

INITIAL CONSONANT CLUSTER REDUCTION AS A FUNCTION OF AGE GROUP IN BANGKOK THAI SPEAKERS

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I. INTRODUCTION

The purpose of this paper is two-fold. First it is an attempt to describe some speech characteristics of two different age groups of native Bangkok-Thonburi residents. Secondly, it is an attempt to speculate on the significance of these synchronic data for the study of sound change.

In recent years there has been increasing interest in the search for socially conditioned variations in language. Age or age group of the speaker has received particular attention. This is because people of different age groups have speech habits formed at different points in time. Although the speech of an individual changes with the passage of time, the static influence of early speech habits seems to dominate over the tendency for gradual change. Thus, older people retain some features of speech from their childhood that younger generations may not have developed at all.

The linguistic variables under study in this paper are the eleven initial consonant clusters of Bangkok Thai. Each cluster consists of a stop plus a liquid or a semi-vowel. For the sake of clarity, the clusters may be divided into three groups: (1) clusters of stop plus R; (2) clusters of stop plus L; (3) clusters of stop plus W. Each of these three groups has some clusters with aspirated and some with unaspirated initial stops, but no group has a full range in place of articulation for the initial stop. There are never any palatal stops in modern Bangkok initial consonant clusters. The native R clusters

may have bilabial, alveolar, and velar stops as first members: PR, TR, KR, PHR, KHR. The L clusters have only four possibilities: PL, KL, PHL, and KHL. The alveolar series is missing. The W clusters are even more restricted. Only velar stops may occur with W, leaving just KW and KHW.

The variables listed here correspond to consonant cluster initials which are found in Thai writing. They are the same eleven consonant clusters which are traditionally posited in descriptions of Standard Thai. In this paper "Standard Thai" is used to mean no more than a "standard", a set of sounds believed to be "correct" by the people of Thailand. It is not to be equated with the actual speech of any specific group. Capital letters are used to indicate distinctions which are required by Standard Thai and still represented in written Thai. These are distinct from small letters, which are used here to indicate the actual phonetic values of the sounds as used by the informants of this study. In the course of this paper, the term "full retained variants" is used to refer to variants which are pronounced as clusters with the written R retained as flapped ʀ, the written L retained as the lateral, l, and the written W retained as the semi-vowel, w. "Reduced variants" is used to refer to situations where an initial written cluster, believed to be correctly pronounced as a cluster, is realised phonetically as a single initial.

The 151 informants for this study range in age from 18 to 60 years old. They were selected from a list of the native Bangkok-Thonburi employees of three large institutions: a university medical school, a hotel, and an oil company. The selection was made by random sampling stratifying for five levels of occupational prestige and two age groups. The occupational levels included professionals, managers, semi-professionals and clerical workers, semi-skilled labourers, and unskilled labourers. The two age groups included informants between ages 18 and 35 years old on the one hand and informants between ages 36 and 60 years old on the other. Since all informants were of working age, no extremely old informants could be obtained, and the very young were also automatically eliminated. However, an age range of forty-two years was found in the sample population, and the 151 interviewees were fairly evenly distributed throughout the different socio-economic classes. The data presented are based on tabulations of sounds made from taped interviews of one to three hours with each informant.

The remainder of this paper is in two parts. First, the results of the linguistic survey are presented in graph form in terms of percentages of occurrence. Secondly, the significance of these data for the study of sound change is discussed.

II. RESULTS

R CLUSTERS: FULL RETAINED VARIANTS

There was a positive correlation in all R clusters between age and full cluster retention. That is, the higher age group always had a higher percentage of full R clusters than the lower age group had. Figures 1 to 5 demonstrate this fact.

On the average the older group had 8% more full retained R clusters than the younger group. However, TR showed twice as high a difference between the age groups as the average R cluster. There were 16% more tr variants for TR pronounced by older speakers than by younger ones.

Both age groups retained full clusters for TR more frequently than for any other R cluster. A possible explanation for why TR has exceptionally high full cluster retention is that it is the product of people's conscious efforts at spelling pronunciation. There is some evidence that TR underwent a sound change in recent history to kr and then subsequently changed back again to the tr prevalent today due to people's concern with "correctness" in language. This evidence may be used to construct an argument which explains the high rate of full cluster retention for TR.

The first step in the argument begins with the Ramkhamhaeng Inscription of A.D. 1292 (Coedès 1962:133). This documents the earliest Thai writing system which was developed during the Sukhothai Period. The writing system was based on the Cambodian alphabet of the time which in turn was derived from Sanskrit (Coedès and Burnay 1927:88&90). This system had a *ṭ* cluster which corresponds to modern TR. It is impossible to document the phonetic value associated with the letter *ṭ*. However, William J. Gedney, the dedicatee of the Festschrift to which this paper is contributed, has informed me that *ṭ* is believed to have been the letter that the Cambodians used for their t sound c. 1292. Thus we can infer that the Thais adopted this letter for a t sound in their own language.

The argument continues (for which I am indebted to Dr Gedney) with a second point based on evidence in literary sources. These sources indicate that there was a widely accepted *kʰ* variant which developed after the Sukhothai Period. In the works of Rama I and Rama II, the first two reigns of the Bangkok Period, 1782-1825, there is an expression, *pen ʔèek nay sàwèekkràchàt* 'to be first under the white umbrella' (i.e. to be the King). Although modern editions write *sàwèettràchàt*, we know that this was pronounced as a *kʰ* (or a k) variant because of the internal rhyme in the expression (Rama II 1921:9).

The Pallegoix dictionary of 1854 provides evidence for the third point in the argument. It shows that the T in the TR cluster was pronounced as a k during the first half of the 19th century. Pallegoix (1854:349,351,355,362,364) lists *kron* as a variant of *tron* 'to be straight', *kraa* as a variant of *traa* 'seal', *kray* as a variant of *tray* 'three', as well as other examples of TR words alternatively pronounced with *kr*. Also, the Royal Institute Dictionary (1950:80) lists *kràap* as an Ayuthaya Period (1350-1767) variant of *tràap*, an elegant word meaning 'until' in a few expressions.

From the preceding evidence we infer that between the Sukhothai Period and the reign of Rama IV in the 1850s, a *kř* variant for TR had become prevalent. The fourth step in the argument is that King Mongkut (Rama IV) seems to have been the first man on record to voice concern about "correctness" in the Thai language. This concern may have been due to increased Western influence in Thailand during the 19th century. Whatever the reason, King Mongkut (Rama IV 1923:16) began issuing edicts on proper usage at that time.

To conclude the argument, we find that today in Bangkok teachers urge their students to pronounce TR as *tř*. *tř* is now the only acceptable standard pronunciation. The change in acceptability of the *kř* variant for TR combined with efforts by authorities to enforce "correct" usage leads us to infer that a spelling pronunciation regained prominence due to people's conscious efforts. This is posited as a possible explanation why TR shows an exceptionally high rate of full cluster retention compared to other R clusters.

TR distinguished itself from other R clusters in another way. It had the sharpest stratification between age groups of all the R clusters on the rate of full cluster retention. Not only were the retention rates for each age group higher than the rates on other R clusters, but the difference between the rates of the two age groups was greater than for other R clusters. The latter suggests that age is a more powerful conditioning factor on TR than on other clusters.

R CLUSTERS: REDUCED VARIANTS¹

The data show that there was a negative correlation between age group and cluster simplification. That is, the older age group had a consistently lower percentage of simplified clusters than the younger group. Figures 6 to 10 illustrate this phenomenon.

¹It should be noted that the sections on full retained and reduced variants are not redundant since other variants for each cluster, not discussed in this paper, do exist.

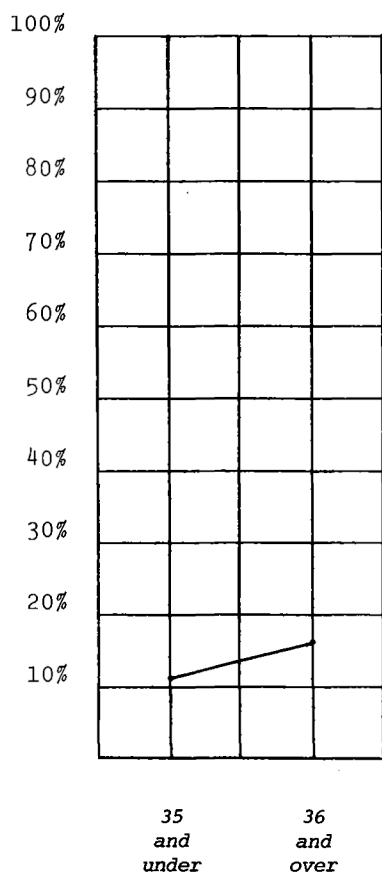
PERCENTAGE OF FULL CLUSTER RETENTION IN R CLUSTERS
ACCORDING TO AGE GROUP

Fig. 1 - př for PR

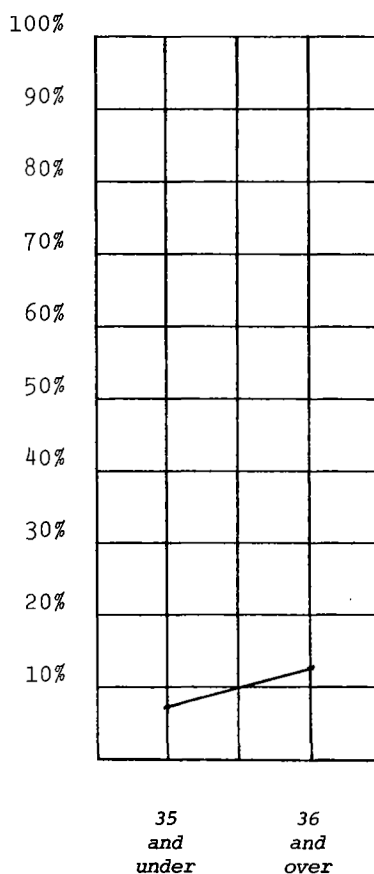


Fig. 2 - kř for KR

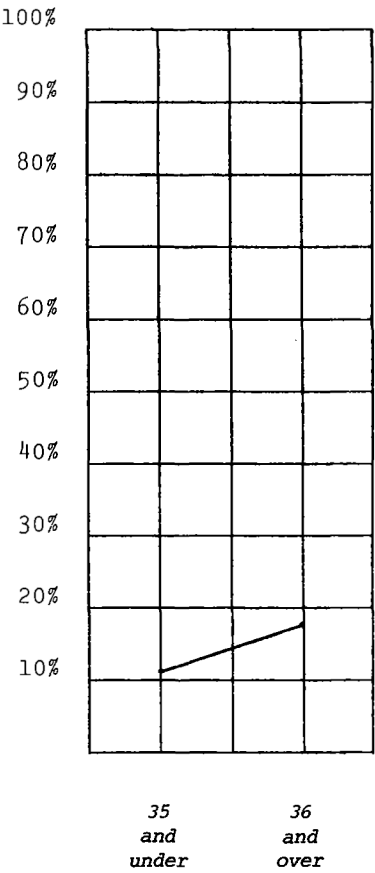


Fig. 3 — phř for PHR

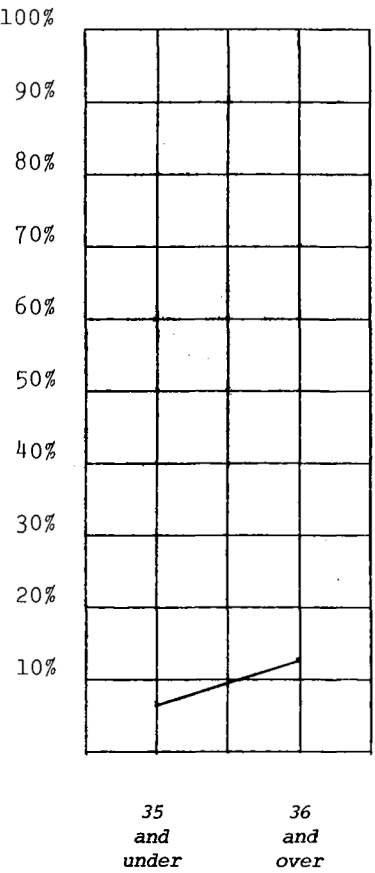
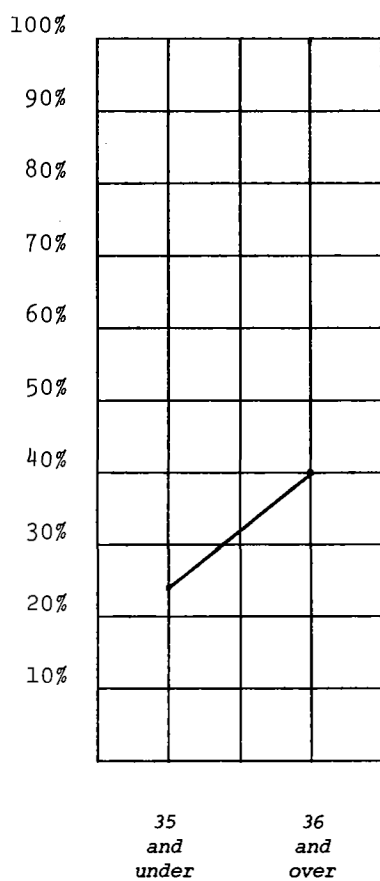


Fig. 4 — khř for KHR

Fig. 5 - $t^{\check{r}}$ for TR

PERCENTAGE OF CLUSTER SIMPLIFICATION IN R CLUSTERS
ACCORDING TO AGE GROUP

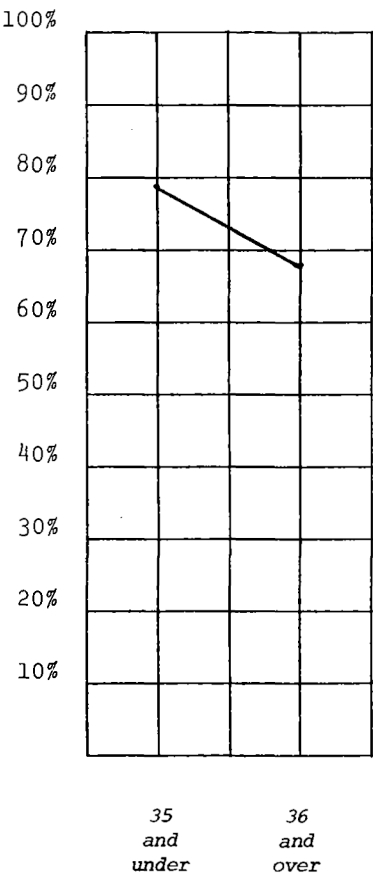


Fig. 6 - p for PR

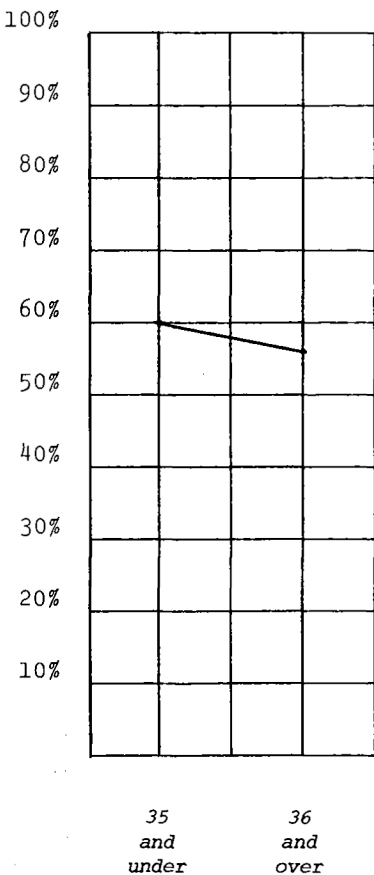


Fig. 7 - k for KR

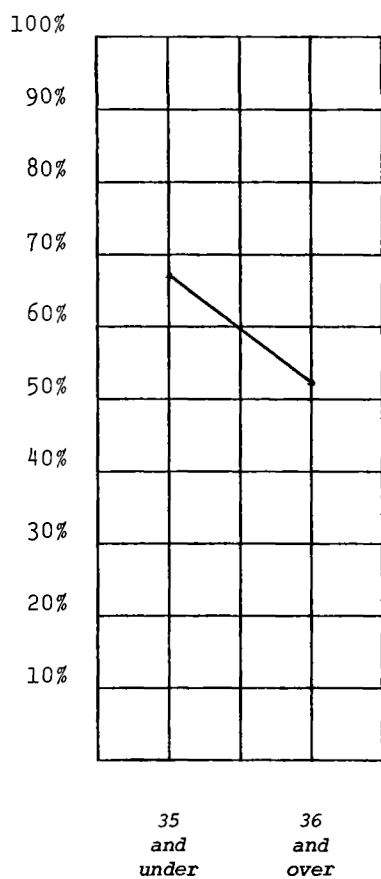


Fig. 8 — ph for PHR

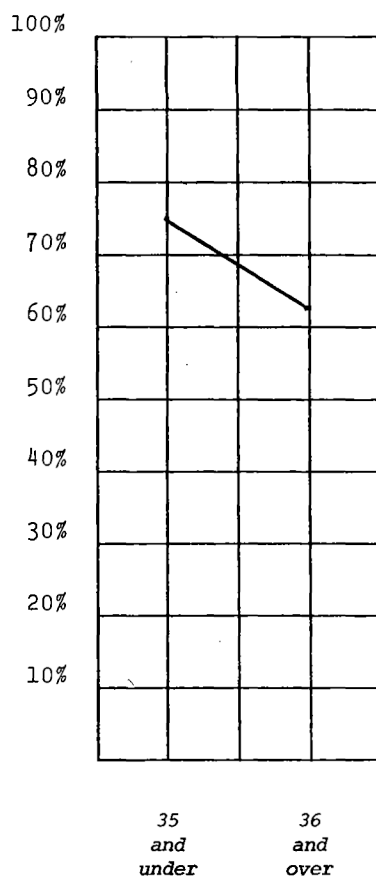


Fig. 9 — kh for KHR

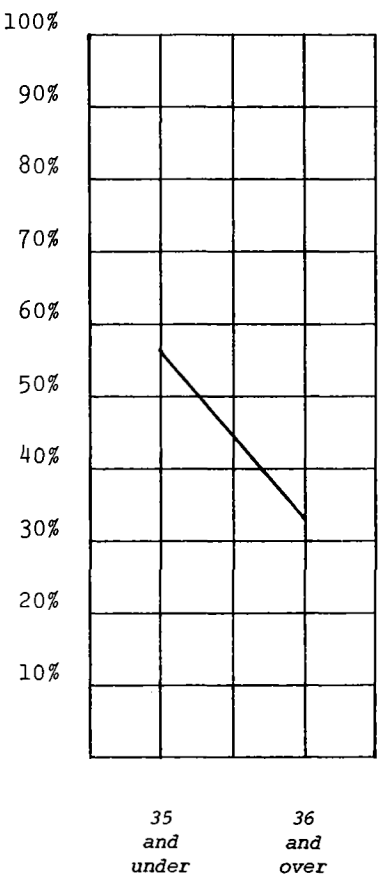


Fig. 10 - t for TR

There is an average difference of 13% between the older and younger groups on R cluster simplification. Looking at the individual cases making up the average, we find on the lower extreme that KR is simplified 4% more often by the younger group than by the older group. On the upper extreme, the TR cluster shows the most striking stratification between age groups of all the R clusters. The younger group has a 23% higher rate of cluster simplification than the older group. TR has the sharpest differentiation between age groups of any R cluster on both reduced variants and on full retained variants. In other words TR is the R cluster most strongly conditioned by age.

L CLUSTERS: FULL RETAINED VARIANTS

It was hypothesised that the older age group would pronounce full retained L clusters a greater percentage of the time than the younger age group. The survey showed that there was in fact a strong positive correlation between the two variables. Figures 11 to 14 summarise the findings.

The older group always had a higher rate of L clusters with full l variants than the younger group. Although this positive correlation was always present, KHL showed only a 4% difference between age groups. However, the average difference was 15%, and PHL had as high as 23% greater cluster retention for the older speakers.

L CLUSTERS: REDUCED VARIANTS

It was hypothesised that since cluster simplification is a sound change in progress in the Bangkok-Thonburi area, there would be a higher rate of cluster simplification in L clusters in the younger age group than in the older age group. The hypothesis was supported. The data showed that there was in fact the expected negative correlation between age group and cluster simplification. Figures 15 to 18 present the evidence.

For every L cluster there is a higher rate of cluster reduction in the lower age group. The average difference in rates between the two age groups is 15% although KHL has only a 3% difference.

PERCENTAGE OF FULL CLUSTER RETENTION IN L CLUSTERS
ACCORDING TO AGE GROUP

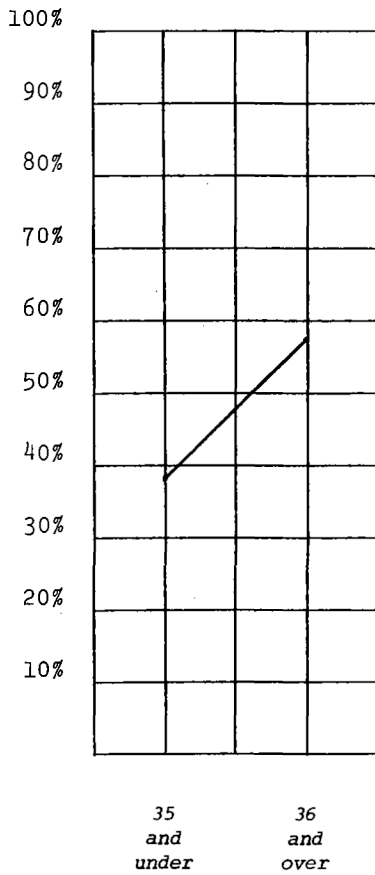


Fig. 11 - p1 for PL

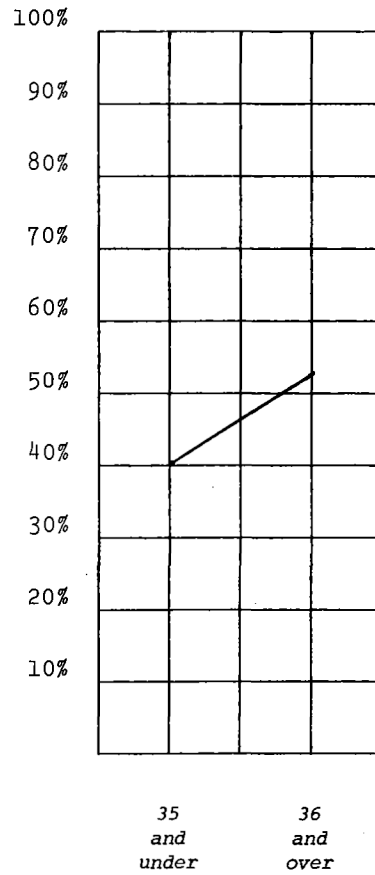


Fig. 12 - k1 for KL

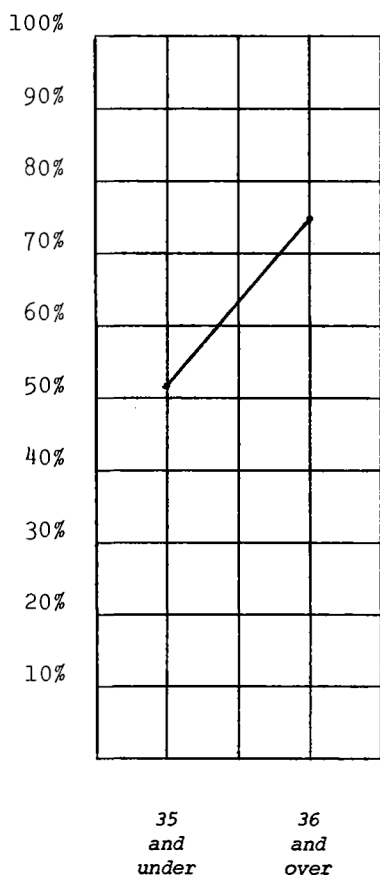


Fig. 13 — phl for PHL

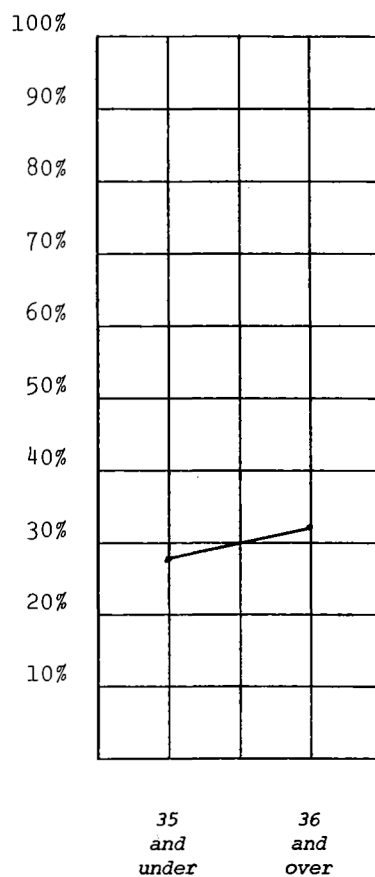


Fig. 14 — kh1 for KHL

PERCENTAGE OF CLUSTER SIMPLIFICATION IN L CLUSTERS
ACCORDING TO AGE GROUP

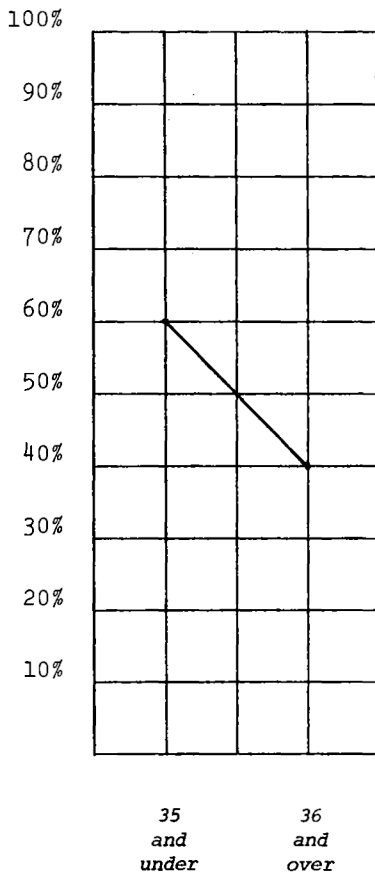


Fig. 15 - p for PL

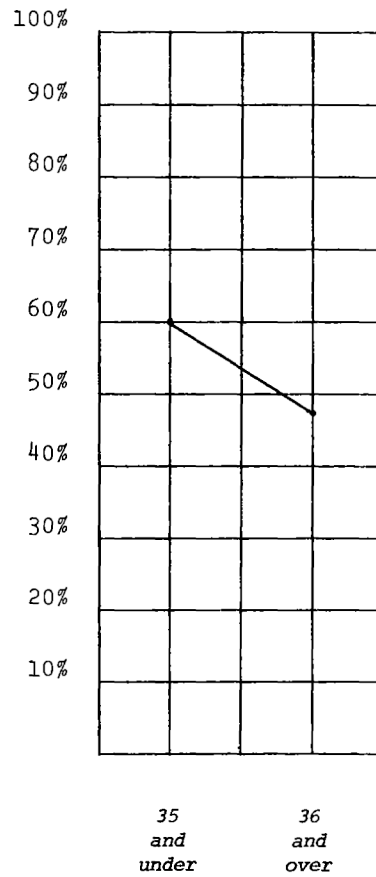


Fig. 16 - k for KL

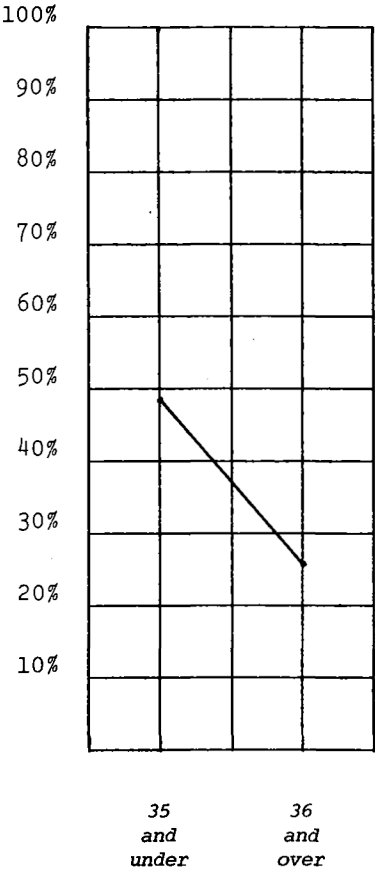


Fig. 17 — ph for PHL

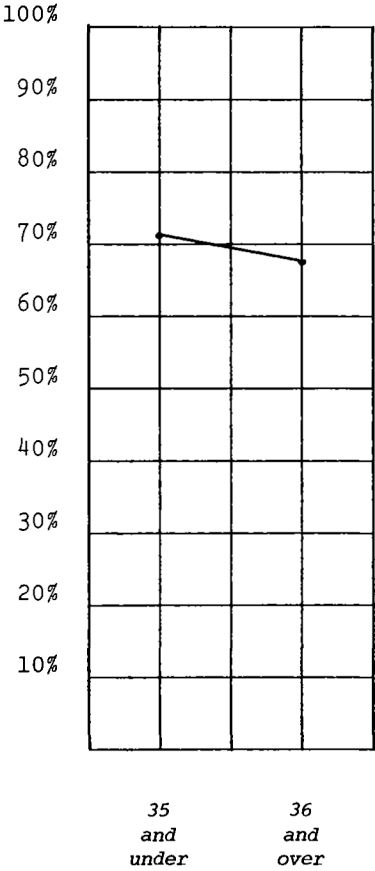


Fig. 18 — kh for KHL

W CLUSTERS: FULL RETAINED VARIANTS

It was hypothesised that age group would have a positive correlation with full cluster retention in W clusters. That is, the older age group was expected to have a higher rate of full W cluster retention than the younger age group. Surprisingly, this was true for only one of the two W clusters. Figures 19 and 20 show the results of the survey.

PERCENTAGE OF FULL CLUSTER RETENTION FOR W CLUSTERS ACCORDING TO AGE GROUP

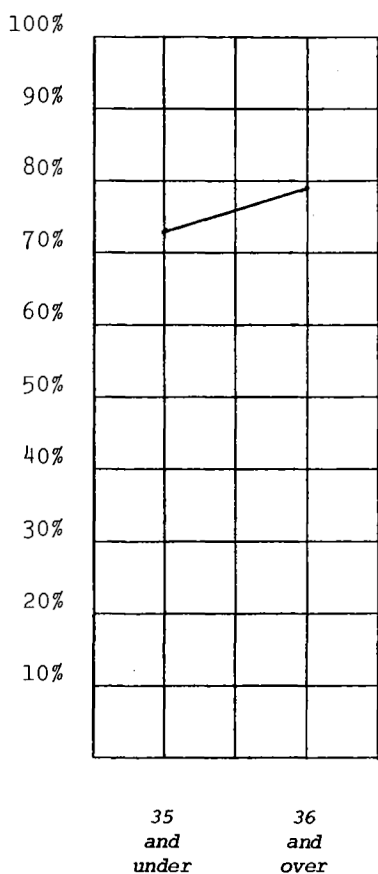


Fig. 19 - khw for KHW

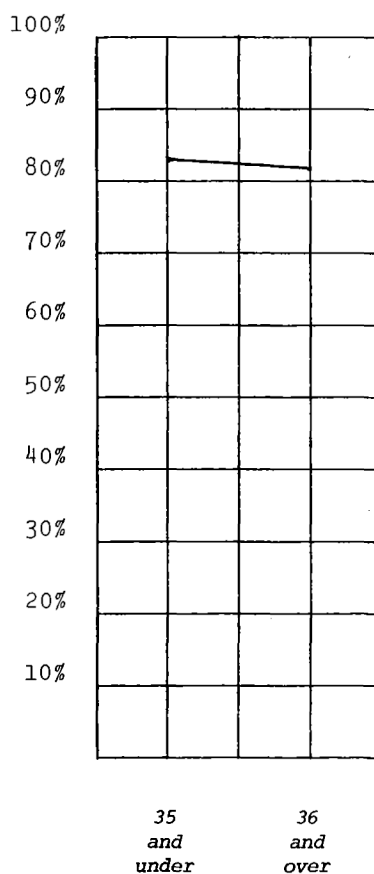


Fig. 20 - kw for KW

KW did not have the expected positive correlation between age group and full cluster retention. In fact, it was the only one of all the Thai clusters that failed to show this correlation (the difference between age groups was exceptionally small - only 1%). The KHW cluster had a 6% difference between age groups; the R clusters had an average difference of 8%, and the L clusters had an average difference of 15%. Thus, KW is an exception both in not having a positive correlation with age group and in differentiating less between age groups. This leads us to suspect that age is not, contrary to expectations, a significant conditioning factor on KW. Further evidence is presented in the following section of this paper to support this conclusion.

W CLUSTERS: REDUCED VARIANTS

It was predicted that there would be a negative correlation between age group and cluster simplification in W clusters. The results obtained from the survey did support the hypothesis, but the negative correlation between the two variables was not as strong as expected. Whereas in R clusters the younger group had an average rate of cluster simplification 13% higher than the older group, and in L clusters 15% higher, in W clusters the younger group had only a 3% higher rate than the older group. It was expected that the differences would be roughly comparable. Instead, the W clusters stood out as having a much lower differentiation according to age group than the clusters with liquids.

Figures 21 and 22 show the results of the survey. These graphs and the ones in the preceding section provide evidence for the conclusion that the variants of KW in particular, and KHW to a lesser extent, are not strongly conditioned by age group. This may be an insignificant bit of information, or it may be the key to evidence on a much larger and more important question.

KW and KHW showed the smallest differentiation between age groups of any of the clusters. Interestingly, they also had the highest rates of full cluster retention and the lowest rates of cluster reduction of any of the clusters. This means that they are the most stable of all of the clusters in Bangkok Thai. KW had higher cluster retention and lower cluster simplification rates than KHW, so it can be considered the most stable cluster of all.

PERCENTAGE OF CLUSTER SIMPLIFICATION IN W CLUSTERS
ACCORDING TO AGE GROUP

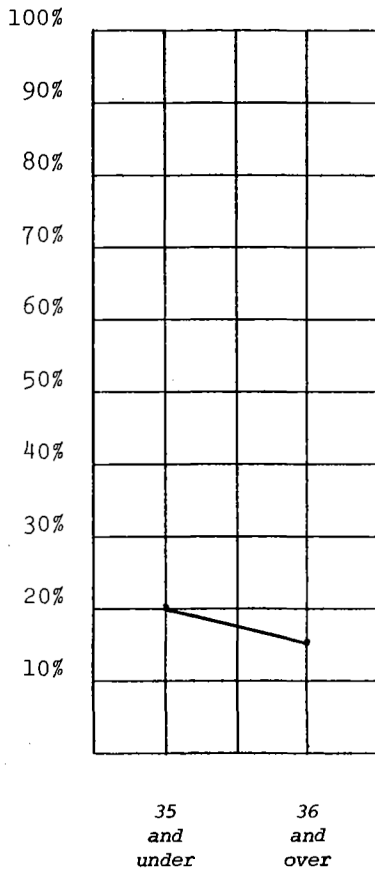


Fig. 21 - f for KHW

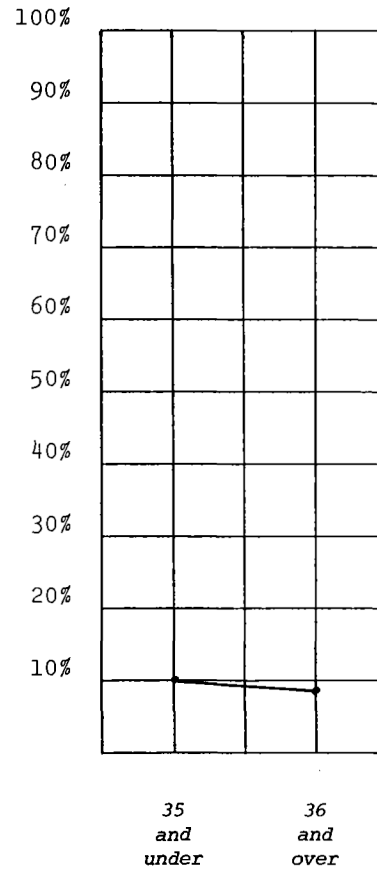


Fig. 22 - f for KW

SUMMARY: FULL CLUSTER RETENTION

In the previous sections of this paper, generalisations were based on the findings for the individual clusters. The clusters were grouped under headings for the sake of clarity and generality, but the rates of occurrence were reported individually. In this summary the figures reported represent *average* rates of occurrence. That is, the rates for the five individual R clusters were averaged. Similarly an average score was calculated for the four L clusters and the two W clusters. This yielded three average rates which are useful in the comparison of cluster types. They also eliminate the idiosyncratic effects of age group on particular clusters and allow us to see overall patterns.

Of all the R, L, and W clusters in Bangkok Thai, there was only one exception to the generalisation that a positive correlation exists between full cluster retention and age group. In this exception, KW, there was a difference between the age groups of only 1%. Thus it still seems worthwhile to look at the general trends, ignoring the exception for now.

Table 1, presenting average rates of full cluster retention, highlights the stratification among the three types of clusters. The R clusters are far less stable in both groups than the W clusters. It is apparent in Table I that the linguistic shape of the second member of the cluster is a far stronger conditioning factor on full cluster retention than the social variable, age group. Once the averages are

Table I

AVERAGE PERCENTAGE OF FULL CLUSTER RETENTION IN
THREE TYPES OF CLUSTERS ACCORDING TO AGE GROUP

Cluster Type	Age Group	
	35 and under	36 and over
R	12	20
L	39	54
W	78	81

calculated, there are no exceptions to the overall generalisation that age group and full cluster retention are positively correlated.

Clusters with unaspirated stops as initials were found to be more stable than those with aspirated stops as initials when the data were

controlled for occupational class. This was generally found to be true when controlling for age group as well. Table II demonstrates this relationship between the clusters with aspirated and unaspirated initials.

Table II

AVERAGE PERCENTAGE OF FULL CLUSTER RETENTION IN
CLUSTERS WITH ASPIRATED AND UNASPIRATED INITIALS
ACCORDING TO AGE GROUP

Cluster Type	Age Group	
	35 and under	36 and over
R		
asp. stop	9	16
unasp. stop	21	23
L		
asp. stop	40	53
unasp. stop	39	55
W		
asp. stop	73	79
unasp. stop	83	82

There is one exception to the generalisation that full cluster retention is generally more common in clusters with unaspirated initials than in clusters with aspirated initials. That exception occurs in the younger group on L clusters. The difference there between the two types of initials, however, is only 1%. This would not warrant the opposite generalisation, nor would it suggest that the distinction elsewhere is merely coincidence. The older group as well makes very little distinction in L clusters between the two types of initials. This leads us to suspect that the distinction is particularly weak or perhaps even non-existent in L clusters.

The second deviation from the expected results in Table II occurs in the W clusters with unaspirated initial. Since there is only the KW cluster in this group, the exception is the same one discussed previously in the treatment of KW.

If all clusters are grouped together regardless of the aspiration of the initial consonant and the place of articulation of the second consonant, the average rate of full cluster retention is 9% lower in the younger group than in the older group (see Table III). Whereas the older group retains full cluster 43% of the time, the younger group pronounces them only 34% of the time. In other words, neither age

group manages even half the time to pronounce the forms which they think they should say, the very forms they indeed think they *do* say. This is strong evidence that consonant clusters are declining in the speech of Bangkok Thai, regardless of what the people think they do or think they should do.

Table III

AVERAGE PERCENTAGE OF FULL CLUSTER RETENTION IN
ALL CLUSTERS ACCORDING TO AGE GROUP

Age Group	Percentage
35 and under	34
36 and over	43

SUMMARY: CLUSTER SIMPLIFICATION

For all three types of consonant clusters in Bangkok Thai there were no exceptions to the generalisation that a negative correlation exists between age group and cluster simplification. Table IV summarises the data on this subject. It shows the average percent of reduction for two age groups in the three types of clusters.

Table IV

AVERAGE PERCENTAGE OF CONSONANT CLUSTER SIMPLIFICATION IN
THREE TYPES OF CLUSTERS ACCORDING TO AGE GROUP

Cluster Type	Age Group	
	35 and under	36 and over
R	67	54
L	60	45
W	15	13

Since there were no exceptions in individual clusters to the negative correlation between age group and cluster simplification, Table IV giving average rates of reduction *ipso facto* has no exceptions to the correlation. The table is nevertheless interesting because it emphasises

some striking differences among the three cluster types. The younger group simplifies L clusters four times as often as W clusters and R clusters four and half times as often as W clusters. The older group reduces L clusters about three and a half times as often as W clusters. As in full cluster retention, the W clusters vary more in average rate of cluster simplification between cluster types than between age groups. Contrary to the situation with full cluster retention, this is not true of all cluster types. The R and L clusters vary more between age groups in the same type of cluster than between types of cluster in the same age group. One generalisation, however, is strikingly clear in both Table IV and Table V (below). W clusters can only be said to be very weakly conditioned by age group.

Table V

AVERAGE PERCENTAGE OF CLUSTER SIMPLIFICATION IN
CLUSTERS WITH ASPIRATED AND UNASPIRATED INITIALS
ACCORDING TO AGE GROUP

Cluster Type	Age Group	
	35 and under	36 and over
R		
asp. stop	71	58
unasp. stop	65	52
L		
asp. stop	60	47
unasp. stop	60	44
W		
asp. stop	20	16
unasp. stop	10	9

As with full cluster retention, cluster simplification was found to be related to the presence of aspiration in the initial consonant. In this case, however, reduction increased when aspiration was present. Table V demonstrates that this generalisation holds true for all three cluster types in both age groups. The one exception to the generalisation is in the older age group on L clusters. L clusters with aspirated initials have an equal rather than a higher rate of reduction than those with unaspirated initials. The exception is a very small deviation in the overall pattern.

If the rates of all clusters are averaged, the variables of cluster type and initial aspiration are eliminated for the moment. This makes it

possible to focus on the central variable of this discussion, age group. We find, as expected (see Table VI), that age group is negatively correlated with cluster reduction. The younger speakers simplified clusters 55% of the time, whereas the older speakers simplified them only 43% of the time, making a difference of 12% between the age groups.

Table VI

AVERAGE PERCENTAGE OF CLUSTER SIMPLIFICATION IN
ALL CLUSTERS ACCORDING TO AGE GROUP

Age Group	Percentage
35 and under	55
36 and over	43

III. SIGNIFICANCE OF THE FINDINGS FOR THE STUDY OF SOUND CHANGE

It is impossible to determine conclusively the progression of linguistic change throughout time by doing a synchronic study. To make such a determination at least two different points in time must be studied. However, studying the speech of successive living generations is a useful tool enabling us to *infer* the progression of linguistic change. It helps to suggest which of the variants found in the synchronic data are the older ones and which are the newer ones. In the data presented in this paper, studying the speech of the two age groups leads us to hypothesise that the reduced variants have been introduced into Bangkok Thai where the full retained variants were formerly used. Thus, it is the reduced variants which are to be considered the newer forms.

There are several bits of evidence which support the hypothesis that the full retained variants are the earlier pronunciations for the initial clusters and that the reduced variants are the innovations. The study of age group in particular, however, lends support to this contention. The age group of thirty-five years and under simplified clusters 55% of the time, whereas the group thirty-six years and over simplified clusters only 43% of the time. This suggests that we are right in claiming full retained clusters to be older forms rather than reduced variants. It also lends support to the view we propose here that consonant cluster simplification is a rule which is gaining prominence. We cannot be sure that new generations will continue to apply the rule increasingly frequently even though the younger generations today have a

higher rate of rule application than the older generations. However, we hypothesise that the cluster simplification rule is operating more often since there is no evidence which suggests a trend in any other direction.

There is further evidence to suggest that the reduced variants are the innovations in Thai and that the full retained variants are the older ones. This evidence comes from general linguistic theory. The theory of naturalness claims that consonant cluster simplification is a natural process in language. Consonant cluster complication is not considered to be natural. Thus, this theory suggests that it would be a more natural change if R, L, and W clusters were pronounced as full retained variants at an earlier stage in Thai history and had been variably changed more recently to reduced variants than if the reverse were true.

The theory of internal reconstruction also supports the contention that reduced variants are the new forms and that full retained variants are the older forms. It assumes that if new variants are introduced into a language, there must be a conditioning factor. If we hypothesise that reduced variants are the newer forms, we can cite natural phenomena such as lack of stress and a variable rule allowing only a single consonant in the environment #__V as conditioning factors. However, if we hypothesise that full retained variants are the newer forms, there are no natural processes which we can posit as conditioning factors for this innovation.

Further evidence supporting the conclusions implied by the findings in this paper comes from the Thai writing system. Since the earliest Thai orthography, developed in the Sukhothai Period, wrote consonant clusters distinct from single initial stops, it is highly likely that there was some distinction between the two at that time. For most of these clusters there is evidence from other related languages of the Tai family that they are historically genuine. That is, there is no reason to suspect that the majority were introduced only as a result of borrowing. Thus, we suppose that during the Sukhothai Period, the written clusters were either pronounced as actual clusters or as phonetically complex sounds distinct from the sounds written as single initials. Thus the Thai orthography, dating from the 13th century A.D., gives us some evidence that full cluster retentions or something like them were the pronunciations used for the written clusters during the Sukhothai Period and that the reduced variants for these clusters were introduced later.

In sum, the bits of evidence from the writing system, the theory of naturalness, and the theory of internal reconstruction concur with the

evidence from the speech of different generations. These factors lend support to the contention that the reduced variants (single consonant initials) in modern Bangkok Thai are more recently introduced variants than the full, retained consonant clusters. More significantly, however, the credibility of the study of different age groups as a means of determining sound change is enhanced. Furthermore, our confidence in the reliability of age group data is heightened. Finally, we have been able to make important hypotheses not only about the presence of sound change, as opposed to inherent variability, but also about the direction of sound change.

