As with *Model RegionNNONPreV*, neither gender nor MCI appear to have a significant effect on the articulation of /r/ when all non-pre-vocalic tokens are included. The model estimates are shown in table 5.21 with all of the entered variables retained in the model.

Table 5.21: Model estimates for *Model RegionCNONPreV*

	Estimate	Std. Error	z-score	Pr(> z)
Intercept / baseline	-8.39116	0.88633	-9.467	< 0.001
MCI	-0.08548	0.15306	-0.558	0.577
Gender M	-0.02183	0.57871	-0.038	0.970

5.2.9 The connection between pre-vocalic and non-pre-vocalic /r/

A final important question to consider is the degree to which the changes in pre-vocalic /r/ and non-pre-vocalic /r/ are connected. The results of the statistical models seem to indicate that the decline in linking /r/ and the increase in non-pre-vocalic /r/ are influenced in slightly different ways by the social and linguistic factors entered into the models. For linking /r/, region is significant (town N use less) and higher MCI scores have a significant disavouring effect. The preceding vowel context is not influential. For pre-consonantal /r/, region is significant (town N use more), but MCI is not influential. In contrast to pre-vocalic /r/, the preceding vowel context (i.e. NURSE) is a significant predictor for articulation.

In order to ascertain whether the articulation of the different dimensions of /r/ use may also be influential on each other, I tested for a direct correlation between the proportion of articulated tokens of non-pre-vocalic /r/ (i.e. pre-consonantal phrase final and non-phrase final tokens plus absolute final tokens) and the proportion of articulated tokens of pre-vocalic non-phrase final tokens (i.e. linking /r/s). The correlation test identified a significant negative correlation between the two sets of tokens (-0.3800913, significant at $p=0.007704$). This finding is very exciting. It suggests that as linking /r/ declines, non-pre-vocalic /r/ can be predicted to increase, and vice versa. I discuss this issue further in chapters 6 and 7. The negative correlation is displayed in figure 5.19.

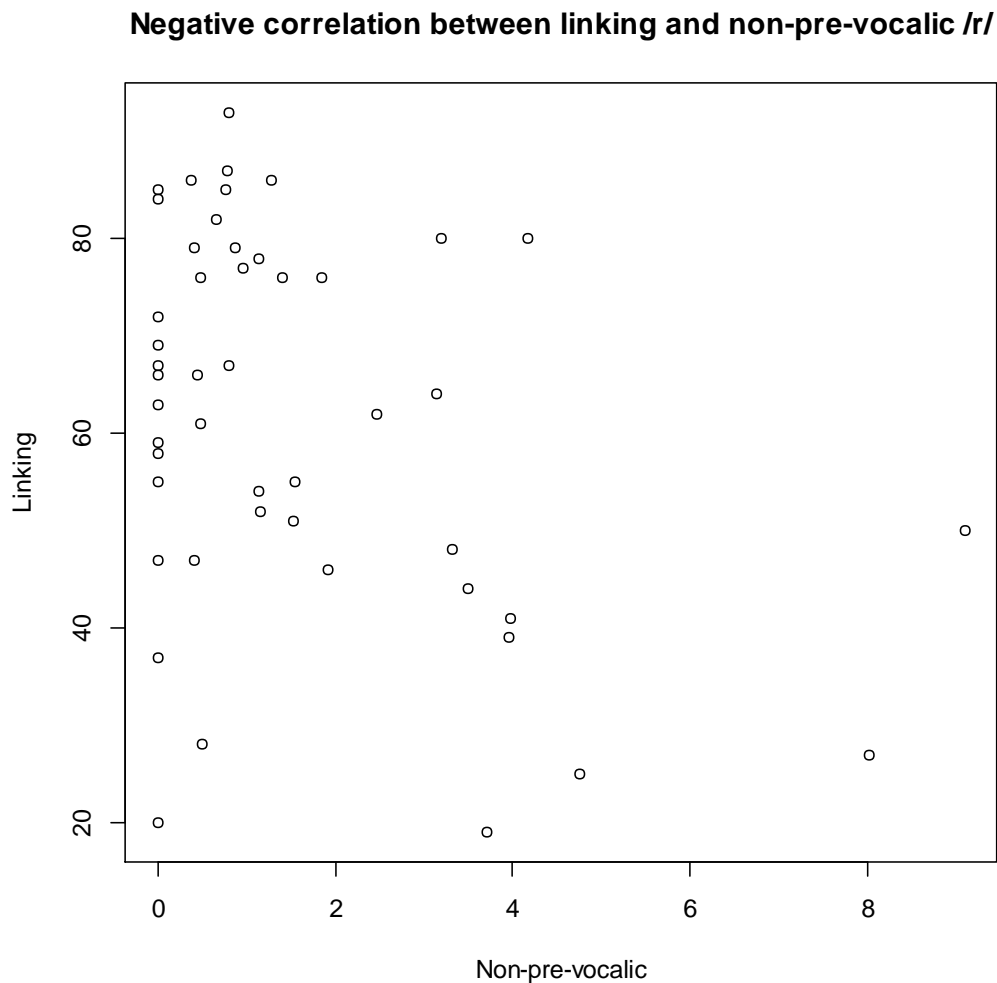


Figure 5.19: Negative correlation between linking /r/ and non-pre-vocalic /r/

5.3 Chapter summary

The findings of the mixed effects models described in this chapter raise some important questions about MNZE rhoticity. First of all, there is an indication that changes are taking place for both phonological dimensions of rhoticity. On the one hand, the articulation of pre-vocalic (i.e. linking) /r/ appears to be decreasing. On the other, the articulation of pre-consonantal /r/ may be on the increase. The age differences identified by the models do not necessarily indicate change, but are certainly suggestive of innovative changes in MNZE rhoticity. More data comparisons with more data obtained from adults is needed to confirm if this is in fact the case.

The findings for the pre-vocalic tokens may reflect a decrease in the overall rates of sandhi /r/. (Intrusive /r/ is not analysed in this thesis because there are too few potential contexts available in the data). Alternatively, the levels of linking /r/ may be typical of NZE

speech or there may be greater social variability in MNZE sandhi /r/ than has previously been identified.

There seems to be good evidence that sandhi /r/ is regionally variable. Speakers in region N are less inclined to articulate these tokens. However, there is no evidence of a gender difference. It is not clear that the regional difference is the hallmark of a new change or that it is related to the increasing regional diversity. However, the fact that there is a regional difference is an exciting finding.

The fact that speakers with higher MCI scores also tend towards a reduced likelihood of sandhi /r/ articulation in both regions is also of considerable interest. There is reasonable evidence that a reduction in sandhi /r/ articulation is associated with speakers who have more active involvement in Maori culture.

For pre-consonantal /r/ it is more difficult to shed light on variation using statistical analysis due to the low numbers of articulated tokens available for model estimates. Nevertheless, the mixed effects models provide interesting results. The age difference is significant within region N specifically as well as when the adults are compared with teenagers from both towns. The finding that there is a change occurring towards more pre-consonantal /r/ (and non-pre-vocalic /r/ more generally) is not conclusive. However, since the MNZE data was collected, I and colleagues in New Zealand have observed an increase in the articulation of pre-consonantal /r/ tokens, both amongst the general public and in the media. It appears that there is indeed an innovation involving the articulation of non-pre-vocalic /r/s, especially in the context of a preceding NURSE vowel for the pre-consonantal tokens. Linguistics scholars are now beginning to comment on this innovation (cf. Miriam Meyerhoff's comments in a recent news article by Charles Anderson, 17/06/2012, Laurie Bauer's *Dominion Post* article 2009).

The fact that the NURSE context is identified as significant in the model fitted to the pre-consonantal data also supports the theory of a change. The context of a NURSE vowel has been identified in studies as the first to be affected in changes to /r/. It is a context in which non-pre-vocalic /r/ has begun to exhibit (re)emergence after it has apparently ceased to be articulated (e.g. Irwin & Nagy 2007).

The findings indicate that regional variation is relevant for non-pre-vocalic /r/ use as well as for pre-vocalic /r/ use. Is this variation indicative of regional phonological diversity in MNZE? If this is the case, could this diversification evolve into regionally distinct varieties and how might this development occur? Although Maori ethnicity appears to be relevant for pre-vocalic /r/ use, this does not appear to be the case for the non-pre-vocalic tokens. This

makes the regional difference all the more interesting. It seems that Maori culture / ethnicity is influential on one dimension of rhoticity (linking /r/), while region and vowel context is more relevant for the other (non-pre-vocalic /r/).

It seems clear that the influence of speakers' social identities on this variation in rhoticity needs to be probed in more detail. Even though region has been identified as relevant to both dimensions of /r/ use, the statistics do not show the extent to which regional / local identity has relevance for the speakers. In addition, the statistics do not probe the significance of concepts such as "Maori identity" and "regional identity" for speakers. The statistical results do not shed light on the nature of the connections between individual speakers' degrees of rhoticity and their identity construction. The finding that the patterns of pre-vocalic /r/ and non-pre-vocalic /r/ use are related also deserves to be probed further, especially considering the apparent differences in the social influences on their use.

The questions raised here cannot easily be addressed using quantitative methods alone. The models fitted to the data have produced intriguing results, but a closer and more qualitative look at the data is required. I take the position (as emphasised by Fox 2008: 2, *his italics*), that statistical models are "grossly *simplified* descriptions of complex social reality." The statistical analyses identify patterns of variation in the data, but do not provide any explanatory account of the variation. There is no doubt that variation in MNZE rhoticity is subject to a wide variety of influences beyond those explored and described in this chapter. Despite efforts to minimise potentially confounding factors, it is not possible to account for all extraneous factors which may have affected /r/ articulation in this data. It is therefore important to view the results presented in this chapter with a degree of caution.

The quantitative analyses can be significantly enhanced by incorporating an additional layer of qualitative analysis into the investigation of sociolinguistic variation. In the next chapter I probe the behaviour of individual speakers with respect to rhoticity and pursue the question of the development of regional identities and regional dialects in more depth.

Chapter 6: Qualitative analysis of MNZE rhoticity

In this chapter I aim to build on the quantitative findings of chapter 6 by exploring sociocultural influences on patterns of rhoticity in the data. I adopt a social constructionist approach, utilising speakers' discourse about their social lives to identify social motivations underlying their linguistic choices. Recent dialectological research emphasises the importance of attending to the "local context" of linguistic variation. The quantitative analysis does not address the local meanings and sociocultural dynamics which underpin the variation in rhoticity. It is the local context of variation in MNZE rhoticity that I aim to address in this chapter. In the first section I outline the value of adopting a discourse analytical approach in a thesis investigating regional phonological variation in MNZE. In subsequent sections I provide a qualitative analysis of the sociocultural conditions in which variation in rhoticity is embedded. By exploring in detail the sociocultural context of the variation I aim to shed light on the relevance of variation in rhoticity for potential regional linguistic diversification and the development of regional dialects in MNZE.

6.1 Introduction

Chapter 6 identified a regional difference in the use of two phonological dimensions of rhoticity. The mixed effects models predict that town N speakers exhibit lower use of linking /r/ than town C speakers. Town N speakers are also predicted to exhibit a higher use of non-pre-vocalic /r/ than town C speakers. In one sense, this finding supports a hypothesis of regional variation in MNZE phonology. However, as Eckert (2008: 455) has highlighted, "exploring the meaning of variation requires that we examine what lies beneath generalisations." A qualitative analysis may reveal evidence to support certain interpretations of the quantitative patterns.

I draw heavily on the discourse of participants during their semi-structured interviews¹³. I aim to identify links between the linguistic behaviour and the discourse of individual speakers. I adopt the view that speakers' ideas and beliefs about their town are shaped by, and also shape, the discourse used to describe them (cf. Johnstone 2008: 11). Speakers' talk about their town and their social lives facilitates the construction of an image of their town and their local identities. The discourse is therefore likely to illuminate ideas which may be relevant for the linguistic variation.

¹³ 2 male town N speakers who were not included in the mixed effects models in chapter 5 due to missing MCI data, are taken into account in this chapter.

The type of analysis carried out here is similar to that of Llamas (2000, and see Dyer 2002), who sought correlations between patterns of phonological variation (the glottalisation and glottal replacement of /p, t, k/) and speakers' sense of place. Llamas used an "Identification Questionnaire" to elicit informants' attitudes towards their language and their town. In this research I have elicited informants' attitudes directly during interviews. While this method makes it more difficult to systematically compare speakers' comments, the benefit of this method is that the interview context enabled me to probe informants' opinions on particular topics in more detail. It also enabled informants to provide extended responses.

It is important to acknowledge that the discourse is situated within the communicative event of the interviews with me. It is influenced by the purpose of the talk (to inform), the setting (an unusual interview scenario with a relative stranger) and the relationship between the interactants (the degree to which participants felt comfortable, my approach to eliciting information, the extent of cooperation between myself and my participants). Other contextual factors may also have influenced responses.

Although the same questions were phrased slightly differently in each interview, the participants all had an opportunity to comment on the majority of the same topics. Since I am dealing primarily with the discourse of teenagers, this may incur a degree of unreliability. Prior to the interviews the teenagers may not have reflected on the sociocultural issues that I was probing. Their responses might be influenced by factors other than any serious consideration of the issues. Certainly, the attitudes and comments should not be viewed as fixed. Nevertheless, the teenagers seem forthright and genuine in their discourse. When their comments are mediated by a concern for political correctness, this is often made explicit. When they are confused and do not know what to say, this is usually also evident. Some participants comment more than others on particular topics and participants express varying degrees of confidence in their opinions. Some teenagers display an impressive degree of insight into the sociocultural issues I was probing. Consequently, I believe that the discourse provided by the participants adds an important layer to the picture of quantitative variation identified in this research.

The discourse data sheds light on the interplay of various sociocultural factors significant for collective identities based on place, region or ethnicity. In relation to such collective identities Jenkins' (2004: 79) comments that:

Collective identification evokes powerful imagery of people who are in some respect(s) apparently similar to each other. People must have something significant

in common - no matter how vague, apparently unimportant or apparently illusory - before we can talk about their membership of a collectivity. However, this similarity cannot be recognised without simultaneously evoking differentiation. Logically, inclusion entails exclusion, if only by default. To define the criteria for membership of any set of objects is, at the same time, to create a boundary, everything beyond which does not belong.

The discourse data thus provides important clues as to relevant points of similarity and difference which the speakers in each town use to define themselves, as individuals or as collectives, in contrast to others. Apart from the town overviews provided below, I focus my analysis exclusively on the teenagers' discourse since I am concerned with how the teenagers construct their local identities. I first provide a sociohistorical overview of the two towns based on interview data, talks with community members and written sources.

6.2 The sociocultural context

This section provides the sociohistorical context for the more detailed comparisons of the two towns and the individual speakers in subsequent sections.

6.2.1 Town N: the King Country

Town N is situated in what was once largely inaccessible terrain. With its rivers, mountains and dense Manuka bush, and compounded by significant Maori resistance, it was the last region of the North Island to become occupied by Europeans. The area was a site of convergence, conflict and negotiation between Maori tribes who had first settled there and Maori and Europeans respectively who desired to infiltrate the area. The construction of a railway line into the town facilitated vigorous European settlement from the early 1900s.

Until the 1980s town N was a significant location in an independent council borough. The population exceeded 6,000 at its peak. The original European inhabitants were railway construction workers and sawmillers. Many farming settlements also grew up in the area. As sawmilling ended in the mid-1900s the town economy shifted to one based mainly on farming.

Older town N inhabitants describe a lively town in the past with several local government departments providing employment opportunities. However, government services were centralised into the wider regional Ruapehu district in the late 1980s and employment options

declined significantly. Adults often refer to the centralisation of services when discussing the town's loss of productivity, as in extract 1.

1. Town N

Nora: that many years ago twenty-seven years ago that would've been the s-
beginning of the end of [town N] as far as- employment went
the freezing works went the railway went the hospital went telecom went post
office went everything
all the big- things job um- attractions went

The adults describe a decline in shops, businesses, services and entertainment over the decades. In addition, the reduced and relatively more fixed population became increasingly geographically mobile in order to access services which were no longer available locally. Improved transport links have facilitated frequent trips out of town.

The adults identify the positive aspects of life in town N, especially as a place for families bringing up young children. They provide several examples, such as in 2, of their friendly, tight-knit community pulling together and looking after each other.

2. Town N

Greta: i've got a next door neighbour at the moment that's very poorly and like i went
down yesterday and took some soup and some baking to put in her freezer for
when [laughs]: visitors: came cos i know she won't be able to eat it herself but i
said when you get someone turn up and it's lunch time you can just (tip) some
soup in a pot and //you've got\
SM: /yeah\
Greta: got some lunch

Town N has changed substantially over the last century. It was founded upon a convergence of people with diverse social and cultural backgrounds, a situation in which substantial dialect contact and levelling is likely to have occurred (cf. chapter 2). A thriving economy

once sustained a regular turnover of temporary inhabitants. Adults contrast its former profitable times with its current economic struggles. The town is less isolated geographically than it once was. Trips out of town for shopping, visiting relatives and to access health services are commonplace.

6.2.2 Town C: the Horowhenua-Manawatu

As with many European settlements in New Zealand, Town C is a coastal town. It is situated on the North Island's west coast. It began as a Maori settlement. The onset of European presence in the area was marked by a major earthquake in 1855 which disrupted settlements further north.

Town C was also once considerably more active economically than it is today. It was a prime location for flax milling. Related economic activities were wool / textile manufacturing, the engineering of machinery associated with the flax industry, saw mills and road and railway construction. Town C and other coastal settlements were once connected via ferries on the river and the town was a resting point on the tram and ferry route between Wellington and Wanganui. As in town N, improvements in transport and communication lines in the late 1800s led to the restructuring of services and economic attention shifted away from town C and towards cities. The flax industry declined and families turned to sheep and dairy farming. In recent years the town has witnessed further reductions in its economic opportunities. Its textile factory was facing imminent closure when I commenced the fieldwork. Teenagers were aware of the scarce employment opportunities. In extract 3 Jemima discusses the imminent closure of the factory where her Mum works.

3. Town C

Jemima: [factory A] and [factory B] it's like basically the only thing keeps town C going //cos they're\ the two main factories and it's //(got) hard\

SM: [factory A] //okay\

Jemima: /oh i think that's\ yeah since since that's closing down lots of people are moving either to Auckland or to Aussie

SM: is that where your mum works //[factory A] right\

Jemima: /yeah\ i guess most of them will still stay here but they still lose quite a few people and if [factory B] was to close there'd be hardly anywhere to work so

they'd have to leave

One difference between the two towns is the slightly more urbanised context of town C. Town N is a service centre to its surrounding remote rural areas. It is the site of the only secondary school available for those areas. In contrast, town C is flanked by two adjacent small towns, which I will refer to from here on as adjacent town A and adjacent town B. Students who attend school C may live within town C, in its nearby beach community, in either of the two adjacent towns, or in more remote rural areas scattered between and around the 3 towns. The 3 towns and their surrounds form a larger Horowhenua-Manawatu district.

Unlike in town N, teenagers in the Horowhenua-Manawatu district may attend other schools. Town C is also considerably closer to its nearest city, Palmerston North, than town N is to Hamilton. However, Town C is similar to town N in its small, rural outlook and town C participants also emphasise the friendliness of their town, as in extract 4.

4. Town C

Linzy: i think our area's really friendly because well- my sister her ball was the other day and she's supposed to- her partner was supposed to be getting his suit off his brother in Palmy and his brother's flight got cancelled so there was no one home and so [sister's partner] couldn't get the suit and she was sitting in the travel agent's office cos it's the only quiet place to ring mum and the lady from the travel agent had a suit and she gave it to my sister for the ball

SM: [laughs]: really?:

Linzy: yeah she just like trusted her and- so [sister's partner] had a suit like they're just real friendly

There are thus similarities and differences between the two towns which may hold significance for the participants' sense of local identity and for differences in rhoticity between the towns and the individuals. In the next section I identify a range of sociocultural factors which are potentially relevant for linguistic variation.

6.3 Comparison of town N and town C sociocultural factors

A number of sociocultural factors are evident in the discourse data which are likely to influence speakers' local identities. It is impossible to cover all such factors in this thesis. In this section I focus on factors which are not only supported by the sociolinguistics literature, but which also stood out during analysis as key factors for the development of regional distinctiveness. The first concerns the way in which speakers' describe their towns.

6.3.1 Local identities

Johnstone (2004: 69) notes that "popular labels for places often reflect the ways in which places are constituted through shared experiences and shared orientations." A primary consideration then is whether the labels and descriptions which participants apply to their towns are significantly different.

In both towns a contrast between small town and big city life plays a significant role in the teenagers' descriptions. They use adjectives such as "relaxed" and "quiet" to describe their town and refer to cities as "busy," "rushed" and potentially "dangerous," as in extracts 5 and 6.

5. Town C

Sarah: like it seems like (and) everyone like in wellington and auckland like too busy to just stop and like take a look at life like they're just like "(oh) i've gotta get to work" and stuff like that and then here we're just like real chillaxed out and just like just take each day as it comes i suppose

6. Town N

Amy: and when i have kids i want them to grow up in town N cos in the cities isn't it supposed to be dangerous and i think it (would) be more dangerous for kids to grow up in the city

Teenagers in both towns demonstrate negative perceptions of city life and city dwellers. Negative comments are overwhelmingly directed at Auckland, and to a lesser extent

Wellington and other cities. City-dwellers are perceived as “different” and “posh,” as Shena exemplifies in 7:

7. Town C

Shena: um sometimes y- i reckon you can tell from auckland they're more up-nosey people sometimes like when they're from the big cities normally you can tell like from palmerston when they come here or when you go to palmerston you can tell they just- they just wear different they walk different they're all different

Teenagers claim they can distinguish “outsiders” based on their city styles as described by Steve in 8.

8. Town N

Steve: like you can tell you go to Hamilton you grab a bunch of people and you bring them here and they're just wearing like different style to everyone around like some people might not notice it but i can notice it yeah

SM: does town N have it's own style then or //is it just\

Steve: /aw not really\\ i think we're just lagging behind a bit we're just a bit late [laughs] we catch up with everything after everyone's already had it

A more significant reason that outsiders are easily recognised is what I refer to in this thesis as the “everybody knows everybody” effect. Everybody knowing everybody features prominently in participants’ descriptions. This important feature of their towns’ identities contributes to a positive perception of friendliness which stands in contrast to cities or other places they visit, as Tracy explains in 9.

9. Town N

Tracy: it's good and everyone's friendly like i notice that from like when i go go to see my cousin in rotorua these like people here seem a lot friendlier like i get along with them over there but you can just tell the difference yeah

SM: mm can you give any examples

Tracy: like some people are like people over there just seem don't seem down to earth as much as [town N] like here they'll just come up to say hello to you even if they don't know you and over there like they kinda they do talk to you and stuff but like for example when i met my cousin's friends they all nice to me and stuff but when she meets my friends they're like way more nicer [laughs]: and friendlier: and whatever and yeah

“Outsiders” are individuals who have not been seen in town before. Being able to distinguish easily between insiders and outsiders contributes to a sense of local identity. Llamas (2000: 142) notes that speakers’ perceptions of local identity can be influenced by the descriptions applied to them by outsiders, even if speakers appear to reject such descriptions. The teenagers perceive outsiders as having negative perceptions of their town, its inhabitants or its school and this seems to be based primarily on their relatively low socioeconomic status, as shown in 10 and 11.

10. Town N

Jenny: most people that come to [town N] that haven't been here before are too scared to walk up the main street because everyone's just like it's- who was it nana had some friends come down and they weren't old they were about in their forties and they were too scared to walk down the street by themselves because they were scared of all the maori people up the street because they just look so tough and everyone walking around in their pyjamas and their slippers have you seen that

11. Town C

- Nettie: like they think cos [school C] is in [town C] that it's a real stink like low graded college
- SM: Mm
- Nettie: but it's actually not that bad as everyone makes it out to be so it's-
- SM: Yeah
- Nettie: so they'll come here from like [Palmerston North school name] and stuff they think that this school's just stupid because it's in [town C] but it's not like the town we're in that defines the school

Rivalry between sports teams and other towns or regions can also reflect sociocultural relationships between different localities and indicate the strength of local identity (cf. Llamas 2000; Beal 2006). Teenagers in both towns seem unaware of particular rivalries with other sports teams, schools or towns. In extract 12, Steve, who plays in town N's first fifteen rugby team, describes Hamilton as the town that his team most wants to beat, but says this is based on wanting to beat the "best" team of the time. He also comments that there are insufficient teams locally with whom such rivalries might become established.

12. Town N

- Steve: we love beating the hamilton boys whenever we play them at ANYTHING we love to- we love to beat them they don't really know who we are but we like to beat them cos they're the top dog in the waikato competition all the time and also in the king country competition is a school in taupo and they think that they're the best in the king country but we are so yeah we have bit of a rivalry with them you know when we go to play them or one person might go over there and their f- their mate from taupo might tell them that their teams gonna smash our team and yeah it's just quite quite minimal cos there's no one else really around us

Steve is the only speaker in the data set who provides any indication (and it is a vague one) that his town may have a distinctive identity, see extract 13.

13. Town N

Steve: yeah i don't know if there's anything special about here but like we all seem to like we're so isolated like there might be a small community outside hamilton like just five minutes away but they're not isolated like they're part of hamilton we're [town N] we're not part of anywhere it's like so we sort of [pause] gel together better or something i'm not really sure

Generally, teenagers in both towns describe differences between small town and city life, rather than identifying any unique characteristics of their town, as in 14.

14. Town N

SM: so do you think um there's anything kind of special about um [town N] then
Jenny: not really /it's\\ just small but there's heaps of small places

Both towns are described in very similar terms, i.e. a safe and friendly place, a good place to bring up children, but not as a place for the long term. The close similarities between how the two towns are described may reflect a discourse of small town New Zealand which may have become embedded across the generations. The “everybody knows everybody” effect is a key feature of this discourse. Friendliness, cooperation and a laid back attitude are highly valued. This discourse also involves positioning city-dwellers as the “outsiders” who are less friendly, too busy and too posh.

There is no evidence in the discourse data that participants perceive their town as distinctive. However, since the small town versus city distinction seems significant, a factor which may be relevant for linguistic variation is the extent of individuals’ local versus global orientation, which I discuss in the next section.

6.3.2 Local versus global orientation

Johnstone (2004: 74) notes that speakers may demonstrate a relatively more global outlook or may be more locally / traditionally oriented. Labov (1963) demonstrated significant linguistic differences between inhabitants of Martha's Vineyard who were oriented more towards preserving traditional local life and Vineyarders who were relatively more positively oriented towards sojourners. Eckert (1988, 2000) observed linguistic differences in relation to Belten High teenagers' city / urban versus school / suburb oriented stances.

There are differences in the extent to which individuals in town N and town C are oriented towards a rural and / or small town lifestyle. Some individuals express a more negative view of small town life than others and demonstrate a more global orientation and enthusiasm towards experiencing the wider world.

The rural lifestyle is significant for many town N teenagers who often express their detailed knowledge and involvement in farming practices. Families whose incomes are not directly related to farming often own land and livestock as a lifestyle choice. In town C teenagers' lifestyles are slightly more urbanised but some teenagers have grown up within a farming culture. In both towns teenagers' attitudes towards rural life vary considerably and there are differences in attitudes towards rural and / or small town life versus a more global / city-oriented perspective.

The issue of local versus global orientation is interconnected with speakers' future social / career aspirations. Both towns have limited employment options and teenagers are aware that most employment opportunities lay outside of the town. Teenagers display different degrees of willingness in relation to leaving town, pursuing a career, travel and seeing the wider world more generally. In extract 15, Robin seems somewhat resigned to the prospect of working in the local supermarket while in extract 16, Sue is more definite about leaving.

15. Town C

Robin: [laughs] i wouldn't like to work at a supermarket but i probably will

SM: yeah?

Robin: if i never move [pause]

16. Town C

SM: do you think you'll like do you see yourself s- staying around here

Sue: //no\ definitely not

SM: /in\ the future

Sue: soon as i can i'm going

It is important to acknowledge the complexity of these types of issues. Other aspects of individuals' identities may also impact on their local orientation. Sociolinguists have repeatedly shown that different aspects of speakers' identities are co-constructed (e.g. Ochs 1992; Eckert 1996, 2012). Speakers' friendship groups, their involvement in particular social practices, their orientation towards particular gendered or ethnic identities, are interconnected. Individuals' orientations towards certain social identities are also community and context-specific (see Eckert & McConnell-Ginet 1992; Holmes 2000; Ehrlich 2008).

6.3.3 Social practices

Teenagers' involvement in particular social networks and social practices is likely to play a significant role in the linguistic choices of the teenagers in this research. However, due to the nature of the fieldwork I was not in a position to carry out an in depth examination of specific friendship networks. There were simply too many for this to be possible. In addition, the situation regarding friendship groups is further complicated by the "everybody knows everybody" effect. Despite identifying certain group distinctions, teenagers simultaneously describe drifting around and visiting each other's groups. Nevertheless the discourse data provides considerable information about individuals' involvement in particular social practices or friendship groups. While there is insufficient space in this thesis to provide a detailed analysis of these issues, it is important to take them into account when considering individuals' linguistic choices.

For example, in both towns, outdoor activities such as motorbiking, hunting and fishing are typically, but not exclusively, male-oriented. A culture of shopping seems almost exclusively female-oriented. Some girls are involved in the motorbiking culture. In extract 17, Linzy explains that motorbiking "goes with the territory" and is part of the rural context, rather than a specifically male practice.

17. Town C

Linzy: if you've been brought up on a farm most of us (like)- know how to ride motorbikes and like it

SM: Yeah

Linzy: it just goes with the territory

Other social practices that teenagers from both towns are involved in include a Christian youth group, music bands, gangs, criminal activities, parties, sports teams and drug culture. The potential significance of a variety of social practices must be evaluated when considering individuals' linguistic behaviour.

6.3.4 Social networks and geographical mobility

I had expected speakers in both towns to have close-knit social networks due to the rural contexts and the relative distance from major urban centres. I was interested in attempting to correlate differences in speakers' geographical mobility with their linguistic behaviour. As noted in chapter 2 studies have demonstrated the significant influence of social network connections on linguistic behaviour (cf. Milroy and Milroy 1985, Milroy 2002b, 2007). Speakers with greater geographical mobility are those most likely to adopt linguistic innovations from outside the community. Such speakers may have peripheral contact with various social networks and are thus more likely to adopt innovations from one network and pass them on to relatively more stable group members of another.

The teenagers certainly describe close-knit networks. This is especially evident in relation to the "everybody knows everybody" effect. However, the extent of geographical mobility of teenagers in both towns is impressive. For these teenagers, close-knit networks and a high degree of geographical mobility are not mutually exclusive.

It is extremely difficult to identify differences in the degrees of contact which individual teenagers have with other New Zealand towns and cities. Almost every speaker describes visiting a wide range of locations.

In town N it is clear that Hamilton is the main / most frequently visited urban centre. Informants speak casually about travelling the 2 hours plus to Hamilton for a day's shopping. Jenny explains in extract 18 that school-leavers also often continue future studies in Hamilton because it allows them to remain relatively close to the town and family.

18. Town N

- Jenny: a lot of people go Hamilton cos it's close here and it's like close to family but Hamilton's the main place or they go down south but there's there used to be a polytech here but it closed down so you can't do it unless you do an apprenticeship cos there's lots of apprenticeships but people that wanna go to university or go to a (polytech) or something you have to go out of town //so\
 SM: /how\\ how long does it take to get to Hamilton
 FYFMP1: two and a half hours depends how fast you drive it's about two and a half to three hours
 SM: mm
 TYFP2: but yeah it's either like we went and had a look at the [college] and just about most of the people staying in the student village were from town N

In town C teenagers regularly visit Palmerston North and refer to this city as “Palmy” as in extract 19.

19. Town C

- Robin: //ah we\ shop in Palmy most weeks [pause] that's usually as far as we go for groceries and things
 SM: yeah as a family?
 Robin: yeah
 SM: why do you go all the way to palmy to shop
 Robin: um sometimes just to [pause] well we go to macdonalds and sometimes look at the ware house and things

It may seem reasonable to assume that Hamilton will have a more significant influence on linguistic variation and change in town N than Auckland or other cities and that in town C, the main influence is Palmerston North. However, it is apparent that the situation is more complex. In both towns, teenagers describe contact with places across a wide geographic range. Table 6.1 lists the different places visited by teenagers in each town. In terms of reasons for visiting these locations, with the exception of Hamilton for town N speakers and

Palmerston North for town C speakers, the most common reason that teenagers give for visiting other places is having relatives in those areas. In fact the number of relatives whom individual speakers have in various parts of the country is surprising.

Table 6.1 Range of locations visited by town N and town C teenagers

Town C	Town N
Auckland	Auckland
Bay of Islands	
Bay of Plenty	
Christchurch	Christchurch
Coromandel	
Gisborne	
Hamilton	Hamilton
Hastings	
Napier	Napier
Nelson	
	New Plymouth
Pahiatua	
Palmerston North	Palmerston North
Paraparaumu	
Picton	
Rotorua	Rotorua
South Island	South Island
	South Island West coast
Southland	
(Balclutha, Clinton, Invercargill)	
	Taupo
Tauranga	Tauranga
Wanganui	Wanganui
Wellington	Wellington
Whakatane	Whakatane
Whangarei	Whangarei

Extract 20 demonstrates a common response to questions about geographical mobility.

20. Town C

Jemima: um //i've only got\ my nana and my granny who live round here the rest like all my uncles and aunties and mainly all my cousins

SM: /or is it just-\

- Jemima: live either down south (and) up north or in aussie
yeah um i normally- i go up to taupo lots to see my auntie and my cousin cos it's cheap just to bus for me up there and i stay there
- SM: right okay so what- where else have you been then in new zealand besides wh- what have you given me now- um Palmerston North you've been to Wellington
- Jemima: and yeah //and\ napier gisborne
- SM: /been to auckland\\
- Jemima: auckland wellington um we went oh we go to picton and we went down to invercargill so we went down one side and came back up the other which (was) long but it was good
- SM: was that like a holiday
- Jemima: yeah cos my auntie lives in invercargill

It is apparent from the speaker discourse that teenagers from both towns visit some of the same places. Geographical mobility has been found to play a key role in the spread of linguistic innovations and speakers in both towns have the opportunity to come into contact with innovative linguistic variants in other parts of the country. It will be difficult to distinguish individuals in terms of geographical mobility. Nevertheless there may be some individuals who are significantly less mobile than others. The linguistic behaviour of any such speakers is of considerable interest.

The discourse data reveals that the populations of each town are very transient. Several teenagers describe having shifted towns within the last decade or comment that their family is moving to another town in the near future. Other speakers had come to the town from other countries. The geographical mobility and transience of the two towns is likely to be extremely important in relation to the apparent lack of distinctive town identities. With so much similarity between individuals and towns with respect to geographical mobility, differences in speakers' local versus global orientations may potentially play a significant role in linguistic variation.

Another important sociocultural factor in this thesis is the issue of ethnicity. Ethnicity may have relative degrees of significance for individuals' identities. In addition, ethnicity may be playing an influential role in ongoing developments in MNZE.

6.3.5 Ethnicity

In chapter 3 I drew attention to the challenges I faced when attempting to categorise teenagers according to Maori versus Pakeha ethnicity. The discourse data is insightful for NZE sociolinguistic research concerning ethnicity. Speakers have often been categorised as either Maori or Pakeha, but with little explanation of how categorisation was established, and there is seldom in depth exploration of ethnicity from a social constructionist perspective (but see King 1999).

Ethnicity was a difficult issue to probe during the interviews. People tended to shy away from the issue. However at the risk of making participants uncomfortable, I sometimes pursued challenging lines of enquiry. It is not always clear if people are responding in what they consider to be a politically correct manner or if they are genuinely expressing their opinions.

Speakers express a range of opinions and attitudes in relation to Maori culture and ethnicity. A common attitude in both towns is that ethnic relations are unproblematic and largely irrelevant. As Steve illustrates in extract 21, people of different ethnicities are often described as all getting along together.

21. Town N

Steve: i i (reckon) there's probably an even mix of maoris and pakehas in this school and yeah but like there's no like racial segregation like you see a group of maoris and there might be one white guy hanging out with them but that's just cos that's who they've made friends with like most of my friends that i hang out with like during the day and at lunch time and stuff most of them are um pakeha and then there's a few a few other people like there's a few islanders and a couple of maoris that sorta hang around like near us and they almost it's almost like we've (integrated) into one sort of little group of friends

Nevertheless, teenagers identify that there are differences in the degree to which individuals draw attention to ethnicity, as Jemima explains in 22.

22. Town C

- Jemima: yep there's a group even in like my year there's a group of [sighs] sorry they're white but i don't know how //to say it without being racist they're like\
- SM: /it's alright [laughs]\\
- Jemima: it's like a group of white girls and then there's like a group of really maori girls and then there's the people in the middle
- SM: //oh okay\
- Jemima: /sort of that\\ doesn't like there's maori and european and (who) you're for us and you don't care but those ones are sort of like they stick together no matter what

Teenagers display different attitudes towards the incorporation of Maori language and culture into New Zealand society and / or school life. There is a continuum of degrees of positive versus negative orientation on this complex issue. A particularly interesting finding is that several teenagers refer to a particular stereotype of Maori identity. Participants distinguish between “nice” Maori people and Maori people who they refer to as “hori” or “rangi.” This Maori vocabulary connotes the qualities of being scruffy, untidy and “rugged”. In extract 23, Hui makes the link between his Dad’s Maori identity and doing things in a “rangi” way.

23. Town N

- Hui: you can tell dad's a maori //maori\
- SM: /yeah?\\
- Hui: cos like he tends to [pause] do things a little bit rangi it's [laughs]: t- yeah:

Although teenagers often struggle to provide definitions of these words, they clearly have negative connotations. Hetty uses the word “rugged” in her attempts at a translation for “hori” in extract 24 below. One definition provided by an online urban dictionary (<http://www.urbandictionary.com/define.php?term=hori>) is:

“Derogatory term for a Maori which has many meanings such as poor, filthy, underclass, rugged, etc.”

Some teenagers who identify as (at least partly) Maori explicitly reject this Maori identity. In extract 24 Hetty argues that it is not real Maori and that it gives Maori a bad name.

24. Town N

- Hetty: well it's not it's not real maori it's like just hori what you- what's- the stereotype of a maori is it's not real maori (people) like they don't know how to speak maori or anything i wouldn't class them as being real maoris
- SM: hori? what's- tell me what that means
- Hetty: oh HORI hori oh i think it's rangi like like like like like you know like rugged rugged
- SM: //you mean like not genuine\
- Hetty: /rugged like you-\
- SM: rough?
- Hetty: yeah [laughs]: you know like just- rugged it's like you look you look rugged and like ah [laughs]
- SM: but you used it to say- to talk- to say about maori culture here it's like it's not real it's hori
- Hetty: yeah they they think being maori is like eh they do //eh\ they think being maori is like this fake as like don't have like- just a a look about //them\ #
- SM: /you mean\ like the like gangster look
- Hetty: yeah they give maori a bad name i reckon those kinda people

Attitudes towards ethnicity may have particular relevance for linguistic variation in this study, especially since the quantitative analysis in chapter 6 identifies MCI scores as influential on linking /r/.

One final factor that I would like to draw attention to is speakers' beliefs and awareness in relation to New Zealand dialect differences.

6.3.6 Language ideologies

As described in chapter 2, people's beliefs about linguistic variation may impact on the development of distinctive local varieties. The existence of distinctive dialects is not based purely on actual linguistic differences but is also influenced by speakers' awareness of and

interpretations of those differences. It is worth exploring teenagers' awareness of distinctive aspects of speech in relation to their town or other regions of New Zealand. In particular, the salience of particular linguistic variants and the connotations associated with them might influence speakers' adoption or non-adoption of those variants in subtle ways.

The New Zealand dialect difference most frequently commented on was the articulation of non-pre-vocalic /r/ in the South Island. This was usually referred to as "having" or "rolling" the "r" and was a description applied to South Islanders generally as well (more accurately) speakers in Southland. It is clear that the perception of a South Island speech style has become enregistered in people's language ideologies. Teenagers describe a variety of sources of their knowledge, including direct exposure, other people's comments or exposure via T.V. shows. One example of such comments is extract 25.

25. Town C

- SM: do you think you can tell where people are from at all like by the way they speak
- Sarah: south islanders you can
- SM: how can you tell
- Sarah: like that guy that girl on um shortland street
- SM: //mm\
- Sarah: /i\ was watching last night that Morgan girl and she rolls her "r"s like she's like "hers" and stuff like that and you can hard out tell that like [laughs]: she's from the south island:

Apart from comments about the South Island "r", teenagers were not aware of regional linguistic differences. However, they did demonstrate considerable insight into linguistic variation. In extract 26 Linzy describes a "cycle of words" and observes that her South Island cousins take time to catch up with the new words used by town C teenagers.

26. Town C

- Linzy: although like words that we use a lot up here (like) words like you know how

you say like cool or (dude) or whatever like they're old here and they'll just be using them down there

SM: // [laughs]

Linzy: /like there's a cycle of words and like words we think are cool and new like (dove) been used down there like years ago it's-

SM: really?

Linzy: yeah so it's like the cool words up here are different to the ones down there

SM: yeah can you think of any examples

Linzy: /like "sweet" and that it was a couple of years ago like it was cool here and then i was with my cousin he's like "oh that's sweet" and i was like that's so old // [laughs] he's like "no it's not"

Teenagers also give of examples of their own linguistic creativity and demonstrate differences in slang or lexical differences involving particular social groups. Nathan works on a large farm and describes a style of speech associated with the male farming community in extract 27.

27. Town C

Nathan: um my- where i work they talk heaps different to people around here

SM: // yeah?

Nathan: /just cos they don't- they don't go off the farm and so all the workers on the farm they all sort of talk the same but they talk different to everyone else like they've got a sort of a high pitch kind of voice and a- they just sort of skip out words to make it shorter

Some of these comments may be relevant to rhoticity. For example, in extract 28 Jemima draws attention to a speech style associated simultaneously with Maori ethnicity and low socioeconomic status.

28. Town C

- Jemima and you've got like maori kids seem to talk different to what european kids do
- SM: mm
- Jemima and it sort of depends like whether their families are like rich or poor or
 whatever
- SM: yeah
- Jemima just seems like and the poorer families seem to be more thug and [pronounces
 /r/]: gangster: even if they're European

It is not clear whether, in referring to “more thug and gangster”, Jemima is describing a social identity or a linguistic variety. However, it is important to note when Jemima says “gangster,” she also pronounces the /r/. This is of considerable interest for this thesis. It may signal the early onset of connections between non-pre-vocalic /r/ pronunciation outside of Southland and social characteristics which may be associated with its articulation. Speakers who describe non-pre-vocalic /r/ in the South Island do not appear to be aware of using the feature in their own speech. Yet extract 28 may provide evidence of a subconscious link between Maori, social class and /r/ use. A similar connection between a Maori and “gangster” speech style (and language acquisition) is made by Cassandra in extract 29.

29. Town C

- Cassandra: like the first fifteen and how they talk compared to like me or my friends or
 something it's completely different like- they're more- gangster kinda [laughs]:
 like: “bro” and just yeah more of the maori kinda- [pause] like if they've been
 brought up speaking maori first and then switched to english i've got mates that
 have done that that live in town C and you can tell the- accent kinda

In extract 30, Sherry attempts to explain the complex connection between Maori ethnicity and teenagers' speech.

30. Town C

- Sherry: um [laughs]: yeah: they do talk a lot different though it's like [pause] maori people and stuff they kind of have a [pause] sort of slang language sort of thing
- SM: yeah
- Sherry: they're own sort of thing they make up and stuff and
- SM: do you think that's actually a maori thing rather than just like a //a teenage thing\
- Sherry: /no it's like everyone a teenager thing\\ but like a lot it like you hear more like maori people using it and if like s- a pakeha person will say it they'll be like "oh you wanna be maori" or something like that //it's quite ()\
- SM: /so even like\\ the maori people themselves kind of identify those things as being maori
- Sherry: they don't really identify it as being maori it's like teenager thing to do like use it but like if someone like me 'cos like i'm not really classified in that maori group thing and all that sort of thing but like if i was gonna go and say something like THEY would normally say they'd be like "oh stop trying to be black" or something so [laughs]

In extract 31, Rena draws attention to a speech style associated with gangsters in Auckland.

31. Town C

- SM: do you think f- people here have a particular way of talking or something that's different to other people
- Rena: /[tut] um\\ not really yeh
- SM: mm or anywhere else in new zealand do you think people talk different in palmy //or-\
- Rena: /i think\\ auckland
- SM: in //auckland?\
- Rena: /yeah like\\ if you were to go go there and like hear them talk to you they've got totally different like it's the same [tut] but they're like sort of gangster [laughs]: up there: so it's //like [laughs] yeah\

The phrase “no smoke without fire” seems appropriate in relation to these examples. Speakers’ perceptions of linguistic differences are often inaccurate but they may nevertheless indicate relevant points of contrast between social groups, social practices and linguistic behaviour.

6.3.7 Summary of sociocultural factors

I have drawn attention to a variety of sociocultural factors in this section which may be relevant for the variation in rhoticity. It is important to note that the factors are not to be viewed as separable. Issues of local identity, ethnic identity and perceptions of social stereotypes may be merged in complex ways. I am therefore interested in the orientations that individual speakers demonstrate in relation to these complex of aspects of identity. In the next section I investigate whether similarities and differences identified in the discourse of individuals with respect to these sociocultural factors sheds any light on similarities and differences in rhoticity.

6.4 Rhoticity and identity in two New Zealand towns

6.4.1 General trends in rhoticity

The mixed effects models identified trends in rhoticity for pre-vocalic and non-pre-vocalic tokens of /r/ based on the fixed effects in the models, i.e. the social characteristics: age, gender, region and MCI scores. I summarise the trends identified for each dimension in 32 to 34 below.

32. For pre-vocalic non-phrase final /r/:

- (i) the 6 adults are predicted to articulate more linking /r/ when compared either with teenagers across both towns or with town N teenagers only
- (ii) town C speakers are predicted to articulate more linking /r/ than town N speakers
- (iii) MCI scores are inversely correlated with articulation of linking /r/

33. For non-pre-vocalic /r/:

- (i) non-final pre-consonantal /r/ is more likely to be articulated in the context of a preceding NURSE vowel

- (ii) the articulation of non-pre-vocalic /r/ is low across all speakers but the teenagers are predicted to articulate more /r/ than the 6 adults when adults are compared with teenagers across both towns or with town N teenagers only
 - (iii) town N speakers are predicted to articulate more /r/ than town C speakers
34. Pre-vocalic /r/ and non-pre-vocalic /r/ are correlated such that speakers who produce less linking /r/ are likely to produce more non-pre-vocalic /r/.

In addition to the trends associated with fixed effects, the models also provide intercept values for individual speakers. These intercept values provide an insight into the amount and direction that each speaker diverges from or adheres to a given model's fixed effects trends. In the following sections I consider individual speakers' /r/ use in relation to specific models of pre-vocalic and non-pre-vocalic /r/.

There are 54 speakers in total and it is not possible to consider every speaker in detail. I focus primarily on teenagers since they have most importance for the research questions. In addition, Johnstone (2004: 72) highlights the potential significance of "outliers" and notes that "the most "normal" speakers (those whose behaviour is statistically most like others) may not be ... theoretically the most interesting." I therefore focus primarily on speakers who deviate from the fixed effects trends in rhoticity.

Since I am particularly interested in discovering more about the sociocultural dynamics within each of the two towns and possible differences between them, I provide town-specific analyses of individual speaker behaviour, while taking care to consider individual speaker linguistic behaviour in the context of the particular statistical models. In addition, I am also interested in exploring whether individual speaker behaviour reveals any gender differences with regard to /r/ use within each town, since the models have provided inconclusive results in relation to gender. I therefore also provide a gender-specific analysis. I start with an analysis of individual speaker behaviour in relation to linking /r/ in section 6.4.2.

6.4.2 Pre-vocalic /r/

Model PreV tested effects on the pre-vocalic non-phrase final tokens of /r/ across all speakers. The variables included in the model were *region*, *age*, *MCI* and *gender* and an interaction between *region* and *gender*. The *Model PreV* results are shown in table 6.2.

Table 6.2: Fixed effects in *Model PreV*

Default condition:	Adult speakers, 0 MCI, Town C, female gender
Age Young:	Young speakers predicted to produce less /r/
Region N:	Town N speakers predicted to produce less /r/
MCI:	Higher MCI scorers predicted to produce less /r/
Gender M:	Not significant but retained due to interaction
Region N x Gender M:	Town N male speakers predicted to produce more /r/

The fixed effects coefficients for *ModelPreV* can be used to calculate the predicted log odds of linking /r/ articulation based on each speaker's social characteristics. *ModelPreV* predicts town N adults to have the highest log odds of /r/ articulation, followed by town C female teenagers, then town C male teenagers, then town N male teenagers. Town N female teenagers are predicted to have the lowest log odds of linking /r/. In addition, individual /r/ use is influenced by differences in speakers' MCI scores, since higher MCI scores are correlated with lower log odds of articulation. Each speaker appears higher or lower on the predicted scale of /r/ use in accordance with the combination of their age, gender, town and MCI characteristics.

The individual intercepts obtained from *ModelPreV* represent adjustments to the log odds of articulation for individual speakers. They capture speaker variation that is not accounted for by the fixed effects. The individual intercept values show the degree and direction of each speaker's deviation away from the fixed effects trends. Tables 6.3a and 6.3b show each speaker's predicted log odds of articulation based on fixed effects only (ordered from highest to lowest predicted /r/ use), as well as each speaker's intercept value. In addition, the tables show each speaker's predicted /r/ use once the intercept value is added to the log odds for the fixed effects. Table 6.3a shows the 26 speakers predicted to use most /r/ and table 6.3b shows the 26 speakers predicted to use the least. The tables include speakers' ethnicity labels, town (N or C) and MCI score. The town N speakers appear in bold font and the 6 adults are highlighted in grey.

When speakers' predicted log odds based on fixed effects alone is compared with their predicted log odds when their intercept values are also taken into account, the data shows how much each speaker adheres to the trends associated with their social characteristics. Figure 6.1 shows speakers' predicted /r/ use for fixed effects only on the x-axis and where each speaker is predicted to sit when their individual intercept is incorporated. The degree

and direction of each speaker's deviation is thus represented by their position in relation to the diagonal x-y line.

Table 6.3a: Predicted log odds of linking /r/ for individual speakers based on fixed effects only versus fixed plus random effects

Town	Speaker	Ethnicity	MCI	Fixed effects log odds	Speaker's intercept	Fixed plus random effects log odds
N	Elsie	Pakeha	0	2.353	-0.031350978	2.32164902
N	Donna	Pakeha	1	2.15767	0.084385931	2.24205593
N	Rebecca	Kiwi	3	1.76701	0.02475175	1.79176175
N	Greta	New Zealander	3	1.76701	-0.046990777	1.72001922
C	Cassandra	European	0	1.76018	0.438695758	2.19887576
N	Lisa	Pakeha	4	1.57168	0.112562775	1.68424278
C	Robin	European	0	1.40953	0.079992881	1.48952288
N	Nora	Pakeha	5	1.37635	-0.34729804	1.02905196
C	Jemima	Maori-Pakeha	2	1.36952	0.273589674	1.64310967
C	Emma	Maori-Pakeha	2	1.36952	0.148949273	1.51846927
C	Kylie	Pakeha	2	1.36952	0.03580057	1.40532057
C	Charlene	Maori-Pakeha	2	1.36952	-0.119160581	1.25035942
C	Nettie	Dutch	2	1.36952	-0.522331161	0.84718884
C	Linzy	Maori-Pakeha	2	1.36952	-0.66093119	0.70858881
N	Kane	Pakeha	0	1.36515	-0.387756675	0.97739333
C	Kenney	Pakeha	1	1.2142	-0.126873091	1.08732691
C	Sherry	Maori-Pakeha	3	1.17419	0.463210932	1.63740093
C	Sue	Maori-Pakeha	3	1.17419	0.099025799	1.2732158
C	Nate	Maori-Pakeha	2	1.01887	0.44913258	1.46800258
C	David	Maori-Pakeha	2	1.01887	0.231435563	1.25030556
C	Caleb	Maori-Pakeha	2	1.01887	-0.527920917	0.49094908
N	Douglas	Pakeha	2	0.97449	0.45963303	1.43412303
N	Steve	European	2	0.97449	0.259825157	1.23431516
N	Tim	Pakeha	2	0.97449	0.251857686	1.22634769
N	Joshie	Pakeha-Tokelaun	2	0.97449	-0.377573767	0.59691623
N	Launa	Pakeha	0	0.89705	0.162394836	1.05944484

Table 6.3b: Predicted log odds of linking /r/ for individual speakers based on fixed effects only versus fixed plus random effects

Town	Speaker	Ethnicity	MCI	Fixed effects log odds	Speaker's intercept	Fixed plus random effects log odds
N	Emily	Pakeha	0	0.89705	-0.422262602	0.4747874
C	Rob	Maori-Pakeha	3	0.82354	0.467334458	1.29087446
C	Anthony	Maori-Pakeha	3	0.82354	0.286854103	1.1103941
C	Brandon	Maori-Pakeha	3	0.82354	-0.550643969	0.27289603
C	Shena	Maori-Pakeha	5	0.78353	-0.062348256	0.72118174
N	Simon	Maori-Pakeha	3	0.77916	0.394868282	1.17402828
N	Casey	European	1	0.70172	-0.101773892	0.59994611
N	Tanya	Maori-Pakeha	1	0.70172	-0.287883587	0.41383641
N	Sienna	Maori-Pakeha	1	0.70172	-0.477319973	0.22440003
C	Glen	Maori-Pakeha	4	0.62821	0.168419313	0.79662931
C	Rena	Maori	6	0.5882	-0.266465135	0.32173487
N	Amy	European	2	0.50639	0.204167936	0.71055794
C	Nathan	Pakeha	5	0.43288	-0.628847694	-0.19596769
C	Sarah	Maori-Pakeha	7	0.39287	0.002692111	0.39556211
C	Christy	Maori-Pakeha	7	0.39287	-0.119078764	0.27379124
N	Daniella	Maori-Pakeha	3	0.31106	0.049491745	0.36055175
C	Tom	Maori	6	0.23755	-0.037811527	0.19973847
N	Jenny	European	4	0.11573	0.437971574	0.55370157
N	Charlotte	Maori	4	0.11573	-0.444197929	-0.32846793
N	Mike	Maori	7	-0.00216	-0.45395582	-0.45611582
N	Anita	Maori	7	-0.47026	0.061735873	-0.40852413
N	Dana	Maori-Pakeha	7	-0.47026	-0.055599483	-0.52585948
N	Tilly	Maori	7	-0.47026	-0.150733296	-0.6209933
N	Hetty	Maori-Pakeha	9	-0.86092	0.341452806	-0.51946719
N	Hui	Maori-Pakeha	12	-0.97881	-0.230422883	-1.20923288
N	Tracy	Maori-Pakeha	10	-1.05625	0.703900858	-0.35234914

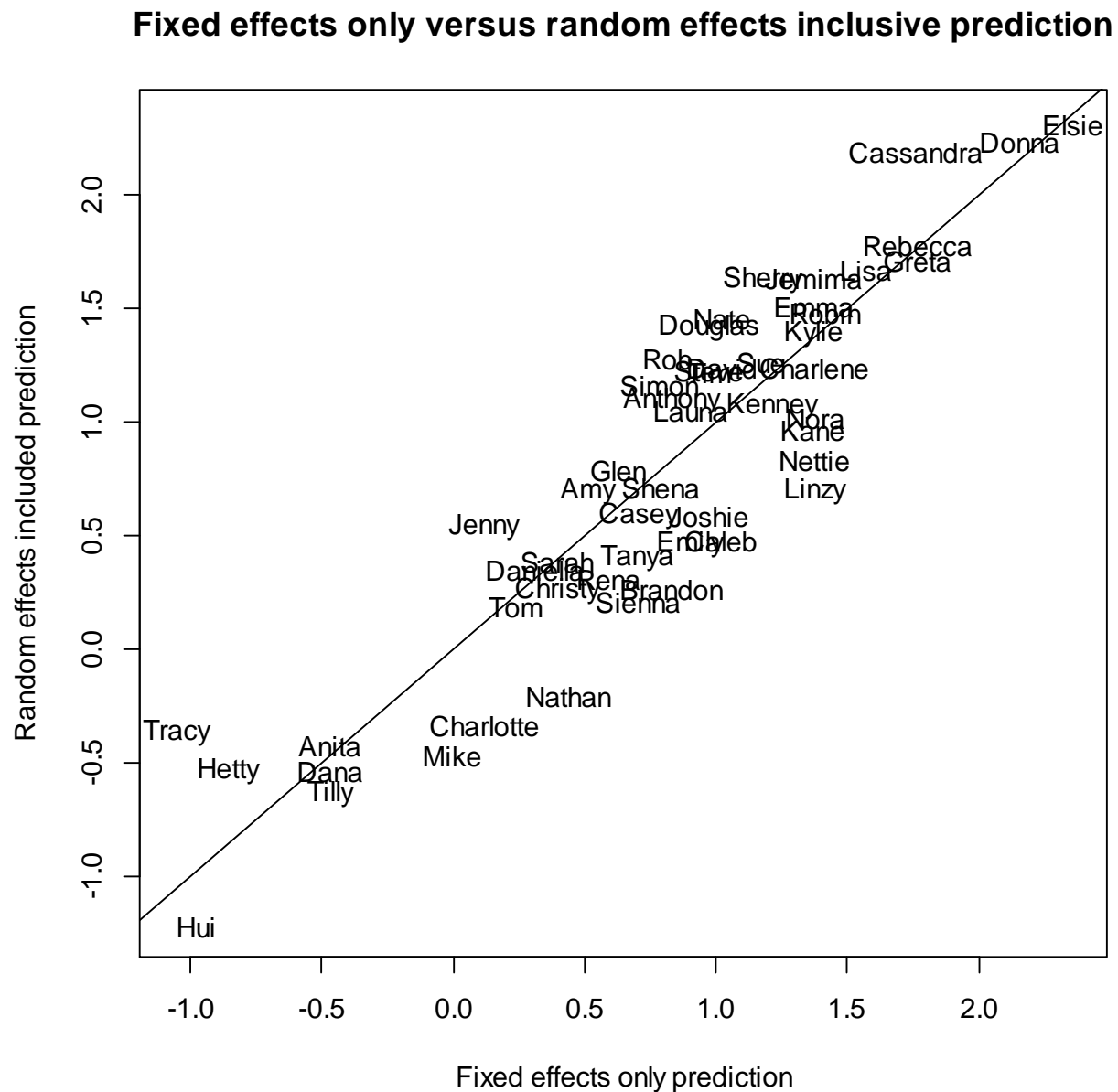


Figure 6.1: Model predictions for individual speakers – fixed effects only versus random effects included

In the context of the fixed effects trends identified in table 6.2, some interesting observations can be made about individual speaker behaviour in tables 6.3a and 6.3b and figure 6.1. I discuss the town N speakers first.

6.4.2.1 Pre-vocalic /r/ in town N

It is apparent in table 6.3a that 5 of the town N adults deviate hardly at all from the model's fixed effects predictions. Their intercepts are small values in either a positive or negative direction. However, 1 adult, Nora, has a larger intercept value and in figure 6.1 she deviates further from the fixed effects line than the other adults (Elsie, Donna, Rebecca, Greta and Lisa). Based on her age, region, gender and MCI score, Nora is predicted (by the fixed effects) to be amongst the highest linking /r/ users, but in fact her individual intercept pushes her into a somewhat lower usage than the fixed effects predict. Nora thus deviates away from the expected high use of linking /r/ for adults and moves closer towards the lower use that is more consistent with some of the teenage speakers.

Nora is 63 and has lived in the community since she was 8. She trained as a nurse in the local hospital and has worked in local health services throughout her adult life. In extract 35 Nora explains that in recent years she has been commuting to work at an Auckland hospital and living there for several days out of each week.

35. Town N

- Nora: my children by this time had grown up and lived elsewhere so i lived with my daughter in Auckland and have worked at [name] hospital since then casual part time and i commute
- SM: where's [name] //hospital\
- Nora: /auckland\\
- SM: you commute?
- Nora: i commute yeah from here not every day i do four to five day stretches and i live locally up there with a friend and then i come back home again

Nora is the most geographically mobile of the 6 adult females and has regular contact with Auckland city. Nora also describes a relatively “nomadic” lifestyle which involves extensive

contact with people from diverse cultural and ethnic backgrounds as a result of her work. She is aware of the need for cultural sensitivity in some cases, see extract 36.

36. Town N

SM: do you think that there's like a division between maori and non-maori people or do you think that things are quite well um- sort of integrated //here and friendly\

Nora: /no from my perspective\\ they're often not it's quite a tribal thing and even you know as a nurse with patients in the hospital you still had to be careful what [pause]
what area sometimes they were from because there was a little things about the way they did things and (no) but you still have to be a wee bit careful perhaps more now than you were ten years ago even

It is clear that Nora's social network ties are diverse. It is possible that her deviation away from the predicted use of linking /r/ is due to contact with individuals across the socioeconomic and cultural spectra.

The town N female teenagers, and especially those with high MCI scores, are predicted by the model's fixed effects to be the lowest users of linking /r/. Some of the town N teenage girls deviate very little, if at all, from what the model predicts for them based on their social characteristics, while others deviate considerably.

For example, Anita, Dana and Tilly each have an MCI score of 7 and, combined with being town N female teenagers, they are predicted to be some of the lowest users of linking /r/. Their individual intercepts are small values and in figure 6.1 it is apparent that they conform to the model's expected trends since they sit on, or close to the line.

However, Tracy sits some distance away from the line. She has the highest MCI score of all town N females, identifies as Maori-Pakeha and obtained her high MCI score by virtue of her regular involvement in Maori cultural events at her marae and her basic competence in the Maori language. Tracy expresses a positive attitude towards learning Maori and uses Maori vocabulary in some of her discourse. The fixed effects predict that Tracy will be the lowest user of linking /r/. However, Tracy's individual intercept, which is a large positive

value, has pushed her away from the line and towards higher use of linking /r/ than is expected based on her social characteristics.

Although Tracy has lived in town N all her life and her family has a farm, she seems to have a relatively global outlook. She wants to “get away just to experience like other places and stuff” and her aspiration is to study business in Hamilton where she visits friends frequently.

Like Tracy, Hetty also has a high MCI score (10) and her intercept value also pushes her in the direction of higher /r/ use than is predicted by the fixed effects trends. Hetty also orients away from the rural lifestyle. She moved to town N very recently from Hamilton where she grew up. She is unhappy about her move to town N, maintains friendship ties in Hamilton and wishes to return there. Hetty aspires to study at University, possibly in law. In extracts 37 and 38 she describes town N as “a hole” and says she won’t be staying.

37. Town N

SM: so how would you describe [town N] then compared //to\

Hetty: /a hole\\

SM: a hole

Hetty: yeah

SM: [laughs] are //there-\

Hetty: /(it's)\\ actually a hole it is honestly a hole like there's- if you- if i didn't play netball- and i had no friends [laughs] this town would be death there would be nothing at all to do here honestly there's- what do you do here you look forward to the weekend and going out and drinking that's what you look forward to doing here

38. Town N

SM: do you know what you're going to do have you got any plans or anything

Hetty: i dunno i might be a lawyer or something //[laughs]\

SM: do you think you'll stay in town N

Hetty: no no i won't at all

SM: you're quite sure you won't

- Hetty: i'm pretty pretty sure cos i'm like positive i won't stay here
 SM: have you got any idea where you will live where you'd like to go and live
 Hetty: hamilton (then) i'll go to uni hopefully

Hetty's attitude towards the Maori culture is also interesting. Although she has a high level of Maori language competence, it is Hetty who argues most forcefully that Maori people are often misrepresented as "hori" (cf. extract 24). There may be connections between Hetty's and Tracy's higher than expected use of linking /r/ and the stance they take towards Maori identity and / or their global outlook and social aspirations.

Town N girls with lower MCI scores are predicted to use higher rates of linking /r/ than girls with higher MCI scores. For example, Amy has an MCI score of 2 and is predicted to have higher linking /r/ use relative to Hetty and Tracy. Her intercept is a relatively small value and Amy deviates only slightly from her predicted behaviour towards slightly more linking /r/ use.

Amy is involved in farming and expresses local loyalty to town N. She wants to attend agricultural college and "be a farmer or something to do with farming." Although Amy describes herself as "European", in extract 39 she expresses a positive attitude towards Maori culture.

39. Town N

- Amy: like how we've got our kapa haka and i like i like that because i think
 otherwise the culture will just be lost and the language if everyone doesn't
 carry it on [pause] i think it's good

Amy is friends with Jenny who also describes herself as European. Jenny is predicted to use less linking /r/ than Amy due to her higher MCI score of 4. However her positive intercept value pushes her away from the line in figure 6.1 and more towards Amy. Like Amy, Jenny does not show any strong desire to leave town N. Although she has considered studying as a beautician, she also wants to stay in town N and particularly dislikes big cities (see extracts 40 and 41).

40. Town N

SM: what do you think of Auckland

Jenny: it's a bit big [laughs] i just find it like really big and it's not like nice scenery it's just all tall buildings and it's just it's real busy and i don't like it i like Hamilton cos it's a lot smaller and i like Rotorua cos it's a lot smaller i just don't like big cities and i hated wellington yeah we go down there quite a bit sometimes just for visits i hated it it's just too busy and it's so windy and oh i just hate it i hate big cities i dunno yeah

41. Town N

Jenny: i was gonna go to a course in Hamilton at the end of this year but i don't really wanna leave [town N] now i'm kind of attached to my friends and family here yeah other places are alright but i like this place cos it's my home

It is interesting that in extract 42, unlike Amy, Jenny expresses a decidedly negative attitude towards the school's promotion of Maori language and culture.

42. Town N

Jenny: i think that people have l- lately been pushing everything like everything maori and it's going a little bit far like (the) welcome to the new principal and the whole powhiri was two hours long and it was just all //maori\

SM: /[laughs]\\\

Jenny: there was no translation there was five minutes english at the end and it was compulsory for us to sit there in the freezing cold and just listen to something that we couldn't understand and y- i reckon th- they should have translations for us cos not even half the maori people at school speak maori

SM: mm

Jenny: yeah it's just and they've got all these special programmes for maori people but i think well why should it just be for maori people why can't it be mixed because our there's no special things just for european people (it's)

SM: mm
 Jenny: all cultures (it's) just that sort of stuff

Jenny also makes a distinction between “nice” Maori people and those who “try and act like gangsters.”

There is thus a tentative indication in the discourse data that regardless of the fixed effects trends, orientation towards linking /r/ (even from a low starting point such as Hetty’s and Tracy’s) could reflect a more global outlook and / or high social aspirations, and / or an orientation away from a particularly negative stereotype of Maori youth.

Thus we begin to see some tentative links between linking /r/ use and speakers’ respective positions in relation to identity and attitudes. Jenny’s more dramatic orientation towards linking /r/ in comparison to what is expected of her, may be reflective of her more dramatic orientation away from a negative stereotype of Maori identity and / or her more local orientation. (More detailed sociocultural information for Tracy, Hetty, Amy and Jenny is provided in appendix 2a).

There are also town N girls who deviate in the opposite direction, i.e. towards lower use of linking /r/ than predicted by the model. For example, Sienna has a very low MCI score and is predicted to use considerably more linking /r/ than Tracy. However, just as Tracy’s intercept shows that she uses more /r/ than expected, Sienna’s relatively high negative intercept value pushes her away from the line and towards unexpectedly lower use.

It is difficult to identify any specific characteristics that may be relevant to Sienna’s linguistic behaviour. She is ambivalent about her Maori identity, and says that she feels “more Pakeha than Maori”. She is moving to a New Plymouth boarding school in order to increase her educational opportunities. It is not clear whether she is oriented more towards city life or rural life and she does not yet have clear aspirations for her future. Sienna’s discourse does not provide any real insight into sociocultural factors which may be relevant to her lower than expected /r/ use. Although her MCI is low Sienna seems to be advanced in the change towards declining linking /r/.

A similar observation can be made about Charlotte. Charlotte is good friends with Hetty but has a much lower MCI score. Like Hetty, she expresses the view that Maori can be “nice and tidy”. While Hetty has a higher than expected use of linking /r/, Charlotte has a much lower than expected use than predicted for her MCI. She moves considerably away from the line in figure 6.1 and in the direction of lower linking /r/ users such as Hetty.

These 2 girls have only known each other since Hetty's recent move to town N from Hamilton. It is interesting that Charlotte is much more attached to town N, in contrast with Hetty's overtly negative stance. Her family is in the process of resettling in Australia and she does not want to leave. She has so far managed to remain in town N with an older sister but suspects she will be leaving soon. Her more positive attitude towards town N and the rural environment could be relevant to her shift towards lower linking /r/ use, as could her vague social aspirations.

Since Hetty has only recently moved to town N from Hamilton, the difference between the 2 girls may indicate the importance of town N as a geographical location for the change. Though Hetty's attitudes to Maori identity may be more relevant, it is also possible that Hetty, coming from Hamilton, has simply not yet adopted this feature and this makes sense given her clear orientation away from town N.

Emily also shifts considerably from the model's prediction of high use due to her 0 MCI score. Although Emily describes herself as Pakeha it is interesting that, like Charlotte, she is also locally oriented towards town N. Although Emily expresses a desire to have a career as an early childhood teacher or a flight attendant and says that she wants to see the world, she also describes herself as "not a city person" and perceives Aucklanders as "posh". She has a large group of friends in town N and is involved in the motorbiking culture. In extract 43 she demonstrates her mixed feelings about pursuing a career and wanting to stay in town N.

43. Town N

Emily: um i'd like to get out and just experience (some) stuff but um i'd also like to stay here and that cos it's where all my friends are and yeah [pause] I like this town /[laughs]\

Emily's attitude towards the incorporation of Maori cultural activities into the school is negative.

44. Town N

Emily: i just don't really like () like we do kapa haka at school and it's compulsory

i don't see the need for that like yeah they say respect our culture and that and then it's like what about our culture like what they do they do for us

Given Emily's attitude towards Maori culture, we might expect her to conform more to the model's trends for low MCI scorers (i.e. more linking /r/). Perhaps Emily's attachment to her rural lifestyle and her involvement in the motorbike culture (she describes herself as almost the only girl doing this), is influential on her move towards lower than expected linking /r/. (Detailed sociacultural information for Sienna, Charlotte and Emily can be viewed in appendix 2b).

When the town N boys' behaviour regarding linking /r/ is considered, there is slightly more substantial evidence that local versus global orientation, social aspirations and attitudes to Maori culture may be relevant to variable linking /r/ use.

Town N boys are predicted by the model's fixed effects to use more linking /r/ than town N girls, though this will also vary according to individual MCI scores. 4 town N boys with low MCI scores (Douglas, Simon, Tim and Steve) are predicted to have relatively high linking /r/ use and due to their positive individual intercept values, they orient towards even higher use than expected. Douglas and Simon both shift somewhat more than Tim and Steve. (Detailed sociocultural information for these 4 boys is provided in appendix 2c).

Each of these boys expresses a disinterest in the Maori language and culture. In extract 45 Tim says that "their race is pretty much disappearing anyway".

45. Town N

- Tim: /you get\\ some people that sort of try a bit too hard # they go over the top but it's up to them really [laughs]
- SM: you think it doesn't matter if like the language disappears
- Tim: oh it'd be sad but i mean their race is pretty much disappearing anyway so

Each of these boys also displays definite career aspirations and is relatively outward-looking. For example, Douglas shows a considerable shift towards higher linking /r/ use from what is predicted by the fixed effects. He says that he only really likes town N because that is where his friends are, but he prefers other places. Although he does not know which career he will

pursue, he already knows which University he hopes to attend (see extract 46). It is interesting that he describes his chosen University as “flash.”

46. Town N

SM: mm how many more years at school have you got

Douglas: um this one and then next year so two more then i'm probably going to uni

SM: do you know- have you any idea which- university or which city or-

Douglas: i might go to- um massey in palmerston north cos that's quite a cool university and it looked pretty flash”

Simon plans to join an air force officer's programme and expects to be living “some place flash” when he grows up. He explicitly states that the town N houses are not expensive enough for him.

Steve is not as extreme in his positive shift as Douglas and Simon but he also has an obviously global outlook. He has been brought up on a farm but says he is “sick of the work”. He works as a lifeguard at the local pool and participated in the Spirit of Adventure youth programme which involves several days learning to sail a ship and developing confidence, communication, self-reliance and leadership. Steve plans to go to camp America on leaving school and to develop a career as an outdoor instructor. It is interesting that Steve and Tim, who are good friends with similar attitudes and involved in similar activities, have the same MCI score, and almost identical intercept values, which reflects almost identical behaviour in relation to their linking /r/ use.

There are two clear points of contrast between the attitudes of these 4 boys and 4 boys who shift towards lower than expected use of linking /r/ (Mike, Kane, Joshie and Hui, detailed sociocultural information is provided in appendix 2d for these 4 boys). The latter 4 boys show a more positive orientation towards Maori culture and / or a relative lack of social aspirations.

Hui takes a very positive stance towards Maori culture. He has the highest MCI score of all speakers and is predicted to have the 2nd to lowest use of linking /r/. Hui's family moved to town N from the South Island 8 years ago due to their dissatisfaction with Maori secondary education opportunities. Hui's parents and siblings speak Maori and he learnt his Maori in the

home and at the kohanga that his family owned in the South Island. In extract 47 he describes the Maori language as “part of him.”

47. Town N

- SM: where would you use maori outside school
- Hui: the marae ah wanangas [pause] at huis [pause] even family occasions when like family come ou- from outta town or something
- SM: why did you want to learn maori
- Hui: oh cos it was it's a part of me really this that was why i wanted to

A local marae is situated on the farm land owned by Hui's family and he spends a lot of time there. Hui wants to return to the South Island where he grew up as he still has many relatives there. Hui has a negative intercept value and deviates even further towards low linking /r/ use, surpassing Tracy, who, as a town N female with a higher MCI, is predicted to be the lowest user.

Mike has the next highest MCI score (7) of the town N boys. However, Mike's intercept value is more strongly negative than Hui's and he thus deviates even more than Hui in the direction of less linking /r/. As Mike explains in extract 48, he helps his Nan to provide catering for cultural events at various maraes.

48. Town N

- Mike: my my nan is um oh we do all the maraes around here
- SM: what do you mean
- Mike: we go and cater for them and everything
- SM: //catering\
- Mike: /take the\ food and do the cooking
- SM: how many maraes are there in this //area\
- Mike: /here\ i think there's thirteen
- SM: so is that like um a family business
- Mike: nah it's just what my nan my nan does she um oh we've been brought up next

to the marae and all that cos we used to live next to the marae and go to all the tangis and unveilings and all the um celebrations and birthdays and everything

Mike has contact with fluent Maori speakers and he says that learning Maori is important to the culture.

Unlike Hui and Mike, Kane and Joshie are predicted to have relatively high use of linking /r/ as low MCI scoring males. In fact, both boys exhibit considerable movement towards lower use.

Joshie has Tokelauan ancestry and he recognises the importance of Maori language for keeping the culture going. He has had a relatively isolated life since he grew up in a very small rural community about 30 kilometres away from town N close to the prison where his parents worked. He moved to town N 3 years earlier when the prison closed and says the town is *less* isolated than where he grew up. Most of his relatives live in Wellington but he prefers life in town N. He seems uncertain about his future plans but suggests he may pursue a career in the army or police services.

In extract 49 Kane seems even less clear on his future employment plans. His rural orientation may also be relevant to his lower than expected linking /r/ use.

49. Town N

Kane: well i prefer [town N] because like you know there's no traffic and stuff and we're like right by mountains lakes surrounded by rivers bush farm lands and you know just cos i do a lot of outdoor stuff so yeah it's good for me but the city i'm not really into shopping and stuff so i don't find it that great

The town N boys' discourse again indicates possible links between linking /r/ use and speakers' attitudes and identities, over and above the fixed effects trends identified in *Model PreV*. The boys who shift towards more linking /r/, over and above the model's predictions for their social characteristics, often have more definite career aspirations. They may be disinterested in or even negative about Maori culture. Boys shifting towards less linking /r/ may be more ambivalent about their aspirations, display a more rural orientation or have

more positive attitudes towards the Maori language and culture. However, these tentative connections suggest that linking /r/ is not linked directly to specific sociocultural factors or characteristics, but is associated with a mixture of stances or positions that speakers orient towards or away from. In section 6.4.2.2 I consider whether the discourse data from town C supports these views.

6.4.2.2 Pre-vocalic /r/ in town C

The 4 town C girls with the highest individual intercepts who shift the most towards greater than expected linking /r/ use are Cassandra, Jemima, Emma and Sherry (appendix 2e provides detailed sociocultural data for these 4 girls). These 4 girls all have low MCI scores and are predicted to have a relatively high use of linking/r/. They are therefore exhibiting a relatively strong move towards higher linking /r/ use over and above the expected trend for town C low MCI-scoring females. Each of these girls has relatively high social aspirations. Sherry wants to study drama in Auckland or Wellington. Cassandra wants to go to Otago University to study medicine. These 2 girls can be seen to deviate considerably from the diagonal line in figure 6.1.

Jemima and Emma deviate somewhat less from the model's predicted behaviour than Cassandra and Sherry. They are both unsure of the type of career they will pursue but clearly intend to further their education after school.

3 of the 4 girls also display interesting attitudes towards Maori culture. Jemima describes herself as having both Maori and Pakeha ethnicity, but in extract 50 she rejects an expectation to behave a certain way simply because she is Maori.

50. Town C

Jemima: well they still sort of classify themselves as maori and maori act this way and //so\ i should be acting like that and cos i'm brown but my sister's white so she should be acting like that even though we're both

SM: who s- who says that

Jemima: it's just like what kids think like when- cos i don't smoke or do any of that but because i'm maori they expect that's what i do so you g- or the fact that i don't fight but

SM: right so you should smoke and drink //and\

Jemima: /yeah\\ sort of like that they just expect you to have like have done it sort of thing so like when they're all having a puff out on the court or whatever they're like "oh" and you're like "no i don't smoke" and they're like "are you sure"

In extract 51 Jemima also expresses the opinion that a distinction should not be made between Maori and European people in the allocation of educational support.

51. Town C

Jemima: i'm not sh- i don't know wh- i guess maori might have been trailing behind but it's [pause] like it should just be for everyone's achievement pushing //everyone\ up together not trying to push maori and europeans separately

Jemima thus displays a stance which is oriented away from the negative "hori" stereotype of Maori and this strong view may be compatible with her positive orientation towards high use of linking /r/.

The other 3 girls who orient towards more linking /r/ from a high starting point also display a negative or disinterested stance towards Maori language and culture. In extract 52 Cassandra, who describes herself as European, suggests that Maori are given unfair advantages.

52. Town C

Cassandra: and then you've got like the maori benefits and stuff like that specifically for maori people

SM: //mm\

Cassandra: /but\\ you don't really have one (just) specifically for pakehas and stuff like that

SM: what kind of benefits are you aware of then that are like //that\

Cassandra: /um\\ like just scholarships and stuff for cos they're maori and they're seen as

underprivileged sometimes and- yeah [laughs]

An additional potentially important factor which connects 2 of these 4 girls is their involvement in a Christian youth group. In extract 53 Emma explains that the youth group involves bible study group meetings, conferences and camp experiences with many people of different ages at various places around the country.

53. Town C

Emma: friday night um it starts at seven and you get to like go- we go to a lot of different places like in summer we go to oh to the beach and we go play cricket and oh a lot of my friends go that's like our friend group goes to youth group and um sometimes we have like the whole of saturday and um we go like to this to [local place name] just um just past [adjacent town B] and we go like (have you) you know those biscuit black tubes that are like circles you can like float on them in a ba- in a pool //or something\

SM: //mm\

Emma: um and they have some other people too they have younger people like um in their twenties and stuff and they all help out it's really fun

The Christian Youth Group has members in many different New Zealand towns and cities and is a source of considerable contact between teenagers across New Zealand who are involved in it. Given Emma's and Sherry's linguistic behaviour, there is no evidence that the Christian youth group community of practice is a source for the MNZE change towards declining linking /r/. If it is, then other factors are influencing Emma's and Sherry's clear orientation away from the change. It seems more likely that the Christian youth group is compatible with Emma's and Sherry's identities as young aspirational New Zealanders.

Amongst the 3 town C girls who deviate the most towards less linking /r/ from the model's predicted use (Linzy, Nettie and Rena, see appendix 2f), only Rena expresses a definitely positive attitude towards Maori language and culture. Rena is not involved in the culture "as much as i should be" but she visits the marae, her elderly relatives speak Maori and the family "try to like bring it in teaching my little brother". Rena's MCI is 6 and she is

therefore orienting even further than might be expected towards lower /r/ use for higher MCI scorers. However, Linzy and Nettie both score only 2 on the MCI index and are predicted to be relatively high linking /r/ users. These 2 girls have much lower linking /r/ use than is predicted by the model in relation to their social characteristics.

Linzy is considerably more rurally oriented than the other girls. She grew up on a farm in a rural area near to town C. She would “rather live out in the country than in the city”. She discusses townies’ inaccurate perceptions of farmers being rich and their fear of large animals. She is involved in the motorbike culture, which she describes as dirty and dangerous and part of the rural culture. She aspires to become a big animal vet and maintain a country lifestyle. She does not like city environments.

Nettie is Dutch. She moved to New Zealand from Holland with her family at age 5. They initially lived closer to Wellington and only moved to town C five years earlier. Nettie has therefore undergone dialect / language acquisition and has had to accommodate to local community norms.

Nettie strongly maintains Dutch aspects of her identity. She speaks Dutch at home, maintains regular contact with her “oma” [grandmother] in Holland and visits the Dutch bakery in another town. However, she is close friends with Linzy, lives in a rural area and works on her neighbour’s farm. Nettie expresses ambitious social aspirations to study in Wellington and become a lawyer and her lower than predicted linking /r/ use seems surprising. Perhaps it enables her to express an identity that, in contrast to her Dutchness, is more appropriate for the rural context and for her friendship network.

Finally, it is worth noting that none of these 3 girls is a member of the Christian youth group.

The town C girls provide reasonable supporting evidence in their discourse of relevant connections between linking /r/ variability, attitudes towards Maori culture, social aspirations and local versus global orientation.

Amongst town C boys, 4 boys shift the most from their predicted behaviour towards higher linking /r/ use (Rob, Nate, Anthony and David, see appendix 2g). All 4 boys have low MCI scores and are thus not expected to exhibit a low rate of linking /r/ and they shift even more in the direction of higher linking /r/ use. Rob and Nate do this somewhat more so than Anthony and David. When seeking differences between the 4 boys in their linking /r/ use and in their attitudes, only Rob, who has the highest positive intercept of the 4, has any definite social aspirations.

Rob has been in care for most of his life. He has lived in various places and only came to town C at age 13. He is probably involved in criminal activities since he talks at length about gang culture. Rob describes his friends' activities as "pretty shocking". However, he also describes his efforts to stay out of trouble. He has given some thought to his future employment prospects and undertakes various DIY jobs, spending his earnings on "trying to just keep up with the fashion". Extracts 54 and 55 may indicate that Rob is trying to leave his troubled past behind and work towards a more profitable and aspirational future.

54. Town C

- SM: so what do you think you'll um do then when you leave school have you got any ideas
- Rob: oh i'm either gonna go contracting builder or an accountant something along those lines
- SM: are you good at the kind of financial type stuff
- Rob: oh i'm just good with the figures

55. Town C

- SM: yeah do you go there a lot palmy
- Rob: once a week
- SM: how do you get there
- Rob: just get my auntie to give me a ride
- SM: so you don't go like with mates and stuff //or\
- Rob: /oh\ nah nah i'll get up to trouble i don't like getting in trouble

Nate's intercept value is not much lower than Rob's but he does not describe any particular career aspirations. He does not consider participation in school work worthwhile and seems to be relatively small town-oriented. Towns and cities annoy him and in Palmerston North "they just think they're all better than everyone".

Both Rob and Nate exhibit a disinterest in Maori culture. Anthony, who also deviates towards even higher linking /r/ use than predicted, but somewhat less than either Rob or Nate, says that he wishes he were "browner" because "all the little white boys get picked on but

none of the little brown arseholes get picked on”. Anthony considers himself part-Maori and it is not clear if his comment represents a positive or a negative stance towards Maori culture.

Anthony gets into extensive trouble together with his friend Caleb, whose intercept is in a strong negative direction (I discuss Caleb below). Anthony says that “my school file's about this thick of bad things”. His aspiration in life is to be a “jackass,” i.e. he wishes to emulate the crude and dangerous stunts performed on an American reality T.V. series. Town C speakers, as well as low MCI scorers, are predicted to trend towards higher use of linking /r/. Rob, Nate and Anthony go beyond the amount of linking /r/ use predicted in relation to their social characteristics and use even more. With the exception of Rob, it is unclear why these boys orient so positively towards linking /r/ if the feature is associated with a more global outlook / higher aspirations and a more positive interpretation of Maori identity. Perhaps the change has not yet infiltrated the speech of the town C boys very much.

David, who has a less extreme positive intercept, seems to conform slightly more to the discourse patterns identified previously. Although he has a particularly rural lifestyle, he also demonstrates awareness that the promotion of Maori culture is not always perceived positively in New Zealand society in extract 56.

56. Town C

- David: there's a lot of people that don't like maori culture and the things they do like
 SM: mm
 David: and protesters and stuff like that (and then) yeah
 SM: yeah
 David: all um like the land issues and stuff people don't really like that i know that um
 [pause] my great grandma was given a lot of land
 SM: //mm hm\
 David: /and\\ she didn't want it
 SM: [laughs]
 David: it's too much controversy

It may be relevant for David's use of linking /r/ that despite his farming background he wants to join the navy. Since he enjoys diving, he identifies underwater welding as a profitable occupation. He explains that “with the oil companies and stuff that are down south

they don't have anyone to weld their boats when they get ruined ... there's a lot of money in it.” It is also interesting that David describes town C inhabitants as using “a lot of slang” in extract 57.

57. Town C

- SM: do you think people like here speak any differently to people anywhere else
//or\
David: /[laughs]: yeah:\\ [laughs] their english isn't very good //[laughs]:
sometimes:\\
SM: /[laughs]\\ in what way
David: um like a lot of slang
SM: right
David: oh i do it too sometimes but (you just) tend to pick up on what everyone else
says
SM: yeah
David: and it's a lot of slang and a lot like words that in sentences shouldn't really be
there [pause] and
SM: have you got any examples
David: um a lot of them like they talk to you like oh yeah “wot up bro” and [laughs]:
stuff //like that:\\

David also recognises the relatively low social aspirations of many people in town C, stating that “some of them don't really get very far a lot of people on the dole”. Thus, along with Rob, David seems oriented towards higher social aspirations and also orients further towards linking /r/ than the fixed effects have predicted.

3 town C boys have strongly negative intercept values (Brandon, Caleb and Nathan, see appendix 2h). Brandon and Caleb both have low MCI scores but shift considerably away from the model's fixed effects prediction towards much lower /r/ use. Brandon is quite locally oriented. He says he is “not really a city kind of person” and refers positively to the “everyone knows everyone effect” in extract 58.

58. Town C

Brandon: mm no nah there's- yeah there's no bad things here [pause] it's pretty safe cos everyone that lives here knows everyone so [pause] you're all alright cos you've got back up if any other people come to town and wanna beat you up

SM: //yeah\

Brandon: /you've\\ always got people from this town to help you out

Brandon positions himself positively in relation to Maori language and culture. He attended kohanga as a young boy and still has direct exposure to the Maori language due to his many Maori relatives. In extract 59 he describes the decline in his Maori language competence.

59. Town C

Brandon: and i been brought up around maori a lot and then i used to speak maori and now since i've started [mispronounced]: speaking: speaking english it's my maori's just go- going away further

SM: oh right how well did you used to speak maori

Brandon: um [pause] not WELL but alright //c-\ used to go to a um [pause]

SM: /yeah\\

Brandon: [tuts] kindergarten a kohanga which is a maori kindergarten i used to go to that

Caleb also orients considerably further in the negative direction from the model prediction for a town C male with a low MCI score. Nathan has a higher MCI score (5) and is predicted to use linking /r/ less than Caleb, but he shifts even more towards low linking /r/ use than this. Again, it is possible to appeal to either rural orientation or a positive stance towards Maori culture when considering each boy's clear orientation toward low linking /r/, beyond what the fixed effects predict would be the case.

Nathan is very much involved in the rural lifestyle. He works on a dairy farm part time and is leaving school soon to work full time on the farm while simultaneously studying towards his agricultural qualifications. I had experienced dairy farming personally and had an extensive conversation with Nathan about different types of dairying technology and milking

sheds. Nathan enjoys the small town life. He says “i don't like it when it's too busy i like it just pretty laid back” and “i wouldn't want to live in Auckland.” It is also interesting that when asked about dialect differences in New Zealand he specifically draws attention (in extract 60) to a speech style associated with farming.

60. Town C

Nathan: um my- where i work they talk heaps different to people around here

SM: //yeah?\

Nathan: /just\ cos they don't- they don't go off the farm and so all the workers on the farm they all sort of talk the same but they talk different to everyone else like they've got a sort of a high pitch kind of voice and a- they just sort of skip out words to make it shorter

Caleb provides the strongest indication yet that low use of linking /r/ may, for some people, signify orientation towards a particular stereotype of Maori identity that is described by some as “hori”. Caleb is good friends with Anthony. Just as Anthony expresses a desire to be a “jackass”, Caleb is equally frank about his low career aspirations. He states “i'm thinking i'll get a dumb job”. When discussing the topic of Maori ethnicity in extract 61, Caleb explicitly labels himself as “hori” and links this to the Maori aspect of his identity.

61. Town C

Caleb i'm i'm as white as you can pretty much get but like i know that i have maori blood in me that's why i'm probably so hori

SM: what does hori mean?

Caleb: don't you know what hori is scruffy rugged

What seems most problematic about attempting to correlate patterns of linking /r/ with attitudes and social stances for the town C boys then, is that Anthony has a positive intercept for linking /r/, while his friend Caleb, has such a low one. These boys are effectively “partners in crime” who express highly similar attitudes.

The model identifies town N speakers as lower users of linking /r/ than town C speakers. It could be then, that declining linking /r/ has simply not progressed as far in town C as in town N. Nevertheless for the 5 teenagers who deviate clearly in a negative direction from the model's fixed effects predictions, there is either involvement in the rural / farming lifestyle (Nettie and Linzy), and / or low social aspirations, and / or a positive stance in relation to Maori identity (Nathan, Brandon and Caleb).

6.4.2.3 Summary of findings for pre-vocalic /r/

There seems to be reasonable evidence in the discourse data that variability in linking /r/ is associated with certain sociocultural stances and aspects of identity projection. However, there are clearly individuals who do not conform to the patterns identified. I discuss the findings in more detail in chapter 7, where I also consider the implications for language change and the ongoing development of NZE. The analysis of the discourse data has had some success in illuminating sociolinguistically meaning variation in linking /r/. In the next section I adopt the same methods in an attempt to shed light on variation in non-pre-vocalic /r/.

6.4.3 Non-pre-vocalic /r/

Very few tokens of non-pre-vocalic are articulated across the data and it is useful to consider more closely the raw numbers and proportions of /r/s pronounced by individual speakers in each phonological context. In the following analysis of individual speaker behaviour in relation to non-pre-vocalic /r/, I analyse individual speaker /r/ use by combining:

- Speaker intercepts taken from town specific models of non-pre-vocalic /r/
- number of articulated / number of potential non-phrase final pre-consonantal /r/ (Pre-C)
- number of articulated / number of potential phrase final pre-consonantal /r/ (PF Pre-C)
- number of articulated / number of potential phrase final pre-vocalic /r/ (PF Pre-V)
- number of articulated / number of potential absolute final /r/ (Abs F)
- proportion of all non-pre-vocalic tokens of /r/ (Prop. NPV /r/)

6.4.3.1 Non-pre-vocalic /r/ in town N

Tables 6.4a and b show the non-pre-vocalic data for all speakers within town N. Table 6.4a shows all speakers who produced at least 1 non-pre-vocalic /r/ and table 6.4b shows those who did not produce any. The data is ordered from highest to lowest proportion of /r/ use across all phonological contexts.

The intercepts are from *model RegionNNONPreV*. This model included the variables *age*, *MCI* and *gender*, but only age was identified as significant. The 6 adults are highlighted in grey. In addition to information about non-pre-vocalic /r/, I also include each speaker's proportion of linking /r/, plus their chosen ethnicity label and their MCI score (note that *model RegionNNONPreV* and other models for non-pre-vocalic /r/ did not identify MCI as having any significant effect on articulation).

The 2 male teenagers in town N who did not supply questionnaire data (Matt and Jayden) also appear in the tables. Although they do not have intercept values or MCI scores, the raw data reveals that Matt does not use non-pre-vocalic /r/ and Jayden does. What is perhaps most striking about the data in tables 6.4a and b is the number of people who articulate a non-pre-vocalic /r/. 23 out of 30 speakers articulate at least 1 non-pre-vocalic /r/. Only 7 do not. Very few tokens are articulated by each person (often only 1 token is articulated), and the percentage of articulated tokens reaches 9% at the most. Nevertheless, the articulated variant occurs in the speech of the majority of informants.

A striking observation in the tables is the way in which the proportions of linking /r/ tend to increase as the proportion of non-pre-vocalic /r/ decreases. As I noted in chapter 5, a correlation test confirmed the statistical significance of an inverse correlation between the two dimensions of rhoticity. In chapter 7 I discuss the linguistic processes that may be involved in these exciting changes to MNZE rhoticity.

Table 6.4a: Non-pre-vocalic /r/ data for town N speakers who articulate /r/

Speaker	Intercept	PreC	PF PreC	PF PreV	Abs F	Prop. NPV /r/	Prop. Linking	Ethnicity	MCI
Casey	1.44900715	6/59	0/3	0/3	0/4	0.086	0.5	European	1
Tilly	1.32176078	16/186	0/20	1/12	1/6	0.080	0.27	Maori	7
Dana	0.70151254	1/28	0/8	0/4	1/6	0.043	0.25	Maori-Pakeha	7
Sienna	0.62135274	4/102	0/9	0/5	1/9	0.040	0.48	Maori-Pakeha	1
Tim	1.56559479	3/82	0/7	0/3	1/7	0.040	0.8	Pakeha	2
Anita	0.54029651	9/228	1/18	0/12	1/39	0.037	0.39	Maori	7
Hetty	0.38242566	6/124	0/9	0/8	0/18	0.037	0.41	Maori-Pakeha	9
Hui	-0.20275087	6/143	0/7	0/3	0/12	0.036	0.19	Maori-Pakeha	12
Joshie	0.64913828	3/74	0/4	0/3	0/7	0.034	0.44	Tokelaun-Pakeha	2
Simon	0.34856558	3/80	0/3	0/6	0/11	0.030	0.8	Maori-Pakeha	3
Tracy	0.22786603	4/102	0/17	0/7	0/8	0.029	0.64	Maori-Pakeha	10
Tanya	0.50198631	2/136	0/8	1/5	1/14	0.024	0.46	Maori-Pakeha	1
Daniella	0.3251305	2/76	0/2	0/5	0/1	0.023	0.62	Maori-Pakeha	3
Nora	1.11577973	3/171	0/15	0/5	0/4	0.015	0.69	Pakeha	5
Jayden	N/A	1/62	0/3	0/3	0/1	0.014	0.76	Maori-Pakeha	NA
Emily	0.38230806	1/75	0/9	0/7	0/3	0.010	0.53	Maori-Pakeha	0
Steve	-0.03227607	3/286	0/14	0/9	0/8	0.009	0.77	European	2
Launa	-0.33374036	1/104	0/4	0/4	0/4	0.008	0.79	Pakeha	0
Greta	0.35291427	2/250	0/14	0/2	0/15	0.007	0.82	New Zealander	3
Amy	-0.89568291	3/332	0/22	0/26	0/20	0.007	0.66	European	2
Douglas	0.1635426	1/121	0/3	0/1	0/5	0.007	0.87	Pakeha	2
Elsie	0.73512488	1/137	0/2	0/7	0/3	0.006	0.82	Pakeha	0
Mike	-0.52075078	1/178	0/15	0/10	0/7	0.004	0.28	Maori	7

Table 6.4b: Non-pre-vocalic /r/ data for town N speakers who do not articulate /r/

Speaker	Intercept	PreC	PF PreC	PF PreV	Abs F	Prop. NPV /r/	Prop. Linking	Ethnicity	MCI
Lisa	-0.42796193	0/265	0/11	0/13	0/4	0.000	0.84	Pakeha	4
Rebecca	-0.26131548	0/231	0/10	0/12	0/2	0.000	0.85	Kiwi	3
Donna	-0.38094757	0/247	0/13	0/14	0/2	0.000	0.89	Pakeha	1
Charlotte	-1.19459012	0/106	0/8	0/3	0/15	0.000	0.2	Maori	4
Jenny	-1.63871559	0/320	0/24	0/18	0/7	0.000	0.63	European	4
Matt	N/A	0/47	0/6	0/1	0/7	0.000	0.66	Maori-Pakeha	NA
Kane	-0.56046794	0/161	0/6	0/4	0/13	0.000	0.59	Maori-Pakeha	0

The majority of town N speakers articulate at least 1 non-pre-vocalic /r/. The most important point of difference that can be identified between the speakers in table 6.4a, therefore does not concern the proportion of /r/s that each individual articulates, but instead concerns which of the phonological contexts the /r/s are articulated in.

The *Model RegionNNONPreV* identified a significant age difference. 3 adults articulate a non-pre-vocalic /r/ and 3 adults do not. As well as teenagers articulating higher proportions of /r/ than adults overall, it is also only teenagers who articulate /r/s in non-pre-vocalic contexts other than the word medial pre-consonantal position.

The model did not identify a gender difference. However, with such small tokens of /r/ being produced, the change may currently be at too early a stage for clear stratification to have emerged. It is interesting then, that in table 6.4a, there are only 6 speakers to articulate /r/s in contexts other than pre-consonantal word medial, and that 5 of these speakers are female and only 1 is male. It seems that a very low incidence of word-medial pre-consonantal /r/ is not unusual across speakers, but it is the young female speakers who are expanding the range of contexts in which non-pre-vocalic /r/ is articulated.

This data may be representative of sound change at an early onset. It has entered the speech of several speakers at a low frequency in 1 specific phonological context. Some more innovative (female) speakers appear to be expanding the range of contexts in which they may use the variant. Although the data is sparse and any generalisations can only be tentative at this stage, the proportions of articulation in each context are suggestive of the hierarchical diffusional pattern suggested in 62:

62.

- (i) Word medial pre-consonantal: the most favoured context for articulation of /r/. 23 town N speakers produce an /r/ here. None of the town N speakers produces a final /r/ without also producing a non-final /r/.
- (ii) Absolute final /r/: 6 speakers produce /r/ here. This is also the only other non-pre-vocalic context where a town N male (Tim) articulates /r/.
- (iii) Phrase final or pre-pausal /r/ before a word beginning with a vowel: this may be the next most likely context. However, with only 2 instances there is little difference between this context and the next (iv).
- (iv) Phrase final or pre-pausal before a word beginning with a consonant (1 female).

The discourse data may shed more light on the sociolinguistic variation involved in the apparent spread of this innovation. The small gender differences are suggestive of an innovative variant at an early onset. The variant may be influenced by the decline in linking /r/ use and / or by sociocultural factors. Although the two dimensions of rhoticity are clearly related from a linguistic point of view, this does not necessarily mean that the same sociocultural meanings underpin both changes. It is therefore interesting to probe whether the individual speaker discourse data suggests that the sociocultural factors which are relevant to non-pre-vocalic /r/ use are similar to or different from those which were identified as potentially relevant to the variation in linking /r/.

Since an important point of difference is the range of contexts in which non-pre-vocalic /r/ is used by individuals, I evaluate individual differences by considering primarily the range of phonological contexts that individuals articulate an /r/ in as well as the proportions.

Town N adults only use /r/ in 1 context and exhibit relatively low proportions in comparison to town N teenagers. However, it is apparent that 1 adult, Nora, orients more towards non-pre-vocalic /r/ than other adults. I noted previously that Nora deviates from the fixed effects prediction for linking /r/ towards less linking /r/ than expected for adults, and seems to have the most diverse network ties of the 6 adults, which includes extensive contact with Auckland due to her hospital work. Her linguistic behaviour may therefore signal the importance of geographical mobility and contact for the spread of changes to both pre-vocalic and non-pre-vocalic /r/.

In tables 6.4a and b, only 2 town N girls do not produce any non-pre-vocalic /r/ (Charlotte and Jenny). 3 girls produce /r/ in 3 different contexts (Tilly, Anita and Tanya) and 2 of them in 2 different contexts (Dana and Sienna). It may be insightful to consider whether there are any apparent differences between the 5 girls who articulate /r/s in the widest range of contexts and the 2 girls who do not pronounce any. (More detailed discourse information for Tilly, Anita and Tanya in appendix 2i(a), for Dana and Sienna in 2i(b) and for Charlotte and Jenny in appendix 2j).

It may be significant that the 5 girls who produce non-pre-vocalic in the widest range of contexts show an apparent lack of attachment to town N. Tanya was not discussed in section 6.4.2.1 but she has a relatively low intercept for linking /r/. She deviates somewhat from the expected behaviour for her MCI score of 1. Tanya did not grow up in town N and has lived in Auckland. In extract 63 she describes town N as “dumb” and “hori”. She wants to leave as soon as possible. Her favourite place is Hamilton and she wants to go to University there and study photography.

63. Town N

- SM: okay what do you think of [town N] then generally
- Tanya: [pause] boring just like hoodlams and [pause] parties [tut] and it's hori
[laughs]
- SM: it's what
- Tanya: hori
- SM: what's does //that mean\
- Tanya: /like\\ crusty as
- SM: //[laughs]: what does that mean:\
- Tanya: /[laughs]\\ like dumb and boring [snorts]

I have already discussed Sienna in relation to her lower than expected use of linking /r/. Thus Sienna appears to be progressive both in relation to declining linking /r/ use and in the articulation of non-pre-vocalic /r/. However it is difficult to identify clear patterns in her discourse data. She is moving to a boarding school in New Plymouth and it is unlikely that her high educational aspirations will keep her in town N for long.

Tilly's relatively low use of linking /r/ is consistent with her high MCI score (7). In extract 64 Tilly describes how much she enjoys being in busy cities. She plans to attend a college to train as a flight attendant and travel the world.

64. Town N

- Tilly: it's weird cos i kinda like traffic it's like so busy that it's like not lonely
there's people [laughs]: everywhere:
- SM: oh //like the the s- all\ the speed and the noise //and everything\ doesn't
bother you
- Tilly: /even if you don't know them\\
/yeah\\ no [laughs]
cos i like here's so much quietness that [laughs] it's like i wanna hear noise
[laughs] like heaps of people like cars and whatever [laughs] that's my thing

It seems that each of the 3 girls who uses non-pre-vocalic /r/ in the widest range of contexts exhibits a relatively global outlook and a lack of local loyalty, or at least some indifference, towards town N. This is very interesting given that the speakers who seemed to exhibit the most divergence in the direction of *low* use of linking /r/ in section 6.4.2.1 tended to exhibit a more local orientation and a *less* global outlook. This seems somewhat paradoxical given that there is also a negative correlation between less linking /r/ and more non-pre-vocalic /r/.

Dana is also quite geographically mobile with contacts in several parts of New Zealand's North Island. Dana uses non-pre-vocalic /r/ in 2 contexts. Her linking /r/ behaviour is consistent with a female town N speaker with a higher MCI. Dana does not know what she wants to do in the future but she describes town N as "kind of boring" and in extract 65 she suggests that she would like to broaden her horizons.

65. Town N

Dana: oh i'd like to mo- leave yeah try somewhere else [laughs]: been here all my life: so i'd like to go [laughs]

Finally, Anita has spent 6 years living in Wellington between the ages of 6 and 12 and it is unlikely that town N is the most significant influence on her speech. She has friends in Rotorua who she visits regularly. Anita also did not exhibit any strong divergence from the pre-vocalic /r/ model trends. Her linking /r/ use is as expected given her social characteristics, i.e. relatively low. Although Anita lives in a small rural area she describes town N as "dumb". Anita often works with shearing gangs and she aspires to work as a sheep shearer. When she becomes rich she wants to move to Rotorua, which is her favourite place.

Unlike these 5 town N girls who exhibit the most progressive non-pre-vocalic /r/ use (in terms of contexts of articulation), the 4 girls with zero or very low non-pre-vocalic /r/ use all display a relatively local / rural orientation and generally appear less geographically mobile. I discussed Jenny in relation to her positive intercept value for linking /r/. Jenny did not demonstrate any desire to leave town N and left school to have a baby. Charlotte expresses a negative attitude towards her imminent move to Australia and would prefer to live in a rural / farming area. This appeared to be relevant to her trend towards less linking /r/.

There are also 2 teenage girls in town N who have very low use of non-pre-vocalic /r/ and who may represent speakers who are just beginning to use the feature (Amy and Launa, cf. appendix 2j). Amy and Launa also both show a relatively rural orientation. In relation to linking /r/, neither girl deviates much from the *model PreV* trends in their intercept values. Both girls have proportions of linking /r/ which are consistent with low MCI.

I have already discussed Amy's considerable involvement in the farming culture. She wants to be a farmer. She comments that cities are more dangerous. Her close friend is Jenny. Both girls show a similar orientation towards small town life.

Launa also enjoys riding her motorbike on the farm with her friend Emily. Emily also has a lower proportion of non-pre-vocalic /r/ than most other town N girls and only uses the variant in the non-final pre-consonantal position.

The findings are very interesting. While a more global outlook and greater geographical mobility seems to be relevant to non-pre-vocalic /r/ use, speakers with the most progressive use of non-pre-vocalic /r/, and who are most globally oriented, are not the most progressive in terms of the decline in linking /r/. Those who are most extreme in the decline of linking /r/ tend to be more locally oriented and show less concern for their future career aspirations. This provides an important indication that while the 2 variants may be influencing each other linguistically, they are not necessarily associated with the same sociocultural patterns of use.

The model findings for non-pre-vocalic /r/ did not identify MCI scores as predictive of /r/ use and in contrast to linking /r/, it is difficult to identify commonalities in the discourse data in relation to attitudes to Maori culture. Of the 2 girls who do not use non-pre-vocalic /r/, Jenny expresses a negative view towards the incorporation of Maori culture into school life, while Charlotte expresses the view that it is okay for Maori to present themselves in a "nice and tidy" way. These 2 speakers coincide slightly on orienting away from stereotypically negative Maori behaviour.

However, the 5 town N girls with high non-pre-vocalic /r/ use do not display either particularly negative or particularly positive attitudes towards Maori culture. Anita has strong Maori connections since her Mum works in a kohanga. She also describes her friends as "all the Maoris" but she says she is no longer interested in learning the language.

Tanya's attitude towards Maori culture is more negative as she considers activities such as kapa haka or learning the language to be "dumb" and "boring".

In extract 66, Tilly explains that she is oriented more towards her "European side" at present, although Maori culture was more significant for her when she was younger.

66. Town N

Tilly: /oh no\\ well # i really really liked maori [laughs]: like: the maori culture when i was little and i always wanted to learn the culture and like the language like i really wanted to speak it but then like when i grew up i was like kind of getting into [laughs]: like the european side and i was like oh i wish i was white [laughs]: and all this stuff: i was like oh like cos i like how they wear their boots and their jackets and [laughs]: stuff like

Another girl, Casey, provides supporting evidence that non-pre-vocalic /r/ is not linked to Maori ethnicity in the same way that linking /r/ may be. Casey only produces /r/ in one context. However, she has the highest proportion of non-pre-vocalic /r/ in town N.

Casey has been living in town N for 7 years, since she was 9. She moved to New Zealand from Surrey in England. She considers the Maori language to be unimportant since “we’re the only country that even talks it and most of the maoris don’t even understand it.” Casey says that she considers herself a New Zealander now and would not want to return to England. She is well-integrated into her new social group and her high use of non-pre-vocalic /r/ could reflect this. In addition, she does not consider town N to be a viable place to stay in the future. She was preparing to move to Hamilton to study travel and tourism at college.

The discourse data for the town N girls suggests that attitudes and / or involvement in Maori culture is not relevant to the adoption of non-pre-vocalic /r/. However, local versus global orientation could be playing an influential role. At least 2 of the 5 most progressive female speakers could potentially carry an innovative non-pre-vocalic /r/ into town N either from the South Island or from north of town N. Tilly visits relatives both in Auckland and in the South Island “right down at the bottom.” In extract 67 she identifies the South Island as a source of influence on her style interests.

67. Town N

Tilly: and down south there's a lot of um pakehas that they've all got that dag designer [laughs]: stuff (): i've like always wanted that stuff but yeah i have to like get a job and stuff to get money [laughs]: so i can: get my own stuff

It is also interesting that Hetty, who moved to town N only recently from Hamilton, uses non-pre-vocalic /r/ at a frequency which is intermediate relative to other town N girls, and she does not do so in any final contexts. Hetty also shifts towards higher linking /r/ use from the lower starting point predicted for her high MCI score. She has high social aspirations and expresses a strong view that a “hori” Maori way is not “genuine” Maori. Thus high social aspirations may be relevant to the avoidance of both of these changes, even within the same lower class communities. Given Hetty’s linguistic behaviour, there is no evidence that contact with Hamilton is having a major influence on this change.

It is difficult to identify significant differences in the linguistic behaviour of the town N boys. Only 2 boys do not produce any non-pre-vocalic /r/. However, the variant seems to have infiltrated the boys’ speech much less than the girls in terms of the range of phonological contexts. The most interesting speakers to consider are Tim, who produces 1 /r/ in absolute final position and has the highest proportion of /r/, plus Kane and Matt, who each produce none. It is not clear why Hui is identified in the *RegionNNONPreV* model as having a negative intercept. He has the 8th highest proportion of non-pre-vocalic /r/ of the town N speakers and after Tim, seems the next most positively oriented towards non-pre-vocalic /r/.

It is worth comparing Tim and Hui with Kane and Matt (appendix 2k provides detailed sociocultural information for these 4 boys). There are not obvious differences between the 2 pairs of boys in terms of a more rural versus a more global outlook or in terms of orientation towards or away from Maori culture. However, the 2 boys with the highest /r/ use clearly have the opportunity to adopt the feature from the north and the south of the country respectively. Tim visits his sister in Whangarei, which is in the far north-east of the North Island, while Hui grew up on the South Island and has relatives there and in Christchurch. However, Matt also visits Auckland and is positively oriented towards the city, yet he does not use non-pre-vocalic /r/. The town N boys’ data therefore does not provide much insight into non-pre-vocalic /r/ use. In the next section I consider non-pre-vocalic /r/ use in town C.

6.4.3.2 Non-pre-vocalic /r/ in town C

The non-pre-vocalic /r/ data for town C girls is presented in table 6.5. Again, I focus on proportions of /r/ and on contexts of use rather than on intercept differences specifically. The intercepts come from the town C specific model of non-pre-vocalic /r/: *Model RegionCNONPreV*. This model included the variables *MCI* and *gender*, neither of which were significant fixed effects.

The proportions of /r/ use for the town C speakers are clearly lower than for town N speakers. They range from 2% to 0%, while the town N speakers' articulation ranges from 9% to 0 percent. It is clear why the statistical models identified a regional difference. Again, most town C speakers pronounce at least an occasional word-medial pre-consonantal /r/ (15 out of 24 speakers), but it is primarily female speakers who produce final /r/s (6 females), with only 1 boy (Caleb) producing a final /r/. It seems that in both regions, males are just beginning to articulate /r/s in final contexts and females are most likely to be introducing the innovation.

In contrast to town N, there are 2 town C girls (Sue and Linzy) who produce /r/ in final contexts without also producing /r/s in word medial pre-consonantal contexts. The differences with respect to contexts of use are much less clear since the rates of articulation are lower. Nevertheless, the hierarchy of phonological contexts identified in 62 above is tentatively supported by the town C data. The word medial pre-consonantal context is clearly the favoured context for introducing /r/. 3 speakers produce an /r/ in the absolute final context, which is the next most favoured context for town N. Again, the only male speaker to produce a final /r/ does so in the absolute final context. 4 speakers produce /r/ phrase-finally before a vowel and only 2 speakers phrase-finally before a consonant. I consider the possible implications of this pattern of diffusion further in chapter 7.

Given the clear regional difference in the rates of non-pre-vocalic /r/, the patterns are tentatively indicative of a change spreading geographically southwards and being used slightly more by speakers in areas further north. Its use further north is supported by Kennedy's (2006) NURSE rhoticity data in South Auckland, which was noted in chapter 2.

Although differences are less clear for town C speakers, I again discuss data for the most and least progressive users of non-pre-vocalic /r/.

Table 6.5: Non-pre-vocalic /r/ data for town C speakers

Speaker	Intercept	PreC	PF PreC	PF PreV	Abs F	Prop. NPV /r/	Prop. linking /r/	Ethnicity	MCI
Anthony	1.19896391	5/242	0/3	0/4	0/11	0.019	0.75	Maori-Pakeha	3
Caleb	0.90762859	2/157	0/6	0/9	1/10	0.016	0.51	Maori-Pakeha	2
Jemima	1.44506571	4/355	1/18	1/13	0/11	0.015	0.86	Maori-Pakeha	2
Christy	1.2790968	3/238	0/16	1/5	0/11	0.014	0.51	Maori-Pakeha	7
Tom	0.2116302	2/100	0/9	0/22	0/21	0.013	0.54	Maori-Pakeha	6
David	0.67498333	2/158	0/8	0/9	0/7	0.010	0.78	Maori-Pakeha	2
Sue	0.59660187	0/190	0/8	1/6	1/8	0.009	0.75	Maori-Pakeha	3
Emma	0.73084328	2/274	0/15	0/15	1/6	0.009	0.82	Maori-Pakeha	2
Sherry	0.15205587	1/246	1/9	0/10	0/8	0.007	0.85	Maori-Pakeha	3
Cassandra	0.21582611	2/229	0/13	0/10	0/15	0.007	0.93	European	0
Shena	0.07646668	2/410	0/22	0/11	0/20	0.004	0.66	Maori-Pakeha	5
Nettie	0.01915505	1/187	0/9	0/5	0/19	0.004	0.6	Dutch	2
Nate	-0.01782161	1/232	0/11	0/3	0/30	0.003	0.86	Maori-Pakeha	2
Brandon	0.08596653	1/208	0/20	0/15	0/14	0.003	0.47	Maori-Pakeha	3
Linzy	-0.07797548	0/308	0/19	1/12	0/32	0.002	0.55	Maori-Pakeha	2
Rena	-0.22686374	0/135	0/18	0/10	0/15	0.000	0.47	Maori-Pakeha	6
Charlene	-0.25737543	0/135	0/10	0/6	0/19	0.000	0.72	Maori-Pakeha	2
Sarah	-0.48694285	0/323	0/17	0/10	0/22	0.000	0.58	Maori-Pakeha	7
Kylie	-0.61233197	0/218	0/8	0/5	0/12	0.000	0.79	Pakeha	2
Glen	-0.25664938	0/182	0/4	0/8	0/15	0.000	0.66	Maori-Pakeha	4
Rob	-0.22413023	0/159	0/4	0/5	0/7	0.000	0.85	Maori-Pakeha	3
Robin	-0.21961407	0/100	0/3	0/1	0/4	0.000	0.84	European	0
Nathan	-0.37550058	0/297	0/9	0/11	0/15	0.000	0.37	Pakeha	5
Kenney	-0.19442201	0/94	0/5	0/1	0/12	0.000	0.69	Pakeha	1

Amongst the town C girls, Jemima uses the variant in 3 contexts. 4 girls use the variant in 2 contexts. 1 of these (Christy) has a higher proportion than the other 3. 4 girls in town C do not produce any non-pre-vocalic /r/. I discuss the discourse data for Jemima, Christy, Emma and Sue who have the highest proportions of /r/ use and the widest range of contexts (detailed discourse data appears in appendix 2l) and for the 4 girls who do not use non-pre-vocalic /r/ (Kylie, Sarah, Charlene and Rena, cf. appendix 2m).

As with the town N boys, it is difficult to identify clear patterns of difference between the highest users and non-users of non-pre-vocalic /r/ among town C girls. Jemima is interesting because she is one of the highest users of linking /r/ in the data set and shifts even further towards more linking /r/ than predicted by the fixed effects. She has a low MCI, high educational aspirations and orients away from a negative Maori stereotype, despite being partly Maori. Similarly Emma, with non-pre-vocalic /r/ in 2 contexts, has a high use of linking /r/, consistent with a low MCI score and aspirations for further education. Emma is involved in the Christian Youth group which, as I noted earlier, provides scope for contact with diverse people and places. It is interesting that Emma's friend, Sherry, who attends the youth group with her, also uses non-pre-vocalic /r/ in 2 different contexts.

Christy and Sue were not discussed in relation to linking /r/. Sue hardly deviates from the model's fixed effects prediction of a relatively high proportion of linking /r/, consistent with her identity as a Maori-Pakeha with a low MCI and lack of involvement in Maori culture. Of the 4 girls with high non-pre-vocalic /r/ use, Christy has the lowest proportion of linking /r/, consistent with the *model PreV* trend for her relatively high MCI score. It is difficult to see the connection between low linking /r/ and high non-pre-vocalic /r/ for these 4 town C girls.

However, these speakers do have the potential to come into contact with individuals who could use non-pre-vocalic /r/ in the South Island, in the far north of the North Island or in Auckland. Jemima visits many relatives around the country including an Aunt in Invercargill. Christy visits her brother in Auckland who is a professional rugby player. Sue also visits Auckland sometimes. It is also very interesting that Emma's boyfriend is Caleb (the only town C male to use a final /r/), who I discuss below.

For the 4 town C girls who do not use non-pre-vocalic /r/ it is also difficult to identify the connection with linking /r/. Kylie and Charlene have quite high percentages of linking /r/ (79% and 72% respectively) and also have obvious social aspirations. Rena and Sarah have lower linking /r/ use (47% and 58% respectively) and seem less career-minded. Even though Sarah is good friends with Sue, who does use non-pre-vocalic /r/, she does not use the variant herself. None of the 4 girls show any particular rural orientation and vary in the extent to

which they wish to pursue careers. Rena does visit relatives in Auckland. The data for these 4 girls is not particularly illuminating, though apart from Rena, there seems to be less geographical mobility.

Only 6 of the town C boys produces any non-pre-vocalic /r/. 2 have very low proportions. Caleb stands out as the only male speaker to produce an /r/ in a final context. 5 of the boys do not articulate non-pre-vocalic /r/.

I compare the discourse data for Caleb and Anthony, who have the most significant /r/ use, with the data for Nathan and Glen, who do not use non-pre-vocalic /r/, (appendix 2n provides the detailed data for these 4 boys).

I discussed Anthony and Caleb in section 6.4.2.2. They are close friends who get into a lot of trouble. Anthony describes himself as a “jackass” and has a surprisingly high use of linking /r/ (75%) given that he has such low social aspirations. As a result of being moved from one care situation to another, Caleb has lived in Auckland and in Christchurch. Due to his background it is likely that he has come into contact with diverse types of people in diverse social contexts. His linking /r/ use is more consistent with his claim to a “hori” identity. Caleb and Anthony both position themselves as “tough guys”. Caleb mentions teenagers who think they are tough and describes various dangerous pranks that Anthony and he have attempted. Anthony considers more dark-skinned Maori to be those who are not picked on by other boys. Thus while both Caleb and Anthony differ with respect to their linking /r/ use, they are similar in their non-pre-vocalic /r/ use. While Anthony has the higher proportion of non-pre-vocalic /r/, Caleb also uses it in an absolute final context. Perhaps, Anthony has not yet caught up with Caleb in also adopting the change towards lower linking /r/ use?

In section 6.3.6 I noted that teenagers draw tentative links between gangsters in Auckland, Maori ethnicity, low socioeconomic class and distinctive speech styles. It may well be that the use of non-pre-vocalic /r/ is one way of orienting towards some of these attributes.

One relevant point that does appear to stand out in the data is contact with the Auckland area (and possibly the south of the South Island). In town N, Tilly visits relatives in Auckland and in the South Island. Tanya has lived in Auckland and still has relatives there. Sienna has also lived in Auckland. These girls have the most progressive use of non-pre-vocalic /r/. The 4 town N girls who do not use non-pre-vocalic /r/, or who have very low use, seem less geographically mobile, especially in relation to contact with Auckland.

In town C Jemima, Christy and Sue all visit Auckland. Caleb, the only boy to use non-pre-vocalic /r/ in a final position, has had contact with Auckland and Christchurch. However,

Glen has a cousin who lived in Southland and he is aware of non-pre-vocalic /r/ but does not use it. Contact with the far north of New Zealand, with Auckland and / or with Southland may be a source for the adoption of non-pre-vocalic /r/ into these towns, but there are clearly also other factors influencing whether speakers adopt it or not.

6.4.3.3 Summary of findings for non-pre-vocalic /r/

The apparent connections between non-pre-vocalic /r/ and speakers' attitudes and behaviour are tentative. However, the qualitative analysis does draw attention to some lines of inquiry which are worth pursuing in future research on this variant. Contact between speakers in potentially relevant parts of New Zealand and a more global orientation seem to be the most noticeable attributes associated with non-pre-vocalic /r/. The very low numbers of /r/ tokens articulated by town N boys and by teenagers in town C are as yet, insufficient for clear patterns to be identified. This is an interesting finding in itself. The town N girls who have the most extensive use of non-pre-vocalic /r/ are also the speakers for whom potentially relevant sociocultural factors are most apparent and this provides insights into the diffusion of the variant at a very early stage. At this very early stage of change then, the global orientation factor may be very relevant for the beginnings of geographical diffusion of the variant. The quantitative analysis of non-pre-vocalic /r/ suggests that the variant has progressed further in town N than it has in town C, and also that it has not progressed as far as the apparent change towards declining linking /r/.

6.5 Chapter summary

The qualitative analysis in this chapter has uncovered socially meaningful variation in relation to /r/ use. Using the participants' discourse as a basis for identifying relevant sociocultural factors has led to some interesting observations. In both towns, linking /r/ seems to be associated with a set of social attributes or attitudes which individuals orient towards or away from, particularly Maori identity, social aspirations and small town lifestyles. In town N, more so than in town C, non-pre-vocalic /r/ may be connected to a more global outlook, and may be brought in by speakers who have exposure to non-pre-vocalic /r/ in other parts of New Zealand. Despite being connected linguistically, the 2 dimensions of rhoticity seem to differ in terms of the sociocultural influences on their usage. The additional layer of discourse analysis has provided important insights into sociocultural factors which may impact on the ongoing development of NZE. In the next and final chapter, I return to theoretical

considerations in relation to dialect change and discuss the implications of the findings of this thesis for the ongoing development of NZE.

Chapter 7: Discussion and conclusion

In the preceding chapters I have presented a holistic analysis of rhoticity in NZE. The analysis has produced several interesting findings. In this chapter I discuss the implications of the findings for theories of dialect change and in relation to the development of new regional dialects in NZE and other postcolonial varieties of English.

7.1 Introduction

The quantitative and qualitative analyses in chapter 5 and chapter 6 identified interesting trends in linking /r/ and in non-pre-vocalic /r/. The MNZE data suggests that changes are underway for each of these dimensions of rhoticity. While linking /r/ appears to be declining in MNZE, non-pre-vocalic /r/ seems to be on the increase. Non-pre-vocalic /r/ is evidently a newer and more innovative development in the MNZE phonological system than the decline in linking /r/. As a result it is more difficult to pinpoint socially meaningful patterns of variation for the latter variant.

The data was collected in relatively rural communities and a reasonable assumption is that the changes may be more progressive in central city areas of New Zealand, e.g. Auckland or Wellington. However, an important finding in this thesis is that, almost without exception, the inhabitants of these small New Zealand towns are geographically mobile. It is difficult to distinguish individuals who are more likely than others to have brought these innovations into their community. Almost all speakers have the opportunity to do so. The geographical mobility and transience of populations is an important one for the topic of dialect development in postcolonial dialects. I discuss this further in 7.2 below.

The results indicate that the decline in linking /r/ is closely connected with Maori identity. However, the thesis also demonstrates that ethnic identity in New Zealand is an extremely complex issue and one which has important implications for future developments in the variety. The findings show that speakers who lack Maori cultural connections may also orient away from linking /r/ and that positive attitudes towards small town and / or rural lifestyles may also be indexed by an orientation away from linking /r/. Since speakers who have higher social aspirations often orient towards higher linking /r/ use, the findings indicate that the issue of Maori identity is intertwined with social stereotypes and attitudes concerning socioeconomic status. Speakers who orient away from Maori cultural stereotypes (especially the “hori” stereotype identified by the participants in this thesis), as well as speakers who value career aspirations, or display a relatively global outlook, seem to be those who are most

likely to use a higher rate of linking /r/. The findings thus support Eckert's (2000: 455) assertion that:

The very fact that the same variables may stratify regularly with multiple categories – e.g. gender, ethnicity and class – indicates that their meanings are not directly related to these categories but to something that is related to all of them ... variables index demographic categories not directly but indirectly ... through their association with qualities and stances that enter into the construction of categories.

An indexical field of social meanings (cf. Eckert's 2008) can be suggested for linking /r/, as in figure 7.1.

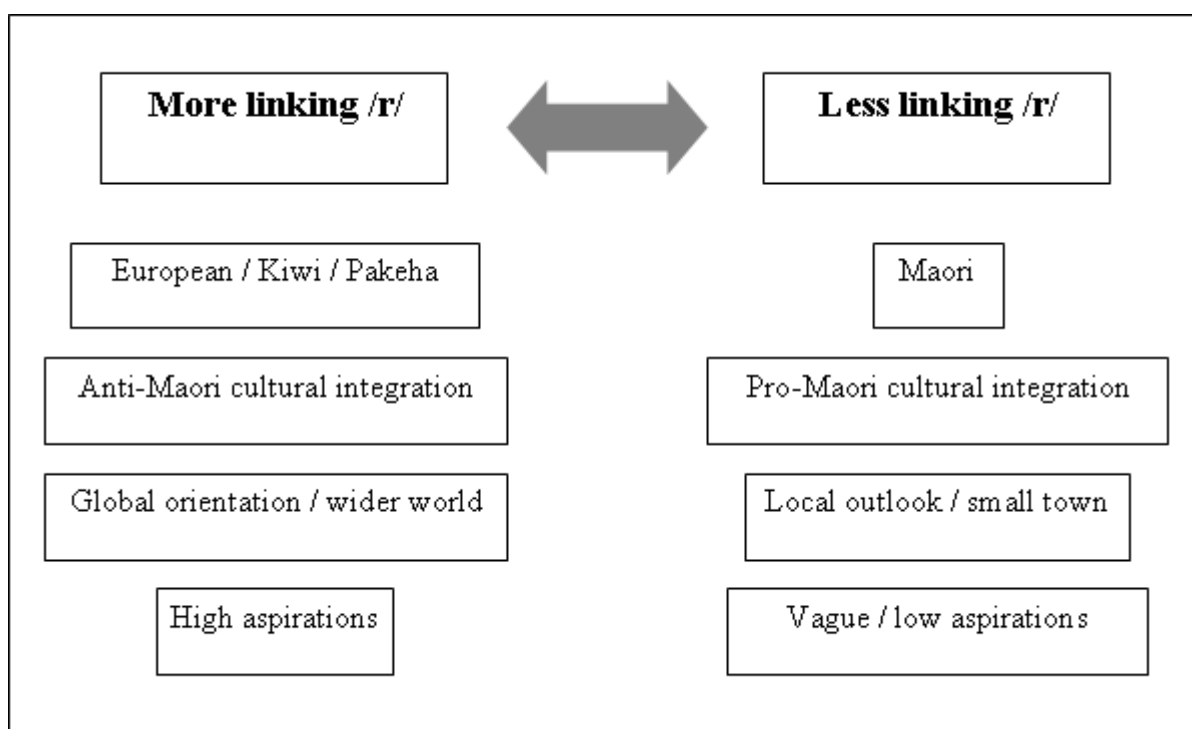


Figure 7.1: Indexical field for linking /r/ in MNZE.

Variability in linking /r/ use appears to be used to index any of several interconnected stances and social attributes.

Unlike linking /r/, non-pre-vocalic /r/ does not appear to have any strong association with Maori identity. There is possibly a subtle association between a more upwardly mobile / global orientation for non-pre-vocalic /r/ users since among town N girls, where the variant

has progressed the furthest, the most rurally-oriented speakers are the lowest users. However, it may simply be that the more globally oriented speakers have had the greatest exposure to the innovation. It is difficult to evaluate this possibility since any differences between speakers in relation to geographical mobility are extremely subtle and difficult to identify, however there is some tentative evidence that the non-pre-vocalic /r/ variant is being brought in from Auckland and perhaps also from the lower South Island. However, the non-pre-vocalic /r/ variant is at such an early stage of adoption that its social meanings are as yet difficult to pinpoint. I discuss the social evaluation of the variant in section 7.2.1 and provide some tentative suggestions.

Even though the two dimensions of rhoticity seem quite distinct at the social level, this thesis has identified a linguistic correlation between them. Speakers with lower linking /r/ use tend towards higher non-pre-vocalic /r/ use and vice versa. I discuss the implications of this correlation further in section 7.2.4.

It is interesting that 50% of the adults in this study articulate a non-pre-vocalic /r/ and 50% do not. This finding has several possible implications. One is that the innovation had already begun at least one generation preceding the teenagers in this study. Another interpretation is that adults adopted the feature from teenagers. A third option is that the articulation of non-pre-vocalic /r/ by some speakers is not as unusual in NZE as has been presumed previously. Chapter 4 highlighted the enduring variability of /r/ historically. It could be the case that the details of NZE rhoticity are only now becoming apparent, perhaps due to an increase in its use, or to its appropriation by particular speakers, or to the recent change in the focus of NZE scholarship on heterogeneisation rather than homogeneisation.

In relation to the S-curve of linguistic change (cf. Weinreich et al. 1968), the apparent change in non-pre-vocalic /r/ is clearly currently in the minority. However, the findings, combined with Kennedy's (2006) observation of NURSE rhoticity in the far north and Auckland, supports a hypothesis of diffusion from the north of New Zealand southwards. Town C exhibits less progressive use than town N. However, the data also lends weight to the possibility that the variant is spreading northwards from the far south of the South Island, where the variant is historically attested. Due to geographical mobility, speakers in both towns could potentially carry the variant from either part of the country and it may be that there is mutual influence from both north and south.

These key findings have important implications for theories of dialect development in postcolonial Englishes and in relation to Schneider's (2003, 2007) theory of future regional

diversification. In the sections which follow I discuss the theoretical implications of the results in relation to dialect development.

7.2 New dialect development in a new dialect

The main focus of this thesis is on sociolinguistic processes relevant to the development of new dialects in a (relatively) new variety of English. A primary question that arises is whether or not the findings support a hypothesis of increasing regional diversification. The findings are inconclusive on this matter. Certainly, distinctive regional dialects have not been discovered in this thesis. In relation to the linguistic regions identified by Bauer & Bauer (2002), the results are also inconclusive. While there are differences between the 2 towns in the extent to which the innovative phonological features are used, there are not true distinctions in the manifestation of rhoticity between the two towns. The differences identified may reflect ongoing diffusion, and the frequency differences may become less distinct over time. Alternatively, the features could increase in one town and decline in another. Despite this ambiguity, the findings provide important observations concerning the ongoing development of postcolonial varieties of English. One major observation concerns issues of contact and geographical mobility.

7.2.1 Contact and geographical mobility

The extent of geographical mobility and transience in the two towns both at the present time and historically is striking. A distinction between tight-knit working class communities and more diffuse and higher social class communities has often been cited in sociolinguistic research in relation to processes of dialect levelling and the diffusion of linguistic changes (Milroy & Milroy 1985; Milroy 2002, 2007; Kerswill 1996a; Kerswill & Williams 2002b). Close-knit networks have been associated with low level contact with outside members, loose networks with high level contact. What is apparent in this thesis is that the communities under investigation are tight-knit, working class, rural communities at the same time as being relatively diffuse, transient, globally-oriented communities. It is not the case that the two communities are isolated, even though a primary motivation for my focusing on town N in this study was its apparent social and geographical isolation. It is also not the case that some speakers can be distinguished from others within each community as being particularly mobile and likely to diffuse changes. Across the speaker sample, the speakers make regular visits out of town to multiple places, some of which are a good distance away from their own towns (e.g. to the far north or to the far south of the country).

These interesting sociocultural dynamics may be characteristic of wider New Zealand or even of many other postcolonial varieties. These sociocultural conditions have implications for dialect development. The geographical mobility and transience of the populations means that exposure to innovations in the wider linguistic market will be commonplace and linguistic changes are likely to diffuse rapidly in the variety as a whole (i.e. nationally). This is likely to minimise the potential for the emergence of regional diversification.

The “everybody knows everybody” effect within communities will also impact on linguistic distinctiveness. Since the population networks are close-knit, innovative features brought in from outside the community will be distributed through the community rapidly. This could account for adults adopting non-pre-vocalic /r/ since the teenage participants describe close contact with parents or friends.

High population transience is also likely to influence the potential for diversification. In both towns there are speakers in the MNZE data who have undergone 2nd language and / or dialect acquisition (e.g. one Dutch, one English and one South African - the latter was not included in the analysis). Depending on the native language background, different newcomers might be challenged by different degrees of phonological restructuring during their acquisition of NZE. Inevitably some variants will be more difficult for speakers to accommodate to. The persistent disruption involved in such transient populations is likely to sustain a high degree of dialect mixture and heterogeneity. Thus, as in certain European cities (e.g. Birmingham, cf. Khan 2006; London, cf. Torgersen et al. 2006; Glasgow, cf. Stuart-Smith et al. 2011), ethnolinguistic mixing in NZE such communities may lead to interesting dialect developments. Ethnolinguistic mixing may be particularly significant for the ongoing development of NZE and I discuss the issue of ethnicity further below.

7.2.2 The role of ethnicity

I addressed ethnicity from several different angles in this thesis. The findings suggest that the self-identification of ethnicity is not, by itself, an adequate basis for addressing ethnicity-related patterns of linguistic variation. The MCI questionnaire employed in this thesis proved to be relatively successful when entered as a variable into statistical models of rhoticity. Incorporating a layer of qualitative analysis regarding speakers’ attitudes to Maori culture strengthened the findings of the statistical models and provided deeper insights. The thesis demonstrates the benefits of probing social categories from multiple angles.

The findings are revealing in relation to the role that ethnicity may be playing in ongoing phonological developments in NZE. Although an orientation away from linking /r/ is

associated with speakers' orientations towards particular aspects of Maori identity, the situation is complicated. Young New Zealanders do not conform to the binary Maori-Pakeha classificatory system which is often imposed on them by social institutions. The relevance of Maori versus Pakeha ethnicity is likely to vary according to individual speaker, social group, social practice and social context. Maori (and other ethnic) identities contribute to a rich complex of identity construction and it is clear that the connections between sociocultural relations and linguistic behaviour in New Zealand are extremely muddy.

Ethnicity could play a significant role in future regional diversification in MNZE. Speakers may orient more towards or away from features such as linking /r/ in order to adopt particular social stances. Ethnic identity provides a "meeting ground" for individuals with similar stances. What may be particularly relevant for future dialect development is what the discourse data reveals about certain social stereotypes associated with Maori ethnicity. The teenagers display awareness of different ways of being Maori and the lack of segregation between speakers along ethnicity lines means that features which are associated with being Maori are being mixed up with other social characteristics. As a result, ethnicity can be linked to various other aspects of identity.

Particular stereotypes of speech, such as an Auckland variety, may emerge, which are based on a conglomeration of characteristics such as socioeconomic status, ethnic identity, native language background, social practices, etc. Since such factors are interconnected, certain linguistic features, such as an avoidance of linking /r/, are used by speakers who converge on some of the same interconnected characteristics. Linguistic features may subsequently become identified and evaluated in the belief systems of communities as being associated with a particular characteristic. "Place" or "location" could be one such characteristic linking speakers who orient towards the same linguistic feature due to their interconnected stances. There is some evidence in this thesis that rhoticity may be involved in emerging phonological distinctiveness. The implications of this distinctiveness for regional phonological diversification may depend on the social evaluation of the phonological features involved. I discuss this in 7.2.3.

7.2.3 The social evaluation and salience of rhoticity

The innovative pronunciation of non-pre-vocalic /r/ does not currently appear to be socially salient. I noted in chapter 2 that salience is influenced by a complex combination of factors. Phonetic distinctness may play a role in the salience of non-pre-vocalic /r/ and also in the change that seems to be underway. In chapter 2 I noted that the NZE NURSE vowel has

increasingly front and high articulations. While the vowel may sometimes sound like GOOSE, it is also possible that it could be perceived as /r/. I noted in chapter 5 that /r/ seems to manifest in a variety of articulations, especially when it undergoes change. In chapter 6 I noted that it was sometimes difficult to determine during the analysis whether a phonological feature should be categorised as /r/ or not. The presence versus absence of /r/ is phonetically gradient and it is likely that variables can become increasingly /r/-like without speakers noticing. This thesis illustrates complex issues of social evaluation for /r/ in relation to the different orders of indexicality described in chapter 2.

Comments about non-pre-vocalic /r/ in the discourse show that speakers continue to associate the variant (inaccurately) with South Islanders (i.e. not specifically Southlanders). The variant is enregistered in the belief systems of New Zealanders as a “mythical” South Island identifier. The association of non-pre-vocalic /r/ with the South Island has reached a 3rd order of indexicality. The variant is associated with a stereotype.

However, the discourse data suggests that non-pre-vocalic /r/ is undergoing reallocation in terms of its social meanings in relation to its use in areas outside of Southland. For speakers in town C and town N (and possibly other areas of the North Island), the “new” non-pre-vocalic /r/ articulation is currently only at the 1st order of indexicality. The variant may be used in a socially meaningful way, but it is not yet clear what this is and its use is not yet noticed. The 1st order indexical status of non-pre-vocalic /r/ in towns C and N, ties in with its very recent emergence. However, there is also evidence that the variant may be beginning to enter the 2nd order of indexicality for some speakers. In the 2nd order, speakers begin to notice the variant and to identify socially meaningful associations with its use. Although the feature is not yet explicitly identified in the discourse, 2 speakers in the data use the variant in a way that may reflect a subconscious social evaluation.

In chapter 6 one town C speaker made the comment that a particular style of speech is associated with the combined attributes of “gangster,” Maori ethnicity and socioeconomic status. I repeat the example in extract 1 below.

1.

Jemima and you've got like maori kids seem to talk different to what european kids
do

SM: mm

- Jemima and it sort of depends like whether their families are like rich or poor or whatever
- SM: yeah
- Jemima just seems like and the poorer families seem to be more thug and [pronounces /r/]: gangster: even if they're European

Jemima's articulation of /r/ when she says *gangster* could be socially meaningful.

Another town C speaker, Linzy, articulates only one non-pre-vocalic /r/ in all of her data. Linzy has a particularly rural outlook. Linzy's articulation comes when she is making a comparison between Palmerston North city and town C. The articulation is a pre-vocalic phrase final token which occurs in the word *bigger*, in extract 2.

2.

- SM: what do you kind of like think of Palmerston North then in comparison to like [pause] somewhere like town C or-
- Linzy it's [pronounces /r/]: bigger: [pause] um
 (it's) more [pause] people
 like Town C's quite spaced out and-
 more traffic and things over in Palmy

Both Jemima's and Linzy's articulations of /r/ may be topically appropriate and could signify subconscious connections between more global, city-oriented identities (which Linzy does not orient to herself).

Other speakers draw attention to connections between language and potentially relevant social characteristics. In extract 3, Robin suggests that Maori individuals emulate African American rap musicians in their styles of dress and speech.

3.

- Robin: yeah especially maoris look up to the negro rappers they borrow a lot of

- their culture and ideas from them african americans
- SM: how do you know that
- Robin: ah well it's just that sort of general vibe you get as you look around [pause]
- SM: can you give me any examples //cos that's quite interesting for me\
- Robin: /() ah it's\ [pause] it's the clothes they wear important thing
- SM: what kind of //clothes\
- /()\ hoods and [pause] ah [laughs] :you know: [pause] the (): [laughs]
- SM: yeah
- Robin: [pause] and they talk like them they have the words like “yo” [laughs]

Gibson (2005) has researched the use of non-pre-vocalic /r/ in the singing of New Zealand hip hop artists and has suggested potential connections between NURSE rhoticity and the identities and styles associated with rap / hip hop musicians. Several of the male participants in this thesis identify American rap music / hip hop as expressing themes that they identify with, as in 4.

4.

- Glen: yeah oh like 2pac 2pac like speaks his speaks his mind more than anything else he doesn't try try act act the man and that and like talks about his life and talks about how he thinks and what goes through his head and his family and that
- SM: oh yeah
- Glen: and he but he puts it into like a rap sort of [pause] sort of thing and it works for me

Although my suggestions here are exploratory, the discourse points to potential links between Auckland, gangsters, socioeconomic status and ethnicity for the emerging social evaluation of non-pre-vocalic /r/.

Blake & Shousterman (2010) describe a diachronic increase of vowel centralisation and rhotacisation (i.e. *hair*, *here* and *her* are all articulated as [hɜː]), by traditionally “r-less”

African American speakers in St. Louis. Blake & Shousterman (2010: 231) describe St. Louis as having “a place identity inextricably tied to the linguistic hip-hop market.” Blake & Shousterman (2010: 240) note that the concept of “place” is an important one for rap musicians. They suggest (2010: 240) that St. Louis rappers are “giving place a meaning through their linguistic practices,” i.e. through the use of rhotic centralised vowels. They note that the rhotic vowels have reached a level of 3rd order indexicality for the St. Louis rappers, but for St. Louis community members more generally, the variant is at a 2nd order of indexicality. It is not yet stereotypically assigned social meaning by community members in the same way that it is by rappers.

Blake & Shousterman (2010), and see Eckert (2000) and Johnstone et al. (2006) note that the same linguistic variants can become salient to different communities of speakers at different times. Non-pre-vocalic /r/ in MNZE is an example of a variant which displays complex patterns of salience and reallocation. For one community of speakers it has become a recognised stereotype of South Islanders’ speech. For others its usage is innovative, its social meaning is undergoing reallocation and the feature is not yet noticed.

Llamas (2000: 142-143) has demonstrated that speakers who express negative attitudes towards an accent used by others (i.e. “Geordie”), may nevertheless use features of that accent in expressing their own local identities (Middlesbrough / North Eastern). The participants in this study who use non-pre-vocalic /r/ and are aware of this feature in Southlanders’ speech are not aware of the feature in their own speech and if they were, it is unlikely that they would ascribe themselves a “Southland” identity.

Blake & Shousterman’s study also illustrates the way in which an innovative variant may undergo geographical diffusion and subsequently become associated with a particular place through its links to other social attributes.

The rap / gangster connection may subsequently prove significant for MNZE non-pre-vocalic /r/. Caleb who uses non-pre-vocalic /r/ the most in town C talks at length about New Zealand gangs and his connections to them. It is important however not to attribute the same social evaluations / social meanings to variants used in different communities. Meyerhoff & Niedzielski (2003) and Pennycook (2007) emphasise the locally specific manifestations of variants which have cross-cultural / global currency. The point which I wish to make in this thesis is that non-pre-vocalic /r/ may currently be linked to a variety of subtly entwined social attributes. The indexicality field associated with non-pre-vocalic /r/ is only just emerging. The possibility exists for any particular attribute to become increasingly prominent as the variant becomes noticed and assigned meaning. Place identity could be one such attribute.

These issues also highlight the global accessibility of non-pre-vocalic /r/ across English dialects as I discuss below.

7.2.4 Linguistic considerations

Milroy (2007) describes “off the shelf” linguistic features (cf. chapter 2) as those which are particularly susceptible to change and diffusion. Features such as /θ, ð/ replacement, glottalisation of voiceless plosives, /l/ vocalisation (see Kerswill & Williams 2002b; Beal 2010) have diffused rapidly and become supralocal. It seems that /r/ is one such feature. It is subject to widespread variability on a global level. Milroy (2007) suggests that such features require less face to face contact or direct exposure than other “under the counter” features.

Milroy (2007: 154) also notes that “off the shelf changes highlight the role of attitude and ideology and the influence of particular identifiable speakers or groups of speakers.” Thus, although /r/ is implicated in variability on a global scale, its use by a given community of speakers can be manifest in locally distinctive ways (cf. Meyerhoff & Niedzielski 2003; Beal 2010). Ongoing change in rhoticity across English varieties therefore has important consequences for the future evolution of those varieties.

/r/ has an enduring historical susceptibility to change in a variety of phonological contexts. Harris (2012: 5-8) describes 3 main systems of rhoticity in English varieties but notes that these are not the only systems which occur. In system 1, /r/ is retained in all phonological contexts where it is historically attested (though retained does not mean that it is articulated categorically). In system 2, /r/ is preserved pre-vocalically (including across word boundaries) but not pre-consonantly or word- or phrase-finally. NZE rhoticity has, until now, been described as system 2. A 3rd system described by Harris (2012: 7) involves system 2 with the addition of /r/ deletion in linking /r/ positions and in intervocalic positions within words where the vowel following the /r/ is unstressed (e.g. *Carolina, Hurricane, very*).

The analysis of rhoticity in this thesis suggests that MNZE currently conforms mainly to system 2 but is also beginning to incorporate aspects of systems 1 and 3. It is like system 2 in its preservation of /r/ in pre-vocalic contexts. However, it is also like system 1 due to the increasing articulation of pre-consonantal, word-final and phrase-final /r/. It is also like system 3 in its trend towards non-articulation of pre-vocalic /r/ across word boundaries.

/r/ has important implications for theoretical / phonological description (as Harris 2012 discusses) and I do not have space to explore the phonological implications in this thesis.

However, with respect to phonological context, the MNZE data shows that /r/ occurs in each of the contexts in 5-9:

5. Word initially (*red*)
6. In consonant clusters (*traffic*)
7. In linking contexts (*far away*)
8. Pre-consonantly (*work*)
9. Before word, phrase or utterance boundaries or before a pause (*far##*).

With regard to 9, some such articulations occur in contexts that might superficially be considered as “linking.” However they are not linking tokens, since a definite pause occurs between the /r/ and the following vowel and / or, the following vowel is accompanied by a glottal onset or glottal stop. The “linking” context is thus one in which /r/ can be realised as ambisyllabic, as occurring in a syllabic onset, or as a syllable coda /r/. This supports Harris’s (2012) contention that a phonological analysis of /r/ based on the syllable does not fully capture the variability involved.

Off the shelf features are often more difficult to distinguish from certain other features perceptually (e.g. /f/ and /θ/; /r/, /w/ and /v/; or /r/ and /ʒ/). Like labiodental fricatives, /r/ tends to be acquired relatively late by native English speakers and is often imperfectly acquired. Non-native speakers may struggle to acquire /r/ at all. In this thesis the majority of non-pre-vocalic /r/s are articulated in the context of a preceding NURSE vowel. It is not clear whether the variant should be categorised as /r/ or as a rhotacised NURSE vowel. The acoustic and perceptual differences between these two sounds are gradient, not absolute. However, it would not be accurate to describe MNZE as having only NURSE rhoticity since /r/ is also articulated non-pre-vocalically following vowels other than NURSE (e.g. *letter*, *north*, *air* and *start*). One area that I did not explore was the influence of particular phonetic realisations of vowel phonemes on /r/ articulation. This could be an interesting avenue for future research.

The issue of a correlation between linking /r/ and non-pre-vocalic /r/ is particularly important for ongoing developments in NZE rhoticity. It is interesting to contemplate the linguistic processes that might be occurring. While the 2 changes could be separate from a social point of view, it is also possible that non-pre-vocalic /r/ has simply not progressed sufficiently for clear stratification to have emerged. It is possible that both changes are

influenced by similar sociocultural identity issues, but only linking /r/ has progressed far enough for Maori identity to be identified as significant. Since there is a tentative indication that non-pre-vocalic /r/ is influenced by exposure to the variant in Auckland, the variant may have progressed further in that geographical area. Data on rhoticity in Auckland, or further north, might provide more clearly stratified results in relation to ethnicity. There is insufficient evidence in the current data to assume that Maori (and Pacific Island) identities are not relevant to both changes in tandem.

There are several scenarios that could be hypothesised in relation to how these 2 changes might influence each other linguistically, as described in 10 to 13.

10. The 2 changes may be occurring independently and not influencing each other
11. The increase in non-pre-vocalic /r/ may be directly influencing the decline in linking /r/
12. The decline in linking /r/ may be directly influencing the increase in non-pre-vocalic /r/
13. The changes to the 2 dimensions of rhoticity could be mutually exacerbating each other

The scenario in 10 seems unlikely given the statistically significant correlation between linking /r/ and non-pre-vocalic /r/ in the thesis. The scenario in 11 also seems unlikely. This is because it seems that the decline in linking /r/ arose earliest. This change has progressed further than the change towards non-pre-vocalic /r/ in the data for both towns. The use of a) VØV articulations, b) VʔV articulations and c) a glide between 2 full vowels, in contrast to VrV sequences in lexical phrases such as *far away*, reaches 70% for some of the speakers. The highest articulation of /r/ in non-pre-vocalic contexts reaches just below 10%. In VrC contexts alone, it also does not exceed 10% for any individual speaker. (Of course, it is important to remember that linking /r/ is variable in varieties described as non-rhotic, so it is not possible to ascertain to what degree linking /r/ has declined in NZE and over what period of time.)

It seems reasonable to suggest that the decline in linking /r/ may have been influenced by Maori language phonology, which permits VV sequences. I suggest a probable link between the avoidance of linking /r/s, Maori identity and the Maori phonological system's inclusion of VV sequential structure. Several participants in this thesis also produce VV sequences across

word boundaries in instances where the article “an” is used in StBrE to avoid vowel hiatus, e.g. “a/an apple”. For example, describing her holiday in Vanuatu, Amy states “we saw a albino”. She articulates /r/ between “saw” and “a”, but “a” and “albino” are separated with a glottal onset for the second vowel. Paul Kerswill (personal communication) notes that this phenomenon also occurs in multicultural communities in the London area. It would therefore be useful to subject this observation to systematic analysis in future research.

The articulation of non-pre-vocalic /r/ may also be associated with Maori language contact but in a different way. It seems clear that non-pre-vocalic /r/ articulation has progressed the most in the word medial pre-consonantal position and that influence from the NURSE vowel context is specific to pre-consonantal /r/ within the word. The NURSE vowel context is apparently not relevant to linking /r/ use. This finding is significant because studies which have examined recent changes towards a (re)emergence of pre-consonantal /r/ have also identified the NURSE vowel as a context in which the /r/ first begins to appear (e.g. Irwin & Nagy 2007).

It has been noted in the literature that fronting of the GOOSE vowel may have some association with Maori ethnicity. Exposure to similar-sounding NURSE and GOOSE pronunciations, combined with other NZE vowel changes affecting the central vowel space (e.g. raised NURSE and changes to FLEECE, KIT, FOOT and STRUT, see chapter 2), may be influencing both a) the perception that some articulations of the NURSE vowel are rhotic or are /3r/ sequences and b) the tendency for NURSE vowels to be articulated with rhoticisation in order to maintain a contrast between variants of GOOSE and NURSE. My suggestion here is that the 2 changes may have arisen independently but both under the influence of Maori language contact phenomena.

Although there is currently no clear and direct connection between the 2 changes in terms of how they have arisen, this does not mean that the 2 changes are not having any influence on each other. It is not immediately clear how exposure to VØV sequences might influence speakers to produce VrC sequences as in 12 above. However, once both VØV sequences and VrC sequences have arisen, could exposure to both of these variants fuel progress towards the articulation of word final and phrase final tokens of /r/? One possible scenario is proposed in 14.

14.

- (i) speakers are exposed to a) $V\emptyset V$, $V?V$, VV and VrC , and also to b) VrC . The two processes arose separately, but perhaps are both influenced by Maori language contact.
- (ii) since $V\emptyset V$ is heard frequently and speakers also hear VrC , when VrV sequences are heard, the /r/ in these linking contexts might be re-analysed not as an ambisyllabic /r/, but as an /r/ which belongs only to the first word, i.e. $Vr\#V$. This might influence speakers to produce /r/s in linking contexts in which the /r/ is separated from the second word. There are examples of these $Vr\#V$ sequences in the data along with $Vr?V$ sequences, though they are sparse.
- (iii) $V\#V$ combinations currently coexist with $Vr\#V$ sequences in the data. It is clear that the former are the most frequent, and it is not clear if $Vr\#V$ is set to increase.
- (iv) under the influence of exposure to $Vr\#V$ sequences, where the /r/ is reinterpreted as belonging only to the first word, as well as exposure to VrC sequences, where the /r/ is clearly part of the word, speakers might also begin to produce $Vr\#\#$ articulations where no word follows (i.e. /r/s in absolute final contexts). This appears to be the next most frequent context for non-pre-vocalic /r/ in the data set, after word-medial pre-consonantal tokens.
- (v) with exposure to $Vr\#\#$ sequences, where the /r/ is clearly word final, speakers might then be influenced to articulate /r/s in other word final and phrase final contexts, i.e. $Vr\#V$ (e.g. *here. I ...*) and $Vr\#C$ (e.g. *far. I ...*).

The scenario in 14 is not intended to be a definitive explanation of the processes that are occurring, but it is a tentative hypothesis of how the 2 dimensions of rhoticity might feed into each other.

The models of rhoticity in this thesis did not find word frequency to be relevant. However, I feel that the issue of word frequency is worth exploring further. It is possible that the results were due to the way in which the word frequencies were calculated. Collocation effects may also be relevant in relation to linking /r/. Most of the preceding vowel contexts for linking /r/ were letter vowels, but this does not mean that specific lexical items and / or the combination of preceding and following vowel or the actual collocation is not influential on linking /r/.

Finally, it is important to emphasise once more, that /r/ as a variable is an inherently complex phenomenon. Despite my best efforts to incorporate as many relevant factors as possible, I have only scratched the surface of MNZE rhoticity. In section 7.3 I provide some final reflections on the thesis.

7.3 Reflections

7.3.1 The study of early onset variants

The thesis findings suggest that up to a point, innovative variants at an early stage of use do not lend themselves readily to sociolinguistic analysis. On the other hand, the variant does not have to become particularly widespread before patterns begin to emerge under sociolinguistic analyses. In fact, the analysis of a variant at such an early stage provides an important point of comparison for future analyses as the variant gains ground and this could be particularly revealing for understanding the trajectory and social meaning of the change.

7.3.2 Working with teenagers

The data set used in this thesis was smaller than I had anticipated collecting. This is due partly to my focus on teenagers as participants. With hindsight, on listening to the recordings, I am frustrated to realise my missed opportunities. I could also potentially have secured more participants by finding a way to actively participate in the schools or in the communities. Although this possibility would be constrained by relevant persons of authority (e.g. principals, community leaders, etc), it is an option worth pursuing in any similar fieldwork in future.

7.3.3 Sociophonetics

I would have liked to investigate in more acoustic phonetic detail the different articulations associated with /r/ tokens in the data. I had to limit the scope of different possible analyses, and given that I combined quantitative and qualitative methods in this thesis, acoustic phonetics was unfortunately an area which I had to neglect.

7.3.4 Ethnolinguistic variation

Since it would have over-complicated the thesis I was unable to include speakers of a variety of different ethnicities in this study. However, the ethnolinguistic mosaic that is apparent in the many 21st century New Zealand communities is not doubt of considerable relevance for the theoretical issues in this thesis. In particular, rich ethnolinguistic variation may be

influencing both dimensions of rhoticity and provide a source for these changes to spread more spatially outwards across New Zealand.

7.3.5 The role of media

I did not pursue this area in the thesis but people's exposure to linguistic features in the speech of people who appear on T.V., radio, etc. could be potentially influential on NZE linguistic variation, especially where particular media personalities are viewed as models to be emulated. I noted in chapter 6 that several participants refer to T.V. programmes as a source of their awareness of the Southland non-pre-vocalic /r/. Media influence on rhoticity would provide an interesting line of future research.

7.4 Conclusion

This thesis has presented a holistic and historical evaluation of rhoticity in MNZE as well as a detailed consideration of processes of dialect change. A huge amount of ground has been covered and yet I have only scratched the surface of many layers of variation involving rhoticity historically, in contemporary dialects of English and in NZE specifically. The introduction and literature review in chapters 1 and 2 foregrounded the importance of sociocultural dynamics when considering the sociolinguistic processes involved in the development of new dialects. Chapter 3 outlined a number of important sociocultural considerations in relation to the development of new dialects. The sociohistorical overview of chapter 4 emphasised the significance of the sociocultural context for interpretations of historical sound change and variability and its consequences for later dialect developments. In particular, chapter 4 illustrated that rhoticity has always been a “messy” phenomenon and that NZE rhoticity has had an ambiguous status from the outset. In chapter 5, the utilisation of modern statistical techniques of mixed effects regression modelling identified basic trends in rhoticity which were used as a foundation for the more qualitative analysis of chapter 6. The qualitative analysis enhanced the quantitative findings by drawing attention to a number of social attributes evident in the speaker discourse which are potentially relevant to the speakers' different orientations towards or away from the apparent changes in rhoticity. In conclusion, the holistic and social constructionist position adopted in this thesis has enabled a detailed insight into a complex and messy conglomeration of historical, social, cultural and linguistic effects. These effects unite in propelling forward an individual linguistic variant on the path of its social life. To the extent that speakers' future beliefs, behaviours and the social dynamics affecting them are unpredictable, the future social life of a linguistic variant also

cannot be predicted. There is no evidence in the results of this thesis that the phonological variation identified is currently contributing to the emergence of regional dialects, but it may do so in the future. MNZE rhoticity is contributing to significant phonological changes in the variety and this seems to be connected to disorderly heterogeneity in the variety: the instability and restructuring of sociocultural identities, especially in relation to multicultural communities and language contact phenomena. There is significant potential for these dynamics to restructure socially and linguistically within and between specific communities and to emerge as divisions along the lines of regional or local identity.

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Appendix 1: Methodological tools

1a: Ethics approval



Phone 0-4-463 5676
 Fax 0-4-463 5209
 Email Allison.kirkman@vuw.ac.nz

MEMORANDUM

TO	Sharon Marsden
COPY TO	Professor Laurie Bauer, Supervisor
FROM	Dr Allison Kirkman, Convener, Human Ethics Committee
DATE	May 17, 2007
PAGES	1
SUBJECT	Ethics Approval: No 52/2007, Embryonic Regional Phonological Variation in New Zealand English.

Thank you for your application for ethical approval, which has now been considered by the Standing Committee of the Human Ethics Committee.

Your application has been approved and this approval continues until 30 July 2009. If your data collection is not completed by this date you should apply to the Human Ethics Committee for an extension to this approval.

Best wishes with the research.

Allison Kirkman
 Convener

1b: School N and school C demographics

	School N	School C
School type	secondary years 9-13	secondary years 9 – 13
Decile	†2	‡2
Roll	†586	‡337
% Maori	†48	‡40
% NZ European/Pakeha	†47	‡39
% other European	◇	‡18
% Other ethnic groups	†5	‡3 (1% Pacific Island, 2% Asian)

† = Information obtained from ERO report of 30th May 2007; ‡ = Information obtained from ERO report of 21st December 2007, ◇ = information not available (cf.

<http://www.ero.govt.nz/>)

1c: Participant information sheet

VICTORIA UNIVERSITY OF WELLINGTON
To Whaea Wānangana te Upoko o te Taia Māori



Research project: Life and language in the local community

INFORMATION SHEET FOR PARTICIPANTS

My name is Sharon Marsden. I am a student at Victoria University of Wellington.
 I am doing some research for a PhD project about life and language in your town.
 Ethics approval has been obtained for this project.

This sheet explains how you can help me. I am interested in hearing what you have to say about your town. If you agree, I will meet you and ask you some questions about your family background, your neighbourhood and your friendships. I will ask you about life in your community. I also want to find out about language in your town and I may ask you about some of the words that you use.

I may need to talk to you more than once. I would like to talk to people in pairs, so please ask your friends and family/whanau if they are willing to join in when I talk to you. I want to remember what you tell me so I'd like to tape-record our conversations.

You can change your mind about helping me at any time within two weeks of your first recorded interview. You do not have to give reasons if you want to stop taking part. If you withdraw from the project, any data that you have provided will be destroyed.

The information you give me will be private and confidential. Your name will not be on the tapes and no-one will be able to identify you. I will keep the tapes and store them in a safe place. I will use them to write a report for the University. The School of Linguistics and Applied Language Studies will mark my report and it will be kept in the University library. Other University researchers may request permission to use the tapes for their own research. I will carefully control which researchers use the tapes and how the tapes are used.

Please keep a copy of this information sheet. If you are willing to help me, please sign the consent form. If you are under 16 years of age, your parent or guardian must also give their permission and sign the consent form.

Thank you

Sharon Marsden (Researcher)

Signed:

Date:

If you have any questions or would like more information about the project, please contact me, or my supervisors, Laurie Bauer and Paul Warren, at the School of Linguistics and Applied Language Studies at Victoria University, P O Box 600, Wellington.

Sharon Marsden: 04 4635233 ext: 8709, email: sharon.marsden@vuw.ac.nz

Professor Laurie Bauer: 04 463 5619, email: laurie.bauer@vuw.ac.nz

Associate Professor Paul Warren: 04 463 5631, email: paul.warren@vuw.ac.nz

1d: Town N information leaflet

Are you a ?

What does your region mean to you?

Do you see yourself as being different to a Wellingtonian, or an Aucklander?

Would you like to take part in a survey about ?

If you have any comments about regional identity in ...

... please fill in this form & post it in the box provided

This survey is part of a PhD research project being carried out at the School of LALS, Victoria University of Wellington

Researcher: Sharon Marsden
Victoria University of Wellington
Room 402
von Zedlitz Building
Kelburn Parade
Wellington

Phone: 04 4638079
or email:
sharon.marsden@vuw.ac.nz

What's so special about ?



- What does it mean to be a ?

- What are defining regional qualities?

- I think/don't think is different from other regions because:

[illegible]

- Interesting facts, favourite things, or other comments about

[illegible]

Please give your age

Age: -----

Name & contact details are optional

Name: _____

Contact details:

Phone -----

Email -----

- I would/would not like to be contacted

1e: Participant consent form

VICTORIA UNIVERSITY OF WELLINGTON
Tā Whare Wānanga o te Hōkio o te Ika a Māui



CONSENT TO PARTICIPATION IN RESEARCH

Research project: Life and language in the local community

Name of participant: _____

I have been given an information sheet about this project and I understand what it is about.

I have had an opportunity to ask questions and have them answered to my satisfaction.

I understand that I may withdraw from this project at any time within two weeks of my first recorded interview without giving reasons and without any penalty of any sort. I understand that if I withdraw from the project, any data I have provided will be destroyed.

I agree that the recording and the transcript of my interview may be held by the researcher.

I understand that only linguistics researchers will be allowed to listen to the recording and it will only be used for genuine linguistic research purposes.

I understand that published results will not use my name and that no opinions will be attributed to me in any way that will identify me.

☐ I would like to receive a summary of the results of this research when it is completed.

If you are under the age of 16, a parent or guardian must also sign the consent form.

- **I agree to take part in this research.**

Signature: _____ **Date:** _____

Parent/Guardian name: _____

Signature: _____ **Date** _____

1f: Interview schema

Interview Schema for semi-structured interview with researcher

- **Demographic**

How long have you lived in [hometown]?

When did you first come to live in [hometown]?

Where were you born?

If born in place of residence: How long have your parents lived in [hometown]?

Where were your (parents/grandparents) born?

If not born in place of residence: Tell me about any other places you have lived

Were any of these places overseas?

How long did you live there?

How long did you live in [previous place of residence]?

If moved to place of residence recently: Why did you/your family move to [hometown]?

Were you happy about moving to [hometown]?

- **Social network**

Tell me about your friends and family?

Who is your closest friend? How often/where do you see [closest friend]?

Do all your friends know each other?

Tell me what your usual day/week is like?

Where do you spend your free time and who with?

Are you involved in any local clubs, hobbies or community activities?

If yes: Tell me about [activity]?

Who do you do these activities with?

Do you have a job?

If yes: Tell me about your work

Tell me about the people you work with?

Is there any travel involved in your work?

How often do you travel outside the local community/to the city/abroad and for what reasons?

Do you have friends/relatives in other parts of New Zealand?

Do you visit them? If yes how often?

- **Social network – teenagers**

Tell me about the people you spend time with at school?

Who do you usually spend time with most?

Do you have a 'group' or 'gang' of friends?

Do you have a name for your group/gang?

Does everyone in your group get along?

Are there other gangs of friends in or outside of the school?

If yes: Do they have a name for their group?

Does your group get along with [other group/gang]?

What do you and your friends spend their time doing when you're not at school?

- **Local orientation**

Is there a name for people from your town or city?

If yes: Do you use this name to describe yourself?

Where do you like going most in your spare time within your region?

What is your favourite shopping centre?

What football or other sports team do you mainly support?

Who is its main rival?

What do you think of your home town or city?

Do you think that another nearby town or city is favoured more than yours?

If yes: does [rival town] get the best facilities?

In which town or city are people generally friendlier? Why?

What are the main reasons for any rivalry between your town or city and any of its neighbours?

Tell me what life is like in [hometown]?

What do you like about living in [hometown]?

Is there anything you don't like about living in [hometown]?

Has life changed much here since you were younger?

What do you think life is like for children here now compared to in the past?

What is special about your town?

What do you think about gangs in the community? Are gangs a problem?

- **Local orientation – teenagers**

What is good about living in [hometown]?

Is there anything not so good about living here?

What is there for young people to do here?

What would you like to do when you leave school?

Where would you like to live/work?

Do you think you will stay in [hometown]?

Why do you want to move away / stay here?

Are your friends planning to leave / stay too?

- **Personal history – teenagers**

Do you have any scary/funny stories to tell?

What is the scariest / funniest / most unusual / most embarrassing thing that ever happened to you?

What's the worst thing you have ever done?

- **Ethnicity**

How would you describe your ethnicity?

How involved are you in Maori culture?

Do you consider Maori culture to be important to New Zealand identity?

Is Maori culture important in your town?

How well do Maori and non-Maori get along in your town?

How do you feel about the Maori language? Do you think it is important for people to learn Maori?

1g: Paired discussion guide

Paired discussion question / guide sheet

About your town

1. How would you describe your town? What do you think of it?
2. What are people like in your town?
3. Is there any name for people from your town or region? If yes, do you use this name to describe yourself?
4. What are the good things about your town? What are the bad things?
5. Is there anything that you would like to change about your town?
6. What do you think other people say about your town?
7. Are there any towns or cities which you like more than yours? Why?
8. Are there any towns or cities which you don't really like? Why?
9. In which town or city are people generally more friendly? Why?
10. Do you know of any rivalry, conflict or competition between your town and any other town?
11. What is your favourite town or city? What makes it special for you? Does it have something that other towns don't have?
12. Is there enough for young people to do in your town? How do you spend your free time here?
13. Are there any sports teams from your town that you support? Is there a main rival sports team?
14. What do you think about the way that people in your town speak?
15. Can you tell if people "belong" to your town by the way they speak?
16. Can you think of any way that your accent is different from the accent of nearby towns or cities? For example, are there any words that are special to your town or words that are pronounced differently?
17. Can you tell which part of New Zealand someone is from by the way that they speak?
18. What accent would you say *you* have?
19. Do you have a special way of speaking with a friend or group of friends? For example do you have any special words, slang words or different ways of pronouncing words? If yes, can you give any examples?
20. Do you know any interesting or funny stories about your town?
21. Do you know any scary stories about your town?
22. What do you know about the history of your town?
23. Has your town changed in any way in the time you have been living here?
24. Do you think you will still be living in your town when you are older? Why?

Appendix 2: Qualitative data – Individual speaker sociocultural information

2a: Town N girls deviating towards more linking /r/

Speaker	Tracy	Jenny	Hetty	Amy
Intercepts	0.703901	0.437972	0.341453	0.204168
MCI	10 Maori-Pakeha	4 European	9 Maori-Pakeha	2 European
Sociocultural information	<p>Friends with Tanya and Tilly</p> <p>Lived in town N all her life</p> <p>Geographically mobile</p> <p>Family connections in far north</p> <p>Regular involvement in Maori cultural events</p> <p>Aspires to study business in Hamilton</p> <p>Town N is alright but boring</p> <p>Wants to get away to experience other places</p>	<p>Friends with Amy</p> <p>Negative attitude towards Maori language & culture</p> <p>Distinguishes “nice” Maori from unpleasant types</p> <p>May pursue tourism or beautician career</p> <p>“hates” cities</p> <p>Does not want to leave town N</p> <p>Wants to move in with boyfriend</p> <p>Wants to be a god mother to her friend’s baby</p> <p>Left school to have a baby</p>	<p>Friends with Charlotte</p> <p>Unhappy about recent move to town N from Hamilton</p> <p>Describes town N as “a hole”</p> <p>Contact with Hamilton, wants to return</p> <p>Actively learning Maori language</p> <p>Rejects “hori” Maori stereotype</p> <p>Aspires to go to University and possibly be a lawyer</p> <p>Is “positive” she will not stay in town N</p>	<p>Friends with Jenny</p> <p>Has always lived in town N</p> <p>Describes town N as a “cute little town”</p> <p>Thinks cities are dangerous</p> <p>Positive orientation to town N</p> <p>Involved in farming</p> <p>Wants to go to agricultural college</p> <p>Aspires to “be a farmer or something to do with farming”</p>

2b: Town N girls deviating towards less linking /r/

Speaker	Sienna	Charlotte	Emily
Intercepts	-0.47732	-0.4442	-0.42226
MCI	1 Maori-Pakeha	4 Maori	0 Pakeha
Sociocultural information	<p>Lived in Auckland from age 6 to 9</p> <p>Moving to New Plymouth boarding school</p> <p>Ambivalent about Maori identity</p> <p>Put “Maori-Pakeha” on the form because her Nan would be disappointed otherwise.</p> <p>Feels “more Pakeha than Maori”</p> <p>Plays guitar</p> <p>Has “a big as group of friends”</p> <p>Likes aspects of both city and rural life</p> <p>No clear aspirations</p> <p>Wants to do something “arty” for a job and have an overseas experience</p>	<p>Friends with Hetty</p> <p>Lived in town N all her life</p> <p>Has been “everywhere” (Auckland, New Plymouth, Hamilton)</p> <p>Strong attachment to town N</p> <p>Moving to Australia against her wishes</p> <p>Does not like busy places</p> <p>Wants to live in a rural / farming environment</p> <p>No strong views about Maori</p> <p>Says Maori can be “neat and tidy”</p>	<p>Friend is Launa</p> <p>Always lived in town N</p> <p>Rural lifestyle</p> <p>Hamilton & Rotorua for shopping and cousins, plus Levin & Taupo</p> <p>Prefers rural life: “not a city person”</p> <p>Wants to see the world, have a career, be a flight attendant or early childhood teacher</p> <p>Wants to “get out and just experience stuff but um i'd also like to stay here and that cos it's where all my friends are”</p> <p>Involved in motorbike culture</p> <p>Negative attitude towards Maori: “what do they do for us”</p> <p>Describes Aucklanders as “posh”</p>

2c: Town N boys deviating towards more linking /r/

Speaker	Douglas	Simon	Steve	Tim
Intercepts	0.45963303	0.394868282	0.259825157	0.251857686
MCI	2 Pakeha	3 Maori-Pakeha	2 European	2 Pakeha
Sociocultural information	<p>Friend is Kane</p> <p>4th highest intercept across all speakers</p> <p>Always lived in town N</p> <p>Prefers other places</p> <p>Friends the only good thing about town N</p> <p>Not into party scene: "it's a waste of time"</p> <p>Likes the outdoor life</p> <p>Lives on a lifestyle block</p> <p>Involved in raising cows / farming culture</p> <p>Visits relatives in Whangarei</p> <p>Likes motorbike riding and hunting</p> <p>Not interested in learning Maori</p> <p>"might go to Massey in palmerston north cos that's quite a cool university and it looked pretty flash"</p>	<p>7th highest intercept across all speakers</p> <p>Always lived in town N</p> <p>Not involved in farming lifestyle</p> <p>Visits "mostly hamilton sometimes new Plymouth"</p> <p>Doesn't want to stay in town N: "can't really go anywhere with a career here"</p> <p>Plans to join the airforce: "basic training in woodbourne in the south island the um i'm going for the university officer thing"</p> <p>Not interested in hunting, motorcycling, sports or partying</p> <p>Prefers to "go on the computer do weights um and watch tv"</p> <p>Not interested in Maori culture or language but sister is fluent</p> <p>Wants to live "some place flash"</p> <p>The houses in town N "won't cost enough for me to buy them"</p>	<p>Friends with Tim</p> <p>Always lived in the area</p> <p>Farming boy but "hate it" and "sick of the work"</p> <p>Life guard at pool</p> <p>Visits Taupo, Tauranga, Hamilton</p> <p>Auckland is "too big too messy"</p> <p>Not interested in Maori language</p> <p>Big group of friends</p> <p>Spirit of Adventure</p> <p>Rugby first fifteen, socce, hockey and "just about anything i can get into really"</p> <p>Enjoys outdoors and wants outdoor career, e.g. outdoor instructor</p> <p>"i'm gonna go to camp america as soon as i get out of school"</p>	<p>Friends with Steve</p> <p>Always lived in town N</p> <p>Positive about town N</p> <p>Wants to stay and get a builder's apprenticeship</p> <p>Visits New Plymouth and Whangarei where sister lives</p> <p>Not interested in the Maori language or culture: "some people that sort of try a bit too hard they go over the top"</p> <p>Doesn't mind if the language disappears: "oh it'd be sad but i mean their race is pretty much disappearing anyway so"</p>

2d: Town N boys deviating towards less linking /r/

Speaker	Mike	Kane	Joshie	Hui
Intercepts	-0.45395582	-0.387756675	-0.377573767	-0.230422883
MCI	7 Maori	0 Pakeha	2 Pakeha-Tokelauan	12 Maori-Pakeha
Sociocultural information	<p>7th lowest pre-vocalic /r/ intercept of all speakers</p> <p>Lives in “rough” part of town N</p> <p>Friends with many people</p> <p>Diverse network</p> <p>Catering for maraes</p> <p>Many Maori connections & relatives, some speak Maori fluently</p> <p>Says it’s “important that maori people should know how to speak maori cos it's the only thing (own) culture”</p> <p>Says he might do “any kind of law” and won't stay in town N</p> <p>Says there is “not much you can do” in town N “if you wanna get out and go round look around places travel”</p>	<p>Always lived in town N</p> <p>Mum is a teacher</p> <p>Visits grandparents near Rotorua regularly & New Plymouth relatives</p> <p>Hamilton for shopping</p> <p>Prefers town N: “there's no traffic and stuff and we're right by mountains lakes surrounded by rivers bush farm lands”</p> <p>Enjoys outdoor stuff: surfing, kayaking, river, mountains</p> <p>Doesn't enjoy the city</p> <p>Expresses confusion about future plans, may travel then come back, may go to University or college</p> <p>No interest in learning Maori</p>	<p>Friends with Mike but not particularly, it's just that Mike is a friendly guy</p> <p>Lived 30km away near prison where parents worked until 3 years earlier</p> <p>Most of relatives in Wellington and visits there occasionally</p> <p>Prefers town N</p> <p>Doesn't like big cities</p> <p>Doesn't visit other places much</p> <p>Does karate and watches t.v.</p> <p>Not into motorbiking or hunting</p> <p>Likes swimming, athletics</p> <p>basketball</p> <p>May join army or police</p> <p>Positive attitude to Maori language: “don't wanna lose the culture”</p>	<p>Came to NZ from west coast of the south island 8 years ago for Maori educational opportunities.</p> <p>Strong Maori identity, the language is “part of him”</p> <p>Parents & siblings speak Maori</p> <p>Attended kohanga in South island</p> <p>Mum works for Maori trust</p> <p>Lives on a farm</p> <p>Marae is on the farm</p> <p>Lots of different friends, some older and working in forestry</p> <p>Would maybe like to work in forestry</p> <p>“i wanna go to down south back down christchurch or to the west coast”</p>

2e: Town C girls deviating towards more linking /r/

Speaker	Sherry	Cassandra	Jemima	Emma
Intercepts	0.463211	0.438696	0.27359	0.148949
MCI	3 Maori-Pakeha	0 European	2 Maori-Pakeha	2 Maori-Pakeha
Sociocultural information	<p>Friends are Shena, Emma & boyfriend</p> <p>Always lived in town C</p> <p>Christian youth group</p> <p>Visits Tauranga, Te Puke, Turangi, Whakatane</p> <p>“Nearly all of my relatives live in other places”</p> <p>In a band</p> <p>Aspirations: “i’m definitely gonna like move and go up to Auckland or Wellington to one of the drama schools”</p> <p>Has Maori relatives and knows basics in language but: “i’m not really like too fussed with it”</p> <p>Would prefer to live in a small town in future because doesn’t like cities: “it’s like big and busy and so rushed and everything and like i’m not that sort of rushy big city person”</p>	<p>Friends with Kylie</p> <p>Born in Wellington, lived in town C since age 3, still calls Wellington home because: “town C’s just so little”</p> <p>Mum is British and “determined to keep her accent”</p> <p>Visit friends in Palmerston North</p> <p>Owns own car</p> <p>Works in local library</p> <p>Maori culture: “people try to force it on to others too much”</p> <p>“i’m not maori so why do i have to”</p> <p>“you’ve got like the maori benefits and stuff like that specifically for maori people”</p> <p>Wants to go to Otago university to study medicine</p> <p>Friends with sporty boys due to swimming and soccer activities</p> <p>Wants to experience city life</p>	<p>Many friends.</p> <p>Always lived in town C</p> <p>Relatives down south and Taupo</p> <p>Visits Auckland, Wellington, Picton, Invercargill</p> <p>Works at DIY store, plus sports family & friends</p> <p>“you feel comfortable in town C”</p> <p>Uses Maori vocabulary, identifies “thug and gangster” style</p> <p>“i think they’re a bit pushy with maori culture they think that’s new zealand culture when it’s not really”</p> <p>Rejects negative stereotype of Maori: “because i’m maori they expect that’s what i do”</p> <p>Wants to further education but torn between leaving for a job and stay close to friends and family</p> <p>Will probably leave because: “the people (who) i’m friends with are gonna go far anyway”</p>	<p>Friends with Sherry, boyfriend is Caleb</p> <p>Laser tag group</p> <p>Christian youth group</p> <p>Lots of friends</p> <p>Too boring in town C, wants to see the world</p> <p>Has got the travelling bug from her relatives</p> <p>Visiting family in Australia soon</p> <p>Visits relatives in Wellington</p> <p>Visits friend in Palmerston North at weekends</p> <p>Says Maori is not relevant to her because she is English</p> <p>Wants to go to University but not yet sure what she wants to study, maybe history or psychology</p> <p>Says about town C: “it’s so small ... i wanna go somewhere bigger”</p>

2f: Town C girls deviating towards less linking /r/

Speaker	Linzy	Nettie	Rena
Intercepts	-0.66093	-0.52233	-0.26647
MCI	2 Maori-Pakeha	2 Dutch	6 Maori
Sociocultural information	<p>Friends with Nettie</p> <p>Always lived on farm in rural area: “i'd rather live out in the country than in the city”</p> <p>Into motorcross culture: “goes with the territory”</p> <p>Talks about “townies” not getting the rural lifestyle</p> <p>Visits Palmerston North, Lower Hutt, Paraparaumu</p> <p>Shopping with friends in Palmy</p> <p>Cousins in Timaru and Christchurch, adjacent town A</p> <p>Wants to be a big animal vet</p> <p>Maori language & culture: “important ... to keep like basic knowledge of the language”</p> <p>Identifies more with local area than town C</p> <p>“if my family like my cousins and that stay down south i might move down there so i can be near them otherwise i'll stay in this area in a farming area</p>	<p>Friends with Linzy</p> <p>Came from Holland age 5, originally lived in Paraparaumu and still visits there occasionally</p> <p>Lives in rural place just outside of town C and went to primary and intermediate school</p> <p>Works at neighbours farm</p> <p>Still speaks Dutch</p> <p>Visits relatives in south island</p> <p>Aspirations to go to University and study law in Wellington</p> <p>Shopping with friends in Palmy</p> <p>Positive about maori culture but not involved: “it's like okay for like them but it's not really what i'm into”</p>	<p>Many friends and relatives in local area, at the beach & in adjacent town A</p> <p>Visits Palmerston North, relatives in Pahiatua & Auckland</p> <p>Positive about maori identity, not involved “as much as i should be”</p> <p>Elderly relatives speak maori</p> <p>Visits the marae and “we try to like bring it in”</p> <p>Likes town C: “cos it's like humble and you know you'll be safe cos you know everyone”</p> <p>Cities are “busier more people and like you're a stranger” but “it's pretty cool cos ... you see different people and ...meet new people”</p> <p>Not involved in farming</p> <p>Is a singer and wants to be involved in music industry</p> <p>Works at the local supermarket</p>

2g: Town C boys deviating towards more linking /r/

Speaker	Rob	Nate	Anthony	David
Intercepts	0.467334	0.449133	0.286854	0.231436
MCI	3 Maori-Pakeha	2 Maori-Pakeha	3 Maori-Pakeha	2 Maori-Pakeha
Sociocultural information	<p>Friends with Glen</p> <p>Lived in Fielding for 13 years</p> <p>Care of CYFS</p> <p>Enjoys making music</p> <p>DIY jobs: “i've just bought a new phone and new clothes”, “trying to just keep up with the fashion”</p> <p>Wants to be “contracting builder or accountant”</p> <p>Describes town C as boring</p> <p>Visits Palmerston North</p> <p>Criminal connections: “the people i hang around with they're pretty shocking”</p> <p>Gang culture & boys’ culture: weights, boxing, drinking</p> <p>Ambivalent about Maori culture: “oh i don't have nothing against maoris but i wouldn't live TOTALLY their way”</p> <p>“i couldn't live in town C ‘cos it's- just not big enough”</p> <p>“so that's the game plan move to somewhere like [adjacent town A] or Palmy”</p>	<p>Lives in nearby beach community where there's “nothing to do ... not enough people”</p> <p>Spends time with friends in town C</p> <p>Doesn't care about school, school work is not worth doing</p> <p>Visits relatives in Bay of Plenty</p> <p>Doesn't like towns and cities: “it's too much people i get angry”</p> <p>No future aspirations</p> <p>Doesn't care about Maori culture, Says he “wouldn't wanna move to a city”</p> <p>“not really interested in learning any other languages cos everyone speaks english”</p> <p>Doesn't go to Palmy often because “they just think they're all better than everyone”</p> <p>Negative perceptions of Auckland: “oh nah i definitely don't wanna go there”</p>	<p>Friends with Caleb</p> <p>Lives close to adjacent town B but on “the white boys side”</p> <p>Spends time in each town and in Palmy</p> <p>Adjacent town B: “think they're big tough people”</p> <p>Gets into trouble a lot: “my school file's about this thick”</p> <p>Not interested in school work</p> <p>Wants to be a “jackass”</p> <p>Part Maori & wishes he was browner: “cos you see all the like all the little white boys get picked on but none of the little brown arseholes get picked on”</p> <p>Pig hunting</p> <p>No clear aspirations but may go sheep or dairy farming</p> <p>Involved in farm culture</p> <p>Prefers town C to Palmy: “i don't mind going there once in a while but i don't like living there s- too- too many people”</p>	<p>Born in Palmerston North</p> <p>Lives in small rural place</p> <p>Maori connections in Rotorua: “go up there whenever there's like family occasions”</p> <p>Involved in farming</p> <p>Works weekends at pig farm</p> <p>Motorbike culture</p> <p>Spends time at beach with Grandad</p> <p>Plays hockey</p> <p>Outdoor life, trips to Coromandel with friends</p> <p>Not bothered about Maori culture: “don't really see the point”</p> <p>Aspires to join navy</p> <p>Underwater diving / welding: “like there's a lot of money in it”</p> <p>Town C slang: “their english isn't very good”, “a lot of people in town C some of them don't really get very far a lot of people on the dole”</p>

2h: Town C boys deviating towards less linking /r/

Speaker	Nathan	Brandon	Caleb
Intercepts	-0.62885	-0.55064	-0.52792
MCI	5 Pakeha	3 Maori-Pakeha	2 Maori-Pakeha
Sociocultural information	<p>Lowest pre-vocalic /r/ of the town C boys</p> <p>Lives on lifestyle block in rural area</p> <p>Works on dairy farm</p> <p>Leaving school to work full time on farm & study agriculture</p> <p>Strong connections to farming community</p> <p>Aware of farming speech style</p> <p>Visits relatives in Invercargill & Gisborne, visits Palmerston North most weekends with mates</p> <p>Lot of sports</p> <p>Likes small town life: “i don't like it when it's too busy i like it just pretty laid back”</p> <p>Positive attitude towards maori culture but not interested</p> <p>Not interested in city life: “i wouldn't want to live in Auckland”</p>	<p>Always lived in town C</p> <p>Lives with Nan</p> <p>Visits Dad in Palmerston North Mum is in Australia</p> <p>Close friend in Palmerston North</p> <p>Visits Maori relatives in Tauranga, Auckland & adjacent town B</p> <p>Prefers Palmy to town C because there is more to do but not a city person</p> <p>Laser tag group with Christy</p> <p>Works at supermarket</p> <p>Wants to keep working there</p> <p>Christian youth group</p> <p>Might like to be a missionary worker</p> <p>Strong Maori connections</p> <p>Went to a kohanga: “i been brought up around maori a lot and then i used to speak maori and now since i've started speaking english my maori's just going away further”</p> <p>Nan speaks maori at home</p>	<p>Lives in adjacent town A</p> <p>Caleb and Anthony get into a lot of trouble: “we're like the little hoodlams of [adjacent town A]”</p> <p>Brother in jail for drug dealing</p> <p>Girlfriend is Emma, Christian youth group</p> <p>CYFS care, been moved around a lot, lived in Christchurch & Auckland</p> <p>“i know that i have maori blood in me that's why i'm probably so hori”</p> <p>Positive about maori culture: “it is our culture like new zealand's culture”</p> <p>Low aspirations: “i'm thinking i'll get a dumb job”</p> <p>Says that town C is boring</p> <p>Attends Christian youth group but only because girlfriend Emma attends: “we're not allowed to go this week cos we caused some trouble”</p>

2i (a): Town N girls who produce /r/ in 3 non-pre-vocalic contexts

Speaker	Tilly	Anita	Tanya
Intercepts	1.32176078 (proportion: 0.080, 3 contexts)	0.54029651 (proportion:0.037, 3 contexts)	0.50198631 (proportion: 0.024, 3 contexts)
MCI	7 Maori	7 Maori	1 Maori-Pakeha
Sociocultural information	<p>Slightly negative linking /r/ use</p> <p>Always lived in town N</p> <p>Visits local marae for various events</p> <p>Visits lots of relatives in Auckland, bottom of South island, Tokoroa, Rotorua, Turangi, Taupo, Palmerston North</p> <p>Refers to South Island as a source of western influence</p> <p>Used to like Maori culture but now more into European styles: “i was like oh i wish i was white”</p> <p>Aspires to go to a Hamilton college to become a flight attendant</p> <p>Wants to travel</p> <p>Very pro-city, wants to leave the small town life behind</p> <p>Likes it busy</p>	<p>Neutral linking /r/</p> <p>Born in town N, lived in Wellington between age 6 & 12</p> <p>Mum works in Kohanga</p> <p>Shearing culture</p> <p>Aspires to be a shearer</p> <p>Likes getting into trouble & getting drunk</p> <p>Left school before I completed interviews</p> <p>Negative attitude towards town N</p> <p>Friends are: “all the Maoris.”</p> <p>Says she is halfcaste but: “not “THAT maori.”</p> <p>Attended kohanga</p> <p>Used to speak maori, but no longer does</p> <p>Relatives seak Maori but she says: “i don't really care”</p> <p>Not very geographically mobile Visits Rotorua, wants to live there when rich</p>	<p>Relatively negative linking /r/</p> <p>Friends with Tilly</p> <p>Born in Auckland</p> <p>Moved to town N aged 10</p> <p>Relatives still in Auckland, but does not want to be there</p> <p>Negative attitude towards Maori culture and language: “don't like doing that it's dumb”</p> <p>Describes town N negatively: “boring just like hoodlams and parties [tut] and it's hori”</p> <p>Preferred place is Hamilton</p> <p>Wants to leave “straight away after i finish school”</p> <p>Wants to “go to Uni up in Hamilton or something”</p> <p>Interested in photography</p>

2i (b): Town N girls who produce /r/ in 2 non-pre-vocalic contexts

Speaker	Dana	Sienna
Intercepts	0.70151254 (proportion: 0.043, 2 contexts)	0.62135274 (proportion: 0.040, 2 contexts)
MCI	7 Maori-Pakeha	1 Maori-Pakeha
Sociocultural information	<p>Fairly neutral linking /r/ Always lived in town N Lives in small rural area Parents / grandparents also live there Lives on lifestyle block: Geographically mobile, visits relatives in Wanganui, Hamilton, friends in Napier Likes shopping Describes town N as “kind of boring” and wants to “try somewhere else” Doesn't know yet what she wants to do in the future Says she is half and half Maori but doesn't think Maori language / culture is important</p>	<p>Lowest linking /r/ use of all girls Lived in skiing lodge in nearby town until 4 years ago Lived in Auckland from age 6 to 9 Moving to New Plymouth boarding school Ambivalent about Maori identity Put “Maori-Pakeha” on the form because her Nan would be disappointed otherwise. Feels “more Pakeha than Maori” Plays guitar Has “a big as group of friends” Likes aspects of both city and rural life No clear aspirations Wants to do something “arty” for a job and have an overseas experience</p>

2j: Town N girls with no non-pre-vocalic /r/

Speaker	Jenny	Charlotte	Amy	Launa
Intercepts	-1.63871559	-1.19459012	-0.89568291	-0.33374036
MCI	4 European	4 Maori	2 European	0 Pakeha
Sociocultural information	<p>Friends with Amy 7th highest linking /r/ intercept Negative attitude towards Maori language & culture: “it's going a little bit far” Discusses powhiri for the principal and “special programmes for Maori ... why should it just be for maori people” Distinguishes “nice” Maori from unpleasant types Aspirations: considering tourism or beautician Says she “hates” cities Does not want to leave town N Wants to move in with boyfriend Want to be godmother to friend's new baby Left school to have baby</p>	<p>Negative intercept for linking /r/ Friends with Hetty Lived in town N all her life Has been “everywhere” (Auckland / New Plymouth / Hamilton) Fairly strong attachment to town N Upset because she is being moved to Australia against her wishes Does not like busy places Wants to live in a rural / farming environment Does not express any particularly strong feelings about Maori ethnicity Expresses the view that Maori can be “neat and tidy”</p>	<p>Neutral to low linking /r/ Friends with Jenny Has always lived in town N Thinks cities are dangerous Describes town N as a “cute little town” Likes the fact that “everybody knows everybody” Says she likes living there Is involved in the farming lifestyle and wants to go to agricultural college Aspires to “be a farmer or something to do with farming” Thinks the incorporation of Maori culture is good: “I like how we've got our kapa haka and i like i like that because i think otherwise the culture will just be lost and the language if everyone doesn't carry it on ... i think it's good”</p>	<p>Friend is Emily Ride motorbikes on the farm together Has always lived in same rural area Dad is thinking of moving to Hamilton but she wants to stay in town N with friends Visits Taupo and Hamilton for beach for fishing with relatives Likes town N says it is “too busy in the city and you don't really get to know your community” Part time admin job at local solicitors Wants to be a builder: Negative about Maori culture:” i try to keep away from that actually” “it just frustrates me i hate having to do like when we had our kapa haka tournament”</p>

2k: Town N boys with highest and lowest users of non-pre-vocalic /r/

Speaker	Tim	Hui	Kane	Matt
Intercepts	1.56559479 Proportion: 0.040 (2 contexts)	-0.20275087 Proportion: 0.036 (1 context)	-0.56046794 Proportion: 0.000	Proportion: 0.000
MCI	MCI: 2 Pakeha	MCI: 12 Maori-Pakeha	MCI: 0 Pakeha	Maori-Pakeha
Sociocultural information	<p>Friends with NRYMP3</p> <p>Fairly positive intercept for linking /r/</p> <p>Has always lived in town N</p> <p>Positive about town N and wants to stay and get a builder's apprenticeship</p> <p>Visits New Plymouth and also Whangarei where his sister lives</p> <p>Not interested in the Maori language or culture and says that:</p> <p>"some people that sort of try a bit too hard they go over the top"</p> <p>Doesn't mind if the language disappears: "oh it'd be sad but i mean their race is pretty much disappearing anyway so"</p>	<p>Quite negative linking /r/ use</p> <p>Strong Maori identity</p> <p>Came to NZ from west coast of the south island 8 years ago for Maori educational opportunities. The language is "part of him"</p> <p>Uses Maori vocabulary</p> <p>Parents and siblings speak Maori</p> <p>Attended kohanga in the South island which parents ran</p> <p>Mum works for Maori trust</p> <p>Lives on a farm</p> <p>Marae is on the farm</p> <p>"i wanna go to down south back down christchurch or to the west coast"</p> <p>Has lots of different friends</p> <p>Some are older and working in forestry</p> <p>Would maybe like to work in forestry</p>	<p>Negative intercept for linking /r/</p> <p>He has lived in town N all of his life.</p> <p>Mum is a teacher</p> <p>Visits grandparents near rotorua regularly.</p> <p>Goes to New Plymouth "cos i've still got lots of relatives over there" and Hamilton for shopping</p> <p>Prefers town N: "there's no traffic and stuff and we're right by mountains lakes surrounded by rivers bush farm lands</p> <p>cos i do a lot of outdoor stuff"</p> <p>Likes surfing, kayaking, river and mountains</p> <p>Doesn't enjoy the city</p> <p>Doesn't know what he wants for the future but thinks he may go to University and travel around a bit then come back to town N</p> <p>No interest in learning Maori</p>	<p>Always lived in town N</p> <p>Visits relatives in Auckland</p> <p>Prefers Auckland to town N: "bigger more lights more everything really"</p> <p>Play basketball & soccer</p> <p>Hangs out at the gym with the cool boys</p> <p>Wants to go to college and train as a chef</p> <p>Distinguishes himself from: "the wannabe fellas who wanna try be cool"</p> <p>Lots of friends, they visit each other's houses & go to parties.</p> <p>Describes ethnicity as: "German Irish English & Maori"</p> <p>Not involved in Maori language and culture, doesn't think it's important</p> <p>Prefers city life to town N: "yeah i do prefer it in the city than here"</p>

2l: Town C girls with highest use of non-pre-vocalic /r/

Speaker	Jemima	Christy	Emma	Sue
Intercepts	1.44506571 Proportion: 0.015 (3 contexts)	1.2790968 Proportion: 0.014 (2 contexts)	0.73084328 Proportion: 0.009 (2 contexts)	0.59660187 Proportion: 0.009 (2 contexts)
MCI	2 Maori-Pakeha	7 Maori-Pakeha	2 Maori-Pakeha	3 Maori-Pakeha
Sociocultural information	<p>Always lived in town C</p> <p>Relatives down south and Taupo, also visits Auckland, Wellington, Picton, Invercargill</p> <p>Works at DIY store, plus sports family & friends</p> <p>“you feel comfortable in town C”</p> <p>Uses Maori vocabulary, identifies “thug and gangster” style</p> <p>“i think they're a bit pushy with maori culture they think that's new zealand culture when it's not really”</p> <p>Rejects negative stereotype of Maori: “because i'm maori they expect that's what i do”</p> <p>Wants to further education but torn between leaving for a job and stay close to friends and family, will probably leave because: “the people (who) i'm friends with are gonna go far anyway”</p>	<p>Lived in Nelson in the South Island for about a year at age 8 and lost Maori competence</p> <p>Lives near the beach</p> <p>Cousin is Rena, work together at supermarket</p> <p>Used to play rugby</p> <p>Maori culture involvement: kapa haka, Maori oratory competitions, Maori language competence, Maori performing arts, went to kohanga reo and could speak maori “but i kinda lost it”</p> <p>Definitely positive about Maori language and culture</p> <p>Goes to Palmerston North and adjacent town for shopping</p> <p>Has best friend in wellington</p> <p>Visits brother in Auckland who is a professional rugby player.</p> <p>Doesn't yet know what she wants to do in the future</p>	<p>Friends with Sherry, lots of friends, boyfriend is Caleb who is “trouble”</p> <p>Christian youth group</p> <p>Meets people from all over New Zealand</p> <p>Too boring in town C, wants to get out and see the world</p> <p>Has got the travelling bug, visiting family in Australia soon, visits relatives in Wellington</p> <p>Friend in Palmerston North visits at weekends</p> <p>Maori is not relevant because she is English</p> <p>Wants to go to University but not sure what she wants to study. Interested in history and psychology but would like an outdoor job</p> <p>Town C is “so small like um oh yeah i wanna go somewhere bigger”</p>	<p>Best friends with Sarah</p> <p>Lives in adjacent town A</p> <p>Dad is school teacher</p> <p>Positive about maori culture: “i'm all for like enforcing putting the maori culture into new zealand” but not actively involved</p> <p>“i'm j- just a kiwi i guess”</p> <p>Town C is “a dud town”</p> <p>“i'm pretty sure i was born to live in a city”, “i love going to wellington”</p> <p>Is “definitely” not staying</p> <p>Wants to move to Wellington, Auckland or Otago</p> <p>“think i'm the kind of person that was made just to not stay in one place all the time”</p> <p>Spends most time in adjacent town A & Palmerston North</p> <p>Visits relatives in Hamilton and Auckland sometimes</p> <p>Wants to be a psychologist or an accountant</p>

2m: Town C girls with lowest use of non-pre-vocalic /r/

Speaker	Kylie	Sarah	Charlene	Rena
Intercepts	-0.61233197 Proportion: 0.000	-0.48694285 Proportion: 0.000	-0.25737543 Proportion: 0.000	-0.22686374 Proportion: 0.000
MCI	MCI: 2 Pakeha	MCI: 7 Maori-Pakeha	MCI: 2 Maori-Pakeha	MCI: 6 Maori-Pakeha
Sociocultural information	<p>Friends with Cassandra, often go to Palmerston together</p> <p>Wants to go to University and become a doctor, lawyer or writer</p> <p>Fairly pro-city “i feel quite limited here because it's doesn't seem like there's many opportunities”</p> <p>Will probably live in a city</p> <p>Mum is a teacher</p> <p>Seems quite studious: “i used to play soccer but i just don't have enough time cos i take an extra subject at school”</p> <p>“i'll probably stay for seventh form cos i- kind of the career that i'll probably end up doing will probably need as much education as i can get”</p> <p>Positive attitude to Maori culture but not involved</p>	<p>Best friends with Sue</p> <p>Spends most time in adjacent town with Sue and for sports and boyfriend: “my home away from home”</p> <p>Plays in soccer, netball and hockey teams: “i love sports”</p> <p>Very large family and diverse contacts: “our family's like the biggest family in town C”</p> <p>Friends in other adjacent town also</p> <p>Mum is a bank manager</p> <p>Finds the “wannabe gangsters” annoying</p> <p>Did all the Maori classes at primary school but then got too busy with sports</p> <p>Visits the marae but doesn't speak the language much</p> <p>Nana is fluent</p> <p>Thinks city people are too busy and not “chillaxed” enough</p>	<p>Friends with Sherry</p> <p>Lived in town N since a baby</p> <p>Not involved in farming</p> <p>Often visits family in Wellington</p> <p>Has a friend in Tauranga who used to go to school C</p> <p>Says she is “not really a huge city kind of girl”</p> <p>“i really don't like city life i like it quiet and peaceful and i'd like to live in a you know this kind of place”</p> <p>Wants to go to Victoria university</p> <p>Positive attitude to Maori culture but not involved: “i just like experiencing different cultures and stuff like the kapa haka”</p> <p>Wants to be a writer or get involved with journalism</p> <p>Wants to get out and see the world: “i'd probably be in a city i want to get lots of travel in too”</p>	<p>Many friends and relatives in local area, at the beach & in adjacent town A</p> <p>Visits Palmerston North, relatives in Pahiataua & Auckland</p> <p>Positive about maori identity, not involved “as much as i should be”</p> <p>Elderly relatives speak maori</p> <p>Visits the marae and “we try to like bring it in”</p> <p>Likes town C: “cos it's like humble and you know you'll be safe cos you know everyone”</p> <p>Cities are “busier more people and like you're a stranger” but “it's pretty cool cos ... you see different people and ...meet new people”</p> <p>Not involved in farming</p> <p>Is a singer and wants to be involved in music industry</p> <p>Works at the local supermarket</p>

2n: Town C boys with highest and lowest use of non-pre-vocalic /r/

Speaker	Anthony	Caleb	Nathan	Glen
Intercepts	1.198964 Proportion: 0.019 (1 context)	0.907629 Proportion 0.016 (2 contexts)	-0.3755 (proportion: 0.000)	-0.25665 (proportion: 0.000)
MCI	3 Maori-Pakeha	2 Maori-Pakeha	5 Pakeha	4 Maori-Pakeha
Sociocultural information	<p>Friends with Caleb</p> <p>Lives close to adjacent town B on “the white boys side”</p> <p>Spends time in each town and in Palmy</p> <p>Adjacent town B: “think they're big tough people”</p> <p>Gets into trouble a lot: “my school file's about this thick”</p> <p>Not interested in school work</p> <p>Wants to be a “jackass”</p> <p>Part Maori & wishes he was browner: “cos you see all the like all the little white boys get picked on but none of the little brown arseholes get picked on”</p> <p>Pig hunting</p> <p>No clear aspirations but may go sheep or dairy farming</p> <p>Involved in farm culture</p> <p>Prefers town C to Palmy: “i don't mind going there once in a while but i don't like living there s- too- too many people”</p>	<p>Lives in adjacent town A</p> <p>Friends with Anthony: “we're like the little hoodlams of [adjacent town A]”</p> <p>Brother in jail</p> <p>Girlfriend is Emma, Christian youth group</p> <p>CYFS care, been moved around a lot, lived in Christchurch & Auckland</p> <p>“i know that i have maori blood in me that's why i'm probably so hori”</p> <p>Positive about maori culture: “it is our culture like new zealand's culture”</p> <p>Low aspirations: “i'm thinking i'll get a dumb job”</p> <p>Says that town C is boring</p> <p>Attends Christian youth group but only because girlfriend Emma attends: “we're not allowed to go this week cos we caused some trouble”</p>	<p>Lives on lifestyle block in rural part of town C</p> <p>Works on dairy farm and is leaving school to work full time on farm and study agriculture</p> <p>Strong connections farming community</p> <p>Aware of a farming speech style</p> <p>Visits relatives in Invercargill and Gisborne and visits palmerston north most weekends with mates</p> <p>Does a lot of sports</p> <p>Likes small town life: “i don't like it when it's too busy i like it just pretty laid back”</p> <p>Positive attitude towards maori culture but not interested</p> <p>Not interested in city life: “i wouldn't want to live in Auckland”</p>	<p>Friends with Rob</p> <p>Lived in Taranaki & Wellington</p> <p>Moved to town C aged 6</p> <p>Big family, visits Wellington, Taupo, Hamilton, Bay of Islands iwi, Cousin has lived in south island</p> <p>Positive attitude to maori: Went to kohanga and “used to do maori back last year ... and still try and learn it”</p> <p>Spends most time in Palmerston North & adjacent town A, feels more at home in Wellington</p> <p>Goes to parties, friends in adjacent town B, likes boxing & motor sports</p> <p>Says town C is boring</p> <p>Doesn't know about future, may try army or a trade</p> <p>Will probably move to Wellington: “i wouldn't wanna stay here i don't like it ... not really my place”</p>