

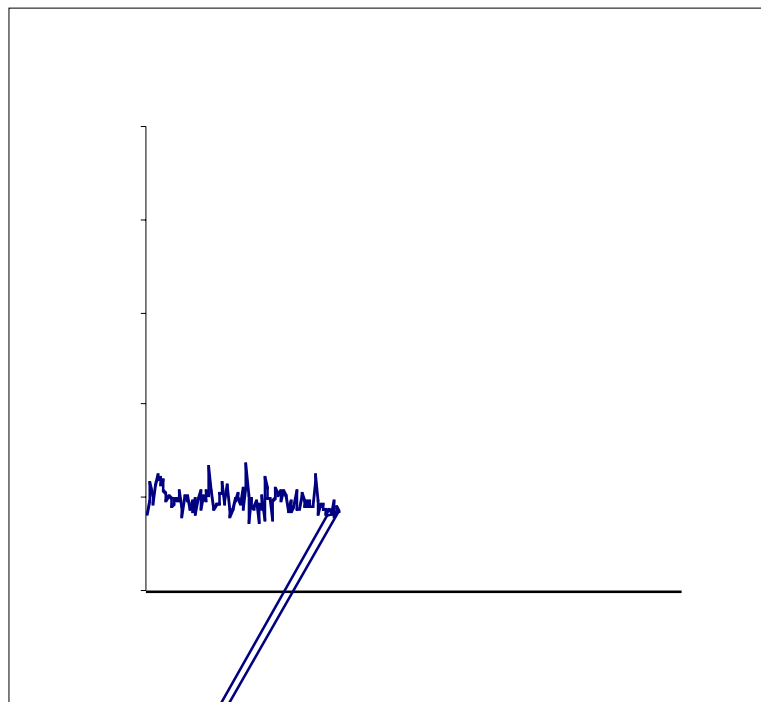
# **THE *KIT***

community associated with age (Batterham 1995, Allan and Starks 2000) and to, a lesser extent, with gender (Maclagan *et al.* 1999, Bell 1997).

## **2. The experiment**

The data was collected using the technique of the Taped Rapid and Anonymous Survey (Starks 1998, Starks and McRobbie-Utasi, to appear. McRobbie-Utasi and Starks 1999). The survey was conducted in public places throughout the city of Auckland, New Zealand. Those interviewed were approached using intercept or opportunistic sampling, i.e., any individual who passed by the interviewer was asked to participate (Cooper and Emory 1995). The interview consisted of four questions, each requiring a one-word response. The KIT vowel in the speech of the interviewer (the target of this study) occurs in the second of these questions in the (stressed) word *this*:

of variation in connection with the realization of the first formant; the greater degree of variation in F2 values corresponds to differing degrees of centralization.



*Figure 1.* F1 and F2 values of the KIT vowel of the interviewer

*Figure 2.* Overall variation in percentages

### **3.2 Variation in relation to gender**

In examining the variation in relation to gender the following pattern may be observed: (i) F1 measurements have similar values in the speech of the interviewer when questioning male and female speakers, thus there is no evidence of accommodation in this regard, (ii) there is more variation with regard to F2 values. This pattern is substantiated by the following measurement results (Table 1):

Table 1. Formant frequency distribution in relation to gender

	Frequency values	Percentages	
		FEMALE	MALE
F1	416 Hz – 556 Hz	82.5%	88%
F2	1461 Hz – 1611 Hz	75.6%	68.3%

The distribution of formant frequency realizations as presented in Table 1 suggests that vowel lowering does not play a role in the accommodation of the interviewer to her respondents. In connection with the F2 values, although a greater degree of variation with regard to tongue backing may be observed, the difference does not reach statistical significance.

For both genders there is a peak indicating where F1 and F2 frequency values are concentrated. Peak value percentage differences do not reveal any attempt by the interviewer to accommodate.

F1 peak: 451 Hz – 486 Hz 29.9% (FEMALE), 31% (MALE)  
 F2 peak: 1561 Hz – 1611 Hz 24.9% (FEMALE), 23.2% (MALE)

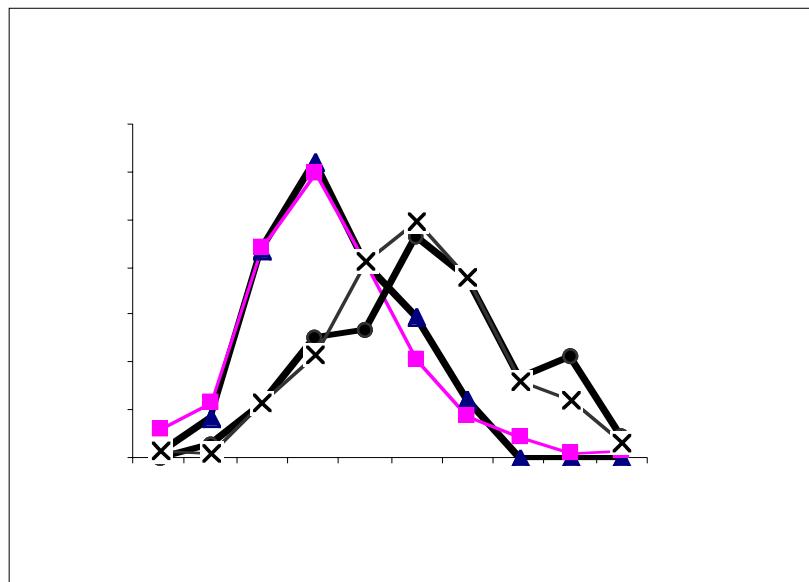


Figure 3. Gender: variation in percentages

The above figure summarizes the variation in percentages in relation to gender. It can clearly be seen from the graph that F1 values almost completely overlap, and that F2 values reflect little difference.

Consequently, it may be stated that variation in the speech of the interviewer cannot be accounted for on the basis of gender alone.

### 3.3 Variation in relation to age

Impressionistic analysis of the respondents' KIT vowel when occurring later in the interview (reported in Allan and Starks 2000) indicates that realizations of the vowel differ most noticeably between two age groups: 15-24 years and 25-34 years. Accordingly, in working with age -- a continuous variable -- this division is

employed in the present study. The assumed difference is substantiated by the measurement values suggesting attempts to accommodate by the interviewer. Table 2 summarizes the distribution of the formant frequency realizations in relation to these two age groups.

Table 2. Formant frequency distribution in relation to age

	Frequency values	Percentages	
		YS	OS <sup>1</sup>
F1	416 Hz – 556 Hz	76.8%	85.3%
F2	1461 Hz – 1611 Hz	70.1%	66.6%

For both age groups there are peaks indicating where F1 and F2 frequency values are concentrated. *Figure 4* summarizes the variation in relation to age.

F1 peak: 451 Hz – 486 Hz 34.1% (YS), 22.1% (OS)  
 F2 peak: 1561 Hz – 1611 Hz 20.4% (YS), 26.5% (OS)

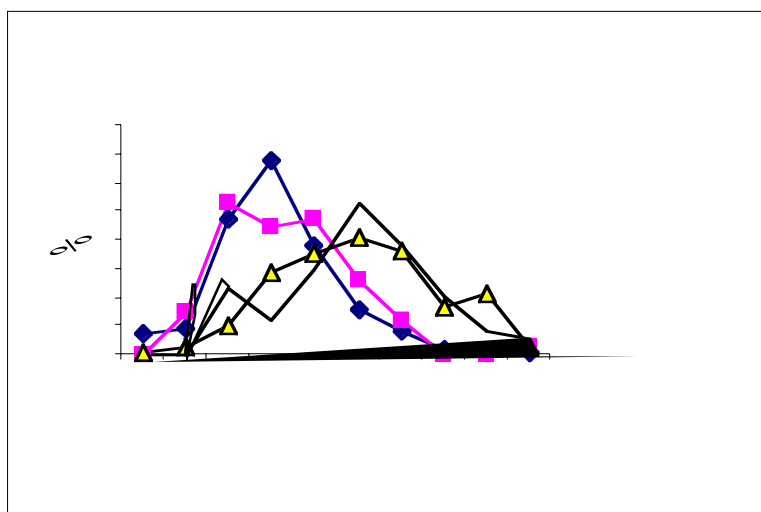


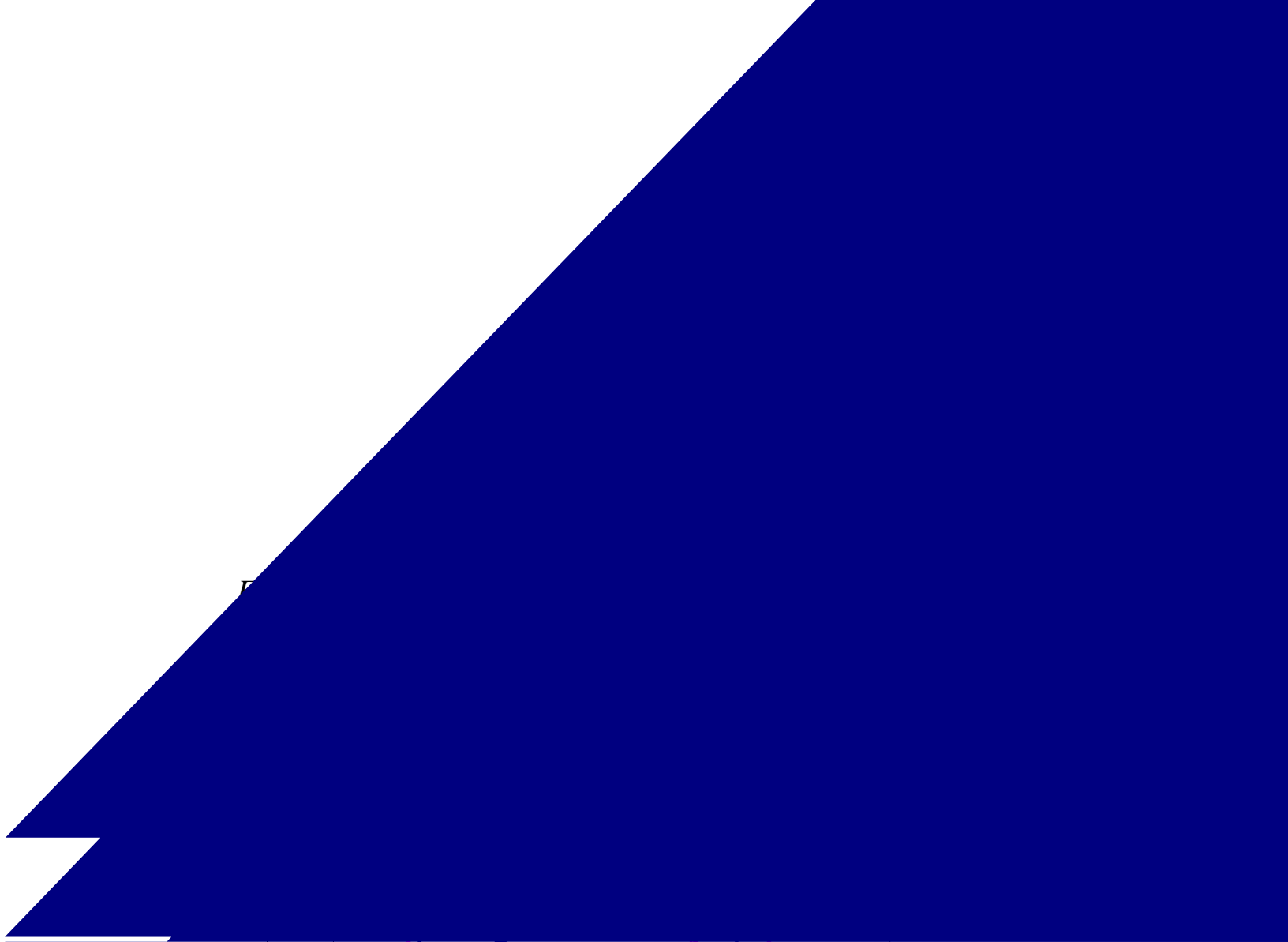
Figure 4. Age: variation in percentages

The pattern presented above suggests that the interviewer may be targeting a less centralized vowel when addressing speakers in the second group, i.e., those between the ages of 25-34 years. The realizations of peak frequency appear to be in conformity with this pattern of accommodation.

The differences observed with regard to age were examined further in relation to gender, in order to establish whether they may be attributed to age alone, or to differences in connection with one and not the other gender. Accordingly, formant frequency realizations by the two age cohorts (YF-OF and YM-OM) were compared. *Figures 5, 6, 7 and 8*<sup>2</sup> show the interaction of these two variables in relation to F1 and F2. For female speakers there appears to be a difference between the realizations of both F1 and F2 for younger and older speakers; for male speakers the difference is more evident with regard to F2. Implications of these patterns are discussed in Section 4.

<sup>1</sup> YS (Younger Speakers: 15-24ys.), OS (Older Speakers: 25-34 ys.).

<sup>2</sup> YF (Younger Female), OF (Older female); YM (Younger Male), OM (Older Male).



*Figure 6.* F1 variation in % in relation to age and gender (male)

*Figure 7.* F2 variation in % in relation to age and gender (female)

The formant frequency measurement values in relation to both variables --

YM	451 Hz – 486 Hz	38.9%	1561 Hz – 1611 Hz 1661 Hz – 1761 Hz	50%
OM	451 Hz – 486 Hz	27.8%	1611 Hz – 1711 Hz	52.7 %



<i>MF2(OS)</i> 1711 Hz (SD: 78)	<i>M F1(YF)</i> 554 Hz (SD: 87)	<i>M F1(OF)</i> 460 Hz (SD: 87)
$p < .05$	$p < .05$	$p < .05$

In interpreting the results presented in this study, the following patterns emerge with regard to the issue of accommodation by the interviewer to her respondents in brief encounters:

- (i) Gender: it appears that in considering gender alone the stereotypes suggested in the literature do not play a role in the realization of the KIT vowel by the interviewer (but see below!)
- (ii) Age: there are different patterns for respondents under and over 25 years, implying that a more advanced degree of centralization is associated with the younger age group.
- (iii) The different response patterns observed with regard to younger vs. older male interlocutors indicate that younger males are also associated with a greater degree of centralization of the KIT vowel than older male speakers.
- (iv) The patterns evident in relation to both variables lead to the conclusion that the interviewer may be aware of the stereotyping of younger female which leads to the process of centralization.

## 5. Conclusion

The findings show that the interviewer produced a neutral vowel with some minor variation. This variation appears to be conditioned by the age, and, to a certain extent, gender of the addressee. The interviewer produced a less centralized KIT vowel when the respondent was older or male (although as indicated above, there appears to be a pattern present in connection with younger male respondents approximating to that of the younger female respondents).

In New Zealand English, older viewer mTT6 g.a673ba pattminor 4erns evidvowel th

English KIT vowel (Maclagan 1999 and Bell 1997) fall outside those attested by the interviewer.

The present study is part of a pilot project aimed at examining the extent of accommodation by the individual in brief encounters with respondents differing in gender and age. While it does appear that stereotypes may play more of a role -- due to the minimum linguistic input in the type of data collection employed -- given the fact that the speech of only one individual was analyzed, and inasmuch as the possible impact of the minimum linguistic impact was not considered, further studies are needed to confirm the degree of accommodation expected with regard to the variables examined.

Implications of the acoustic analysis confirm assumptions stated in previous studies with regard to the role of gender and age in the different realizations of the KIT vowel (Batterham 1995, Allan and Starks 2000), concerning age) and Maclagan *et al.* 1999, Bell 1997, concerning gender. One of the tendencies that became apparent in the present study has not yet been discussed in the literature: accommodating to younger male speakers appears to be similar to the accommodation to younger female speakers, implying that age is the most relevant factor when considering the process of centralization.<sup>5</sup>

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<sup>5</sup> Analysis of two additional individuals participating in the same experiment is in progress. Further, an additional variable, ethnicity, is also included in the next stage of the project that will examine accommodation by the individual in relation to social variables.



