

VARIABILITY OF RHOTICS IN PUNJABI-ENGLISH BILINGUALS

Allen Hirson, Nabiah Sohail
A.Hirson@city.ac.uk; nabiah@hotmail.com

ABSTRACT

This paper examines variation of /r/-pronunciation as a function of social identification in Punjabi-English bilinguals. This is clearly different from previous studies of linguistic stratification based upon geography, gender age or social network [1], [2]. The study presented here examines group affiliation of second generation Punjabi speakers (whose habitual home language is Punjabi) from south east Britain. The subject selection for the study partitions British-Asian speakers of English (from the Indian Subcontinent) on the basis of self-identification as either 'British Asian' or as 'Asian'. The main research question was whether 'British Asian' speakers of English with particular social affiliations acquire the local (south east British) pattern of /r/-pronunciation (excluding postvocalic realisations) or whether they retained features of Punjabi rhotic realisations and postvocalic /r/.

Keywords: Rhotics, Punjabi-English bilinguals, social identification.

1. INTRODUCTION

Large and vibrant Punjabi speaking populations are found in London's district of Southall and in other urban centres in the UK. This community originates from Pakistan and the Indian province of Punjab and Gujarat and it exhibits considerable heterogeneity, socially, ethnically, culturally, and linguistically. Owing to the religious affiliations of this linguistic group and the politically charged tensions generated by international terrorism, the identification of individuals has been divided between a newly forged and distinctive 'British Asian' (relatively integrated), or 'Asian' (relatively alienated from the indigenous culture).

A number of other studies have explored language interference and the effects of the prestige language on Punjabi-English bilinguals. This includes the study by Heselwood & McChrystal (1999) [3] concerning the effects of age and place of (first language) L1 acquisition on the realisation of Punjabi stop consonants in a Bradford Punjabi community. They found that voice onset patterns of Punjabi stops paralleled those of native English speakers for subjects aged less than 25 who had acquired Punjabi locally in Bradford. Generally, older speakers differed from the locals even when they also acquired Punjabi locally. The result is an emerging British variety of Punjabi distinct from that found on the Indian subcontinent. Further, the younger group tended to produce Punjabi and English voiced stops in the same way, i.e. the minority language is affected by the dominant language (English). By contrast, the present study considers the possibility that the minority language (Punjabi) affects the dominant accent of English, at least in respect of rhotic pronunciation.

There is also clear evidence of gender variation in this bilingual population. Romaine's (1979) [4] classic study of /r/-pronunciation in Edinburgh school children showed that while the Scottish rhotic is typically realised as a trill or tap, young females made significantly more use of prestige [ɹ]-form than their male peers. Levine & Crockett's (1996) study of postvocalic /r/ in North Carolina [5] also supports the thesis that women lead the linguistic change from an historical to a more modern norm. Heselwood & McChrystal (2000) [6] examined the presence of Punjabi accent features in Punjabi-English bilingual children as perceived by phonetically trained listeners. They found that male subjects were rated as having more non-English influences in their

pronunciation than the female controls. Other research suggests that females favour 'supra-local variants' (of accent) over local variants, while males appear to use more local forms [7].

The present study considers the possible language interference in adult speakers in respect of rhotic pronunciation, and possible gender differentiation.

2. MATERIALS AND METHODS

2.1 Speakers

The selection criteria used to recruit the 24 subjects included age range (19-26), British born, resident and schooled in London to at least secondary level. They all had to be fluently bilingual in English and (Standard) Punjabi with no other languages. At least one parent was required to have been born and brought up in South East Asia, and there had to be no previous diagnosed speech language, voice or hearing difficulty. Identity affiliation was teased out through questionnaires which addressed language background, language use as well as social and cultural issues. Embedded in the questionnaire was a question regarding identity. On the basis of the answer to this question ('Asian' or 'British-Asian?') the group was divided into 2 subgroups of 12 subjects each. Each group was gender balanced, with comparable age profiles: female range was 19-24 years (mean 22.5) and male range was 19-26 years (mean 23.4).

Six monolingual Punjabi speakers were also recruited to provide baseline measures for /r/-pronunciation in standard Punjabi. These speakers were born and educated to at least secondary school level in South East Asia and both their parents had been born and brought up in this part of the world. This group was also controlled for age and gender.

2.2 Data collection procedure

In order to examine the effects of social identification and gender on rhotic

production, speech samples were elicited from the Punjabi-English subjects using a picture-naming task. This comprised high frequency words of concrete objects that were considered culturally neutral. Subjects were unaware of the specific purpose of the investigation; they were under the impression that the task concerned short-term memory.

Similarly, speech samples were elicited from the smaller group of monolingual Punjabi speakers in order to establish empirically the range and types of rhotics that might be expected in standard Punjabi. This standardly includes the alveolar and retroflex taps as well as a voiced alveolar trill [8].

Having obtained appropriate consent from the subjects, they were recorded using a Sony TCD-D8 digital audio tape recorder, and boundary microphone.

Subsequent analysis involved auditory phonetic assessments and acoustic examination of spectrograms of the speech tokens. The instrumental analysis was achieved using *Praat* (Version 4.4.16, University of Amsterdam).

In addition to the auditory phonetic analyses of rhotic versus non-rhotic accent of English and places of articulation, acoustic analysis examined acoustic correlates of apical tongue movement in the production of the postalveolar approximant. Specifically, a dipping third formant (F3) was considered to be an indication of apical tongue movement [9], falling F4 movement was considered a correlate of retroflexion, clear discontinuities corresponded with tapping, and slow periodicity evidence of trilling.

2.3 Analysis procedures

The design of the study was an Independent Groups Design (between subjects design). The independent variables were identity ('Asian'-identified or 'British-Asian'-identified) and gender. The dependant variables were the phonetic realisation of /r/, formant values and rhoticity.

T tests were carried out on the parametric data to investigate differences among the two experimental groups, ('Asian'- and 'British-Asian'-identified groups) and gender. Where appropriate, nominal data were tested for significance, using chi-squared tests. Statistical analyses were carried out to test for significant differences among the 'Asian' and 'British-Asian' identified groups in terms of place and manner of articulating /r/ as well as F3 formant values. Further analysis was carried out to investigate gender differences. The significance threshold was set as $p < 0.001$.

3. RESULTS

Results of the questionnaire permitted clear separation of the two subject groups into 'British Asian'- and 'Asian'-identified groups.

The 'British-Asian'-identified participants almost invariably displayed non-rhotic accents consistent with a South East British accent of English. (A single exception was one 'British Asian'-identified male participant who displayed a rhotic pronunciation for a single target stimulus, 'star'. All remaining 39 target words for this subject, were, however, pronounced non-rhotically).

All 12 'Asian'-identified participants had rhotic accents i.e. they produced /r/ in non-prevocalic positions. This was evident from dipping/lowering of F3. They all used post-alveolar [ɹ] and retroflex [ɻ] approximants. This group also exhibited the retroflex tap [ɽ] by all but one 'Asian'-identified participant. Labiodental [v] taps were evident in seven and alveolar taps [ɾ] in nine of the 'Asian'-identified participants. The alveolar trill [r̄] (found in Punjabi but not generally in S.E British English) was employed by only two of the 'Asian'-identified participants.

In Figure 1 below it can be seen that the 'Asian'-identified group employed a much wider spread of rhotic forms including the retroflex tap rarely used by the 'British-Asian' group – but commonly used by the monolingual Punjabi speakers.

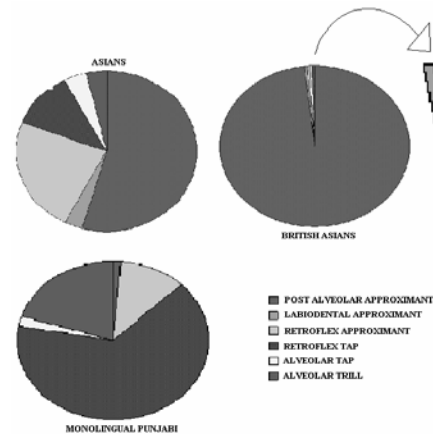


Figure 1: Distribution of /r/-realisations in 'British-Asian' and 'Asian'-identified speakers of English and monolingual Punjabi speakers.

A single token of the labiodental approximant [v] found in the 'British Asian' sample was not found in the other groups – but is increasingly a feature in South East British English [9].

Punjabi monolinguals predominantly used alveolar trills and retroflex taps. Only a single token of the postalveolar approximant was found, and no tokens of the labiodental approximant were observed. These differences were reflected in the F3 data. A significant effect for F3 was found, ($t(931) = 8.81, p < .001$) with 'Asian' group achieving higher F3 values than the 'British-Asian' group.

A statistically non-significant difference was found between females and males in respect of F3 values in the 'Asian'-identified group. Although there was no gender difference in mean F3 values in the 'British-Asian' group there is some difference in the spread of F3 values. F3 was higher in postvocalic environments for the 'British Asian'-identified group compared to the 'Asian'-identified group confirming the non-rhotic status in the former group. Manner of articulating /r/ does not differ by gender, $\chi^2(1, N=466) = 0.034, p = 0.8542$. Similarly place of articulation shows no significant difference across males and females in the 'British-Asian' identified group, $\chi^2(1, N = 466) = 0.034, p = 0.8542$.

4. DISCUSSION & CONCLUSIONS

The differences in the rhoticity and in the range of rhotics employed by the 'Asian' speakers (compared to the 'British Asian') speakers suggested that the difference in social identification permits greater or lesser language permeability from Punjabi to English. It may also explain changes that speakers make under different speaking situations depending upon factors that may otherwise be overlooked. It may be speculated that wearing of a headscarf (*hijab*) by the experimenter in the present study might have been a significant factor and this will be investigated with appropriate controls in a follow-up study. The factors highlighted in the present study have already paid dividends in forensic phonetic casework in which speakers appear to adopt different patterns of rhotic pronunciation depending upon the manifest ethnicity of the interlocutor.

The evidence for the effect of gender in the present study was restricted to the females in the 'Asian'-identified group who used a greater proportion of approximant rhotics compared to the males who employ a greater proportion of taps, trills and retroflex rhotics. The gender differences within this group suggests an accelerated linguistic integration by these young women (who used rhotic forms that more closely resembled the pattern in 'British Asian'-identified group than the men in the 'Asian'-identified group).

Overall, social identification appears to be important in separating different subgroups within the South East Asian communities in Britain – at least insofar as rhotic production is concerned. Unpublished research [10] suggests that similar considerations may be important in relation to speakers' patterns of pronunciation if they identify themselves, for example, as 'Black British'.

5. REFERENCES

[1] Wells, J. C. (1982) *Accents of English Vols 1-3*: Cambridge University Press.

[2] Foulkes, P. & Docherty, G. (eds) (1999) *Urban Voices: Accent Studies in the British Isles*. London: Arnold.

[3] Heselwood, B. & McChrystal, L. (1999) The effect of age-group and place of L1 acquisition on the realisation of Panjabi stop consonants in Bradford: an acoustic sociophonetic study. *Leeds Working Papers in Linguistics & Phonetics* 7. 49-68.

[4] Romaine, S. (1979) Postvocalic /r/ in Scottish English: Sound Change in progress? in Trudgill, P. (1979) *Sociolinguistic Patterns in British English*. Edward Arnold: London.

[5] Levine, L. & Crocket, H.J (1966) Speech Variation in a Piedmont Community: Postvocalic r, *Sociological Inquiry* 36 (2), 204–226.

[6] Heselwood, B. & McChrystal, L. (2000) Gender, accent featured and voicing in Panjabi-English bilingual children. *Leeds Working Papers in Linguistics & Phonetics* 8. 45-70.

[7] Watt, D. & Milroy, L. (1999) Patterns of variation and change in three Newcastle vowels: is this dialect levelling? In Foulkes, P. & Docherty, G. (eds) *Urban Voices*. London: Arnold.

[8] Sohail, N., Hirson, A., & Verhoeven, J. (2007, in preparation) Illustration for Punjabi, *Journal of the International Phonetics Association*.

[9] Lindsey, G. & Hirson, A. (1999) Variable robustness of non-standard /r/ in English: evidence from accent disguise. *International Journal of Speech, Language and the Law*, 6 (2) 278-288.

[10] Coulthrust, B. (2003) *The Non-standard pronunciation of /k/ in a black-identified speech community*. BSc Research project. City University, London.