

## ***A Study of Cognitive Level of Bilingual Proficiency: What Makes Balanced Bilinguals?***

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This is an on-going study to investigate bilingual proficiency of Japanese children living abroad. The research centers on bilingual proficiency in relation to age of arrival, length of stay, and language use at home in order to find out factors leading to balanced bilinguals. The project was conducted in Vancouver, Canada in 2001. This paper reports the results of the Oral Proficiency Assessment for Bilingual Children (OBC) developed by Canadian Association for Japanese Language Education. The OBC interview tests aim to examine Japanese and English proficiencies in three dimensions: basic, communicative, and cognitive. The objectives of the paper are: 1) to present the results of L1/L2 proficiencies of Vancouver survey on balanced bilinguals as case studies; 2) to find out factors leading to cognitive/academic language proficiency; and 3) to verify Cummins' L1/L2 interdependent hypothesis and threshold hypothesis. Subjects are 17 Japanese children with the age range of 6-12 years old who study English as L2 at Canadian schools during weekdays and study L1 at the Japanese School on Saturday as heritage program. Following factors are proposed for CALP acquisition: L1 use at home, amount of reading in L1/L2, motivation for language learning, positive attitude, and socio-cultural interests.

This study is one of survey series to investigate bilingual proficiency of Japanese children living abroad. The research centers on bilingual proficiency in relation to age of arrival, length of stay and language use at home to find

out factors leading to balanced bilinguals. The project was first conducted in Hawaii in 1996, in which L1 and L2 proficiencies of 108 children in a Japanese Supplementary School (Rainbow School) was investigated. The age range is 6 to 9 years with the length of stay, 4 to 114 months (or 9 years and 6 months). The objective of Hawaii survey is to overview variables that play crucial roles in determining L1 and L2 proficiencies. The hypothesis of the pilot study is that L2 proficiency is interrelated with L1 proficiency (Cummins' L1/L2 interdependent hypothesis). The study centers on bilingual proficiency in relation to age factors and length of stay. The materials used for the Hawaii survey are Language Assessment Scales (LAS) English level 1 Form A (Grades K-5), modified to written form ( $r_{xx}=96$ ) and its translated Japanese version ( $r_{xx}=86$ ) and questionnaires (32 items of basic data, parents evaluation of their child's language proficiency and language use at home and school).

The results of the study are as follows: 1) English proficiency assessed by the LAS was correlated with the length of stay in the U.S. ( $r=.47$  at  $p<.001$ ); 2) English proficiency was negatively correlated with the age of arrival ( $r=-.40$  at  $p<.001$ ); and 3) Overall L1 and L2 proficiency was not significantly correlated. However, correlations were computed in the discourse tasks such as sentence comprehension ( $r=.52$  at  $p<.001$ ) and story retelling in written form ( $r=.35$  at  $p<.001$ ) between L1 and L2. These correlations can be interpreted as follows: 1) The longer children stayed in the US, the more proficient they were in terms of the English LAS; 2) The early age arrivals were more proficient in English than the later age arrivals within the range of zero to 9 years of age arrivals; and 3) The older the child was, the more proficient s/he is in Japanese; the later arrivals were more proficient in L1 than L2, and they were more proficient than younger arrivals.

This pilot study leads to exploration of the following questions. What makes differences between successful balanced bilinguals and unsuccessful bilinguals with limited language proficiency? What leads to bilingual competence? How competent in L1 and L2 to earn cognitive level of proficiency? What factors linked to cognitive level of language proficiency?

The next step of the project is to explore further on these points, namely, cognitively and academically required level of proficiency (in relation to age factors). For this in mind the survey of bilingual proficiency of Japanese children have been continued in Vancouver, Boston, Toronto and Montreal. The paper reports the results of the study, which was conducted in Vancouver in August 2001.

## **DEFINITIONS AND OBJECTIVES**

The word bilingual(ism) is frequently used and understood without posing any problem even in Japanese as a loan word. The word is commonly used as if the concept is taken into granted. However, the concept of bilingualism covers wide range of definitions. It seems to be problematic, as bilingualism is a topic, which amalgamates multidimensional aspects and levels of using two languages. First, bilingualism is treated on two levels simultaneously as individual and societal bilingualism or bilingual individuals and bilingual societies. To differentiate this bi-level character, the terminology, bilinguality, is introduced to refer to the former and bilingualism to the latter (Hamers et al., 2000). Secondly, definitions of bilingualism range from a native-like competence in two languages to a minimal proficiency in a second language (L2). It covers the whole range of continuum of proficiency. In the popular view, bilingual equals being able to speak languages perfectly. A distinction is also made according to competence in two languages between the balanced and dominant bilingualism. The former is defined as “approximately equal competence in two languages” (Baker et al., 1998, p. 698) and the latter, as “the language which a person has greater proficiency in or uses more often”(p. 700). Bilingualism may also be defined according to the relative status of the two languages as in additive/subtractive bilingualism. Additive bilingualism is defined: A situation where a second language is learnt by an individual or a group without detracting from the maintenance and development of the first language. A situation a second language adds to,

rather than replaces the first language. This is the opposite of subtractive bilingualism.” (p. 698)

These multi-facets definitions raise methodological difficulties as they lack precision. None of the definitions specify what is meant by native-like competence. It is also difficult to define bilingualism on a multidimensional continuum. In spite of these theoretical and methodological limitations, I would like to pursue individual bilingualism in terms of a single dimension, namely the level of proficiency in two languages in this study. I follow the definition of the balanced bilingual as a person who has approximately equivalent competence in two languages. I also follow the definitions of dominant, additive and subtractive bilinguals as given above as operational definitions in the present paper to describe Japanese children growing up in English speaking countries.

The objectives of the paper are: 1) to present the results of L1/L2 proficiencies of the Vancouver survey on balanced bilinguals as case studies; 2) to find out factors leading to cognitively and academically required level of proficiency; and 3) to verify Cummins' L1/L2 interdependent hypothesis and threshold hypothesis.

## **METHOD**

### **Subjects**

Subjects are 17 Japanese children of Vancouver Japanese Supplementary School. The age range is 8 to 12 years old with the length of stay, 1 year and 4 months to 10 years (or 16 to 120 months). The children study English as L2 at Canadian schools during weekdays and study L1 at the Japanese School on Saturday to maintain Japanese (See Table 1).

### **Material**

The Material used for the present study is Oral Proficiency Assessment for

Bilingual Children (hereafter OBC) developed by Canadian Association for Japanese Language Education (CAJLE, 2000). The OBC interview tests aim to examine Japanese and English proficiencies in three dimensions: basic, communicative, and cognitive. Basic Tasks attest basic sentence comprehension skills in the question and answer (Q & A patterns; 15 items). Communicative Tasks attest interpersonal communicative skills in roll-plays such as asking information, receiving messages and negotiation (12 items: See Appendix). Cognitive Tasks attest cognitive/academic level of language proficiency: the Tasks include storytelling, recycling at home, explaining an earthquake, pollution and digestion or telling cross-cultural differences (13 items: see Appendix). The questions in the whole Tasks are asked with the aid of picture cards. The total score ends up 152 points with 20 evaluation points for Basic, Communicative and Cognitive Tasks. That is, proficiency of each language is evaluated on 5~0 scale by pronunciation, vocabulary, preciseness, sentence types and distinction of languages for the Basic Tasks (Basic 2, Table 1); communicative proficiency is evaluated by listening comprehension, fluency, appropriateness, politeness, positive attitude for the Communicative Tasks (Com 2, Table 1); and cognitive level of proficiency is attested by good contents, telling things in good order, appropriate language use and long sentences/paragraphs for the Cognitive Tasks (Cog 2, Table 1). The OBC Tasks take approximately 30 minutes for an interview in L1, another 30 minutes for L2. The interviews were recorded on mini-disks (MD) and videotapes.

## **Hypothesis**

Hypotheses of the research are: 1) Age of arrival, L1 use at home and reading are contributing factors of being balanced bilinguals; 2) L2 proficiency is interrelated with L1 proficiency (Cummins' Interdependent Hypothesis); and 3) The level of bilingual proficiency is related to cognitive level of the learner: one may become an additive bilingual when his or her L1/L2 proficiency is higher than a certain level. If not, one may end up with

double limited proficiency (Cummins' Threshold Hypothesis).

## **THEORETICAL FRAMEWORK**

The theoretical framework of the present study comes from Cummins, namely, BICS-CALP distinction, L1/L2 Interdependent Hypothesis, and Threshold Hypothesis.

### **BICS-CALP Distinction**

According to Cummins there are two types of language proficiency: BICS and CALP.

BICS stands for basic interpersonal communicative skills whereas CALP, cognitive/ academic language proficiency. BICS is everyday, straightforward communication skills or conversational proficiency. Such skills are "context-embedded" (Cummins, 1984, p. 138) or helped by contextual supports such as gestures and looking at pictures or concrete objects. CALP, on the other hand, is the level of language required to understand academically demanding subject matter in a classroom. Such language is often abstract, without contextual supports or "context-reduced" (p. 138). That is, little support is offered in many classrooms from the contexts. Thus, CALP is distinguished from BICS, which is relatively undemanding cognitively and relies on the context to aid understanding. BICS develops prior to CALP.

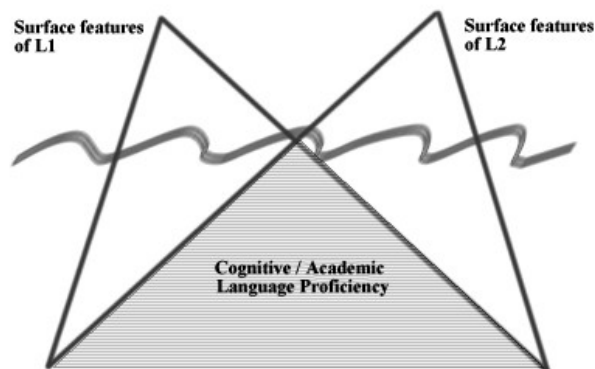
Cummins (1984) presents the distinction between BICS and CALP in the iceberg metaphor. BICS is surface level conversational proficiency while CALP is its underlying proficiency or deeper level of language proficiency. CALP is "a deeper conceptual and linguistic proficiency" (p. 143). BICS is only a part of global language proficiency and is "surface fluency" (p. 136). BICS deals with "formal aspects of language (e.g. pronunciation, basic vocabulary, grammar)" (p. 137). CALP, on the other hand, deals with semantic and functional meaning (pragmatic aspects of

language proficiency).

### **Interdependent Hypothesis**

Then a question is how L1 proficiency is related to L2 proficiency. Cummins explains its relationship in the dual iceberg figure, an iceberg for L1 and the other for L2 (Figure 1). The figure expresses that “despite the obvious differences between L1 and L2 in terms of the surface features of phonology, syntax and lexicon, there is common underlying proficiency that determines individual’s performance on cognitive/academic tasks (e.g., reading) in both L1 and L2” (Cummins, 1980 in Baker et al., 2001, p. 118). In other words, there are “common cross-lingual proficiencies underlie the obvious surface differences” (p. 118) of each language. According to Cummins, some of “the literacy-related skills” are involved in the common underlying proficiency such as “conceptual knowledge, subject matter knowledge, higher-order thinking skills, reading strategies, writing composition skills” (Cummins, 1984, p. 144). Those “literacy-related skills developed through the medium of

**FIGURE 1**  
**The ‘Dual-iceberg’ Representation of Bilingual Proficiency**  
**(Cummins, 1980 in Baker et al., 2001, p. 118)**



L1 transfer to L2 given sufficient exposure and motivation” (p. 144). Through the common underlying proficiency (CUP), two languages work in integration: “It has been hypothesized that the cognitive/academic aspects of L1 and L2 are interdependent: “Interdependence of CALP across languages” (Cummins, 1980 in Baker et al., 2001, p. 118).

Interdependent Hypothesis suggests that a child’s second language competence is partly dependent on the level of competence already achieved in the L1. What is important is that the CUP should be well developed. That is, a child’s fundamental, central language proficiency needs to be sufficiently well developed to cope with the curriculum processes of the classroom. This underlying ability could be developed through the first or the second language and in both languages simultaneously.

### **The Threshold Hypothesis**

One important theme in research on bilingualism is the relationship between bilingualism and cognition. Doing a research on bilingual proficiency of Japanese children, the author has noticed that not all of them obtain cognitive benefits from living with two languages. The issues they raise are:

- 1) Under what conditions does bilingualism have positive or negative effects on cognitive development?
- 2) What level of competence does he or she need to attain in two languages to obtain cognitive advantages from bilingualism?

One answer is contained in Cummins’ Threshold Hypothesis. According to Cummins, “the effects of bilingualism on cognitive growth may be mediated by the level of competence an individual attains in his two languages” (Cummins, 1976 in Baker et al., 2001, p. 41). He proposes two threshold levels in relation to bilingual proficiency and cognitive effects. Thresholds are levels of language competence a person has to reach to gain cognitive benefits from bilingualism. A lower or first threshold is a level of bilingual



proficiency one must attain to avoid any negative cognitive consequences of bilingualism. One language must at least be proficient enough to cope with the academic content of the classroom in order to surpass the lower threshold. A higher or second threshold is a level of bilingual proficiency when both languages are well developed to the point where one may cope in the classroom in either language. The “attainment of a second, higher level of bilingual proficiency might be necessary to lead to accelerated cognitive growth” (Cummins, 1984, p. 107). Once past this second threshold, there are cases that bilinguals have cognitive advantages over monolinguals as evidenced in the present research.

## **RESULTS AND DISCUSSION**

The paper now discuss the results of the Oral Proficiency Assessment for Bilingual Children (OBC) survey conducted at Vancouver Japanese Supplementary School in August 29 and 30, 2001. The results of L1/L2 proficiencies of 17 Japanese children are shown in Table 1.

The total score of the OBC interview tests on L1 ranges from 92 to 148 out of 152 points, while that on L2, 43~150. The group average on L1 is 134, while that on L2, 116; that of Cognitive 1 (storytelling, explaining pollution, digestion and cross-cultural differences) in L1 is 11, while that in L2, 8.9 (out of 13 points); and that of Cognitive 2 (telling things in good order, good contents with appropriate language use, and length of sentences/paragraphs) is 16.6 and 12.2, respectively. L1 proficiency is generally higher than L2: the total score is 18 points higher, Cognitive 1 is 2.1 higher and Cognitive 2 is 4.4 points higher than in L2 counterparts.

**TABLE 1**  
**OBC (Introductory, Vocabulary, Basic, Communicative, Cognitive Tasks)**

S	Sex	Age	Gd	AOA	LOS	L2	L1	Intr20	Voc 32	Basc1	Basc2	Com1	Com2	Cog 1	Cog 2	Total			
										15	20	12	20	13	20		152		
1	M	11	5	8	3.3					E	20	21	14	18	8.5	16	5.5	3	106
										J	20	23	13	20	9.5	14	9.5	16	125
2	M	11	6	1.7	10					E	20	28	15	20	12	20	11	20	146
										J	18	30	15	20	12	20	13	20	148
3	F	9	4	0	9					E	20	27	15	20	11	18	13	20	144
										J	18	32	12	14	11	16	11	16	130
4	M	10	4	5	4.3					E	20	29	13	13	4	10	8	6	103
										J	20	32	13	16	12	20	12	16	141
5	M	9	4	8.4	1.4					E	12	8	12	11	0	0	0	0	43
										J	19	29	15	17	4.5	5	1.5	1	92
6	M	11	5	7	3.1					E	20	27	14	20	12	20	11.5	20	144.5
										J	20	30	15	20	9	16	12.5	20	142.5
7	F	8	2	0	8.3					E	18	24	15	16	4.5	9	8.5	12	107
										J	17	14	14	16	11.5	14	6	8	100.5
8	M	11	6	8	3					E	20	29	15	20	11	20	12.5	20	147.5
										J	20	30	15	20	9	18	13	20	145
9	M	9	4	0	10					E	20	24	14	20	9.5	17	13	20	137.5
										J	20	25	15	20	10	18	11.5	16	135.5
10	F	9	4	1.2	8.7					E	19	27	14	18	11	20	12	20	141
										J	20	28	15	20	8.5	16	12	16	135.5
11	M	10	4	7.7	2.6					E	18	19	14	10	9.5	6	8	3	87.5
										J	20	30	15	20	11	20	10.5	16	142.5
12	M	12	6	9.11	2.6					E	19	29	14.5	13	7.5	10	8.5	7	108.5
										J	20	30	15	20	12	20	13	20	150
13	F	11	6	10	1.1					E	20	27	15	20	10	20	10	20	142
										J	20	32	15	20	12	20	13	20	152
14	M	12	6	10	2.5					E	19	28	15	20	9	20	9.5	20	140.5
										J	20	29	15	20	12	20	13	20	149
15	M	10	4	8	2.5					E	19	18	15	14	11.5	14	7	6	104.5
										J	20	29	12	20	12	20	13	20	146
16	F	8	3	7	2					E	19	20	13	6	3	4	8	6	79
										J	20	25	14	16	11	18	11	20	135
17	M	10	4	8	2					E	20	20	14	16	8	12	5	4	99
										J	19	26	14	20	5	13	7	8	112
Average		10.1	4.6	6.2	4.5					E	18.9	23.6	14	16.2	8.4	13.9	8.9	12.2	116
										J	18.3	26.8	14.3	18.7	10.4	17.2	11	16.6	134

(S: students, Gd: grade, AOA: age of arrival, LOS: length of stay, E: English, J: Japanese)

## Analysis

The Pearson product-moment correlation has been used to discover which variables are correlated to the total scores of the English and Japanese OBC. Exploratory comparisons are made between the variables (age, age of arrival, and length of stay) and the total scores of L1 and L2. Raw scores from the OBC tests and the subscale scores of the Tasks are submitted to the

correlational analyses. The present paper will focus the report on the results of the Cognitive Tasks due to page constraints. The results of the analyses are as follows (age of arrival and length of stay are calculated in months):

- 1) Overall English and Japanese proficiencies assessed by the OBC (total scores) were correlated at .60.
- 2) English proficiency on Cognitive Task 1 (Cog 1) was correlated with Japanese counterpart at .74; L1 and L2 Cognitive Tasks 2 (Cog 2) were correlated at .48.
- 3) English proficiency (total scores) was correlated with the length of stay (LOS) at .49, with age (Age) at .38, and with the age of arrival (AOA) at -.26.
- 4) English Cognitive Task 1 (Cog 1) was correlated with LOS at .59, and with the age of arrival (AOA) at -.46.
- 5) L2 Cognitive Task 2 (Cog 2) was correlated with LOS at .54, and with AOA at -.29.
- 6) Japanese proficiency (total scores) was correlated only with Age at .61 (correlations with AOA and LOS were almost none); Cog 1 in L1 was correlated with Age at .51, with LOS at .11 and with AOA, not significantly (-.05); L1 Cog 2 was correlated only with Age at .50 (other correlations were almost none).
- 7) The age of arrival (AOA) and length of stay (LOS) were strongly correlated at -.85.

These correlations can be interpreted as follows. Overall L1 and L2 proficiency is significantly correlated in terms of the OBC within the age range of 8 to 12 years. Specifically, cognitive tasks such as story telling, explaining pollution (its solutions), digestion, and comparing two languages, people, local and Japanese schools (and two cultures) are strongly correlated between L1 and L2. Those who stay longer in the host country are generally more proficient in L2 within the range of 16~120 months (1.4~10 years) of stay; they are specifically so in cognitive level of L2 (telling stories and cognitively demanding explanations in good order with good contents and appropriate language use). Influences of the age factors to overall L2 proficiency seem to be weak. However, the early arrivals are generally higher

in cognitive level of L2 proficiency than the later arrivals within the range of 0~120 months (0~10 years) of age arrivals. Japanese proficiency is linearly related to age: the older the child is, the more proficient s/he is in overall L1, so is in cognitive level of L1 proficiency. The early arrivals stay distinctively longer in the host country.

The present paper will focus our discussion only on the results of the Cognitive Tasks of OBC tests as mentioned above. A couple of balanced bilinguals will be discussed in detail as case studies to find out factors leading to cognitive/academic language proficiency. Two groups, those who stayed for a long period of time and those who stayed short in the host country, will be analyzed. Students under present discussion are highlighted in bold type in Table 1.

#### *Pollution Task*

First the cognitive task of pollution will be discussed. The task required here is to explain pollution and its solution by looking at a picture card in which the earth is crying with factories in the background emitting clouds of smoke. The questions are: Why do you think the earth is crying? What do you think we can do to solve this problem?

Now children whose length of stay is long will be discussed first. Student 2 (S2) on Table 1 is an 11-year-old boy at the time of the interview, whose age of arrival (AOA) is 1 year old and 7 months with the length of stay (LOS), 10 years.

*Pollution: S 2 (M, Age: 11, AOA:1.7, LOS: 10)*

I think it's crying...because...because human beings are **polluting** the earth, and cutting trees for no reason, killing animals, taking their homes, and putting some gas out on the air, making the air fill really bad. And I think we could solve this problem by ...um...saving some water, not put it down when you're brushing, or put it low, and ... and save some paper, um...use it really wisely, and I think we will make a good--- [?]

The paragraph construction of English is quite logical: the cause and effect paragraph is well constructed with clear reasoning. Six causes of pollution are exemplified with two suggested solutions. S2 uses cognitively demanding terms such as *polluting* the earth. Now look at his Japanese version of the same task. The interviewer's interpretation, comments or missing words are given in brackets.

*Kogai/ Osen (Pollution): S 2 (M, Age:11, AOA:1.7, LOS: 10)*

Kono chikyu ga naiteiru noha ningen ga **sizen hakai** site iru kara desu. Ki wo kittari, gasu ya....abura wo sokora hen ni sutetari siteiru node, chikyu ga naiteirun dato omoimasu. Bokutachi ga kore wo naosu niha, kami wo setuyaku sitari, mizu wo setuyaku shitari, soyu koto wo sureba, anzen de, heiwana chikyu ni naru to omoimasu.

(Translation)

The earth is crying because people are destroying nature. As they are cutting trees, throwing away [exhausting] gas...and oil here and there, I think that is why the earth is crying. We can remedy this by saving paper and water. Doing these things, I think the earth will be safe and peaceful.

Here again his (S2) Japanese is exceptionally well constructed with clear four causes of air pollution. Though he did not use the cognitively demanding term for *pollution (kogai)*, which 5<sup>th</sup> graders learn in Japanese classroom, he substituted it by the phrase, disruption of nature (*sizen hakai*.) One interesting point is that his statement in Japanese is under the influence of English paragraph. His logical construction in L1 is not usually expected of his monolingual age group in Japan. His Japanese proficiency is amazingly high which is also exhibited in storytelling and other tasks. Considering 10 years in Canada from the age of one, his L1 CALP is exceptionally high. His bilingual proficiency would be that of a balanced bilingual.

### *Storytelling Task*

The result of the Storytelling task will be presented next. In this task children are asked to tell a story: they can either choose one of the stories in

the picture card, or they can tell any other story of their repertoire. The task is: 'A small child wants you to tell her/him a story. Tell her/him the story.' While most of the children told the same story in L1 and L2, S2 picked up *Three Little Pigs* in the picture in L2 and a different story in L1, *Momotaro*, or *A Peach Boy*.

*Story Telling: S2 (M, Age:11, AOA:1.7, LOS: 10)*

Once upon a time, there lived three pigs. But they wanted to live...don't want to live together. So they said they will make **each houses**. So they went off to the journey. The ... the biggest pig ...said...the biggest pig made a house of straws. The second pig made a house ... of...of sticks. The last pig made a house of bricks. One day the hungry, hungry wolf came...came ... and went, "I smell little pigs. This might be the house of the pigs. One, two, three, **achoo**," and he blow the house away. The first pig ran to the second pig's house, and ... and hallowed [followed??] there. Then, but then, the wolf came again and "ha...ha...**hakshu**..." And, he blow the house away. The two little pigs went ... went...to the third pig's house. And, and hallowed there, but ..but the wolf came and went again, "a...a...**achoo**." But it was made of bricks so it didn't break. But the wolf had a good idea. He went on the chimney...he wanted his **finalists** [pigs finally? last pigs ?] **go** down the chimney, and **eat** all the pigs. So he climbed on the chimney and he went down. But the smart little pig knew his plan. He brought some water and put it ...he brought some water and put it under the chimney. And when the wolf came down, "Achoo." It was very hot. He ran out of the door and he never came back again. And the three little pigs **lives** happily ever after. (254 words)

S2 told the story like an actor as if he were telling it to a little boy. It follows the traditional narrative construction of English: it begins with "Once upon a time, there lived~" and ends with "~ lived happily ever after." There are minor errors in plural and tense forms that are highlighted. L1 onomatopoeia is transferred to L2 construction: he has substituted onomatopoeia, *hackshu* or *achoo* for huffing and puffing noise in L2 narration.

I will next discuss another child who stayed long in the host country.

Student 10 (S10) is a 9 year-old girl whose age of arrival is 1 year and 2 months, and the length of stay is 8 years and 7 months. While most of the children told the same story in L1 and L2, she picked up *Three Little Pigs* in the picture card in L2 and a different long story in L1 of her repertoire.

*Story telling: S10 (F, Age: 9, AOA: 1.2, LOS: 8.7)*

There are three little pigs. And their mother said that you can, you have to make your own house by yourself. And the first, but the big brother, said that "I can make my house out from the hay", and he made his house out from the hay and lived all day. Then one day the wolf came and knocked it and said, "Can I come in?" And he said, the pig said, "No, you **can't**." Then "I will blow your house." And he puffed and puffed and **blowed** his house and he ate,.....really can't catch him and.... The next him, the **next** brother made his house out of wood and he felf this wooden...eat [? noise] all day. The wolf came and puffed and puffed and "Can I come in?" The pig says, "No, you can't." And he puffed and puffed. The wolf **blewed** his house, but the pig run away. The really little one made the house from brick. And the two big brothers run into his house and the wolf says, "I'll huff and puff your house." But he couldn't because it's made of brick. So the wolf **think** of other one to make. He's out of chimney. But the pig noticed that so he put the pot of pot of hot water and when the wolf came, he burned his tail and he **runned** away. But the pigs laughed and played the song. And that's the end. (241 words)

S10 told a story in a narrative paragraph with good time-order, which extended for two minutes with 241 words. There is sometimes a mixture of direct and indirect speech, as in "And their mother said that *you can, you have to make your own house by yourself*." There are also minor tense errors in irregular verbs, such as *blowed, blewed, runned*, and in tense agreement, as in, "So the wolf *think* of other one to make." There are some errors in vocabulary, as in "The *next* him, the *next* brother" for the *second* brother; and "made the house *from brick*" for the house *with bricks*. However, overall structure is well constructed with native like pronunciation and rhythm.

Now look at her long story in L1 of her own repertoire, *Urikohime*, or a girl in the melon.

*Ohanashi (Story telling): S10 (F, Age: 9, AOA:1.2, LOS: 8.7)*

Mukashi mukashi aru tokoro ni, ojiisan to obaasan ga kawa he sentaku ni itteiru to ookina uri ga don[bura] ...nagarete kimasita. Obaasan ga hirotte uchi ni kaette, ojiisan ni misetara, ojiisan ga, "Wah, nan, mah nante oishi souna uri da! Sassoku tabete miyo" to itte, obaasan ga manaita ni nosete, kitte ... anoh, uri wo kirimasita. Uri wo kitta naka kara kawaii onnano ko ga dete kimashita. Obaasan...okasan... obaasan ha, "Mah, nante fushigina koto da. Kitto kamisama ga sazuke te kureta no daro." to iimashita. Sorede, sono ojiisan tachi ha sono ko wo Urikohime to iu namae ni shimasita. Urikohime ga sodatu to, totemo utukushii onnano ko ni narimashita. (Cont.)

(Translation)

Once upon a time in a village, an old man and his wife went to a stream to wash their clothes. A big melon floated down the stream. She picked it up and took it home. He looked at it and said, "Wow, oh dear, how delicious it looks! Let's eat it right now." She put it on a chopping board, cut ... ah, cut the melon. When she cut it, a pretty girl came out of the melon. The old woman...mother...old woman said, "Oh dear, how mysterious it is! God must have given her to us." Accordingly, they named her Urikohime, the melon princess. (Cont.) (1782 words)

This is only one sixth of her long story, which extended for six minutes with 1782 words. She told the story fluently with details just as she was reading a book aloud to a little child. Her wording is rich with full of empathy: it reflects how she likes reading stories. It follows the typical narrative construction of Japanese stories, *Mukashi mukashi aru tokoro ni*, which is a Japanese version of "Once upon a time there were~." She must have been read a lot at home when she was little as she was familiar with the story-grammar of Japanese. Her L1 proficiency is outstanding despite of her extended length of stay (8.7) in Canada. It is assumed that her CALP is high: she can logically explain pollution and digestion with cognitively demanding terms such as *pollute*, *get digested*, *small intestine* and *the big intestine* as shown below. The task is to explain the process of digestion looking at the picture with a boy with an apple in his mouth. The question is: 'Tell me what



happens to the apple after the boy bites it?’

*Digestion: S10 (F, Age: 9, AOA: 1.2, LOS: 8.7)*

It go to the stomach and it go to small intestine and it goes pieces and go to the big intestine and get digested...They go away.... go into the washroom.

In other tasks there is minor L2 transfer in L1 vocabularies. S10 literally translated *play baseball* as in, *yakyu wo asondeiru*, which should be expressed with a *do-verb* (not *play*) in Japanese, as *yakyu wo shiteiru*. Another L2 transfer is found in the word order of date in the L1 sentence, *Otanjoobi ha 11 gatu 9ka[konkonoka] 1991 nen desu* (My birthday is November 9<sup>th</sup>, 1991). It should be in reverse order in Japanese: year, month and day. Even with these minor errors, she is a successful additive bilingual with L2 stronger than L1.

Considering their age of arrival and length of stay, the cases of S2 and S10 are surprising especially their level of competence in L1. They came to Canada at age 1, an age apparently their L1 competence had not been attained yet. It could be surmised that as they were continuing to develop competence in their native language, while beginning to acquire competence in English, the host language. We could conclude that apparently S2's and S10's developing competence in their L1 had not been unduly affected by their exposure to an L2.

Next, a successful bilingual within a short period of time will be discussed. Student 13 is a 11 years old girl whose age of arrival is 10, and the length of stay is a year and ten months. She told *Three Little Pigs* both in L2 and L1.

*Story telling: S 13 (F, Age: 11, AOA: 10, LOS: 1;10)*

Once upon a time there **was** three little pigs and their Mom. Then two big [noise] .... comfortable couch. They were....they were too big to live in the house. So their Mom told them to make, “Build your...their own house. But to be careful for the wolf.” Then three little pigs walked together on the street. Then there was a man with ...the hay. And the biggest pig built the house with the hay. So the biggest pig built the house with the hay. The two pigs went on. Then they found a man with branches. And the second biggest pig said that she **will** build a house with the branches. So he built

the house and one little pig went on. Then he saw a man with a **brick**. So he said he will build the house with the brick. So he said built the house. Then the wolf came to the biggest pig's hay house and then he knocked the door. The biggest pig knew that it was wolf so he didn't open the door. And then he blew the house so that he **can** eat the pig. But the big, the biggest pig ran away, escaped to the second biggest pig's house and then locked the door. The wolf came to the second biggest pig's house but they knew that it was the wolf. And then the wolf... blew the house so he can eat the two pigs, and then.... But they escaped to the third little pig's house and locked the door. Then the wolf came and locked the door. Then they knew it was the wolf so they **won't** open the door. So he **try** to blow the house so he **can** eat three pigs. But it was made out of brick so he couldn't blow the house. He found the chimney and then he try to jump into the house from the chimney. The little pig is smart and the wolf **might** come from the chimney. So he set ...the pot with boiled water. And then the wolf jumped into... the pot. And then three little pigs lived happily ever after. (359 words)

She told the story in a well-constructed structure with minor grammatical mistakes such as verb agreements, tense and articles. Her level of L2 is impressive considering the length of stay in Canada: she has attained a good command of L2 within a year and half. The story is presented in natural English with fairly good pronunciation and intonation. Her oral presentation is outstanding in the latter half of the story, with an emphatic stress on the auxiliaries, *won't* and *might*. It follows a narrative paragraph in which it begins and ends with the typical storytelling in English. It reflects her amount of reading in L2. Now look at her L1 version of the same story.

*Ohanashi: S13 (F, Age: 11, AOA:10, LOS:1.10)*

Mukashi aru tokoro ni 3 biki no kobuta ga sunde imashita. Okaasan ga, "Ookiku natta no dakara, jibun no ie wo mochi nasai. Demo ookami niwa ki wo tukenasai", to iimasita. Aruite ikuto, wara wo motteiru hito ni ai mashita. Ichiban ueno onisan ha, wara de ouchi wo tateru koto ni shimashita. (omit) Niban me no kobuta ha, ki no eda de ouchi wo tateru kotonni shimashita. Ichiban shita no kobuta ha .... (omit) Soshite, renga de ouchi wo tukuri mashita. .... (omit) Ookami ha, mata , to wo tatakai mashita.

(knock, knock). Demo, doa wo akete morae nai node, entotu kara hairu to shimashita. Atama no ii kobuta ha, entotu no shita ni atui nabe wo oite oki mashita node, ookami ha sono naka e ochite shimai mashita. Soshite, kobuta tachi ha, shiawaseni kurashi mashita. (640 words)

(Translation)

Once upon a time there lived three piglets. The mother said, "As you are grown up, you should have your own house. Watch out for the wolves." Walking along the road, they came across with a man carrying [a bail of] hay. The eldest brother had decided to build a house with hay. .... (omit) The second piglet had decided to build a house of tree branches. The youngest piglet made a house with bricks. .... (omit) The wolf knocked the door again. (knock, knock) However, the door was not opened. So he tried to get in through the chimney. The smart piglet placed a hot pot under the chimney. So the wolf fell into it. Then the piglets lived happily ever after.

This is a part of the story which consists of 640 words. S13 told the story in details in good time order. Her L1 version is almost twice as long as that of L2. In other tasks her explanations of pollution and digestion in L2 are insufficient due to lack of cognitively demanding terms. However, her response to those tasks in L1 shows that her cognition is high: she can manipulate appropriate words like global warming, small and large intestines in L1. We could assume that she will turn out to be a balanced bilingual. She epitomizes a good example of an additive bilingual: when L1 CALP is high, that fact is transferred to L2 CALP acquisition.

### **CALP Related Factors**

Factors leading to CALP level proficiency in L1 and L2 have emerged from interviews of 17 children in the present study. Common factors leading to CALP among these successful bilinguals are L1 use at home, wide reading (which reflects parents' involvement in reading), amount of reading in L1/L2, motivation for language learning, positive attitude or way of thinking, and socio-cultural interests.

### *Home Language*

L1 use at home plays an important role in CALP development. L1 use is a common factor of successful bilinguals including those who are not discussed in the present paper due to page constraints, such as S6, S8 and S9 with similar basic data (AOA: 7 to 8 and LOS: 3). Exceptions in my study are brothers, S14 and S15, whose sibling language is sometimes English. The language at home for other successful bilinguals are strictly Japanese. Separation of language use at home and school is a contributing factor of balanced bilinguals.

### *Reading*

Reading in L1 and L2 is a determinant factor of attaining CALP in both languages since academic and cognitive information depend much on written forms. All of the highly proficient bilinguals in the study enjoy reading; some of them specifically have mentioned their favored authors' names. For instance, S2 likes reading very much; he prefers novels written by Akagawa Jiro and Kit Pearson. S13 is also a good reader in L1 and L2; she likes *Harry Potter*, *Olivia*, fantasies, mysteries and non-fictions. Wide reading must have been one of the contributing factors of her acquisition of L2 competence in such a short time. S6, S8, S9 and S10 also like reading. S10 is fond of reading in L1 but not so much in L2. Japanese books are easier to read for her. It explains her outstanding storytelling of *Urikohime* in spite of her extended length of stay.

### *Interest in Language*

The CALP related factors are interrelated: Reading factors are related to interest or motivation to learn language, which in turn is closely related to positive attitude. All of the successful bilinguals in the study show keen

interests in language; they have strong motivation to learn language. In the Cognitive task, Comparisons of Language Use, the following questions are posed: Which language do you think is more difficult to learn, Japanese or English? and What's the most difficult thing about learning English for you? Some of the responses of the children in their words are as follows:

S2 : English. Because the pronunciations are low and high. And, it's very hard to take it to the other person. So, Japanese, it goes to them. But it's hard communicating in English because there are many words, and tones and high voices and low voices. So it's very hard for me.

S10: I think Japanese and English. Because I'm not good at Japanese translation and I'm not good at writing *kanji* (Chinese letter). For English, sometimes the teacher says something that I don't know but everyone understood it except me. So I have to use the dictionaries to know the words.

S13: Both. Japanese is hard because 'could, would'. English is hard because I live only 1 year here. (What is the most difficult thing in learning English?)...Can't think of any...Grammar (is most difficult).

S15: English. Because it's ...because I'm Japanese... I know more tha (?) Japanese. [I know more Japanese than English.]

It is interesting to notice that successful bilinguals in the study have metalinguistic awareness of differences between the two languages. S2 has deep insights into languages: he is attentive to tones, pitch movement and intonation, as he knows that those suprasegmental features function important roles in communication in English. S13 also has good insights into languages in such a way that she specifically points out difficult aspects of the two languages.

#### *Positive Attitude*

What has impressed the author most is that all of them have clear visions of their future jobs with specific reasons and motivations. S2, for example,

wants to be an actor. It explains his exceptionally outstanding storytelling in both languages. It was as if he were acting out the stories. S10 wants to be an artist while three boys wish to be sports players: S6 want to be a basketball player while S8 and S14 hope to be ice hockey players, the latter wishes to join the strongest ice hockey team, NHL, in Canada. S7 would like to be a teacher while S15, a doctor. S13 wants to be a translator as she is “fond of books and tell that to everyone” as in her words. Her keen interests in languages and books explain how she has turned out to be an additive bilingual.

Their positive attitudes are also reflected, first, in their active participation in the interviews. Secondly, they have interests in different cultures or socio-cultural interests: specifically, S10 is interested in the First Nations such as Inuits. Others show positive way of thinking about Canada and that they would like to stay long. Thirdly, as mentioned above, they have positive attitudes towards their future.

**TABLE 2**  
**CALP Related Factors**

Factors	S2	S10	S13	S14	S15
Home language	Japanese	J	J	J(sometimes E)	J
Language Interest	Yes	Yes	Yes	Yes	
Positive Attitude	Actor	Artist	Translator	Hockey player	Doctor
Reading	Very much	Like (J)	Very much	like	like
Easier Reading Lang	J	J	J	E/J	J/E
Difficult Language	E	J/E	J/E	J/E	E
Socio-cultural Interest	Canada	1 <sup>st</sup> Nations	Canada	NHL Player	Canada

*Length of Stay*

Length of stay is not a determinant factor of L2 CALP development in the

present study as generally has been expected. There are cases among those who have stayed long in the host country, yet their L2 proficiency, not to mention their L1 proficiency, is very low such as S7, to take one. She has stayed in Canada for eight years and seven months since her birth. There are cases that have negative consequences of being exposed to plural languages, the typical case in the study is S5: none of the languages have reached age-appropriate competence. One factor common to S5 and S7 might be exposure to plural languages: the former was born in Darien, China, and his father being a Chinese, he is studying at Madeline school as well; S7 might be exposed to Vietnamese at home from her father.

Still others have not reached the generally expected level in L2, such as S4, S11, S12, S16 and S17. S4, who has lived in Canada for four years and three months, lived in China at three. S16 and S17, a sister and a brother, had lived in France and Italy. A bold assumption might be drawn from these children with limited proficiency that they could not successfully develop the common underlying proficiency due to exposure to more than two languages. They might not have developed the CUP firmly enough to acquire the literacy-related skills, conceptual and subject matter knowledge. It is a matter of L1 CALP to predict L2 CALP acquisition. If L1 CALP is better developed, children will acquire cognitive/academic L2 skills (Cummins, 1980, in Baker et al., 2001, p. 120). The assumption made presently on unsuccessful bilinguals is still tentative and needs to be studied further in the on-going research on bilingualism and its cognitive effects in the future.<sup>1</sup>

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<sup>1</sup> There are other cases to exemplify length of stay as not being a determinant factor of L2 CALP development. Some children in an immersion program in Japan scored very high in various English tests with no overseas experiences or even visiting English-speaking countries (Yumoto, 2003, p. 16). Other such example is the case of students in the Philippines: only insignificant few of them ever get such direct exposure, yet they manage to be successful English as second language learners (personal comment). The secret for both cases could really be proficiency in their L1.

## **CONCLUSION**

I have presented the results of bilingual proficiency of children at Vancouver Japanese School focused on cognitive competence. Based on the analysis of successful bilinguals, I propose following factors leading to CALP acquisition: L1 use at home, amount of reading in L1/L2, motivation for language learning, positive attitude and socio-cultural interests. Among these factors L1 use at home and reading in L1 have been suggested to be contributing to the CUP. The literacy-related skills and higher-order thinking skills acquired in L1 seem to have transferred to L2 in the additive bilinguals in the present study.

The present research on factors leading to balanced bilinguals compared to those of double limited bilinguals could be another evidence to support Cummins' L1/L2 Interdependent hypothesis and Threshold hypothesis. The study strongly supports that "in relation to L2 CALP acquisition," "level of L1 CALP is a major determinant." (Cummins, 1980, in Baker et al., 2001, p. 120).

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## **APPENDIX**

### **Communicative Tasks**

#### Getting Information

You want to go to (the swimming pool) on Saturday. But you don't know whether it is open on Saturdays, what time it is open, how much the entrance fee for children is. Phone the place and find out about .....

#### Taking/Giving A Message

You are at home now. Your mother is not in. The phone is ringing. Please answer the phone.

"Hello, is this the ..... 's residence?"

"Is your mother at home?"

"Do you know when she'll be back?"

"Would you tell her to call me when she gets back."

"I am Mrs. Yamada. My phone number is 222-1234."

Then your mother comes home.

"I am back. Did anybody call?"

"Ok. Thank you."

### **Cognitive Tasks**

#### Story telling

A small child wants you to tell her/him a story. Tell her/him the story. (You can choose one of the stories in the picture, or you can tell any other story.)

#### Pollution

#### Digestion

Tell me what happens to the apple after the boy bites it?

#### Comparisons

Which language do you think is more difficult to learn, Japanese or English?

(What's the most difficult thing about learning English for you?)

How are your Canadian friends different from your Japanese friends?

(How are your American friends different from Japanese friends?)

What do you think is the difference between Japan and America/Canada?

[If the above questions are too difficult for a child to answer, ask the following questions.]

Which school do you like better, the Japanese school or the local school here?

Why do you like it?

How is the Japanese school different from the local school? (CAJLE, 2000)