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ABSTRACT
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The model is generally applicable, but the empirical tests are
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Australian censuses). The findings indicate that fluency responds to
incentives, including economic incentives, and both the individual's
exposure to and efficiency in acquiring dominant language skills. The
analysis also shows that fluency enhances labor market earnings.
Among immigrants from non-English speaking countries, those fluent in
English had more than 9 percent higher earnings in 1986. Fluency is
also shown to enhance the returns of other skills, including
schooling and labor market experience. Two appendices present an
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Language and Work Among Immigrants: Endogeneity in the Australian Experience

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Abstract

Language and Work Among Immigrants: Endogeneity in the Australian Experience

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This study is concerned with the determinants of dominant language fluency among immigrants and the labor market impact of this fluency. The model is generally applicable, but the empirical tests are performed for adult foreign-born men in Australia (1981 and 1986 Censuses). The findings indicate that fluency responds to incentives, including economic incentives, and both the individual's exposure to and efficiency in acquiring dominant language skills. The analysis also shows that fluency enhances labor market earnings. Among immigrants from non-English speaking countries those fluent in English had over 9 percent higher earnings in 1986. Fluency also enhances the returns to other skills, including schooling and labor market experience.

(100 words)

Language and Work Among Immigrants:
Endogeneity in the Australian Experience

Barry R. Chiswick
Paul W. Miller

I. Introduction

Australia is often described as a land of immigrants. According to the 1981 Australian Census, 21 percent of the population was born overseas, and for 26 percent of those born in Australia, one or both parents was foreign born. Prior to World War II nearly all immigrants to Australia came from English-speaking countries, primarily from the British Isles. In the post-war period there has been an increase in the heterogeneity of immigrants. First from Southern Europe, particularly Italy, Greece and Yugoslavia, and more recently increasingly from Asia. Australia's new immigrants do not bring with them the fluency in English associated with native speakers. In recent decades there has been an increase in the proportion of the immigrant flow entering under the refugee and family sponsorship categories, and a concomitant decrease in the proportion entering as unsponsored immigrants. The entrance tests, which have included language skills, are more demanding for the latter than for the refugee and family categories that have increased in relative importance.

Language fluency is generally suggested to have an important role to play in the adjustment of immigrants in Australia. Cox (1975, p. 13), for example, suggests that "many Australians and migrants regard fluency in the language as *sine qua non* for adequate

integration and there is some truth in this, regardless of how one
views integration".   The empirical evidence on this is mixed:
Chiswick and Miller (1985) and Stromback (1986) report that
language fluency is positively related to economic success, but
Scott and Scott (1985) report that while fluency in the English
language predicted assimilation to Australian-born friends and
similar indices of adaptation, it did not forecast the level of
material well-being in Australia.

The reported degree of proficiency in English among immigrants
in Australia is quite high.   Among adult male employed immigrants
reporting in the 1981 Census, 92 percent responded that they spoke
English well or very well, in contrast to the U.S. where only
80 percent of male immigrants responded in a similar manner to the
same question.   This arises in part because Australia still
receives a larger proportion of its immigrants from English-
speaking countries.   Yet, even among immigrants from non-English-
speaking countries, English language fluency is more prevalent in
Australia than in the U.S. (fluency rates of 86.4 percent and
76.6 percent respectively).   It may be that language skills are
greater in Australia than in the U.S. because of the effective use
of fluency in English in the "point system" in immigrant selection.
Alternatively, incentives for acquiring English language skills may

differ or the language questions, although worded the same, measure different skills.[1]

In spite of the increased proportion of those not fluent in English in the immigrant stream, little is known about the determinants of English language fluency in Australia. Even less is known about the impact in the labor market of this fluency. Yet both issues are very important for an understanding of the implications of giving preference to English speakers in immigration policy (e.g., points for English fluency in the point system) and the promotion of multiculturalism in Australia. In a broader context, the Australian experience may be fruitful for understanding the immigrant adjustment process in the other major immigrant receiving countries.

This paper addresses the inter-relation between English language fluency and work among immigrants in Australia, using micro data from the 1981 and 1986 Australian Censuses of Population and Housing. Section II develops a model for analyzing English language fluency. The data used for this study are discussed in Section III, while the estimation of the determinants of English language fluency is presented in Section IV. The standard human capital approach to analyzing immigrant adjustment is augmented in Section V in three ways--by adding a fluency variable to an OLS

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[1]The United States has never explicitly incorporated English language fluency, whether spoken or written, in its immigration criteria. Although the 1990 Immigration Amendments create a skill-based point system for selecting one category of immigrants, the initial proposal to award points for English language fluency was defeated.

equation, by using an instrumental variables approach and by using selectivity correction techniques. The conclusions (Section VI) indicate that the data for Australia are consistent with the model of English language fluency, and that this fluency is important, and rewarded, in the Australian labor market.

II. Determinants of Language Fluency-The Theory

Language skills are an important form of human capital. They satisfy the three basic requirements for human capital. These skills are embodied in the person, they are productive in the labor market and/or in consumption, and they are created at a sacrifice of time and out-of-pocket resources.

Skills in one's "mother tongue" are acquired as young children. At this stage the investments are made largely by the parents or care-givers. This is a time in the life cycle when the human mind is especially efficient in creating language capital (Harley 1986, Long, 1990). Among children, in general language capital is acquired when other forms of human capital (e.g., physical maturation, schooling) are being acquired. Thus, their acquisition of spoken language skills in the mother tongue seems almost effortless.

Among immigrants, however, the acquisition of language capital relevant for the destination can be very costly and certainly not appear to be an effortless process when this language differs

sharply from the mother tongue.[2] Dominant language fluency among
immigrants can then be expressed as a function of three conceptual
variables: economic incentives, exposure and efficiency.

As with other forms of human capital, "economic incentives"
can be expected to be an important determinant of language capital
acquisition.   The economic incentives arise in part from the
increment in the market wage rate and the decrease in the cost of
consumption (including search costs) associated with a higher level
of fluency. This suggests an endogeneity between real wage rates
and language skills.

The economic incentives for language acquisition are also
related to the expected future duration in the destination.
Immigrants expecting to return to their origin country would have
a shorter expected future duration in the destination and,
therefore, less of an incentive to make language investments
specific to the destination and more of an incentive to make
investments that retard the depreciation of origin language skills.
Thus, other variables the same, destination language fluency would
be lower for immigrants from countries where there is a higher
incidence of return migration.

"Exposure" refers to the learning-by-doing and the formal
instruction aspects of acquiring fluency in the destination
language.   It includes the extent to which others, whether in

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[2]This explains, in part, the preference on the part of
international migrants for destinations with the same or similar
mother tongue. See, for example, Chiswick and Miller, (1991).

person or through the media, use the language in one's presence,

and the extent to which the person himself or herself utilizes the

language.   Exposure to the destination language is greater the

smaller the "linguistic distance" between this language and the

immigrant's mother tongue. The linguistic distance between Spanish

and Italian, for example, is smaller than that between Spanish and

Korean. Therefore, including language (or country) of origin in an

analysis of fluency in the destination language measures, in part,

the effects of linguistic distance.

For immigrants from multi-lingual countries of origin (e.g.,

India) a measure of the linguistic distance between the immigrant's

mother tongue and the destination language may be misleading.

Exposure to the destination language while still in the origin,

whether it is used as a lingua franca (e.g., English in India) or

because of the presence of foreign nationals (e.g., overseas U.S.

military bases), would enhance destination language skills.

Duration in the destination, as measured by the number of

years since migration, is also an index of exposure.   Other

variables the same, destination language fluency would be expected

to increase with duration, up to the asymptote of full fluency.

The intensity of exposure per unit of time in the destination

is smaller for those living in an environment in which more people

communicate in the immigrant's mother tongue. Thus, the greater

the extent to which a minority language is spoken in the area in

which the immigrant lives, whether by immigrants or natives, the

poorer will be the fluency in the destination language.

Perhaps the most important language environment is in the home. Language skills emerge in large part through the linguistic interaction of those living together. Marriage to a spouse from the same linguistic origin will detract from destination language exposure and thereby reduce fluency, compared to marriage to a native speaker of the destination language. Children in the family, particularly those born in the destination, are more likely to be fluent in the dominant language because of the effects of age on language acquisition and their enrollment in school. Thus, to the extent that immigrant parents acquire fluency from their children, adult immigrant language fluency is enhanced by the presence of children. On the other hand, rather than serving as teachers, children may serve as parental interpreters to the world outside the immigrant language enclave. If so, children would inhibit destination language fluency on the part of adult immigrants.

"Efficiency" refers to the extent to which a given amount of destination language exposure produces language fluency. The very young have an impressive ability (efficiency) to acquire language skills even in more than one language simultaneously. With age, however, this facility appears to diminish.[3]

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[3]For detailed analyses of this issue, including a survey of the literature, see Harley (1986) and Long (1990.

Efficiency in language acquisition may be enhanced by a higher level of education. This may arise because the more educated have a greater mastery of their mother tongue, and are more efficient in learning new concepts and new terminology. Those with higher levels of schooling acquired in the origin country may, in addition, have been exposed to the destination language if this was part of the curriculum. Furthermore, those with schooling in the destination would be expected to be more fluent in the destination language as fluency may be a pre-requisite for school enrollment and the destination schooling itself would enhance fluency.

Refugees may appear to have a lesser efficiency in acquiring dominant language skills than economic migrants from the same linguistic origin for two reasons. First, refugees are less intensively self-selected for the characteristics that enhance a successful adjustment in the destination. Factors other than successful adjustment play a larger role, if not a dominant role, in their decision to migrate. Second, refugees could be expected to have invested in less preparation for the move, particularly if sudden changes in political events are responsible for their refugee status.

This analysis suggests the following conceptual equation:

LANG = f (Economic Incentives, Exposure, Efficiency),

where LANG is a measure of the immigrant's fluency in the dominant language. The empirical counterpart of this conceptual equation is:

LANG = f (Expected Wage Increment for Language Fluency,
                    +
              Age at Migration, Duration in Destination,
                    +   +
              Education, Married to Native of Destination,
                    +   +
              Married to Native of Origin, Children, Minority
                    -                           ?   -
              Language Concentration, Linguistic Distance,
                                                    -
              Refugee Status, Expected Future Duration),
                    -                              +

where the expected partial effect (positive or negative) is indicated under the variable.

Not all of these variables can be measured on an individual basis. There are no data on individual variations in expected increments in wages due to improved language fluency. It is, therefore, not possible to estimate the partial effect of expected wage increases due to fluency on the acquisition of fluency. Deleting this variable means that some of this effect may be captured by other variables.

One approach would be to use observed earnings as a proxy for the expected wage increment variable. Then, equations for language fluency and earnings could, in principle, be estimated simultaneously. This requires identifying instruments for both the language and earnings equations. The limitations inherent in determining appropriate identifying instruments, particularly for identifying the languag equation, preclude this approach.

Alternative procedures, to be discussed below, are used to address the endogeneity issue.

III. The Data

The data analyzed in this study are from the microdata files (one-in-one-hundred sample) released from the 1981 and 1986 Australian Censuses of Population and Housing. For most immigrant labor market analyses the 1981 Census is far superior to the 1986 Census. The 1981 Census reports income in 14 categories rather than the 8 available in the 1986 data, and period of immigration in single years (up to an upper limit of 35 or more years) rather than the 5 broad categories used in presentation of the 1986 data. An advantage of the 1986 Census, however, is that it includes information on any second language spoken in the home by the respondent. Thus, the empirical analysis of language fluency uses both censuses so as to exploit as fully as possible the available data.

The statistical analysis is limited to foreign-born males age 25 to 64 who were employed at the time of the Census. The analysis is computed for members of the primary family living in private dwellings. That is, those living in institutional settings or members of secondary families in a household are excluded from the analysis.

The 1981 Census asked if the respondent spoke a language other than English at home, and if yes, also asked for the degree of fluency in spoken English--"Very well", "Well", "Not Well" and "Not at all". In the 1986 Census, the respondent is also asked if a language other than English is spoken at home. This time, however, if the response is "yes", the respondent is asked to identify the

other language. Twelve minority languages, representing 74 percent

of immigrants reporting a minority language are coded on the data

file.

It is useful to collapse the four-category English language

proficiency variable into two categories for the statistical

analysis. The Australian Bureau of Statistics cautions that the

"Not Well" and "Not at All" categories will under-estimate the

extent of English language deficiency.[4] Furthermore, preliminary

tests indicated that among immigrants from non-English speaking

countries there is no difference in earnings between those who

reported they only spoke English at home and those who spoke

another language, but spoke English very well, in contrast to the

other three groups for which earnings were significantly lower by

about 12 percent.[5]

Hence, in the analysis reported here, immigrants fluent in

English are defined as those who only speak English at home and

those who also speak another language, but speak English very well.

Using this definition the fluency rate is 76.0 percent for adult

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[4]Australian Bureau of Statistics, Census 81-Language,
Catalogue No. 2152.0, p. 1.

[5]Using the 1981 Census data for immigrants from non-English
speaking countries, controlling for education, experience,
duration, location and citizenship, the earnings differentials from
the benchmark (speaking only English at home) are:

Speak	Coefficient	t-ratio
Very Well	-0.020	-0.84
Well	-0.125	-4.91
Not Well	-0.128	-3.97
Not at all	-0.111	-0.88

male immigrants and 58.2 percent for those from non-English
speaking countries.[6]   The fluency rate varied sharply across
birthplace regions.   It is relatively low for Southern Europe
(39.9 percent), Other Asia (i.e., excluding Vietnam and South Asia,
46.9 percent), Vietnam (16.7 percent) and South and Central America
(38.8 percent) but much higher for Northern Europe (excluding the
British Isles, 87.3 percent) and South Asia (87.8 percent).

The model suggests the importance of a minority language
concentration variable in the analysis of language fluency.
Specific minority languages are not identified in the 1981 Census,
but there is substantial detail on country of birth.   Linguistic
country groups were created by combining countries with the same
language (e.g., combining Portugal, Brazil and Timor).   Then, the
proportion of the population in the "area" in which the immigrant
lives that is of the same minority linguistic-country group as the
immigrant is assigned to the respondent.   English speaking
linguistic country groups, either as the mother tongue or a major
lingua franca, are assigned a value of zero.

In the 1986 Census, twelve minority languages are identified.
The minority language concentration variable is defined as the
proportion of the population age 15 to 64 in the region in which he
lives that reports the same minority language.

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[6]The English speaking countries for this purpose and in the
regression analysis include Britain, Ireland, Canada, U.S., British
West Indies and New Zealand.

Unfortunately the area or region of residence variables are limited. Both Censuses identify only size of place, and this is limited to "major urban areas", "other urban areas" and "rural areas".[7]

The variables discussed above and the other variables used in the statistical analysis are defined in detail in Appendix A. The means and standard deviations of the variables are also reported in this Appendix.

IV. Analysis of Linguistic Fluency

Table 1 reports the results of alternative specifications of the model. The model includes the exposure and efficiency variables discussed above. In particular, English language fluency is related to education (years of schooling), duration of residence, age (which measures the effect of age at migration when duration is held constant), current marital status, married overseas, number and age of children, size of place, and dichotomous variables for country of birth. The minority birthplace concentration measure is included in columns 2 to 5. Columns (1) to (3) are OLS regressions, while column (4) is a logit equation and column (5) is OLS excluding immigrants from the major

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[7]Two data files were released from the 1986 Census. The "Section of State" Household Sample File distinguishes "major urban areas", "other urban areas" and "rural areas". The "State/Territory" file distinguishes 7 States/Territories and "major urban" "balance of State/Territory". The "Section of State" file is comparable to the 1981 Census Public Use Sample and hence has been used in these analyses.

English-speaking source countries (Britain, Ireland, Canada, U.S.,
British West Indies and New Zealand).

The estimates for the baseline specification presented in
Table 1, column (1) reveal that each additional year of education
is associated with an increase in the fluency rate of
2.5 percentage points, or about 3.6 percentage points for those
from non-English speaking countries.   Educational attainment
therefore has a pronounced impact on the language skills: there
is, for example, a difference of 12.5 percentage points between the
language fluency rates of individuals with the mean level of
education (of around 11 years) and those who hold bachelor degrees,
other variables the same. This rises to 18.0 percentage points for
non-English origin immigrants.

Age at immigration is also an important consideration, with
language proficiency declining the greater the age at migration.
For example, immigrants who arrived in Australia as 25 year olds
are predicted to have English fluency rates 10 percentage points
greater than immigrants who arrived at 45 years of age, *ceteris paribus*,
but this is 18 percentage points among the sample of non-English
origin immigrants.

There is a distinctive pattern by marital status.   The
language proficiency of individuals who married in Australia does
not differ significantly from the rate of individuals who are
single. However, the rate for individuals who married prior to
migration is around 4 percentage points (8.5 percentage points for

those not from the major English-speaking source countries) lower

than for the remainder of the group. Marriage prior to migration,

in general, marriage to a person of the same origin country,

appears to reduce opportunities to acquire fluency in English.

The other family-related variables in the equation are the

presence and age of children. It has been suggested previously in

analyses for the U.S. and Canada that the partial effect is

positive, suggesting that the net effect is that parents may learn

the dominant language from their children (Chiswick and Miller, in

press). In the Australian data, however, the children variables

are generally statistically insignificant, although they are at the

margin of statistical significance in the Table 1, column (3)

specification that includes limited interaction terms.[8] Moreover,

the coefficients are typically negative, except when there are at

least two children, one pre-school age and the other school age.

More children may result in English language inter-action among the

children, and hence greater parental fluency.

What role, therefore, do children play in parental language

attainment? One possibility is associated with the desire to

preserve the language of origin, perhaps because of an expectation

for return migration or to maintain a cultural/national identity or

maintain ties with relatives in the origin. This means teaching

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[8]Alternative specifications of the children variables,
including analyses within birthplace groups, also result in
negative, but generally statistically insignificant coefficients.

the minority language to children at home or in school.[9] In his review of the position of various immigrant groups in Australia for the 1975 Australian Government Commission of Inquiry into Poverty, Cox (1975, p. 85) comments on Polish immigrants: "the resulting emphasis upon teaching Polish and utilizing it in the home had obvious implications upon the second generation......It also affected the parents' degree of fluency in English". The negative coefficients could also indicate that children act as interpreters for their parents, thereby reducing the benefits from the development of dominant language fluency, and thus reducing the incidence of this skill. While children can serve this role in the household, they can hardly be claimed to fulfil the same function in the workplace.[10] Yet, Cox (1975, p. 28) noted that "most employers who accept employees with no knowledge of English do not encourage them to learn".

The intriguing aspect of the effects of children on parental fluency, however, is the difference between Australia and the two North American labor markets. It may arise from differences in community perceptions. Prior to the 1960's "immigrants were expected to assimilate largely unaided, that is, to embrace

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[9]In addition to limited opportunities in public schools, there exist private day schools and after school and weekend programs for transmitting the country-of-origin language to native-born children.

[10]If children serve as interpretors in household and community matters, one would expect that their presence would be associated with a depressing effect on earnings, other variables the same. Tests suggest, however, that children have an insignificant effect on the earnings of adult male immigrants.

wholeheartedly the Australian way of life and deny and forget their
origins. By the 1960's.....there developed a greater acceptance of
the role of language and cultural maintenance in facilitating
settlement. This integration model envisages that immigrants would
adapt to a core of Australian institutions and values while
maintaining their cultural traditions"[11]

The emergence of multiculturalism would have lowered the
relative price of not learning English. Consequently, immigrant
parents would be more likely to speak their mother tongue at home
with their children, and the positive effect of children on
parental English fluency would diminish as a result.

Language skills improve rapidly with years in Australia. Each
additional year of residence is associated with almost a one
percentage point improvement in the language fluency rate among all
immigrants and a 1.6 percentage point increase for those from
non-English speaking countries. The differences in the language
fluency rates across duration of residence categories are
impressive. For example, the language fluency rate of immigrants
who have been in Australia for the mean period of residence (= 18.5
years) would be around 17 percentage points higher than for the
most recent arrivals, and 30 percentage points for those from
non-English speaking origin countries.

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[11]"Understanding Immigration", publication circulated by the
Secretariat to the Committee to Advise on Australia's Immigration
Policies, Australian Government Publishing Service, Canberra, 1987,
p. 14.

Country of birth is another important determinant of English

language proficiency. Compared to the benchmark, Britain, Ireland,

Canada, U.S., British West Indies and New Zealand, each of the

birthplace coefficients is negative and statistically significant.

Moreover, the estimated coefficients are generally quite large. In

Table 1, column (1), among the Europeans, there is a clear

distinction between those from Northern Europe (language fluency

18.6 percentage points lower than the reference group), Southern

Europe (57.8 percentage points lower fluency) and Eastern Europe

(40.5 percentage points lower fluency). Immigrants from Arabic

speaking countries have a language fluency rate 50 percentage

points lower than for the reference group, other variables the

same.

The four Asian variables indicate that exposure to English

prior to migration has an important impact on language attainment

in Australia. Thus, for immigrants from the Philippines (a region

of considerable U.S. colonial influence and current military

bases), the rate of language fluency is only 13 percentage points

lower than for the benchmark groups, for those from South Asia (a

region of British colonial influence) it is 15 percentage points

lower than for the benchmark, while for immigrants from Vietnam and

Other Asia the rate of English-language proficiency is considerably

lower, with the deficit being 78.7 and 54.1 percentage points,

respectively. Immigrants from South and Central America also seem

to have a substantial language deficiency compared to immigrants

from English-speaking countries (55.8 percentage points lower

fluency).

Column (2) in Table 1 includes the language concentration

variable in the specification. Two major comments are pertinent

here. First, inclusion of this variable is associated with only

minor changes in the estimated coefficients of the birthplace

dichotomous variables (compare Table 1 columns (1) and (2)). As

the language concentration variable is in fact constructed using

birthplace as the indicator of linguistic origin, the apparent

orthogonality of the constructed measure is surprising. Second,

the estimated coefficient is negative (-0.019), and highly

statistically significant (t = 4.82). The estimated impact

suggests that an increase in the linguistic composition of the area

favorable to an immigrant by 5 percentage points would be

associated with a reduction in the language fluency rate of

immigrants of around 10 percentage points. This seems to be a

quite powerful effect, and as it is shown below, it persists when

the analyses are conducted within major birthplace regions.[12]

Column (3) in Table 1 adds two interaction terms to the

estimating equation. The negative coefficient on the age-duration

interaction variable indicates that the effect of duration on

English language fluency is weaker the older the age at migration.

The negative coefficient on the education-duration interaction

_____

[12]This evidence is consistent with Evans' (1986, p. 234)
hypothesis that "Members of large immigrant groups with more
inward-looking friendship networks and more in-marriage will be
less skilled in the host country's language".

indicates that the effect of duration on fluency is weaker for the
better educated than for the less well educated. In other words,
the English proficiency gap by level of education diminishes with
a longer period of residence.

English language fluency models were estimated separately for
the sample of those not born in the English-speaking source
countries.   This is shown in Table 1, column (5) for the
non-English-speaking source countries as a group and in Table 2 for
the major regions of origin. The effects of schooling, duration,
age at immigration and married overseas are all larger when those
from English-speaking countries are deleted from the data.

For all birthplace groups, language proficiency is positively
related to education attainment. The estimated impact (Table 2)
varies from around 2 percentage points higher fluency per year of
education for the most fluent groups (Northern Europe, South Asia),
to 6 to 7 percentage points higher fluency per year of education
for immigrants from Arabic-speaking countries and South and
Central America, who have relatively low levels of language
attainment. Overall, the simple correlation coefficient between
mean level of fluency and the partial effect of education is -0.70,
and this is statistically significant at the 10 percent level.

Language fluency improves with duration of residence for all
birthplace groups, and the partial effect varies from around 1
percentage point for the Northern Europeans, to 3.5 percentage
points for immigrants from Other Asia (evaluated at YSM=10).
While there is a negative association between the mean level of

language fluency and the partial effect of duration (simple correlation coefficient =-0.27), this is not significant at conventional levels. It is also noted that for three birthplace groups (Eastern Europe, South Asia and Other Asia) there is evidence of a curvi-linear relationship between language attainment and duration in Australia; fluency rises but at a diminishing rate with a longer residence.

Minority language concentration is significant and negative overall, and in four out of eight individual birthplace regions (Table 2). It is negative and insignificant in two cases and positive and insignificant for the remaining two birthplaces.

Finally, the foreign marriage variable also performs satisfactorily within the disaggregated analysis: It is significant and negative overall and in 5 out of the 8 individual birthplaces. This variable is positive and significant in the case of South Asia.

In comparable analyses for the U.S. and Canada, the foreign marriage variable for South Asia also had positive, although not statistically significant, effects on language fluency compared to those who were not married (Chiswick and Miller in press). This seemingly South Asia effect is undoubtedly reflecting an unmeasured variable. One explanation is the much higher rate of arranged marriages among those from South Asia. More so than for other countries, post-migration marriage may involve spouses with the same non-English mother tongue who have only recently arrived in the destination.

The 1986 Census provides the opportunity to construct a minority language concentration variable that more closely matches the conceptual variable. Table 3 presents results from estimation of the language model using these data.[13] In spite of some minor changes in the definitions of some of the other variables, comparison of Tables 1 and 3 reveals that the estimated effects are virtually identical.[14] For example, the partial effects of education in column (1) of Table 1 (1981 data) is 0.025, and that in column (1) of Table 3 (1986 data) is 0.023. Even though the age and duration of residence variables for the analysis of the 1986 Census data have been created from interval data, the partial effects are identical to those derived from the 1981 Census, where the data were provided in single years.

Some caution is warranted when comparing the birthplace effects in the two analyses, due to the somewhat different groupings of countries. However, for the Southern Europe, Arabic, Vietnam and Africa groups the variables are the same. The estimated coefficients are again remarkably similar: Southern Europe (-0.578 in 1981, -0.577 in 1986), Arabic (-0.499 in 1981, -0.457 in 1986), Vietnam (-0.787 in 1981, -0.831 in 1986) and Africa (-0.197 in 1981 and -0.116 in 1986). The model, therefore, appears to be quite robust.

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[13]The mean values of the dependent variable LANG are similar in the two Census samples. It is equal to 0.760 in the 1981 data and 0.769 in the 1986 data.

[14]See the Appendix for these differences in definitions.

Column (2) in Table 3 augments the specification with the
minority language concentration measure. This is negative and
highly significant ('t' = 13.38). Moreover, the estimated partial
effect, -0.075, is four times the size of that estimated for
Canada, and five times that estimated for the U.S. The estimated
coefficient implies that in a region with 5 percent of the
population speaking the same non-English language as the
respondent, language proficiency will be a massive 37.5 percentage
points lower than elsewhere.

There are two factors that could be responsible for this
stronger effect in Australia. First, Australian immigration may be
more intensely characterized by 'waves' of immigrants from specific
source countries than immigration in North America. This would
provide a strong basis for language maintenance. Second, it is
possible that the stronger measured effect of the language
environmental factor reflects the greater emphasis on
multiculturalism in Australia. That is, the "ethnics" may be more
ethnic in Australia than elsewhere. This is consistent with one of
the arguments advanced earlier concerning the (marginally) negative
impact of children on parent's dominant language fluency.

It is noted that inclusion of the appropriately defined
minority language concentration variable (compare Table 3, columns
(1) and (2)) in the estimating equation results in some marked
changes to the birthplace effects, which contrasts with the
situation in Table 1. For example, the partial effect of a
Southern European origin declines by 13.8 percentage points, from

-0.527 to -0.389, and that for Vietnam from -0.831 to -0.753 and

that for South American from -0.600 to -0.554. Italian, Greek,

Vietnamese and Spanish are among the languages distinguished in the

construction of the minority language concentration variable.

The remainder of Table 3 parallels that for the study of the

1981 Census. The similarity of the results for both the logit

specification and for the linear probability model estimated for

the sample of immigrants from non-English speaking countries

attests to the soundness of the model.[15]

Table 4 examines the inter-relationships between the minority

language concentration variable and education, age and period of

residence. The negative influence of the concentration variable

(column 4) is greater for the less-well educated, for immigrants

who arrive as adults, and for immigrants who have been in Australia

for only a short time. Thus, for the very immigrants who have the

lowest levels of language skills, *ceteris paribus*, living in a minority

language enclave has a greater retarding effect on their

acquisition of English langauge fluency.

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[15]In the column (3) specification the interaction between age
and duration of residence is insignificant, whereas it was highly
significant in Table 1. This may be attributable to the fact that
both variables are available only in interval form in the 1986
data.

V. Analysis of Earnings

The analysis of earnings is based on the standard human capital earnings function modified for immigrant adjustment (Chiswick, 1978). Certain additional modifications are made to conform to the data available in the Australian census. The basic equation specifies ს t the natural logarithm of earnings is a function of education, total potential labor market experience, duration in the destination, married, Australian citizen, size of place and country of birth. It is hypothesized that, with the exception of the birthplace variables, all of these partial effects are positive. These variables are defined and their means and standard deviations are reported in the Appendix.

The 1981 Australian Census information on earnings was collected and released in the Public Use Sample File in 14 broad brackets, and in the case of the 1986 Census the data were collected in 14 broad intervals, but these were aggregated to only nine intervals when the data were released in the Household Sample File (Section of State). While there are statistical techniques that may be used to accommodate this peculiarity of the Australian data [see Stewart (1984)], a previous application using the 1986 Census data [Miller (1989)] reveals few gains are apparent from the adoption of methodology that explicitly recognizes the categorical nature of the income data. Accordingly, the analyses in this section are based on a dependent variable formed from the midpoints of the income intervals, and using a value of 1.5 times the lower threshold for the open-ended upper limit. This is the procedure

employed in previous research based on the 1981 Australia Census by
Chiswick and Miller (1985) and Stromback (1986).

Previous research [Chiswick and Miller (1985)] suggests that
the curvilinear relationship between earnings and duration of
residence that was a notable feature of earnings functions for
immigrants in the U.S. and Canada is not evident in the Australian
data. Hence only a linear duration of residence term is included
in the estimating equations.

The basic regression equation is reported in Table 5,
column (1) for the adult foreign born men in the 1981 Australian
Census. The partial effects are all statistically significant,
with the hypothesized signs and are consistent with other studies.

Table 5 columns (2) to (5) address the issue of the effect of
English language fluency on the earnings of immigrants in
Australia. The observed dichotomous English fluency variable is
added in column (2) and replaced in column (3) by a predicted
measure using an instrumental variables (IV) approach.[16] In
columns (4) to (7) the analyses are done separately for those
fluent in English and those not fluent where, columns (4) and (6)
are OLS equations and columns (5) and (7) are equations corrected
for the potential selectivity bias in such a dichotomy of the data.

Reading across the columns in Table 5, it is apparent that
earnings rise by about 6 percent per year of schooling for

---

[16]The instruments are all of the variables in the language
equation in Table 1. The identifying instruments are married
overseas, number and age of children and the birthplace
concentration variable.

immigrants as a whole, but the effect is larger (8 percent) for those fluent in English and smaller (about 2 percent) for those not fluent in English. Earnings increase but at a decreasing rate with a rise in total potential labor market experience, where the increase in Table 5 column (1) is about 1.3 percent per year for the first year and 0.8 percent when evaluated at 10 years.

The earnings of immigrants increase by about 0.04 percent per year in the country, and this effect is highly statistically significant. This effect of duration in Australia on earnings is smaller than what is found in the United States and Canada, but consistent with other studies of Australia (see Chiswick and Miller, 1985, 1988 and in press). Among those not fluent in English there is no significant effect of duration. Note, however, that part of the effect of schooling, experience and years since immigration is to raise the level of fluency of immigrants.

Earnings vary systematically by size of place. Compared to the large urban areas, earnings are about 6 percent lower in small urban areas and about 20 percent lower in rural areas. Curiously, among those not fluent in English living in a small urban area exacts a larger (about 15 percentage points) earnings penalty. The partial effects of the size of place variables may be reflecting equalizing wage differentials if they reflect unmeasured differences in the cost of living or in immigrant skill. Their persistence suggests that they are not short-term disequilibrium differentials. Marital status is associated with about 12 percent

higher earnings for those currently married, regardless of fluency
in English.

Australian citizenship, on the other hand, provides no
additional earnings, when other variables including country of
origin are the same. This finding is consistent with previous
research (see, for example, Chiswick and Miller, 1985) and the
observation in The Report of the Committee to Advise on Australia's
Immigration Policies [the Fitzgerald Report] that "Citizenship is
of little material value" (Immigration: ~~A Commitment to Australia,~~
~~The Report of the Committee to Advise on Australia's Immigration~~
~~Policies, Canberra~~ (1988) p. 11). It is premature to link the
absence of a pecuniary return to citizenship to the low propensity
among immigrants to naturalize. The mean citizenship rate in
Australia (56 percent) exceeds that in the U.S. (48 percent), even
though analyses for the U.S. indicate a 5 percent earnings premium
associated with citizenship (Chiswick and Miller, in press).
Perhaps the other factors to which the Fitzgerald Report drew
attention may be responsible. These include the low symbolic value
of citizenship in Australia, the absence of links between
citizenship and welfare entitlements, the absence of special
privileges for citizens for sponsoring relatives to immigrate to
Australia, and the special relationship British immigrants
maintain.

The estimated birthplace effects are measured with reference
to the earnings of British immigrants. They fall into two groups.
The first group comprises immigrants from the other English-

speaking countries, for whom the estimated effects are not

statistically significant.   This result is not surprising for

immigrants from Ireland, Canada, U.S. and New Zealand. However,

for the immigrants for the British West Indies the finding

contrasts with the evidence from Britain and North America

(Chiswick 1980, Chiswick and Miller, in press). The finding may be

even more remarkable since there is no statistical control for

race.[17]

The estimated partial effects of birthplace for the

non-English speaking origin groups are all negative, and, with the

exception of the small and heterogeneous "Remainder" group, they

are all statistically significant. Moreover, the partial effects

are essentially invariant with respect to whether an English

fluency variable is added to the equation. The ranking in terms of

earnings relative to the benchmark (the British) fall into two

groups. The differential is 13 percent or smaller for South Asia,

Africa, Other Asia, Northern Europe and Eastern Europe. There is,

however, a much larger differential of 20 percent or more compared

to the British, other variables the same, including language

_____

[17]In the study of immigrant earnings in the U.S. labor market
reveals significantly lower earnings for black immigrants
(coefficient of -0.224). However, the sample of West Indian
immigrants in Australia is very small (only 6 observations) and
given the greater distance involved in migrating to Australia
compared with the U.S., Canada and the U.K., the West Indian
immigrants in Australia are also likely to be a highly select
group. Furthermore, the racial composition of these immigrants is
not known.

fluency, for those from the Philippines, South America, Southern

Europe, Arab countries and Vietnam.[18]

Table 5, column (2) augments the basic estimating equation

with the measure of dominant language fluency. English language

facility is associated with a statistically significant 5.3 percent

higher earnings ('t' = 2.54). For the sample of immigrants from

non-English speaking countries, the effect of language fluency in

a specification similar to that in column (2) was 6.4 percent

('t' = 2.83). Analysis of the limited income data released in the

1986 Unit Record Sample File revealed a partial effect of English

language fluency of 8.3 percent ('t' = 4.75) for the total sample,

and 9.3 percent ('t' = 5.10) for the portion of the sample from

non-English speaking countries. It is not clear whether the

differences between the 1981 and 1986 Censuses reflect a rise in

the premium for English language skills over the five years, or the

smaller number of income categories.[19] In other words, dominant

language fluency is a skill that is rewarded in the Australian

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[18]Among the Vietnamese the earnings differential is quite
marked, the estimated coefficient of -0.557 implies an earnings
differential of about 43 percentage points. However, nearly all of
the Vietnamese were in Australia less than 5 years and this effect
may not have been fully controlled by the duration of residence
variable. Furthermore, refugees would be expected to have a
particularly low fluency especially during the initial period of
adjustment.

[19]Repeating the analysis of the 1981 census data after deriving
the dependent variable from 8 rather than 14 intervals results in
a slight increase in estimated coefficient on the dominant language
fluency variable, from 0.053, 't' = 2.54, to 0.057, 't' = 3.40.

labor market.   Adding this variable has very small or trivial

effects on the other coefficients.

Table 5, column (3) presents the results with the instrumental

variables (IV) measure of fluency.   The dominant language fluency

effect is negative and statistically insignificant, the 't' being

only 0.76. This method of estimation is sensitive to the choice of

instruments, and there is often little to guide the choice of

"good" instruments that will yield the minimum asymptotic variance.

Comparison of the OLS and instrumental variables estimates listed

in columns (2) and (3), respectively, reveals that a number of

birthplace coefficients (in particular, those for Southern Europe,

Arab countries, Vietnam, Other Asia, South and Central America)

change considerably, indicating a pronounced widening of the

inter-birthplace wage differential under the instrumental variables

method.   In the previous applications (analyses of U.S. and

Canadian labor markets) such changes were not evident. Part of the

unique features of the results in Table 5, column (3) may be due to

the use of a minority concentration variable based on birthplace in

the 1981 Census rather than on a second language as an identifying

instrument.   Study of the limited income data available in the

1986 Census suggests that this is indeed the case.

Table 5, columns (4) and (5) present analyses for the sample

fluent in English. As the selectivity correction factor (λ) is

statistically insignificant, the two sets of results are quite

similar.   They reveal that, among groups fluent in English, the

partial effect of education on earnings is higher than reported for

the pooled analysis (7.6 percent compared to 6.1 percent).

Similarly, the partial effect of pre-immigration experience is

marginally higher for the group proficient in English than for the

aggregate-level results (1.2 percent compared with 0.7 percent when

evaluated at EXP=10 years). The impact of duration of residence in

Australia is, however, the same for the various language-fluency

groups under investigation.

Results for the 24 percent of the sample lacking dominant

language fluency are presented in Table 5, columns (6) and (7).

The effect of education, other variables the same, is quite low,

and indicates that each additional year of education is associated

with only 1.2 percent higher earnings. This low partial effect,

and the contrast with the 7.7 percent effect for the group fluent

in English, may be indicative of a complementarity between the

skills represented by formal education and language. A similar

interpretation ..ay apply to the relatively low effects of

pre-immigration experience (0.96 percentage points, which is

marginally lower than the 1.2 percentage point effect estimated for

the group possessing English language fluency).

The duration of residence variable becomes statistically

insignificant in Table 5, columns (6) and (7). In other words,

labor market experience in Australia does not attract an earnings

premium if the individual is not fluent in English. This is

consistent with one of the explanations generally offered for the

positive relationship between earnings and duration of residence--

the learning about the institutions of the Australian labor market.

This learning is presumably impeded by inadequate facility in English.

A final feature of the results in Table 5, columns (6) and (7) is that the coefficient on the selectivity correction term (λ) is negative, and statistically significant ('t' = -2.71). The negative coefficient implies positive selection into the non-dominant language fluency market. That is, individuals will not undertake the investments necessary to attain English language fluency if their unobservable skills are relatively highly rewarded in the (hypothesized) market for individuals lacking English language skills.

To complete the study of income determination in Australia, two tests of endogeneity, based respectively on the selectivity corrected and instrumental variables estimates, were conducted. Each test involves augmenting the earnings equations with generated regressors, and conducting F-tests of the incremental contribution of the additional regressors. In the case of the selectivity correction approach, the F-test of the statistical significance of the two selectivity corrections terms in an equation pooled across individuals who are proficient in English and those who lack this skill was 5.68, which exceeds the critical value $F_{0.05,2,7269} = 3.0$ [see Robinson (1988)]. For the Hausman type test derived from the instrumental variables approach, the value of the F-test statistic is 19.09, which exceeds the critical value $F_{0.05,9,7253} = 1.88$ [see Robinson (1988)]. Thus, there is evidence that dominant language

fluency is endogenous to the process of earnings determination in
Australia.

VI. Summary and Conclusion

This study is concerned with the determinants of dominant
language fluency among immigrants and the labor market impact of
this fluency. The analysis explores the endogeneity between
dominant language fluency and earnings. The empirical tests are
conducted for Australia.

A theoretical model of language fluency is developed, where
fluency is a rising function of economic incentives for acquiring
fluency, exposure to the English language, and efficiency in
achieving English language proficiency. "Economic incentives"
include the increment in annual earnings with greater fluency and
the expected duration in the destination. "Exposure" includes the
learning-by-living--duration in the destination-- and the extent of
English language usage in the area and the household in which the
immigrant lives. "Efficiency" refers to the extent to which
exposure produces language fluency and is related to the level of
other skills (e.g., schooling) and biological/maturational factors
(i.e., age). Empirical counterparts are developed for the
theoretical variables.

The model is tested and the parameters are estimated using the
public use sample micro-data from the one-in-one-hundred samples
released from the 1981 and 1986 Australian Censuses of Population
and Housing. The two data sources are used to test robustness and

because of the somewhat different features of the files. The
analysis is limited to adult (age 25 to 64) foreign-born men.

Those immigrants who speak only English or who speak another
language but who speak English very well are referred to as fluent,
while the others are referred to as not fluent. Using this
definition, in 1981, 76 percent of adult foreign-born men and 58
percent of those from non-English speaking countries are fluent.

The empirical analysis is very robust. Fluency is shown to
increase with English language exposure. It is greater the greater
the use of English in the country of origin, the longer the
duration of residence, the smaller the proportion of people in the
immigrant's area who speak his mother tongue, and if the spouse
does not have the same mother tongue. Fluency increases with
efficiency in language acquisition; it increases with the level of
schooling and decreases with age at immigration. These patterns
hold overall and when the analyses are done separately by region of
birth.

The analysis of earnings uses the now standard human capital
earnings function model augmented for immigrant adjustment.
English language fluency in the 1981 Census is shown to be
associated with a statistically significant 5.3 percent higher
earnings, which increases to 6.4 percent for those from non-English
speaking countries. For the 1986 Census the effects are larger,
8.3 percent and 9.3 percent, respectively, suggesting an increase
over time in the returns to English language skills. Tests
indicate the complementarity among skills. That is, the effects on

earnings of schooling and labor market experience are much larger
for those fluent in English.

Various procedures are implemented to test for the endogeneity
of language skills. These tests indicate that those who anticipate
higher earnings for unmeasured reasons if they were to become
fluent are more likely to acquire English language fluency. That
is, fluency responds to economic incentives, other variables the
same.

The model is generally applicable for any immigrant receiving
country. The findings indicate that the determinants of English
language skills among immigrants can be studied using econometric
techniques, that fluency responds to incentives (economic,
exposure, efficiency), that language skills have an important
impact in the labor market, and finally that earnings and language
fluency are determined jointly.

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TABLE 1

REGRESSION ESTIMATES OF ENGLISH-LANGUAGE FLUENCY AMONG ADULT
FOREIGN-BORN MEN, AUSTRALIA, 1981: (Dependent Variable: GOODENG)

		Total Sample			Non-English Speaking
Variable	OLS (1)	OLS (2)	OLS (3)	LOGIT (4)	OLS (5)
Constant	0.814	0.820	0.495	5.694	0.195
	(30.24)	(30.58)	(10.29)	(10.32)	(4.30)
Education	0.025	0.024	0.030	0.234	0.036
	(16.35)	(16.14)	(11.18)	(13.61)	(15.43)
Age	-0.005	-0.005	0.002	-0.067	-0.009
	(10.95)	(10.69)	(1.78)	(11.05)	(11.16)
Years Since Migration (YSM)	0.009	0.008	0.026	0.109	0.016
	(17.24)	(16.68)	(10.89)	(16.19)	(17.17)
Married	-0.011	-0.011	-0.006	-0.141	-0.016
	(0.91)	(0.92)	(0.53)	(1.01)	(0.76)
Married Overseas	-0.037	-0.038	-0.047	-0.400	-0.085
	(3.42)	(3.54)	(4.37)	(3.51)	(4.58)
Child < 6 years only	-0.022	-0.020	-0.024	-0.217	-0.035
	(1.57)	(1.46)	(1.79)	(1.38)	(1.49)
Child 6-17 years only	-0.007	-0.005	-0.018	-0.042	-0.011
	(0.73)	(0.55)	(1.89)	(0.41)	(0.68)
Children < 6 & 6-17 years	0.004	0.005	-0.010	0.080	0.003
	(0.33)	(0.36)	(0.72)	(0.56)	(0.14)
Small Urban Location	0.032	0.025	0.024	0.320	0.049
	(3.01)	(2.37)	(2.29)	(2.11)	(2.27)
Rural Location	0.026	0.019	0.016	0.200	0.047
	(1.97)	(1.46)	(1.21)	(1.16)	(1.75)
Min. Birthplace Concentration	(a)	-0.019	-0.020	-0.069	-0.013
		(4.82)	(4.89)	(2.79)	(3.20)
Birthplace:					
Southern Europe	-0.578	-0.548	-0.552	-7.512	(a)
	(53.02)	(43.40)	(43.85)	(16.33)	
Northern Europe	-0.186	-0.174	-0.185	-5.510	0.326
	(15.79)	(14.60)	(15.18)	(11.82)	(20.05)
Eastern Europe	-0.405	-0.389	-0.376	-6.959	0.127
	(17.43)	(16.60)	(16.21)	(14.74)	(4.91)
Arabic	-0.499	-0.499	-0.490	-6.919	0.091
	(14.68)	(14.66)	(14.58)	(14.32)	(2.59)
South Asia	-0.145	-0.145	-0.146	-4.787	0.411
	(7.39)	(7.42)	(7.71)	(9.72)	(16.04)
Philippines	-0.127	-0.124	-0.099	-4.957	0.468
	(1.75)	(1.70)	(1.32)	(6.39)	(6.14)

TABLE 1 continued

| Variable | Total Sample | | | | Non-English Speaking |
	OLS (1)	OLS (2)	OLS (3)	LOGIT (4)	OLS (5)
Vietnam	-0.787 (16.94)	-0.785 (16.87)	-0.761 (16.68)	-8.432 (13.36)	-0.166 (3.57)
Other Asia	-0.541 (14.45)	-0.539 (14.39)	-0.531 (14.30)	-7.459 (15.06)	0.022 (0.57)
South and Central America	-0.558 (10.49)	-0.315 (4.47)	-0.310 (4.44)	-6.189 (9.91)	0.215 (3.30)
Africa	-0.197 (7.55)	-0.196 (7.54)	-0.200 (7.69)	-5.376 (10.96)	0.362 (11.91)
Remainder	-0.154 (3.32)	-0.151 (3.27)	-0.144 (3.20)	-4.817 (6.57)	0.364 (6.86)
Age * YSM /100	(a)	(a)	-0.034 (9.47)		
Education * YSM /100	(a)	(a)	-0.033 (2.41)		
Sample Size	7288	7288	7288	7288	4166
R	.4472	.4507	.4562		.3481
McFadden's R				.5086	

Notes: 't' statistics in parentheses derived using White's t(1980) heteroscedasticity consistent covariance matrix estimator.
    (a) variable not entered

The prediction success rate for the logit model is 87.91 percent.

Source: 1981 Australian Census of Population and Housing, 1/100 Sample of the Foreign Born.

TABLE 2

SELECTED REGRESSION COEFFICIENTS FOR ENGLISH-LANGUAGE FLUENCY
BY PLACE OF BIRTH, ADULT FOREIGN-BORN MEN, AUSTRALIA, 1981

Birthplace (% fluency)	Education	YSM	YSM Squared	Minority Concent.	Married Overseas	Sample Size
All non-English Total (58.16)	0.036 (15.43)	0.016 (17.17)	(c)	-0.013 (3.20)	-0.085 (4.58)	4166
S. Europe (39.88)	0.032 (8.08)	0.023 (13.34)	(c)	-0.006 (1.44)	-0.052 (1.84)	1921
N. Europe (87.29)	0.022 (4.98)	0.008 (4.88)	(c)	-0.157 (4.01)	-0.185 (4.12)	850
E. Europe (63.45)	0.024 (2.88)	0.035 (3.41)	-0.046 (1.88)	0.023 (0.82)	-0.213 (2.92)	394
Arabic (45.51)	0.060 (6.66)	0.015 (3.14)	(c)	0.747 (1.62)	-0.198 (2.47)	178
S. Asia (87.85)	0.024 (3.87)	0.028 (4.05)	-0.043 (2.88)	-0.672 (2.68)	0.130 (2.45)	288
O. Asia (46.90)	0.041 (4.50)	0.048 (3.81)	-0.065 (2.05)	-1.436 (3.14)	0.139 (1.30)	145
S. & C. America (38.81)	0.065 (3.40)	0.014 (2.16)	(c)	-0.014 (1.34)	-0.599 (4.24)	67
Africa (81.60)	0.036 (3.43)	0.008 (2.59)	(c)	-0.868 (2.67)	-0.023 (0.31)	212

Note: 't' statistics in parentheses derived using White's (1980) heteroscedasticity-consistent covariance matrix estimator.

(a) = additional control variables are: age, married, child < 6 only, child 6-17 only, children < 6 and 6-17, small urban, rural; Equations for Vietnam, Philippines and the Remainder group are not presented owing to small sample size - Philippines (mean fluency rate of 86.36, sample size = 22), Vietnam (mean fluency rate of 16.67, sample size = 48), Remainder (mean fluency rate of 90.24, sample size = 41).

(b) = variable divided by 100

(c) = variable not entered

Source: See Table 1

TABLE 3

REGRESSION ESTIMATES OF ENGLISH-LANGUAGE FLUENCY AMONG ADULT
FOREIGN-BORN MEN, AUSTRALIA, 1986: (Dependent Variable: GOODENG)

| Variable | Total Sample | | | | Non-English Speaking |
	OLS (1)	OLS (2)	OLS (3)	LOGIT (4)	OLS (5)
Constant	0.781 (28.17)	0.779 (28.77)	0.592 (10.29)	4.110 (9.67)	0.242 (5.09)
Education	0.023 (15.69)	0.022 (14.66)	0.024 (7.98)	0.205 (13.02)	0.033 (14.97)
Age	-0.005 (11.55)	-0.005 (10.40)	-0.001 (0.64)	-0.054 (10.68)	-0.009 (11.12)
Years Since Migration (YSM)	0.009 (20.48)	0.008 (21.20)	0.018 (7.24)	0.108 (20.23)	0.017 (22.51)
Married	-0.011 (0.97)	-0.009 (0.88)	-0.009 (0.86)	-0.130 (1.06)	-0.018 (0.95)
Child < 6 years only	-0.001 (0.03)	0.003 (0.17)	0.003 (0.18)	0.117 (0.69)	0.023 (0.90)
Child 6-17 years only	-0.014 (1.56)	-0.011 (1.25)	-0.016 (1.81)	-0.055 (0.58)	0.023 (0.90)
Children < 6 & 6-17 years	-0.001 (0.01)	0.001 (0.02)	-0.003 (0.24)	0.017 (0.12)	-0.016 (1.03)
Small Urban Location	0.011 (1.08)	-0.012 (1.22)	-0.013 (1.26)	-0.119 (0.81)	-0.016 (0.74)
Rural Location	0.042 (3.51)	0.015 (1.26)	0.014 (1.22)	0.298 (1.69)	0.027 (1.17)
Min. Language Concentration	(a)	-0.075 (13.38)	-0.074 (13.26)	-0.362 (11.73)	-0.070 (12.60)
Birthplace:					
Southern Europe	-0.527 (44.33)	-0.389 (24.53)	-0.390 (24.62)	-5.836 (18.20)	(a)
Northern Europe	-0.151 (11.15)	-0.129 (9.76)	-0.128 (9.66)	-4.217 (12.51)	0.241 (12.42)
Other Europe	-0.351 (17.17)	-0.337 (16.64)	-0.333 (16.47)	-5.474 (16.85)	0.065 (2.64)
Arabic	-0.457 (14.45)	-0.393 (12.37)	-0.391 (12.37)	-5.525 (16.13)	0.040 (1.21)
Other Asia	-0.285 (16.20)	-0.250 (14.58)	-0.250 (14.64)	-4.779 (14.77)	0.170 (7.31)
Vietnam	-0.831 (26.54)	-0.753 (24.10)	-0.736 (23.52)	-7.461 (15.52)	-0.276 (7.62)
South America	-0.600 (12.42)	-0.554 (11.56)	-0.556 (11.59)	-6.117 (15.37)	-0.095 (2.00)

TABLE 3 (continued)

Variable	OLS (1)	Total Sample OLS (2)	OLS (3)	LOGIT (4)	Non-English Speaking OLS (5)
Other America	-0.051 (3.31)	-0.042 (2.79)	-0.043 (2.79)	-2.155 (3.24)	0.366 (13.90)
Africa	-0.116 (5.05)	-0.084 (3.67)	-0.087 (3.80)	-3.591 (9.62)	0.343 (11.59)
Age * YSM /100	(a)	(a)	-0.016 (1.19)	(a)	(a)
Education * YSM /100	(a)	(a)	-0.018 (4.27)	(a)	(a)
Sample Size	7194	7194	7194	7194	4152
R	.3979	.4254	.4268		.3268

Notes: 't' statistics in parentheses derived using White'st(1980)
        heteroscedasticity consistent covariance matrix estimator.
   (a) variable not entered

Source: 1986 Australian Census of Population and Housing, 1/100 Sample of the
        Foreign Born.

TABLE 4

SELECTED REGRESSION COEFFICIENTS FOR ENGLISH FLUENCY MODEL WITH MINORITY LANGUAGE CONCENTRATION INTERACTION TERMS, ADULT FOREIGN-BORN MEN, AUSTRALIA, 1986

Variable	(1)	(2)	(3)	(4)
Education	0.022	0.015	0.016	0.016
	(14.66)	(10.09)	(10.58)	(10.39)
Years Since Migration	0.008	0.009	0.009	0.007
(YSM)	(21.20)	(21.19)	(21.19)	(16.55)
Age	-0.005	-0.004	-0.003	-0.003
	(10.40)	(10.10)	(8.12)	(6.95)
Min. Language	-0.075	-0.153	-0.057	-0.131
Concentration (CONC)	(13.38)	(10.67)	(2.12)	(4.83)
CONC * Education	(a)	0.008	0.006	0.007
		(5.85)	(4.39)	(4.54)
CONC * Age	(a)	(a)	-0.002	-0.003
			(4.18)	(6.59)
CONC * YSM	(a)	(a)	(a)	0.005
				(9.18)
Sample Size	7194	7194	7194	7194
R	.3979	.4301	.4324	.4428

For notes and sources, see Table 3. In addition to the variables listed, all other control variables used in Table 3 are included in these equations.

Partial derivatives [from column (iv)] evaluated at sample means are:

dGOODENG/dEDUC = 0.016 + 0.007 CONC = 0.020
dGOODENG/dYSM = 0.007 + 0.005 CONC = 0.010
dGOODENG/dAge = -0.003 - 0.003 CONC = -0.005
dGOODENG/dCONC = -0.131 + 0.007 EDUC - 0.003 Age + 0.005 YSM = -0.075

TABLE 5

REGRESSION ESTIMATES OF EARNINGS EQUATIONS, ADULT FOREIGN-BORN MEN, AUSTRALIA 1981
(Dependent Variable: Natural Logarithm of Annual Income)

Variable	Total Sample			Fluent in English		Not Fluent in English	
	OLS (1)	OLS (2)	IV (3)	OLS (4)	Select Crtd (5)	OLS (6)	Select Crtd (7)
Constant	8.625 (138.21)	8.586 (136.17)	8.743 (52.96)	8.390 (108.20)	8.380 (132.31)	8.832 (71.24)	8.786 (79.92)
Education	0.061 (19.66)	0.060 (19.14)	0.064 (13.35)	0.076 (19.40)	0.077 (23.24)	0.020 (4.02)	0.012 (1.98)
Experience	0.013 (4.44)	0.013 (4.48)	0.013 (4.52)	0.020 (5.37)	0.020 (6.07)	0.008 (1.32)	0.012 (1.86)
Experience Squared/100	-0.027 (4.92)	-0.027 (4.82)	-0.028 (5.27)	-0.039 (5.52)	-0.039 (6.55)	-0.016 (1.77)	-0.017 (1.73)
Years Since Migration	0.004 (4.00)	0.003 (3.34)	0.005 (2.42)	0.003 (3.21)	0.004 (3.72)	0.003 (1.12)	-0.004 (1.24)
Small Urban	-0.065 (2.92)	-0.066 (3.00)	-0.060 (2.83)	-0.053 (2.41)	-0.052 (2.44)	-0.138 (1.67)	-0.157 (2.86)
Rural	-0.196 (5.98)	-0.197 (6.01)	-0.192 (7.81)	-0.222 (6.46)	-0.221 (8.63)	-0.009 (0.09)	-0.031 (0.49)
Married	0.122 (6.37)	0.123 (6.43)	0.117 (6.32)	0.117 (5.95)	0.116 (6.11)	0.147 (2.44)	0.170 (4.01)
Citizen	-0.011 (0.72)	-0.012 (0.80)	-0.007 (0.44)	-0.008 (0.47)	-0.008 (0.47)	-0.017 (0.52)	-0.011 (0.39)
Ireland	-0.049 (1.63)	-0.049 (1.64)	-0.048 (1.18)	-0.053 (1.77)	-0.053 (1.29)	(a)	(a)
Canada	-0.076 (0.87)	-0.074 (0.85)	-0.082 (0.88)	-0.104 (1.18)	-0.105 (1.13)	(a)	(a)
US	0.018 (0.18)	0.019 (0.20)	0.013 (0.22)	-0.032 (0.33)	-0.033 (0.53)	(a)	(a)
New Zealand	0.049 (1.41)	0.048 (1.37)	0.053 (1.58)	0.039 (1.12)	0.040 (1.21)	(a)	(a)
Br. W. Indies	-0.100 (0.63)	-0.100 (0.62)	-0.100 (0.46)	-0.135 (0.87)	-0.135 (0.62)	(a)	(a)
So. Eur.	-0.211 (12.10)	-0.180 (8.36)	-0.305 (2.44)	-0.177 (7.32)	-0.205 (5.06)	(a)	(a)
No. Eur.	-0.101 (4.20)	-0.091 (3.67)	-0.132 (2.82)	-0.103 (3.87)	-0.113 (4.30)	0.159 (2.61)	0.031 (0.43)
Ea. Eur.	-0.131 (4.06)	-0.109 (3.13)	-0.197 (2.13)	-0.130 (2.83)	-0.151 (3.42)	0.156 (4.20)	0.124 (2.50)
Arabic	-0.275 (6.65)	-0.248 (5.70)	-0.355 (3.10)	-0.234 (3.18)	-0.259 (3.85)	-0.084 (1.98)	-0.119 (2.10)
So. Asia	-0.055 (1.94)	-0.047 (1.65)	-0.080 (1.69)	-0.078 (2.53)	-0.087 (2.29)	0.153 (2.06)	-0.040 (0.35)
Philippines	-0.190 (2.15)	-0.183 (2.07)	-0.211 (1.79)	-0.240 (2.37)	-0.249 (2.02)	0.302 (2.12)	0.125 (0.41)
Vietnam	-0.557 (3.95)	-0.515 (3.66)	-0.683 (3.71)	-0.268 (3.46)	-0.307 (1.58)	-0.267 (1.55)	-0.230 (2.62)
Other Asia	-0.121 (2.30)	-0.092 (1.66)	-0.209 (1.68)	-0.163 (1.72)	-0.190 (2.62)	0.227 (4.16)	0.217 (3.46)

TABLE 5 Continued

Variable	Total Sample			Fluent in English Select		Not Fluent in English Select	
	OLS (1)	OLS (2)	IV (3)	OLS (4)	Crtd (5)	OLS (6)	Crtd (7)
S & C Amer	-0.207 (3.24)	-0.177 (2.67)	-0.297 (2.17)	-0.254 (1.73)	-0.279 (2.57)	0.123 (2.72)	0.105 (1.26)
Africa	-0.084 (2.56)	-0.073 (2.21)	-0.117 (2.00)	-0.075 (2.03)	-0.086 (1.93)	0.094 (1.79)	-0.054 (0.54)
Remainder	-0.048 (0.68)	-0.039 (0.56)	-0.073 (0.81)	-0.018 (0.24)	-0.026 (0.29)	-0.068 (0.60)	-0.250 (0.94)
GOODENG	(a)	0.053 (2.54)	-0.160 (0.76)	(a)	(a)	(a)	(a)
λ	(a)	(a)	(a)	(a)	0.035 (0.85)	(a)	-0.178 (2.71)
R	.1479	.1487		.1460	.1460	.0484	.0518
Sample Size	7288	7288	7288	5540	5540	1748	1748

Note: 't' statistics in parentheses calculated using White's (1980) heteroskedasticity consistent covariance matrix estimator.
       (a) = variable not entered

Source: 1981 Australian Census of Population and Housing.

APPENDIX A

A.   Analysis of 1981 Australian Census of Population and Housing

The Australian Bureau of Statistics released two public use

samples from the 1981 Census of Population and Housing: the 1/100

Persons Sample File and the 1/100 Households Sample File. These

differ in terms of the target population [persons versus

households] and also in the extent of geographic information

provided and the degree of detail contained in the classification

scheme used for some charactersitics. All geographic references

other than for a code showing major urban/other urban/rural region

of residence were removed from the Household Sample File to ensure

that the confidentiality of individuals is protected. In the case

of the Persons Sample File, some data at the state level are

included, but at the cost of a reduction in the number of

categories used when classifying birthplace [40 compared to 101]

and period of residence [only 5 broad intervals for valid codes].

Some of the birthplace classifications in the Persons File are less

useful for analysis of linguistic effects. For example, Indonesia

is grouped with the Philippines, South Africa is coded with Egypt.

As well, information on the duration of marriage of males and the

number of children is unavailable when the Persons File is used.

Definition of Population: Foreign-born men aged 25 to 64 who were

employed (excluding unpaid helpers) at the time of the Census. The

analysis is restricted to individuals living in private dwellings

and who were members of the primary family in such dwellings (i.e.,

all single family private dwellings and the primary family in

multi-family households).

Earnings (LNEARN): Respondents were asked to report the gross

income (including pensions and/or allowances) that they usually

receive each week from all sources. The answer was given simply by

placing a tick in a box corresponding to 14 weekly income

categories. This was converted to a usual yearly income by the

Australian Bureau of Statistics by multiplying the weekly figures

by 52. Hence the data are standardised for weeks worked. For the

open-ended upper income interval (over $26000 per year) a mean

value of $39000 is imposed. The income data are used in the model

in logarithmic form.

Years of Education (EDUC): This variable records the total years of

full-time education. It has been created from the census "Age Left

School" and "Qualifications" variables. Years of education is

calculated as 'age left school minus 5'. Individuals who stated a

school leaving age of 19 or more years were assigned 13 years of

education. Individuals who possess a diploma have been assumed to

have the equivalent of 15 years of full-time education, individuals

who possess a bachelors degree the equivalent of 16 years of

full-time education, individuals who possess a graduate diploma

have been assumed to have the equivalent of 17 years of full-time

education, and individuals who have a higher degree (Masters, Ph.D)
have been coded as having 19 years of education.

Years of Experience (EXP): This is computed as age minus years of
education minus 5 (i.e., EXP=AGE-EDUC-5). A quadratic
specification is used.

Years Since Migration (YSM): For individuals with fewer than 35
years of residence in Australia, information on years since
migration is available in single years. The open-ended category of
35 years or longer is assigned a value of 40 years.

Birthplace: The following birthplace regions were formed from the
99 valid country codes available in the original data: Britain,
Ireland, Northern Europe, Southern Europe, Eastern Europe, Arabic
countries, Philippines, Vietnam, South Asia (which primarily
comprises the regions of British influence), Other Asia, Canada,
U.S., British West Indies, South and Central America, Africa, New
Zealand, Other. For the study of language proficiency, immigrants
from Britain, Ireland, Canada, U.S., British West Indies and New
Zealand are used as the control group whereas for the study of
earnings, the omitted category is restricted to immigrants from
Britain.

English Language Proficiency (GOODENG): GOODENG is set to one for
individuals who speak only English at home, or if a language other

than English is spoken in the home, speak English "very well". The GO\DENG variable is set to zero where a language other than English is spoken in the home and the respondent speaks English either "well, "not well" or "not at all". No information was collected in the 1981 Australian Census of Population and Housing on second languages spoken. Census pre-tests indicate that the Census language information will provide only a broad indication of the level of proficiency in English. In particular, the Australian Bureau of Statistics notes:

> Testing prior to the census compared responses to the question with assessments of language proficiency for a sample of respondents interviewed for the purpose. These results showed that those who responded 'not well' or 'not at all' were correctly identified as prospective 'clients' for English language tuition. However, some who responded 'well' or 'very well' did not rate highly in the interview assessment. Responses to the 1981 Census question therefore may underestimate the number of people who were not proficient in English.
> [Australian Bureau of Statistics publication Census 81-Language, Catalogue No. 2152.0].

Citizenship (CITIZEN): This is a dichotomous variable, set to one for immigrants whose country of citizenship is recorded as Australia, and set to zero for individuals stating a non-Australia

country of citizenship, and also for those who are classified as
stateless.

Marital Status (MARRIED): This is a binary variable, defined to
equal one for individuals who are married (spouse present), and
defined to equal zero for all other marital states. Information on
whether the individual is married is derived from the Census
question on marital status. Information on whether the spouse is
present is derived from the family structure of the public use
sample file.

Married Overseas (FORMAR): This binary variable is constructed
using information on the duration of the current marriage and
duration of residence in Australia. Information on duration of
marriage is derived from the family structure of the file.
Individuals having a duration or marriage in excess of their
duration of residence in Australia are assumed to have married in
the country of origin and are coded with FORMAR equal to one. The
variable is set to zero for all other individuals.

Children: Three variables were constructed from the family
structure of the public use sample file to parallel the variables
included in the analysis of the US Census. The first of these
records whether one or more children aged less than 6 years were
living in the family and there were no older children. The second
records whether one or more children aged between 6 and 17 years

inclusive were living in the family, and there were no younger
children. The third variable records the presence of children aged
less than six years and between 6 and 17 years.

Location: The only geographic information contained in the
Households public use sample distinguishes individuals living in
major urban areas, other urban areas and rural areas. On this
basis, two dichotomous variables were formed, the first for
individuals living in "other urban areas" and the second for
individuals living in "rural" areas. Individuals residing in major
urban areas comprise the control group.

Minority Language: This variable is defined as the percentage of the respondent's linguistic-country group (see following definition) that resides in the same locality (metropolitan area, other urban area and rural area) as the respondent. It is set equal to zero for the English-speaking majority group.

Linguistic-Country groups: The following groupings are used in the study: English (UK and Ireland, Canada, British West Indies, USA, Bangladesh, Burma, India, Pakistan, Sri Lanka, Kenya, Malawi, Tanzania, Uganda, Zambia, Mauritius, Republic of South Africa, Christmas Islands, Cocos Islands, Oceania other than New Caledonia), Spanish (Spain, Argentina, Boliva, Colombia, Ecuador, Mexico, Paraguay, Peru, Uruguay, Venezuela), Portugese (Portugal, Brazil, Timor), Arabic (Bahrain, Jordan, Saudi Arabia, Kuwait, Muscat and Oman, Qatar, Yemen, Iraq, Lebanon, Syria, Egypt), Scandinavian (Norway, Sweden, Denmark, Finland), Chinese (China, Hong Kong, Taiwan, Singapore), German (Austria, Germany, Switzerland), French (Belgium, France, Switzerland, New Caledonia), Russian (Estonia, Latvia, Lithuania, Ukraine, USSR), Italian (Italy), Greek (Greece, Cyprus), Slavic (Albania, Bulgaria, Czechoslovakia), Hungarian (Hungary), Dutch (Netherlands), Polish (Poland), Romanian (Romania), Indonesian (Indo ia), Persian (Iran), Hebrew (Israel), Japanese (Japan), Cambo. n (Kampuchea), Korean (Korea), Laotian (Laos), Malaysian (Malaysia), Tagalog (Philippines) Thai (Thailand), Turkish (Turkey), Vietnamese (Vietnam), Maltese (Malta), Serbian (Yugoslavia).

Note: All variables for Australia are dichotmous except earnings, education, total experience, duration in the destination and the minority concentration measure.

Language Question: 1981 Australian Census of Population and Housing

Q.15 Does the person speak a language other than English at home?

No, only speaks English☐

Yes☐

How well does this person speak English?

Very Well☐

Well☐

Not Well☐

Not at All☐

Analysis of 1986 Australian Census of Population and Housing

The analyses of the 1986 Australian Census presented in the paper are based on the 1986 Household Sample File (Section of State). Because of differences in the way in which primary information has been coded in this and the 1981 Census, it has been necessary to change the definitions of some variables. The new definitions are listed below.

Years Since Migration: The 1986 Census data are released in categorical form, and only five broad categories are distinguished: 0-4 years, 5-9 years, 10-14 years, 15-19 years and 20 years and over. A "continuous" duration of residence variable is created using the mid-points of the closed intervals, and a value of 30 years for the open-ended upper interval.

Birthplace: Eleven broad birthplace regions are recognised is the study. They are: UK and Ireland, Southern Europe, Northern Europe (The Netherlands, Germany), Other Europe (all other countries of Europe, including USSR), Arabic countries, Vietnam, Other Asia, South America, Other Ameiica (Canada, Caribbean, El Salvador, Mexico, United States, Other American), New Zealand, Other Oceania.

Foreign Marriage (FORMAR): In the study of the 1981 Census, the foreign marriage variable was constructed using information on duration of marriage and duration of residence in Australia. For most respondents this information was available in single year.

However, as noted above, the duration of residence data in the 1986

Census are in very broad intervals.   The duration of marriage

information is coded into 5-year intervals in the 1986 sample file.

This   method   of   presenting   the   primary   data   prevents   the

construction of a usable foreign marriage variable.

Age: The age data are presented in 5-year intervals: 25-29, 30-34,

35-39, 40-44, 45-49, 50-54, 55-59, 60-64.   The midpoints of these

intervals have been   used to create a "continuous" age measure.

Minority Languages: Twelve minority languages are coded in the

Household Sample File. These are: Arabic/Lebanese, Chinese, Dutch,

French,   German,   Greek,   Italian,   Maltese,   Polish,   Serbian   &

Croatian, Spanish, Vietnamese. The minority language concentration

variable (CONC) is constructed from these data as follows: Each

respondent is assigned a value equal to the percentage of the

population aged 15-64   in the region (defined broadly using

information on location) in which he lives that reports the same

second (minority) language as the respondent.   The percentage

representation in each language group is displayed in Appendix

Table B.

Language Question: 1986 Australian Census of Population and Housing

Q. 17 Does the person speak a language other than English at home?

☐ No, speaks only English

☐ Yes

_____

[Answer question 18 for each person who speaks a language other than English at home]

Q. 18   How well does this person speak English?

             Very Well ☐

             Well ☐

             Not Well ☐

             Not at All ☐

APPENDIX B
Descriptive Statistics

APPENDIX TABLE A
MEANS AND STANDARD DEVIATIONS OF VARIABLES BY REGIONS OF ORIGIN FOR
ADULT FOREIGN-BORN MEN, AUSTRALIA, 1981

| | Total Sample | | English-Speaking | | Non-English Speaking | |
	Mean	Standard Deviation	Mean	Standard Deviation	Mean	Standard Deviation
Education	10.961	2.800	11.266	2.455	10.732	3.012
Age	41.808	10.221	41.405	1C.429	42.110	10.054
Experience	25.847	11.146	25.138	11.166	26.378	11.103
YSM	18.578	9.790	17.008	9.948	19.755	9.503
Married	0.839	0.368	0.819	0.385	0.854	0.353
Married Overseas	0.306	0.461	0.358	0.480	0.266	0.442
Child < 6	0.124	0.330	0.118	0.323	0.129	0.336
Child 6-17	0.343	0.475	0.328	0.470	0.355	0.479
Children < 6 & 6-17	0.131	0.338	0.115	0.319	0.144	0.351
Small Urban	0.113	0.317	0.149	0.356	0.087	0.282
Rural	0.076	0.265	0.098	0.297	0.060	0.237
Minority Concent.	0.650	1.891	0.000	0.000	1.138	2.388
Citizenship	0.558	0.497	0.322	0.467	0.734	0.442
Birthplace:						
Britain	0.346	0.476	0.808	0.394	(a)	
Ireland	0.025	0.156	0.058	0.234	(a)	
Canada	0.005	0.067	0.011	0.102	(a)	
US	0.011	0.102	0.025	0.155	(a)	
West Indies	0.001	0.029	0.029	0.044	(a)	
New Zealand	0.041	0.199	0.002	0.296	(a)	
Southern Europe	0.264	0.441	(a)		0.461	0.499
Northern Europe	0.117	0.321	(a)		0.204	0.403
Eastern Europe	0.054	0.226	(a)		0.095	0.293
Arabic	0.024	0.154	(a)		0.043	0.202
South Asia	0.040	0.195	(a)		0.069	0.254
Philippines	0.003	0.055	(a)		0.005	0.072
Vietnam	0.007	0.081	(a)		0.012	0.107
Other Asia	0.020	0.140	(a)		0.035	0.183
South America	0.009	0.095	(a)		0.016	0.126
Africa	0.029	0.168	(a)		0.051	0.220
Remainder	0.006	0.075	(a)		0.010	0.099
Earnings	14,855	7,808	16,347	8,426	13,737	7,108
Log(Earnings)	9.475	0.574	9.577	0.538	9.399	0.588
GOODENG	0.760	0.427	0.998	0.045	0.582	0.493
Sample Size	7,288		3,122		4,166	

Note: (a) = variable not relevant
The English-speaking regions include Britain, Ireland, Canada, US, New Zealand
and the British West Indies.

Source: As for Table 2.

APPENDIX TABLE B

PERCENTAGE REPRESENTATION OF MAJOR MINORITY LANGUAGE GROUPS BY LOCALITY AUSTRALIA, 1986

Language	Metropolitan	Small Urban	Rural
Arabic/Lebanese	1.06	0.04	0.02
Chinese	1.55	0.33	0.09
Dutch	0.61	0.43	0.55
French	0.43	0.25	0.30
German	1.03	0.63	0.61
Greek	2.80	0.37	0.28
Italian	4.24	1.27	1.70
Maltese	0.67	0.09	0.22
Polish	0.74	0.18	0.19
Serbian, Croatian	0.67	0.06	0.23
Spanish	0.72	0.07	0.16
Vietnamese	0.70	0.07	0.02
Other	4.94	1.62	2.50

Source: 1986 Australian Census of Population and Housing