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**BILINGUAL LITERACY AND ACADEMIC SUCCESS**

**AMONG SAMOAN BORN STUDENTS IN A NEW ZEALAND**

**SECONDARY SCHOOL.**

A thesis presented in partial fulfilment of the requirements for the  
degree of Masterate in Education at Massey University.

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## Abstract

This thesis is a study of bilingual students' literacy abilities and practices in a secondary school setting. Informed by Jim Cummins' writings on bilingual students' achievement in schools and by J. W. Oller's theories on language measurement, this project addresses the nature of first language reading behaviour of Samoan bilingual students in English immersion education in New Zealand. In addition, the Cummins' (Cummins, et. al. 1984) hypothesis that age 12 is the optimal age to transfer language of education and country is tested.

Research took place with Samoan born students (n=29) enrolled at the researcher's place of employment. The reading ability of students in Samoan and in English is tested through exact word scoring of a 7th word mechanical deletion cloze task, using a translated narrative text at the 12 year reading age. School records of academic achievement from the half year point are included for comparison with literacy achievement. These data were analysed with demographic details obtained from a student questionnaire. The questionnaire also provided descriptions of student reading behaviour in Samoan. Similar data is obtained from a group of NZ born Samoans (n=20) for comparison and referencing.

Reading behaviour of these students gives a high importance for Samoan language reading, yet little actual time is spent reading in that language. Both groups of students on average performed better on English cloze tests than Samoan. The NZ born students read better in English and worse in Samoan than their immigrant counterparts.

The tested hypothesis is only partially supported by the research findings. Predictions of CALP (reading) ability generated by Cummins' hypothesis are seen to a significant level,. However, none of the variables used correlated with academic achievement. Furthermore, in contrast to Cummins' predictions, a strong inverse correlation between length of residence and reading ability in the two languages is found. In other words, the longer Samoan born students are in one of the countries the better their ability in the language of that country and the weaker their ability in the other language. No such significant correlations were found among NZ born students.

Alternate theoretical explanations for the results are offered using concepts from the fields of sociology of education and socio-historic psychology. Appendices include test materials, questionnaire and interview forms. A bibliography of over 380 references is included.

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*To my wife, Judy,*

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*With love.*

*Without you I could not have finished.*

## Chapter 1: Introduction

Non-English Speaking Background (NESB) students in New Zealand (NZ) schools have been a common occurrence since during World War 2 (Skinner, 1987). They came as a result of several major waves of migration that reflected global events and NZ's response to them. Refugees from Europe arrived during and shortly after that war and European economic migrants were welcomed during the 1950s. Pacific Islanders arrived in large numbers in the 1970s and 1980s primarily to meet NZ's labour shortage. War refugees from the conflicts in South East Asia arrived especially in the 1980s. More recently large numbers of wealthy economic migrants have been arriving from northern Asian countries (eg. Taiwan and Korea) in the 1990s. The third most common language in NZ after English and Maori is Samoan, the largest of the Pacific Island communities in NZ (Learning Media, 1994e: 7).

It is worth quoting from Waite's discussion of developing a language policy in New Zealand as a preface to this thesis to indicate the author's position towards students whose first language (L1) is not English.

"It is vital that children who come to school speaking a language other than English and who require ESL assistance not be seen as children with a deficit. On the contrary, these children bring with them their own linguistic richness. They have already acquired one language (or even more) and may well already have learnt to read in that language; they therefore come equipped with well-developed linguistic skills, and in some cases reading strategies, which transfer to the new language being learnt, namely English. If there is a problem, it lies not with the ESL child, but with an education system that is ill equipped to provide ESL assistance." (Waite, 1992: 26)

It is the intention of this study to investigate the nature of that linguistic richness brought by immigrant Samoan children in terms of their reading literacy and the impact that has on their educational attainment in English-speaking schools in NZ. It needs to be kept in mind that linguistic minorities are usually also ethnic minorities. Ethnic minorities are relatively small in number, relatively powerless in society, have cultural differences often arising from foreign extraction, are possessed of a sense of shared ancestry and identity and are committed to self-preservation (Jeffcoate, 1984: 11).

Further, the emphasis in this study is on how well literacy in L1 and L2 have been *learnt* and what factors contribute to success in their learning. The word 'learn' suggests that there is an active and effortful process on the part of each individual in relationship with others who are trying to teach. This Vygotskian perspective is clearly expressed by Goldman:

"Literacy is both a cognitively and an interpersonally constructed phenomenon. The language learner is not victimized, tossed wildly about, by sociological factors, nor kept imprisoned by internal, cognitive structures. ... We would expect that differences within a group of individuals as well as differences between groups of individuals would be accounted for by internal *and* external contexts and their *interaction*." (Goldman, 1987: 4. italics in original).

Conscious of this context the chapter begins with an overview of Non-English Speaking Background (NESB)<sup>1</sup> demographics.

## ***NESB Students in NZ***

Recent statistical publications identify the size of New Zealand's NESB population; its ethnic make-up, its rates of academic difficulty and economic hardship. The NESB population of NZ has been classified into two major groups; Pacific Islands and Ethnic Communities. This section will examine socio-economic conditions for minority language (LM) communities, the demographics of NESB language needs and educational achievement among LM students. Results of a survey done in 1995 at the author's place of employment of students born outside NZ will be reported in chapter 3.

### **Socio-Economic Conditions for LM communities**

The 1991 Census (Department of Statistics, 1994) paints a grim economic picture of life for students of Pacific Island ethnicity; *viz.* Samoan, Fijian, Cook Island Maori, Niuean, Tongan, Tokelauan. Five percent of New Zealand's resident population identify themselves among these Pacific Island groups. Two thirds of them live in the Auckland region with the bulk of them (65.9%) in the Auckland urban area. Unemployment is 20.9%, double the national rate with over half (53.3%) of them receiving an income support payment other than Guaranteed Retirement Income (GRI). The average number of people in a household is 4.2 compared with the NZ average of 2.8 for all households. Nearly 51% of Pacific Island

households were rented or leased, compared with 23.1% for the nation and only 8.1% were owned without a mortgage compared with a national figure of 34.2%. Thus it is most likely that Pacific Islands students experience levels of poverty, overcrowding, unemployment and associated difficulties higher than the national average.

In addition to Pacific Islanders there is a large ethnic population in the Auckland region (Thomson, 1993). There are approximately 155,500 people in New Zealand who identify themselves with an ethnic community that is not Maori, nor Pacific Island, nor English speaking, and not NZ Pakeha. These ethnic groups grew dramatically in the 5 year inter-census period from 1986 to 1991; and included 29,621 Asians granted Permanent Residence out of a total 72,479 Permanent Residents from Non-English Speaking countries. The three largest ethnic communities in New Zealand are Chinese (29%), Indian (20%), and Dutch (16%). Roughly 42% (65,822) of all ethnic people live in the Auckland region, including two thirds of Yugoslavs, more than half of all Chinese and Indians and between one third and one half of nearly all other ethnic communities.

In contrast to the Pacific Islands groups, the ethnic communities experience life in New Zealand in a manner much closer to the New Zealand national average. However, Cambodians and Vietnamese have proportionally lower incomes while Japanese men and Sri Lankans have more upper income proportions. Otherwise ethnic communities are at about the NZ average. Most non-European ethnic communities rent accommodation more than the national and have larger households (4-5 persons) more frequently than the average. In general the ethnic communities are better off than the Pacific Island communities. In addition, the ethnic communities are growing more through migration than through birth rate.

### **NESB Students in School**

LM students (estimated at 15% of primary students in 1993; Wagemaker, 1993: 14) enter NZ secondary schools either as the children of business migrants or of family reunifications. A study of NESB students in New Zealand schools in March 1992 (Atkinson, 1992) categorised 45,194 students from non-English speaking and non-Maori descent homes

into 5 levels of proficiency. These range from no ability to communicate orally (Level 1) to no extra assistance required for participation in the educational mainstream (Level 5). Table 1 shows the available statistics for NESB students in 1992 and 1993 (Ministry of Education, 1994). In 1992 NESB students requiring language help made up nearly 5% of the total school population. Almost 70% of all NESB students were considered to be in need of language assistance ranging from clearly focused curriculum assistance to total instruction in both oral and written English. Being brought up in NZ then is no guarantee that a child will be a successful user of English in school settings.

**Table 1: NESB students in NZ schools**

| Type                                 | 1992   | 1993        |
|--------------------------------------|--------|-------------|
| Total NESB                           | 45,194 | 46,700      |
| Short Residence<br>(2 or less years) | 8,324  | 5730        |
| High School Form 3-7                 | 16,421 | 18,569      |
| Need Help (level 1-4)                | 31,537 | <i>n.a.</i> |
| In Auckland                          | 31,048 | <i>n.a.</i> |
| Pacific Island                       | 25,105 | <i>n.a.</i> |

*(n.a. = not available)*

In 1992 18% of all NESB students had been in NZ two or fewer years, with this falling to 12% by 1993. In 1992 36% of NESB students were enrolled in secondary school, rising to nearly 40% in 1993. These figures seem to indicate a trend of the NESB population aging through the school system. Of the 25,105 identified as Pacific Islanders almost half were born in New Zealand (12,077). The total NESB Pacific Island population is about 57.5% of the total identified Pacific Island school population in New Zealand.

Just over two thirds of the 1992 survey population lived in the Auckland region. There were 22,026 (71% of Auckland total) students requiring significant levels of support (levels 1 to 4) for their spoken and written English. Of all NESB students in the Auckland region 5,675 of 31,056 (18%) had been living in New Zealand for no more than 2 years. This is a number nearly equal to that same category for the whole of New Zealand a year later. Perhaps the phenomenon of NESB students is restricted primarily to Auckland. A further 9,838 NESB students requiring language help in the Auckland region had actually been born in New Zealand.

It may be that the more recent arrivals make up the majority of those most needing help or simply the majority of those receiving help. Certainly for secondary schools in the Auckland region, NESB students, especially those of Pacific Island and Asian ethnicity, are a growing population with significant educational and linguistic needs.

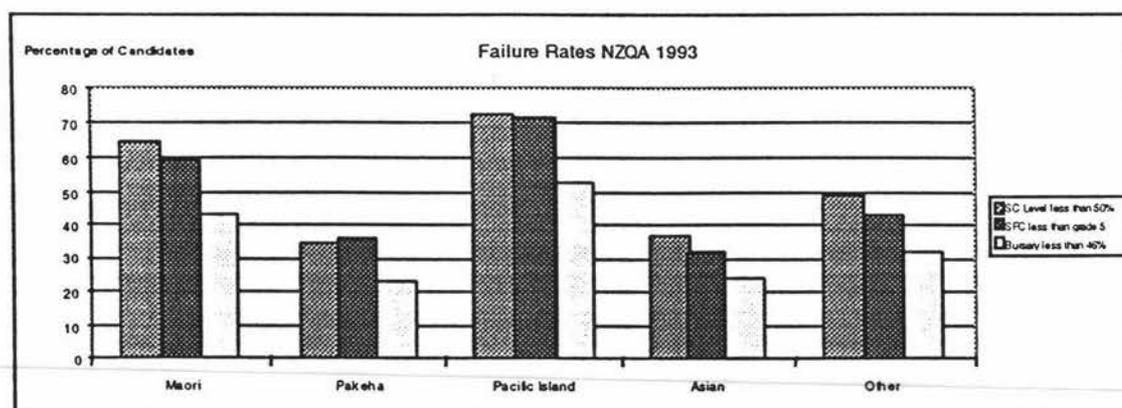
### School Achievement among Ethnic Groups

According to Statistics New Zealand's analysis of the 1991 New Zealand Census of Population and Dwellings (Department of Statistics, 1994) nearly half of Pacific Islanders have no official school qualification, a rate exceeded only by that of the NZ Maori. New Zealand Qualification Authority's (NZQA) reporting of 1993 Secondary Qualifications (NZQA, 1994) identified Maori, Pakeha, Pacific Island and Asian students. Table 2 and Chart 1 show the percentage of each group receiving failing grades for each level of academic achievement in the senior secondary school. It is noteworthy that the Pacific Island group is consistently highest in the rate of failure at all three levels.

Table 2: Failure Rates by Ethnic Group: NZQA Qualifications 1993

| Ethnic Groups  | SC Level<br>less than 50% | SFC<br>less than grade 5 | Bursary<br>less than 46% |
|----------------|---------------------------|--------------------------|--------------------------|
| Maori          | 63.8                      | 58.7                     | 42.6                     |
| Pakeha         | 34.4                      | 35.5                     | 22.9                     |
| Pacific Island | 72.1                      | 71.3                     | 52.6                     |
| Asian          | 36.6                      | 31.7                     | 23.8                     |
| Other          | 48.1                      | 42.5                     | 32.2                     |

Chart 1: NZQA Failure Rates 1993 by Ethnic Group



Reading performance of NESB students is also a concern after the 1990 International Association for the Evaluation of Educational Achievement (IEA) reading literacy survey. NESB secondary school students, who may well have been born in New Zealand, performed less well on reading literacy with "large differences ... in favour of Pakeha" (Wagemaker, 1993:35) or the English Speaking Background (ESB) students. To add weight to this area of concern, Wagemaker (1993:51) states that "New Zealand had the largest average difference [of test scores] between the two groups [students whose home language was the same as the test language and those with a different home language]" of students among all countries involved in the 1990 IEA international study of reading literacy.

Since Samoans constitute the largest single block of Pacific Islands students in NZ they face high levels of literacy difficulty and academic failure. The plight of Samoans in the USA makes for an interesting comparison. There are more than 60,000 Samoans in the United States of America and only 30,000 left in American Samoa. Samoan students have the lowest grade point averages of all groups in San Diego County (Trueba, et. al., 1993: 23).

### ***Outline of Thesis***

This thesis focuses on several questions raised by the theoretical writings of Jim Cummins as applied to the New Zealand context. By using quantitative descriptions of reading ability complemented with a survey questionnaire the following central issue is discussed:

Is there an optimum age of arrival in NZ and an optimum mother tongue (L1) literacy level for ensuring academic success in the English speaking secondary school system of New Zealand for bilingual migrants?

Research into this question is motivated by several factors. Little work has been done on the role of bilingualism on the poor academic success of NESB Pacific Island students presently in NZ schools. What there is on the NZ situation tends to emphasise the role of psychological, cultural or social aspects rather than linguistic factors and concentrates primarily on the plight of the indigenous people, the tangata whenua, rather than that of the

NESB migrants. NZ School Charters require schools to make efforts to redress inequity in outcomes. In a just society the majority population cannot ignore the relationship of poor literacy achievement and lack of schooling success to the high rates of social and educational problems being experienced by LM populations.

The specific questions addressed in the study are as follows.

1. What are the general literacy related characteristics of Samoan born students in NZ secondary schools?
2. What is the optimal age of arrival and length of residence in NZ for bilingual migrant children to experience academic success?

An operational version of question 2 is presented at the beginning of Chapter 4 before results are presented. This way the actual results are discussed in direct connection with the hypothesised results.

The thesis follows a format recommended by Brown (1991). In Chapter 2 there is a survey of relevant literature divided into four major topics; ie. Cummins' hypotheses on bilingual education, bilingual reading literacy, academic achievement of ethnic minority students and cloze procedure as reading assessment device. Chapter 3 provides a description and justification for methods used in selecting subjects and materials and a description of procedures taken to elicit data. Chapter 4 gives a description of the findings and of statistical analyses of the data. Chapter 5 presents a discussion of the findings in light of the literature survey ideas and draws attention to the limitations of the study. Directions for possible further research are also briefly indicated.

## Chapter 2: Literature Survey

This chapter surveys aspects of bilingual education theory pertinent to the research. Topics covered include Cummins' hypotheses on bilingualism, bilingual literacy, educational achievement of ethnic minorities, and cloze procedure.

### *Cummins' Hypotheses*

Jim Cummins, working at the Ontario Institute of Studies in Education (OISE), Toronto, has had a major impact on the bilingual education field<sup>2</sup>. His ideas on 'threshold levels', 'linguistic interdependence' and 'cognitive academic language' have been influential in research and debate since they were first advanced in the 1970's. This stage of the literature survey will outline these relevant aspects of Cummins' writings and use related works in the field of bilingual education to elucidate them. Especial attention will be paid to the socio-contextual and cognitive dimensions of Cummins' writings.

There has been a long history of conflicting research and opinion about the educational success of bilingual students with the emphasis latterly swinging to a positive outlook on bilingualism's role in education (for reviews see: Baral, 1987; Casanova & Arias, 1993, Davies, 1962; Döpke, et. al., 1991; Horner, 1975; Lambert and Peal, 1972; Legarreta-Meraida, 1981, Skutnabb-Kangas, 1981; Tosi, 1990). An early effort by Cummins, and his colleague at OISE, Merrill Swain, (Swain & Cummins, 1979) to interpret and integrate disparate empirical findings resulted in four identified factors contributing to positive and negative results of schooling for bilingual students. These included:

1. whether the learner is from majority or minority language group.
2. the perceived socio-economic value and status of L1 and L2.
3. the socio-economic status of learners.
4. the type of bilingual education programme.

A typical scenario for LM children was the following: a bilingual student comes from a low-status, low socio-economic standing group and that child was educated in the majority language in such a way that the child's home language was replaced by the second language resulting in little academic success. On the other hand, children, of middle or

upper class backgrounds, from the majority language group experienced academic success in bilingual education programmes that sought to add a second language rather than replace the first.

This section will examine first the effect of structural contexts of bilingual education. Second, linguistic factors in bilingual education will be examined.

### **Contexts of Bilingual Education**

The importance of educational context was elucidated clearly in Cummins' (1986b) watershed article in the Harvard Educational Review. There, using language reminiscent of Paulo Freire and Douglas Barnes in terms of types of educational processes, Cummins suggested that LM students were 'empowered' or 'disabled' by four major characteristics of schools. In other words, the more a school implemented policies and practices that gave status to L1, enabled students to learn in L1, involved students in their learning and took account of global external factors in assessment the more likely LM children were to succeed academically. These dimensions are summarised in the following list and supporting Table 3 (Baker, 1993: 241-243):<sup>3</sup>

1. The extent to which minority language pupils' home language and culture are incorporated into the school curriculum. Additive bilingual programmes work better for cognitive and affective reasons.
2. The extent to which minority communities are encouraged to participate in their children's education. Giving status and importance to the L1 and home culture through collaborative parent participation.
3. The extent to which education promotes the inner desire for children to become active seekers of knowledge and not just passive receptacles. Giving importance to what children already know through reciprocal dialogue and interaction with the teacher across all language modes.
4. The extent to which the assessment of minority language pupils avoids locating problems in the pupil and seeks to find the root of the problem in the social and educational system or curriculum wherever possible. Looking beyond test results to cultural, economic, political facets of the situation gives greater likelihood that students can be empowered in their own learning.

**Table 3: Results of Cummins' Contextual Dimensions.**

|                    | <u>Empowered LM Children</u>   | <u>Disabled LM Children</u>  |
|--------------------|--|--|
| <b>Dimension 1</b> | <u>Additive</u> : Incorporation of Home Language and Culture in the School | <u>Subtractive</u> : Home Language and Culture Excluded from the School. |
| <b>Dimension 2</b> | <u>Collaborative</u> Community Participation                               | <u>Exclusionary</u> Community Non-Participation                          |
| <b>Dimension 3</b> | <u>Reciprocal Interaction</u> Curriculum                                   | <u>Transmission Oriented</u> Curriculum                                  |
| <b>Dimension 4</b> | <u>Advocacy Oriented</u> Assessment and Diagnosis.                         | <u>Legitimisation Oriented</u> Assessment and Diagnosis.                 |

The effect of bilingual education context has been discussed by other researchers.

Swain argued (1986) that the best bilingual programmes for NESB students are those that develop and maintain the student's L1 "on the grounds that this will provide the essential psychological and sociological support for linguistic and academic learning in both languages"<sup>4</sup>. Pattanyak (1986) argued that mother tongue education was not only a right and a need but also beneficial economically, culturally, scholastically and politically. The idea that LM NESB bilingual students develop cognitively through the maintained use of their L1 for school purposes has been argued in New Zealand as a vital key for academic development (Hastings, 1988; Jamieson, 1980; Lameta-Tufuga, 1994; Lang, 1994; Learning Media, 1994e; Moorfield, 1987; Waite, 1992).

Collier, generalising from a wide survey of research, summarised the position well:

"When students are schooled in two languages, with solid cognitive academic instruction provided in both the first and second languages, both language minority and language majority students generally take from 4 to 7 years to reach national norms on standardized tests in reading, social studies, and science (measures of thinking skills), whereas their performance may reach national norms in as little as 2 years in L1 and L2 tests in mathematics and language arts (the latter testing spelling, punctuation, and simple grammar points). ... Adolescent arrivals who have had no L2 exposure and who are not able to continue academic work in their first language while they are acquiring their second language do not have enough time left in high school to make up for the lost years of academic instruction. ... Consistent, uninterrupted cognitive academic development in all subjects throughout students' schooling is more important than the number of hours of L2 instruction for successful academic achievement in a second language" (1989: 526 - 527).

Phillipson, et. al. (1986) supported the call for L1 education for LM groups, based on their study of bilingual programmes in Europe and the USA that give high degrees of academic success. High degrees of academic success (HDS) were experienced in programmes that included maintenance of L1 for minority groups and immersion in L2 for majority group students. Ellis (1994: 229) summarised the social contexts of bilingual

education and the potential L2 learning outcomes in a similar way. Trueba (1988)

emphasised the role that schools can and must take in ensuring LM students succeed in their new land:

"an effective learning environment must be constructed in which the child, especially the minority child, is assisted through meaningful and culturally appropriate relationships in the internalization of the mainstream cultural values embedded in our school system". (p. 282)

He argued later (Trueba, et. al., 1993) that an effective way of ensuring high levels of literacy in English necessary for acculturation and empowerment is through L1 education for the cognitive skills benefit.

NZ's state education system provides education for LM students who have English as L2 in the same mainstream classrooms as L1 English students with some provision for withdrawal for L2 instruction or reading development. Internationally this method is known as submersion education, ie. programmes that force LM children to accept instruction through the medium of a foreign majority high-status language in classes where some children are native speakers of the language of instruction and where the teacher does not understand the L1 of the LM children (Ellis, 1994: 224-225). This method is in contrast to immersion programmes wherein children are educated in L2 by bilingual teachers in company with other children who equally do not know the L2 used in school. Consequently, it is argued LM children lose their L1 in favour of L2 and in the process do not attain high levels of academic achievement. Submersion education is an educational policy intended to assimilate LM students into the host nation (Extra & Vallen, 1989).

Language submersion has been argued as having a deleterious effect on the general language development of Samoan speaking children in NZ (Waite, 1992: 18). Spolsky (1988) suggested that the lack of opportunity in NZ to develop Samoan language in schooling not only cuts off LM children from their traditional cultural and social values but also creates an environment in which children are not exposed to a rich linguistic setting conducive to cognitive and linguistic development. Lameta-Tufuga (1994) has extended this point with her experimental research on the use of L1 in Science class discussions for Samoan students, wherein students who were encouraged and allowed to use L1 in class

experienced significant improvements in their knowledge of the subject matter. In contrast, schooling in Samoa is meant to be generally through immersion in English only (Lo Bianco, 1990). However, Lo Bianco reported that most teaching is actually done in a mixed fashion; that is both languages are used with the vernacular used to translate what students are meant to learn in the immersion L2. He suggested that this environment results in little L2 learning and that Samoa would be better to extend and develop vernacular medium education.

In opposition to the position that only majority culture children be immersion educated, Porter (1990) has argued that LM children, including those from working-class immigrant backgrounds, be immersion educated in English from the earliest age possible (age 5 or 6). She argued that this will bring about the highest possible level of language and academic attainment in L2 and that L1 should be reintroduced after three or four years of intensive L2 learning.

It is worth noting at this time that the advocacy of L1 as language of instruction for LM students is about much more than improved educational attainment. The cognitive and academic benefits of L1 education may be the ideological framework for the advancement of L1 medium education but the socio-political dimensions of the decision are actually more important and fundamental. Porter (1990) makes the political aspect clear in her recount of the ideological and political fracas in the USA surrounding her opposition to Transitional Bilingual Education<sup>5</sup> legislation, which requires states, cities and school boards to provide L1 maintenance education for LM students regardless of LM parent preference, in favour of structured immersion for LM students in the United States. Not only does the LM group have to attain a condition of conscious, mobilised ethnicity (Fishman, 1989a) but the majority, especially the middle third economically, must actively cooperate in sharing social and political power (Fishman, 1989c). This aspect of bilingual education will be taken up again in the section on LM ethnic achievement. However at this point in the discussion on L1 education, Fishman's comments on the use of minority mother tongues in education seem germane:

“Issues of cultural integration, economic control and political power are usually involved (even if not discussed), and it these issues, ... that are at the crux of the

problem, ... Whereas positive academic outcomes may or may not necessarily be forthcoming, depending on the literacy level of the learners' preschool social environment, the socio-cultural and political implications of the use of disadvantaged mother tongues lead to some reform. ... the real significance of using disadvantaged vernaculars as instructional co-media ... is that such use symbolizes a lessening of relative disadvantage and, hopefully, an increase of the possibility of attaining ethnocultural autonomy, including technical and socio-political self-regulatory power. It is only under such circumstances that the use of disadvantaged languages as instructional [co-media can be] established on a stable basis." (Fishman, 1989b: 475, 478-479).

Cummins (1986b) has argued quite forcefully that teachers are obliged to advocate success for LM students by empowering their acquisition of L2's language and culture while retaining and valuing their home language and culture. However, he has noted (Cummins, 1989) the overrepresentation of LM students in learning disability classes and suggested that little progress towards deinstitutionalizing racism had taken place in the United States or Ontario. Further, Trueba (1992) clearly identified the institutional environment as the cause of LM student failure in his ethnographic studies of ESL children in a California primary school. Nevertheless, Lucas (1993; Lucas, et. al., 1990; Lucas and Katz, 1994) has reported characteristics of schools that are successful in assisting Latino LM students to academic achievement. These features include services and attitudes that go beyond just academic instruction as well as a place for L1 in instruction. Porter (1990) also reviewed characteristics of programmes in which LM students are experiencing academic success and English language proficiency, despite a lesser importance being given to instruction in L1. These include: early use of and wide exposure to English as L2, integration of LM students with majority students, highly skilled and trained staff, and strong communication with parents to ensure their understanding and participation in school goals. In a similar vein, Fazio and Steven (1994) reported that schools that provide highly structured learning environments, greater exposure to the target L2 and L1 support programmes are associated with higher levels of L2 performance even for low SES children.

Fishman (1989c) has supported the experimental two-way bilingual education programmes of New York state as a way to ensure that the political will of the middle-class is behind bilingual education (see Porter, 1990 for descriptions of this type of programme). His proposition is that English L1 children be educated bilingually in L2 (~~immersion style~~)

with children for whom that target L2 is L1. This creates a two-way street of learning L2 for both groups of students and thus ensures continued funding for LM children's education.

This of course will work only when the majority middle-class see that there is something in it for their children, as can be seen in the popularity of French immersion programmes in Canada. Collier (1992) reported that such programs, in existence since 1963, do have benefits: acquisition of native-like proficiency in L2 speaking and writing skills and reduction of social distance between majority and LM students.

Perhaps the impact of Cummins' advocacy for minority students is taking hold. To conclude this discussion it can be seen for Cummins that the social context of bilingual education, and especially school organisation, plays a major role in the academic achievement of LM students.

### **Linguistic Proficiency in Bilingual Education**

Prior to outlining the impact various contexts of bilingual education had on LM students, Cummins had also sought to explain the relationship of cognitive and linguistic dimensions in bilingual students to their academic performance. Thus his work on linguistic thresholds, interpersonal communication versus academic literacy skills, linguistic interdependence and contextualised language was developed.

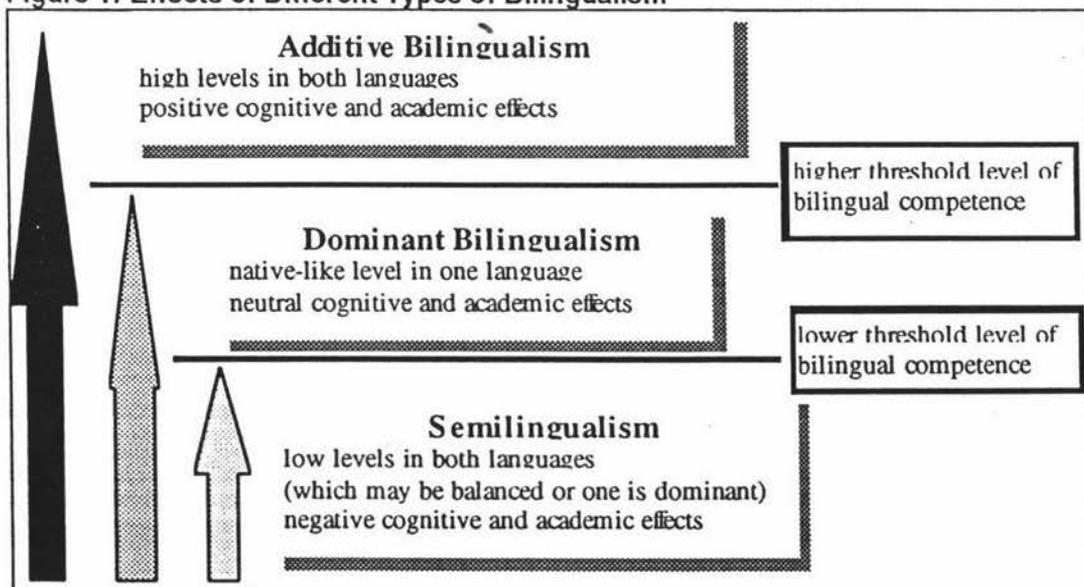
#### ***Linguistic Thresholds***

Linguistic thresholds, inspired by Swedish research into Finnish-Swedish bilingualism (surveyed in Skutnabb-Kangas, 1981), were advanced as an explanation for the phenomenon of LM students not doing well in schooling. Perhaps the fact that they were not very proficient in either their L1 or L2 explained their failure in majority language schooling. Cummins (1979) argued that there were two thresholds (Figure 1 from Cummins, 1979: 230) which bilingual students had to pass through in order to obtain maximum benefit from their bilingual experience. Not reaching the lower level of competence in either language, called semilingualism, had negative cognitive and academic effects.

The term semilingualism, a translation of the Swedish *halvspråkig*, was originally used to denote Finnish immigrant children to Sweden who were not competent for school purposes in their first language, Finnish, or their second language, Swedish (Kalantzis, et al., 1989; Skutnabb-Kangas, 1981: 248-263; Tosi, 1979). Not attaining competence in either language is associated with negative attitudes in the learner towards their own ethnic identity and to the culture of the target language (Ellis, 1994). Tosi (1984) has identified factors contributing to this condition: inconsistent linguistic models in the family, lack of exposure to a standard version of L1, difference between dialects of L1 used at home and at school, gradual intergenerational extinction of L1 in families, and cultural and emotional difficulties in coping with two languages.

The upper threshold, called 'additive bilingualism' after Lambert (see Lambert, 1989), indicated that students had a high level of competence in both languages and as a result experienced positive cognitive and academic effects. Students who had passed the first but not the second threshold (dominant bilingualism) were considered to have adult like competence in one of their languages and thus they experienced neutral consequences from their bilingualism, almost as if they were monolingual (Baker, 1993:135-137).

**Figure 1: Effects of Different Types of Bilingualism**



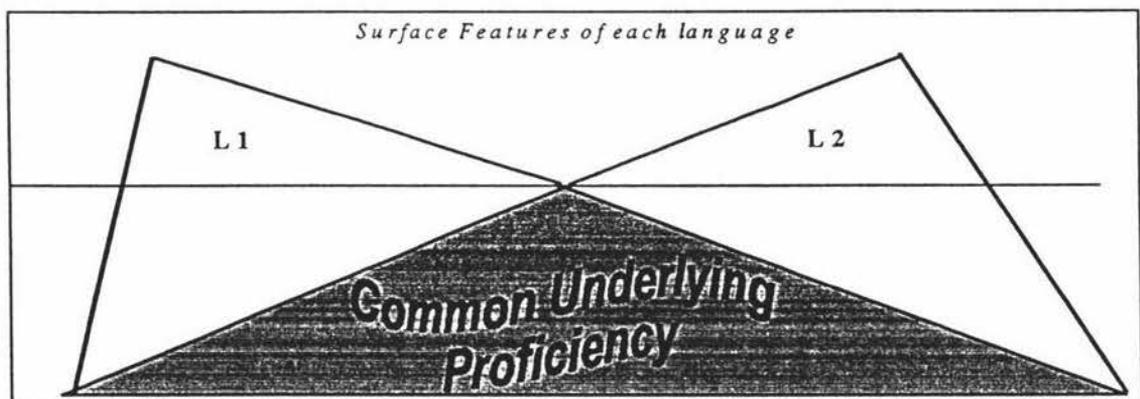
(Figure adapted from Cummins, 1979: 230)

### *Linguistic Interdependence*

Cummins (1979, 1981, 1984a, 1986a, 1991a, 1991b) argued further, in a hypothesis called linguistic interdependence, that languages were interrelated at a deep level in the human mind in such a way that cognitive or linguistic development in one language would be beneficial for the development of the same sorts of skills in a second language. Metaphorically, he described the situation as being a dual peaked iceberg in which the vast bulk of the berg under water represented the common underlying cognitive or linguistic abilities accessed by the above surface different size mountains of language ability or performance in two separate languages (Figure 2). He contrasted his model with the idea that the underlying cognitive abilities are separate for each language.

**Figure 2: Dual Iceberg Representation of Bilingual Proficiency**

*(adapted from Cummins 1984a: 143)*



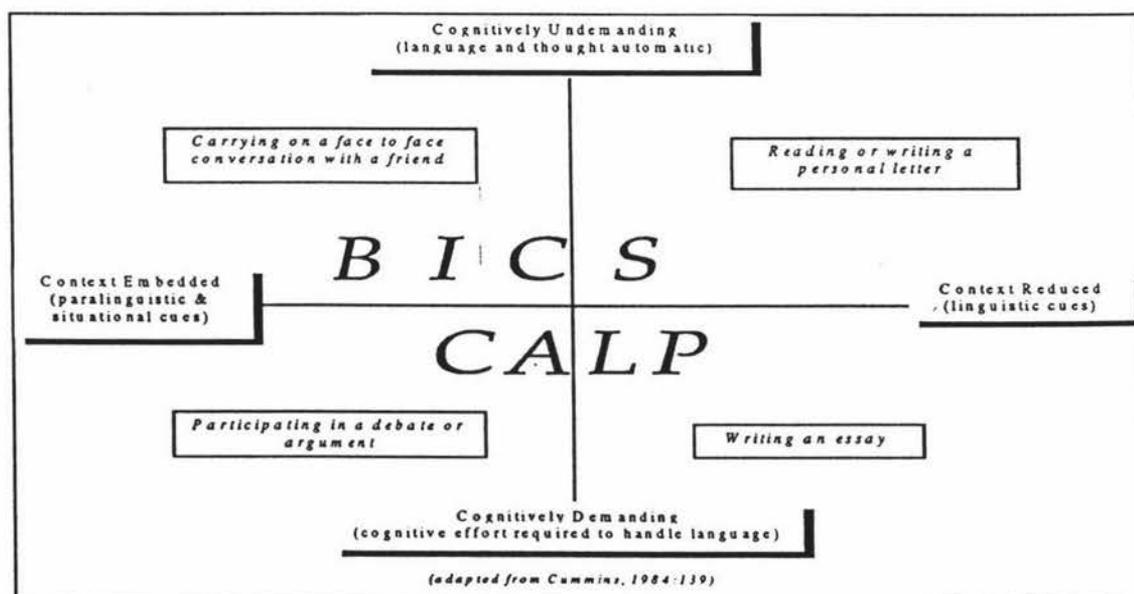
Formally, the principle has been expressed as follows: "To the extent that instruction in L<sub>x</sub> is effective in promoting proficiency in L<sub>x</sub>, transfer of this proficiency to L<sub>y</sub> will occur provided there is adequate exposure to L<sub>y</sub> (either in schools or environment) and adequate motivation to learn L<sub>y</sub>." (Cummins, 1991b: 166) In fact, if a child did not develop certain cognitive skills related to adult-like command of vocabulary, language functions and concepts in L1 then it was most likely that the child would remain semilingual. Verhoeven (1987: 255-6) concluded that bilingual education programmes "can improve students' academic proficiency in both languages and will certainly not result in any disadvantage to students compared with monolingual programmes" because of the

“considerable transfer of literacy skills from one language to another.” Thus the threshold hypothesis is linked to the developmental interdependence hypothesis.

### *BICS and CALP*

The term semilingualism is no longer used by Cummins as a result of a variety of critiques (Baker, 1993: 9-10; Baral, 1987; Ellis, 1994; Grosjean, 1992; Martin-Jones & Romaine, 1986; Paulston, 1982; Tosi, 1984) that the term was pejorative or misleading, that it reflected a deficit theory view of LM children’s language, that quantification of the terms was difficult and vague or that the phenomenon did not exist at all. The notion of Basic Interpersonal Communication Skills (BICS) and Cognitive/Academic Language Proficiency (CALP) was developed partially in response (Cummins, 1984a; Baker, 1993:138-144). Cummins made a distinction between the ability to communicate orally in social contexts (BICS) and the ability to perform in the literate/verbal environment of academic, cognitively demanding learning (CALP). In other words, just because a student could participate in classroom social activities in the target language did not imply that he or she could function effectively with literacy based school tasks in the same language. These two apparently dichotomous dimensions of language proficiency were plotted on a grid created by two continuums; cognitive demand and contextual support (Figure 3).

**Figure 3: Context and Cognitive Demand in Communication**



Perhaps intelligence explains why some bilinguals do well academically. Lambert and Peal (1972) concluded in a study of French-English bilinguals in Montreal that bilinguals performed better than monolinguals on both verbal and non-verbal intelligence tests and that they did better in school than monolinguals due to their superior intelligence. However, later research by Genesee (1976) found that French L2 immersion students in Montreal displayed a range of abilities reflecting Cummins' distinctions. The intelligence ranking (IQ) of the learners in L1 was irrelevant to their performance in oral communication in L2, whereas their performance in L2 reading and writing tests correlated highly with their L1 IQ rankings. Thus he concluded that intelligence in L1 does affect L2 literate performance but not interpersonal communication ability. Also Wright (1993) found that high levels of oral proficiency in L1 and L2 did not correlate with positive educational benefit rather that literacy and formal language study appear to be the intervening variable associated with educational achievement.

School achievement is influenced by a lot more than simply speaking two languages. The relationship of literate language ability to educational achievement will be taken up further in the section on bilingual literacy.

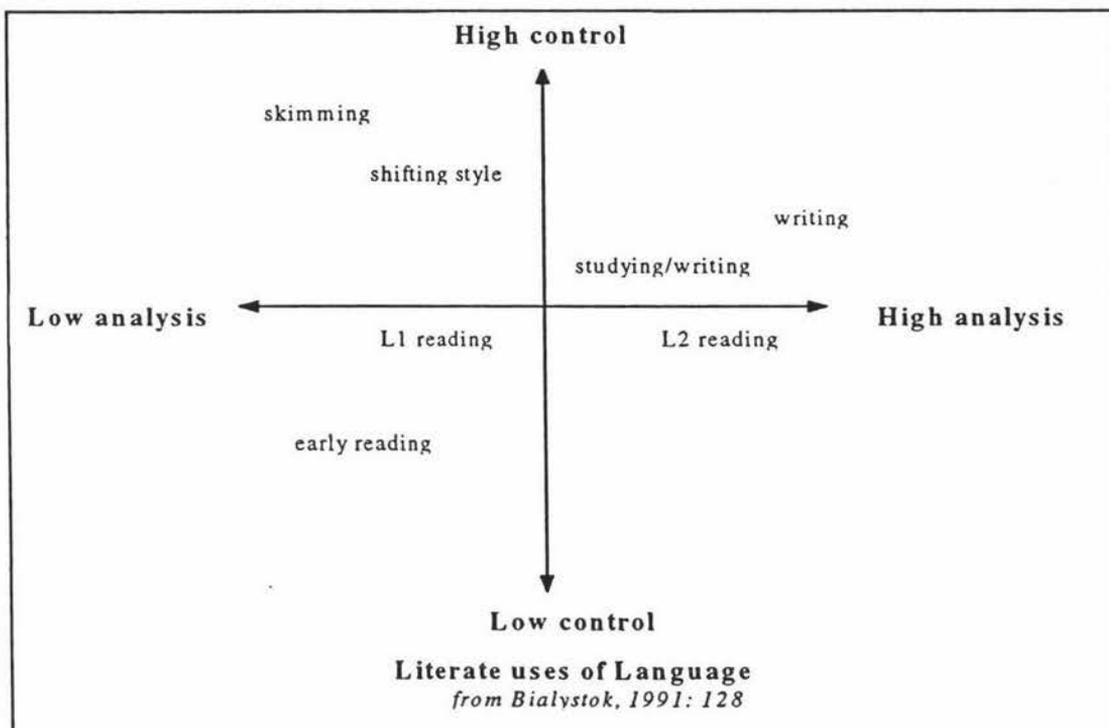
### *Context and Cognitive Demand*

Simply put some educational tasks are more intellectually demanding than others and often those tasks provide less contextual support for the learner. Contextualised or context embedded language exhibits certain traits (Baker, 1993:10; Foley, 1992) such as (a) more emphasis on extralinguistic or paralinguistic cues to meaning (eg. gesture, expression, pointing, stress, intonation), (b) discourse is more often related to real world events and people, (c) less complex syntax is used, (d) shared knowledge is assumed and (e) communication is usually interactive. In decontextualised language, on the other hand, words fill the role played by extralinguistic features. Syntax and lexicon are usually more complex while discourse is more structured and removed from immediate real world events. No absolute dichotomy between BICS and CALP is intended. In a pedagogical application of this concept, Freeman & Freeman (1992) recommended providing as much physical

context as possible so that the contextually disembedded aspects (eg. academic reading) are more easily accessed by L2 learners.

In a reflection of Cummins' (1979; 1981; 1983; 1984a) own description of language as being either contextualised or decontextualised Bialystok (1991) argued that literacy tasks generally require higher levels of cognitive analysis and language control than do oral uses since reading is a decontextualised language use. Her breakdown of various print related tasks (Figure 4) shows the varying intellectual and linguistic demands placed on learners.

**Figure 4: Literate uses of language**



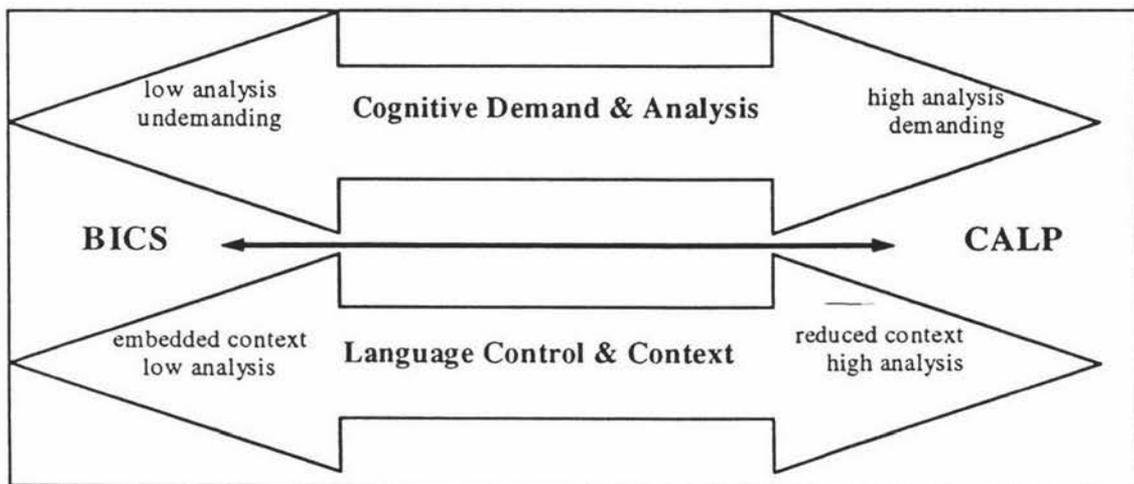
Her examination of literate language use is very close to and consistent with Cummins' analysis seen in Figure 3. Her positioning of literate tasks on a scale of cognitive analysis and control of language and thought tends to move educational activities diagonally from context embedded (low control) and cognitively undemanding (low analysis) to context reduced (high control) and cognitively demanding (high analysis).

As Baker (1993) has pointed out language development is most likely not to be a two stage process but rather a gradual slide across a continuum of dimensions and contexts of language use. In his opinion, (Baker, 1993: 145) cognitively demanding tasks are context reduced and context embedded tasks are cognitively undemanding. Thus BICS and CALP

really represent only two of the four quadrants plotted in Figures 3 and 4 and the situation would be better portrayed by Figure 5 that places the two concepts on a continuum of language use (Ellis, 1994). Cummins (Cummins, et. al., 1984) took issue with Krashen's (1981) Input Hypothesis by suggesting that BICS/CALP distinctions were more the product of different human attributes than differential exposure to comprehensible input. In other words, BICS ability is a manifestation of personality attributes of the individual whereas CALP is a manifestation of underlying cognitive proficiency.

**Figure 5: BICS and CALP**

(adapted from Cummins, 1984a and Bialystok, 1991)



### *CALP and School Context*

Cummins' examples of cognitively demanding tasks (Figure 3) clearly point to a school specific cultural context for language use. As Martin-Jones and Romaine (1986) point out CALP is really an ability to display standards of literacy and literate talk appropriate to the cultural setting of the school. Chang and Wells (1988) argue that a prime function of schooling is to promote, through writing and speech, literate thinking, ie. the exploitation of "the symbolic potential of language to enable the thought processes themselves to become the object of thought" (Chang and Wells, 1988: 106). Troike (1984) suggested that, since CALP appears to be equivalent to Oller's (1978, 1979) general language proficiency as indicated by student performance on language and IQ tests, there is a strong possibility that, in addition to tapping the same factor, they reflect "not some general underlying ability, but simply degree of acculturation to a culture-specific set of

norms" (1984: 49) as expressed in school culture. Wald (1984) asserted that CALP is really a measure of literacy, as a result of its emphasis on context-reduced and cognitively demanding activities, and its presence is indicated by performance in school task related tests.

Vygotsky (1978; 1991) has argued that language mediated communication is how children develop higher mental abilities and personal, social and cultural identity. Rogoff (1991) has noted the importance of language in the social process of educating children and has identified (Rogoff, Gauvain & Ellis, 1991) the significant effect schooling has on culture specific cognitive and literacy activities. She (Rogoff, 1981) identified four possible mechanisms for the specific effect of schooling on cognitive skills: (a) an emphasis on general rules; (b) the use of decontextualised verbal instruction; (c) teaching of specific cognitive skills and (d) literacy. Scribner and Cole's (1979, 1981) landmark study of literacy among the Vai of Liberia found that although literacy itself brought no cognitive benefits, schooling and the type of language used developed context specific advantages similar to those identified by Rogoff. These are that literates outperformed nonliterates in (a) synthesising a spoken message, (b) using graphic symbols to represent language, (c) using language as a means of instruction and (d) talking about correct Vai speech.

Thonis (1981) has argued that CALP is very important in learning to read since, among other things, reading is thinking (a top-down way of viewing reading). For her, school academic tasks require verbal reasoning that is independent of specific language skills but reading skills should be acquired first in L1 since transfer of skill is most successful for strong skills. In Australia it has been argued (Döpke, et. al., 1991) that the lack of CALP skills in LM students should be viewed in the same light as the similar lack among L1 low socio-economic status (SES) students. In other words, LM and low SES monolingual students are similarly "unequipped to comply with the academic demands of our school system." (Döpke, et. al., 1991: 54).

The connection of CALP to school has been made explicit in the development of the Cognitive Academic Language Learning Approach (O'Malley, 1988). This is an instructional system that gradually introduces English through presentation of the language

by content instruction, usually first in mathematics and science. Supposedly, these two subjects are less language dependent and are easier to handle for bilingual students who may have already acquired the content in L1. On the other hand, Short (1994) recommended that a social studies and language course be the stepping stone for LM students preparing to enter mainstream classes. In any event, students develop the required academic language with grade appropriate content. In other words, "ESL students will learn English through an organized approach to the content area materials they need to study in the regular classroom." (Freeman & Freeman, 1992: 228). Starfield (1994) described such an application for NESB students entering South African tertiary education.

Thus it can be seen that, despite criticisms of his narrow focus on school-based literate activities, Cummins' hypotheses are not outside the confines of a socio-cultural, Vygotskian context-specific approach to language use and learning. Indeed they are appropriate to the study of children's language activities for academic purposes in school settings. The nature of school culture will be discussed in the section on Ethnic Minority School Achievement. The nature of literacy and its measurement will be taken up in the section on Bilingual Literacy.

### *Length of Residence and Age on Arrival*

Subsequent to a reanalysis of psychological test results carried out on immigrant children in Canada, Cummins (Cummins, 1981, 1984a: 130-151, 1991a, 1992; Cummins & Swain, 1986: 183-204) identified the importance of a child's length of residence in the new country. He asserted that the average student requires 5 to 7 years studying and living in L2 to reach the same academic ability as his or her intellectual peer working in L1, whereas BICS ability is attained relatively quickly, usually within 12 to 24 months. The best results (4 years to age appropriate performance in L2) were obtained by the children of Japanese diplomats and business people who had continued their Japanese education as an adjunct to their English language schooling in Toronto.

This contention is supported by laboratory experimental work carried out in Europe on bilingual adolescents (Mägiste, 1986) that found between 3 and 6 years were needed to

reach language balance between L1 and L2. More recently, Fazio and Stevens (1994) found that length of residence was a significant variable for French L2 oral comprehension and expression among bilingual migrants to Montreal. Collier (1987, 1989) has also supported Cummins' five to seven year time frame in her surveys of academic progress of NESB students in the United States. Genesee (1987) pointed out that extended exposure to the second language may be crucial in acquisition of the L2, since "second language proficiency tends to increase the earlier immersion begins and the more second language exposure the learner has." (1987: 191)

Further Cummins argued (Cummins, et. al., 1984) that children who arrive from another language background at an older age when they have already established cognitive/academic skills in their L1 do perform better initially in classroom setting use and learning of L2. However, the effect of length of residence did mean that younger immigrants may eventually attain higher levels of L2 than older immigrants. Thus he suggested that

"in terms of immigrant students' ability to approach grade norms in L2 academic skills, there may be a critical age on arrival at about age 12, after which it will become increasingly difficult for students to catch up." (Cummins, et. al., 1984: 79).

Collier (1989) argued that age 12 is the age by which first language acquisition is completed and thus age on arrival (AOA) around 12 ensures that appropriate cognitive development for schooling in L1 has taken place. In a longitudinal survey designed to test Cummins' contention, Collier (1987) found that children aged 8 to 11 upon arrival actually made the quickest progress academically, taking between two and five years depending on subject to reach 50th Normal Curve Equivalent (NCE). She did note that a much higher ranking than 50th NCE is required for entry to post-secondary education and that a further three to four years of language and subject development would be required to reach such a level. Thus a total of 5 to 9 years would be needed for children in this age group to have the language and academic achievement to enter university. By then of course their ages would range anywhere between 13 and 20. However, she (Collier, 1992: 91) admits that "separating age from hundreds of other variables" that influence language acquisition is difficult "because the circumstances (variables) for each student acquiring a target language

vary greatly from individual to individual." Nevertheless, she argued that actual age on arrival is not a disadvantage as long as development of L1 is not discontinued.

In support of this age factor, Kerr (1983) reported research done in Sweden on Finnish immigrant children concluding that the best age to move to another country during schooling appears to be around 10 or three years after commencing schooling. Corson (1993) argued that the majority language L2 should not be introduced until quite late in schooling and certainly not before early adolescence. Lightbown and Spada (1993) reported a series of studies on age concluding that the best age of L2 acquisition to attain native-like mastery of L2 is adolescence (ages 12-15). They repeat the warning that, although early childhood exposure to L2 should result in high levels of L2 proficiency, under some circumstances such early exposure may result in subtractive bilingualism, i.e. the loss of L1 before L2 is mastered and consequently academic and personal problems.

Ellis (1994: 484-494) reported studies that conclude adults learn faster than children especially in terms of grammar rather than pronunciation and benefit from formal learning situations. However, ultimately children are more likely to reach higher levels of attainment. He suggested that the critical period for acquiring native like grammatical competence is about age 15, which is later than the period for pronunciation. Hyltenstam (1992) supported this position, suggesting that L2 acquisition after age 6 makes native-like phonological competence unlikely and after age 12 near impossible. He also suggested that vocabulary and discourse ability will follow the same age related trends. Ellis (1994) put forward six different explanations to account for the role of age in L2 acquisition;

- a) adults may have less sensory acuity to pick up the phonology of L2,
- b) development and changes in the neurological structures of the brain may contribute to acquisition patterns,
- c) children may be more strongly motivated to communicate with native speakers of L2 and have less anxiety about their performance,
- d) adults may expect to be taught rather than simply acquire L2 through exposure,
- e) children may receive superior input than adults who are more likely to negotiate meaning with native speakers of L2
- f) and children may store L1 and L2 information separately.

Research has been carried out to discover what happens to L1 as L2 is acquired.

Palij and Aaronson (1992) have found among university psychology students in New York

that current ability in English as L2 declines as it is acquired later in life while current ability in L1 declines the earlier English as L2 is acquired. Hyltenstam (1992) found that children who attain native-like competence in L2 make far more mistakes in L1. Acquiring L1 at the 'right' age is not enough to ensure ultimate native-like competence. Opportunity and motivation to use L1 must also be present. Collier has argued that academic achievement is dependent on growth in academic, cognitive and language areas and that where one or more dimensions are neglected then academic achievement will not occur. Development occurs within socio-cultural processes primarily focussed on the family and that is why L1 must be involved in the education of NESB students (W-B Olsen & Leone, 1995).

Research on vocabulary development in English (Nation, 1983, 1990) gives further grounds for the idea that a significant time factor is involved in the preparation for academic success. A vocabulary of only 2,000 head words would appear to be adequate for about 85% of all oral and written communication and would be reached by the average native speaker of English by the age of five. Nevertheless, high school course work and examinations are geared for the average native speaker of English who would be expected by the age of 15 to have a vocabulary of about 12,000 words.

It has been estimated elsewhere (Adams, 1990) that a corpus of 5,000,000 words in running text taken from American school books written from grades 3 to 8 is made up of just 85,000 separate words. Five thousand of these words occur very frequently, ie. 90% of the 5,000,000 can be found among these 5,000. The remaining 80,000 words, though occurring only 50,000 times (10% of 5,000,000), actually account for 94% of all the different words. However, even the most frequent words are still extremely rare; eg. the five thousandth most frequent word occurs only about ten times per million words. Ominously for learners, "The less frequent a word is, the greater is the amount of meaning that it is expected to contribute to a passage; the less frequent a word is, the more strongly the meaning of a passage is expected to depend on its full and proper interpretation." (Adams, 1990: 185). Thus it can be seen that any learner of English has a large obstacle to knowing the language and reading it.

Corson (1985) attributed much of this semantic barrier to English learning and academic success to the 'lexical bar', ie. the high proportion (between two thirds and three quarters) of Latinate words in the language. Tang (1992) reported studies that show that vocabulary accounts for anywhere between .41 and .93 of the factor loading on reading comprehension tasks. Krashen (1989) argued that the large vocabulary required for academic success at the tertiary level is only gained through extensive personal reading, in other words it is a result of the CALP skill being applied. It has also been found that white middle class students have an advantage over LM students in both decoding skills and vocabulary knowledge perhaps due to prior experience with decontextualised language and with items from the lexical bar (White, Graves & Slater, 1990).

It is obvious why Cummins warned that the fact that a social-communicative competence can be reached in one to two years should not distract students, teachers, parents or assessors from the real language learning challenge still facing the student.

To summarise the key points of Cummins' theories, bilingual migrant students have to develop both interpersonal and cognitive academic language proficiency to succeed in schooling. The latter skills are greatly developed by the mastery of literacy, especially in L1, since there is a transfer of CALP from L1 to L2. Minority group bilinguals are assisted in the development of CALP through primary school training and literacy development in L1 rather than through rapid submersion in L2 and this is in contrast to majority group bilinguals who benefit more from immersion in L2 as early as possible. Too rapid a submersion in L2 for minority group NESB students can result in poor language and academic development in both L1 and L2. There appears to be an ideal age for migration to an L2 country (age 12 is suggested) and a significant period of time (5 to 7 years) is required to attain mastery of L2 CALP. Furthermore, schools can and must provide innovative educational contexts for LM migrants.

This concludes a review of Cummins' thinking on language and school achievement for bilingual students. The rest of this chapter will review research on a variety of relevant topics reflecting on Cummins' work. These include bilingual reading literacy,

school achievement for ethnic minority students and reading and language assessment through cloze procedure.

## ***Bilingual Literacy***

This section will first discuss definitions of reading and the processes by which it is acquired. A considered position on the reading debate will be taken. Then the implications of these on bilingual reading will be reviewed. Literacy includes both reading and writing. This ability among bilingual populations is sometimes known as biliteracy (Cumming, 1994). Language proficiency and, specifically, reading achievement have been found to be significant predictors of academic attainment (Trueba, 1989; Trueba, et. al., 1993). Much of the secondary school curriculum depends on a developed ability to read effectively. In one psychologist's opinion, "of all the skills that the child must acquire in school, reading is the most complex and difficult." (McLaughlin, 1987: 59). Thus, reading in two languages is the dimension of bilingual literacy that this study focuses on.

## **Functional Literacy and Its Significance**

The definitions of reading literacy are complex and many. International definitions of reading tend to focus on how much reading or what kind of reading people can do. In China (Xiaochun, 1992) the number of characters read (1500 for rural people and 2000 for city dwellers) define literacy while other nations use an amount of schooling: four years of schooling in Kuwait (Ahmed, 1992) and West Germany (Biglmaier, 1992), six years of formal schooling in Nigeria (Odejide, 1992), and completion of Standard III in the Republic of South Africa (Butterfield, 1992). Williams and Snipper (1990) identify three types of literacy: ie. functional (usually a grade level between the fourth and eighth years of schooling), cultural (the knowledge background to make sense of a certain socio-historical set of writings often associated with a certain cultural elite) and critical (the ability to analyse the political and social nature of writing). Goldman (1987) reviewed Sylvia Scribner's three metaphors of literacy; (a) an adaptation for effective performance in a range of settings and activities (functional literacy); (b) power to advance socio-politically and economically in an

increasingly technological society and (c) a state of grace attained by special artistic people. This section will deal with the first two of these metaphors as being consistent with a holistic view of culture.

Bormuth (1975) rejected definitions to do with grade levels since these fail to take into account the artifactual nature of literacy. In other words reading is a construct of man, not of nature, and that any definition must make a judgment concerning the set of skills capable of achieving societal goals and values. With this in mind a further definition of functional literacy has been advanced by Vincent (1989: 15).

" A person cannot be considered literate, UNESCO decided in 1956, until he 'has acquired the knowledge and skills in reading and writing which enable him to engage effectively in all those activities in which literacy is normally assumed in his culture or group.'"

Vincent made it clear that this definition focuses on two critical aspects of literacy that often get ignored in more cognitive definitions. The use made of literacy and the historical context in which that use is made are crucial aspects of assessing whatever impact literacy has made. Functional literacy has also been defined in the context of an Iranian Literacy Project of 1970 as a:

" technical and cultural advancement activity integrating, in a synchronized process, vocational training, scientific acculturation, mathematical instruction, civic and socio-economic education, and learning to read and write. This process is designed to improve the productivity of workers, to facilitate their integration into a rapidly modernizing society, and to accelerate development." (Verne, 1981:299)

Likewise, the French definition of illiteracy, picking up on environmental context, is the inability to face the new requirements in reading and writing imposed by economic and social change (Fijalkow, 1992).

The IEA study of reading literacy also focused on a contextual definition: "Reading literacy is the ability to use and understand those written language forms required by society and/or valued by the individual" (Wagemaker, 1993:9). A tripartite continuum of reading proficiency levels was constructed: ie. low-level literate, literate, high-level literate (Wagemaker and May, 1993:157-165). Low-level literate refers to readers who are able to read and understand only essential forms and simple materials (for example, public signs, health notices and job advertisements). An ability to read these materials would enable a

person to maintain a household, raise a family, perform a manual job and use basic community services in this country. However, anyone unable to read at this level would be seriously disadvantaged in terms of their ability to function both at home and in society (Wagemaker and May, 1993: 161). It appears that the description of low literate abilities is a definition of functional literacy in New Zealand. The borderline between the literate and high-level literate includes the ability to cope with materials below Form 4 secondary school texts (Wagemaker and May, 1993: 162). Thus students reading independently at a Form 2 level would be classified as in the literate rather than functional category.

Ryan (1992) has suggested two main reasons for the apparent increase in numbers of functionally illiterate people in industrialised countries. Firstly, the increasing complexity of life and work in 'advanced' societies has meant that the level of ability needed to engage in activities requiring reading has increased as well, making literates of two decades ago potential illiterates of tomorrow. Secondly, he focuses on the disappearance of individual silent reading for knowledge, thought and information in favour of an "overindulgence in the 'empty calories' served up by the media" (Ryan, 1992: xii). Indeed, Tuman (1992) has suggested the spread of computer technology into literacy will change literate activity from the classic liberal (and possibly mythical) model of the reader or writer alone to a more social 'on-line' activity in which text and graphic appearance will be equally important.

These definitions of functional literacy make it clear that literacy is a process with a social purpose and use. Graff (1987) developed this idea with a definition that focuses on a 3 stage process, ie.: (a) a tool, (b) a skill attainment, and (c) an ability having applications. The social dimension of literacy leads to the argument that literacy is first and foremost a social practice and concept and that therefore it is part of a specific ideology. Street (1984: 97) contended that "No one material feature serves to define literacy itself. It is a social process, in which particular socially constructed technologies are used within particular institutional frameworks for specific social purposes. ... Something more is involved [Finnegan] says, 'than the mere adoption of writing itself.'" The view of literacy advocated by Street and others has been called pragmatic in that it views literacy as an instrument of social relations. This is in opposition to an autonomous view of literacy that suggests textual

meaning is independent of the social environment in which it was created or used (Hill & Parry, 1994).

Ferdman (1991) argued that in homogeneous monocultural societies the definition of literacy is unproblematic since there is common cultural understanding (usually that it is a technical individual skill) of what it means to be literate. However, in heterogeneous multicultural societies literacy soon becomes understood as a social artefact, the result of cultural transmission. Smith and Elley (1994:82), argued reading must be placed in a Vygotskian socio-cultural context of learning, ie. the social environment in which print activity is learned influences the purposes of reading, the nature of reading materials, the nature of reading attainment and thus must be taken into account.

This discussion of the meaning of literacy then leads to the conclusion that reading literacy is the social use of written or printed technology for a social purpose. The issue has been put clearly (McNaughton, 1995: 7) "Literacy is not just a cognitive achievement on the part of the child; ... it means achieving membership in a culture." Thus, for the purposes of this study, the point of reading is the ability to handle independently text at a difficulty level appropriate to the early years of secondary schooling; in other words the ability to be a full member of school academic culture. However, this perspective still does not answer the question of what happens when someone reads. This will be addressed in the next section.

### **The Reading Process: Top and Bottom.**

Psychologists have tried to make sense of what reading technically is and have usually ended up in two schools of thought (ie. bottom-up vs. top-down). Their disagreements have generated a great deal of passionate heat in what is called the 'reading debate'. Howards (1980) has associated the bottom-up school with behaviourist psychology and the top-down approach with gestaltist psychology<sup>6</sup>. The bottom-up (eg. Gough, 1972; Laberge & Samuels, 1974) school of reading argued that reading is based on eye fixation and word recognition skills that allow the reader to phonologically decode and understand the word being read. This is opposed by the top-down school (eg. Goodman, 1970; Smith, 1975) that argued that the reader's prior knowledge and selective sampling of the text are used to

guess at or predict meaning. The following are examples of top-down definitions of reading. Reading (Pumfrey, 1977: 2) is "more than a simple mechanical skill ... more than the ability to understand the explicit meaning of the passage ... It is a constructive thinking process which includes comprehension of explicit and implicit meaning.". Melnik (1971: 54) put it bluntly: "reading is a thought-getting process ... reading is inquiry." Crowder and Wagner (1992: 3) avoided this argument from a bottom-up position by claiming that there ought to be two words for reading: one to describe translating print into speech and the other to cover the sense of understanding written language.

Some theorists have argued that reading is interpreting any symbol or sign in the environment. Downing and Leong (1982: 4) said that making sense of any conventional, convenient and arbitrary visual symbol is reading. Sign reading by preschool children of such graphic items as McDonalds, Coke, Pepsi, etc. is given as evidence. However, Crowder & Wagner (1992) reported that when the graphic environment is changed such 'prereaders' cannot read the same words. Hoover and Tunmer (1993) also took issue with this universalist position. For them reading, a technical not a cultural or political process, is the decoding "of printed input that allows access to the appropriate entry in the mental lexicon" (1993: 6). Reading comprehension is achieved by the multiplicative relationship of phonologically grounded decoding of print into sound and linguistic comprehension of the words being decoded.

In an alphabetic orthography it appears that word recognition uses recall of previously encountered words and yet it must also have generative procedures (phonological decoding skills) in order to discriminate new or as yet unlearned words (Thompson and Fletcher-Flinn, 1993). It is clear then that there is an interaction of both word recognition strategies among skilled readers whereas beginning or poor readers often struggle to master the phonological decoding skills necessary to read an alphabetic orthography. They end up relying on context dependent behaviours, such as guessing or predicting words, that weaken their long-term comprehension (Nicholson, 1993a, 1993b).

The condition of being able to understand more than one can decode is usually called dyslexia while the opposite condition of being able to accurately decode into sound

text that one does not understand is referred to as hyperlexia (Hoover & Tunmer, 1993). It has been the experience of the author that low achieving Pacific Island students reading in English as L2 fall more often into the latter category while low achieving readers who have English as L1 often demonstrate the first category.

Some models of reading (eg. Stanovich, 1980) propose that when readers are weak in one set of skills they compensate by using their knowledge of the other skill (Ammon, 1987: 72-75; Rayner & Pollatsek, 1989: 467-471). Smith and Elley (1994:82), recognised top-down theorists in NZ, also admit “that there is much to be said for an intermediate or interactive view”. Interestingly in the field of bilingual reading, according to Durgonoglu and Hancin (1992), much study of bilingual reading has been based on a top-down model of reading<sup>7</sup> wherein visual processing factors have been downplayed.

For the purposes of this study reading will be considered to be a socially created context-specific artefact that requires a combination of word recognition skills, extensive linguistic comprehension and appropriate background understanding for the various academic purposes associated with secondary schooling. Success at secondary school reading involves language knowledge and the ability to decode those scripted words into sound and meaning in texts written at least for the end of the Form 2 level in NZ schooling. The role of the socio-cultural environment of schooling has been mentioned above in the section on CALP and School Context. The impact of LM ethnic culture and class on reading and school achievement will be investigated in the section on Ethnic Minority School Achievement.

## **Research on Biliterate Reading**

This section will examine what we do know of how biliteracy is constructed and what affect it has.

Out of Hornberger’s nine continuums of biliteracy, Cumming concluded that “the fundamental similarity between literate behavior in first and second languages is not an issue of much doubt” (1994:14). Verhoeven (1987) has identified three such similarities: (a) there is a universal order of acquisition, (b) similar learning strategies are used and (c) there are

similar error patterns. Nevertheless, he pointed out three important differences: (a) L2 reading is less efficient, (b) prior knowledge is different and (c) the presence of L1 interference. In any event, “educational practice in various countries throughout the world makes it clear that at school immigrant children mostly learn to read in their second language. Especially in Western Europe bilingual literacy instruction is very rare.” (Verhoeven, 1987: 258).

The balance of top-down and bottom-up strategies is different when reading in L2 for at least five possible reasons (Bialystok, 1994), which include (a) familiarity with the cultural assumptions of L2, (b) non-activation of appropriate cultural schema, (c) lack of proficiency in L2 to use bottom-up processing, (d) different conceptions of reading and appropriate strategies and (e) imbalance of reader’s cognitive style and the style of presentation in the text. Durgunoglu & Hancin (1992: 394) also suggested that cross-language transfer from L1 to L2 reading may depend on how developed L1 reading proficiency is. The impact of L1 cultural knowledge and referents on reading in L2 is also significant (Lasisi and Onyehalu, 1992).

An information-processing model of reading (McLaughlin, 1987) argued that beginning and advanced L2 readers would use different strategies: beginners focus on phonological information until word decoding becomes automatic, while advanced readers who have already mastered decoding concentrate on processing syntax and semantics. Unsurprisingly, McLaughlin found that beginning ESL readers made more errors in cloze tests than advanced readers. He reasoned that the beginning readers did not know the language, especially syntax, well enough to make accurate predictions. But both groups tended to make errors, at similar rates, that were not contextually meaningful suggesting that, despite the fact they had the skills to ‘go for meaning’, the advanced ESL students did not make strategic use of the contextual knowledge at their disposal.

It has been found that orthography plays a role in biliteracy (Bialystok, 1994). Haynes and Carr (1990) have identified the context-specific impact of writing-system knowledge on visual word processing in reading, concluding that English L2 readers from an L1 Roman alphabet and similar orthography to English are advantaged in speed of

reading and in phonological encoding compared to English L2 readers from different L1 orthographies (eg. Arabic, Chinese, Japanese). The same phenomenon was recorded in a comparison of Greek learners of English L2 and English learners of Chinese as L2 (Chitiri, et. al., 1992). Durgunoglu & Hancin (1992) suggested that this phenomenon can be anticipated by Seidenberg's connectionist model of reading.

Hedgcock and Atkinson (1993) found that although extensive prior reading was a significant predictor of L1 school-based writing performance the same could not be said for writing in L2. Their results suggested that extensive reading may have little impact on L2 writing proficiency. They suggested that Cummins' CALP theory may be wrong. Porter (1990) argued from the French immersion programmes of Canada that L1 literacy is attained easily after first learning L2 literacy provided the latter is taught in immersion. Collier (1987, 1989) found that reading tests (such as the SRA) that require the ability to think in the language were better indicators of L2 thinking skills than 'language arts' tests that measure mechanical skills of punctuation, capitalisation, spelling and simple grammar.

The question then arises, in terms of bilingual students, of how does a teacher, parent or student know if a reading or academic difficulty relates to a language proficiency or a literacy problem in L1 or L2 or to some combination of both (Durgunoglu & Hancin, 1992; Cumming, 1994: 6). Cumming (1994) believes the answers to this question are difficult since systematic, empirical research on biliteracy is limited to evaluations of innovative curricula developed for specific minority populations, eg. Hawaiian children learning to read English, Hispanic children learning to read English in LA, Haitian adults learning Creole and English literacy in Boston and Punjabi women learning English literacy in Vancouver.

The bilingual populations of Montreal have proved a powerful research setting on biliteracy<sup>8</sup>. Donin and Silva (1994) found in their study of French-English nursing students at just an intermediate level of L2 proficiency that L2 comprehension of text was very similar to that of L1. They invoked a compensatory interactive model of reading to explain why lower levels of efficiency at the morpho-lexical and syntactic levels did not hinder comprehension. Conceptual knowledge of the content or the rhetorical style of the text

structure is used to overcome linguistic deficiencies. Phonological recoding as an important factor in L2 sentence reading among English/French bilinguals has been identified (Segalowitz, 1986; Segalowitz and Hébert, 1990). Highly skilled readers of the two languages showed native-like effects when reading aloud in both languages while those who read slower in L2 than L1 seemed to experience a greater memory load burden in L2 than did the faster readers. Lack of efficiency in the lower levels of the cognitive apparatus, (word recognition, depth of semantic activation, phonologically coded information) may be the principal problem rather than problems to do with strategic use of linguistic knowledge

Hampton (1992) found that the strongest relationship among bilingual Samoan children in a NZ primary school was between early literacy in Samoan and high progress in reading in English and that bilingualism itself appeared to have the weakest relationship with reading process variables. Tang (1992) found in a set of case studies of Asian ESL students in Auckland that a combination of title discussion and vocabulary activities gave long-term improvement in reading comprehension since the activities involved both top-down and bottom-up strategies respectively.

Bialystok (1994) concluded that L2 readers use both linguistic skills and general knowledge to understand what they are reading. "No one kind of information is primary, and no one kind of information is irrelevant." (Bialystok, 1994: 4939).

### **Samoa Language and Literacy**

This section will examine critical features of the Samoan language that influence reading assessment. It will also discuss socio-cultural dimensions of literacy practice as they affect reading achievement. A number of phonological and syntactic differences between English and Samoan, a western Polynesian language, have been identified (Krupa, 1983, Mosel and Hovdhaugen, 1992). Trueba, et. al. (1993) reported that these unique semantic, syntactic and phonetic characteristics of Samoan English often result in Samoans being classified as Limited English Proficient in California schools. This may be in spite of the fact that individual children are English dominant.

The following characteristics of Samoan are relevant for this study:

- the phonological system is greatly simplified (5 vowel and 13 consonant sounds only),
- there are only 17 letters in Samoan orthography,
- the vast majority of Samoan words (five in six) are single syllable words,
- reduplication of root morphemes is highly productive,
- the number of productive affixes is small.

Table 4 shows the results of these differences in a sample sentence (Mosel and Hovdhaugen, 1992: 42).

**Table 4: Samoan and English Sentence Differences**

|                               |           |           |              |           |              |             |
|-------------------------------|-----------|-----------|--------------|-----------|--------------|-------------|
| <b>Samoan (6 words)</b>       | <i>'O</i> | <i>le</i> | <i>teine</i> | <i>sa</i> | <i>tagi</i>  | <i>pea.</i> |
| <b>(literal translation.)</b> | PRES      | ART       | girl         | PAST      | cry          | continually |
| <b>English (4 words)</b>      | The       | girl      |              | cried     | continually. |             |

Thus it can be seen that Samoan can take 2 or 3 print words to express what in English is just one word. For example, *Tapo's Friend* by Willard Price (Learning Media, 1983) is a text of about 700 words in English but is nearly 1200 words long in Samoan. In addition context is essential to ascertain the intended meaning of a word, especially if macrons (diacritic marks used to indicate long vowels) are omitted from written text. The implications for cloze testing are significant. Mechanical deletion of every *n*th word is fraught with some difficulty, especially for a non-speaker of Samoan, since the selected word to be deleted may form only a part of a semanteme (meaning bearing unit) as seen above in the phrase "*sa tagi*". Whether the deletion of such a part phrase is valid or possible can only be decided by a literate speaker of Samoan who acts as an informed respondent.

Another important aspect of Samoan literacy is what is available to be read. Mosel and Hovdhaugen (1992: 4) reported that there are a small number of weekly newspapers published completely or partly in Samoan. In addition to Biblical Samoan, there has arisen within the last two decades a body of modern Samoan written literature consisting mostly of short stories, radio plays and poems largely written for children. This suggests that there may yet be a limited supply of adult level written modern Samoan in NZ for migrants to read.

Biblical Samoan is written in a high prestige sociolect of Samoan that has formed the basis for all written Samoan (Mosel and Hovdhaugen, 1992: 8-11). This literary variant, called *tautala lelei* (good language) or *tautala i le t/n*, has differences of phonology,

orthography, morphology and syntax from the commonly used and first learned oral variant called *tautala leaga* (bad language) or *tautala i le k/g*. Perhaps this predominance of the literary variant has come about for reasons Huebner (1987: 185) has documented, ie. "The rapid acquisition of vernacular literacy ... can be viewed as resulting in part from the utility, ... of the institutions of literacy at least as much as from the perceived utility of literacy per se. ... In Samoa, Christianity [the institution of literacy] was perceived as reinforcing the traditional social order, ... ."

Spolsky (1988) in his study of seven years ago on Samoan-English bilingualism in Western Samoa has identified a set of factors that tend to support the use of either Samoan or English in Western Samoa. Urbanisation, schooling<sup>9</sup>, higher education, bureaucratic and business uses of writing, contact with overseas, fiction reading, exposure to TV and radio all tend to support the development of English use. These sociolinguistic pressures were so strong that "there are parents who want their children educated only in English; similarly, there are many children in school with weak knowledge of Samoan." (Spolsky, 1988: 13).

The language situation is associated with the organisation of education in Western Samoa. Western Samoa has a long and wide-spread tradition of literacy and learning, having attained nearly 100% literacy before the start of the 20th century (Gannicott, 1990: 25). Village schools are built, financed and run by villages, though the government arranges staffing, while government schools, primarily in the urban areas, are funded 100% by the government (Fairbairn-Dunlop, 1992). On average the rate of tuition subsidy increases as a child progresses through the schooling system; approximately 75% at primary level, +80% secondary level and 100% at tertiary level (Gannicott, 1990: 38). The village schools tend to teach in Samoan with English as a language while government schools teach in English, the language of national examinations, with Samoan as a subject (Fairbairn-Dunlop, 1992). Thus, Fairbairn-Dunlop argued that students of the government schools enjoy a distinct advantage in school achievement. Western Samoan education is being reorganised to be more vocationally/technically oriented in the Junior High Schools in order to meet the nation's need for skilled labour (Gannicott, 1990). At the same time, tertiary level vocational training is being centralised in the National University of Samoa.

Despite the cost of school fees nearly 100% of 10-14 year olds are enrolled in school while two-thirds of 15-19 year olds are enrolled (Gannicott, 1990: 26). Gannicott (1990) has attributed this pattern of school attendance to pressures in Samoan society that encourage pursuit of Western style academic qualifications expressed primarily in terms of NZ academic certificates, regardless of their inappropriacy for Samoa's actual labour market requirements. Economic incentives such as increased pay for higher qualifications, increased tuition subsidies for higher levels of study and opportunities to study overseas combined with culturally shaped family and student pressures to obtain an internationally accepted education operate to ensure that English speaking secondary education such as may be had at Samoa College will be preferred. Nevertheless, in spite of such government assistance, economic incentive and familial motivation, the levels of academic attainment in Western Samoa are quite low. Gannicott (1990) cites research by Kinloch that found that the best Samoan students on competitively awarded full government scholarships to NZ universities did no better than part-time NZ students, who are considered to be significantly less able than full-time students. It is concluded, "If the products of that élite system are not receiving a basic education up to international standards, there cannot fail to be concerns about the quality of schooling received by the vast majority of pupils who do not go through the senior secondary/tertiary stream. ... In short, the quality of primary and secondary schooling in Tonga and Western Samoa is in all probability much lower than had previously been thought." (Gannicott, 1990: 32-33).

The relationship of sociolect to literacy may pose a problem for Samoan respondents who, here in NZ, are exposed to oral colloquial Samoan and who have had little opportunity to master the literary version. Such candidates would most likely not attend church frequently since it has been found that NZ born Samoan adolescents who have had regular church attendance and participation have a good command of Samoan literacy (Lameta, 1995). Students who have had a reasonable amount of Samoan education should theoretically be advantaged by their experience with the literary form. However, Lameta (1995) has found that many students educated in Samoa have lower levels of Samoan literacy than NZ born students unless they had attended Samoan language 'pastor's' schools

in the villages rather than state primary schools in the town areas. Gannicott's (1990) analysis of Western Samoan education should account for some of the Lameta-Tufuga's findings and may well have a bearing on the academic achievement in NZ of Pacific Islands born students. These trends also support the analysis Spolsky (1988) carried out on Samoan-English bilingualism in both NZ and Western Samoa.

The development of Samoan language literacy is now a priority item among Samoan elites in the NZ educational scene. Spolsky (1988) has pointed to the development of, largely church based, Samoan language pre-school programmes (*a'oga amata*) as evidence that NZ based Samoans want L1 maintenance. Morgan (1995) has updated developments in these programmes identifying a mixture of parental goals. What parents want can be seen as either social ligature development (ie. "maintain language, culture, identity, learn respect for elders, be helpful, learn Christian values, get along happily, have good manners, be obedient, polite, honest, kind") (Morgan, 1995: 15) or increased options enhancement (ie. "have a good education thus enabling them to get a good job, learn English to understand schools' topics") (Morgan, 1995: 15).

The NZ Ministry of Education (Learning Media, 1994e) has published recently a draft curriculum statement of aims, strands and objectives consistent with the NZ Curriculum Framework for the Samoan language and culture. There are eight levels covering the range of early childhood education to the end of secondary schooling. The Ministry has determined that Curriculum Framework levels 3 to 4 cover the range of work normally carried out in school classes ranging from Standard 4 through to Form 3 inclusively (Ministry of Education, 1993: 13). The objectives for Reading and Writing at levels 3 and 4 in the Samoan Draft Curriculum include among others: describe the setting, plot, characters, and theme of a story read in Samoan; read short passages to find answers to questions; read a story about a familiar topic; predict what will happen next and read silently for a sustained period (Learning Media, 1994e: 45-58). The implications of these levels in terms of this study will be discussed in the section on materials in chapter three.

From this discussion of Samoan literacy and education, it may be concluded that there is something in the interaction of western style education with Samoan students that

fails them whether they be in the islands or overseas. This is so despite the obvious commitment to education and literacy that the Samoan people have. Whether this pattern of academic underachievement can be resolved by education reform in either Samoa or NZ is to be seen. In this light a discussion of cultural, ethnic, racial factors shaping both literacy and academic attainment will now be entered. An examination of the school achievement of the Samoan speaking ethnic minority will also be gone into.

### ***Ethnic Minority School Achievement***

As has been seen by the statistics provided in Chapter 1, ethnic minority and linguistic minority children in NZ are experiencing problems with scholastic attainment. However, this is not to say that LM students do not achieve highly in other just as meaningful domains, eg. sport, art, or cultural activities. Nevertheless, LM students' learning problems can often be manifested in three forms: (a) lack of overall participation in class activities, (b) lack of academic productivity in school and at home, and (c) presence of signs of ongoing emotional turmoil (eg. stress, fear, confusion) (Trueba, et. al., 1993: 16). NZ is not alone in the situation of below expected scholastic achievement for LM students; many nations around the world struggle to cater for the educational needs of students who do not share the L1 of the dominant majority or to cater for the educational needs of differing language communities within a nation state<sup>10</sup>. The achievement of ethnic and linguistic minorities has been a genuine concern in many modern multicultural societies. There have been many reasons put forward for the low scholastic achievement of LM students. Some see deficits within the minority group as the cause, others see oppressive racist attitudes on the part of the majority group as the cause and others see the source in the difference between majority and minority cultures in terms of values, beliefs and practices. Whatever the truth, it seems apparent that ethnic culture is a key to understanding the degree to which LM children acquire CALP.

The connection between Cummins' work on educational contexts for bilingual education has been made to other work concerned with sociological and anthropological facets of education (eg. Casanova and Arias, 1990). Cummins (1984a) himself admitted that

the cognitive linguistic factors he identified are a set of intervening variables rather than independent causal variables. He accepted the causal primacy of sociopolitical factors and socio-cultural contexts. Döpke, et. al., (1991) argued that the reasons for LM school failure must be sought in the differences between the majority and minority group cultures and SES. Troike (1984: 49) warned that “social and cultural factors may be much more powerful than purely linguistic factors in influencing educational achievement, and, indeed, that linguistic factors may be simply second or third order reflection of the social and cultural context of schooling.” Kalantzis, et. al. (1989: 33) have argued from the context of mother tongue maintenance education in Sweden that reasons for failure in academic achievement and social success for LM children have been put down to the fact that “too much emphasis was put on language proficiency, and the culture of the children of migrant background ignored.” The same point has been made in the context of Asian and Pacific Island migration to the USA (Trueba, et. al., 1993: 13). Trueba (1988), basing his work on Vygotskyan socio-historical psychology, asserted the primacy of culture over other forces:

"culture affects the entire process of knowledge acquisition and information processing, regardless of sociological forces, colonialist oppression or historical backgrounds of students" (p. 279).

Thus whatever culture is, it is important in education. This section will offer an understanding of culture before embarking on a review of sociological and psychological dimensions of culture involved in the educational attainment of LM students.

### **Culture: Meaning and Responses**

A holistic view of culture is taken in this study (Burtonwood, 1986). Culture is “a shared organization of ideas that includes the intellectual, moral and aesthetic standards prevalent in a community and the meanings of communicative actions” (LeVine 1984: 67). Cultures are collective (that is social), organised (that is purposeful), variable (that is changing across time and between each other), and have multiplexity (that is there are complex interrelationships within themselves) (LeVine 1984; Peacock, 1986; Tulviste, 1991; Verma, 1986). Culture is the interaction of knowledge and what people do with it to produce new meanings and new processes (Hamill, 1990). Individuals express a culture in

specific contexts that must be included in the unit of analysis when determining either what an individual knows or how it is known (Cole, 1991). Thus all people, regardless of colour, creed, language or history have a culture that is expressed through membership in an ethnic group. Although language is linked to ethnicity both as a means of communication and as a symbol of ethnic identity, the link is not inevitable but only highly likely (Fishman, 1989d). Language does not define ethnicity but is closely connected. ✎

Three levels of culture within the holistic framework have been identified (Kalantzis, et. al., 1989: 24). The first level are all the things that are common to all humanity in distinction to things common to the animals, eg. language as communication. This level is largely irrelevant to this study. At the second level, and of more importance, are the major types of political-social-economic-cultural arrangements that require different forms of cognition and language use; eg. feudalism, hunting and gathering, industrialism, etc. Industrial societies such as New Zealand do not have more than one culture at this level of analysis. The third level, perhaps the most superficial and inconsequential yet most prominent, incorporates all the diverse, visible and transportable ways of self and group expression that can be tolerated as positive diversity in Western industrial societies. Spindler and Spindler (1990) supported this view in their analysis of how the base culture or referent ethnic class of the USA (Caucasian, Anglo, middle class, urban, professional/business, tertiary educated) is only superficially affected by the presence of many ethnic groups in the nation.

Ferdman (1991) has identified three possible responses or attitudes to cultural diversity: assimilationism, amalgamationism, and pluralism<sup>11</sup>. Assimilationism tends to ignore difference and focus on individual psychological factors since maintenance of cultural difference is irrelevant to the goal of getting LM students to successfully become members of the majority culture. The 'melting pot' or amalgamation approach views each culture's variety as no more important than any other's since all cultures contribute equally to the creation of a new supra-culture. As an example of this approach, Lambert (1989) admitted that early immersion schooling in L2 was developed explicitly to overcome assimilationist and segregationist tendencies in Quebec in the early 1960s. The goals of immersion were

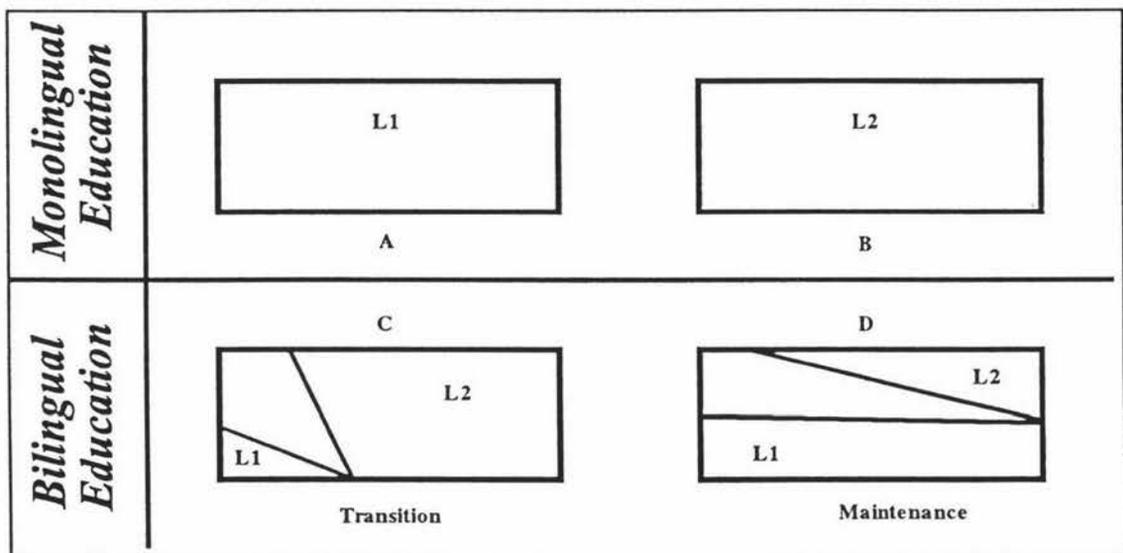
“reducing ignorance of French Canadian-ness and increasing an appreciation for it among Anglo-Canadian children” (Lambert, 1989: 35). Pluralists, on the other hand, interpret individual behaviour in the light of cultural identity and seek to institute separate programmes with separate goals for different cultural groups.

Cultural pluralism (Verma, 1986: 4) is a condition of institutional and value separateness of ethnic and linguistic groups within the same society. At the same time these separate groups have a shared commitment to the goals of society, shared access to economic and political power and agreement about the role of the state in supporting different plural groups. This segregationist drive has been founded, in Jeffcoate’s opinion (1984: 121) on philosophical and moral relativism. The downside of such pluralism is that control of the national curriculum and education system by the state becomes difficult (Bullivant, 1981, 1986). As Bullivant (1981: 14) has put it “allowing democracy full rein may cater for the educational wants of individuals and groups that are part of a society’s pluralist composition, but doing so risks weakening the cohesion of the nation-state by interfering with the enculturation imperative - the need to have enough of a common culture passed on to each generation of children.” It would appear with NZ’s structural commitment to Taha Maori, especially in education among other things, that NZ is becoming a pluralist society. This may also be evident in the developing commitment to Samoan education.

These various responses to cultural difference have been played out in a variety of educational models. Kroon and Sturm (1989) described four models of teaching to LM students. Two models are monolingual and two are bilingual and can be seen in Figure 6. In each model the vertical axis represents the degree of attention to each of the languages while the horizontal axis represents time at school from beginning of school to end of grade *n*. Model A (Segregation) is when LM children are educated separately in their own L1 from majority culture L2 children. This can be seen in Turkish language schooling in Bavaria for children of so-called ‘guest workers’ and in Bantu education in apartheid South Africa. Model B (Assimilation) represents the most common response to LM students provided they exist in small numbers or concentrations. This can be seen in so-called ‘submersion’ education of NESB immigrants to NZ. Model C (Transition) is commonly

used for immigrant children as a stepping stone to mainstream L2 education. This is the model for most 'bilingual' education for Hispanics in the USA as discussed by Porter (1990). Model D (Maintenance) is the rarer model of L1 maintenance for LM students. It can be seen in Canada in Heritage or Ancestral Language programmes (Danesi, 1989) for indigenous and immigrant LM students. The growing provision of Samoan language instruction in NZ as suggested by the draft curriculum seems to best fit Model D maintenance.

Figure 6: Models of Bilingual Education



(adapted from Kroon and Sturm, 1989: 105)

From this discussion and from Cummins' writings on educational context, it can be seen that the educational organisational response a society takes to LM populations is related to a general philosophic response to cultural difference within a nation state by the majority cultural group. It is also clear that all responses are fraught with difficulties; liberal responses may contribute to a breakup of the very nation state that is making the provision, while conservative responses may create and maintain intolerance, racism and inequity. For parents, teachers and administrators the pros and cons these responses to culture are awkward and uncomfortable.

## Cultural Reproduction

In contrast to theorists who discount the effect of language in favour of the power of social relations, others have examined the process of cultural transmission of language and literacy. Children acquire culture and language primarily through socialisation and secondarily through education (Harker & McConnochie, 1985), though the role of schooling in cultural reproduction is significant (Spindler & Spindler, 1990). Cultures are not mechanically reproduced from generation to generation, they change through each individual's personal appropriation or transfer of cultural knowledge. Cultural knowledge is jointly constructed by the individual and significant others and exhibited uniquely by the individual in a social environment (Bronfenbrenner, 1986; Lave, 1991; Rogoff, 1990; Valsiner, 1988). Because socialisation takes place in context-specific settings there are specific and limited, as opposed to universal, cognitive and developmental results (Laboratory of Comparative Human Cognition, 1983). The consequences of socialised cultural transmission are revealed in the external environment and life of an individual (Valsiner, 1988) which in turn becomes grist for cultural transmission to other individuals.

Bourdieu (1974: 32) has described how the capital and ethos of a family's culture, ie. attitudes, values, and language, are absorbed or acquired through social life within the family environment which takes place in the 'habitus', a term used to describe this micro culture in order to distinguish it from the greater external culture (Bullivant, 1987: 26-31; Harker, 1982: 38). Thus, all students come to the school system, in which the direct, formal processes of cultural reproduction through education take place, with an already extant habitus or culture. Bourdieu argued that the key to understanding how schools hand on and legitimate the culture of the dominant groups is the use of language (Bourdieu 1974: 39-41). The charismatic use of university language is first acquired in the family lives of the dominant groups. It is then required in schools where its possession is treated as a sign of 'natural intelligence or giftedness' rather than as the product of a certain social upbringing. Thus for Bourdieu, language is, in many ways, the most critical tool for educational

achievement. As Corson (1990: 77-78) put it in his survey and summary of language across the curriculum initiatives:<sup>12</sup>

"We know that children's differences in language ability, more than any other observable factor, affect their potential for success in schooling. ... the unavoidable centrality given to language in education through its priority in the activities of thinking, knowing and learning."

This is just as true for students from other language backgrounds as it is for students from habituses that do not have the 'school' version of the language in their experience. With differential access to the language of schooling success it is no wonder that students from non-dominant ethnic or cultural groups fail to succeed academically out of all proportion. Even when non-dominant groups acquire mastery of the school's language through hard work, Bourdieu argued that the school tends to write off their achievement as being of less value than mastery attained through social privilege. Mastery of the linguistic and cultural capital of the university, and by extrapolation the school, is gained by having it in one's family habitus. Attitudes, values, knowledge and language needed to guarantee school success appear to be natural in those students because "they are the culture of that class" (Harker 1982: 38). Siguan (1989) cited the middle-class Cuban immigrants in Florida as an example of a group that have a 'school' mode and use of language at home even if it is a different language (Spanish) than that used in school itself (English). For him such a possession in one language made progress in either language easier. Harker and Nash (1990) concluded their study of school achievement in a Kura Kaupapa Maori with the contention that the differences in cultural or literary resources possessed by Anglo-Maori working class families are the principal reasons for Maori underachievement rather than any structural incapacity.

All of this is not to say that students without school literacy or capital are incapable of complex cognitive procedures. Wald (1984) pointed out Labov's example of a 16 year old with a grade 2 reading level carrying out a clear and logical discussion on the colour of God using nonstandard language forms. Other researchers have pointed to the existence of highly developed mathematics skills (Carraher, Carraher & Schliemann, 1991) among

children in natural social contexts. Wald (1984) asked if these existing skills could be adopted to school achievement.

Ferdman (1991) pointed out the importance of congruence between the pupil's culture and that of the school wherein literacy education takes place.

"To the extent that schools tend to reflect the dominant culture, pupils from the dominant ethnic group are more likely to find consistency between the various constructs of literacy. ... because literacy education tends to be left primarily to the school, children become literate in the cultural image represented by their school. ... In the case of minority group members, however the process may be less smooth, depending on the extent to which their group's standards for cultural significance differ from the dominant group norms. ... Thus, at the individual level, whether deliberately or not, the process of becoming and being literate involves becoming and being identified with a particular culture." (p. 355)

Some research investigating differing values and beliefs of LM families has been reported and is worth reviewing at this time. Corson (1990: 165-168) has identified two LM groups most likely to be ill-served by schooling systems: new settler families and ancestral aboriginal cultures submerged by a dominant colonial culture. He also reported a variety of cultural differences in learning styles that LM groups had from each other and from the majority culture. The importance of parent culture beliefs and practices for LM academic achievement will be shown. These psychological factors interact meaningfully with the sociological and linguistic dimensions of culture discussed earlier.

Chen and Uttal (1988) have identified the cultural values of Chinese parents that contribute to superior performance of Chinese children in mathematics. These include the Confucian belief in human malleability, self-improvement, high standards and active parent assistance with homework. Similar beliefs were noted among the parents of higher achieving readers in a study of literacy in Morocco (Wagner & Spratt, 1988), including a stress on parental responsibility for education and more involvement in school progress. Verma (1986), in a study of ethnic minority achievement in West Yorkshire, found that the factors discriminating between high and low examination results were different for the five ethnic groups studied, with the only factor in common for all five being school attendance/absence, which was in last position among those significant factors.

Tomlinson (1989) reported that many LM parents have been disappointed by the school's performance vis á vis their children's academic attainment, sensing that they have

been blamed for school inadequacy. She suggested that the increasing number of separate, religiously based schools (eg. black Seventh Day Adventist, Islamic) in Britain is a response by parents to ensure a more conducive environment for the children of ethnic communities. Tomlinson claimed that the school attended makes more difference to attainment than does ethnic group. Ramon (1990) found among Hispanic bilingual primary school children in California that positive parental and student attitudes correlated positively with academic achievement in mathematics and reading achievement.

As would be anticipated by a neo-Vygotskian socio-historical psychology, it does seem safe to say that ethnic educational attainment is subject to context-specific variables. The problem obviously, in terms of this study, is the degree to which the cultural construction of literacy and schooling in Samoan as L1 and that of English language schooling in New Zealand coincide..

### **Immigrant Cultures in New Lands**

LeVine and White (1986), basing their work on anthropological and historical studies of education in a variety of countries, argued that urban-industrial cultures have totally different ambitions for education than do traditional-agrarian cultures<sup>13</sup>. They introduce the concepts of options and ligatures as meaningful ways to evaluate the sum of life chances for an individual. They asserted that urban-industrial cultures view school as a way to learn one's future work and enhance individual life opportunities or choices, in other words enhance options. On the other hand, traditional-agrarian cultures view school as a means of developing moral character and of strengthening social relationships, social identity, roles and support, ie. enhance ligatures. They warned traditional-agrarian nations that wholesale adoption of industrial cultures' schooling contexts would not necessarily enhance a student's life chances; "Members of contemporary industrial societies have more of everything except relationships, and in the end these give life a meaning it otherwise cannot have" (p. 196). Corson (1993) has argued that to achieve social justice in host nations educational organisation, pedagogy and curriculum must be sensitive to the needs of ethnic communities for whom social ligatures are vital, eg. refugees and indigenous peoples.

However, the case is different for migrants from village-agricultural societies who choose to migrate to an industrial society like Australia or New Zealand (Kalantzis, et. al., 1989). These people have no practical possibility of carrying on traditional-agrarian life even if some facets of cultural identity are maintained in the new environment. The cash economy, industrial economic relations, commodity driven consumerism, private ownership, etc., hallmarks of industrial-urban societies, so predominate in these nations that assimilation to a single culture is a *de facto* assumption. "Culture and language are never simply maintained. A change in structural context requires new cultural and linguistic solutions to be developed." (Kalantzis, et. al., 1989: 22). Further, they argued that it is impossible for immigrants to maintain anything more than level 3 features of culture since the cultural arrangements of industrial societies prevent LM traditional-agrarian cultural, political or economic arrangements from being maintained and thus L1 language functions, genres, vocabulary, etc. cannot develop to the same linguistic power and richness as L2. Fishman (1989e) reminds us that literacy in a minority language can only be taught at a school if the minority language has powerful and protected sociocultural functions. Strong out-of-school institutions (eg. church, home, workplace) must exist that use the minority language literacy. Psychological, pedagogic and linguistic factors are not enough to ensure that biliteracy is more than a passing stage. It seems unlikely over a several generational period that such functions can continue to exist in a new land without powerful support from the majority culture.

Other researchers have echoed this cautionary note from different perspectives. Ogbu (1987) distinguished voluntary immigrant minorities from castelike or subordinate minorities that are in a lesser societal position through colonisation or slavery. Although the former minorities, in his opinion, "often experience initial difficulties due to language and cultural differences, they do not experience lingering or disproportionate school failure." (1987: 152). Paulston (1982, 1986, 1988, 1994) has raised objections to the call for mother tongue education. She drew attention to the issue of a migrant group's confidence in its ethnic or cultural identity and how that confidence affects the group's attitude towards language shift or death and assimilation, regardless of the degree of academic success their

children may experience. In other words, if an LM group believed that its culture and language were secure, perhaps because of its continued flourishing existence in another nation, then that group would not necessarily want L1 education for its children even if those children were not as successful academically as language majority children. She (Paulston, 1982) also pointed to xenophobic inclinations in the majority culture and vested interests of LM culture group elites as factors that encourage inappropriately the drive for L1 maintenance education. It is worth quoting more extensively from her review of Swedish research on bilingualism (Paulston, 1982: 30, 32):

“Societies will typically blame the schools, the teacher, the method for matters which are symptomatic of social ills and beyond the control of any individuals. ... We see then that most of the initial decisions about the schooling of migrant children in Sweden are clearly policy decisions. We do know from the Canadian studies that it is educationally feasible to teach children to read in a second language, given trained and understanding teachers and a supportive home and school culture. The decision about home language education then is a political decision which should follow from the long-range goals set for immigrants, ie. freedom of choice about assimilation. However, conflicting values ... may exert (sic) pressure in different directions so that the choice may not be very obvious. For school officials to inform illiterate mothers from autocratic countries of the dire dangers of semilingualism as an established scientific fact does not constitute my notion of freedom of choice.”

Spolsky also advocated a more pragmatic view of L1 maintenance with his observation that people will give up on their ethnic or traditional languages for such mundane things as "English and a bathroom!" (1989: 451). Fishman (1989a) has documented the paths by which language shift takes place for immigrants to another land and language. His sociolinguistic analysis showed that ethnic identity for immigrants need not after two or three generations be connected to the original L1 of that community. Thus, the fact that immigrants have chosen to come to a new country for economic, educational or political advantage can explain their reticence to insist on L1 education and maintenance in the new host country.

Some writers have disregarded the possibility of intentional and informed relinquishment of L1 by immigrants, instead suggesting that such a decision is simply ill-informed and ill-advised. Saunders (1991) suggested reasons centred on parental concerns for intentional language shift. These include parental fears that L1 will have a negative effect on L2 acquisition, parental lack of knowledge about normal bilingual development, an

unrealistic parental expectation that children will be perfect in L2, and parental fears that bilingualism may impair intellectual development. Saunders recommended that many of these reasons could be overcome through education of parents. Nevertheless the processes of language shift would still continue since parents are motivated usually by much more than just ignorance and fear. Clearly L1 instruction or L2 immersion instruction depend not just on resources but especially on the political will of both the parent community and the school authority (Burnaby, 1988; Genesee, 1988).

Kalantzis, Cope and Slade (1989) have argued that the kind of liberal multiculturalism that presumes all LM ethnic migrants will want to maintain the distinctive community features associated with level 3 of culture, (ie. language, food, customs, etc.), is a kind of disempowering and unconscious racism. Porter (1990) shared this concern on behalf of Hispanic immigrants to the US, whom she feared were being condemned to a working-class ghetto existence by being trapped in a linguistic nursery created by bilingual education. For her (Porter, 1990: 9) the "notion that Spanish-speakers are the only group that cannot be expected to learn English for mastery of school subjects is patronizing and demeaning to all latinos and should be forcefully denounced." She also suggested that the goal of cultural and language maintenance for LM children in a new host country is a legitimate concern for cultural anthropologists but for other people such goals are "irrelevant exercises in romantic ethnicity" (Porter, 1990: 181). Tosi (1984) also warned that language maintenance programmes, despite their intention of fostering societal bilingualism and cultural pluralism, can become separatist when the majority population are not interested in learning the LM L1.

Immigrants to industrial societies almost invariably aspire to the kind of goals mentioned by Spolsky (1989), ie. a good job, a good education, a good house, and so on. If maintaining traditional community features is perceived as an obstacle to those goals then they will be dispensed with. Thus in a multicultural society, "language policy cannot simply orient itself toward maintenance for maintenance's sake or for sentimental reasons; ... We are not duty-bound to conserve any ancestral characteristics that do not perform a useful purpose for us. On the other hand, we should not be pressured to reject ancestral

characteristics because they do not prove to be structurally useful to us.” (Kalantzis, Cope and Slade, 1989: 194-195) Pluralists may denounce ESL or transitional teaching as assimilationism but such programmes may be concerned with social empowerment of LM communities in relationship to the dominant culture of the host nation. This is a warning against ivory tower idealism concerning L1 education. Thus Cummins' hypotheses may be valid but only for those groups that wish to keep their L1.

### **Socio-Economic Class as Culture**

There can be no doubt that socio-economic factors also have a major influence on educational attainment and are often difficult to separate out from cultural factors. Nevertheless, “social class is itself a culture as it represents a way of life which specifies social expectations in the areas of family life, use of leisure time, use of economic resources, church participation, friendship patterns, civic activities, and attitudes toward life.” (Shade, 1989: 27). Inequality based on social class and geography is a prominent feature of Britain's educational system (Jeffcoate, 1984). Schools are not equal because of where they are and the wealth and education of the families whose children attend them. The same can be said of the USA (Turner, 1985) and, perhaps also, New Zealand. Jeffcoate (1984: 46) makes the relevance of class to ethnic minorities plain:

“Most ethnic minority pupils are of working-class parentage, live in predominantly working-class neighbourhoods and go to predominantly working-class schools. ... the debate about the causes of ethnic underachievement, in so far as it exists, has been a replication in miniature of the debate about the causes of working class underachievement.”

Similarly, Durán (1987) reported that the socioeconomic status of a student's family was the most important predictor of schooling outcome measures for Hispanic students in the US. Siguan (1989) suggested that the only Hispanic population in the USA that attains both high grades in English and Spanish are the middle-class immigrants from Cuba. Otherwise, it is a choice of doing well in either English or Spanish depending on the amount of exposure. Pagé (1989) found that upper socioeconomic students at junior high school age in Montreal do significantly better on tests of reading comprehension than lower socioeconomic ones. Ellis (1994) reported several studies that conclude that middle-class children achieve

higher levels of L2 proficiency than working class children in formal language learning settings that emphasise decontextualised language skills. On the other hand, in settings that stress communication skills (eg. immersion) social class of the learner is of no effect. Thus, ethnic minority pupils do not experience equal opportunity in education for some simple reasons; working class background, NESB, cultural discontinuity and racism (Jeffcoate, 1984: 54).

However, not all ethnic minorities of a similar socioeconomic background do equally poorly in schooling. Social class, though powerful in explaining underachievement, is not enough to explain the difference in educational achievement, despite their class similarity, of South Asian and West Indian students in Britain (Jeffcoate, 1984). Jeffcoate (1984: 65-67) concluded his review of West Indian school failure with the view that the relative cultural strengths of ethnic minorities go further to explain achievement than either student deficit or school racism. He cautions that the explanatory power of social class does not clarify why individual children are not getting the desired results. Ellis (1994: 239) summarised the relationship of social factors and L2 achievement as indirect since psychological variables (attitudes to target language, culture and speakers) determine the nature of and amount of contact with L2.

Interestingly, although a majority of LM families are working-class in their new host nation, they were not all working-class in their home country. Trueba, et. al. (1993: 71) pointed out that upper-class socialisation and value orientations in the home country lead to more effective use of resources in the host country. The psychological aspects of middle or upper class may well transfer across migration experience despite actual economic working-class status in the host country and these factors may contribute to individual success.

Ellis (1994) concluded his review of socio-economic class effect in L2 acquisition by reminding readers that it is the different experiences of the world that members of different social classes are likely to have that contribute to difference in language acquisition not the social class itself. The issue is not deficit but difference.

## **Samoa Culture and School Achievement**

It would appear that both economic improvement of the family and educational opportunity for children have been primary reasons for Samoan migration to NZ (Utumapu, 1992). Waged employment in NZ not only brought access to western living standards but also permitted migrants to support families in Samoa through remittances and perhaps thereby raise the social status of the family. Escape from schools of a perceived lower standard, the cost of education and the limited educational facilities in Samoa motivated migration to NZ where it was believed there existed a more advanced education system (Utumapu, 1992: 61 - 62). Like most migrants Samoan families have high aspirations for their children's educational success (Utumapu, 1992: 72). Thus there are important elements of Samoan culture that motivate desire for academic success here in NZ.

In the NZ context, it would appear that the Samoan community in New Zealand has left the stage of complacency towards language shift. In Paulston's terms the Samoan community has developed from being an ethnicity to being an ethnic movement. In her words (Paulston, 1986: 135), "The major difference between Ethnicity and Ethnic Movement is when ethnicity as an unconscious source of identity turns into a conscious strategy, usually in competition for scarce resources." Spolsky (1988) referred to Samoans who recognised by 1988 that Samoan language and culture had to find a place in NZ primary and secondary schooling. He argued after extensive discussions with Samoan community leaders that "The New Zealand school gives the most minimal recognition to the language and culture of a large group of its pupils. This rejection by the school is clearly part of the reason that the pupils themselves reject school: it is tragically ironic that a culture with such a high value for education should have such a small proportion of its children continuing beyond the fifth form." (Spolsky, 1988: 22). This statement echoes many of Cummins' concerns and ideas about LM educational achievement.

Lameta (1995) also reported significant changes towards the importance of Samoan language in education here in NZ. She cited as evidence the growing number of Samoan language nests, modelled on the Maori Kohanga Reo, the 1995 conference of Samoan

language educators and the existence of a draft curriculum statement for Samoan language and culture (Learning Media, 1994e). The latter document makes explicit the interrelationship of language and Samoan culture (*fa'asamoa*) and the role of Samoan in educational achievement in NZ. It would appear that in the short time since the author began post-graduate studies in 1990 that the demand for Samoan L1 education has crystallised and become manifest.

However, other researchers have rejected the emphasis on language difference as the significant variable in high levels of Samoan student failure. Nicol (1985) reported a significant learning style difference for Samoan children in that there is a high value put on non-verbal tactile or gestural communication by Samoan families in contrast to the verbal emphasis of New Zealand schooling. Lloyd (1995) also pointed to the way Samoans are socialised into their own culture (encouraged uses of watch, listen, repeat) and the way they use language (rich oral language used primarily for social ligatures) as significant sources of difference. Jones (1991) documented, in the context of a New Zealand secondary school, the activities and beliefs of Pacific Islands students and their families that contributed to the girls' lack of academic success and contrasted them with those of successful Pakeha girls. She attributed the relative failure of Pacific Islands children not only to cultural difference but also to a kind of symbolic violence perpetrated by the school system wherein students not sharing the cultural capital of the school experience a different education to those who do share it. Her findings reflect many of the concerns for student empowerment enunciated by Cummins earlier.

Trueba et. al. (1993) reported that other educators have argued that the oral education tradition of Pacific Islands cultures militates against academic achievement in intensive literate schooling. Afele-Fa'amuli (1992) has argued that, since Samoa is an oral culture, the acquisition of non-indigenous knowledge and skills is more effective if demonstration, discussion, lecture and creative teaching techniques are used in the context of group learning.

The cooperative working strategies of Pacific Islanders has also been suggested as a reason for Samoan children not adjusting to individualistic or small group educational styles

of education. The Pacific Island Students Academic Achievement Collective at the University of Auckland (no date) has suggested a range of other factors affecting educational attainment such as, culturally defined family obligations eg. cooking, cleaning, driving, child-minding, and so on. Even sitting at the back of the room, not speaking in class and not seeking assistance from teachers (all behaviours normally associated with low achievement) can be understood as culturally appropriate ways of showing respect.

Further, Tavana (1994) in a survey of 50 Samoan leaders drawn from government, school, business, church and matai found that a set of fa'asamoa cultural values correlated with high degrees of social success. These include (a) respect for elders, (b) communal collaboration, (c) interdependence, (d) deep and active care and (e) productivity. These values are inconsistent with the philosophy and practice of education in urban industrial societies (LeVine & White, 1986). It may be that schools that emphasise these factors will enable Samoan students to succeed much in the same way as some schools in the United States have done for Latino children (Lucas, 1993).

### **Summary on Ethnic Achievement**

There are many variables affecting ethnic educational achievement. In Verma's (1986: 11) words "Social, cultural, linguistic, religious, socio-economic class and personal characteristics all contribute to the particular educational aspirations of ethnic groups, which can range from education for 'assimilation' to education for 'cultural autonomy'". The relative mix of factors is context specific: "factors affecting achievement in one ethnic group many not necessarily affect the achievement of another." (Verma, 1986: 98). It may well be, despite the possibility of it being construed as a 'blame the victim' syndrome, that the individual personal characteristics of a student, shaped by his or her family habitus and ethnicity, are most important in determining academic achievement. Though there appears to be evidence that the majority culture can aid and abet LM academic achievement by making some context specific changes to the structure of schooling. Nevertheless, it is the language factor that this research study focuses on while attempting to take account of these larger issues.

## ***Cloze Procedure***

This section will provide a theoretical overview of the cloze procedure as it has been used historically for both L1 reading assessment and L2 language proficiency assessment. This review will form the basis for the procedure's use in the study of bilingual reading literacy of LM students born outside NZ.

Cloze procedure was first developed in the 1950s and has been used widely by teachers of mother tongue English reading and by teachers of English as a second language. Cloze procedure is normally the mechanical deletion of every  $n$ th (usually between 5 and 10) word to a total of 50 gaps in a piece of prose text approximately 500 words long. Readers are required to supply a word that they think best fits the context, syntax and semantics of the gap. It is generally simple to create, though perhaps time consuming, and easy to mark, especially if exact-word marking is used.

### **Readability and Reading Ability**

The procedure was first introduced by Taylor (1953) as a superior method to the extant procedures for measuring readability of text. Taylor claimed that cloze procedure (calling on gestalt psychology's concept of closure) took better account of text difficulty and ease than formulaic procedures<sup>14</sup> that depended on counting such things as sentence length and word length (ie. Dale-Chall and Flesch). A series of experiments he conducted concluded that cloze procedure:

- accurately ranked passages in terms of difficulty,
- yielded statistically contrastable scores,
- was reliable and predictive despite contrasting variations of marking or word deletion,
- was applicable to a wide range of texts,
- and the possibility of its use as a means of contrasting the reading abilities of different individuals was suggested.

Other researchers have compared cloze procedure as a readability measure favourably against other formulaic procedures; eg. SMOG (Vaughan, 1984, 1988), Spache (Cameron et. al., 1987), Dale-Chall (Manning, et. al., 1986), Henry (Renaud, 1980), Lix (Anderson, 1981). Chall, of the Dale-Chall formula, and Conrad (1991) successfully verified readability formula attribution of text difficulty by the use of cloze tests across grade

levels four through eleven. The development of formulas for languages other than English (Crawford, 1984; Hague, 1984; Harrison, 1986; Renaud, 1980) has gone ahead but in some cases cloze procedures have been developed to overcome the lack of a feasible readability formula (Rabin, 1987). Bormuth (1985) has concluded that readability formulas are seriously flawed in that they assume difficulty is purely the result of readers' language knowledge and the linguistic complexity of the text. The fact that the formulas consistently overestimate the difficulty of simple materials for young readers and underestimate the difficulty of advanced materials for older readers is explained by the formulas' insensitivity to the amount of prior background knowledge a reader has and the amount of prior knowledge assumed by the writer. The use of cloze as a preferred readability measure has continued in recent applications of the procedure on US government and on business documents (Dwyer & King, 1991; Howard, 1992; Lehner, 1993; Shaffer et al, 1993; Stevens et al., 1992).

By the late 1960s Taylor's last finding, that cloze could measure the reading ability of individuals, had developed into a recognised means of measuring an individual's reading comprehension within the field of mother tongue reading assessment. Bormuth (1968) established that scores on cloze procedure could be interpreted as an indication of a reader's comprehension of a text in much the same way as conventional comprehension tests. He gave benchmark scores that indicated whether a reader was functioning at a frustration, instructional or independent level in terms of the text. The scores and levels are shown in the Table 5 adapted from Bormuth (1968:433). Bormuth's research has been influential on the meaning of cloze procedure among reading researchers (Hafner, 1977; Marlow & Reese, 1992; Rye, 1982; Smith and Elley, 1994; Strickland and Morrow, 1990; Tonjes & Zintz, 1981).

**Table 5: Reading Level and Cloze Score**

| Level                    | Standard Test | Cloze  |
|--------------------------|---------------|--------|
| <i>independent study</i> | 90% +         | 57% +  |
| <i>instructional</i>     | 75 - 89%      | 44-56% |

Other L1 reading researchers have found advantage in the cloze procedure.

Vincent et. al. (1983) asserted that cloze is an improvement over word-recognition and sentence-completion testing. Vincent (1985:14) concluded that cloze tests "seem to involve similar reading skills to those covered by conventional tests requiring use of context and reference." Mulholland (1986) has used cloze procedure to analyse the type of reading error being made and to establish appropriate remediation. Schwartz (1984: 151) assumed that performance on cloze-type tests "depends on a combination of knowledge (about words and their meanings as well as about syntax, grammar, and text meaning) and mechanized decoding processes", with the latter bottom-up process accounting for more individual variability than the former top-down ones. Wood (1988) dismissed cloze tests since they fall short of measuring the wide range of reading instruction that students are given and for failing to investigate high-order cognitive abilities. Perhaps her criticism is shaped by her top-down beliefs concerning the psychology of reading.

### Unitary Competence Hypothesis

Teachers in the burgeoning field of English as a second language adopted the procedure (Anderson, 1971)<sup>15</sup> from much the same perspective as Bormuth. Researchers found that cloze procedure measured second language proficiency (eg. French, English, Spanish, Japanese, Hebrew) with high degrees of correlation to other measures of language ability (Aitken 1977; Chihara et. al., 1977; Hinofotis, 1980; Hinofotis & Snow, 1980; Lapkin & Swain, 1977; Mullen, 1979; Shohamy, 1983; Stubbs & Tucker, 1974; Swain, Lapkin & Barik, 1976) and that they were generally economical, valid and reliable measures of overall language proficiency.

The influence of John Oller on L2 use and understanding of cloze procedure is undoubted. He began publishing a series of articles investigating the nature of cloze procedure in relation to language (not reading *per se*) proficiency (Oller, 1972; 1973, 1976; Oller & Conrad, 1971; Oller & Inal, 1971). Oller speculated that cloze procedure drew on the reader's or language learner's underlying competence in the language of the text and such competence could be understood in terms of a "grammar of expectancy". Thus cloze

procedure was tapping into some sort of homogeneous "general language proficiency". Oller advocated the use of tests like cloze procedure and dictation on the basis that they were integrative of a range of language skills and thus indicative of the real language proficiency of a learner. He opposed the traditional discrete point language tests since they encouraged an artificial classroom language unsuited for communication in the real world.<sup>16</sup>

The implications of this angle of research surfaced in a clear form in Oller's work in the late 1970s. Oller (1978, 1979), supported by Gunnarsson, (1978); Streiff, (1978); and Stump, (1978)<sup>17</sup>, argued that language proficiency accounts for the vast bulk of variation in IQ and in other psychological and educational tests; in other words, intelligence tests were mostly measuring language ability. He advanced the hypothesis, supported by extensive factor analysis techniques, that there is a single unitary factor - global language proficiency or 'g'<sup>18</sup> to account for variance in test results and that cloze procedure was effective in accounting for about 80% of all variation in the tests being tested. A variety of language proficiency and reading tests were subjected to factor analysis and between half and two thirds of all variance, and sometimes as much as 80%, was attributed to a single global factor (Oller & Hinofotis, 1980; Scholz et. al., 1980; Flahive, 1980; Hisama, 1980).

Relatively quickly, the force of criticism against Oller's single unitary or global hypothesis (Powers, 1982; others reported in Oller, 1983) was such that by 1983 Oller admitted:

*"the strongest form of the unitary hypothesis was wrong. ... multiple factors underlie language proficiency ... when a general factor appears it can always be partitioned into multiple contributing factors."*(1983:352 - italics in original)

However cloze procedure does measure something to do with both language ability and reading comprehension since it requires language production as well (Lynch, 1992). Researchers in the last two decades have sought to improve the reliability and validity of cloze procedure from its many detractors (Alderson, 1983; Bullock and Lantolf, 1987; Coniam, 1993; Davies, 1990; Hughes, 1989; Klein-Braley, 1983; Porter, 1978; N. Wood, 1988). The objections (perhaps best summed up by Klein-Braley (1983: 228): "In all I examined 22 cloze tests for this population. No test reached a reliability of .9. This does not mean that reliable cloze tests for specific populations do not exist."), though damaging to

Oller's unitary competence hypothesis, did not stunt research into what cloze tests were actually doing.

Various techniques for improving the validity and reliability of cloze procedure have been advanced and other factors influencing cloze performance have been identified (Aghbar and Tang, 1991; Brown, 1988; Bullock and Lantolf, 1987; Des Brisay, et. al., 1993; Grant, 1991; Ilyin, et. al., 1987; Jacobson, 1990; Jonz, 1989; Khodabakshi, 1991; Madsen, 1983; Sciarone and Schoorl, 1989; Turner, 1988). Other research has found that the classic cloze is still reliable and useful in English and other languages (Brown 1983; Brown et. al., 1991; Djiwandono, 1990; Fotos, 1991; Hanania and Shikhani, 1986; Jonz, 1991; Lynch, 1992; McKenna and Layton, 1990; Rathmell, 1984; Schils and Weltens, 1991; Tenhaken and Scheibner-Herzig, 1988; Xie, 1991), while others have found computerisation of cloze procedures beneficial (Butler 1990; Butler, 1991; Cameron, et. al., 1987; Clariana, 1991; Clausing & Schmitt, 1990a; 1990b; Stevens, 1991). Cloze has also found a home in the assessment or instruction of mother tongue reading ability in vocational or work-related contexts (Carr, 1990; Council of Forest Industries, 1991; Farris, 1992; Fiske and Todd, 1994; Nurss, 1990). Cloze procedure has developed into a legitimate tool to test other facets of language knowledge or skills (Andrews & Mason, 1991; Bahns & Eldaw, 1993; Black, 1993; Fusaro, 1993; Laufer & Osimo, 1991; McEneaney, 1994; McDaniel et al., 1991; Oh, 1992; Pico, 1990; Reutzler & Morgan, 1990; Richardson et al., 1991; Speaker & Grubaugh, 1992; Tsiouris, 1990; Vivian, 1990). Cloze has also been found useful as a pedagogical technique for the development of lexis and syntax and for the development of meaning negotiation skills and strategies (Llewelyn, 1990).

Despite the death of the Unitary Competence Hypothesis, Hughes (1989) contended that cloze is still valid for an approximate idea of a person's overall ability in a language but only in circumstances where decisions taken as a consequence of testing are insignificant and where misplacement can easily be rectified. Fotos (1991) asserted from research on English as a Foreign Language (EFL) learners in Japan that cloze has an especial use for teachers who are not native speakers of the target language. Wu (1994) found that cloze

tests using narrative texts are more sensitive to intersentential constraints and therefore are more suitable to measure overall reading comprehension.

### **Cloze within Cummins' Hypotheses**

In 1983 Oller sought to integrate Krashen's (1981) input hypothesis, and Cummins' (Cummins, 1979, 1983) threshold hypothesis and BICS/CALP distinctions with his own theorising and empirical research (Oller, 1983) as hypotheses capable of explaining the kinds of empirical work he and other cloze researchers had been reporting for the previous decade. Laesch and van Kleeck (1987) argued that cloze procedure "provides a valid assessment of the higher-level academic language proficiency of bilingual students." (1987:183) despite the problems of reliability identified beforehand. In other words the better a learner's academic literacy experience the better cloze results obtained. Bild and Swain (1989) also used the Cummins' hypotheses to explain cloze results found among bilingual students learning French as a third language through immersion. The hypothesis of the interdependence of cognitive academic literate language (Cummins, 1981) is used to explain the fact that bilingual students learn French more affectively than their unilingual peers. Oller later contended (Oller, 1991) that recent cloze research among US bilinguals (Hopi-English, Navajo-English, Choctaw-English, Spanish-English and overseas students) indicates a deep language factor (or composite of semiotic factors or English language proficiency) mediating performance. He (Oller, 1991) again reiterated a call for greater scrutiny of the threshold hypothesis.

### **Conclusions About Cloze**

Empirical research across two large fields (first language reading and second language proficiency assessment) seems to indicate the following claims for cloze are valid:

- Cloze measures a knowledge of syntax and vocabulary.
- Cloze requires basic level literacy processes both for writing and reading.
- Cloze is useful when the tester does not know the target language.
- Cloze can be used across a variety of languages and alphabetic orthographies.
- Students require previous experience with the text genre and cloze procedure.

- Special effort (eg. item analysis, extra length, norms standardisation) has to be made to make cloze tests reliable.

It appears that cloze reading requires both top-down and bottom-up reading strategies (Nicholson, 1993b; Rayner and Pollatsek, 1989). Top-down characteristics are evident in that prior knowledge of the genre, text content and vocabulary assist in filling in the gaps; good readers can discover correct answers by reading ahead and establishing a context and, finally, guessing is sometimes the only way to fill the gap. Bottom-up traits are also prevalent in that accurate decoding of words around the gap and syntactic knowledge of the target language are vital to allow a reasonable word, let alone an exact word, to be inserted. Moreover, there is a tendency for readers to fill gaps using within sentence knowledge. It seems most likely that a compensatory interaction of top-down and bottom-up information is necessary for successful completion of cloze passages.

Thus from this summary and the review of literature it would appear that cloze has a place in reading assessment and readability measurement. When used in conjunction with other measures, placement decisions based on cloze results can be taken provided it is possible to easily reverse any mistakes. If not too great a reliance is put upon the results, then cloze procedure measures the academic reading literacy of students and gives an overall indication of their language proficiency. In addition to assessment of language and reading proficiency of students the procedure is still an appropriate, and sometimes superior, device to measure readability of texts.

## ***Review***

The linguistic hypotheses of Jim Cummins are situated in a highly political and ideological framework. It seems likely that the cloze procedure will give a useful indicator of both L1 and L2 language and reading proficiency. However, that language or reading factors alone play an important or direct role in the academic achievement of Samoan students in NZ secondary schools is doubtful. Length of Residence (LOR) and Age on Arrival (AOA) are likely to make a difference in explaining achievement, yet it seems more

likely that personal or family beliefs about literacy and migration and socioeconomic factors play a more significant role in individual academic attainment.

## Chapter 3: Method

This chapter will review methods of subject selection and materials development. It will also report the procedures used to collect data. This study has used primarily quantitative methods to elicit data. A survey was used for subject selection and a questionnaire was employed to draw out demographic details of the subjects' backgrounds and literacy characteristics. Tests of language and reading ability were carried out and form the heart of the study.

The fundamental problem with an empirical approach to human linguistic behaviour is that most human behaviour is ultimately unpredictable and potentially irrational (Hughes, 1980: 82-86; Perrow, 1982: 685). It is difficult to assume that there are universal laws of social behaviour that can be explained by an external observer. This is especially so in the context of cross-cultural and multi-cultural research. Indeed, despite the appearance of objectivity, empirical tests are highly subjective constructs of meaning (Hughes, 1980: 28, 53, 74, 79, 80, 84, 85; Potter & Wetherell, 1987: 147-150; Russell, 1987: 11). Triangulation on the hypothesis is a preferred strategy for any research project. Methods should come from quantitative, interpretive and critical schools of knowledge because it is necessary to generate results using quite varying methods so that the "findings are no longer attributable to a method artifact" (Jick, 1979: 608). It is vital to uncover divergent, inconsistent, contradictory or deviant results to further eliminate error from the hypothesis (Mathison, 1988: 15). Nevertheless, time constraints have prevented such a thorough triangulation and thus weaken the reliability and generalisability of findings. Perhaps an undue reliance is placed on statistical techniques of analysis. However, given the nature of time and resources such logico-mathematical procedures do provide a solid counter-balance to unsubstantiated assertion.

An explicit setting out of the guiding theoretical assumptions is made in conjunction with the description of the method. Opportunity is thus given to be consciously critical of those assumptions (Corson, 1990: 31; Lather, 1986: 271). It is intended that this

explicitness will make error elimination from the hypothesis and the creation of an improved theory more likely.

## ***Subjects***

Subjects for this study were all enrolled students at a large co-educational college in the Auckland region on March 1, 1995. The college had 1,492 students on the roll on March 1, 1995. Based on previous self-reported ethnicity, the Principal estimated that about 20% (300) were non-white, or non-Maori. The Pacific Island communities made up 85% of this total with others, mostly Asian, making up the balance. However, data on country of origin were not available in the College data base since the enrolment form only asks students to identify if they were born outside New Zealand and not in which country. Further these data are not entered into the computerised database. A survey was carried out by the author in March 1995 to determine the number of students born outside New Zealand. The survey required teachers of the 60 vertical form groups to get students to identify their country of origin if they were born outside New Zealand. Although the form was issued to form group teachers on March 15, 1995 the last form was not returned until April 4. Factors involved in the delay include student absenteeism, teachers away on camps, and the researcher's part-time attendance at the College.

The results revealed some surprising facts. 265 students reported that their country of origin was outside NZ. More than 40 countries are represented as birth places. The single largest number came from Samoa (58) followed by the UK (33) and Australia (23). The numbers for all other countries are close to or less than 10. The largish number from Korea (14) included a number of full fee paying students. Table 6 shows the countries and number of students born in each state.

**Table 6: Countries of Origin**

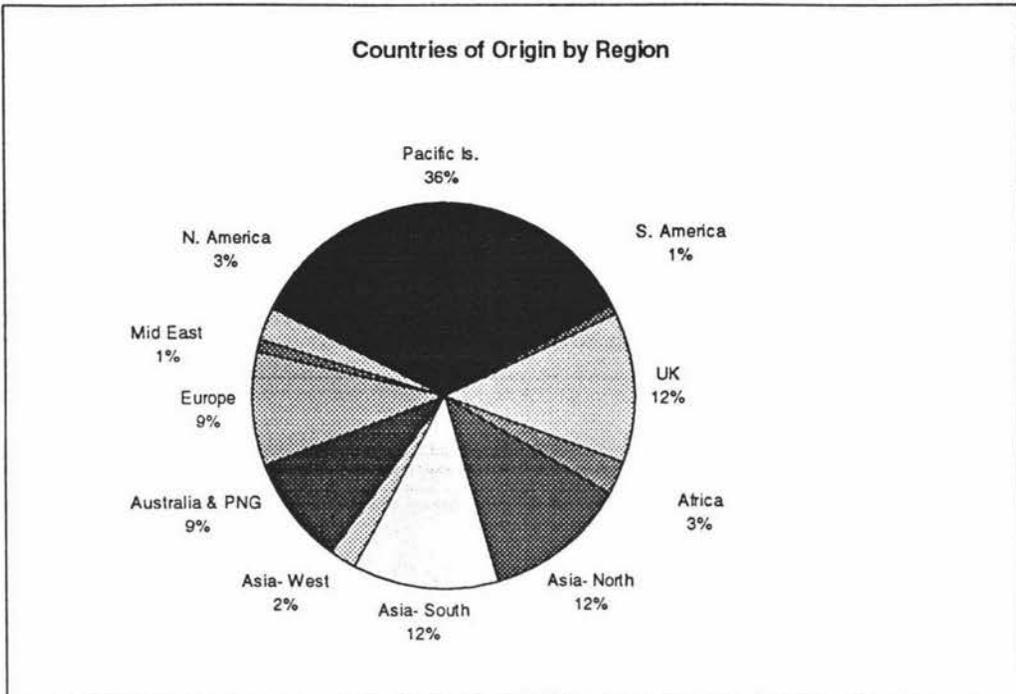
|                |    |              |    |
|----------------|----|--------------|----|
| Australia      | 23 | Pakistan     | 1  |
| Cambodia       | 4  | Peru         | 1  |
| Canada         | 3  | Philippines  | 5  |
| China          | 6  | PNG          | 1  |
| Cook Islands   | 3  | Poland       | 5  |
| Ellice Islands | 2  | RSA          | 6  |
| Fiji           | 18 | Samoa        | 58 |
| France         | 1  | Saudi Arabia | 1  |
| Germany        | 3  | Singapore    | 1  |
| Greece         | 2  | Sri Lanka    | 1  |
| Holland        | 5  | Taiwan       | 8  |
| Hong Kong      | 4  | Thailand     | 3  |
| India          | 1  | Tokelau      | 1  |
| Iran           | 5  | Tonga        | 5  |
| Israel         | 2  | Tuvalu       | 2  |
| Japan          | 1  | UK           | 33 |
| Kiribati       | 1  | Uruguay      | 1  |
| Korea          | 14 | USA          | 5  |
| Laos           | 2  | Vietnam      | 6  |
| Malaysia       | 9  | Yugoslavia   | 9  |
| Nauru          | 1  | Zimbabwe     | 1  |
| Niue           | 1  |              |    |

When these countries are grouped by regions (Table 7 and Chart 2) the picture becomes clearer. Just over one in three (36%) students were born in a Pacific Island country. About one in four (26%) came from a country somewhere in Asia.

**Table 7: Regional Groupings of Countries of Origin.**

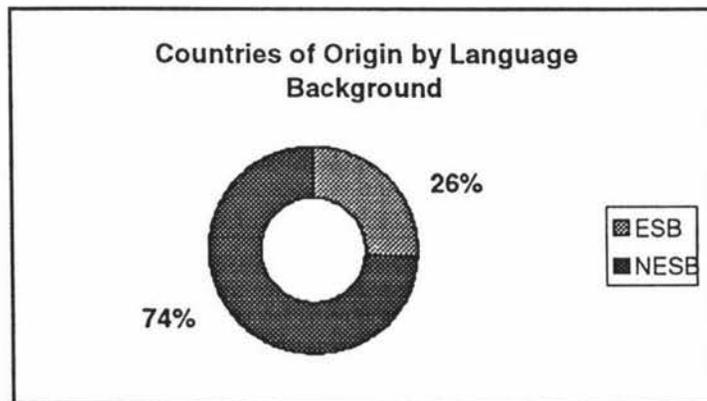
| Regions:               | Countries  |
|------------------------|--|
| <b>Africa</b>          | RSA, Zimbabwe  |
| <b>America- N</b>      | Canada, USA  |
| <b>America- S</b>      | Peru, Uruguay  |
| <b>Asia -N</b>         | China, Hong Kong, Korea, Japan, Taiwan   |
| <b>Asia- S</b>         | Cambodia, India, Laos, Malaysia, Philippines, Singapore, Sri Lanka, Thailand, Vietnam    |
| <b>Asia - W</b>        | Iran, Pakistan   |
| <b>Australia</b>       | Australia and Papua New Guinea   |
| <b>Europe</b>          | France, Germany, Greece, Holland, Poland, Yugoslavia                                     |
| <b>Mid-East</b>        | Israel, Saudi Arabia   |
| <b>Pacific Islands</b> | Cook Islands, Ellice Islands, Fiji, Kiribati, Nauru, Niue, Samoa, Tokelau, Tonga, Tuvalu |
| <b>UK</b>              | England, Jersey, Scotland, Wales   |

**Chart 2: Regional Groupings of Countries of Origin**

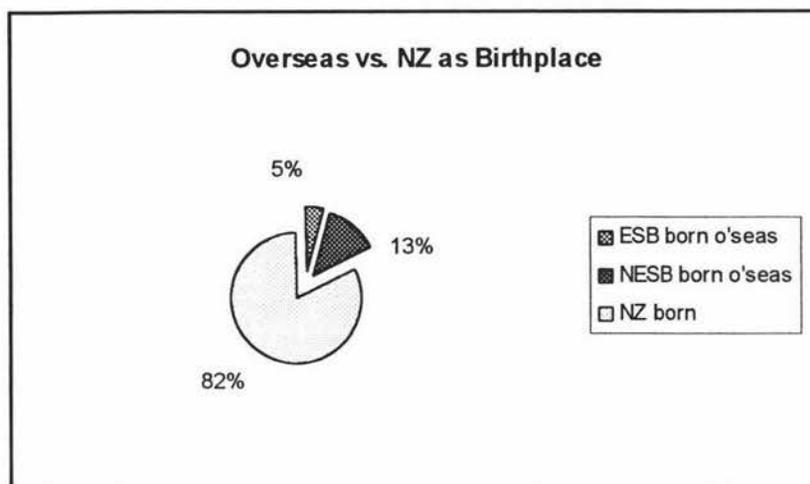


Upon closer examination it turned out that only the students born in Pacific Islands and Asian countries were actually non-white, constituting a population of about 160 non-white, NESB students born outside NZ. Thus, in total nearly three in four (Chart 3) came from countries that are considered to be non-English speaking (ie. UK, North America, Australia are English speaking).

**Chart 3: Language Background of Countries of Origin**



Consequently 265 students were born overseas constituting about 18% of the total 1995 enrolment (Chart 5). Importantly 13% of the college was born overseas in a non-English speaking country.

**Chart 4: Overseas Born as Proportion of Enrolment**

92 students from Pacific Islands backgrounds reported being born in the islands.

This number is more than one third (37%) of the total estimated Pacific Islands population at the College. However, with 71 (more than 4% of total roll) students reporting birth in an Asian country apparently the College's rough and ready statistics on ethnicity are somewhat inaccurate.

It should be remembered that this survey is not a definitive measurement of the total NESB population at the College. No effort has been made to count NZ born students whose families do not use English as L1. The grand total of students for whom English is not L1 is bound to be higher than the present survey indicates. Neither has this survey measured the level of English language proficiency nor level of language assistance required by NESB students. There are only about 25 students in special ESOL programmes designed for NESB students in their first year in NZ. In other words the vast majority of NESB students, whether born in NZ or overseas, are in the College's mainstream educational programmes. When so many NESB students exist in a school population, the levels of academic achievement and language proficiency that are normally used to signal a student's need for help must change.

Nevertheless the picture offered here is not dissimilar to the general scene in the Auckland region as discussed in Chapter 1. It is expected that these overseas born NESB students will experience the socio-economic and academic achievement profiles described earlier. With so many visibly different students (163) born in Non-English speaking

countries there is a significant challenge to the educational programmes and resources of the College.

After a call for volunteers from among Samoan born students, a total of 29 volunteered to participate in the study. This represents about 50% of the total Samoan born population in the school in 1995.

## ***Materials***

Three different types of materials are used in this study. Cloze tests of reading (Appendix 5) in Samoan and English are used to estimate student proficiency at reading in those languages. A questionnaire (Appendix 7) is used to obtain general characteristics of students' reading in Samoan and essential demographic details. School records are used to obtain reports of academic or scholastic attainment.

## **Cloze Tests**

Cloze tests are systematic rationally defined measurement instruments applied to the behaviour of individuals (Hughes, 1980: 41; Dixon, et. al., 1987: 71) for the purpose of creating raw data that can be subjected to logico-mathematical devices to establish degrees of association or correlation among the researched variables for the purpose of supporting generalisations about social entities (Hughes, 1980: 57). This approach is appealing in our technological society since it reflects the natural sciences' objectivity, replicability and neutrality (Hughes, 1980: 17-19, 38, 45). More importantly, this empirical approach is essential if a hypothesis is to be tested in such a way that it can be falsified or disproved as opposed to just being verified in a positivist sense (Campbell & Stanley, 1979: 35; Corson, 1990: 33).

The School Journal has been widely used as a source of material for the testing of or development of reading comprehension (Blaiklock, 1989; Gilroy and Moore, 1988; Griffiths, 1989; Nicholson, 1991). The Journal includes a wide range of genres (articles, stories, plays and poems) geared in both reading age and interest level to students from the standards (Parts 1 and 2) right through to Forms 1 and 2 (Parts 3 and 4). Because the materials

generally provide high interest and relevance for reluctant or poor readers from a variety of ethnic or racial backgrounds they are still used in secondary schools for remedial and developmental purposes. To assist teachers and researchers, Learning Media publishes the recommended reading ages for all passages in a catalogue. For these reasons the author turned to Learning Media for source material for cloze testing in both Samoan and English.

To ensure comparability of texts between languages it was decided to use texts that were published in both Samoan and English. Learning Media of Wellington, New Zealand have been publishing around 10 titles a year in Samoan for use in schools (Long, 1995), most of which have also been released in English. Nevertheless, the translation process renders the stories "not exactly the same in both languages" (Learning Media, 1994a). The fact that they are the same narrative story with the same illustrations does make them as close as is feasible for the purposes of this study.

The stories published in the two anthologies *Tala Tusia 1* (Learning Media, 1994c) and *Tala Tusia 2* (Learning Media, 1994d) are intended for students who can read Samoan at a relatively advanced level equivalent to Part 3 or 4 of the School Journal in English. Unlike beginners' level stories these are published without macrons and glottal stops; thus readers must be able to use context to distinguish between words that appear the same and yet have different meanings. Therefore, they are recommended for children who read independently in Samoan (Learning Media, 1994a). Consequently it can be concluded that these stories require an adult-like functional literacy in the target language.

The stories in these collections were first written and published in English by Samoan writers and then translated into Samoan. However, one story, *One Samoan Evening* (Samuelu, 1985) was actually first written in Samoan and then published in English translation some nine years prior to its publication in Samoan as *O se Afiāfi i Samoa* (Samuelu, 1994). Since the story was a genuine Samoan written text it was selected as the test passage.

According to the School Journal Catalogue (Learning Media, 1994b) the complete English story has a reading age of 8 1/2 to 9 1/2 years. However, readability statistics provided by Microsoft® Word for Windows® 6.0<sup>19</sup> indicate that the difficulty of just the

selected passage (Appendix 4) is significantly more difficult. The average grade level of the extract using the three formulas reported was grade 7.5. This places it in United States terms as appropriate for 13 to 14 year olds in their 8th year of schooling. The equivalent grade level in NZ would be 12 to 13 year olds in Form 2. Lameta (1995) estimated that the Samoan extract would fit in a range of Level 3 to Level 4 of the draft curriculum statement in Samoan.

As a further confirmation of the appropriateness of these passages for the study's purposes a Lix score was generated. The Lix readability formula has been advocated as a device capable of measuring reading difficulty across many languages (Anderson, 1983; Harrison, 1986). The formula requires a simple sum of the average sentence length and the percentage of words more than 6 letters long. When applied to this passage the scores were surprisingly similar (31.5 in English and 31.3 in Samoan)<sup>20</sup> despite the fact that there was a far higher percentage of long words in English and a higher average sentence length in Samoan. Anderson (1983) has developed a scale to convert Lix scores to grade levels. A Lix score of 31 is considered appropriate for grade 6. This is the grade level of students aged about 11 to 12 years.

Another method for calculating readability is the Noun Frequency method developed by Warwick Elley (Smith & Elley, 1994) in New Zealand in the 1970s. This involves grading nouns used in a passage by their frequency and averaging the grade by the number of nouns. According to this method the English version of the passage has an average noun frequency level of 5.18 that translates to an approximate reading age range of 10 to 12 years. An increase of the average level of only 0.02 would raise the reading age range to 11 to 13 years bracketing the target age of the study. This acts as confirmation that the extract is focused in the target range required by this study. Notice that it is also considerably more difficult than the age range proposed in 1985 for the whole story by the School Journal.

Table 8 presents a summary of the readability calculations taken. Chronological ages of students in the various grade levels are calculated by adding the appropriate school starting age of six to the Grade Level. The average of lowest full year age of each measure is

12.2 years. Thus, it can be safely concluded that the English version extract is aimed at about the 12 year old level. Further, if the Lix argument and the opinions of Learning Media and Elaine Lameta are accepted, the Samoan extract is so also.

**Table 8: Summary of Readability Calculations**

| Readability Measure | School Journal | Flesch-Kincaid      | Coleman-Liau        | Bormuth             | Lix             | Elley Noun |
|---------------------|----------------|---------------------|---------------------|---------------------|-----------------|------------|
| English             | RA 8-9         | GL 6.4<br>(CA 12.4) | GL 7.2<br>(CA 13.2) | GL 8.9<br>(CA 14.9) | GL 6<br>(CA 12) | RA 10-12   |
| Samoan              | NA             | NA                  | NA                  | NA                  | GL 6<br>(CA 12) | NA         |

(RA = Reading Age; GL = Grade Level; CA = Chronological Age; NA = Not

Applicable)

The cloze test was constructed by selecting an English extract of 410 words that describes the events surrounding a spear throwing competition and a rugby game beginning at the 10th paragraph of the narrative (Appendix 4). After leaving the first paragraph of the extract intact every 7th<sup>21</sup> word was deleted mechanically except where the 7th word fell on a proper noun (Appendix 5). In that case the next word was deleted and mechanical deletion carried on from that point at the same ratio. Fifty words were deleted (Appendix 6). The Samoan version was 522 words long and finished 7th word deletion significantly earlier in the story despite deletion commencing at the same point. The accuracy of the Samoan cloze was verified by the Programmes Manager of PIERC Education, an education resource and research organisation for Pacific Islands communities<sup>22</sup>. Copyright permission to use the extracts for research purposes was granted both by the publisher and author<sup>23</sup>.

## Questionnaire

A questionnaire is used to elicit self-reported information from respondents of details not otherwise available from official school records. Despite the fact that questionnaires are inflexible and are unable to elicit elaborate answers (Tuckman, 1978: 39; Hughes, 1980: 99) they are ideal to obtain basic demographic information and personal opinions and information. Indeed the whole point of questionnaires is to ask standard questions that relate to the hypothesis (Tuckman, 1978: 25; Dixon, Bouma & Atkinson,

1987: 79; Sax, 1979: 90). The standardised questions yield comparable nominal results quickly, economically and reliably (Sax, 1979: 89-90; Tuckman, 1978: 39).

Questionnaires require a reasonable level of literacy and comprehension in the instrumental language (Sax, 1979: 90, 107). Translations of the questions into L1 would be ideal. This would allow the questionnaire to partially overcome the meaning uncertainty normally associated with the language of questionnaires (Hughes, 1980: 96-98). However, this was beyond the resources available. The researcher was present to explain any problems with the questions. Further follow-up was carried out by the researcher to clarify any missing or confusing responses. The questionnaires were completed at the same time as the cloze tests. This was done to avoid long delays in obtaining data from students. A further limitation of questionnaires is, as Durán (1987) has pointed out, that survey studies are not designed to give causal accounts nor are they capable of investigating the interaction of the social and psychological variable involved in the development of literacy. However, correlation associations can be derived from this type of data.

Since in-depth ethnographic study was not possible, interviews would have been appropriate to investigate some of the psychological variables. In-depth probing dialogic interviews (Lather, 1986: 266; Hughes, 1980: 73, 76; Jick, 1979: 605) constitute a means of triangulating upon the hypothesis. A schedule of questions is required (Dixon et. al., 1987: 79, 80) to allow the researcher some common starting point and to focus the interview on the hypothesis. The interview enables information to be gathered quickly, provides a subjective way of checking written test data against spoken performance, and allows the interviewer to move into new areas (Black & Champion, 1976: 371). However, given the time constraints created by deadline for submission and the length of time required to collect data it was not possible to carry out this procedure. Future research would benefit greatly from such ethnographic input.

The questionnaire (Appendix 7) was designed to elicit necessary information to test the hypothesis. Information on each student's AOA and LOR in NZ was obtained along with general demographic information on the student's family background (parent occupation, matai relationship, parent education, etc.). In addition, the questionnaire

explored various facets of the student's literacy and language experience. Questions were asked about schooling in Samoa, self-rated speaking and reading abilities and reading behaviour.

Codification of nominal data generated by the questionnaire was necessary for statistical analysis purposes. Where possible numbers used were common across categories. No answer was coded as 0; Samoan (L1) was coded as 1; English (L2) was coded as 2; Both was coded as 3. The socioeconomic status of parents was calculated using the Elley-Irving Socio-Economic Index (Elley & Irving, 1985; Irving & Elley, 1977). This index gives a numeric scaled value to each occupational category as defined by NZSCO<sup>24</sup> based on educational requirements and income generation, where level 1 is the highest and 6 the lowest. One set of labels used to describe the levels is: 1 - Higher Professional - Administrative; 2 - Lower Professional-Technical; 3 - Clerical-Highly Skilled; 4 - Skilled, 5 - Semi-skilled; and 6 - Unskilled (Elley & Irving, 1985: 118). Since the index is designed to classify NZ occupations only the parent's New Zealand work is used in data analysis. Classification of non-work occupations (ie. Beneficiary (7), Home Duties (8) and Other (9)) was determined by advice from Statistics New Zealand (DeLorenzo, 1995). Self-rating of language proficiency in both Samoan and English was obtained for ability to read and speak each language. A five point scale was used, where 1 was very poor, 2 was poor, 3 was satisfactory, 4 was good and 5 was very good.

### **School Records**

Information about academic achievement was available from the College student files. Each file had to be searched for the most recent school report. Different Forms have varying reporting time frames. Form 4 grades were reported at the end of Term 1, Forms 5 to 7 were reported immediately prior to the July Mid-Term break. Form 3 grades were reported at the end of July following the half-year option switch. Although it would have been more satisfying to use end of year academic reports, thesis completion deadlines forestalled such an approach. In addition, school records were used to supplement questionnaire responses to fill in missing details such as parental occupation.

Academic achievement was calculated by averaging each student's reported results for all subjects except for Life Skills and Physical Education. Junior reports (F3 and F4) report grades on a one to five scale, with five highest and one lowest. Grades were converted to decimal by application of a scale presented in Appendix 8. Senior grades (Forms 5 to 7) are normally reported in decimal form, but where the five point scale was used the individual grade was converted using Appendix 8. Where both examination and course work grades were provided but not amalgamated into one overall mark, the examination grade was used.

As Collier (1989) has pointed out there are several ways to measure academic achievement. It can be seen that for this study academic achievement is measured by two of the four methods she identified; ie. an average across all subjects of teacher-made tests in each subject area. Unlike standardised test scores which only measure reading, these teacher-made evaluations also include the ability to function orally, certainly for junior form students, and in writing.

## ***Procedures***

This section will report actual procedures undertaken to collect and process data and then analyse results statistically.

## **Data Collection**

Because of the low numbers of NESB students from countries of origin other than Samoa it was decided to limit the study to the latter group. A meeting with the researcher, a teacher at the College, at which the aims of the study were presented (Appendix 2) was held in early April, 1995. Of the 58 students identified as being born in Samoa 36 (two had already left the College) were given permission to participate by their caregivers. This process took from the beginning of April through to the middle of June because of the two week holiday at the end of the first term.

Testing was carried out in one batch of 23 students in June and a series of individual researcher supervised tests through the subsequent weeks. This was done since it

was not possible to get all students to appear at the same time. In the end only 29 students ended up actually participating. The tests were presented half with the Samoan text first and half with English first. Both tests were presented at the same time and students were allowed to transfer any knowledge or language gain from one test to the other. Despite the fact that this appears to violate the assumption of independence of observations (Brown, 1992), it was considered appropriate to allow for any interdependence of language effect to operate fully. Instructions on completion of the cloze tests were given orally and in written form (Appendix 3).

The first test presented some unusual circumstances. The students (23) came in very excited and despite constant urging from the researcher proceeded to violate standard school test behaviour. There was a great deal of helping, not just from students seated near each other but also across the room. Thus it was not possible to guarantee absolute individuality of test performance. The five students who were tested later did comply with standard test behaviour and provided truly individual results.

To create an interesting contrast and a point of reference for Samoan born students, it was decided to test a group of volunteer NZ born Samoan students. A meeting was held at the end of July explaining the project to interested students. A second batch of tests was carried out on twenty volunteer New Zealand born Samoan students, who had self-selected from among the approximately 180 Samoan students on the College's database. Tests were carried out in August in the same time slot as the first batch of Samoan born students with the same conditions. However, this time individual effort was maintained and there was no help offered from one student to another.

Students completed the questionnaire at the same time as they answered the cloze tests. They were given assistance to understand the questions by the researcher. Where necessary, the researcher followed up missing or confusing data by speaking to students individually at a later date in the term.

## Data Processing

The cloze tests were scored on an exact word basis in order to get around the researcher's lack of Samoan language. Raw scores were multiplied by two to obtain a percentage score. Unlike Madsen (1983) who advocated allowing recognisable misspellings, misspellings were treated as wrong in English since the researcher had no way of verifying if Samoan misspellings were legitimate. Illegible handwriting was treated as wrong as were two words inserted in one blank space. Any use of macrons by respondents was ignored in Samoan.

Percentage scores have often been taken as indicators of a reader's level in terms of the text, ie. independence, instruction, or frustration. An average of eight such available boundary scores was taken and used to interpret these test results (Table 9). Thus scores 54% or better on an exact word basis were interpreted as meaning that the student can read independently on the passage. This in turn is understood to reflect the reading demands of functional literacy for secondary schooling in NZ in either language.

**Table 9: Cloze Scoring Systems (% scores)**

| Reading Level | Bormuth 1968 | Anderson 1971 | Bormuth 1975 | Hafner 1977 | Tonjes & Zintz 1981 | Rye 1982 | Chall & Conrad 1991 | Smith & Elley 1994 | Average |
|---------------|--------------|---------------|--------------|-------------|---------------------|----------|---------------------|--------------------|---------|
| Independent   | 57- 100      | 54- 100       | na           | 50- 100     | 58- 100             | 60- 100  | na                  | 45- 100            | 54- 100 |
| Instructional | 44- 56       | 44- 53        | 36-          | 42- 49      | 44- 57              | 40- 59   | 35-                 | 40- 44             | 41- 53  |
| Frustration   | 0- 43        | 0- 43         | 0- 34        | 0- 41       | 0- 43               | 0- 39    | 0- 34               | 0- 39              | 0- 40   |

## Statistical Analysis

Statistical analysis was carried out using SPSS® 6.1 for Windows™ Student Version (SPSS, 1994) on a 486 DX2/66 PC computer. Descriptive statistics, including calculation of means and standard deviations, were generated by SPSS. Graphs were drawn with the aid of Microsoft Excel® 5.0. Three main classes of data were generated; continuous, ordinal and categorical or nominal. Pearson correlation coefficients ( $r$ ) were calculated for continuous data; Spearman Rank Correlations ( $r_s$ ) were calculated for ordinal data. The parental SES data were correlated with the continuous data using Spearman Rank Correlation since it was

not certain that the intervals in SES data were of constant value. The types of data and the appropriate variables are listed in Table 10. A T-test of between group means was also calculated to test the predictions generated from Cummins' optimal age of arrival hypothesis.

**Table 10: Variables Classified by Data Type**

| <u>Continuous</u>                 | <u>Ordinal</u> | <u>Nominal or Categorical</u>       |
|-----------------------------------|----------------|-------------------------------------|
| Academic Achievement Average      | Father's SES   | Form Level                          |
| Age in Calendar Year 1995         | Mother's SES   | Gender                              |
| Age on Arrival                    |                | Have You Read L1 this year?         |
| Amount of Weekly L1 Reading       |                | Is Reading in Samoa Important?      |
| L1 Test Scores                    |                | Language of Schooling in Samoa      |
| L2 Test Scores                    |                | Reasons for coming to NZ            |
| LOR in NZ                         |                | Relation who is a Matai             |
| LOR in Samoa                      |                | School Type in Samoa                |
| Self Rated Reading Ability in L1  |                | Type of Reading Material in L1      |
| Self Rated Reading Ability in L2  |                | What Language is Used at Church?    |
| Self Rated Speaking Ability in L1 |                | Which Language Did you Read First?  |
| Self Rated Speaking Ability in L2 |                | Which Language Do You Read Better?  |
|                                   |                | Which Language Do You Speak Better? |
|                                   |                | Why is reading L1 important?        |

Following the procedure of Ehrman and Oxford (1995), the data are discussed only when correlations exceed 0.20. Although this level is low, findings are reported at this level so that later research can further test them with other populations. The acceptable significance level is set at  $p < 0.05$ . Although this level may result in a high number of errors in view of the number of variables, it is used to suggest possible trends for further analysis.

## Chapter 4: Results and Discussion

This chapter will report the results of the research by focusing on the two research questions proposed in Chapter 1.

### ***General Characteristics of Samoan Born Students***

This section will report the general characteristics of Samoan born students in the study. Along the way appropriate results from the NZ born students will be added in. Results have been grouped under several headings, ie. Age and Residence, Schooling in Samoa, Family Background, Oral Language Ability, Reading Ability and Behaviour, Cloze Procedure Results and Academic Achievement.

As was mentioned earlier 29 of the 58 Samoan born students on the College's roll participated in the study. There were 14 students enrolled in Junior Forms (F3 and F4) and 15 in Senior Forms (Forms 5, 6, and 7). Fifteen were male and 14 female. Only twenty five different families were represented in the sample since there were four pairs of siblings in the group. There may well have been many others among the group who were related to each other.

Of the NZ born students in this study there were seven enrolled in Junior Forms and 13 in Senior Forms. Among the NZ born students there were 2 pairs of siblings making a total of 18 families. There were 9 males and 11 females.. This makes a total population of exactly 24 males and 25 females.

### **Age and Residence**

Ages of students at their 1995 birthday range from 14 to 21. The mean age is 15.8 years. The NZ born students were minimally older on average with a range of 14 to 18 years and a mean of 15.9. Table 11 presents ages, frequency and percent of the two sample populations.

Table 11: Age 1995

| Age | Samoan Born |         | NZ Born   |         |
|-----|-------------|---------|-----------|---------|
|     | Frequency   | Percent | Frequency | Percent |
| 14  | 6           | 21%     | 4         | 22%     |
| 15  | 11          | 38%     | 2         | 11%     |
| 16  | 4           | 14%     | 6         | 33%     |
| 17  | 2           | 7%      | 3         | 17%     |
| 18  | 5           | 17%     | 3         | 17%     |
| 21  | 1           | 3%      | -         |         |

Age on Arrival (AOA) in New Zealand varies from age 1 to 18 with a median of 7 and an average of just under 9 (8.8 yrs.). Table 12 presents the ages, frequencies and percentages for Samoan born students.

Table 12 Age on Arrival in New Zealand from Samoa

| Age | Frequency | Percent | Age | Frequency | Percent |
|-----|-----------|---------|-----|-----------|---------|
| 1   | 1         | 3       | 10  | 1         | 3       |
| 2   | 3         | 10      | 11  | 1         | 3       |
| 3   | 1         | 3       | 12  | 2         | 7       |
| 4   | 2         | 7       | 13  | 1         | 3       |
| 5   | 1         | 3       | 14  | 2         | 7       |
| 6   | 2         | 7       | 15  | 1         | 3       |
| 7   | 5         | 17      | 16  | 1         | 3       |
| 8   | 1         | 3       | 17  | 2         | 7       |
| 9   | 1         | 3       | 18  | 1         | 3       |

The data become more interesting when grouped by school age categories as presented in Table 13. Almost a quarter arrived too young to have started primary school. Over a third arrived at some point during their primary schooling, while a further tenth arrived during intermediate age years. This means almost half arrived sometime during their primary schooling years. Just over a quarter arrived at an age appropriate to secondary schooling.

Table 13: AOA by School Age Categories

| School Related Category | Frequency | Percentage |
|-------------------------|-----------|------------|
| Pre-Primary             | 7         | 24%        |
| Primary                 | 11        | 38%        |
| Intermediate            | 3         | 10%        |
| Secondary               | 8         | 28%        |

Closely related to AOA is Length of Residence (LOR) in both Samoa and New Zealand. Table 14 presents length of residence, frequency and percent for both countries.

The average LOR in Samoa is just over 8 years, with a range of 1 to 17 years. The average LOR in New Zealand is just over 6 1/2 years with a range of 1/2 to 14 years. In contrast, the NZ born students have lived nearly their full calendar ages in NZ. A mean of 15.2 years in NZ means that on average less than half a year has been lived outside NZ. In fact only one NZ born student had lived more than half a year in Western Samoa (8 years in fact), while two others had lived three years in American Samoa, a much more English speaking environment naturally.

**Table 14: Length of Residence in Samoa and New Zealand for Samoan Born Students**

| Length of Residence<br>years | Samoa      |         | NZ         |         |
|------------------------------|------------|---------|------------|---------|
|                              | Frequency  | Percent | Frequency  | Percent |
| 0.5                          | -          |         | 3          | 10      |
| 1                            | 1          | 3       | 3          | 10      |
| 2                            | 3          | 10      | 2          | 7       |
| 3                            | 1          | 3       | 2          | 7       |
| 4                            | 2          | 7       | 1          | 3       |
| 5                            | 3          | 10      | 1          | 3       |
| 6                            | 2          | 7       | 1          | 3       |
| 6.5                          | 1          | 3       | -          |         |
| 7                            | 3          | 10      | -          |         |
| 8                            | 2          | 7       | 3          | 10      |
| 8.5                          | -          |         | 1          | 3       |
| 9                            | -          |         | 3          | 10      |
| 9.5                          | -          |         | 1          | 3       |
| 10                           | 1          | 3       | 3          | 10      |
| 11                           | 2          | 7       | -          |         |
| 12                           | -          |         | 1          | 3       |
| 13                           | 2          | 7       | 3          | 10      |
| 14                           | 1          | 3       | 1          | 3       |
| 15                           | 2          | 7       | -          |         |
| 17                           | 3          | 10      |            |         |
| <b>Mean</b>                  | <b>8.3</b> |         | <b>6.7</b> |         |
| <b>Std. Dev.</b>             | <b>5.0</b> |         | <b>4.5</b> |         |

### Schooling in Samoa

Eight students reported not attending any school in Samoa. Of those that did the amount ranges from one year to twelve years, with an average of 3.7 years. Table 15 shows the amount of schooling in Samoa for these students. One third of students completed only three or fewer years of schooling prior to coming to NZ, while not quite one in five had between three and eight years of primary schooling and only 16% had any secondary

schooling. Only one NZ born student had any schooling in Samoa for a total of three years in state bilingual schools.

**Table 15: Amount of Schooling in Samoa**

| <b>Time in Years</b> | <b>Frequency</b> | <b>Percentage</b> |
|----------------------|------------------|-------------------|
| 0                    | 8                | 28                |
| 1 - 2                | 7                | 23                |
| 3 - 5                | 7                | 23                |
| 6 - 8                | 4                | 13                |
| 9 - 12               | 5                | 16                |

For students attending school in Samoa 13 went to state schools, 5 to religious or pastor's schools and one went to both. Six claimed that the school they attended used only Samoan, two that only English was used and 14 experienced schooling that used both languages.

### **Family Background**

Parental Socio-Economic Status and the presence of Matai status relatives contribute to each student's family background. Table 16 presents the frequency of both parents' SES. It is worth noting that six Samoan born students had a deceased father. For Samoan born students, fathers' SES tends to group around levels 5 and 6 while mothers' SES is much more evenly distributed, though with a greater volume at the lower levels. Interestingly it is the women who have the highest SES. Among NZ born students, parental SES is very similar throughout with nearly identical distributions. On average the NZ born students' parents have slightly higher SES.

Spearman rank correlations (Appendix 9) show that for Samoan born students maternal SES has a number of interesting relations. On a technical note, the correlation signs have been reversed since higher SES values are represented by the lower end of the Elley-Irving scale. There is a significant, yet moderate, positive correlation between mother's SES and age on arrival in NZ (.4467), amount of schooling in Samoa (.5077) and length of residence in Samoa (.3964). On the other hand, there is a significant, yet moderate, negative correlation between Mother's SES and length of residence in NZ (-.4102) and self-rated ability to speak English (-.3909). It would appear that the longer the student

lived and studied in Samoa the higher his or her mother's SES here in NZ, whereas those whose mother has a lower SES have been longer in NZ and believe they speak English well. Perhaps the longer a Samoan mother is in NZ the poorer her socio-economic prospects.

The effect of maternal SES is also evident among NZ born students (Appendix 10) wherein mothers' SES correlates negatively with fathers' SES (-.5594); ie. as mothers' SES improves the fathers' tends to fall. Mothers' SES also correlates negatively with amount of weekly Samoan reading (-.5655) and positively with self-rated ability to speak English (.5319). In other words, as mothers' SES improves then the amount of Samoan reading goes down and the sense of oral proficiency in English increases. It would seem that Samoan women who have been in NZ long enough to have secondary age children born in NZ have even lesser socio-economic prospects than those who have been here a shorter time and that there is an impact on the children's reading in L1 and speaking in L2.

**Table 16: Parental Socio-Economic Levels**

| SES level        | Samoan     | Born       | NZ         | Born       |
|------------------|------------|------------|------------|------------|
|                  | Mother     | Father     | Mother     | Father     |
| 1                | 2          | -          | 1          | 1          |
| 2                | 2          | 1          | 1          | 1          |
| 3                | 4          | 2          | 3          | 2          |
| 4                | 4          | 4          | 4          | 3          |
| 5                | 4          | 8          | 2          | 5          |
| 6                | 6          | 7          | 4          | 2          |
| 7                | -          | -          | 1          | 2          |
| 8                | 6          | -          | 1          | -          |
| <b>Mean</b>      | <b>4.9</b> | <b>4.8</b> | <b>4.5</b> | <b>4.5</b> |
| <b>Std. Dev.</b> | <b>2.2</b> | <b>1.1</b> | <b>1.8</b> | <b>1.7</b> |

*Note: Table shows frequency. One case missing.*

Matai status is a traditional Samoan way of conveying prestige and importance that has carried on in NZ. Most Samoan born children have a matai in their family (23 of 29) who in the main is their own father (39%) or an uncle (26%). Only 70% of NZ born students reported having a Matai relation. Again father and uncle dominate with a combined total of 59% of all matais selected. Table 17 shows the matai relationship frequencies for both groups.

**Table 17: Matai in the Family**

| Relation        | Samoan Born Frequency | NZ Born Frequency |
|-----------------|-----------------------|-------------------|
| Father          | 11                    | 7                 |
| Uncle           | 6                     | 9                 |
| Other           | 4                     | 5                 |
| None or Unknown | 6                     | 6                 |

*Note: More than one matai possible per student.*

Church attendance is the norm for the Samoan born students, while just two of the NZ born students do not attend. Table 18 shows the predominant language of their church as reported by the students. Two thirds of Samoan born pupils go to a church that uses Samoan primarily while a quarter go to English speaking churches and one tenth reported that both languages are used. Among NZ born pupils Samoan language and bilingual churches prevail over purely English speaking ones.

**Table 18: Church Language**

| Language  | Samoan Born Frequency | NZ Born Frequency |
|-----------|-----------------------|-------------------|
| Samoan    | 19                    | 11                |
| English   | 7                     | 3                 |
| Bilingual | 3                     | 4                 |
| None      | -                     | 2                 |

Samoan born students were asked to give reasons for why their families had moved from Samoa to New Zealand. A variety of reasons were given though they easily collapsed into a few significant general categories; ie. Education, Economics, Better Life, Family Reunion, Other, Unknown/Not Given. Improved educational opportunity in New Zealand was selected 14 times for a total of 41% of all reasons given. The other reasons combined to a total of 48% while unknown or not given made up the balance. Table 19 gives a detailed breakdown.

**Table 19: Reasons for Migration to New Zealand**

| Reason            | Frequency | Percentage |
|-------------------|-----------|------------|
| Education         | 14        | 41         |
| Economics         | 6         | 18         |
| Better Life       | 5         | 15         |
| Family Reunion    | 2         | 6          |
| Other             | 3         | 9          |
| Unknown/Not Given | 4         | 12         |

*Note: Total exceeds 100% due to rounding. More than one reason was possible per student.*

## Oral Language Ability

Students rated their own ability to speak both Samoan and English. For Samoan born students the mean value for Samoan was 4.1 while the mean value for English was 3.9, representing a negligible average difference. For both languages, 73% of respondents claimed that their ability to speak each language was good or very good, though twice as many students rated their Samoan as very good as those who felt their English was very good. In contrast, the NZ born students have an extremely high view of their spoken English (95% rated it as good or very good) and a much lower perception of their Samoan (only 35% rated it as good or very good). The NZ born mean of 4.7 for English is much higher than the Samoan born perception of their L1 and the NZ born mean of 3.2 for Samoan is considerably lower than the Samoan born perception of spoken English as L2. Table 20 presents the percentage of students in each ability range.

| SAMOAN BORN | 1 | 2  | 3  | 4  | 5  | Mean  | Std. Dev. |
|-------------|---|----|----|----|----|-------|-----------|
| Samoan      | 3 | 7  | 5  | 21 | 52 | 4.103 | 1.145     |
| English     | 3 | 7  | 17 | 45 | 28 | 3.862 | 1.026     |
| NZ BORN     |   |    |    |    |    |       |           |
| Samoan      |   | 25 | 40 | 25 | 10 | 3.225 | .924      |
| English     |   |    | 5  | 20 | 75 | 4.700 | .571      |

**Table 20: Self-Rated Spoken Language Abilities**

When asked which language they spoke better 14 Samoan born students chose Samoan, 11 English and three thought they spoke both equally well. Not one NZ born child chose Samoan as the language they spoke better. 90% chose English and 10% thought they spoke both equally well.

## Reading Ability and Behaviour

Students rated their reading ability in both languages. Table 21 shows the percentages of self selected reading proficiency. The mean values show a similar split as was seen in spoken language proficiency between NZ born and Samoan born students. The Samoan born means for both languages are quite close together (Samoan = 3.6 and English = 3.9), whereas for NZ born students the means are quite a way apart (Samoan = 2.9 and English = 4.7). Interestingly, both groups express a greater confidence in their English

reading. 72% of Samoan born students rated their English reading as good and very good while only 55% rated their Samoan as good or very good, while 90% of NZ born ones thought that their English was good or very good but only 35% of them gave the same evaluation to their Samoan reading.

When the Samoan born students were asked which language they read better 15 (52%) selected English, 7 (24%) chose Samoan and 7 (24%) claimed they read both equally well. When asked the same question NZ born students preferred English almost exclusively; 85% English, 5% Samoan and 10% both equally well.

**Table 21: Self-Rated Reading Proficiencies**

| SAMOAN BORN | 1 | 2  | 3  | 4  | 5  | Mean  | Std. Dev. |
|-------------|---|----|----|----|----|-------|-----------|
| Samoan      | 7 | 14 | 7  | 24 | 31 | 3.603 | 1.277     |
| English     | 3 | 10 | 13 | 38 | 34 | 3.914 | 1.103     |
| NZ BORN     |   |    |    |    |    |       |           |
| Samoan      | 5 | 10 | 30 | 25 | 10 | 2.850 | 1.348     |
| English     | - | -  | 10 | 10 | 80 | 4.700 | .657      |

Although English is the language students believe they read better in both groups, it is not generally the language Samoan born students learned to read first. Sixteen (62%) learned to read Samoan first, nine (35%) learned to read English first and one claimed to have learned to read the two languages at the same time. Naturally enough, the NZ born students learned to read in NZ's dominant language; 75% in English, 10% both languages at the same time (one of these was the student who lived his first 8 years in Samoa after being born in NZ) and 15% in Samoan.

Samoan language reading is still common among Samoan born students. Twenty five (86%) claim to have read something in Samoan this year while only four denied such activity. When asked to quantify average weekly amounts of reading in Samoan the results are not so encouraging. Amounts ranged from none to as much as one student's claim of 6 1/2 hours each week, with a mean of just 1.4 hours per week. Just over a third did no reading in Samoan or gave no answer to the question. A quarter read less than an hour a week, leaving just 42% to read between one and six hours a week.

NZ born students are not doing as well at all. Although 89% claimed to have read something in Samoan this year, like the Samoan born students, about a third did no reading in Samoan on a regular basis. The range of time is from as little as 5 minutes per week to a maximum of 4 hours. There is no doubt that NZ born pupils read a lot less with an average of only just over half an hour. In fact, 55% of NZ born students read 5 minutes or less of Samoan each week. Table 22 displays the frequencies of pupils and their average weekly reading time in Samoan.

**Table 22: Average Weekly Reading Time in Samoan**

| Range of Times    | Samoan Born Frequency | NZ Born Frequency    |
|-------------------|-----------------------|----------------------|
| None or No Answer | 10                    | 7                    |
| less than 1 hour  | 12                    | 10                   |
| 1 - 2 hours       | 8                     | 2                    |
| more than 2 hours | 4                     | 2                    |
| <i>Mean</i>       | <i>1h 23 minutes</i>  | <i>38 minutes</i>    |
| <i>Std. Dev.</i>  | <i>1h 59 minutes</i>  | <i>1h 12 minutes</i> |

Despite these small amounts of actual Samoan reading, students believe that reading in Samoan is important with 23 (82%) Samoan born students and 14 (74%) NZ born students making the assertion. When asked why reading Samoan is important a wide range of answers were given by Samoan born students, whereas NZ born pupils gave a much more limited range of replies. However, it was possible to classify the responses, especially using LeVine and White's (1986) theoretical perspectives, as Cultural Identity, Cognitive Benefits of Bilingualism, Communication Advantages, Economic Advantage and No Answer/Not Important. The Cultural Identity rubric included such things as the importance of reading to know one's history, ancestors or religion and being able to pass on family knowledge. The words of one NZ born student express the clarity of thought and emotional strength of this motivation: "It's my culture and I feel it is my obligation and my duty to learn more about it. I should be able to read Samoan and know my culture better, because it is a part of who I am, and I should be able to share it with my children who deserve the right to know more about their culture." Table 23 portrays the results of this question. The predominant value of cultural identity can be seen in that over half of both groups of students gave reasons related

to this topic. Nearly a quarter of Samoan born students and a third of NZ born ones claimed that reading in Samoan is not important or gave no reason in reply to the question.

**Table 23: Reasons for Importance of Reading in Samoan**

| Reason                            | Samoan Born Frequency | NZ Born Frequency |
|-----------------------------------|-----------------------|-------------------|
| Cultural Identity                 | 18                    | 13                |
| Cognitive Benefit of Bilingualism | 2                     | -                 |
| Communication Advantages          | 2                     | -                 |
| Economic Advantage                | 2                     | -                 |
| No Answer/Not Important           | 7                     | 7                 |
| Other                             | -                     | 1                 |

*Note: More than one answer possible per student.*

Having identified why reading is important, how much reading they do and how well they rate their Samoan reading ability, students were then asked to identify the kinds of reading material they use when reading in Samoan. All answers were some combination of the categories suggested in the question as examples of reading materials. This raises a question as to whether students were responding appropriately. Nevertheless, religious materials (Bible, Sunday School material, hymnals) were selected most often as the source of Samoan reading material. Although NZ born students spend less time each week reading Samoan material it would appear that more of them, when they read, read church related literature and possibly turn more often to Samoan language newspapers. Table 24 presents the frequency of students in each group selecting each type of Samoan reading material.

**Table 24: Types of Samoan Language Reading Material**

| Type      | Samoan Born Frequency | NZ Born Frequency |
|-----------|-----------------------|-------------------|
| Religious | 16                    | 16                |
| Newspaper | 14                    | 11                |
| Letters   | 12                    | 7                 |
| Stories   | 9                     | 6                 |
| Other     | 0                     | 1                 |
| None      | 4                     | 2                 |

*Note: More than one type could be selected by each respondent.*

Correlation calculations (Appendix 9) elucidate the picture of the language proficiencies of migrant Samoan born students. There are some significant, and to be expected, connections surrounding self-rated ability to read Samoan. Those variables that

correlate positively with moderate strength (coefficients between .38 and .55) include length of residence in Samoa, age on arrival in NZ, amount of weekly reading in Samoan and self-rated ability to speak Samoan, which in turn correlates moderately with amount of schooling in Samoa. The one strong correlation, again naturally enough, is with the L1 cloze test (.74). Furthermore, length of residence in Samoa has a significant positive correlation with self-rated ability to read (.4041) and speak (.6022) Samoan and has a negative correlation with self-rated ability to speak English (-.4157). Likewise length of residence in NZ is significantly and negatively correlated with self-rated ability to speak (-.5617) and read (-.3673) Samoan, while there is a strong positive correlation between self-rated ability to read and speak English (.82). Thus the best Samoan language readers are those who have lived longest in Samoa, continue to read in the language, believe they speak the language well and attended schooling in Samoa. These factors create a strong sense of proficiency and real ability in Samoan reading and speaking, whereas longer time in NZ decreases this sense of L1 proficiency and contributes to a greater sense of ability in English reading and speaking.

Among NZ born students there are fewer language related significant correlations. However, self-reported ability to read Samoan correlated positively with L1 cloze performance (.5565) and self-reported ability to speak Samoan (.5351). This latter ability correlates well with the amount of time spent reading Samoan (.5228). Self-reported ability to speak English correlates strongly with self-reported ability to read English (.7293) while negatively with length of residence in NZ (-.4699). This latter coefficient may be anomalous, yet it is possible that the greater number of older senior students are more aware of their English language deficiencies than the younger junior students. It would appear from this examination of results that being born in NZ does not necessarily create inability in L1 reading or speaking but, perhaps, rather that success in L1 is dependent on individual personal attributes.

### **Cloze Procedure Results**

For Samoan born students the Samoan cloze procedure produced a range of scores from zero to 52%, with a mean of 35%. The English test produced a range from 2% to 60%,

with a mean of 44%. For NZ born students the Samoan test produced a much narrower range of zero to 42%, with a much lower mean of 14%. On the English test, however, the NZ born students had a range of scores from 22% to 68%, with a much higher mean of 54%.

When analysed according to the average reading level interpretation of cloze scores (cf. Table 9) it becomes quite clear that the English reading ability of both groups of students is superior to their Samoan. Table 25 presents the frequency of students in each reading ability category at the calculated reading age 12 for these two passages. None of the Samoan born readers, despite some having completed all of primary school, can be considered independent at the 12 year RA in Samoan. In contrast, 11 (38%) of these same students are by this test independent readers in English at the 12 year RA. Similarly, more of the students are at the 12 year RA frustration level in Samoan reading than in English. Despite the fact that 95% of NZ born students are at frustration level in Samoan only 10% of them are in the same position *vis a vis* English reading. Fully 55% of them are independent readers in English, while none of them are in Samoan.

**Table 25: Cloze Test Results by Reading Level**

| Reading Level at RA 12 | NZ Born      |              | Samoan Born  |              |
|------------------------|--------------|--------------|--------------|--------------|
|                        | Samoan       | English      | Samoan       | English      |
| Independent            | 0            | 11           | 0            | 11           |
| Instructional          | 1            | 7            | 17           | 11           |
| Frustration            | 19           | 2            | 12           | 7            |
| <i>Mean Score</i>      | <i>13.7%</i> | <i>54.4%</i> | <i>34.9%</i> | <i>44.1%</i> |
| <i>Std. Dev.</i>       | <i>13.0%</i> | <i>12.1%</i> | <i>16.3%</i> | <i>14.8%</i> |

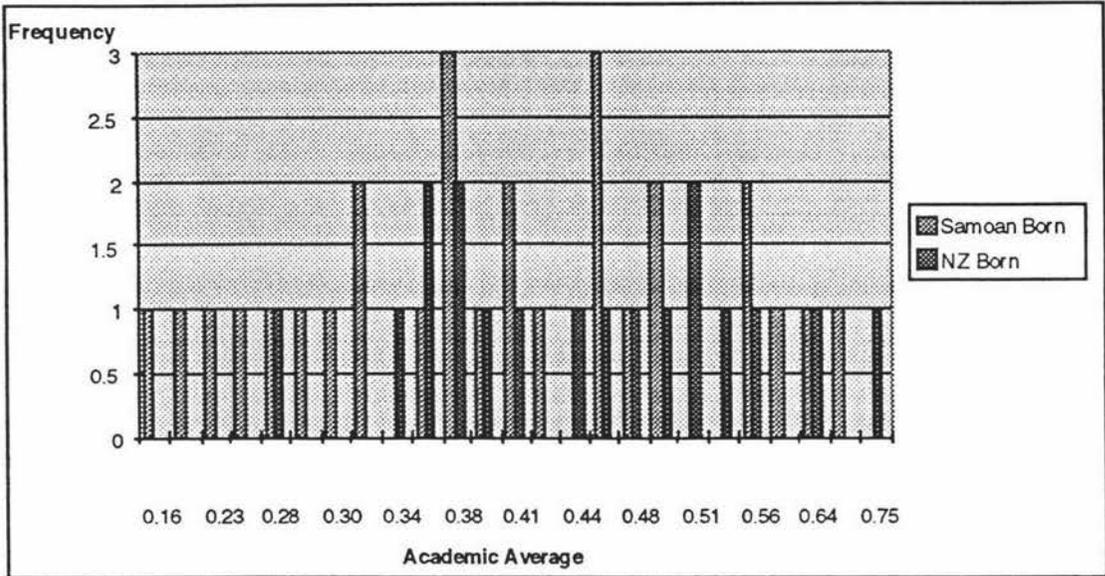
*Note: Frequency of students in each category.*

### **Academic Achievement**

The average academic achievement of the Samoan born students across the complete spectrum of subjects is not high. The mean value is 40.3% (SD = 12.6%), with a range of scores from 16% to 65%. Using a grade higher than 45% as grounds for promotion in any subject it appears that only eleven of the twenty nine (38%) are broadly passing. The situation for NZ born students is slightly more optimistic. The mean value for them is 46.1% (SD = 11.5%), with a range of scores from 28% to 75%. Using the same criteria for

promotion half of the NZ born students are passing. Chart 8 portrays the range and frequency of academic success for both groups.

**Chart 7: Average Academic Achievement**



By conversion of Junior Grades to percentages using the scale in Appendix 9 it was possible to generate statistics for each subject. It should be remembered that only the core subjects of English, Mathematics, Science and Social Studies are common to all students. Option subjects were entered on a random basis into each of the four option columns and thus do not represent any single subject or any logically related group of subjects. Table 26 presents the data for each subject expressed as a decimal fraction of 1.00.

**Table 26: Average Achievement by Subject**

| Samoan Born    | ENGLISH | MATHS | SCIENCE | SOCIAL STUDIES | OPT 1 | OPT 2 | OPT 3 | OPT 4 |
|----------------|---------|-------|---------|----------------|-------|-------|-------|-------|
| <b>AVG</b>     | 0.40    | 0.36  | 0.42    | 0.46           | 0.40  | 0.52  | 0.48  | 0.41  |
| <b>STD DEV</b> | .15     | .16   | .20     | .18            | .19   | .59   | .21   | .11   |
| <b>Number</b>  | 26      | 25    | 23      | 19             | 29    | 24    | 19    | 5     |
| NZ Born        |         |       |         |                |       |       |       |       |
| <b>AVG</b>     | 0.44    | 0.49  | 0.50    | 0.58           | 0.45  | 0.44  | 0.50  | 0.45  |
| <b>STD DEV</b> | 0.18    | 0.23  | 0.17    | 0.16           | 0.16  | 0.19  | 0.13  | -     |
| <b>Number</b>  | 17      | 16    | 17      | 6              | 18    | 18    | 11    | 1     |

It would appear that across the board in the core subjects the NZ born students are consistently superior, though the differences are not large.

## *Optimal Age of Arrival*

This section discusses the key issue of Cummins' hypothesis that age 12 is the optimal age of arrival in a second language environment. Before analysis of results the analytical framework is described and predictions based on Cummins' theory are proposed.

Based on an adaptation of Palij and Aaronson's (1992) classification scheme students were grouped into three age categories (AOA) depending on when they first arrived in NZ; ie. under the age of 5, between 5 and 12, and over 12. Cummins' recommended lengths of residence (LOR) required to attain BICS (basic interpersonal communication skills) and CALP (cognitive academic language proficiency) are used to classify students also. Table 27 outlines the categories that subjects can be placed into and the predicted language proficiency results associated with each stage.

**Table 27: LOR and AOA Stage Categories.**

| Factor          | Time or Age        | Anticipated Language Results                                      |
|-----------------|--------------------|---|
| LOR<br>in<br>NZ | less than 2 years  | L2 BICS not yet acquired  |
|                 | 2 to 5 years       | L2 BICS acquired, L2 CALP not yet acquired                        |
|                 | more than 5 years  | L2 CALP acquired  |
| AOA<br>in<br>NZ | 0 to 4 years       | L1 pre-primary school; L1 BICS only                               |
|                 | 5 to 12 years      | L1 some amount of primary to intermediate school; partial CALP L1 |
|                 | more than 12 years | L1 finished pre-secondary schooling; CALP L1 acquired             |

When plotted against each other to form a matrix it becomes obvious that there are only six possible combinations of these students in a NZ secondary school where the normal entry age is 13 and the normal age of departure is 18 (Table 28). The possible cells are numbered 1 to 6. The cells representing combinations not possible in a secondary school are marked NA for not applicable.

**Table 28: Grid of LOR and AOA Categories in a NZ Secondary School.**

| AOA      | LOR |     |    |
|----------|-----|-----|----|
|          | 0-1 | 2-5 | 6+ |
| 0-4      | NA  | NA  | 1  |
| a: 5-6   | 2a  | 3a  | 4a |
| b: 7-10  | 2b  | 3b  | 4b |
| c: 11-12 | 2c  | 3c  | 4c |
| 13+      | 5   | 6   | NA |

Cell 1 represents students who arrived before starting L1 primary school and who have had sufficient time to acquire CALP in L2 but may not have done so due to a lack of L1 CALP. Students in Cells 2, 3 and 4 will have had varying levels of L1 schooling and thus differing levels of L1 CALP. The differences in this group are determined by the amount of schooling they are likely to have had; (a) are children brought at age 5 or 6 who would be in no more than the primer or junior classes, (b) are children brought between ages 7 and 10 who would be in the standard grades of primary school and (c) are those brought at ages 11 or 12 who would be in Intermediate school.

They will all have L1 BICS mastered but students arriving at age 5 or 6 may not have had any or just a minimal amount of formal schooling, while those arriving between 7 and 10 should have acquired a modicum of L1 CALP ability. The older group, 11 and 12 year olds, should have mastered L1 CALP. In Cell 2 are students who have been in NZ a very short time and are still struggling to acquire BICS in L2. It is likely that Cell 2 students will have arrived in the group C age category and are likely to be found only in Form 3 if at all in the school. Cell 3 should have mastered L2 BICS already and would have arrived as either group B or C age children.

Cell 4 represents those students who have been in NZ long enough to have mastered L2 CALP and could have arrived at any of the ages in the range 5 to 12. Cell 5 and 6 are those students who will have completed L1 primary and intermediate schooling and should have L1 CALP mastered. Cell 5 students will not yet have learned L2 BICS while cell 6 students will be still struggling to master L2 CALP.

Based on this analysis of the cells' attributes, the anticipated rank order of results for cloze tests in L1 and L2 and academic achievement for these 6 categories of students are presented in Table 29. The results are presented in numerical order in one of two halves using the numbering of the groups used in Table 28. The lower half includes those groups expected to perform below the average for each variable while the upper half includes the groups expected to perform well. Group 3 is omitted since this is the group predicted to be in the middle for each variable. It should be noted that since there are only two students in group 3 their omission is not expected to adversely impact on results. The anticipated

performance of a comparison group of NZ born Samoan students is shown as group number

7. This prediction will permit a t-test of split half group means.

**Table 29: Anticipated Rank Order of Results by LOR and AOA Categories.**

|            | low        | high    |
|------------|------------|---------|
| L1 Samoan  | 1, 4, 7    | 2, 5, 6 |
| L2 English | 2, 5, 6    | 1, 4, 7 |
| Academic   | 1, 2, 5, 6 | 4, 7    |

Simply put, this prediction should show that the best L1 readers are those who arrived most recently and who were the oldest on arrival. The best L2 readers should be those who arrived youngest, or who have been in NZ the longest and those born in NZ. The best academic results should be from those who have been in NZ the longest having had at least 4 to 6 years of L1 schooling and from those born in NZ. In accordance with Cummins' hypotheses, the best overall package for immigrant students should be category 4 students. Group 4 are placed in the low half of L1 performance since this group includes students who have had very little L1 schooling. Table 30 shows clearly that there were only 10 students in group 4 who had a maximum of 3.5 years of schooling in Samoa and who had an average of 1.9 years of schooling in Samoa.

Using the information in Table 14 and Table 12 the numbers and percentages of students in each group indicated by Table 28 can be calculated. Table 30 shows that 20% of students have been in NZ less than two years, 17% between two and five years with nearly two-thirds more than six years in NZ. On the other hand, 27% had arrived before the age of five, 44% between the ages of five and twelve and another 27% after the age of twelve.

**Table 30: Frequencies and Percentages of AOA and LOR Cells**

| AOA      | LOR     |         |          | TOTAL   |
|----------|---------|---------|----------|---------|
|          | 0-1     | 2-5     | 6+       |         |
| 0-4      | na      | na      | 8 (28%)  | 8 (28%) |
| a: 5-6   | -       | -       | 2 (7%)   | 2 (7%)  |
| b: 7-10  | -       | -       | 8 (28%)  | 8 (28%) |
| c: 11-12 | 1 (3%)  | 2 (7%)  | -        | 3 (10%) |
| 13+      | 5 (17%) | 3 (10%) | na       | 8 (27%) |
| TOTAL    | 6 (20%) | 5 (17%) | 18 (63%) |         |

At this stage, without further detailed statistical analysis, it is possible to compare the anticipated average score for the various immigration categories with the actual results

for Samoan born students. The scores of the NZ born students are included for comparison. Table 31 presents the average score, as calculated by MS Excel's pivot table function, for each immigration category for the two language tests and academic achievement. The table collapses the distinctions within categories 2, 3 and 4 since there are so few in each category. Values have been rounded to the nearest whole number and are expressed as percentages.

**Table 31: Average Academic and Reading Achievement by Immigration**

**Category**

| Immigration Category | L1 Samoan | L2 English | Academic |
|----------------------|-----------|------------|----------|
| 1                    | 30        | 51         | 39       |
| 2                    | 42        | 32         | 42       |
| 3                    | 40        | 31         | 30       |
| 4                    | 29        | 50         | 41       |
| 5                    | 46        | 32         | 45       |
| 6                    | 43        | 39         | 39       |
| 7*                   | 14        | 54         | 46       |
| <i>Mean</i>          | 35        | 44         | 40       |

\*7 is born in NZ

Table 32 shows the rank order contrast of expected and actual results. Actual results are placed in top and bottom halves by their relationship to the mean score for each variable as displayed in Table 31. There appears to be a high degree of similarity of placement between anticipated and actual results.

**Table 32: Anticipated vs Actual Rank Order of Results by Immigration**

**Category**

| Anticipated | low        | high       |
|-------------|------------|------------|
| L1 Samoan   | 1, 4, 7    | 2, 5, 6    |
| L2 English  | 2, 5, 6    | 1, 4, 7    |
| Academic    | 1, 2, 5, 6 | 4, 7       |
| Actual      | low        | high       |
| L1 Samoan   | 1, 4, 7    | 2, 5, 6    |
| L2 English  | 2, 5, 6    | 1, 4, 7    |
| Academic    | 1, 6       | 2, 4, 5, 7 |

To falsify the apparent similarity of order shown in the averages of each cell a t-test was carried out on these split halves to determine whether the group means are truly different. Shown in Table 33 are the t-test calculations of the mean difference between the

two halves and the 2 tail significance of the difference of means at the .05 level. This analysis seems to clearly indicate that the differences are significant for the two language tests but not for academic average.

**Table 33: T-Test Split Half Difference Results**

|                         | N  | Mean  | SD   | Mean Difference | t-value | DF | 2-Tail Sig. |
|-------------------------|----|-------|------|-----------------|---------|----|-------------|
| <b>Samoan Test</b>      |    |       |      |                 |         |    |             |
| bottom                  | 38 | .2116 | .174 | -.2351          | -3.97   | 45 | .000        |
| top                     | 9  | .4467 | .057 |                 |         |    |             |
| <b>English Test</b>     |    |       |      |                 |         |    |             |
| bottom                  | 9  | .3422 | .158 | -.1836          | -4.00   | 45 | .000        |
| top                     | 38 | .5258 | .115 |                 |         |    |             |
| <b>Academic Average</b> |    |       |      |                 |         |    |             |
| bottom                  | 17 | .4100 | .130 | -.0339          | -0.90   | 43 | .375        |
| top                     | 28 | .4439 | .119 |                 |         |    |             |

Having established that there is some support for Cummins' hypothesis, at least in terms of reading or linguistic ability, it is important to investigate which variables correlate significantly with the reading tests. To that end Pearson and Spearman correlation coefficients were calculated (Appendix 9 and 10). First, it should be pointed out that there is no significant relationship of any variable with academic achievement. This is consistent with the t-test results for academic average. The three critical variables for this hypothesis show important and significant correlations of moderate strength, which are summarised in Table 34.

**Table 34: Selected Correlation Coefficients for AOA and Cloze Tests**

| Correlates | L1 Test | L2 Test  |
|------------|---------|----------|
| AOA        | .4096*  | -.5159** |
| LOR Samoa  | .3812*  | -.4915** |
| LOR NZ     | -.4075* | .5890**  |

\* = Sig. LE: .05; \*\* = Sig. LE: .01 (2 tailed)

This is a strong inverse relationship. Students who have been longer in NZ and arrived younger do better in the English reading test, while those who arrived at an older age do better in L1. In addition, if a student does well in one language he or she is unlikely to do well in the other language. There appears to be a trade-off of ability as Palij and Aaronson (1992) reported, contrary to Cummins' linguistic interdependence hypothesis or the

'semilingualist' argument. It should be noted here that there are no significant relationships for NZ born students involving length of residence and language proficiency or academic achievement.

## Chapter 5: General Discussion

This chapter will give a considered evaluation of the findings in light of the theoretical concerns raised in chapter 2. Before embarking on a discussion of the results, it is important to consider the limitations of the study. After reviewing the tested hypothesis a general discussion on the application of theory to the researched context will be undertaken. The chapter will conclude with some suggestions for future directions of work on this topic.

### *Limitations*

There are some serious limitations of this study that need to be identified immediately. The nature of the sample population is problematic. It is quite small (n=29 Samoan born) and worse it is a voluntary self-selection rather than a random sample. Further the sample is drawn from just one school and may not be representative at all of Samoan born students. The necessity, caused by ethical and privacy considerations, of obtaining informed consent from caregivers and students does create a serious problem for sampling. Thus, there is a real limitation on the generalisability of findings and conclusions.

The nature of the study itself is also problematic. It is a cross sectional study, thus the long-term academic achievement progress of students available in a longitudinal study is not present. The results are correlational not causal thus, as Stanovich (1986) pointed out in the context of variables involved in reading achievement, there is the possibility of mistaking a significant correlation for a cause. Further, the correlations are not strong; few meet the .05 significance level and those that do range from only +/- 0.3 to +/- 0.6. Thus the findings are exploratory in nature rather than conclusive. The lack of triangulation, in that ethnographic methods were not used (eg. parent interviews), also goes a way to limiting the meaning of the findings.

The mechanics of the study also raised some difficulties. The lack of test room control to ensure individuality of results for the batch of tests done by the Samoan born students fogged the results. That there is only one measure of CALP (cloze test) meant that

there was inadequate investigation of the cognitive make-up of the students. Assumptions have had to be made about the cloze test as a measure of CALP. These included: that a reading age of 12 is equivalent to adult capacity; that the extract used is a valid sample of reading age 12; that the narrative genre is a valid sample of secondary school reading material and that a cloze score of 54% is a valid indicator of independent reading age.

Notwithstanding these limitations, and bearing them in mind, the balance of the chapter will discuss the reported findings as significant indicators of student performance and ability. Potential generalisations will be identified.

### ***Age on Arrival Hypothesis***

Cummins' hypothesis, that age 12 is the optimal age to change country and language, predicted accurately the rank order of high and low achieving students in terms of reading proficiencies (Table 29) in the two languages. This alone should not be surprising even if Cummins' theoretical framework is not accepted. The fact that reading language proficiency is predicted by length of exposure and age on arrival is commonsense. Exposure, use and importance of a language to a child result in that language's development. So one would expect proficiency in Samoan or English to correlate with length of time spent in or the age that a child leaves or arrives either Samoa or New Zealand.

From an analysis of the t-test means (Table 33) for the top and bottom halves it appears that, as a group, the best Samoan readers do not make the cut off for independent reading in either language while they attain instructional level in L1. Although not a high level of competence in L1 for the top half, this is not an example of semilingualism. Cummins' threshold levels (Figure 1) clearly indicate that dominant bilingualism would better describe this top half group. One must remember that the need for Samoan literacy in Samoan secondary schooling is limited and that the general use of Samoan literacy in NZ society is even more limited. Thus, we should not be surprised that the actual level of Samoan reading attainment of the newest and oldest age migrants is not actually very high. In a similar fashion, the best English readers, as a group, are only 1.5% away from being classed as independent readers in English, while they read at a frustration level in Samoan.

Again, dominant bilingualism best describes this other half, only this time the dominance is in English.

However, the inverse relationship of reading ability in the two languages (Table 34) is contrary to Cummins' theories. It would appear that students can either read in one language or the other at or near a level that may be sufficient for functional literacy in secondary schooling. This finding is consistent with Palij and Aaronson's (1992) analysis of bilingual language development. The fact that, as exposure increases in one language, ability in the other language decreases is also commonsense. A language that is not used as much, which is not as salient environmentally and for which a child has less function will not develop and will most probably atrophy; while the other, more socially and psychologically powerful, language will develop. This encourages the idea that longer exposure to English brings increased reading ability in the language. To the extent that English reading proficiency is important for schooling success in NZ or in Samoa then more exposure to English, through longer residence in NZ and arrival at younger ages, is important.

This trade-off is not inconsistent with Cummins' conception of the effect of length of residence and age on arrival. What is inconsistent is that the two languages do not develop or contract together or that there is a threshold of L1 literacy ability necessary for L2 literacy development. These students can more or less master L2 literacy for schooling purposes without making a great deal of progress in L1. Since these results have not been contrasted with the English reading ability of matched English L1 students it is not possible to determine whether there is a negative consequence on reading ability as a result of submersion style schooling.

A further contradiction to Cummins' hypothesis is the lack of correlation between language proficiency and academic achievement. Indeed no variable used in the study correlates with academic achievement. Neither half group is performing extraordinarily well academically, though certain individuals are doing well enough to progress to the next level at the end of the year. It does not seem that the actual level of attainment for this group of Samoan students is terribly different from the pattern of results reported nationwide by

NZQA (Table 2). It would be interesting to track these students to end of year results and compare them with both national and school-based norms to determine if these Samoan students are out or under performing relative to other Pacific Islanders and the rest of NZ.

Nevertheless it appears that Cummins' (1984a) own position that language is an intervening variable is supported. Further discussion on what the more causal variables are will be raised later in this chapter. Suffice it to say that individual, culturally shaped attributes are more responsible for educational attainment than linguistic or socio-economic variables.

## ***Discussion***

It seems appropriate to discuss the findings of this study in terms of the topics introduced in Chapter 2's literature review. Throughout the discussion speculation as to possible implications for the college and unanswered questions will be mentioned.

### **Contexts of Bilingual Education**

The provision of education for newly migrant NESB students in the college, in which this study is based, has only one major structural solution. For a small number of students in their first year in the country a one year intensive ESOL programme is offered. After that NESB students are mainstreamed with all other students, a majority of whom have English as their first language. The first year could be considered a type of L2 immersion as Porter (1990) recommended,. However, there is no doubt that submersion defines the overall educational process. A full policy and implementation analysis would have to be undertaken to determine whether these educational structures (see section on Contexts of Bilingual Education) were empowering or disabling (Cummins, 1986b) LM students in the college.

Nevertheless, it would appear that in some dimensions the college is seeking to be additive and collaborative with the Maori and Samoan ethnic communities through the employment of respective liaison personnel and the provision of Maori language and culture instruction in the curriculum. The issues of reciprocal interaction curriculum and advocacy oriented assessment are primarily the responsibility of individual teachers and departments

within the college. Yet there is effort going into professional development that enhances the possibility of these being implemented. Specifically, programmes such as Learning Through Language and interest in Learning Styles pedagogy come to mind. Further investigation of the structural responses identified by Lucas (1993; Lucas, et. al., 1990; Lucas and Katz, 1994) and Porter (1990) should be carried out by the college and pilot implementation should be attempted. Notwithstanding the college's efforts towards an empowering educational experience for LM students, the advent of major curriculum and assessment changes ushered in by NZQA and the Ministry of Education may well overtake any school-based structural responses to these issues.

In any event at present, Samoan language has no official place, despite its widespread use by students, in the curriculum or in the cultural life of the college other than at the distinctive features level 3 (Kalantzis, et. al., 1989). This includes extra-curricular activities such as Samoan culture group performances and Pacific Islands cricket (kilikiti). The college's likely future response to the draft curriculum document on Samoan in the NZ schooling system (Learning Media, 1994e) cannot be determined. Though, if there were significant demand from families, as Genesee (1988) and Burnaby (1988) have indicated is essential in the Canadian context, the college would be supportive in its response.

### **Cultural Responses**

Overall school-based structural responses are dependent on the bigger picture of NZ's response to cultural diversity, pluralism and difference (recall the discussion in the section on Culture: Meaning and Responses). The various changes in NZ education make it difficult to predict outcomes for LM students. Nonetheless, the various trends, including pressure for direct resourcing of education and emphasis on personal, individual responsibility, tend to indicate that innovative, liberal, government sponsored responses are unlikely. Further, as Fishman ( 1989a, 1989b, 1989c) has pointed out, not only do the Samoan community need to become active in demanding a greater place for their vernacular as an instructional medium, but also the majority culture population must see that provision as a positive step in lessening the relative disadvantage of LM students and families.

A positive response from the majority culture population seems unlikely. Since secondary education in Samoa is primarily in English and since a large majority of Samoan immigrants have come to NZ for improved educational opportunities for their children, it must seem very contradictory to majority culture New Zealanders to be asked to provide, through taxation, Samoan language schooling to raise the educational outcomes of Samoan students when such an education is not provided in Samoa itself. This may well reflect inherent racial prejudice on the part of majority culture New Zealanders, as Paulston (1982) suggested in the Swedish context, but it is a question that will be asked and must be answered by Samoan elites who act as apologists and advocates for Samoan vernacular education.

Fishman (1989b) made it clear that educational outcome improvements cannot be used as an appropriate reply to this question. His (Fishman, 1989b: 475, 478-479) words are worth recalling: "positive academic outcomes may or may not necessarily be forthcoming, ... the real significance of using disadvantaged vernaculars as instructional co-media ... is that such use symbolizes a lessening of relative disadvantage". Bullivant (1981, 1986) has made it obvious that prolonged and pronounced state-funded pluralism cannot be sustained by a nation state. Apologists for new vernacular medium education may well have look to alternative models of funding to achieve their ends. In any event, a further potential downside of vernacular medium education is that of socio-economic ghettoisation as identified by Porter (1990). Only the Samoan families and communities can resolve these conflicting agendas as to whether the life chance interests of their children are best served by continued submersion education in English or by L1 maintenance education in either Samoan immersion or Samoan-English bilingual schools. Perhaps no one system will be appropriate for all.

Kalantzis, et. al. (1989) have made it clear that it is impossible for minority ethnic communities to bring their culture holus-bolus into a new land, society and culture, other than at the superficial level. Whether Samoan families are already aware of this impossibility and have welcomed it in exchange for the benefits of life in NZ must be considered by the Samoan elites working towards Samoan language education in NZ. The

maintenance of significant institutions that provide powerful sociocultural functions (Fishman, 1989e) for Samoan language is problematic in NZ. There is a clear difference between the NZ born and Samoan born students in this study that indicates a trend away from Samoan towards English as the primary means of expressing Samoan ethnicity in NZ. Bilingual churches, English language schooling and work places, lack of Samoan reading and self-perceived superior ability in English all suggest that the language shift trends identified by Fishman (1989a) are already in progress.

### **Bilingual Literacy**

Equal strength bilingualism is rare and probably unnecessary. What is so striking about the results for NZ born students is, not that they read significantly better in English with a higher mean and a much higher top score, but that they read so much more poorly in Samoan. 95% of them are reading below a 12 year RA in what is their L1, despite high church attendance and positive motivation to master Samoan literacy. These students show that mastery of English is at the expense of Samoan literate proficiency, yet the students appear to have enough Samoan, in their opinions, for at least the level of social interaction (BICS) that their families and churches, indeed their whole culture, requires. Perhaps the students with lowest Samoan proficiency have the weakest social ligatures to their ethno-cultural group, but such a comment is highly speculative.

The predominance of cultural ligature type reasons for the importance of Samoan reading clearly indicates that these students believe L1 reading is important for cultural identity and belonging. For this reason alone, the introduction of Samoan language and culture to the school's curriculum is to be recommended. The ability to read confidently and successfully in one's L1, whether it has positive academic outcomes or not, is an advantage for cultural belonging which is an outcome NZ can hardly oppose. But to go beyond Samoan L1 literacy and language education (à la the way French, German, Maori and Japanese are taught in the college) to full or partial Samoan L1 schooling would be controversial and possibly counter-productive to the aims of Samoan migrant families, let alone those of the NZ state.

## Academic Achievement

The quality of education in Samoa must be questioned by the literacy test results of the students who have had significant amounts of schooling in Samoa. Their results are noticeably lower than the English language results. This could be construed as an indicator that students in Samoa are not receiving as good an education as Samoan students in NZ. This may be the product of the differing economic resources available to schooling in the two countries. Alternatively, it might be due to Samoa's lack of a full vernacular (L1) education system through to the end of secondary school. Perhaps some interaction of these and other elements conspires to deprive Samoan students from the quality of education their families seek for them here in NZ.

The issue of academic success is unanswered. The fact that these students do not have a highly developed CALP in Samoan has not been associated with academic achievement or difficulty. The overemphasis on language or literacy variables in academic achievement of LM students, as identified by Kalantzis, et. al. (1989), seems to be evident in this study. There are variables not investigated in this study that actually operate in a causative rather than correlational manner upon academic success for NESB students. Cummins has pointed clearly to the structure of bilingual education contexts. Trueba (1988) and others have identified the issue of cultural similarity of the family to the school. Harker and Nash (1990), among others, have pointed to the degree that families have a cultural capital appropriate to schooling. Perhaps Nicholson (1993a, 1993b) and others are correct in pointing to the importance of bottom-up reading instruction strategies in early literacy instruction. Conceivably, in the light of so many conflicting possibilities, the search for a single, albeit distal, low cost, high power causative variable to explain educational outcomes is somewhat akin to the search for the Holy Grail; compulsive, necessary but ultimately fruitless.

Troike (1984: 50) suggested "academic outcomes are always the complex results of interactions between the personal characteristics of the individual and his or her home/cultural background, and the physical, social, cultural, and human characteristics of

the educational setting.” The lack of correlational connection between researched variables and academic achievement clearly supports this position. The exact personal and home background factors and their interaction with school setting variables are not revealed in this study but their importance to scholastic attainment is obviously greater than the linguistic factors that were examined. This is a conclusion supported by Kalantzis, et. al. (1989). Details of home background and emergent literacy development interaction among various Pacific Islands groups here in NZ are being researched by University of Auckland developmental psychologists<sup>25</sup>. Therefore, there is hope that as more of the cultural background of these homes is understood by schools that adjustments to the educational setting will be made.

### ***Future Directions***

As can be seen by points raised in this chapter there are many things that deserve further research. More Samoan born students in other schools, both primary and secondary, should be tested and thus overcome the limitations of this small study. Testing of English L1 students with the English version of the cloze test would create useful norms, which is a recommended method of handling cloze procedure data. Longitudinal tracking of student academic and literacy performance would be beneficial in clarifying the impact of L1 literacy on school achievement. Interviews with Samoan families to explore the cultural factors that contribute to reading and academic success should take place.

These processes should not be limited to students in NZ. Testing, interviewing and surveying of Samoan students in Samoa would provide powerful data to clarify present speculative knowledge about the interaction of bilingual literacy and academic achievement for Samoan students. Such research would require communicative competence in Samoan language or a partnership with a Samoan L1 expert.

Once having established more details of the interaction of the various sociological, psychological, cultural and linguistic variables for Samoan L1 students, it would be highly advantageous to begin work on intervention procedures that would contribute to increased academic outcomes and life chances.

## ***Concluding Remarks***

Despite the limitations of this research and its needs for further exploration, there are some important achievements. The extensive literature review and bibliography function as a useful guide for discussion on the topics connected to bilingual literacy and academic achievement. As well, the findings contribute, albeit in a potentially conflictual manner, to the educational debate on state funded L1 education for NZ's third largest linguistic community, the Samoans. The college in which the research took place now has a much fuller statistical overview of its overseas born NESB population. Further, it has a specific picture of the L1 reading traits of Samoan born students. Perhaps most importantly for the author as a teacher of bilingual students, the research has developed for Samoan speakers a reading and language proficiency measurement method, at a level appropriate to the beginning of secondary schooling. Significantly, the procedure can be used easily by teachers and administrators who do not know Samoan. Finally, benchmarks have been established in one college that can be used as reference points for further research.

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# Appendices

## 1. Glossary

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|--|
| ADDITIVE BILINGUALISM: a category of bilingualism wherein students experience positive benefits both cognitively and academically.   |
| AOA: Age on Arrival in target country.   |
| BICS: Basic Interpersonal Communication Skills - the ability to carry on social intercourse.   |
| CALP: Cognitive Academic Language Proficiency - the ability to carry on schooling in a target language.  |
| EFL (English as a Foreign Language): English Language taught to students not normally resident in an English speaking country who may use the language for academic or vocational purposes rather than as an everyday L2.  |
| ESB: English Speaking Background person or country where English is L1.  |
| ESL or ESOL: teaching or learning of English as L2.  |
| GL: Grade Level, a reading difficulty level assigned to texts and to readers. This is based on the reading comprehension performance of school grade identified readers who form a norm reference for the text and test. A frame of reference commonly used in US or Australian reading instruction. |
| GRI: Guaranteed Retirement Income, a supplementary payment made by the NZ government to elderly persons with low incomes.  |
| HDS: High Degree of Academic Success.  |
| IMMERSION: a method of education where L1 students are educated in L2 without reference to their L1 and where all students are learning L2 simultaneously, that is there are no students who have the school language as their L1.   |
| L1: First Language learned (aka - mother tongue).  |
| L2: Second Language learned, often the language of the majority population of the target country.  |
| LDS: Low Degree of Academic Success.   |
| LM: Language or Linguistic Minority in contrast to the L1 of the dominant majority population in a target country.   |
| LOR: Length of Residence in target country.  |
| NESB: Non-English Speaking Background person or country where English is not L1.   |
| RA: Reading Age, a reading difficulty level assigned to texts and to readers. This is based on the reading comprehension performance of chronologically identified readers who form a norm reference for the text and test. A frame of reference commonly used in NZ reading instruction.            |
| SC: School Certificate, a nationally moderated external examination of school achievement normally held in the 5th form or 3rd year of secondary schooling.  |
| SEMILINGUALISM: a category of bilingualism for LM students wherein they do not attain functional literacy in either L1 or L2.  |
| SES: Socio-Economic Status as calculated using the Elley-Irving indexes which attribute a hierarchical ranking based on a combination of income earned and education required for occupational categories.   |
| SFC: Sixth Form Certificate, a nationally moderated internally assessed certification of school achievement held in the 6th form or 4th year of secondary schooling.   |
| SUBMERSION: education in L2 for LM children in classes where some children have the language of instruction as L1 and where the teacher does not understand the L1 of the LM children.   |

## 2. *Parent / Caregiver Information*

Dear Parent or Caregiver:

Your child has expressed an interest in participating in a research project that I am running at Waitakere College. I am trying to find out how well students born outside New Zealand can read in their first language and if being able to do that well makes it easier for them to do well in schooling in English language.

The project is approved by the Board of Trustees and has the support and cooperation of the College's staff. The project is supervised by Prof. W. Tunmer of Massey University and is a part requirement for the completion of a Masterate in Education degree.

Participants will be asked to do several things for me:

- complete a survey questionnaire about themselves and their family,
- do two reading tests in their first language and in English,
- allow me to look at their first report for the year to know how well they are doing at school,
- and possibly take part in a personal interview about their reading.

All information given to me will be treated in utmost confidence. No-one except my supervisor will be able to see what I collect. No names will be used and it will not be possible for anyone to figure out who did or said anything. If at any time you wish to withdraw your child from the project you have the right to do so. Your child will be given a brief report at the end of the project as to how they are doing in their English reading.

I believe this project is important for families who have children born overseas. I hope to be able to discover how much first language reading ability children should have to be able to do well at high school here in New Zealand. As you can imagine this information will help families and children improve their schooling by developing their reading. Your child's participation will be very useful to other families as well as to your own.

If you wish to contact me for further information you can do that on 473-0609 (res.) or 836-2069 (bus.).

Would you please indicate your approval or disapproval for your child to be part of this project by completing the form on the attached page and returning it to me at Waitakere College as soon as possible.

Sincerely,

Gavin Brown  
B. Ed. (TESL)  
Dean for ESOL Students

attachment: Approval Form

### 3. Test Instructions

#### Test Procedure

You will read the same story twice. Once in English and once in Samoan. You can read them in any order. In each version there are 50 blanks. All you have to do is write in the word that you think best fits the way the passage is written in terms of word meanings and rules of the language.

**Here is an example.**

Sally blew out the (1) \_\_\_\_\_ on her birthday cake.

The missing word is *candles* since it is part of our experience that we blow out candles on birthday cakes and since candles is a noun as required by the word 'the'.

**Another example.**

What did you have for (2) \_\_\_\_\_ today?

The missing word could be *breakfast* or *lunch* or *dinner* or *tea*, since they fit the expression we use for asking about people's eating habits. But it couldn't be *morning tea* or *a snack* since they are TWO word expressions.

**A last example.**

John went to the shop to buy some things his mother had forgotten to get on her way home. He got six farm eggs, half (3) \_\_\_\_\_ kilo of bacon and some pears.

The missing word can only be *a* because of the language rules of English which require that word in this situation.

So you can see that the answer word has to fit the idea and the language rules. Sometimes there will be only one correct answer and other times there will be a wide range of correct responses. You have to think about these same things in Samoan as well as in English.

**Remember to use only one word in each space.**

#### 4. Cloze Passages (Original Versions)

##### One Samoan Evening

Soon there were crowds of small boys and girls breaking away from their play groups on the playing field and coming over to watch our competition. I began to feel shy in case I should come last when it was my turn to hurl my spear, and make everyone laugh at me.

Iona walked over and aimed his spear. Everyone was quiet. They whispered softly and kept their gaze on Iona. Just then, there was a loud uproar from the teams who were playing rounders as they clashed over the bad play and the poor sportsmanship of Paua's team. I was so interested in the argument that I lost track of Iona's performance with his spear. When I turned back to them, three had already had their turn and it was now mine.

I have always believed that if you aren't well prepared before your turn, you won't have good luck. So I stepped back and prepared. Then I stepped forward and hurled. My spear hit the ground and travelled straight along the surface - but not very far. I tensed my body and pulled a face to cover my embarrassment. I was saved by a fight that broke out between Pua and Siala, the captains of the rounders teams. When we reached them, they were just breaking apart from pulling each other's hair, and the President of the Women's Committee was smacking them both with a stinging weed which she had pulled up from the ground.

We had to stop our competition after that because there were too many children crowding around us and we were worried in case we hit someone with our spear. So we went over to the game of rounders and helped the fielding team catch the big lemon they were using for a ball. The batting team were not very pleased with us because we got them all out, even though we were smaller than they were.

After a while, I lost interest in the game of rounders because there were too many playing and I had only touched the ball twice. So I quietly slipped away, just as my cousin Tai was breaking free from a scrum on the other side of the field to score a try with his football. I dashed straight over and tackled him around the stomach, felling him to the ground.

His team all ran over, complaining.

"You're not in that team," they cried. "You get off the field!"

## O se Afiāfi i Samoa

tusia e Afamasaga Samuelu

E lei umi lava ae amata loa ona gasolosolo mai tama ma teine mai a latou taalagōa e agai mai i le mea lea o loo fai ai la matou tauvaga. Ua amata nei ona ou lagona le matamuli ina nei tei ua ou ulivaa pe a oo i lou taimi e ta ai lau ti'a ma avea ai ma mea e talie mai ai tagata ia te au.

Ua savali atu nei i luma Iona ma faaata lana ti'a. Ua leai ma se isi e pisa. Ua nao le taumusumusumu lemu ma vaavaai totoa uma ia Iona. I lena lava taimi, sa faalogoia le feei leo tetele mai le isi itu i le mea o loo fai ai tuligasi'a ona o le taaalo leaga ma le faimamano o le au a Pu'a. Ua alu tele lou ulu i le finauga ua misi ai ia te au le gasologa o le taina o le ti'a a Iona. Ina ua ou toe talii mai, ua toatolu ua maea ona faasolo ma ua oo mai nei ia te au.

O lou talitonuga afai lava e te le sauni lelei ae lei oo mai le faasologa ia oe, e le manuia lau taumafaiga. Sa ou solomuli loa i tua ma sauni. Ona ou laa loa lea i luma ma ta. Ua pau lau ti'a i le eleele ma sosolo sao lava i luga o le eleele - ae le mamao. Ua ou tu faasao nei ma ufiufi ou mata e pupuni ai lou mataga tele. Ua faasaoia au e le fusuaga ua tupu nei i le va o Pu'a ma Siala, o taitai o le au tuligasi'a. Ina ua matou taunuu atu, ua amata ona tuu eseese i laua mai le futiga ulu sa fai ma o loo sasaina mai e le Peresetene o le Komiti a Tina i se vao maufu sa ia seiina mai le eleele.

Ua taofia loa la matou tauvaga i lea taimi ona ua tumu tele mai tamaiti i o matou tafatafa ma ua popole foi nei tei ua lavea se tamaitiiti ia matou ti'a. Sa matou agai atu loa i le mea o loo fai ai tuligasi'a ma fesoasoani i le au o loo taliltuaa i le pueina o le tipolo lapoa o loo fai ma polo. Ua le fiafia lava le au tata ia matou ona ua pepe uma ia matou a meamanu e matou te laiti atu ia latou.

E lei umi lava se taimi ae ou musu foi i le taaloga o le tuligasi'a ona ua toatele le autaaalo ma nao le faalua ona ou pai i le polo. Ma sa ou savalivali ese atu loa, ae ou vaaia loa lou tei o Tai ua mamulu mai i le sikalamu o loo faia i le isi itu o le malae e momoe e sikoa ma lana polo. Na ou momoe atu loa ma pue manava Tai ma faapau i lalo i le eleele.

Ua tau fai tamomoe mai nei lana au ma le le malilie ma fai mai.

“E te le iai i le au lena,” o le feei mai lea. “Alu ese mai ma le malae.”

## 5. Cloze Passages (Mutilated Versions)

### One Samoan Evening

by Afamasaga Samuelu, translated by Mabel Barry

This is part of a description of childhood activities in a Samoan village one evening.

Read it all the way through and put one word only in each of the numbered spaces.

Soon there were crowds of small boys and girls breaking away from their play groups on the playing field and coming over to watch our competition. I began to feel shy in case I should come last when it was my turn to hurl my spear, and make everyone laugh at me.

Iona walked over and aimed his (1) \_\_\_\_\_. Everyone was quiet. They whispered softly (2) \_\_\_\_\_ kept their gaze on Iona. Just (3) \_\_\_\_\_, there was a loud uproar from (4) \_\_\_\_\_ teams who were playing rounders as (5) \_\_\_\_\_ clashed over the bad play and (6) \_\_\_\_\_ poor sportsmanship of Paua's team. I (7) \_\_\_\_\_ so interested in the argument that (8) \_\_\_\_\_ lost track of Iona's performance with (9) \_\_\_\_\_ spear. When I turned back to (10) \_\_\_\_\_, three had already had their turn (11) \_\_\_\_\_ it was now mine.

I have (12) \_\_\_\_\_ believed that if you aren't well (13) \_\_\_\_\_ before your turn, you won't have (14) \_\_\_\_\_ luck. So I stepped back and (15) \_\_\_\_\_. Then I stepped forward and hurled. (16) \_\_\_\_\_ spear hit the ground and travelled (17) \_\_\_\_\_ along the surface - but not very (18) \_\_\_\_\_. I tensed my body and pulled (19) \_\_\_\_\_ face to cover my embarrassment. I (20) \_\_\_\_\_ saved by a

fight that broke (21) \_\_\_\_\_ between Pua and Siala, the captains (22) \_\_\_\_\_ the rounders teams. When we reached (23) \_\_\_\_\_, they were just breaking apart from (24) \_\_\_\_\_ each other's hair, and the President (25) \_\_\_\_\_ the Women's Committee was smacking them (26) \_\_\_\_\_ with a stinging weed which she (27) \_\_\_\_\_ pulled up from the ground.

We (28) \_\_\_\_\_ to stop our competition after that (29) \_\_\_\_\_ there were too many children crowding (30) \_\_\_\_\_ us and we were worried in (31) \_\_\_\_\_ we hit someone with our spear. (32) \_\_\_\_\_ we went over to the game (33) \_\_\_\_\_ rounders and helped the fielding team (34) \_\_\_\_\_ the big lemon they were using (35) \_\_\_\_\_ a ball. The batting team were (36) \_\_\_\_\_ very pleased with us because we (37) \_\_\_\_\_ them all out, even though we (38) \_\_\_\_\_ smaller than they were.

After a (39) \_\_\_\_\_, I lost interest in the game (40) \_\_\_\_\_ rounders because there were too many (41) \_\_\_\_\_ and I had only touched the (42) \_\_\_\_\_ twice. So I quietly slipped away, (43) \_\_\_\_\_ as my cousin Tai was breaking (44) \_\_\_\_\_ from a scrum on the other (45) \_\_\_\_\_ of the field to score a (46) \_\_\_\_\_ with his football. I dashed straight (47) \_\_\_\_\_ and tackled him around the stomach, (48) \_\_\_\_\_ him to the ground.

His team (49) \_\_\_\_\_ ran over, complaining.

"You're not in (50) \_\_\_\_\_ team," they cried. "You get off the field!"

## O se Afiāfi i Samoa

tusia e Afamasaga Samuelu

E lei umi lava ae amata loa ona gasolosolo mai tama ma teine mai a latou taalagoa e agai mai i le mea lea o loo fai ai la matou tauvaga. Ua amata nei ona ou lagona le matamuli ina nei tei ua ou ulivaa pe a oo i lou taimi e ta ai lau ti'a ma avea ai ma mea e talie mai ai tagata ia te au.

Ua savali atu nei i luma Iona (1) \_\_\_\_\_ faaata lana ti'a. Ua leai ma (2) \_\_\_\_\_ isi e pisa. Ua nao le (3) \_\_\_\_\_ lemu ma vaavaai totoa uma ia Iona. (4) \_\_\_\_\_ lena lava taimi, sa faalogoina le (5) \_\_\_\_\_ leo tetele mai le isi itu (6) \_\_\_\_\_ le mea o loo fai ai (7) \_\_\_\_\_ ona o le taaalo leaga ma (8) \_\_\_\_\_ faimamano o le au a Pu'a. Ua (9) \_\_\_\_\_ tele lou ulu i le finauga (10) \_\_\_\_\_ misi ai ia te au le (11) \_\_\_\_\_ o le taina o le ti'a (12) \_\_\_\_\_ Iona. Ina ua ou toe taliu (13) \_\_\_\_\_, ua toatolu ua maea ona faasolo (14) \_\_\_\_\_ ua oo mai nei ia te (15) \_\_\_\_\_.

O lou talitonuga afai lava e (16) \_\_\_\_\_ le sauni lelei ae lei oo (17) \_\_\_\_\_ le faasologa ia oe, e le (18) \_\_\_\_\_ lau taumafaiga. Sa ou solomuli loa (19) \_\_\_\_\_ tua ma sauni. Ona ou laa (20) \_\_\_\_\_ lea i luma ma ta. Ua (21) \_\_\_\_\_ lau ti'a i le eleele ma (22) \_\_\_\_\_ sao lava i luga o le (23) \_\_\_\_\_ - ae le mamao. Ua ou tu (24) \_\_\_\_\_ nei ma ufiufi ou mata e (25) \_\_\_\_\_ ai lou mataga tele. Ua faasaoina (26) \_\_\_\_\_ e le fusuaga ua tupu nei (27) \_\_\_\_\_ le va o Pu'a ma Siala, (28) \_\_\_\_\_ taitai o le au tuligasi'a. Ina (29) \_\_\_\_\_ matou taunuu atu, ua amata ona (30) \_\_\_\_\_ eseese i laua mai le futiga

(31) \_\_\_\_\_ sa fai ma o loo sasaina (32) \_\_\_\_\_ e le Peresetene o le Komiti (33) \_\_\_\_\_ Tina i se vao maufu sa (34) \_\_\_\_\_ seiina mai le elele.

Ua taofia (35) \_\_\_\_\_ la matou tauvaga i lea taimi (36) \_\_\_\_\_ ua tumu tele mai tamaiti i (37) \_\_\_\_\_ matou tafatafa ma ua popole foi (38) \_\_\_\_\_ tei ua lavea se tamaitiiti ia (39) \_\_\_\_\_ ti'a. Sa matou agai atu loa (40) \_\_\_\_\_ le mea o loo fai ai (41) \_\_\_\_\_ ma fesoasoani i le au o (42) \_\_\_\_\_ taliltuaa i le pueina o le (43) \_\_\_\_\_ lapoa o loo fai ma polo. (44) \_\_\_\_\_ le fiafia lava le au tata (45) \_\_\_\_\_ matou ona ua pepe uma ia (46) \_\_\_\_\_ a meamanu e matou te laiti (47) \_\_\_\_\_ ia latou.

E lei umi lava (48) \_\_\_\_\_ taimi ae ou musu foi i (49) \_\_\_\_\_ taaloga o le tuligasi'a ona ua (50) \_\_\_\_\_ le autaaalo ma nao le faalua ona ou pai i le polo. Ma sa ou savalivali ese atu loa, ae ou vaaia loa lou tei o Tai ua mamulu mai i le sikalamu o loo faia i le isi itu o le malae e momoe e sikoa ma lana polo. Na ou momoe atu loa ma pue manava Tai ma faapau i lalo i le elele.

Ua tau fai tamomoe mai nei lana au ma le le malilie ma fai mai.

“E te le iai i le au lena,” o le feei mai lea. “Alu ese mai ma le malae.”

## 6. Cloze Answers

| English<br>Number | Answer   | Samoan<br>Number | Answer      |
|-------------------|----------|------------------|-------------|
| 1                 | spear    | 1                | ma          |
| 2                 | and      | 2                | se          |
| 3                 | then     | 3                | taumusumusu |
| 4                 | the      | 4                | i           |
| 5                 | they     | 5                | feei        |
| 6                 | the      | 6                | i           |
| 7                 | was      | 7                | tuligasi'a  |
| 8                 | i        | 8                | le          |
| 9                 | his      | 9                | alu         |
| 10                | them     | 10               | ua          |
| 11                | and      | 11               | gasologa    |
| 12                | always   | 12               | a           |
| 13                | prepared | 13               | mai         |
| 14                | good     | 14               | ma          |
| 15                | prepared | 15               | au          |
| 16                | my       | 16               | te          |
| 17                | straight | 17               | mai         |
| 18                | far      | 18               | manuia      |
| 19                | a        | 19               | i           |
| 20                | was      | 20               | loa         |
| 21                | out      | 21               | ou          |
| 22                | of       | 22               | sosolo      |
| 23                | them     | 23               | eleele      |
| 24                | pulling  | 24               | faasao      |
| 25                | of       | 25               | pupuni      |
| 26                | both     | 26               | au          |
| 27                | had      | 27               | i           |
| 28                | had      | 28               | o           |
| 29                | because  | 29               | ua          |
| 30                | around   | 30               | tuu         |
| 31                | case     | 31               | ulu         |
| 32                | so       | 32               | mai         |
| 33                | of       | 33               | a           |
| 34                | catch    | 34               | ia          |
| 35                | for      | 35               | loa         |
| 36                | not      | 36               | ona         |
| 37                | got      | 37               | o           |
| 38                | were     | 38               | nei         |
| 39                | while    | 39               | matou       |
| 40                | of       | 40               | i           |
| 41                | playing  | 41               | tuligasi'a  |
| 42                | ball     | 42               | loo         |
| 43                | just     | 43               | tipolo      |
| 44                | free     | 44               | ua          |
| 45                | side     | 45               | ia          |
| 46                | try      | 46               | matou       |
| 47                | over     | 47               | atu         |
| 48                | felling  | 48               | se          |
| 49                | all      | 49               | le          |
| 50                | that     | 50               | toatele     |

## 7. Questionnaire

| <b>Questionnaire about Reading in Samoan</b>   |   | (Qnaire #) <input style="width: 50px;" type="text"/> |
|--|---|--|
| Form Level   | <input style="width: 100%;" type="text"/> |  |
| Your Name:   | <input style="width: 100%;" type="text"/> |  |
| 1 Gender: Male or Female?  | <input style="width: 100%;" type="text"/> |  |
| 2 What is your date of Birth?:   | <input style="width: 100%;" type="text"/> |  |
| 3 How old were you when you arrived in NZ?   | <input style="width: 100%;" type="text"/> |  |
| 4 How long have you lived in Samoa (include holidays of at least a month)?                                   | <input style="width: 100%;" type="text"/> |  |
| 5 How long have you lived in NZ?   | <input style="width: 100%;" type="text"/> |  |
| 6 Why did your family come to NZ?  | <input style="width: 100%;" type="text"/> |  |
| 7 How many years of schooling did you have in Samoa?   | <input style="width: 100%;" type="text"/> |  |
| 8 Which language did the school use for teaching?  | <input style="width: 100%;" type="text"/> |  |
| 9 What kind of school was it? (pastor or state)  | <input style="width: 100%;" type="text"/> |  |
| 10 What is your father's present job?  | <input style="width: 100%;" type="text"/> |  |
| 11 What kind of work did he do in Samoa?   | <input style="width: 100%;" type="text"/> |  |
| 12 What is his highest level of education?   | <input style="width: 100%;" type="text"/> |  |
| 13 What is your mother's present job?  | <input style="width: 100%;" type="text"/> |  |
| 14 What kind of work did she do in Samoa?  | <input style="width: 100%;" type="text"/> |  |
| 15 What is her highest level of education?   | <input style="width: 100%;" type="text"/> |  |
| 16 Is someone in your family a 'matai'? (y/n)  | <input style="width: 100%;" type="text"/> |  |
| If yes, what is their relationship to you?   | <input style="width: 100%;" type="text"/> |  |
| <i>Answer these questions on a scale of 1 to 5. 1=very poor, 2=poor, 3=satisfactory, 4=good, 5=very good</i> |   |  |
| 17 How well do you speak Samoan?   | <input style="width: 100%;" type="text"/> |  |
| 18 How well do you read Samoan?  | <input style="width: 100%;" type="text"/> |  |
| 19 How well do you speak English?  | <input style="width: 100%;" type="text"/> |  |
| 20 How well do you read English?   | <input style="width: 100%;" type="text"/> |  |
| <i>In your opinion:</i>  |   |  |
| 21 Which language do you speak better?   | <input style="width: 100%;" type="text"/> |  |
| 22 Which language do you read better?  | <input style="width: 100%;" type="text"/> |  |
| 23 Which language could you read first?  | <input style="width: 100%;" type="text"/> |  |
| 24 Do you go to church? (y/n)  | <input style="width: 100%;" type="text"/> |  |
| 25 What language is used most at that church?  | <input style="width: 100%;" type="text"/> |  |
| 26 Have you read anything in Samoan this year? (y/n)   | <input style="width: 100%;" type="text"/> |  |
| If yes, make a list of the kinds of things. (eg. Bible, newspaper, letters, stories, etc)                    |   |  |
| <input style="width: 100%; height: 20px;" type="text"/>  |   |  |
| 27 How much reading in Samoan would you do on average each week?   | <input style="width: 100%;" type="text"/> |  |
| 28 Is being able to read Samoan important to you? (y/n)  | <input style="width: 100%;" type="text"/> |  |
| If yes, give your reasons.   |   |  |
| <input style="width: 100%; height: 20px;" type="text"/>  |   |  |

**8. Conversion Scale: 5 point grade to decimal.**

| 5 pt scale | percent scale | 5 pt scale | percent scale |
|------------|---------------|------------|---------------|
| 5          | 90%           | 2.9        | 48%           |
| 4.9        | 88%           | 2.8        | 46%           |
| 4.8        | 86%           | 2.7        | 44%           |
| 4.7        | 84%           | 2.6        | 42%           |
| 4.6        | 82%           | 2.5        | 40%           |
| 4.5        | 80%           | 2.4        | 38%           |
| 4.4        | 78%           | 2.3        | 36%           |
| 4.3        | 76%           | 2.2        | 34%           |
| 4.2        | 74%           | 2.1        | 32%           |
| 4.1        | 72%           | 2          | 30%           |
| 4          | 70%           | 1.9        | 28%           |
| 3.9        | 68%           | 1.8        | 26%           |
| 3.8        | 66%           | 1.7        | 24%           |
| 3.7        | 64%           | 1.6        | 22%           |
| 3.6        | 62%           | 1.5        | 20%           |
| 3.5        | 60%           | 1.4        | 18%           |
| 3.4        | 58%           | 1.3        | 16%           |
| 3.3        | 56%           | 1.2        | 14%           |
| 3.2        | 54%           | 1.1        | 12%           |
| 3.1        | 52%           | 1          | 10%           |
| 3          | 50%           | 0.9        | 9%            |
|            |               | 0.8        | 8%            |
|            |               | 0.7        | 7%            |
|            |               | 0.6        | 6%            |
|            |               | 0.5        | 5%            |
|            |               | 0.4        | 4%            |
|            |               | 0.3        | 3%            |
|            |               | 0.2        | 2%            |
|            |               | 0.1        | 1%            |
|            |               | 0          | 0%            |

### 9. Correlation Coefficients: Samoan Born Students

|               |          |          |         |          |          |         |         |         |               |         |         |          |         |  |
|---------------|----------|----------|---------|----------|----------|---------|---------|---------|---------------|---------|---------|----------|---------|--|
| ACAD AVG      | 1        |          |         |          |          |         |         |         |               |         |         |          |         |  |
| AOA           | 0.0225   | 1        |         |          |          |         |         |         |               |         |         |          |         |  |
| L1 TEST       | -0.1741  | .4096*   | 1       |          |          |         |         |         |               |         |         |          |         |  |
| L2 TEST       | 0.2023   | -.5159** | -0.0446 | 1        |          |         |         |         |               |         |         |          |         |  |
| LOR NZ        | -0.0133  | †        | -.4075* | .5890**  | 1        |         |         |         |               |         |         |          |         |  |
| LOR SAM       | -0.0323  | †        | .3812*  | -.4915** | †        | 1       |         |         |               |         |         |          |         |  |
| RD ENG        | 0.2077   | -0.3443  | -0.153  | 0.0534   | 0.2258   | -0.338  | 1       |         |               |         |         |          |         |  |
| RD SAM        | 0.019    | .3850*   | .7454** | -0.0576  | -.3673*  | .4041*  | -0.0505 | 1       |               |         |         |          |         |  |
| SAM RD Amount | 0.2217   | -0.1438  | 0.1826  | 0.1757   | 0.052    | -0.1266 | 0.1381  | .4098*  | 1             |         |         |          |         |  |
| SPK ENG       | 0.2273   | -.4740** | -0.228  | 0.124    | .4025*   | -.4157* | .8262** | -0.0569 | 0.2859        | 1       |         |          |         |  |
| SPK SAM       | 0.0126   | .5759**  | .5707** | -0.2758  | -.5617** | .6022** | -0.1625 | .5542** | 0.0456        | -0.2004 | 1       |          |         |  |
| SCHL SAM      | -0.0275  | †        | 0.3607  | -.5229** | †        | †       | -0.1543 | 0.3585  | -0.1602       | -0.2804 | .4200*  | 1        |         |  |
| Father SES    | 0.2362   | -0.1086  | -0.2266 | 0.1983   | 0.0329   | -0.1066 | -0.0559 | 0.0082  | 0.0238        | -0.0057 | -.4254* | -0.0532  |         |  |
| Mother SES    | 0.0406   | .4667*   | -0.015  | -0.266   | -.4102*  | .3964*  | -0.1254 | -0.1445 | -0.2505       | -.3909* | -0.0045 | .5077**  | -0.2248 |  |
|               | ACAD AVG | AOA      | L1 TEST | L2 TEST  | LOR NZ   | LOR SAM | RD ENG  | RD SAM  | SAM RD Amount | SPK ENG | SPK SAM | SCHL SAM | F SES   |  |

† = trivial relationship, \* - Signif. LE .05 \*\* - Signif. LE .01 (2-tailed)

Note: Spearman Correlations shown for Father and Mother SES

### 10. Correlation Coefficients: NZ Born Students

|               |          |         |         |         |         |         |         |         |         |               |         |
|---------------|----------|---------|---------|---------|---------|---------|---------|---------|---------|---------------|---------|
| ACAD AVG      | 1        |         |         |         |         |         |         |         |         |               |         |
| L1 TEST       | 0.4088   | 1       |         |         |         |         |         |         |         |               |         |
| L2 TEST       | 0.2528   | 0.2949  | 1       |         |         |         |         |         |         |               |         |
| LOR NZ        | -0.4225  | -0.3274 | -0.1411 | 1       |         |         |         |         |         |               |         |
| LOR SAM       | 0.2076   | -0.0417 | 0.2439  |         | 1       |         |         |         |         |               |         |
| RD ENG        | 0.1025   | 0.0136  | 0.0026  | -0.144  | -0.2354 | 1       |         |         |         |               |         |
| RD SAM        | 0.3445   | .5565*  | 0.0618  | 0.0133  | -0.3481 | 0.1842  | 1       |         |         |               |         |
| SPK ENG       | 0.0976   | -0.1831 | 0.0638  | -.4699* | 0.149   | .7293** | -0.0615 | 1       |         |               |         |
| SPK SAM       | 0.2323   | 0.4401  | -0.2525 | -0.0159 | -0.0708 | 0.0303  | .5351*  | -0.2641 | 1       |               |         |
| SAM RD Amount | 0.1617   | 0.2745  | -0.0106 | 0.0785  | -0.1243 | 0.239   | 0.4259  | -0.3273 | .5228*  | 1             |         |
| M SES         | -0.2241  | -0.1947 | 0.157   | -0.1919 | 0.4093  | -0.0515 | -0.3355 | .5319*  | -0.349  | -.5655*       |         |
| F SES         | -0.0587  | -0.1179 | 0.0437  | 0.154   | 0.4782  | 0.0261  | -0.107  | 0.3368  | -0.2526 | -0.4228       | -.5594* |
|               | ACAD AVG | L1 TEST | L2 TEST | LOR NZ  | LOR SAM | RD ENG  | RD SAM  | SPK ENG | SPK SAM | SAM RD Amount | M SES   |

\* - Signif. LE .05 \*\* - Signif. LE .01 (2-tailed)

Note: Spearman Correlations shown for Father and Mother SES

## Notes:

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- <sup>1</sup> Refer to Glossary in Appendix 1 for definitions of terms commonly used in this project.
- <sup>2</sup> In addition to Cummins' own published writings, the author has found at least twenty major sources dated from 1981-1993 that refer to and work with or debate Cummins' theories of bilingual language proficiency and academic success.
- <sup>3</sup> González (1993) uses Cummins' 1986 Advocacy model in her implementation of assistance to both LM and racial minority students. Nel (1992) uses Cummins' 1986 contextual dimensions to create an outline of a pre-service teacher training course for teachers preparing to teach LM students.
- <sup>4</sup> Freeman & Freeman, 1992 also support this position.
- <sup>5</sup> See Navarro, 1985 for a defence of the political agenda used by advocates of TBE.
- <sup>6</sup> The latter assertion is supported also by Crowder & Wagner, 1992.
- <sup>7</sup> As an example of this position see Freeman & Freeman, 1992 and Nuttall, 1982.
- <sup>8</sup> See d'Anglejan, 1984; Fazio & Stevens; 1994; Levine, 1990; Schecter, 1991 for reviews of the history, politics and settings of French-English bilingualism in Montreal.
- <sup>9</sup> For a history of education in Western Samoa see Baldauf, 1990 and Utumapu, 1992.
- <sup>10</sup> For reviews of five nations (USA, UK, Australia, Canada and Fiji) see Bullivant, 1981. See Eldering & Klopogge (eds.), 1989 for reviews of six Northwest European nations (Britain, France, Germany, Netherlands, Belgium and Sweden). See Paulston (ed.), 1988 for case studies of bilingual education in 25 nations. See Edwards & Redfern, 1992 for a comparison of Canada and Britain. For a more psychological perspective of nine nations (Zambia, Brazil, USA, Canada, Haiti, Spain, Holland, Hungary, Britain) see Sonino (ed.), 1989. For an application of Field Dependence/Independence psychology on the learning of minority culture groups in the USA see Shade (ed.), 1989.
- <sup>11</sup> Verma, 1986 calls them assimilationist, integrationist and multiculturalist. Tomlinson, 1989 calls them assimilation, integration and cultural pluralism. Similarly, Verhoeven, 1987 identified three types of language policy: language separation, language assimilation and language maintenance. The last is associated with cultural pluralism. Edwards & Redfern, 1992 report six responses to cultural difference (*laissez-faire*, assimilation, integration, cultural pluralism, anti-racism and anti-racist multiculturalism) which they see among educators as progressive developments in attitude towards and educational programming for LM or ethnic minority students. See Gutiérrez, 1985 for a model of a bilingual/bicultural individual's stages of acculturation and assimilation.
- <sup>12</sup> For discussions of the relationship and importance of language to learning, development and education see Barnes, 1976; Britton, 1970; Corson, 1988, 1990; Marland, 1977; Smith, 1982; Tizard & Hughes, 1984; Wallwork, 1978; Wilkinson, 1975; D. Wood, 1988.
- <sup>13</sup> Spindler and Spindler, 1990 discuss a contrast between Hinterland and Metropolitan values which are strikingly similar to the Traditional/Agrarian versus Urban/Industrial dichotomy discussed by LeVine and White. They also warned of negative consequences from whole scale adoption of Metropolitan values.

<sup>14</sup> For a historical review of Readability Formula development see Chall & Conrad, 1991.

<sup>15</sup> Cloze Score Interpretation Table taken from Anderson, 1971: 41.

| Levels of Reading   | Cloze Test Percentage Scores |
|---------------------|------------------------------|
| Independent Level   | Above 53 %                   |
| Instructional Level | Between 44 and 53%           |
| Frustration Level   | Below 44%                    |

<sup>16</sup> This trend to communicative and integrative testing spread far afield, even to the Committee of Enquiry on English language testing in NZ universities (University Grants Committee, 1980).

<sup>17</sup> See also Carroll, 1983, Streiff 1983 for further support for this position.

<sup>18</sup> 'g'- is a term developed by Charles Spearman referring to a hypothetical general factor of intelligence. Oller 1978:5

<sup>19</sup>

Readability Statistics for English extract of One Samoan Evening as calculated by MS Word

6.0.

| Readability Statistics     |       |
|----------------------------|-------|
| <b>Counts:</b>             |       |
| Words                      | 410   |
| Characters                 | 1,766 |
| Paragraphs                 | 7     |
| Sentences                  | 24    |
| <b>Averages:</b>           |       |
| Sentences per Paragraph    | 3.4   |
| Words per Sentence         | 17.1  |
| Characters per Word        | 4.2   |
| <b>Readability:</b>        |       |
| Passive Sentences          | 20%   |
| Flesch Reading Ease        | 79.9  |
| Flesch-Kincaid Grade Level | 6.4   |
| Coleman-Liau Grade Level   | 7.2   |
| Bormuth Grade Level        | 8.9   |

<sup>20</sup> Lix score calculations for One Samoan Evening extract.

English Lix score =  $(410/24) + (59/410) = 17.1 + 14.4 = 31.5$  grade 6

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Samoan Lix score =  $(523/22) + (40/523) = 23.7 + 7.6 = 31.3$  grade 6

<sup>21</sup> Madsen (1983) claims that 7th word deletion is the most frequent method.

<sup>22</sup> Fax confirmation of Samoan version accuracy with corrections was received 13 June 1995.

<sup>23</sup> Permission from publisher was received 25 May 1995 and from author on 26 May 1995.

<sup>24</sup> see Department of Statistics, 1992b for description of classification structure used in NZ.

<sup>25</sup> Much of this work is being supervised by Assoc. Prof. Stuart McNaughton, Education Dept.