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Aspiration in South African Indian English:

Emerging phonological norms in new dialect formation

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Abstract

This study falls into the field of linguistic variation and change, within the Labovian tradition of quantitative sociolinguistics. It deals with variable patterns of aspiration of the voiceless stops /p/, /t/ and /k/ (henceforth P, T and K) in South African Indian English, or SAIE, a language contact variety of English spoken as a first language by over three-quarters of a million people in Kwa-Zulu Natal. The data was extracted from R. Mesthrie's database of interviews conducted in Natal (present-day Kwa-Zulu Natal) in the mid-1980s.

After digitalising the data, each token of P, T and K for the casual speech of 34 speakers was coded for aspiration. The data was then analysed using the Varbrul statistical multivariate analysis program. A separate Varbrul analysis was conducted for each voiceless stop and correlations were examined for the linguistic factors of preceding and following phonological segment. In addition, correlations were considered for the following social factors: age, gender, ancestral language, lectal level, social status, education and urban or rural background of the informant.

The results show that aspiration is variable in this dialect in different ways for P, T and K. The most salient factor group for all three was the following phonological segment, with preceding segment generally not significant. In terms of social factors, the most significant factor groups were the ancestral language and lectal level of the speaker, again with slight differences for each of P, T and K.

This study corroborates parts of Mesthrie's hypothesis that some speech accommodation has occurred between speakers of South Indian languages (chiefly Tamil) in which the distinction between aspirated and unaspirated segments is not phonemic, and North Indian languages (such as Hindi and Urdu) in which it is. The overall picture that emerges is of the importance of the solidarity ethic in the initial stages of dialect formation in this speech community, whereas social status holds far less importance at this point.

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Chapter 1

Introduction and aims

1.1 Purpose of the study

This study will focus on the phonetic feature of aspiration in the dialect of South African Indian English (hereafter SAIE). SAIE is the first language of some three-quarters of a million people in the Indian community of South Africa, situated mainly in the province of KwaZulu-Natal. An analysis of the sociolinguistic history and syntactic variation of SAIE was compiled by Mesthrie (1992a), based on a corpus of 150 interviews conducted throughout the province of Natal (present-day KwaZulu-Natal) between 1987 and 1988. In terms of phonological study, the dialect remains largely untouched (exceptions include Naidoo, 1971; Bughwan, 1976, 1979 and Mesthrie, 2004).

Mesthrie (2004: 961) has claimed that the pattern of aspiration of voiceless stops in SAIE differs from the prototypical pattern of 'standard' English, or its nearest approximation in KwaZulu-Natal: White South African English. The aim of this dissertation is to investigate this claim by means of phonetic analysis of recordings from the mid-1980s database, in order to obtain empirical evidence of the aspiration patterns of /p/, /t/ and /k/ (hereafter P, T and K) in a sample of native-speakers of the SAIE dialect.

1.2 The field of Linguistic Variation and Change

This study is based within the Labovian tradition of variationist sociolinguistics. The field of Linguistic Variation and Change (or LVC) focuses on the variation which exists in the language of a speech community. Studies in the field aim to gather empirical evidence, by means of fieldwork, of the social significance of language variation.

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Chambers (1995: 12) cites one of the earliest linguists, Sapir, as saying that 'Everyone knows that language is variable' (1921: 147). However, most early linguistic theorists relegated variation to non-linguistic and non-social explanations such as random, or 'free', variation (Chambers, 1995: 13). Structuralists believed that linguistic rules applied 'categorically', subscribing to what Chambers terms the 'axiom of categoricity' of language (1995: 12). Any deviation from underlying structure was taken to be superfluous and not worthy of study.

One of the first and most famous studies in sociolinguistics is a survey conducted in New York City by Labov (1966: 90-135, cited in Chambers, 1995: 16ff). Labov studied the pattern of pronunciation of /r/, as well as other linguistic features previously thought to have random variation (Chambers, 1995: 16). Labov found that variations in pronunciation of /r/ occurred according to linguistic context, social context and stylistic context (Chambers, 1995: 17). As explained in Chambers (1995: 16ff), Labov's findings contrasted strongly with structuralist theory based on the idea of the 'homogeneous' language. Labov's study formed the foundation for the field of sociolinguistics, and more specifically for the subfield of language variation and change.

1.2.1 The linguistic variable

Studies in the field of LVC are based on the concept of the 'linguistic variable' (Feagin, 2002: 23). The variable is an abstract linguistic concept, which is manifest as different 'variants' under the influence of factors such as style, social class or linguistic environment (Feagin, 2002: 23). For instance, in the case of Labov's study outlined above, the variable (r) had two possible variants: [ɹ] and ø (Chambers, 1995: 17) according to differing contexts.

Following Labov's studies in the 1960s (e.g. Labov, 1966), the focus of fieldwork in LVC is on gathering data to reflect the most casual speech of interviewees. Labov believed that linguistic study should be based on the most natural speech style of the subject, which he termed the 'vernacular' – "the style in which the minimum attention is given to the monitoring of speech" (1972: 208). In order to achieve this,

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fieldworkers were advised to use a relaxed and informal style of questioning the subject, to keep the subject at ease. In this way, Labov claimed it was possible to gain access to the most informal and unselfconscious style of speech of the subject. One successful technique used by Labov, and popular with many researchers since, is to ask subjects the so-called 'danger of death' question (Labov, 1972: 209), whereby subjects are asked to recount a moment in which they feared for their lives. The emotional involvement in telling the story leads to an unselfconscious speech style.

1.2.2 Studies within the field

Further studies in LVC have gone on to consider variation according to sex and gender (Eckert, 1989; Eckert and McConnell-Ginet, 1999; Cheshire, 2001); style (Coupland, 1980; Bell, 1984) and age, particularly focusing on children and adolescents (Eckert, 1988; Labov, 1989; Kerswill and Williams, 2000). Milroy (1980) emphasised the importance and effect of *social networks* on language variation. A more recent study by Fought (1999) on /u/- fronting in Chicano English stresses the importance of selecting social factors, or combinations of factors, that are of relevance to the particular community being studied (Fought, 1999: 5). Fought (1999) shows that broad categories such as gender or social class are not sufficient to explain language variation in all cases. In this study, for instance, Fought found that gang membership usually led to less use of /u/- fronting in Chicano English (1999: 14).

There has been a marked dominance of Anglo-American studies in the field of LVC. Studies of varieties within the South and southern African context could enrich the field considerably. One such variety, the object of this dissertation, is South African Indian English. The following section serves to contextualise the variety in terms of its sociohistorical background.

1.3 Historical background of SAIE

1.3.1 Period of indenture in Natal (1860 – 1911)

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Mesthrie (1992a: 1-32) gives a detailed and well-researched account of the history of SAIE in Natal, which I summarise here in order to provide contextual background for the reader.

Mesthrie (1992a: 7) recounts that around 152 000 Indian immigrants came to Natal between 1860 and 1911. Most came to work on sugar-cane plantations as indentured labourers, since a shortage of workers existed in Natal at the time. The labourers came from various parts of India, with most hailing from the areas of Tamil Nadu and Andhra Pradesh in the south-east and Bihar and Uttar Pradesh in the north-east. There were more South Indian than North Indian immigrants (Mesthrie, 1992a: 7).

As the immigrants came from such a range of areas in India, they brought with them many different languages. Those from the South spoke mainly Tamil, Telugu and other Dravidian languages, while North Indian immigrants spoke a variety of Indo-European languages such as 'Bhojpuri, Awadhi and dialects of Hindi' (Mesthrie, 1992a: 7). These North Indian dialects came together to form one South African vernacular, usually termed 'Hindi' (Mesthrie, 1992a: 7). There were a 'small number of Muslim immigrants' who spoke Urdu (Mesthrie, 1992a: 7). Later, from around 1875, a new group of migrants arrived from the west of India seeking out work as traders (Mesthrie, 1992a: 9). They spoke western Indian languages such as Gujarati, Marathi and Konkani (Mesthrie, 1992a: 9).

As Mesthrie (1992a; 1995b) notes:

> The sociolinguistic milieu in which Indians found themselves was a particularly complex one. Not only did they lack a knowledge of English and Zulu, but they would not always have been able to converse amongst themselves. In particular, people from the north, speaking Indo-European languages, would not have been able to understand people from the south who spoke Dravidian languages.
> (Mesthrie, 1995a: 117 - 118).

Mesthrie (1992a: 12) estimates that only around two percent of immigrant Indians had any knowledge of English.

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1.3.2 The emergence and development of the SAIE dialect (1911 – 1980s)

Pidgin and creole studies (for instance Hymes, 1971; Sebba, 1997) have shown that in the context of the plantation system, the considerable linguistic challenges faced by labourers in a multilingual setting with no common language, or lingua franca, often lead to the formation of a pidgin. It therefore seems likely that a pidgin form of English would have developed under the circumstances outlined above. However, Mesthrie (1995a: 118) claims that this was prevented by the prior existence of a Zulu-based pidgin, Fanakalo. Fanakalo had its origins in the Eastern Cape and KwaZulu-Natal in the 1840s, i.e. before Indian immigration to Natal (see Mesthrie, 1989).

Mesthrie (1992a: 23) cites a passage from the Protector of Indians' Report for 1878 showing that Indians were using Fanakalo (referred to as *Kafir* or *Kitchen Kafir*) quite extensively, more so than English:

> Very often when Indians are employed in out of the way places, there exists a great difficulty in explaining themselves, there being very few who can speak their language. Fortunately, the Indians themselves are very quick in most instances in picking up both English and Kafir,'*but chiefly the latter* (p. 32; emphasis added)

With greater access to education, English (as a second language) came to play the role of main lingua franca amongst Indians by the early 20th century (Mesthrie, 2005: personal communication). It was used by Indians in communicating not only with Zulu speakers and their English employers but also amongst themselves if they did not share a common language, especially in cases in which one speaker spoke a North Indian and the other a South Indian language (Mesthrie, 1992a: 24).

English eventually came to replace the ancestral Indian languages as the L1 of the Indian South African speech community by the 1970s, through a process of 'language shift' (Mesthrie, 1995b: 252). The term 'language shift' denotes "the gradual replacement of one language by another as the common means of communication within a [speech] community" (Mesthrie, 1995a: 126).

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According to Mesthrie (1995a: 119), this occurred partly due to the fact that it was not possible for one of the ancestral languages to serve as lingua franca within the Indian South African community:

> The dominance of Hindi, the chief official language of post-independence India, would not have been acceptable to the large south Indian community, any more than Tamil would have been to the North Indians, or Urdu to the Hindus and Christians. English was in the end able to fulfil this role of 'horizontal' communication as well as of 'vertical' communication with the ruling class of colonial Natal. Even today, pride in one's ancestral language can very easily be mistaken for over-zealous allegiance to one subgroup within the larger Indian community.

The early stages of language shift began in the late 1950s and early 1960s. By the 1960s a considerable shift to English as L1 had occurred (Mesthrie, 1995b: 252) in spite of some hesitance and resistance on the part of the community (Mesthrie, 2005: personal communication). At this stage, an Indian language would usually be spoken in the home (Mesthrie, 1992a: 31). Often the youngest children in the family had already had some exposure to English by the time they entered school (Mesthrie, 1992a: 31).

In the context of the political conditions of Apartheid (1948 – 1992), Mesthrie notes that initially English was learnt in conditions that were not ideal for language acquisition: standards of education were not very high and speakers lacked substantial social contact with first language speakers of English (Mesthrie, 1995b: 251). By law at the time, Indian children were isolated from first-language English speakers in all areas of life: 'hospitals, homes, neighbourhoods, public facilities, schools and even universities' (Mesthrie, 1995b: 252). According to Mesthrie, these segregated conditions led to English most commonly being learnt as a 'second or third language outside the home' (Mesthrie, 1995b: 251). Some learnt in schools, while in the case of those with no formal education, English was learnt at work (Mesthrie, 1995b: 252). Mesthrie (2005: personal communication) stresses that later this second

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language, or L2, became a L1 in an era (1960 – 1980) when education in English had significantly improved.

Mesthrie (1995b: 251) uses historical records to deduce that there were four main sources of input that gave SAIE its current form:

> (a) schooling with teachers being native speakers of English; (b) schooling with teachers being non-native speakers of English; (c) contact with native speakers of English in Natal; and (d) contact with non-native speakers of English (chiefly Indians). [...] The number of non-native English-speaking teachers of English in Natal was at least as great as that of mother-tongue English teachers.

The dialect developed further through a process which Mesthrie refers to as a 'closed cycle of reinforcement' (Mesthrie, 1992a: 31):

> A *closed cycle of reinforcement* [emphasis mine] occurs in a situation involving language shift. The child (using child-language) is quite often a source for the grandmother's (or less commonly, the mother's) knowledge of English. The English of the mother/grandmother in turn reinforces the child's child-language.

By the 1970s, the shift to English (in the form of SAIE) as L1 was virtually complete, with young children having mainly a 'passive competence' in an Indian language (Mesthrie, 1992a: 31). According to Mesthrie (1995b: 252): 'English [had become] the first language of a majority of Indian schoolchildren'.

In the 1980s, the period in which the data for this study was gathered, English was effectively the home language, though many elderly speakers remained bilingual (Mesthrie, 2005: personal communication). However, the youngest speakers often lacked even a passive understanding of their ancestral languages, apart from Gujarati where a higher degree of maintenance was noticeable and still is (Mesthrie, 2005: personal communication). Mesthrie further notes that although Indian languages were introduced as optional school subjects in Indian schools in the early 1980s, not all pupils availed themselves of the option and many schools had difficulties in meeting

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minimum class sizes for such classes to run (since there were five languages involved, plus Arabic in some schools) (2005: personal communication).

Mesthrie's (1992a) book makes it clear that whilst English was the home language in the 1980s, it was a recognisably distinct variety of South African English. However, middle class and more educated speakers did approximate standard English syntax in formal or public styles (Mesthrie, 1992a: 33). They were effectively becoming bidialectal (Mesthrie, 2005: personal communication).

1.4 The structure of SAIE: The lectal continuum

SAIE shows a great deal of variation. Mesthrie's work (1992a) makes it clear that SAIE is not homogeneous, but rather consists of a range of 'overlapping varieties' (1992a: 43). Mesthrie refers to this as a 'polylectal continuum' (Mesthrie, 1992a: 43). Along this continuum, he classifies speakers according to terminology originating in creole studies: *basilect* refers to the form of language furthest from the standard variety; *acrolect* is the variety which differs least from the standard variety; while *mesolect* refers to varieties in the middle of the range (Mesthrie, 1992a: 43).

According to Mesthrie, the basilect is:

> a focussed variety, in the sense of Le Page and Tabouret-Keller (1985). That is, it has clearly defined characteristics at all levels of structure (phonetic, lexical and morpho-syntactic), unlike the other subvarieties of SAIE, which show greater fluidity... (Mesthrie, 1992a: 45).

Typically, the basilect is spoken by older, rural speakers with limited education (Mesthrie, 1992a; 1995b). However, Mesthrie stresses that it is spoken with extreme fluency and shows evidence of some contact with standard English (1995b: 254). The acrolect is described by Mesthrie (1992a) as characteristic of middle-class, younger speakers. It is very similar to standard Natal English, with the exception of 'its phonetics and two or three syntactic constructions' (Mesthrie, 1995b: 254). The 'mesolects' are the many varieties which fall somewhere between these two extremes and show the greatest amount of variation (Mesthrie, 2005: personal communication).

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Mesthrie (1995b: 255) likens these lects to interlanguage L2 varieties which have "stabilised at various points of an interlanguage continuum", but due to the historical conditions outlined above are used by the community as L1s.

Excerpts of speech from the three lectal varieties are given in Mesthrie (1992a: 44 – 45) and are repeated below in order to illustrate the various lects of SAIE for the reader:

Basilect:

QUESTION: How often (do) you go to Durban?

RESPONSE: Where we go! Hardly we go, visit Durban too. Sometime 'olidays, my 'usband take his brother's house an' his sistern-law there an' all of his connection. My connection-all staying Merebank. Sometime holidays we go, but this year 'oliday we had, y'know, like we had some problem an' all, like we want to go visit, I don' like to go stay that two-three weeks an' all – they living 'ard life like us too, they earn little bit money too. We must think too, we just can't go sit down, y'know, like brother or sister, anybody can be, like Durban-side they must pay water, this-thing rate, lights, that-all they must pay… (55-year-old, rural, female, working class)

(*Loose standard English equivalent* (Mesthrie 1995b: 255): We don't go. We hardly ever go to visit people in Durban. Sometimes during holidays my husband takes us to his brother's and sister-in-law's house or to other relatives. My relatives live in Merebank. We sometimes go on holidays, but this year we had some problems; even if we want to visit, we have to consider that to stay for two or three weeks is an imposition, since they live a hard life, with only a little money. We must be considerate; we can't just pitch up and remain there for long. Even if it's our own brother or sister, or anyone close, we have to realise that in Durban people have to pay for services like lights, water, etc.)

Mesolect:

QUESTION: Tell me about the time you had a heart attack.

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RESPONSE: [...] I went an' bought one soda water. So I had a soda water in the café, I took my coat out, took my jersey an' all out, I chucked it on the table. I sat, sat, sat – I said no', I felt I must reach home. I didn't trust anybody to drive that can because it was lent to me from somebody else. So somehow or other I managed, I jumped into the van, an' I drove the van an' came, I just came an' parked here an' lied down. My son was here, this second, third fellow of mine. Phoned by Dr T.G. Singh, while I'm lying on the bed, I donno what happened, the wife gave me little bit of sugar-water. I just drank that sugar-water, and eh, just when I finished drinking the sugar-water I became normal... (60-year-old, urban, male, working class)

Acrolect:

QUESTION: What would you say was the worst moment of your life?

RESPONSE: I would say it was my second year in university when I was doing law. And I'd switched from my BA in my first year to Law in my second year – because my first year BA- I mean, I got through so easily that I felt 'varsity is easy now, let me do Law. So I switched to Law, but unfortunately for me, I – towards the end of the year I – my wisdom, y'know – I had this wisdom problem– and I had it quite severely[1]. But I was determined to go on writing. And that year I was doing Latin and Private Law and all those things – five different courses, simply because my sister-in-law is now an attorney and she was doing most of those courses... (25-year-old, urban, female, middle class)

As Mesthrie notes further (1992a: 58ff), SAIE speakers tend to use a lot of 'style-shifting'. Speakers most commonly use a mesolectal style in informal situations. Mesthrie (2003: 120) claims that adults often use a lower lect when addressing children. To illustrate this style change, Mesthrie (2003: 120) refers to a speaker from the 1986-1988 database: an upper working-class male who spoke in a 'relaxed', 'mesolectal' style. When speaking to his six-year-old daughter, he used a basilectal style: *Tell, tell how you play colour-cards* and later, *Wait, wait, daddy talking* (Mesthrie, 2003: 120). In these cases, Mesthrie claims that repetition of the verb and

[1] Note that 'wisdom' here is short for 'wisdom tooth'.

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deletion of the auxiliary before the present progressive form show a shift to basilectal forms which Mesthrie terms 'downshifting' (Mesthrie, 2003: 120). Mesthrie notes that this was not an isolated incident, but was witnessed repeatedly in the presence of children.

1.5 The relationship between SAIE and Indian English

Trudgill and Hannah (1982: 105) note that English is 'widely spoken and written in India'. However, regarding numbers of speakers using English as an L1, they note: 'there are a number of native speakers of English in India, but these are far outnumbered by those who speak English as L2' (Trudgill and Hannah, 1982: 105). A primary difference between Indian English and SAIE is that SAIE has been used as an L1 through most of its history.

According to Mesthrie (2004: 954), although there are connections between SAIE and the Indian English spoken in India, these are not easily defined:

> The relationship between the two varieties [i.e. SAIE and the Indian English of India] is not straightforward [...] Some of the early input into [SAIE] was indeed directly from India, but of a diverse nature. This included: (a) the first generation of clerks, interpreters and teachers brought over in small numbers; (b) indentured workers of Christian background, mainly from South India; (c) some traders from India with a previous knowledge of English; and (d) political leaders from India (e.g. Gandhi, Sastri, Gokhale). But given the fact that most first generation immigrants did not learn English we should be careful not to overestimate the links between [Indian English] and [SAIE].

Mesthrie (2004: 954) adds that although some similarity with Indian English exists, which he claims is based on 'considerable transfer from the Indian languages', the unique mix of substrate languages in Natal resulted in a form very different from the Indian English spoken in India:

> However, in South Africa [i.e. Natal] the substrate comprised of both Indic and Dravidian languages, causing a blend of Indic and Dravidian influence in [SAIE]

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> that I suspect is not found in India. And, of course, the features of L1 English of Natal [i.e. White South African English of Natal] as well as contact with Zulu and (to a small extent) Afrikaans made [SAIE] further diverge from [Indian English].
> (Mesthrie, 2004: 955)

1.6 Phonological background

1.6.1 What is aspiration?

According to Gimson (1989: 152), the English voiceless and voiced stops /p, t, k/ and /b, d, g/ differ with respect to three phonetic features. The first, noted by Gimson (1989: 152) and the traditional distinction in phonetics, is place of articulation: bilabial, alveolar or velar. Secondly, the stops differ according to force of articulation: according to Gimson (1989: 152) more energy is required to produce 'fortis' /p, t, k/ than 'lenis' /b, d, g/. Finally, and of most relevance to this study, the stops differ in terms of aspiration: /p, t, k/ may be aspirated whereas /b, d, g/ are usually not (Gimson, 1989: 152).

Aspiration is most commonly defined as a voiceless period between the release of a stop and the start of voicing for the following segment (e.g. Lass, 1984: 91; Gimson, 1989: 152), which is accompanied by an audible release of air. In contrast, sounds which are completely unaspirated have no voiceless period, but are voiced from the point at which the stop is released (Ladefoged, 1993: 141-142). Sounds which are unaspirated therefore lack the accompanying release of air of aspirated sounds.

Voiceless aspirated stops are often characterised as having a long 'voice onset time' (Ladefoged, 1993: 142), or 'VOT', defined by Ladefoged (1993: 142) as the length of time after the release of a stop closure and before the start of voicing for the following sound.

Ladefoged (1993: 142) gives a second definition of aspiration in terms of states of the glottis i.e. the degree of opening of the vocal cords during speech. According to

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Ladefoged (1993: 142), "in general, the degree of aspiration will depend on the degree of glottal aperture during the stop closure". Ladefoged notes that a larger opening of the vocal cords when producing a stop leads to more aspiration following the segment (1993: 142).

Along with the three possibilities of voiced, voiceless unaspirated and voiceless aspirated stops, languages such as Hindi, Gujarati and other North Indian languages have 'murmured' stops as well. After the release of the stop closure there is a period of 'murmur', or 'breathy voice' before regular voicing starts (Ladefoged, 1993: 139). As Ladefoged explains, the vocal cords remain 'slightly apart' as for a voiceless sound, but the force of the airflow through the glottis is sufficient to cause the vocal cords to vibrate (1993: 139). The vocal cords either touch at one end, or are held close together without touching at any point, causing murmur (Ladefoged, 1993: 139).

The following table gives the full repertoire of Hindi stops (a hooked diacritic 'ɦ' following the symbol for the voiced stop is used to represent murmur):

Table 1.1 - Stops in Hindi

	Voiceless unaspirated	Voiceless aspirated	Voiced	Breathy voiced
Bilabial	pal 'take care of'	pʰal 'knife blade'	bal 'hair'	bɦal 'forehead'
Dental	tal 'beat'	t̪ʰal 'plate'	d̪al 'lentil'	d̪ɦar 'knife'
Retroflex	ʈal 'postpone'	ʈʰal 'wood shop'	ɖal 'branch'	ɖɦal 'shield'
Postalveolar affricate	ʧʌl 'walk'	ʧʰʌl 'deceit'	ʤʌl 'water'	ʤɦʌl 'glimmer'
Velar	kan 'ear'	kʰan 'mine'	gan 'song'	gɦan 'bundle'

(Source: Ladefoged, 1993: 145)

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Ladefoged and Maddieson (1997) maintain that neither of the two common definitions of aspiration (the first in terms of VOT and the second according to states of the glottis) is satisfactory on its own. Whereas the first definition excludes any specific reference to states of the glottis, the second neglects any mention of the timing of voicing (Ladefoged and Maddieson, 1997: 69). Both aspects are essential to a complete definition of aspiration.

Ladefoged and Maddieson (1997: 69)'s argument is that "if the definition emphasizes timing, rather than a specific glottal aperture, then pairs of sounds such as [p^h] and [$b^ɦ$] in Hindi [...] and many other languages can be grouped together as aspirated". They note that these sounds form part of the parallel series /p/, /p^h/ versus /b/, /$b^ɦ$/ in Hindi. However, they argue that since "sounds such as [$b^ɦ$] do not have a period of voicelessness after the release of the closure [...] aspiration cannot be defined [solely] in terms of such a period" (Ladefoged and Maddieson, 1997: 69).

Ladefoged and Maddieson (1997: 70) suggest the following, more complete, definition of aspiration:

> Aspiration is a period after the release of a stricture and before the start of regular voicing (or the start of another segment, or the completion of an utterance) in which the vocal folds are markedly further apart than they are in modally voiced sounds.

This definition allows for both voiceless aspirated and murmured aspirated sounds.[2]

1.6.2 Aspiration in English

Aspiration is generally position-dependent in English. As mentioned above, voiceless stops are aspirated in syllable-initial, stressed positions. This occurs categorically in

[2] Ladefoged and Maddieson stress that this does not mean to say that *all* murmured sounds are as aspirated, rather only those that have the 'articulatory timing pattern' outlined above (Ladefoged and Maddieson, 1997: 70).

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almost all varieties of English. Gimson gives a succinct summary of the prototypical aspiration pattern of English (1989: 153):

> When /l, r, w, j/ follow /p, t, k/ in [syllable-initial, stressed] positions, the aspiration is manifested in the devoicing of /l, r, w, j/ e.g. in *please, pray, try, clean, twice, quick, pew, tune, queue.* [...] In other positions, i.e. preceding a vowel in an unaccented syllable and finally, such aspiration as may occur is relatively weak, e.g. /p/ in *polite*, *lip.* When /s/ precedes /p, t, k/ initially in a syllable, there is practically no aspiration, even when the syllable carries a strong accent such as in the case of *pin* ['pʰɪn] and *spin* ['spɪn]. In final positions, i.e. preceding silence, /p, t, k/ may have no audible release.

Furthermore, Gimson (1989: 153) claims that in cases where /s/ precedes /p, t, k/ in stressed position (though not in the same syllable) there may be less aspiration on the following voiceless stop. For instance he notes that /k/ in *discussed* exhibits much weaker aspiration than /k/ in *custard* (Gimson, 1989: 153). According to Gimson, a similar effect is evident in the case of fricatives in a preceding syllable, which appear to have an 'absorption-effect' on the aspiration of the stop: "*half-past* and *push past* [versus] *go past*; *brief talk* and *finish talking* [versus] *no talking*; *rough-coat* and *fresh coat* [versus] *two coats*" (Gimson, 1989: 153)

1.6.3 Aspiration in White South African English

The pattern of aspiration as outlined above is the prototypical pattern for English, typically RP. In the case of SAIE, it is necessary to consider the pattern of aspiration of the closest approximation of RP in Natal at the time of data collection: White South African English.

'White South African English' (or WSAfE) is a term used to denote "the first language varieties of English spoken by White South Africans" [3] (Bowerman, 2004:

[3] In South Africa at the time of data collection, the policy of Apartheid resulted in segregation along racial terms. 'White' South African English is no longer confined only to white speakers of English in South Africa, though the racial label is still largely a reliable one.

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934). Lass's original (2002) classification of WSAfE into three social divisions is still largely relevant. These are:

> *Cultivated,* a variety which closely approximates RP and is associated with the upper class; *General*, a social indicator of the middle class; and *Broad*, which is associated with the working class and/or Afrikaans descent, and closely approximating the second-language Afrikaans English variety.
> (Lass, 2002: 109ff, cited in Bowerman, 2004: 934).

In terms of aspiration, 'Cultivated' and 'General' WSAfE have the regular pattern: voiceless stops are aspirated before a stressed syllable (Lass, 2002: 120, cited in Bowerman, 2004: 939). However, Lass (2002: 120) notes that in the case of 'Broad' WSAfE: lack of aspiration is a 'marker' of the variety (cited in Bowerman, 2004: 939).

1.6.4 Aspiration in the substrate languages

Hindi, Gujarati and Urdu are North Indian languages deriving from Sanskrit; Tamil and Telugu are both of Dravidian origin and are grouped as South Indian geographically (Bughwan, 1976: 55). I follow Bughwan (1976: 55) in taking Tamil as the most representative of the South Indian languages and Hindi the most representative of the North Indian languages in the Natal context.

As explained by Lass (1984: 4), the distinction between voiceless aspirated and voiceless unaspirated stops does not have a phonemic function in English, while in the North Indian (or Indic) languages it does. For instance, Hindi has the minimal pair [pʰə̤l] 'fruit', versus [pə̤l] 'moment' (Lass, 1984: 4). The full repertoire of Hindi stop consonants is given in Table 1.1.

Tamil and other South Indian languages generally do not have aspiration. However, there are some exceptions. Asher (1985) notes that in word-initial position, [k] may show some aspiration e.g. *kuʈu* 'give (imperative)' (Asher, 1985: 211), but that this aspiration is not phonemic. Similarly, Asher (1985) notes that dental [t̪] in initial

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position may exhibit some non-phonemic aspiration e.g. *taɳɳi* 'water' [tɑɳːɪ] (Asher, 1985: 212). Asher (1985) further notes that in some cases, long [p:] may show some aspiration when in intervocalic position e.g. *appaa* 'father' [ɑpːɑː] (Asher, 1985: 213). Krishnamurti (2003: 55) notes that some Telugu stops have aspiration. This he attributes to the influence of Sanskrit 'early in the history of the language' (2003: 55). These occur in learned and religious registers of Telugu, rather than colloquial speech (Mesthrie, 2005: personal communication).

The stop consonant inventories of Tamil and Telugu are given in table form in tables 1.2 and 1.3 below.

Table 1.2 – Modern Tamil stop consonants (modified from Krishnamurti, 2003: 62)

	Labial	Dental	Retroflex	Palatal	Velar
Voiceless	p	t	ʈ	c	k
Voiced	(b)*	(d)	ɖ	(j)	(g)

(Annamalai and Steever, 1998: 100-28)

[*Brackets denote a consonant with marginal phonemic status in the language, usually found in loanwords.]

Table 1.3 – Modern Telugu stop consonants (modified from Krishnamurti, 2003: 69)

	Labial	Denti-alveolar	Retroflex	Palatal	Velar
Voiceless	p ph	t (th) *	ʈ ʈh*	c ch	k kh
Voiced	b bh	d dh	ɖ ɖh	j jh	g gh

(Krishnamurti, 1998: 260)

[*Brackets denote a consonant with marginal phonemic status in the language, usually found in loanwords]

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1.6.5 Aspiration in Indian English

The voiceless plosives tend to be unaspirated in varieties of Indian English. Mesthrie's impressionistic hypothesis is that educated speakers of Indian English tend to de-aspirate more often than SAIE speakers, even in formal contexts (2005: personal communication).

1.7 Previous Studies

1.7.1 Studies on aspiration in other Indian Englishes

Not much is available in the literature on aspiration patterns in non-standard varieties of English. One such study by Sharma (2005) examines features of the dialect of twelve Indian English speakers in California: a 'non-native', 'indigenised' variety of English (Sharma, 2005: 194). In the second section of the study, Sharma examines three phonological features of American English in the speech of Indian English speakers: "rhoticity, *l*-velarization and aspiration" (Sharma, 2005: 208). Subjects were graded according to their usage of each phonological variable. Only the "least controversial, or most canonical environments were considered, in other words, those contexts that almost categorically have aspiration, *l*-velarization, and rhoticity in most American dialects (certainly in California)" (Sharma, 2005: 208). Thus, for aspiration only "pre-vocalic, non-cluster voiceless stops in primary stress syllables" were included. In this way a "maximal contrast between the anticipated American realization and the alternative Indian realization of the phoneme" could be obtained (Sharma, 2005: 208).

Sharma found that speakers' use of a particular phonological variant corresponded to their attitude towards American lifestyle and dialect (2005: 212ff), i.e. positive or negative orientation towards the American English dialect was shown to accord with the use or non-use of American English phonological variants, such as the aspiration of voiceless stops. Sharma suggests that this points to conscious dialect awareness on the part of the speakers, tied in with their identity as first generation immigrants to America.

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Sharma (2005: 211) attributes the lack of aspiration in many of the Indian Englishes to "a perception of light English aspiration as absence of aspiration in comparison to full contrastive aspiration in many Indian languages". However, in situations of contact:

> A perception of the difference between total unaspiration (in many Indian Englishes) and partial aspiration (in American and British English) in situations of contact may lead some speakers to begin to introduce aspiration when accommodating to the local variety.
> (Sharma, 2003: 140)

This observation is of some relevance to the findings of the present study.

1.7.2 Previous studies on SAIE

SAIE has been studied mostly as a contact variety that involves a great deal of syntactic variation (esp. Mesthrie 1992a). This study gives a detailed account of the process of language shift through which English, in the form of SAIE, replaced the ancestral Indian languages as the L1 of the Indian speech community in Natal. Mesthrie has also focused on SAIE lexicon (1992b).

More recently Mesthrie (2003) examines the syntactic choices of the first generation of children born after the period of language shift. In the early to mid-1990s, Mesthrie recorded exchanges with three "fifth generation, monolingual [Indian South African] children" outside of the classroom (2003: 119). Mesthrie's study examines the extent to which basilectal forms are retained in the language of these young children. The finding is that "overall, children are less basilectal than their elders" (Mesthrie, 2003: 126): they use far less basilectal forms in their speech, for instance, lower rates of deletion of auxiliary elements. Furthermore children do not appear to be "innovators" (Mesthrie, 2003: 126) in their syntax, but rather their role is "the selection and focussing of the very wide range of variants available to them in adult speech" (Mesthrie, 2003: 126). Mesthrie notes that some variation is found according to social class (2003: 126).

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There is wide scope for further research on varieties of English in South Africa. In particular, studies on the phonology of varieties of South African English are not numerous. SAIE is no exception: as the object of any serious phonological study, it remains largely untouched. The present study is breaking new ground in terms of providing quantitative phonological data for a variety of South African English that warrants considerable further attention.

The following section provides a review of literature on SAIE phonology, with emphasis on findings which are of specific relevance to this research wherever this may be the case.

1.7.3 Previous studies on SAIE phonology

Naidoo (1971) undertook a study to determine the extent to which the ancestral language of Tamil schoolchildren in Durban was reflected in their pronunciation of English (i.e. SAIE). She gives figures for the realisation of English vowels and common features of the English of Tamil speakers such as '*h*-dropping'. Naidoo (1971: 115) notes an 'ejective quality' to realisations of P, T and K in 17.72% of the children surveyed. For K, she attributes the 'sharp' quality to the various pronunciations of this sound in Tamil. Similar findings for T and P occur in English words with double '-pp- and -tt- clusters' in their written form as in e.g. '*butter* [but'tə]' and '*supper* [sup'pə]' (Naidoo, 1971: 116). This is attributed by Naidoo (1971: 116) to the 'sharpening' of the Tamil sounds [t̪] and [p] when they are doubled in Tamil. Naidoo found that P is realised as [p'] in 12.66% of the children studied and T as [t'] in 12.66% of instances. This ejective quality is probably due to affrication, especially of T, as reported later (§2.4). From the results of the survey, Naidoo (1971: 149) concludes that Tamil has a marked influence on both 'perception and production' of English sounds by the children in her study, despite the fact that the majority of children tested spoke only English.

Bughwan made contributed to the study of SAIE phonology in the 1970s. Her Ph.D. thesis, 'An Investigation into the use of English by the Indians in South Africa, with

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special reference to Natal' (1970), is summarised in Bughwan (1976). Bughwan (1976) gives a comparative study of the sound systems of English and the Indian ancestral languages, classifying the Indian languages into two broad groups: North Indian and South Indian. Hindi is taken as representative of the North Indian group (Hindi, Gujarati and Urdu) and Tamil as representative of the South Indian group (Tamil and Telugu). She gives the phonemic inventories of English, Hindi and Tamil, noting the differential role of aspiration in these languages.

Bughwan (1979: 517) claims that the phonological systems of the Indian substrate languages, rather than White South African English (or WSAfE), account for most of the non-standard phonetic features of SAIE, particularly in the case of consonants. However, the influence of WSAfE can be seen in some 'pronunciation traits' (Bughwan, 1979: 514). For instance, the word *huge* [hju:ʤ] is pronounced as [ju·ʤ] in the speech of some SAIE speakers: this is also seen in Broad WSAfE (1979: 515).

Another feature Bughwan (1979: 516) attributes to the influence of Broad WSAfE is the lack of aspiration of K, which also occurs in Broad WSAfE (see §1.6.3). Similarly, lack of aspiration of T occurs in words such as *told* and *protest* (Bughwan, 1979: 516). Some SAIE speakers use the retroflex /ʈ/, as is the case in Indian English (Bughwan, 1979: 516). In some instances, particularly in the case of vowels, Bughwan (1979: 512) claims:

> Pronunciation [...] cannot directly be attributed to either of these main determinants [Indian influence or WSAfE influence]. The comment would be that signs of a distinctive S.A.I.E. are emerging.

She cites the pronunciation of the word *tonsils* as [ʈʰɔnsəɬz], which is unique to SAIE (Bughwan, 1979: 514).

More recently, Mesthrie (2004) gives a concise overview of the phonology of SAIE. Mesthrie (2004: 961) claims that it is still possible to "deduce the [ancestral] linguistic background of older SAIE speakers on the basis of an 'articulatory setting' that involves murmur, or 'breathy voice' (see §1.6.1) for people of North Indian descent

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and its absence amongst people of South Indian descent (especially Tamil speakers)". However, he notes (2004: 961) that this difference is petering out amongst younger speakers. Mesthrie (2005: personal communication) conjectures that this is a reflection of the greater influence of South Indian languages, in which these features play a minor role, on SAIE than on general Indian English.

In terms of stress patterns, Mesthrie notes that SAIE is said to be a syllable-timed dialect rather than stress-timed but that research has not yet been done on this point (Mesthrie, 2004: 961). Mesthrie adds, however, that the stress pattern of the dialect seems different to that of general WSAfE, and the rate of speech faster (Mesthrie, 2004: 961). Another feature noted by Mesthrie is the shortening of long vowels; sometimes this applies to long vowels (2004: 961). Although most words show the same stress pattern as WSAfE, Mesthrie gives the following cases in which stress on an initial syllable is moved to the second, or third syllable (the stress mark precedes the main-stressed syllable):

accomo'date	immi'grate
corp(o)'ration	immi'grating
criti'cise	imi'tate
exagge'rate	in'dustry
re'gister	or'chestra

(Mesthrie, 2004: 961)

1.7.4 Research directions

As mentioned above, SAIE exhibits considerable phonological variation, which could be investigated in future studies. The following aspects could be pursued in future research. These are listed directly from Mesthrie (2004: 955):

a) [Relation to the] five substrate languages belonging to two distinct families: Dravidian (Tamil, Telugu) and Indo-European (Bhojpuri-Hindi, Gujarati, Urdu, Konkani and Sindhi/Meman dialect);
b) Links with Indian English (the English of India);

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c) Links with South African varieties of English, especially varieties spoken in KwaZulu-Natal;
d) Emergence of a core L1 SAIE phonology as younger speakers lose contact with the languages of their grandparents' generation;
e) Ongoing acculturation amongst middle-class speakers to "General" and "Cultivated" varieties of South African English as the rigid barriers between young people of different backgrounds weaken, especially in the post-Apartheid schoolgrounds;
f) Regional variation within SAIE, involving the main dialect in KwaZulu-Natal and smaller pockets in other provinces – Gauteng, Eastern Cape and Western Cape.

1.8 The variable and initial hypotheses

Mesthrie (2004: 961) has noted that the pattern of aspiration in SAIE does not resemble that of standard WSAfE. P, T and K have aspiration patterns that are different from 'standard' varieties of English (Mesthrie, 2004: 961).

The aim of this study, as stated in (§1.1) above, is to determine the distribution of aspiration of P, T and K in SAIE, i.e. which particular linguistic environments favour or disfavour aspiration. I also investigate the correlation, if any, between aspiration and independent social variables. Tokens drawn from a sample of 34 speakers taken from Mesthrie's original database (1987-1988) will be compared in order to ascertain whether a correlation exists between the aspiration of P, T, K (the dependent variables) and various independent variables, such as the linguistic group of the speaker. A number of social variables will be considered to ascertain whether they count as relevant factors: the age, level of education, gender and social status, as well as urban or rural origin of the speaker.

The initial hypothesis is that, to some extent, the level of aspiration present in the speech of an individual reflects the ancestral language of the speaker. Based on the fact that Indic languages have phonemic aspiration, while Dravidian languages largely lack aspiration, speakers of North Indian origin would be likely to show higher levels of aspiration than speakers of South Indian origin (see §1.6.4 on aspiration in the

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relevant substrate languages). At the same time, however, the sample as a whole should reflect the change in attitude from divergent South versus North Indian origins, to an Indian South African community with its own language norms. In this light, a tentative hypothesis is that older speakers may show more differences based on L1 substrate languages, while convergence occurs amongst younger speakers. That is, the difference between North and South Indians is not as stark as it might be: some convergence has taken place and continues to do so.

1.8.1 Working hypotheses regarding aspiration and linguistic environment

It is to be investigated whether the choice of aspirated P, T, K is constrained by the preceding phonological segment, i.e. whether it is preceded by a vowel, consonant, or silence. Preliminary analysis suggests that this choice is constrained by the following vowel, although this is probably not an obvious natural class such as front or high vowels. Analysis of the aspiration pattern in vernacular mesolectal speech points to the following in terms of the role that following linguistic environment plays (Mesthrie, 2004: 962):

> P is always unaspirated before /ɑ:/, /ɔ:/, /ʊ/, /ɒ/, /eɪ/, /oʊ/ and /ɛə/. Thus *park*, *pork*, *put*, *pot*, *pay*, *poke*, *pair* all have unaspirated initial P. Likewise P is always unaspirated before /r/ and /l/, e.g. in *pray* and *play*. This means that /r/ and /l/ are voiced in SAIE in contrast to many varieties of English in which the aspiration on initial consonants causes /r/ and /l/ to become voiceless. In all other contexts whether P is aspirated or not, depends on the particular word. Taking P before /e/ as an example, the following words always have aspiration - *pen*, *pebble*, *pet*; whereas *penny*, *pepper*, *petal*, *peck* are always unaspirated. It has still to be researched whether there is intra-speaker variability (i.e. pronouncing the same word differently) or variation across speakers. Speakers who produce aspiration invariantly with initial P, T, K would be judged as putting on a 'Speech and Drama' accent. The dialect has minimal pairs like *p^{h}ea* and *pee*; *p^{h}iece* and *piss* (pronounced [pi:s]). It also

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has near-minimal pairs such as *p*^{h}*et* and *petal, p*^{h}*en* and *pencil*. Similar principles apply to T and K.

Mesthrie (2004: 962) hypothesises that the SAIE mesolect seems to adopt a 'compromise' between the Hindi and Tamil phonological systems (outlined in §1.6.4 above) in terms of aspiration: "no aspiration before certain back vowels, certain diphthongs and both liquids [while] in all other contexts aspiration is word-dependent".

Mesthrie (in progress) is currently working on a project to ascertain whether this system is a stage in a lexical diffusion process. He notes that, in future, the aspiration of initial P, T, K in stressed positions may be categorical for SAIE (Mesthrie, 2004: 962).

1.8.2 Working hypotheses concerning social factors

The hypotheses take into account the sociolinguistic theory expounded in Chambers (1995: 250) who asserts that "the underlying cause of sociolinguistic differences, largely beneath consciousness, is the human instinct to establish and maintain social identity [...] Linguistic features mark off distinct social groups of various types". The linguistic variable can therefore be a linguistic indicator of the social identity of the speaker.

For the purposes of this study, essentially a pilot, investigatory study, it was decided to keep the focus on social factors as broad as possible. As such, numerous social factors for each respondent were considered. The social factors to be investigated in the study are the following:

(a) The influence of ancestral/home language. This may not be as significant as substrate influence theories alone would suggest. The compromise system outlined above reflects the social circumstances of the 1980s: the making of a new speech community from formerly disparate groups. A degree of speech accommodation should be found amongst speakers as they adjust to each other's L2 norms.

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(b) Social status may prove to be significant. A reasonable hypothesis is that a standard-like system may reflect a higher social status, as frequently found in the variationist literature (e.g. Labov, 1966). A social index score system was devised to accurately represent the social status level of each speaker.

(c) Level of education may be of significance, as frequently found in the literature on second language varieties of English (e.g. Ho and Platt, 1993). Some correlation may be found between higher levels of education and more standard-like use of aspiration.

(d) In terms of age, older and lesser educated speakers may show a less standard-like pattern of aspiration. Younger, middle-class and upper-middle class mesolectal and acrolectal speakers should show higher rates of aspiration. Accomodation is likely to occur amongst younger speakers whilst older speakers are more likely to exhibit differences based on L1 substrate languages, as Mesthrie (1992a: 85 – 96) found for relative clause syntax in SAIE.

(e) Rural versus urban background will be taken into account but may not be particularly influential, as the community is essentially urban-based. There may be some link between rural or urban background and High versus Low social status.

(f) Gender is one of the most salient social variables in the sociolinguistics literature and therefore cannot be ignored (Eckert, 1989). Amongst older SAIE speakers gender differences do not appear to be salient (Mesthrie, 2004: personal communication), though it is a particular strength of the Varbrul program that this can now be confirmed or disconfirmed.

The lectal group (basilect, mesolect or acrolect) of the speaker requires special attention. These terms refer to use of a focused, non target language (TL) -like system (basilect) and a variety targeted towards L1 WSAfE (the acrolect). The original classification (Mesthrie, 1992a: 43–45) deals with morpho-syntactic variation – i.e. the extent to which speakers speak fluently a non-TL system, a TL system, or something in between (the mesolect). Since phonetic analysis was not included in placing speakers impressionistically into one lect or another (Mesthrie, 1992a: 43), it

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is of some interest to see whether there is correlation between the lect of the speaker and patterns of aspiration. We could expect some correlation between a more standard-like aspiration pattern and acrolectal speakers, and a less-standard like aspiration pattern in the case of basilectal speakers.

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Chapter 2

Methodology

2.1. Original sample and data collection

As already mentioned, the data for this study were obtained from Mesthrie's database from the mid-1980s. Accordingly, my discussion of the sample and data collection for the 1980s study follows Mesthrie's (1992a: 34 – 43) account closely. The sample in Mesthrie's (1992a) original study consisted of 150 speakers selected to be representative of the Natal SAIE community as a whole. Mesthrie chose to study speech rather than writing since SAIE is primarily a spoken dialect (Mesthrie, 1992a: 35). The study was based on interviews conducted between 1987 and 1988 in areas chosen for their large Indian populations (Mesthrie, 1992a: 35). Mesthrie (1992a: 35) notes that this was done by consulting sociologists who had worked within the Natal Indian community:

> 1. *Coastal Natal*: the city of Durban (see Map 1), and two rural areas on the south coast – Umkomaas and Sezela (see Umzinto district, marked '3' in Map 2).
>
> 2. *The Midlands*: the city of Pietermaritzburg, and the country town, Howick (see Pietermaritzburg district, marked '8' in Map 2).
>
> 3. *The Uplands*: the city of Ladysmith (see Klip River district, marked '32' in Map 2), the town, Estcourt, and the country towns Mooi River (see Estcourt district, marked '19' in Map 2), Dannhauser and Glencoe (see Dundee district, marked '34' in Map 2).
>
> (Mesthrie, 1992a: 35).

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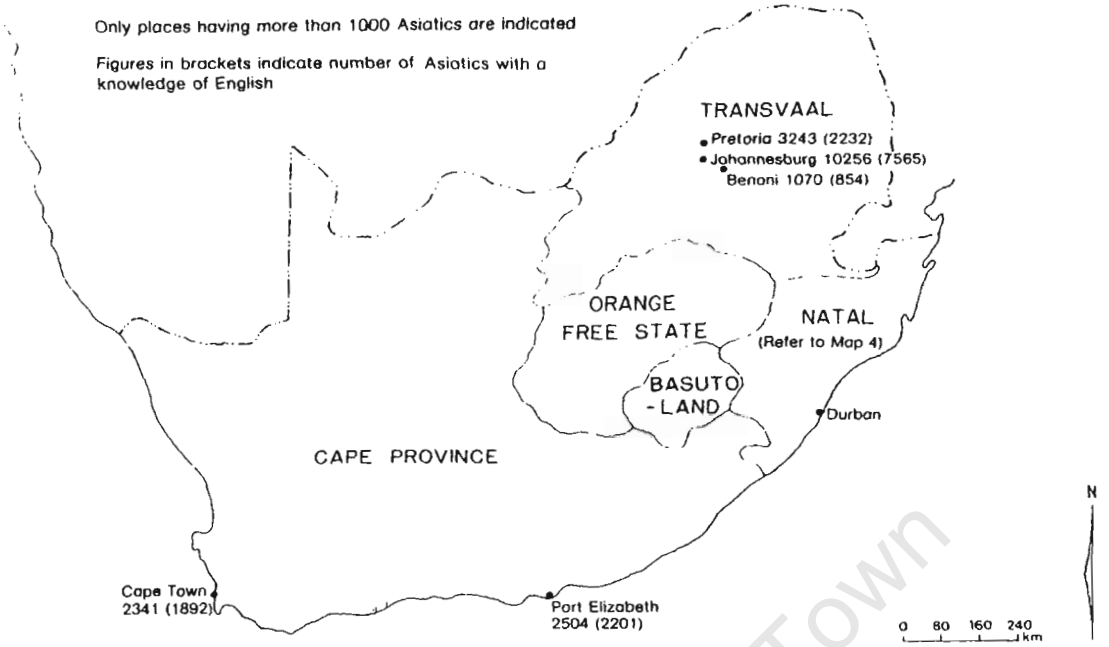
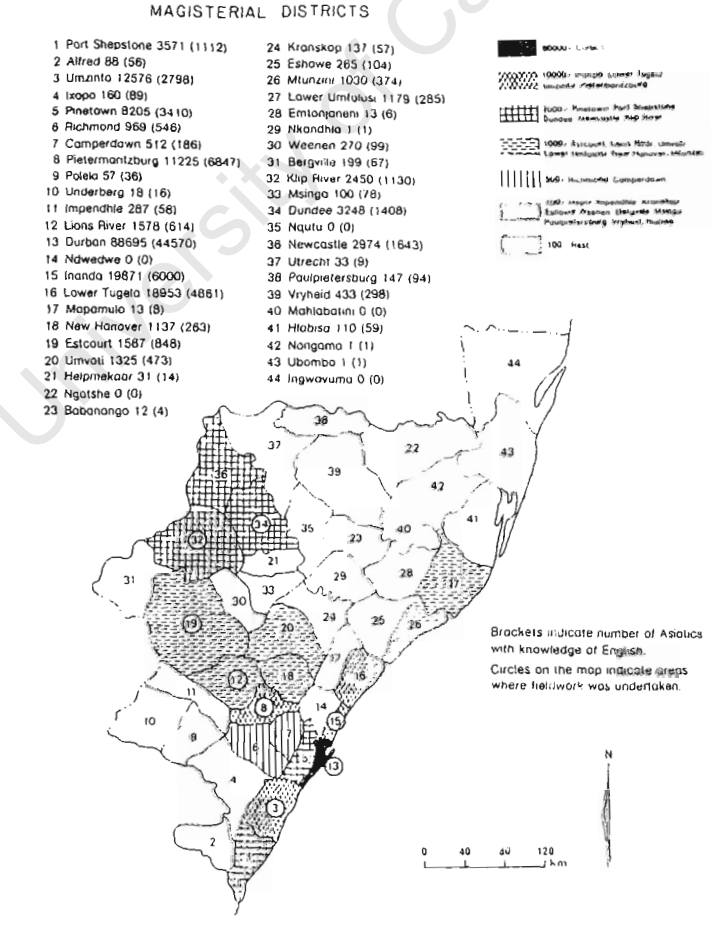


Map 1 – Distribution of Indians in South Africa – 1936
(Source: Mesthrie, 1992a: 36)



Map 2 – Distribution of Indians by magisterial districts of Natal – 1936
(Source: Mesthrie, 1992a: 37)

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Once these areas had been pinpointed, subjects were selected for the interviews by a systematic process of sampling within the areas. As Mesthrie (1992a: 36) explains, municipal data was used to decide on the number of interviews. Using these lists: "The number of pages was divided by the number of interviews required, yielding a number (say, *x*). An interview with one of the householders from every *xth* page was planned." (Mesthrie, 1992a: 36). Mesthrie (1992a: 36) notes that this method was largely successful, since occupants were generally home. In rare cases when they were not, or the property was not developed, an interview was conducted with the occupants of the next house in the street (Mesthrie, 1992a: 36). In the case of the rural areas of Umkomaas and Sezela, municipal data was not available (Mesthrie, 1992a: 37). Accordingly, Mesthrie made use of a 'judgement sample' in these areas (Mesthrie, 1992a: 37).

Mesthrie (1992a: 37) explains that the city of Durban required more careful sampling due to its 'different economic subgroups'. A representative sample was therefore chosen from high-, middle- and low-income areas (Mesthrie, 1992a: 37). According to Mesthrie (1992a: 37) these were Reservoir Hills and the city centre (high-income); Merebank, Overport, Clare Estate and the city centre (middle-income) and Chatsworth and Phoenix (low income).

The only criterion that determined selection of subjects for interviews was place of residence (Mesthrie, 1992a: 37). According to Mesthrie (1992a: 37), this was thought to be sufficient to account for factors such as social class, ancestral language and rural-urban background. For the variables of 'gender, age and education', these 'were controlled on an *ad hoc* basis, where possible' (Mesthrie, 1992a: 38). This was based on numbers of interviewees for each of these factors in preceding interviews (Mesthrie, 1992a: 38).

Mesthrie chose to conduct the interviews during the summer holidays from December to January (Mesthrie, 1992a: 36). In this way, he hoped to maximise chances of finding respondents at home and to prevent the data from being 'biased' against those not usually home during the day (Mesthrie, 1992a: 36).

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Mesthrie generally conducted an interview with one person per household, although at times when more than one person was eager to be included "a group interview was held" (Mesthrie, 1992a: 37). However, he notes (1992a: 37) that only one speaker per household was used for analysis, this being the most talkative speaker in the group.

Mesthrie (1992a: 222-223) compares his data with government census data of the time. These are repeated in the tables below. A 'very close fit' was found in many cases between the census data and data from Mesthrie's analysis, especially for education level, ancestral language, gender and rural-urban background (Mesthrie, 1992a: 38). In terms of age, Mesthrie's data differed slightly: it had a 'greater proportion of people over fifty and [a] smaller proportion of people under twenty' (Mesthrie, 1992a: 38). The census data did not include information on social class (Mesthrie, 1992a: 38). Mesthrie describes the Indian community of Natal as follows:

> Both the census and my survey give a picture of a community that is now largely urban, largely moderately educated (with seven to twelve years of schooling), with a majority of people having Tamil and Bhojpuri [i.e. Hindi] as ancestral languages.
> (Mesthrie, 1992a: 38)

Figure 2.1 – The sample distribution in the original study (150 speakers) in comparison with census data for Indians in Natal in the 1980s
(Adapted from Mesthrie, 1992a: 222 – 223)

I Ancestral language

	1970 census* (%)	SAIE sample (%)
Tamil	36	33.3
Hindi	32	37.3
Gujarati	13.7	8
Telugu	8.7	8.7
Urdu	9.1	10
Other	0.5	2.7
	100	100

(* 1985 figures are not usable since they reflect English as main language.)

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II	Age	
	1985 census (%)	SAIE sample (%)
15-19 yrs	16.8	7.3
20-30 yrs	28	17.3
30-40 yrs	22.8	24
40-50 yrs	15.8	16.7
50-60 yrs	9.4	22
60+ yrs	7	12.7
	99.8	100

(0-14 yrs excluded)

III	Education	
	1985 census (%)	SAIE sample (%)
No education	15.3	11.3
1 – 3 yrs of schooling	8.2	3.3
4 – 6 yrs	15.5	14.7
7 – 9 yrs	28.9	29.3
10 –12 yrs	27.8	32
12+ yrs (post-school)	3.8	9.3
Other	0.4	0
	99.9	99.9

(*People aged 0-14 years were excluded since they were not part of the SAIE survey)

IV	Gender	
	1985 census (%)	SAIE sample (%)
Male	49.2	44.7
Female	50.8	55.3
	100	100

V	Rural-urban domicile	
	1987* (%)	SAIE sample (%)
Urban	92.5	74.6
Rural	7.5	25.3
	100	99.9

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(* 1987 projection based on 1985 census (in *Current Population Survey: Coloureds, Asians and Blacks*).)

VI	Lect	
	(no census data available)	SAIE sample (%)
Pre-Basilect	n/a	4 (6)
Basilect	n/a	20.7 (31)
Mesolect	n/a	61.3 (92)
Acrolect	n/a	14 (21)
		(N given in brackets)

2.2 Interview methodology

A typical Labovian, variationist approach was used in Mesthrie's study, incorporating aspects of methodology recommended by Labov (1972). In section 1.2, I explained that the objective of variationist studies is to attempt to record the most informal speech style of informants, which Labov termed the 'vernacular' (1972: 208). In order to do this, Labov stressed the need for the adoption of an informal style by the fieldworker, and the use of questions designed to make the interviewee recount emotional stories and thus pay less attention to speech (1972: 208). Mesthrie also followed Labov's (1972: 209) call for 'individual, tape-recorded interviews' in order to obtain the best data (Mesthrie, 1992a: 39). Mesthrie made recordings in the homes of his interviewees, making use of a micro-tape recorder (Mesthrie, 1992a: 40-41).

Mesthrie's study also took into consideration the recommendations of Milroy (e.g. 1980) regarding the collection of data (Mesthrie, 1992a: 39). Milroy encouraged fieldworkers to get directly involved in the community being studied; to live within the community and conduct what she termed 'participant observation'(Mesthrie, 1992a: 39). As Mesthrie explains, her belief was that in this way the fieldworker can "access [...] vernacular forms" not available to an 'outsider' conducting an interview (Mesthrie, 1992a: 39).

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Mesthrie was in the fortunate position of having lived in the Natal SAIE community, and being himself a native speaker of the dialect. For this reason, he chose to conduct interviews rather become part of a new network within the community:

> The issue for this native speaker cum fieldworker is [...] whether his own speech networks are replicated on a wider scale. For this reason it seemed more important to spread my nets widely across the speech community in Natal and obtain statistical weighting for [...] highly variable phenomena I had been exposed to all my life. Entering some other network over an extended period of time would have entailed pretending to be an outsider attempting to become an insider (Mesthrie, 1992a: 40)

Mesthrie (1992a: 40 – 41) reports that his fieldwork interviews were conducted as informally as possible. For this reason, interviews were not 'pre-arranged', and Mesthrie did not mention the exact nature of the study but facilitated a relaxed conversation with the interviewee (Mesthrie, 1992a: 40).

Mesthrie aimed for a speech style that was friendly and informal, rather than formal, and found that he 'accomodat[ed] (unconsciously) to the type of speech favoured by the interviewee' (Mesthrie, 1992a: 40). It was hoped that in this way power dynamics would be kept on a par, so that the interviewee felt at ease to speak casually (Mesthrie, 1992a: 40). This was aided by being "a member of the same minority group within apartheid society" (Mesthrie, 1992a: 40).

The conversation topics were the same for each speaker; they were asked about their background and interests, daily routine and work, and finally asked to recount a time when something dangerous, or potentially fatal, had happened to them. This, Mesthrie notes, "most often led to accounts of motor accidents and swimming mishaps [and] proved to be very useful in extracting vernacular styles" (Mesthrie, 1992a: 40) of the interviewees.

In general, Mesthrie found that his interviewees were friendly, relaxed and talkative. Most were not put off by the fact that they were being recorded; on the contrary in many cases personal narratives were spontaneously related by the speaker.

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2.3 The present sample and methodology

The data for this study was collected from a sample of 34 speakers selected from the 1987-88 interview database. It would not have been possible to analyse more than 34 speakers in the detail that I did within the time available for this project. Speakers were selected according to age, sex, urban or rural background, lectal level (as per Mesthrie's original ranking) and ancestral language. Ages ranged from 15 upwards, since those aged 0-14 were excluded from Mesthrie's original sample. In addition, a social status index was devised in order to rank participants on a social scale (see §2.6.2 (6)). To ensure a representative sample, proportions of speakers from each category were controlled to fit as closely as practically possible with the original sample (and census data) proportions. The study was based in the Durban, Coastal Natal and Midlands areas. In effect, the geographical range was a triangle between Sezela (on the South Coast), Durban and Pietermaritzburg (See Map 1 and Map 2 above). It was decided to restrict the study to within this geographical area (i.e. excluding outlying areas of the Uplands such as Ladysmith in the Klip River district and the Estcourt and Dundee districts) in order to keep regional variation to a minimum.

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Figure 2.2 – The sample distribution

I	Ancestral language	n	%	V	Lect	n	%
	Tamil	12	35.2		Basilect	3	8.8
	Hindi	10	29.4		Mesolect	24	70.6
	Telugu	4	11.8		Acrolect	7	20.6
	Urdu	4	11.8			34	100
	Gujarati	4	11.8				
		34	100				
II	Age	n	%	VI	Social status	n	%
	15-30 yrs	9	26.5		Low	12	35.2

	30-50 yrs	16	47		Middle	15	44.1
	50+ yrs	9	26.5		High	7	20.6
		34	100			34	100
	(0–14 years excluded)						
III	Education			VII	Rural-urban domicile		
		n	%			n	%
	Primary	12	35.2		Urban	29	85.3
	High school	15	44.1		Rural	5	14.7
	College or university	7	20.6			34	100
		34	100				
IV	Gender						
		n	%				
	Male	19	55.9				
	Female	15	44.1				
		34	100				

In selecting the sample, speakers were chosen randomly from the original database, but in keeping with representative ratios for each of the above social factors. Two factors were taken into consideration in determining which interviews to use for analysis: an adequate speech sample, i.e. if no narratives occurred in the interview and limited responses were given by an informant, another interview would be drawn from the corpus; secondly the tape recording would have to be of sufficiently clear quality to afford auditory phonetic analysis. Acoustic analysis was not possible as the tapes contained a great deal of background noise (Mesthrie's original aim had been to undertake syntactic rather than phonetic analysis).

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Figure 2.3 – Social profiles of respondents by speaker number

S.No.	Age	Sex	Ancestral Lg	Lect	Occupation	Religion	Region
12	50 +	M	Urdu	Mesolect	Farmer	Muslim	Umkomaas
17	44	F	Hindi	Mesolect	Housewife	Hindu	Reservoir Hills
18	63	M	Hindi	Mesolect	Retired	Hindu	Durban
21	43	M	Urdu	Mesolect	Carpenter	Muslim	Durban
22	35	M	Tamil	Mesolect	Lay preacher	Christian	Phoenix
23	50 +	M	Hindi	Mesolect	Unemployed	Hindu	Overport
24	75	M	Hindi	Mesolect	Retired	Hindu	Overport
26	30 -	F	Gujarati	Acrolect	Housewife	Hindu	Overport
27	40 -	F	Tamil	Mesolect	Housewife	Hindu	Reservoir Hills
31	50 +	M	Hindi	Mesolect	Farmer	Hindu	Umkomaas
39	15	M	Telugu	Mesolect	Student	Christian	Phoenix
40	36	M	Tamil	Mesolect	Spraypainter	Christian	Phoenix
41	38	M	Tamil	Mesolect	Boiler-attendant	Hindu	Phoenix
42	37	F	Urdu	Mesolect	Bank clerk	Muslim	Reservoir Hills
44	35	F	Gujarati	Acrolect	Pharmacist	Muslim	Reservoir Hills
45	47	M	Hindi	Mesolect	School teacher	Hindu	Reservoir Hills
53	38	F	Urdu	Basilect	Housewife	Muslim	Pietermaritzburg
55	56	M	Hindi	Mesolect	Disability Grant	Hindu	Pietermaritzburg
61	16	M	Gujarati	Acrolect	Student	Muslim	Merebank
69	41	M	Telugu	Acrolect	School teacher	Hindu	Merebank
72	29	M	Tamil	Mesolect	Shipping supervisor	Hindu	Merebank
73	34	F	Telugu	Mesolect	Housewife	Christian	Merebank
77	30	F	Tamil	Acrolect	School teacher	Hindu	Reservoir Hills
79	43	F	Tamil	Mesolect	Secretary	Hindu	Reservoir Hills
81	43	M	Hindi	Mesolect	Machine setter	Hindu	Reservoir Hills
82	40	M	Tamil	Acrolect	School teacher	Hindu	Reservoir Hills
83	25	M	Tamil	Mesolect	Unemployed	Hindu	Chatsworth
85	65	F	Telugu	Basilect	Housewife	Hindu	Chatsworth
86	27	F	Hindi	Mesolect	Housewife	Hindu	Chatsworth
89	28	F	Gujarati	Acrolect	Pharmacist	Muslim	Durban
97	33	M	Tamil	Mesolect	Plant supervisor	Christian	Sezela
101	30	F	Tamil	Mesolect	Pharmacist	Hindu	Umkomaas
105	47	F	Hindi	Basilect	Housewife	Hindu	Mooi River
149	60	F	Tamil	Mesolect	Housewife	Hindu	Merebank

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After selecting the thirty-four speakers, the original tape-recorded interviews were transferred to digital, pc-compatible format in order to prevent breakage of tapes during analysis and to ensure maximum sound clarity. Handwritten transcripts were also transferred to pc for easier accessibility and better storage. The tapes were then examined in conjunction with the transcripts and appropriate sections of informal speech selected for examination. Each speaker was assigned a speaker number. For ease of reference, the original speaker number from R. Mesthrie's original study was kept.

In order to control for stylistic variation, it was decided to restrict analysis to casual speech only. For this reason, the first five to ten minutes of each interview were disregarded. Approximately 15–30 minutes of informal speech per speaker were used for analysis; in many cases these took the form of narratives.

The initial phase of the project consisted of phonetic training under the supervision of R. Mesthrie in order to become acquainted with the phonetic nuances of the SAIE dialect and to ensure accuracy in recognition of aspirated and unaspirated tokens. A preliminary coding system was devised whereby '1' was used to represent an aspirated segment and '0' an unaspirated segment. In rare cases where segments were unintelligible (due to bad tape quality, background noise, rapid speech, or stammering) these were coded as such and excluded from the final analysis. A '2a' symbol denoted 'unclear', whereas for problem cases '2b' denoted 'unsure'. There were very few 2a and 2b entries.

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2.4 Selection of tokens

Since the scope of the study is restricted to casual style only, this determined the number of tokens per speaker. In selecting tokens for analysis, only syllable-initial P, T and K segments in stressed positions were considered i.e. the most categorical environment for aspiration of voiceless consonants in English. This therefore excluded /s/-initial consonant clusters from analysis, such as *speech*, *school*, *stay*. These seem to be invariantly unaspirated, with a few exceptions. The strong aspiration associated with L2 'Afrikaans English' in South Africa is not discernible on

the tapes (see Watermeyer, 1993: 119). The analysis included clusters consisting of a voiceless consonant plus a glide or a liquid: *pray, play, pure, tutor, tune, quite, quiet* and so on. Words with standard English stress on a P, T or K- initial syllable (such as *take, parents, came, guaranteed*) were included, as well as general SAIE pronunciations with different stress patterns to WSAfE, such as: *cor'p(o)ration*, *imi'tate*, *in't(e)rested* and apparently unique words to the dialect: *mea'tarians* and *pam'panas* (a type of fish). Also included were tokens unique to a particular speaker in which pronunciation differed from WSAfE norms and resulted in stress on a P, T or K- initial syllable, such as: *'today, in'ter-marriage, Pro'testants, 'perspiration, 'police* or speaker-original words such as *super'tendent = superintendent* and *certifi'cated.* One respondent repeatedly used the word *prespire = perspire,* another used *encrouching = encroaching.*

The focus was restricted to content words, except for *can, can't, cannot* and *too* in positions of stress. A few instances of *across, because* were also included where pronounced with sufficient stress. Compound words were excluded unless stress was on the P, T, or K-initial syllable eg. *'tablespoon.* The compound *part-time* was pronounced in various ways in the data. In cases where either syllable was unstressed or very weakly stressed, it was omitted. In some cases equal stress on both syllables, or significant secondary stress on one of the syllables, meant both would be considered for analysis. The same format was followed for the compound word *Cape Town.*

The majority of words of non-English origin were omitted from the analysis, for example Afrikaans, Zulu and Indian names of towns, cities were excluded throughout – *Transvaal, Isipingo, Kharwastan.* In particular cases it was felt that certain town names that were of English origin and in common use in the dialect should be included in the count, for instance *Pinetown, Clairwood, Cliffdale, Cato Ridge*. First names were included whether of Indian or English origin: *Priya, Peter*. Surnames were excluded. Initials were included- thus in the case of the name *K.L. Reddy, K* was counted. In the case of the name of a certain local hospital, *R.K. Khan,* which

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occurred repeatedly in the Durban interviews, it was decided to include the initial *K* but exclude the surname *Khan* in keeping with the exclusion of surnames in general.

As Mesthrie (2004: 960) has noted: "/θ/ and /ð/ are regularly realised as dental stops /t̪/ and /d̪/, thus *theme* = [t̪i:m], *weather* = [weḍɛ] and *then* = [d̪en]". In some cases, word-initial /t/ is replaced with the dental stop /t̪/. For instance, a number of words "dealing with the mouth [...]: *tooth, teeth, tongue, tonsil* all have an initial dental stop, making a set with *throat*" (Mesthrie, 2004: 960). These words were consequently excluded from analysis, along with *taught* which also begins with a dental [t̪] (Mesthrie, 2004: 960), although *teach*, *teaching* and so on which do have the standard alveolar fricative were included.

The number of tokens per lexical item was restricted to ten as following Tagliamonte (ms: in press), in order to prevent an over-representation of any one particular word in the speech of an informant. The aspiration values for tokens were obtained through a three-step process: an initial listening session in which I worked with the recording in conjunction with the transcript and highlighted all appropriate tokens to be included in the analysis; a second stage, during which I compiled the initial values for each token; and finally a reinforcement stage together with my supervisor in which we listened to all recordings for a final time and ensured the accuracy of values for each token.

Each token was assigned a specific token number. In conjunction with the transcripts and the speaker number of each speaker, in this way it was possible to keep track of each individual token and its position in the interview database. In order to account for the influence of linguistic environment, a record was also kept of the final segment of the preceding word: whether this was a vowel or consonant, or whether the segment was preceded by a pause or silence.

In the analysis phase, a number of instances of T and K were found to have a 'strident' quality which led to difficulty in identifying the presence or absence of aspiration[4]. These appear to be described as 'ejectives' by Naidoo (1971: 115) in the

[4] Watermeyer (1996: 107) notes that "lack of aspiration in word-initial plosives is a salient feature of Afrikaans English" in Cape Town: an L2 variety of English spoken by mother-tongue Afrikaans speakers. In the case of

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speech of Tamil SAIE speakers. Perceptually, it was felt that these sounds were aspirated. However, consultations with Roger Lass (phonetician emeritus at UCT) lead us to treat these segments as affricated /t/. This is a [t] sound produced with a stop and fricative mode of contact. The accompanying high frequency friction is acoustically somewhat similar to aspiration (Lass, 2005: personal communication), but is suggestive of affrication *without* aspiration. These sounds were accordingly scored as 0 for the purposes of this study. Gimson (1989: 160) has noted these affricated stops in "popular London speech", particularly in the case of the alveolar sounds. He also notes the affrication of [t], [d], [k] and [g] when in stressed positions: *time, day, come* and *good* (1989: 160) and points out that this occurs in emphatic speech. A few instances of K in this study were found to exhibit affrication (also noted by Naidoo, 1971: 116). Affricated T typically occurs before high vowels, as in *two*, *ten*, *tech, time* etc in my data. However, I did not pursue this allophonic distribution for the purpose of this study. A further study is planned to investigate this property of T and K. A total of 2842 tokens were used for analysis, an average of 83.6 per speaker. The number of tokens per speaker ranged from around 30 tokens to over 150 depending on the number of realisations of the phonological feature (i.e. P, T and K) per interview.

2.5 Coding and statistical analysis

The next stage of the study was a process of coding into a statistical analysis program in order to obtain quantitative results from the data. There are a number of software packages available to do this, the most commonly used being Varbrul in the case of sociolinguistic studies (Bayley, 2002: 124). Varbrul is a program designed specifically for variationist studies (Bayley, 2002: 124), and enables the user to gauge how numerous social or contextual factors (independent variables) interact to affect the linguistic variable under study (the dependent variable), in this case aspiration of the voiceless stops P, T and K. The specific version of the program used for this study is GoldVarb2001 (Robinson, Lawrence and Tagliamonte, 2001) – a multivariate analysis program for Windows based on GoldVarb for Macintosh (Rand and Sankoff, 1991).

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some speakers who used a dental rather than alveolar /t/, she notes that it was difficult to discern whether the sound was aspirated or ejected (1996: 107).

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Bayley (2002: 126 – 129) provides a succinct account of the workings of the Varbrul programs. The reader is referred to this text, as well as to Young and Bayley (1996) for a more detailed account of the workings of the program. This falls outside of the scope of this dissertation. Some important terminology relevant to the interpretation of the results generated in the Varbrul analysis conducted in this study is given below (taken from Bayley, 2002: 126 – 129) to aid the reader:

(a) Input probability:

> This is the overall likelihood that speakers will choose the variant selected as the application value (i.e. the value that counts as an application of the "rule" being investigated) (Bayley, 2002: 127).

For instance, in a study conducted by Bayley on the deletion of *-t* and *-d* in Tejano English, the program yielded an input probability of 0.469 (Bayley, 2002: 127). This means that *–t* and *–d* are likely to be deleted almost 50% of the time 'regardless of the presence or absence of any other factor in the environment' (Bayley, 2002: 127).

(b) Weightings:

> The program provides a numerical measure of the strength or influence of each factor relative to other factors in the same group. These values, known as 'weightings', range from 0 to 1.00. A value or weight between 0.50 and 1.00 indicates that the factor favours the use of a variant relative to other factors in the group (Bayley, 2002: 126 -127)

Based on (a) and (b) above, Varbrul provides a probability for each social/contextual feature entered into the program (Bayley, 2002: 126). For instance: factors such as the ancestral language of the speaker and the preceding phonetic environment in the case of the present study. As Bayley (2002: 126) explains:

> This is done by combining the input probability (p_0, the likelihood that the "rule" will apply regardless of any other factor in the environment) with the [...] factor weight[ing]s from each of the factors in the model (*p1, p2... pn*) according to the formula:

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$$p = \frac{p_0 \text{ x } \ldots \text{x } p_n}{[p_0 \text{ x } \ldots \text{ x } p_n] + [(1 - p_0) \text{ x } \ldots \text{ x } (1 - p_n)]}$$

(Bayley, 2002: 126)

(c) Log likelihood:

This is a measure of 'goodness of fit' (Bayley, 2002: 128) between the results obtained for a particular run and the data. Bayley (2002: 128) explains that figures closer to zero reflect a better 'fit' to the data than higher figures. Bayley (2002: 128) refers the reader to Young and Bayley, 1996: 272-3 for a detailed explanation of how this statistic is calculated.

(d) Step-up and step-down run:

The program tests which particular factors have a significant effect on the variation by performing a step-up and step-down run (Bayley, 2002: 128). In the step-up run each contextual factor (known as a 'factor group') is added to the model one by one to test its influence on the overall result; the process is continued until all factor groups are included (Bayley, 2002: 128). Once this has been done, the step-down run removes each factor group one by one until a single group remains (Bayley, 2002: 128). The program then reports which of the factor groups have a significant impact on the variation (a probability of less than 0.05, i.e. a less than 1 in 20 chance that the variation is induced by chance) (Bayley, 2002: 129). If the best step-up and step-down runs do not yield the same groups, the data may include inaccuracies. The weightings obtained for each factor in the best step-up and step-down runs reflect the results of the study and any factors not included here are not significant to the variation under analysis (Bayley, 2002: 129).

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2.6 Coding scheme

Bayley (2002: 125) recommends including all factors that could have an impact on the choice of a variant, though he notes each should be based on a 'well-motivated

hypothesis'. As this is essentially an exploratory study into an untouched aspect of phonology in SAIE, and its links, if any, to social variables, the decision was taken to include all factors thought to have potential relevance, in order to test for links to aspiration.

2.6.1 Coding for linguistic environment

Three linguistic factors were coded for: the dependent variable and two independent variables. The dependent variable was assigned a value of 0 or 1: '0' denotes absence and '1' presence of aspiration. For the two independent variables: the preceding phonological segment was coded as 'C' to represent a preceding consonant, 'V' in the case of a preceding vowel and 'P' to denote an audible pause, used in cases of ellipsis and utterance-initial segments. A system of coding from A – T was devised in coding the following phonological segment. Each vowel or cluster was assigned a code from A – T. Below this is given in the form of an adaptation of Wells' (1982, xviii-xix) standard lexical sets. These are adapted to include common SAIE words with stressed and word-initial P, T, K consonants. In the case of liquid or glide clusters, these were coded as one group of consonant clusters (CC-, coded as 'S' in table 2.4 below).

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Table 2.4 - Vowel codes according to adapted lexical sets

Wells' lexical set	Code	Vowel	P, T, K adapted lexical sets		
KIT	A	ɪ	PIT/PICK	TIP/TICK	KIT/KICK
FLEECE	B	iː	PEA	TEA	KEEP
DRESS	C	e	PET	TEN	KEPT
TRAP	D	æ	PAT	TAP	CAT
START	E	ɑː	PART	TART	CART
STRUT	F	ʌ	PUTT	TUCK	CUT
CLOTH	G	ɒ	POT	TOP	COP
NORTH	H	ɔː	PORT	TALK	CAUGHT
GOOSE	I	uː	POOL	TOO	COOL
FOOT	J	ʊ	PUT	TOOK	COOK
NURSE	K	ɜː	PERK	TURN	CURT
FACE	L	eɪ	PAY	TAKE	CAME
GOAT	M	oʊ	POKE	TONE	CONE
SQUARE	N	ɛə = eː	PAIR	TEAR (v)	CARE
CURE	O	ʊə	POOR	TOUR	-
PRICE	P	aɪ	PIE	TIME	KITE
MOUTH	Q	aʊ	POW(ER)	TOWN	COW
NEAR	R	ɪə	PEER	TIER	-
CHOICE	T	ɔɪ	POINT	TOY	COIL
Clusters	S	CC-	pl-, pr-, pj-	tr-, tj-, tw-	kl-, kr-, kj-, kw-

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2.6.2 Coding for social variables

In addition to linguistic factors, seven social factors were coded for in the initial coding stage: age, gender, ancestral language group, level of education, rural or urban background of the respondent, a socioeconomic index score and lectal group (basilect, mesolect or acrolect) of the speaker. These are explained in further detail below:

1. Age

In terms of age, speakers were assigned into three groups: Younger, Middle and Older. Children under the age of 14 were excluded from the analysis, as in the original study. These were defined in terms of the stages of language shift in the community. The Older group, aged fifty years and older at the time of the interviews, had English as an L2 in the time pre-language shift. Speakers between the ages of thirty and fifty years (classified as Middle: 'M') at the time of the interviews form part of the bilingual generation, whilst the Younger group of speakers (classified as 'Y') who were under thirty years of age at the time of interviews, are the 'language shift generation' and have English as L1, and Indian languages as L2 or limited knowledge of ancestral Indian languages.

2. Gender

Speakers are coded as 'M' to denote male, or 'F' to denote female according to their gender.

3. Ancestral language

Speakers are classified into one of five ancestral language groups according to their language background: Hindi (coded as 'H'), Tamil ('T'), Telugu ('V'), Urdu ('U') and Gujarati ('G'). These may need to be recoded at a later stage into language groups: i.e. Dravidian languages in one group and Indic in a second.

4. Urban or rural background

Speakers are classified according to urban or rural background: 'U' to denote urban origins and 'R' to denote rural. The majority of speakers in study were of urban

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origins and had lived in a city throughout their lives. Three of the speakers coded as Rural were farmers and two had lived in rural areas throughout their childhoods.

5. Level of education

Level of education was divided into three categories: those who had schooling up to primary school level, i.e. up to seven years of schooling, were coded as 'P'. Speakers with at least some high school education were coded as 'H'. Speakers with a degree or diploma from any university, college or technikon were coded as 'C'.

6. Social status

In many sociolinguistic studies, a socioeconomic index scale is used to rank participants in terms of social status. These are designed to accurately designate social status to members within the specific community under study. For instance, in Trudgill's study in Norwich (1974 in Ash, 2002: 409) an index incorporating six social factors was used: the informant's "(1) occupation; (2) father's occupation; (3) income; (4) education; (5) locality; and (6) housing" (Ash, 2002: 409). Each of these features was given a score between zero and five, and the scores were totalled to achieve an overall index (Ash, 2002: 409).

Similarly, in this study a social status index was devised to apply within the SAIE community of the 1980s incorporating the following factors: income, residential area/type of housing, parents' education and profession. Mesthrie (1992a) had not found it necessary to do this. A score for parents' education rather than the informant's education is given for two reasons. Firstly, as the education of each speaker was coded as a separate factor group, it was desirable not to duplicate this factor. Secondly, in a situation of social change, parents' education is a better indication of social class than an individual's education. For example, SAIE speaker *x* may be at college on a bursary but be a poor rural dweller of social class L, whereas speaker *y* may have stopped school at high school level but be of social class M if his or her parents were well educated. For each factor a score from one to five was given and the total score summed to give a score out of 20.

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Table 2.5 – Social status index score breakdown

Income:	None	1
	Low < R8000	2
	Mid < R15000	3
	High < R25000	4
	Very high	5
Residential area/type of housing:		
	Informal housing	1
	Rural wood and iron	2
	Urban low income dwelling/ Low-cost apartment	3
	Middle urban residential area	4
	Plush suburbs	5
Parents' Education:		
	None	1
	At least 1 primary	2
	At least 1 high	3
	Both high school	4
	At least one college /university	5
Profession: (= highest profession within the immediate family in the case of housewives, schoolchildren and as yet unemployed older youths)		
	None	1
	Manual labourer	2
	Clerical; Self-employed Manual/ Supervisor	3
	Teacher, Salesman/ Bank Clerk	4
	Business/ self-employed	5

An index score falling between 4 and 10 was classified as part of the Low status group. Middle status group encompassed index scores from 11 – 16, while scores

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between 17 and 20 were designated 'High'. Table 2.6 presents a breakdown of the scores assigned to each respondent. In a sample of sixteen, an impressionistic status rating given by the interviewer (R. Mesthrie) accorded with the values in the table above in thirteen cases. In the other three cases, the impressionistic value was off by one point in each case. A good correlation therefore exists between impressionistic classification by the interviewer and the more objectively weighted index. The boundaries, however, are by no means absolute.

Table 2.6 - Social status index scores for each respondent

Speaker number	Income	Residence	Parents' education	Profession	Total	Code
12	2	2	2	2	8	L
17	5	5	3	3	16	M
18	2	4	2	3	11	M
21	3	3	2	3	11	M
22	2	3	2	2	9	L
23	2	3	2	3	11	M
24	2	3	2	3	10	L
26	5	4	3	5	17	H
27	5	5	2	4	16	M
31	4	2	2	3	11	M
39	3	3	3	3	12	M
40	2	3	2	2	9	L
41	3	3	2	2	10	L
42	4	4	5	4	17	H
44	5	5	5	5	20	H
45	5	5	3	4	17	H
53	2	3	2	2	9	L
55	2	3	2	2	9	L
61	4	4	3	5	16	M
69	4	4	3	4	15	M
72	3	3	2	3	11	M
73	3	4	3	2	12	M
77	5	5	3	4	17	H
79	4	5	3	5	17	H
81	3	5	2	3	13	M
82	4	5	3	4	16	M
83	3	3	2	3	11	M
85	3	3	2	2	10	L
86	3	3	2	2	10	L
89	5	4	2	5	16	M
97	2	3	2	3	10	L
105	3	3	1	2	9	L

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149	2	4	2	2	10	L

n (L) = 12; n (M) = 15; n (H) = 7

7. Lectal level:

Basilect, mesolect, acrolect: B, M and A according to the classifications assigned to each speaker in the original study. These were arrived at by the degree of fluency in either 'broad' WSAfE, or fluency in a variety close to standard. The classification was thus based on the interviewer's impression of the interviewee's overall 'performance'.

2.7 Initial Varbrul run and recoding

Three separate Varbrul runs were conducted for P, T and K in order to clearly show patterns of distribution in aspiration that may differ according to each segment. As outlined above, each vowel was assigned a separate code according to an adapted version of Wells' lexical sets. It was to be expected that vowel groups with smaller numbers of tokens would produce 'knockouts' , i.e. cases where 100% of tokens within a particular factor have the same application value (i.e. 0 or 1) for aspiration, the most extreme case being the 'singleton' group containing only one token (Robinson, Lawrence and Tagliamonte, 2001). The Varbrul multiple regression analysis will not run if there are any knockouts or singleton groups in the results file. Therefore, recoding is necessary, either by removal or collapsing of factors, in order to remove these 'knockouts'.

2.7.1 Recoding for P:

Knockouts were obtained for six factors. In factor group 1, the factor 'Pause', i.e. tokens preceded by a pause, had 32 tokens. All 32 cases yielded a '0', i.e. 100% of tokens were aspirated for this factor. It was decided to combine tokens preceded by a pause with those preceded by a vowel to form a new factor 'n', or 'Non - consonants'. Thus factor group was recoded to include only two factors: Consonants (C) and Non-consonants (i.e. preceded by a pause or a vowel). New codes assigned in recoding

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data were consistently used in lower-case so as not to be confused with codes assigned in the initial run. These were all upper-case codes.

There were also a number of knockouts obtained within factor group 2 ('following segment') in the run for P. The initial coding scheme (A – T) for following vowels and clusters was given above. Below, factors which were combined to exclude knockouts are given:

All 47 instances of [ʊ] (factor J) were unaspirated. Factor J was combined with factor F [ʌ] to form a new factor, 'y'. All 21 instances of [ɔ] (factor H) were unaspirated. Factors H and T, [ɔ] and [ɔɪ], are combined to form a new factor, 'u'. Factors N and K, [ɜ:] and [ɛə], are combined to form factor 'v'. All 22 instances P occurring before [oʊ] (factor M), were unaspirated. M was joined with factor G, [ɒ], to form factor 'w' in the recode. Finally, factor O, [uə], had only 9 tokens, all aspirated. This factor was combined with I, [u:], to form a single factor, 'x'.

All other factor groups for P tokens remained as is for the final Varbrul run.

2.7.2 Recoding for T:

Factor N, [ɜ:], had only 5 tokens, all of which were unaspirated. It was combined with factor K, [ɛə], to form factor 'v'. Factor O, [uə], had only one token. It was joined with factor I [u:]. Factor T, [ɔɪ], was a singleton. It is joined with factor H, [ɔ], to form 'u'.

2.7.3 Recoding for K:

Factor C, [e], only had three tokens, all were aspirated. Similarly, T is aspirated before [e] and [eɪ] (factor L). These two groups were therefore combined to form factor '%' in the recode. Factor N, [ɜ:], only had 7 tokens, all aspirated. These were joined with

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factor K, [ɛə], and recoded as 'v'. Factor T, [ɔɪ], only had one token. This was combined with factor H and recoded as 'u'. Factor Q, [ɑ:], had only 5 tokens, all unaspirated. This group was merged with group E, [ɑʊ], and recoded as 'z'.

Having dealt with all the knockouts for P, T and K, it was possible to launch a binomial up-and-down run in Varbrul to determine results. This information is summarised in table form in Table 2.7 below.

Table 2.7 - Summary of recodes

New code:	Factors combined:	Segments combined:	
n	P, V	preceding 'pause' and preceding'vowel'	for P only
u	H, T	[ɔ], [ɔɪ]	for P, T, K
v	N, K	[ɜ:], [ɛə]	for P, T, K
w	G, M	[ɒ], [oʊ]	for P only
x	I, O	[u:], [uə]	for P and T
y	J, F	[ʊ], [ʌ]	for P only
z	Q, E	[ɑ:], [ɑʊ]	for K only
%	C, L	[e], [eɪ]	for K only

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Chapter 3

Results

Three separate Varbrul analyses were conducted for P, T and K. In each case, results are given for the factor groups selected as statistically significant in the binomial multiple regression analysis, taken from the best step-up run. For P these were: following segment, gender, lectal level and ancestral language. Groups eliminated in the step-down analysis were: preceding segment, age, education, social status and urban-rural background. The results are summarised in the tables below. Weightings reflect the influence of each factor on the presence of aspiration relative to other factors in the group. A weighting of over 0.5 is considered significant. The percentages of aspirated tokens as well as *n* values are given so as to afford a clearer comparison.

3.1 Results for P

Table 3.1 - Varbrul results for P

Aspiration of P

1. Following segment

Rank	Vowel/cluster	Weight	%	*n*
1	[u:], [ʊə]	0.99	90	20
2	[aʊ]	0.84	28	7
3	[ɪə]	0.82	25	8
4	[e]	0.77	27	33
5	[æ]	0.71	21	19
6	[aɪ]	0.63	11	17
7	[eɪ]	0.62	9	63
8	[ɑ:]	0.60	11	62

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9	[iː]	0.59	12	94
10	[ɪ]	0.43	6	29
11	[ɜː], [ɛə]	0.41	5	53
12	[ɒ], [oʊ]	0.38	5	37
13	[ɔː], [ɔɪ]	0.37	6	33
14	[l], [r], [j]	0.37	5	310
15	[ʊ], [ʌ]	0.27	3	53

2. Gender	Weight	%	*n*
Female	0.66	14	296
Male	0.41	8	542

3. Lectal level	Weight	%	*n*
Acrolect	0.68	13	193
Mesolect	0.47	10	622
Basilect	0.07	4	23

4. Ancestral language	Weight	%	*n*
Tamil	0.56	12	350
Urdu	0.56	10	108
Telugu	0.52	17	67
Hindi	0.49	7	228
Gujarati	0.21	5	85

[Total N = 838; Input value: 0.074; Log likelihood: -224.617; Significance: 0.038]

Factors not selected: preceding segment, age, education, social status, urban-rural

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3.1.1 Linguistic Environment:

Preceding segment was eliminated as a significant factor for aspiration of P in the Varbrul analysis. The following linguistic segment was selected as significant. From Table 3.1 above, it is evident that there is no particular rule according to natural

classes of vowels, such as front or back, high or low vowels. Rather, different vowels induce aspirated P differentially. Ranked in first position, when taken together, [u:] and [ʊə] have a weighting of 0.99, with 90% of tokens aspirated. For [ʊə], 100% of tokens (9 out of 9) were aspirated (i.e. this resulted in a knockout in the initial run). For [u:], 9 out of 11 tokens, 82%, were aspirated. Thereafter, a large gap occurs, [aʊ] has a weighting of 0.84 and only 28% of tokens aspirated. P exhibits very low percentages of aspiration. Mesthrie's (2004: 962) initial hypothesis was that before /ɑ:/, /ɔ:/, /ʊ/, /ɒ/, /eɪ/, /oʊ/ and /ɛə/, minimal aspiration occurs. The data reflects this to a large degree: before /ɑ:/ 11% of tokens are aspirated, with a weighting of 0.60; before /eɪ/ (weighting 0.62) 9% of tokens are aspirated; before /ɔ:/, when combined with /ɔɪ/, 6% tokens are aspirated (weighting 0.37). Taken together, before /ɒ/ and /oʊ/ (weighting 0.38) 5% of tokens are aspirated; and before /ɛə/ (weighting 0.41) 5% are aspirated. The lowest level of aspiration occurs before /ʊ/: 3% of tokens are aspirated and have a weighting of 0.27. The low level of aspiration predicted by Mesthrie (2004: 962) before /r/ and /l/ does occur: this factor has a weighting of just 0.37 and only 5% aspirated tokens.

3.1.2 Social factors:

Females show higher weightings for aspiration of P: 0.66 versus 0.41 for males. Lectal level is influential: speakers with acrolectal competence show more aspiration at 13% (0.68) than mesolectal speakers at 10% (0.47), and basilectal speakers have a very low weighting of 0.07, with only 4% of tokens aspirated. In terms of ancestral language, Tamil and Telugu speakers show slightly more aspiration than Hindi speakers. Gujarati exhibits the lowest level, while Urdu is the second highest.

3.2 Results for T

The binomial up-and-down analysis of T selected the following as significant factors leading to aspiration: following segment, ancestral language, lectal level, gender and

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age. Factors excluded were preceding segment, social status, urban-rural and education.

Table 3.2 - Varbrul results for T

Aspiration of T

1. Following segment

Rank	Vowel/cluster	Weight	%	*n*
1	[ɑ:]	0.72	80	5
2	[oʊ]	0.70	81	27
3	[aɪ]	0.68	77	174
4	[ɒ]	0.66	75	20
5	[u:], [ʊə]	0.62	73	133
6	[aʊ]	0.61	73	26
8	[eɪ]	0.60	69	105
7	[e]	0.58	70	118
9	[ʌ]	0.49	66	9
10	[ɔ:], [ɔɪ]	0.49	58	39
11	[ʊ]	0.47	61	36
12	[æ]	0.47	62	62
13	[l], [r], [j]	0.37	54	148
14	[ɜ:], [eə]	0.30	48	31
15	[i:]	0.13	23	80
16	[ɪ]	0.06	12	25

2. Ancestral language	Weight	%	*n*
Urdu	0.72	77	110
Hindi	0.59	65	291
Tamil	0.52	61	413
Gujarati	0.23	62	96
Telugu	0.17	43	82

3. Lectal level	Weight	%	*n*

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Acrolect	0.79	69	198
Mesolect	0.42	61	767
Basilect	0.30	70	27

4. Gender	Weight	%	*n*
Female	0.57	68	383
Male	0.45	60	609

5. Age	Weight	%	*n*
Older	0.59	69	262
Younger	0.49	61	232
Middle	0.46	60	498

[Total N = 992; Input value: 0.651; Log likelihood: -551.937; Significance: 0.034]
Factors not selected: preceding segment, social status, urban-rural, education

3.2.1 Linguistic environment:

As for P, preceding segment is not selected as significant. In terms of following segment, again there is no clear-cut pattern no clear distribution according to natural classes of vowels. After T, higher rates of aspiration are exhibited than for P: a range of 12 to 80% aspiration. Vowels ranked 1 to 12 have a weighting higher than 0.5. T before [i:] and [ɪ] shows the lowest levels of aspiration, far lower than before the other 15 vowels. This reflects the recoding as '0' tokens which showed affrication without aspiration: these often occurred before [i:] and [ɪ].

3.2.2 Social factors

Ancestral language plays some role in determining levels of aspiration for T. After T, Urdu shows most aspiration, followed by Hindi and Tamil. Gujarati speakers (weighting 0.23) and Telugu speakers (weighting 0.17) show very low levels of aspiration. Again, stratification occurs according to lectal level. Acrolectal speakers,

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with a weighting of 0.79, are more likely to aspirate than mesolectal speakers, weighting 0.42. Basilectal speakers exhibit the lowest weighting: 0.30. Female speakers aspirate more than male speakers (0.57 versus 0.46). Interestingly, older speakers achieve the highest weighting for aspiration (0.59), followed by younger (0.49) and middle aged speakers (0.46).

3.3 Results for K

The binomial up-and-down analysis of K selected the following as significant factors leading to aspiration: following segment, ancestral language, preceding segment, gender and lectal level. Factors excluded were age, social status, urban-rural and education.

Table 3.3 - Varbrul results for K

1. Following segment

Rank	Vowel/cluster	Weight	%	*n*
1	[ɜ:], [eə]	0.80	88	9
2	[aɪ]	0.79	87	8
3	[ɑ:], [aʊ]	0.70	86	110
4	[æ]	0.70	83	91
5	[ɪ]	0.67	80	36
6	[e], [eɪ]	0.66	79	143
7	[u:]	0.60	60	5
8	[oʊ]	0.60	72	18
9	[ʌ]	0.60	74	215
10	[i:]	0.46	65	20
11	[ʊ]	0.38	59	44
12	[ɒ]	0.31	49	59
13	[ɔ:], [ɔɪ]	0.31	49	77
14	[l], [r], [j]	0.18	32	67

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2. Ancestral language	Weight	%	*n*
Urdu	0.68	79	147
Hindi	0.56	67	293
Telugu	0.55	67	65
Tamil	0.44	63	422
Gujarati	0.25	47	85

3. Preceding segment	Weight	%	*n*
Vowel	0.56	72	592
Consonant	0.42	57	384
Pause	0.41	61	36

4. Gender	Weight	%	*n*
Female	0.59	66	355
Male	0.45	65	657

5. Lectal level	Weight	%	*n*
Acrolect	0.54	69	198
Mesolect	0.50	61	767
Basilect	0.24	70	27

[Total N = 1012; Input value: 0.693; Log likelihood: -539.007; Significance: 0.046]
Factors not selected: age, social status, urban-rural, education

3.3.1 Linguistic environment

The preceding linguistic segment is found to be statistically significant in contributing to aspiration of K. When K is preceded by a vowel, the weighting is at its highest: 0.56 (72% of tokens aspirated). A preceding consonant or pause elicits lower weightings (0.42 and 0.41 respectively). In terms of following segments, [ɜ:] and [eə] are now ranked most highly with a weighting of 0.80. High weightings are also achieved for K followed by [aɪ] (0.79) and [ɑ:] and [aʊ] (0.70). K-clusters with liquids or glides are least likely to be aspirated, with the very low weighting of 0.18.

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3.3.2 Social factors

The urban-rural distinction was selected in the best step-up run for K, but eliminated in the best step-down run. The weightings obtained in the step-up run were: Urban: 0.51 and Rural: 0.41. The urban-rural distinction had been eliminated by Varbrul in the runs for P and T. A reliable Varbrul result requires agreement in the program's results for the step-up and step-down runs. This does not happen in the case of the rural/urban distinction for K, so I am forced to conclude that it does not count as significant for K (as indeed is the case for P and T)

In terms of ancestral language, Hindi speakers achieved a weighting of 0.56, while Tamil speakers had a weighting of 0.44. Urdu is again weighted highest (0.68) and Gujarati lowest (0.25). Gender again appears influential for K with females more likely to aspirate than males (weightings of 0.59 and 0.45 respectively). Speakers of higher lectal levels achieve higher weightings for aspiration of K: 0.54 and 0.50 (acrolect and mesolect respectively) against the low weighting of 0.24 for the basilectal speakers.

3.4 General findings on P, T and K

In all cases, the factor 'following segment' was selected as influential. In terms of social factors, ancestral language, gender and lectal level were selected as significant for P, T and K. Social status, urban-rural distinction and education were eliminated as factors in all cases. Summaries of the overall findings across P, T and K for the various significant factors are given below.

3.4.1 The influence of following segment on aspiration

When considering the overall distribution of aspiration across P, T, K no clear-cut picture emerges. Below, the separate rank orderings of following segment for P, T and K are presented for ease of comparison. Although no rigid pattern occurs across P, T and K, the rank order remains relatively stable for some of the vowels (and the cluster group), with at least two out of the three rankings differing by no more than two

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points. These cases of similar rankings across P, T and K are highlighted in grey in Table 3.4 below.

Table 3.4 – Rank order for aspiration of P, T and K according to following segment

Following segment:	Rankings:		
	P	**T**	**K**
[ɪ]	10	16	5
[iː]	9	15	11
[ɪə]	3	n/a	n/a
[ʊ]	15*	11	12
[ʌ]	15*	9	10
[uː]	1*	5*	8
[ʊə]	1*	5*	n/a
[e]	4	7	6*
[eɪ]	7	8	6*
[ɜː], [eə]	11	14	1
[ɔː], [ɔɪ]	13	10	14
[æ]	5	12	4
[aɪ]	6	3	2
[aʊ]	2	6	3*
[ɑː]	8	1	3*
[ɒ]	12*	4	13
[oʊ]	12*	2	9
[l], [r], [j]	14	13	15

[n/a denotes zero tokens for a particular subgroup.].

[* denotes vowels which form part of a recoded factor. Identical ranking of two vowels within a column indicates that these form one factor.]

Similar rankings were achieved for P and K for a number of vowels: [iː]; [ɔː] and [ɔɪ]; [æ]; [aʊ] and [ɒ]. For T and K, similar rankings occur before the following four vowels: [ʊ]; [ʌ]; [aɪ] and [ɑː]. There were no cases where P and T scored rankings within two points of each other. In the two cases where this does occur, K is also ranked similarly. There are three cases in total for which P, T and K all had similar

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rankings: preceding the vowels [e], [eɪ] and clusters including a following liquid or glide: [l], [r] or [j]. Thus, some trends can be seen according to following segment.

3.4.2 The influence of ancestral language on aspiration

Ancestral language contributes to variation but not as strongly as the structural constraint of "following segment". There is no particular hierarchy here. For P, the Dravidian language speakers (Tamil and Telugu) are both ranked highly. Interestingly, Telugu speakers score most highly for P while for T the score is exceptionally low: 0.17. For K, these speakers rank in the middle. Urdu speakers show the greatest tendency to aspirate T and K, while for P they are second only to Telugu speakers. Gujarati presents an interesting case – speakers have very low rankings throughout. Gujarati speakers show the least tendency to aspirate P and K. The absence of any distinct hierarchy here is interesting in itself. The influence of ancestral language on aspiration of P, T and K is given in tables 3.5 to 3.7 below, and arranged in comparative rank order in Table 3.8:

Table 3.5 - Results for P according to ancestral language

	Weighting	%	*n*
Telugu	0.56	17	67
Urdu	0.56	10	108
Tamil	0.52	12	350
Hindi	0.49	7	228
Gujarati	0.21	5	85

Table 3.6 - Results for T according to ancestral language

	Weighting	%	*n*
Urdu	0.72	77	110
Hindi	0.59	65	291
Tamil	0.52	61	413
Gujarati	0.23	62	96

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Telugu	0.17	43	82

Table 3.7 - Results for K according to ancestral language

	Weighting	%	*n*
Urdu	0.68	79	147
Hindi	0.56	67	293
Telugu	0.55	67	65
Tamil	0.44	63	422
Gujarati	0.25	47	85

Table 3.8 - Rank ordering of ancestral languages for P, T and K

	P	T	K
Hindi	4	2	2
Urdu	2	1	1
Tamil	3	3	4
Telugu	1	5	3
Gujarati	5	4	5

The picture one gets is two-fold:

(a) Substrate influence in itself is not at all clear-cut. That is, although Tamil speakers do not have phonemic aspiration whereas Hindi speakers do, this does not differentiate their performance within the SAIE spectrum. The distribution of aspiration in SAIE does not correspond to aspiration patterns in any of the ancestral languages.

(b) There is possibly a pattern of accommodation amongst speakers from indentured ancestral background: Tamil/Telugu and Hindi/Urdu, while Gujarati, as a language with more prestige whose speakers are of trading-class background, stands as a language apart.

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P shows very low percentages of aspiration for speakers of all ancestral language groups. Regarding the differences between P on the one hand and T and K it seems that substrate influence may be at play in the case of speakers of Hindi and Urdu (i.e. speakers of Indic language background), who appear to treat P as the unaspirated side of the p-pH continuum. This is possibly why they score lower than speakers of a Dravidian background for P. On the other hand, why P should be so affected but not T and K is unclear.

The fact that Gujarati stands out somewhat from this group is attributable to the fact that its speakers come from an entirely non-indentured background. They are slightly less involved in acts of accommodation within the SAIE community. In Natal (present day KwaZulu-Natal), the community is of trading-class background and in the 1980s was fairly endogamous even within the Indian community of South Africa. However, the class difference from other SAIE speakers does not result in higher values for aspirated P, T, K since the community has been better at maintaining its ancestral language than the other groups. Gujarati is thus something of an island in the SAIE community.

3.4.3 The influence of age on aspiration

The fact that age is not selected as significant is probably due to the fact that all informants were over the age of 15 and that the research is based on a sample within the SAIE community of the 1980s. In the 1980s with Apartheid restrictions the community was still a relatively homogeneous one, less divided by age and status than it is today in the more diffuse post-Apartheid society. There could well be a second reason for the lack of effect of age – Mesthrie (1992a: 41) notes that his 1980s interviews with teenagers were not as successful as with older speakers:

> The one group who – for the most part – gave very little in the way of long pieces of conversation comprised teenagers. They were conspicuously on their guard, putting their best foot forward, answering no more than was required, and had generally no experience with death, disease or evil (yet!).

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However, §3.4.4 and table 3.9 show that despite these limitations, there are some interesting age and gender effects.

3.4.4 The influence of gender on aspiration

Interestingly, gender does play a role in the use of aspiration. The initial hypothesis was that differences in aspiration levels according to gender would only be seen in younger speakers. In order to test this, I set up a cross-tabulation between the factors gender and age in Varbrul. The cross-tabulation (Table 3.9) reveals that older females aspirated 57% of tokens versus 55% for males. Younger females aspirated 51% of tokens versus only 36% for males. This could be a case of younger female speakers accommodating to standard-like norms (the figures for older speakers are almost identical) more than males. However, this claim would have to be tested against present-day empirical data as well as with a larger sample from the current database. Older males show 45% unaspirated tokens, while younger males use 64% unaspirated tokens. That younger females had a slightly lower percentage of aspirated tokens than older females would need explanation as it goes against the tentative claim being made here. Part of the problem lies in the fact that there are two sets of competing norms: older speakers have some allegiance to substrate norms where aspiration is salient as a 'generator' of phonemes; younger speakers have greater allegiance to the new TL (L1 English) in which aspiration is non-phonemic but common initially in stressed syllables. These competing norms show up in the fluctuations in table 3.9. These fluctuations are what we expect in a situation where accommodation of all sorts is taking place: between substrates and the TL as well as between North Indians and South Indians via the new lingua franca, English.

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Table 3.9 - Cross-tabulation of gender and age for P, T and K

	Age	**Y**	**Y**	**M**	**M**	**O**	**O**	Total	Total
Gender	**Aspiration**	n	%	n	%	n	%	n	%
F	1	177	51	270	51	93	57	540	52
F	0	170	49	255	49	69	43	494	48
F	Total	347		525		162		1034	

M	1	121	36	403	45	321	55	845	47
M	0	211	64	484	55	266	45	961	53
M	Total	332		887		587		1806	
Total	1	298	44	673	48	414	55	1385	49
Total	0	381	56	739	52	335	45	1455	51
Total	Total	679		1412		749		2840	

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Chapter 4

Conclusion, limitations and suggestions for further research

The picture suggested by the findings of this study for SAIE in the 1980s is of a variety whose norms regarding aspiration are not clear-cut. Aspiration patterns for P, T and K are not identical. For each of these stops, the following vowel is the major constraint on aspiration- but again, each stop behaves differently from the others. Moreover, individual vowels rather than classes of vowels exact an influence on P, T and K.

The statistics show variation by following segment (linguistic environment) and by social factors (ancestral language and gender), as well as by broad lectal level of speakers. They also show greater levels of aspiration with T and K and lesser levels with P. Another dimension that has not been considered here is whether there is a lexical diffusion effect, with aspiration mandatory in some words, variable in some others and absent in the rest. This is a separate study being undertaken by R. Mesthrie.

The fluctuating phonological norms evident in the findings on aspiration can be taken to reflect the changing social norms within the SAIE society of the time. Particularly within the first generation of immigrants, intermarriage between North and South Indian subgroups was scarce and some degree of difference in culture and customs was upheld. This would have reinforced substrate influence to some extent. However, by the time of the interviews in the 1980s, the Indian community in Natal was beginning to claim a new identity as Indian South Africans. This was further reinforced by the exclusive legislations of Apartheid at the time. This change is captured in the comments of one of the interviewees used in this study: a woman born in Burma. She describes herself as 'not so much a South African Indian' as she was

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born overseas. Referring to her daughter, however, she adds 'she's a South African Indian- a thorough-bred'.

Social status, urban-rural distinction and education are eliminated as factors in the multivariate analysis. This is suggestive of a unified Indian community in Natal of the 1980s without strong linguistic stratification according to social status.

4.1 Suggestions for further studies

It has still to be researched whether there is intra-speaker variability (i.e. pronouncing the same word differently) or variation across speakers. The time-frame of the study did not allow for more than an overall analysis of data. A follow-up study of present day norms is of immense potential interest, to ascertain whether younger, especially middle class, speakers, with more varied social networks today are moving towards the General WSAfE patterns of aspiration. As a native speaker of General WSAfE, comparison of the data with my own speech norms acted as a 'control' in this study. However, a follow-up study involving a larger control group of WSAfE speakers could provide valuable quantitative data. A diachronic database of present-day data and the 1980s data could provide further insight into the mechanisms of language shift, and language change in a post-language-shift community and into the stabilisation of new dialect norms.

In terms of regional variation, SAIE has only so far been studied in the context of KwaZulu-Natal. A study of the regional variation within the variety, for instance in the Cape Town Indian community, has not yet been attempted, though that would have to be contextualised in terms of other Cape Town varieties of English, especially Cape Flats English.

As mentioned in chapter 1, there is a general lack of quantitative data on varieties of English in South Africa. Thus there is scope for further studies to be conducted on regional and social variation in South African English varieties, particularly on a quantitative level. This study has opened the door to further studies on aspiration in varieties of South African English, and quantitative phonological studies in general.

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For instance, further investigations on the tendency to affrication of T and K noted in chapter 2, and the ejection of T and K noted by Naidoo (1971: 16) in SAIE in Durban and Watermeyer (1996: 107) in L2 Afrikaans English in Cape Town could form the basis of a comparative phonological study between English varieties in South Africa.

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