

**“WHEN YOU WRITE ‘FOUR’ IN CHINESE, YOU WILL FIND TWO
‘J’S’ IN IT”: A CASE STUDY OF FOUR CHILDREN LEARNING TO BE
LITERATE IN ALPHABETIC AND NON-ALPHABETIC PRINT**

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“WHEN YOU WRITE ‘FOUR’ IN CHINESE, YOU WILL FIND TWO ‘J’S’ IN
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Framed within sociocultural, sociopsycholinguistic, and socio-semiotic views of language and literacy learning, I employed a qualitative case study approach to examine the nature of bilingual and biliteracy learning process of four young ethnic Chinese children living in a community where mainstream American culture and English predominated. I used observations, interviews, and analysis of documents to collect data over a 3.5-year period at a community-based, weekend mother tongue (Chinese) class where I was also the teacher of my research participants. A constant comparison approach was used to analyze and interpret the data gathered.

Because of their heritage and life experiences, these children had access to two sets of cultural and semiotic resources in both minority (home and the weekend mother tongue school) and dominant (community where they lived and school they attended daily) sociocultural contexts. Findings from this research revealed that meaning making began when these children responded to existing or created texts while involved in semiotic engagements, and through this process

these young learners acquired culturally and semiotically specific knowledge. Experiences with and exposure to these two sets of specifics enabled children to transfer knowledge they acquired in one context to the other, as well as to transmediate between sign systems across sociocultural borders. Finally, within the context of the classroom, these children also experimented with different ways of meaning making, drawing knowledge they possessed from both contexts to create new meaning, from which new specifics were generated.

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CHAPTER ONE

THE LEARNER, THE TEACHER, AND THE RESEARCHER

One Learner, Two Languages, and Three Literacy Stories

Xiao Gang, Taiwan, 1974

At age seven, I had my first encounter with a second language, English, through a formula milk can. I began to notice this strange, yet interesting print one day when watching my mother preparing milk for my baby brother. Intrigued by such a print, full of curves and dots, one that was very different from the Chinese I saw and used daily, I brought the milk can to show my older sister.

“What do these characters say?” I pointed at the four big letters “K”, “L”, “I”, and “M” on the tin can and asked my older sister, who had been studying English for a year at a local junior high school.

“These are English letters, and they stand for the brand name of the milk. They sound like '*cleam*'¹ and mean 'tidy and not messy,'" she explained.

“Keling,” I tried to pronounce the sound by mimicking her and also by looking at the two Chinese characters “克寧 [ke ning]” near the English print on the can. I then began to divide the four English letters into two groups, “KL” and “IM.” “I got it,” I told myself. “The ‘KL’ must be “克 [ke]” in Chinese and the ‘IM’ means “寧 [ning]” in Chinese.” All of a sudden, I felt a sense of triumph because I could speak and understand a second language!

Kaohsiung, Taiwan, 1979-1985

I had thought that learning a second language would be fun, and I had also believed that I would be a successful learner, as I had been in my mother tongue, Chinese. It was not until I really began to study English in junior high that I realized that this was not to be the case. I had difficulty remembering all the sounds and the pronunciation, and I was often confused by the tenses. I would miss letters here and there when writing. My grade was marked down, and my palms were rapped for failing to provide the correct answer to test questions. Learning English, to me, was not a pleasure, but a torture. “I HATE ENGLISH!” I told myself, “Who cares about English?! More people speak Chinese than English.” And I swore that I would never use that language for the rest of my life after I finished high school.

Approximately twenty years after I graduated from high school, I am pursuing my academic degree using English and have been living in English-

¹ Throughout this dissertation, both Chinese and English languages are used, especially in the transcripts. In consideration of my readers, however, I have translated all Chinese text into English. The transcripts should be read in the following way: spoken utterances originally made in Chinese are shown in plain text, and English, in italics.

speaking communities for more than a decade, both by choice. Reflecting upon my first encounter with English when I was seven and on the subsequent experience with it in junior high school, I realize that although I was learning the same language at both life stages, my experience of the process was very different at each stage. As a young child encountering English for the first time, I had an implicit understanding that English, like Chinese, was comprised of meaning, sound, and grammar. Thus, I asked my sister about the meaning of the English print on the milk can, as well as tried to sound out the word and to find the correspondence between the English letters and Chinese characters. In this learning process, I could make use of the linguistic knowledge of my mother tongue to learn English, and I had opportunities to explore different aspects (semantics, phonics, and syntax) of a new language. Studying English in junior high, however, took me down a different path. At school, English was treated as a subject, and I learned it for the sole purpose of passing English examinations, instead of for communicating with others and constructing meaning. Under these circumstances, accuracy was emphasized, and drill and practice became the core of the school's curriculum. I felt lost in that language.

My struggle with English continued throughout my six years of secondary education. Although my parents had always hired private tutors to help me prepare for English examinations and quizzes, I would often perform below average. During those years, I grappled with a question—if Chinese and English are both languages, why couldn't I be good at and enjoy both of them equally? My test results from the college entrance examination put me on the road to discovering the answer to my question, for they led to my admission to the English Department at a local university. By virtue of the four years of English training I received in my undergraduate program, I eventually was able to appreciate and analyze English literature of various genres. However, I still had

difficulty using English, both in oral and written forms, to communicate with others efficiently and effectively for I was always concerned about the mechanical aspects of that language.

Iowa City, Iowa, USA, 1991-1995

It was not until I began my study in the United States that I gradually “learned English, learned through it, and learned about it” (Halliday, 1975). I learned English—its meaning, sound, and grammar system—while using it to cope in my daily life, in and out of school; I learned through English as I read and listened in order to comprehend different texts and gain information; and I learned about English when I asked people questions to help myself better understand specific word usage and to be able to compare it to my mother tongue. This process, however, was not without struggle. In the reflection chapter of my masters thesis, I wrote:

In order to write in English, not only do I need to have a command of its vocabulary and grammar, but most importantly, I also need to write in the way that makes sense both to myself and to my readers. It is, therefore, unlikely that I can think in Chinese and then directly translate the thoughts into English because each language has its own rules that govern the language use. As I began to write, a strong tension often pulled me back and forth between thinking and writing in the two languages. My early drafts of writing were full of Chinese thoughts written in English words As a result, readers of my earlier drafts often had difficulty understanding my points. Recognizing the relationship between language and thoughts, I began to examine my writing from different perspectives—the writer's and the reader's. Being a writer, I needed to fully express my personal thoughts in written words. To look from readers' perspectives, I learned to distance myself from “What I think” to consider “What others may think.” It is, therefore, not only intrapersonal communication, but also interpersonal communication. (Lu, 1995, p.155-156)

Re-visiting my second language learning experiences and examining its relationship with my mother tongue in my early childhood, adolescence, and

adulthood have helped me understand how different contexts and approaches to learning influence the ways that learners view themselves, as well as what is being learned. The informal learning opportunities I experienced at home when I was seven allowed me to explore and experiment with different linguistic aspects of the English language, thus persuading me that the process of learning a new language (i.e. English in my case) can be very similar to that of acquiring one's mother tongue, and that all languages are comprised of meaning, sound, and grammar, regardless of the seemingly distinctive surface structures they have. The formal English instruction I received in school during my secondary years provided very little, if any, space for me to investigate and learn beyond the mechanical aspects of the language, for the focus of the instruction was to prepare students to identify the only correct answer on examinations. The linguistic knowledge I possessed in my mother tongue was irrelevant to the learning of English within that context. As a result of the physical punishment I received due to my poor performance in English examinations, I developed a hatred toward English, and I deemed myself as a failure in second language learning. While studying in the United States, I gradually dis-learned my fear of English, and I re-learned it as my second language, due to the multiplicity of purposes, audiences, and situations I encountered daily. Using English for academic purposes in classes as well as for day-to-day survival outside school has enabled me to develop different approaches and strategies to meet my personal, social, and academic needs. The opportunity to use writing to record the interplay between my first and

second languages during this period has also helped me understand the idiosyncrasies as well as universalities of all language learning.

The experiences I describe above have been transformational, for they not only fundamentally influence the way I view language learning, but also shape the philosophy I hold regarding language teaching. While emerging from the last stage of this transformational process in language learning, I was also just beginning my teaching career, working with a small group of Chinese-English bilingual children. Being a graduate student majoring in education, I have applied what I have learned in my course work to my teaching, as well as to conduct research in my own classrooms. The teaching and research, as well as my own language learning experiences, form the foundation for this research project. Therefore, I would like to share stories with readers from the other two roles—as a teacher and researcher—I play in this inquiry, in the next two sections.

Together, these three threads of experience not only allow me to examine where my personal theory of literacy and language learning originates, but may also help readers understand where I position myself in this study. Chiseri-Strater (1996) argues that as researchers, we all position at least part of ourselves in the studies we undertake, and “the concept of positionality . . . requires textual disclosure when they affect the data, as they always do to some degree” (p. 116). With this disclosure, I hope that I will be able to better deal with my own subjectivity and that my readers will be able to make judgments of my interpretation about this process.

The Teacher and the Sign Systems

My teaching career began at the same time I was re-learning English as a second language in graduate school at the University of Iowa. With an interest in the teaching and learning of young children as well as in art, I was enrolled in the masters program in the Division of Curriculum and Instruction, with a concentration in early childhood and art education. Because of my language and academic background, a group of Chinese/Taiwanese parents recruited me to work with their young children at a community-based, weekend Chinese school.²

Living in a predominantly English-speaking community, my students were exposed to and learned English constantly from their environment—when watching TV programs at home, shopping with their families at local grocery stores, and interacting with others at school. However, they had limited access to their mother tongue, Chinese, except at home, during the weekly Chinese class, and in occasional ethnic group gatherings. As a result, many of these children had a very limited command of the Chinese language, and they did not have a good understanding of Chinese culture. With the desire to help their children develop Chinese language and literacy skills, maintain their cultural identity, and socialize with peers of the same linguistic/cultural background, parents of these children voluntarily set up Chinese language programs operating outside of normal school hours. In chapter two, I will discuss and describe in more detail the program in which I taught. Here, I will focus mainly on my role as a teacher of these children as well the approaches I employed to work with them.

² I will explain the role, function, and the organization of this type of educational institute in chapter two.

In the first four years of my teaching, most of my students were four- to six-year-olds. I assumed at that time that since they were so young, oral language would be the major focus of my instruction. To support their Chinese oral language learning, I employed an art-storytelling approach based on the knowledge I gained from my graduate course work (Dyson, 1992; Galls, 1991; Paley, 1990; Seely & Hurwitz, 1983; Thunder-McGuire, 1994; Wason-Ellam, 1992).

My students and I explored different art media and activities, such as drawing, sculpting, bookmaking, and puppetry. Each week, the children shared stories of their artwork with the group, and they also talked about plans for their subsequent art projects, as well as answered questions from the audience. Initially, these children were somewhat reluctant to talk about their work in Chinese, and their stories were usually short and about the objects they created. Over the course of one year, I was surprised by the fluency and confidence these children exhibited during their storytelling sessions. After my suggestion, some of the children began to write stories, either in Chinese or English.

As my students became more comfortable and confident in their language skills, their artwork also underwent changes. Instead of limiting their work to a single subject, such as a horse or a rainbow, these children began to add more elements to their artwork, thus the length of their storytelling grew longer, and its content became richer. From this teaching experience, I came to realize that art and language were both sign systems that served as tools which my students could use to construct meaning and to communicate with others. I also discovered an

interrelationship existing between these two sign systems, for development in one promoted the learning of the other. I began to be interested in this transactional process and also wanted to further explore how learners develop their language and literacy skills through the use of various sign systems, such as art, music, and mathematics.

Becoming a Researcher

The experience I described above served as the basis for my master's thesis and provided the foundation for my subsequent research. I continued to work with children and to explore different aspects of their language (both oral and written) learning process.

In the fall of 1995, I began a series of pilot studies which examined the socio-cultural context of language and literacy learning among my students. My first research project focused on the types of cultural and linguistic resources that helped a young child, Aileen,³ develop her Chinese literacy at home and in school. I discovered a wide variety of "funds of knowledge" (Moll, Amanti, Neff, & Gonzalez, 1992) at Aileen's home, but limited resources at the private early childhood program in which she was enrolled at that time. In addition, a discrepancy existed regarding mother tongue maintenance/learning between her mother and teacher.

In my second study, I examined the relationship between children's Chinese literacy learning and the child-adult interaction in my class. I was able to identify the social-cultural roles these adults served in helping young members of

³ Pseudonyms are applied to all participants in my studies to protect their privacy.

the class acquire Chinese literacy, ease into their peer group, and become acquainted with the classroom culture.

Based on the information I gathered from the second research project, I embarked on a third study that explored the role of peer interaction in Aileen's and Rosan's⁴ literacy learning process in their mother tongue. Data gathered from a six-month period revealed that these two children made use of a wide variety of sign systems, such as music, art, and mathematics while they interacted with each other in their Chinese literacy learning process.

In my fourth and most recent study, I summarized my findings from Aileen's Chinese literacy learning over a period of three years. I found that Aileen constantly used the knowledge she possessed in English to support her mother tongue (Chinese) literacy learning, and vice versa. In addition, learning to be literate for Aileen was a generative process in which she made use of linguistic conventions in Chinese to invent her own writing system in that language.

Through these research projects, I began to grasp what it means to be literate in a particular social and cultural context. I also began to identify recurring themes in each of the studies. I also found that the longer I immersed myself in the data I collected, the more questions I developed about language and literacy learning, a topic I consider to be worthy of life-long pursuit.

My Research Questions

Reflecting upon my experience as a learner, a teacher, and a researcher has helped me identify what I already know, what I am unsure about, and what I want to learn more about. The studies I conducted earlier have also provided me with

⁴ Like Aileen, Rosan is also a focal participant in several of my research studies.

opportunities to explore various aspects and issues in my language teaching and learning. In this dissertation study, I have traced the Chinese literacy learning process of four young Chinese-English bilingual children living in predominately English-speaking communities over a period of three and a half years.

I wish to answer the following three inquiry questions, which stem from my learning, teaching, and research experiences:

- In what ways does these four children's experience of their two cultures and linguistic systems influence their Chinese literacy development?
- What is the nature of the interplay between their first and second language learning?
- How does the construction of meaning in multiple sign systems influence their language and literacy learning?

These questions are inter-related, yet each plays significant roles in this research project and contributes to my understanding of what it means to be literate in specific social and cultural contexts. Therefore, I will devote three chapters—chapter three through five—to discussing and answering these questions.

Issues in Language and Literacy Learning

In the previous sections, I have shared my experiences as a learner, teacher, and researcher, as well as proposed my inquiry questions. It is through this revelatory process that I came to realize the role social and cultural contexts play in the language and literacy learning processes. Based on my own personal experience, I tried to create a learning environment which took into account my

students' socio-cultural and linguistic backgrounds, and thus be able to better assist their mother tongue learning. As research has been an integral part of my teaching, I examined and collected data on children's mother tongue literacy learning and development in my classroom in order to inform my own practice, as well as to help other educators work with students from similar backgrounds.

When reflecting on these three threads of experience, I have also found myself wrestling with issues relevant to the language and literacy learning among children of linguistic minority groups. Therefore, I would like to discuss these issues in the next section, so that my readers will be better able to situate themselves in this research project and to conceptualize the social, cultural, and linguistic issues surrounding the education of these children.

Mother Tongue vs. Mother's Tongue

Working with ethnic Chinese children in predominantly English-speaking communities, I have found that a complex and dynamic interrelationship exists between these children's mother tongue and their second language. It is complex because theorists and practitioners from different disciplines (e.g., applied linguistics, psychologists, education) and time periods hold different, sometimes conflicting views regarding the nature of, as well as the relationships between first and second language learning. It is also dynamic because the relationship between these two languages changes over time and across different contexts. Hence, I would like to discuss some aspects of this mother tongue-second language issue, based on my personal learning experience, on the research literature, as well as my experience working with language minority children and their parents.

First of all, what does “mother tongue” mean? Harris and Hodges (1995) provide two synonyms—native language and primary language, and these two scholars also define mother tongue (or native language) as “the first language one learns to speak and understand” (p. 163). With very few exceptions, we learn our mother tongue at home from primary caregivers, such as parents. Therefore, it appears reasonable to assume that the language parents speak at home with their children becomes the mother tongue of these children.

Given the context of the language minority families in the United States, this definition gives rise to two central questions: (1) What are the factors that affect the pattern of family language use? (2) What are the consequences of selecting a particular language as the major medium of family communication? Answers to these questions depend mainly upon parents' attitudes toward their own mother tongue(s) and English, as well as their belief in the relationship between language and their children's education. In addition, the language choice at home also is influenced by the social, cultural, and political forces of the society and the community in which linguistic minority families live. From my experiences working with ethnic Chinese children and their parents in the United States, I am able to identify at least three common patterns of language use among these families. I will describe each of them below:

In some families, both parents are from the same linguistic background and share a common, non-English language/dialect. They use that language/dialect as the major medium of communication and also expect their

children to use it at home. The children in such a setting will thus share the same mother tongue as their parents.

While parents may elect their shared mother tongue as the family language, their reason for doing so varies. Some parents use their mother tongue at home because they do not feel comfortable speaking in English, while other parents may be especially proud of their linguistic heritage, and so decide they want their children to maintain the ability to use their mother tongue. In families where parents have limited English proficiency, the older children often assume the role of “language brokers (Tse, 1996)” who translate and/or interpret English and their mother tongue back and forth for their parents and other English-only speakers in order to help their families function properly.

It is also common that children in such a family use their mother tongue to communicate with their parents, but switch, without difficulty, to English when speaking with their siblings. Some of these children might continue to use and develop their mother tongue literacy at home along with learning English at school because situations demand that they use both languages in order to achieve various purposes. However, some children use their mother tongue less and less when they begin formal schooling and learn English at school, as well as in their communities. Eventually, they lose the ability to speak that language due to the lack of practice and experience, even though they might still understand it to a certain extent when spoken to.

In other families, parents elect to use English when interacting with their children regardless of their own linguistic backgrounds. The children's mother

tongue, therefore, is English, because it is the first language they learn to speak and understand, according to Harris and Hodges' definition (1995, p.163). This type of language use, although not uncommon, surprises many people because it is often assumed that language minority parents do not speak English with their children at home. The use of English as a mother tongue among such families is often highly influenced by linguistic factors, as well as social and political forces in the United States. When parents come from different geographical locations and thus speak a language/dialect unintelligible to each other, English becomes more readily accessible as a means of family communication than either of their mother tongues.

There are also some families in which parents share and speak the same mother tongue with each other, but have decided to use English with their children, after considering the social and political consequences their children may face in their educational process. For example, beginning in 1919, Texas legislation made it a criminal offense to teach any non-English language at school; children who spoke a language other than English at school were often punished, either in or out of the classroom (Crawford, 1999). In addition, many states recently have adopted various forms of Official English and have mandated that English be the only instructional language used in public schools (Crawford, 1999). Afraid that their children might be at a disadvantage in education, many language minority parents, even those with limited English proficiency, begin to speak English at home with their children. As a result, children growing up in such families often have limited knowledge of their parents' linguistic heritage.

There are yet some families where each parent speaks a different language to their children, and the children respond to their parents in their respective languages; these children thus grow up learning two mother tongues simultaneously. Harris and Hodges' definition of mother tongue is thus problematic because it recognizes only “one” mother tongue. Bi-racial families with one parent who is either proud of his/her linguistic heritage or uncomfortable with English often fall into this category. Some families have purposefully chosen to raise their children bilingually, because the parents believe that being bilingual will provide their children with better educational and career opportunities, as well as help their children develop a positive bicultural identity (Baker, 1995). Depending on the social, moral, and linguistic supports these children receive, they may continue developing language and literacy skills in two languages. In many cases, however, these children’s ability to use their non-English mother tongue often decreases after they enter school, where they soon recognize that that language is not used and/or valued (Wong-Fillmore, 1991a).

Second Language vs. Secondary Language

Within the framework of these three different types of language use among ethnic minority families, I would like to discuss another term—“second language.” Stern (1983) defines second language as either any language learned later than the first one or learned as a “secondary” language. Here, I would like to use Stern’s definition to review the three variations of mother tongue usage I discussed earlier, as well as to examine issues associated with his definition of second language in different family contexts.

In the first case, the parents and their children share a non-English language as their mother tongue. English is learned after the children have acquired their mother tongue, so they learn English as a second language (ESL). However, the term “second” may have different meanings for different children due to age, years of exposure, and other factors. For example, children who begin to learn English as a second language at ages 5 and 15 respectively would develop very different proficiencies when they both reach age 18. In addition, the term “second language” also carries different meanings when referring to a child’s language development over a period of time.

When considering language learning as an on-going process, second language is by no means always a “secondary language,” a concept implying that the learners would never achieve native or native-like proficiency. Wong-Fillmore (1991b) studies the mother tongue-English shift among young linguistic minority children, and she describes the shift as “when learning a second language means losing the first one.”

Many language minority children do not have sufficient English skills before attending schools. However, as soon as they begin to learn English in school, they realize that it is “the key” for them to participate in peer groups, to learn in the classroom, and to gain access to a wide array of educational materials, such as books from the library. With this realization, many of these children stop using their mother tongue even at home, and thus their mother tongue proficiency decreases dramatically, indeed, at a far faster rate than they learn English (Wong-Fillmore, 1998). English soon becomes these children’s dominant and preferred

language, even though they have not fully mastered it. It follows that English eventually becomes these children's major, and possibly only, language they use throughout their lives.

In the second case, the children acquire English as their first language because this is the language that they have heard and used to communicate with others since birth. These children will continue using this language throughout their lives, unless dramatic life transitions take place (e.g., moving to a non-English speaking country) which require them to learn another language. It is also common that these children begin to learn their parents' mother tongue after they have acquired English. In this situation, English is these children's mother tongue, and their parent's mother tongue, their second language. It is also not unusual that these children learn yet another language as a second language and remain with little or no understanding of their own linguistic heritage.

In the 1998-99 academic year, I taught in the Chinese program offered by the East Asian Languages and Cultures Department at Indiana University. The majority of students enrolled in that program were ethnic Chinese born in the United States or other non-Chinese speaking countries. Many of these students had very limited understanding of the Chinese language because it was neither used at home nor valued in the community in which they lived. A few of them in their first-year Chinese courses dropped the class by the fourth week of the semester because "Chinese is too difficult to learn and takes me too much time." Some of these students had learned a second language, such as French or Spanish, before they had the opportunity to explore their own linguistic heritage.

In the last case, children grow up with “bilingualism as a first language (Swain, 1972)” because they learn both English and a non-English language concurrently. Their second (or third, to be accurate) language will be neither English nor one of their parents' mother tongues. Depending on the various factors that come into play in life, these children may become balanced bilinguals—people who possess equal or almost equal proficiency and competence in two languages. Alternatively, the abilities and skills these children possess in their non-English mother tongue may decline, so that it eventually becomes their secondary language. Although balanced bilingualism is quite common in many Asian and European countries, where linguistic diversity is regarded as a personal as well as societal asset and necessity, it is often not the case in the United States (Hakuta, 1986).

The ideology under various forms of English-Only Movements emphasizes that “English has always been our common language, a means of resolving conflicts in a nation of diverse racial, ethnic, and religious groups. Reaffirming the preeminence of English means reaffirming a unifying force in American life” (Crawford, 1992, p. 2-3). Dominant societal and cultural ideologies like this often impede the maintenance and development of mother tongue(s) among language minority children.

In the previous section, I have provided my readers with several snapshots of language use in linguistic minority households as well as discussed the second language use in association with different family contexts. It is evident from these three types of language learning and uses that children do not necessarily inherit

their parents' language or cultural experiences. Instead, the linguistic, societal, and political ideologies these children grow up with shape the form and drive the direction of their language learning. Language and cultural knowledge, thus, is not inherited but acquired. Learner need to actively participate in the various activities of the socio-cultural and linguistic environment in which they live, at the same time as they evaluate the weights of different types of knowledge and information that would help them gain access to both tangible and non-tangible materials. For the purpose of this study, I would like to provide a definition for each of these two terms—"mother tongue" and "second language"—based on the issues discussed earlier. First, I define mother tongue as the first language(s) parents/primary caregivers and a child use to communicate with each other in meaningful and functional ways, regardless of whether the language(s) is/are the major means of communication between other members of the family or the dominant communication tool(s) used in the community in which the child lives. Second language, I define as any means of communication learned after one has a full command of his/her mother tongue(s). A second language may remain as one's secondary language or it may become one's primary and dominant language when a person is able to use that particular language competently and constantly across various contexts, for different purposes, and with different people.

Mother Tongue Learning and Language Minority Children

Having provided a definition for "mother tongue" and "second language", I would next like to discuss the role mother tongue plays in the learning and education of language minority children who use a non-English language at home

to communicate with their parents and other family members. I want to focus on this issue because all my research participants, except one, belong to families where a non-English language is used, although to different extents and for different purposes. To begin, I would like to share a few questions that people often ask: “Why is mother tongue important?” or “Don't language minority children have to learn English in order to fully function in this society?” Wong-Fillmore (1991b) cites a preschool teacher's comment, one which reflects a common attitude regarding these questions:

Look, these kids need English before they go to school. So, what if they lose their first language? In this world, you have to give something to get something! They lose their mother tongue, but they gain English, and with it, access to what they can learn in school. That's not such a big price. (p. 42)

Is it really “not such a big price” to lose one's mother tongue? What may be the consequence of losing one's mother tongue? Is there any incentive for language minority children to keep using their mother tongue at home along with learning a second language at school and their communities? As is apparent, these are complex issues.

Researchers (Cummins, 2004a; Wong-Fillmore, 1991a) have maintained that the consequence of losing a mother tongue for language minority children and their families is costly and painful. In homes where there is no shared mother tongue between adults and children, the family bonds are often fragile and very likely to break down eventually, because parents and children are only able to

communicate with each other on what must be said and understood but unable to go beyond the level of basic necessity (Wong-Fillmore, 1991b). It follows that with the loss of shared means of communication, parents also lose a major tool to transmit beliefs, wisdoms, and understanding with which they support their children's learning and development (Cummins, 2004a). In other words, when parents are unable to impart their cultural values to their children and lose a primary means of socializing their children, rifts inevitably develop and families lose the intimacy that comes from shared beliefs and understandings (Wong-Fillmore, 1991a). As parents play a major role in educating their children, such losses in family communication are unnecessary and detrimental for these children, their family, and society (Cummins, 2004a).

The opportunity to continue learning and developing mother tongue skills also affects the educational and cognitive development of language minority children (Cummins, 2004a; Wong-Fillmore, 1991a).

Heath (1986) investigates parents' ways of using language with children at home among different socio-cultural groups, and her study reveals that each group has its own specific ways of using language to socialize children; while communicating with their children, parents of each group use various types of speech. Heath labels these types of speech as genres⁵ and explains that each socio-

⁵ Heath (1986) categorizes six main genres commonly used in mainstream homes and classrooms in the United States. These genres include: (1) label quests: Adults ask children to tell the name and attributes of objects; (2) Meaning request: Adults infer what children means or ask for explanation of what is intended; (3) Recounts: Adults request children to retell experiences of information known to both tellers and listeners; (4) Accounts: Children initiate a conversation providing new information or new interpretations of information, and adults judge accounts by both truth value and organization of the telling; (5) Eventcast: This genre takes place when adults and children are engaged in an activity. Adults provide a running narrative of an ongoing activity and or forecast a future event and then ask children to predict future actions or to verbalize plans

cultural group recognizes and uses only a limited number of the total range of genres that human beings are able to produce. When parents and children communicate fluently with each other in their native language, the children acquire the full range of genres in that language. As a consequence, they can apply these genres in their mother tongue across a variety of contexts.

Heath (1986) believes that whether children succeed in academic learning at school depends heavily on their ability to use the specific genres valued at school. When language minority children master the full range of genres in their mother tongue, there is a strong likelihood that these genres include some or all of those valued in school. As these children go to school, they only need to learn the sounds, vocabulary, and syntactical system of English, but they do not need to re-learn all sets of rules for English, such as the basic interaction skills, at the same time (Cummins, 2004a; Escobedo, 1983). Consequently, these children not only have the basic communication skills necessary for social exchange in the school, but they can also apply those genres valued by the school to display their cognitive and academic skills.

Cummins (1981a) has proposed a model, Common Underlying Proficiency (CUP), to explain the interrelationship between mother tongue and second language in terms of academic learning. Cummins regards “Common Underlying Proficiency” as the shared literacy-related aspects of a bilingual’s proficiency in mother tongue and second language, and it involves cognitively demanding, context-reduced communicative tasks, such as learning to read and

in which objects and people will be involved. (6) Stories: Adults tell stories about animate beings who move through a series of events with goal-directed behaviors.

write. The continuous use and development of learners' mother tongue can promote the development of their second language, and vice versa, given the adequate support and exposure to both languages in home, school, and the wider communities (Cummins, 2004a).

As the research literature reveals, the maintenance of mother tongue skills in language minority children not only affects their family relationship and personal growth, but also has great impact on their educational and cognitive development. When children are given opportunities to make use of the knowledge they possess in their mother tongue, they are able to transfer these skills and information to their learning in the second language context. While they develop their second language proficiency and competence, they also begin to compare and contrast between the linguistic systems of their mother tongue and second language, thus deepening their understanding of the roles and functions language plays in their life. Therefore, it is important that these children continue using their mother tongue at home while also learning a second language in their schools and communities.

The Guiding Framework

This inquiry evolves from my experience working with young literacy learners, especially those from language minority backgrounds, as well as from my own language and academic learning experience. Through my course work as well as personal learning experience, I have discovered that it is impossible to understand language and literacy learning processes without taking into consideration the contexts in which the learning occurs (Heath, 1983, Goodman,

1990; Purcell-Gates, 1997; Taylor & Dorsey-Gaines, 1988). From my students, I have also found that learning to be literate involves more than just understanding and being able to construct meaning through linguistic systems.

Other sign systems, such as art, music, and mathematics, are integrated parts of such a process. In addition, because the children I worked with had access to two languages, it is important to review research on bilingual and biliteracy development in children. Therefore, an understanding of theories and models in the following areas is essential to this inquiry: (1) the socio-cultural context of language and literacy learning, (2) language and literacy learning from a semiotic perspective, and (3) bilingual and biliteracy development.

Language and Literacy Learning in Socio-Cultural Contexts

Becoming literate in a specific language does not happen overnight, nor does it take place in a vacuum. Scholars now are aware of how specific contexts and ideologies, such as social, cultural, and political forces, impact our learning processes. The cultural practices and dominant ideologies within learning contexts shape the learners' perception of language and literacy learning processes; likewise, the language that learners use also reflects the values and beliefs embedded in their culture (Luke & Freebody, 1997). In other words, the learning environment and instruction provided by caregivers and educators in our culture not only influences how we understand a particular text, but also how we conceptualize the very act of what constitutes literacy (Suhor, 1991).

Similarly, language learning and cultural learning are inseparable from each other, for language serves as an active agent for preserving, transmitting, and

creating cultures, so that the past, present, and future of a culture's ideologies, beliefs, and values can be disseminated from one generation to the next. Gee (1996) proposes that within each community there exists a specific discourse system—the way of being, doing, and thinking in language—and a discourse system is ultimately about “ways of being in the world” (p. viii). The acquisition of a specific discourse system mainly depends upon how adults or more experienced members of each group socialize their youngsters into the culturally approved ways of being, thinking, and doing through the use of language. Heath (1983) observes children from three different ethnic and social-economic groups, and she finds that even preschoolers exhibit verbal behaviors that are in accordance with their community's values and ideologies, and these behaviors vary from community to community.

Although language and literacy are often considered the major channel for socializing children into specific culture, they are by no means the only one. Cook-Gumperz (1986) argues that becoming literate entails the mastery of socially constructed and approved competencies via the use of a cultural technology. “Cultural technologies,” in a broad sense, not only include language, but also other sign systems, such as music, art, and mathematics, which I will discuss below.

Semiotic View of Language and Literacy Learning

Semiotics is the study of signs and sign systems, such as language, music, art, and mathematics, which human beings use for communication and which comprise forms for presentation and conventions (Berghoff, 1998). Sign systems

not only are tools for basic human interpretative activities that enable us to configure and reconfigure our inner feelings and experiences (Langer, 1967), but they also provide us with avenues with which we compose our total repertoire of learning (Galls, 1991).

Being literate from a semiotic perspective, therefore, means more than just possessing the ability to make use of oral and written language, but requires learners to orchestrate different languages—the language of music, arts, and mathematics—with fluidity (Cairney, 1997; Suhor, 1991)—in order to generate meaning, communicate with others, and acquire knowledge. Short, Harste, and Burke (1996) argue that,

. . . literacy is much broader than language. . . . [W]e define literacy as the processes by which, we, as humans, mediate the world for the purpose of learning. . . . To mediate the world is to create sign systems—mathematics, art, music, dance, language—that stand between the world as it is and the world as we perceive it. (p. 14)

When mediating the world for our learning, we use sign systems in a coordinated way, because each of them is complementary to the other and presents multiple ways of knowing thus expanding the repertoire of our learning (Berghoff, 1998; Leland & Harste, 1994). Suhor (1984) uses the concept of “transmediation” or “the translation of content from one sign system into the other” (p. 250) to explain the moving between and marriage of sign systems in the meaning construction process.

Holding the perspective that any literacy learning is multimodal, semioticians assert that engagement in alternative, available sign systems allows learners to shift and gain new perspectives on a specific topic, thus expanding their understanding and the range of meanings they can express (Harste, Woodward, Burke, 1984). Like language and literacy, the meaning of sign systems is also contextually bound and can only be acquired through functional use with a variety of audiences and for different purposes.

Children who have “bilingualism as first language” (Swain, 1972) will need to learn two sets of linguistic as well as other sign systems in order to transmediate between and orchestrate among these systems across different language and cultural borders.

Bilingual and Biliteracy Development from a Sociopsycholinguistic Perspective

Recent demographic and educational trends in the United States reveal a dramatic increase in the number of children from non-English speaking households (Soto, 1991). According to 2000 Census (U.S. Census Bureau, 2003) data, more than 9.7 million (or about 18.4%) children between the ages of 5 to 17 in the United States use a non-English language at home, and the number keeps increasing each year. Some of these children develop two sets of language as well as literacy skills while growing up bilingually and bi-culturally.

The concept of bilingualism in the United States traditionally had negative connotations, at least in the first half of the 20th century because it was often associated with people having a lower socio-economic status and who were

educationally at risk (Hakuta, 1986). Recent research, however, has demonstrated the cognitive and linguistic flexibility of bilingual children in language and academic achievement (Hudelson, Poynor, & Wolfe, 2003).

In examining the relationship between bilingual learners' mother tongue and second language proficiency, Cummins' model of Common Underlying Proficiency (1981a) has illustrated that experiences with multiple languages, instead of interfering, can actually promote the development of both languages, given adequate motivation and exposure to both languages in the learners' immediate environment. Children who use a non-English home language enter school with many well-developed skills in their mother tongue, and these children are able to use that language for culturally appropriate activities in various contexts with different participants and topics. These skills can serve as the springboard to the learning of English at school (Ollila & Mayfield, 1992).

Edelsky (1986) maintains that once a firm base has been founded in children's mother tongue, they are willing to explore and find out how a second language works. These children can also apply their background knowledge in their mother tongue to make sense of the unfamiliar, to create their own English written text, and to read English materials written by others. Even when the written forms of their mother tongue and English—such as the Chinese characters and the English alphabet—are distinctively different, the children are still able to apply the visual, linguistic, and cognitive strategies used in their mother tongue to reading and writing in English (Freeman & Freeman, 1992).

In the previous sections, I have briefly reviewed three threads of research, theories, and models, which not only provide the framework for this inquiry, but also reveal the evolutionary process of my thinking and understanding of the issues surrounding language and literacy learning among linguistic minority children.

The socio-cultural context of language and literacy learning provides the backbone for this research, for it helps me to see how language and culture interact with each other in a learning process. Furthermore, the semiotic perspective of language and literacy has expanded my understanding of what it means to be literate because it includes all alternative sign systems that human beings use to preserve, transmit, and generate meaning. The concept of flexible cognitive functioning among bilingual and biliterate people provides me an opportunity to examine the interrelationship between the first and second languages.

In this chapter, I have set up the backdrop of this research from the perspective of an English as a second language learner, a teacher working with language minority students, and a researcher interested in children's literacy learning in particular social and cultural contexts.

In the next chapter, I will familiarize my readers with the particular social and cultural context in which this study takes place, by guiding them through a virtual tour of the research setting, including the community and the classroom. In addition, I will introduce the focal research participants—Aileen, Rosan, Maya, and Lucian—to my readers by providing snapshots of each of these children as

well as showing how they interacted with each other and me in the classroom. I hope through such an introduction that my readers are able to personally “meet” and “know” these children as individuals in terms of their personal-social-cultural history, instead of seeing them as a group of research subjects without names, identities, and idiosyncratic persona. Finally, I would also like to guide my readers through my research process—from my field entry to issues I encountered in the field, and from my data collection methods to the approach I employed to analyze and interpret my data.

CHAPTER TWO

THE LEARNER AND LEARNING CONTEXTS, AND THE RESEARCHER AND THE RESEARCH PROCESS

Reflecting on my own English as a second language learning experience, I asked myself questions.

- Do I think in Chinese then translate my thoughts to English?”
- Am I able to think in English directly?
- How can I better translate and interpret a foreign concept linguistically and/or culturally) to monolingual Chinese and English speakers?

Questions like these are interesting but difficult to answer because I have been through different stages of English language development. Depending on the context, the level of my English language proficiency, and the audience, I alternate between thinking and using English and Chinese. These questions, however, have provided me opportunities to reflect on the relationship between my language learning and thinking processes. I have found several patterns of language use to which I am accustomed. The following are some of the more dominant ones:

- It is far more efficient and effective for me to do counting and solve mathematics problems in my mother tongue, Chinese, than in my second language, English.
- I am more comfortable and confident discussing and writing about my academic work in English than in Chinese.

- I code-switch frequently when interacting with close friends and relatives who are also English-Chinese bilinguals.

By examining my patterns of language use, I have come to realize the relationship between language learning, thinking, and context. I learned counting and mathematics in my mother tongue when I was a young child living in Chinese speaking communities. The skills and knowledge I acquired in that language have since enabled me to deal with all aspects of my life involving numbers, such as converting US dollars into Taiwanese dollars and estimating monthly living expenses. I have always positioned myself as a Chinese speaker/thinker and functioned accordingly in contexts when counting skills and mathematics knowledge are required. The ability to employ these skills and knowledge in that particular language has thus become an integral part of my knowledge system.

My academic training in education began approximately ten years ago when I was enrolled in the master's program at the University of Iowa. I stumbled in the early stages of my graduate study due to my lack of familiarity with academic discourse in American classrooms, as well as my not-yet-adequate English proficiency and competency. Gradually I was able to cope with the demands of the courses, and I developed an interest in the areas I wanted to continue pursuing. English has thus become my dominant and preferred means of communicating with people in the academic world, both in oral and written forms. The learning of content through English is so situated that I can neither deny nor neglect its influence on me. English, in a sense, has been my academic "primary language," by which I understand and construct meaning in the academic world.

This language has also become an integral part of me, for it is a major means by which I identify myself academically.

The language skills I possess in Chinese and English enable me to switch between languages while interacting with friends and relatives who are also Chinese-English bilinguals. Because of our life experiences and/or academic backgrounds, we acquire terms and concepts in different languages and in various contexts. With a primary intention to communicate with each other efficiently, we employ the most “economic” strategy of communication, that is, using whatever resources we have in our linguistic data pools without worrying about keeping the whole conversation in the same language. Interactions like these are an essential part of the bilingual and multicultural world in which I live because they not only provide flexibility for my thinking, but also expand the total range of meanings that I am able to express.

I started this chapter with an examination of the patterns of my language use/learning in various contexts and purposes: personal, academic, and social. Through such reflection, I have also gained an understanding of the relationship between the context and myself as a language learner. Based on this understanding, I would like to conduct studies to examine how others acquire and learn to use literacy and language in particular contexts, as well as the role of language and literacy in their thinking, learning, and development.

For the purpose of this study, I traced and documented the mother tongue (Chinese) literacy learning of four ethnic Chinese children living in a mid-western university town for a three-and-a half-year period. In the following sections, I will

first describe the context in which my inquiry took place, including both the university town and the weekend Chinese class, of which I was the teacher. I will then introduce the participating children who have shown me what their language and literacy learning processes are like in such a context.

The Community: Centreton⁶

Centreton is a research-oriented, mid-western university town with a population of approximately 65,000. Like its counterparts throughout the midwest, most residents in Centreton are students and those who have an affiliation with the university. Because of the university's reputable arts and social sciences programs, many students and scholars from around the world have chosen Centreton as their home away from home. Walking around, visitors can see, hear, and even taste the diversity and vitality these multicultural groups of people infuse into this community. Various religious groups/centers, from Buddhism to Islam, from Judaism to Christianity, provide for the different spiritual needs of their respective followers. A wide variety of ethnic restaurants—Asian, Mediterranean, Middle Eastern, and Yugoslavian, to name just a few—offer Centreton's residents and visitors a taste of differences. As well as the food that satisfies one's appetite, there are musical and theatrical performances at the university campus as well as at local, alternative theatres year round to entertain one's ears and mind.

Downtown Centreton, the earliest settlement of the community, is divided by Main Street, which runs north and south. Most of the community's public service centers, such as City Hall and the Post Office, are scattered around Main

⁶ Pseudonyms are used for all participants and the research site throughout this study.

Street, while the majority of the university buildings are located on the eastern side of the town. I have been living in this community since the summer of 1995 and started working with ethnic Chinese children in the fall of 1995. All four focal children in this study lived on the east side of Centreton, and I spent my first three years living on the east side, then moved to the west side in the fall of 1998.

Centreton Chinese School

Centreton Chinese School was founded by parents of the ethnic Chinese children living in this university community in the early 1990s. Alternative educational institutions like this school can be traced back to the mid-19th century, when Chinese youth came to the United States to work as laborers, such as miners and cooks (Chao, 1997).

Holding the traditional Chinese belief that education was the only way to elevate one's socio-economic status, these workers were eager to pursue their education in the New World. However, they wanted to learn and to maintain their traditional Chinese literacy skills in order to communicate with their parents and relatives in China. Many Chinese schools in the North America were set up for such a purpose. Due to the segregation policy and the lack of time for enrollment in regular classes, Chinese youth were only able to attend private tutoring sessions after a long day's work or during the weekends.

In recent years, the social status of the Chinese immigrants has changed from that of manual laborers to professionals in various fields, and the segregation policy has also been abolished. Children of different racial/ethnic groups have become an integrated component of the public schools in the United States.

However, many ethnic Chinese parents have remained concerned about the maintenance of the mother tongue and the development of cultural identity of their U. S. born children (Chao, 1997).

To help resolve their concerns, these parents initiated weekend Chinese schools for their children in the communities where they reside. Although the structure and curricula of these educational institutions are varied, the major purposes of a weekend Chinese school are to help ethnic Chinese children learn Chinese language and literacy skills and develop a positive cultural identity, as well as to provide socialization opportunities for these children and their parents.

I have been working with primary graders in Centreton Chinese School since the fall of 1995. In its early years (1992-1996), the school had to borrow classrooms from the university due to its tight budget. There were about 20 children enrolled in this school, and they were divided into 3 classes—preschool (age 4-5), primary (age 6-10), and intermediate (age 10 and above)—according to children's age and level of proficiency in Chinese language. The teachers were graduate students majoring in education at the university. During the academic year, the children and their teachers met for 1.5 to 2 hours on Friday evenings. Parents of the students took turns with administration, teacher recruiting, and treasury responsibilities. Although the government of the Republic of China (Taiwan) provided a small stipend, the sponsorship of summer teacher workshops, and free textbooks for students, each individual school was responsible for its own curriculum, instruction, and student assessment.

In the summer of 1996, several children and their families left Centreton, and the number of students decreased dramatically. There were only three children remaining in the primary class that I taught. After a discussion with the parents, we felt that the university classrooms met neither the children's learning, social, and physical needs, nor my instructional requirements. I decided to offer the living room of my apartment as the classroom. Since then, I transformed my living room into the classroom for children with whom I worked. Because most of the data I gathered for this study were from this "classroom," I will provide my readers with a description of the classroom, both narrative and visual, in the next section.

The Class

I lived in the Eastman Apartment complex from fall 1995 to 1998. For three years, the children and I used my apartment's living room as our classroom. Most of my data for this study were collected during this period, except those from Aileen, with whom I had worked before we both moved to Centreton. Eastman Apartment was located on the eastern side of Centreton, about a 30-minute walk from the downtown area and was close to a few shopping plazas, a grocery store, and three elementary schools. It was surrounded by several religious centers—Catholic, Mormon, Christian, and Islamic. The residents in Eastman were comprised of university students, families with young children, and retirees.

The apartment in which I stayed during this three-year period was on the second floor of the apartment complex. My living room was a total of 221 square

feet (13 feet x 17 feet). To meet my instructional requirements and the children's learning needs, most of the furniture in my living room was either on wheels or light-weight, and so could be moved around for different purposes. Below are photos of the classroom's physical set up and a narrative description:



Figure 2.1. Physical setup of the classroom.

I intended to provide children a text rich environment by adopting the major components of a quality literacy program as well as modeling after a regular household which was full of printed and non-printed literacy materials, such as books, games, posters, and tapes. Children's writing samples, artwork, and posters were on the south classroom walls. In addition, a bookshelf holding approximately 200 children's books, games, as well as audio- and video-tapes, stood by the south wall of the room. Materials on the shelf were both in Chinese and English, with the contents focused on various aspects of Chinese culture and languages.

The children were encouraged to check out materials from the shelves, and each of them had a small booklet so that they were able to keep track of materials they borrowed or returned each week. A shelf on the east side of the class was for stationery and school supplies, such as different types of paper, scissors, stickers, glues, and markers, for the children as well as myself to create different projects in the class. Two rectangle coffee tables, placed next to each other, were on the south side of the classroom to serve as working stations. In the center of the room were several cushions, on which children sat during sharing/storytelling time, or used as props during dramatic activities. The north side of the wall was usually reserved for posting products of group instructional activities, such as KWL charts or semantic maps.

The children and I met on Saturdays from 3:00 PM to 5:15 PM during regular academic semesters, as well as in the summers. I divided each semester into two 6-week sessions, with one week of break between them. Both Mandarin

Chinese and English were used as instructional languages, for the majority of children was more familiar with English, even though the purpose of the class was to help them learn Chinese. In our class, Maya was the only one who has similar proficiency and competency in Chinese (Cantonese) and English oral language development, for her family use that language almost exclusively at home, and she learned English at school. Coming from a Cantonese-speaking background, Lucian's father also hoped that his children could learn to be literate in Cantonese, for his own mother did not understand Mandarin and had very limited English proficiency. Although both Mandarin and Cantonese are both Chinese dialects, they have very different phonetic systems, and the syntax of these two linguistic systems also varies. Growing up speaking exclusively Mandarin and Taiwanese, I was therefore unable to teach children in Cantonese.

I adapted an inquiry-based curriculum (Short, Harste, & Burke, 1996) to work with the children because of the teaching/learning beliefs I held—that we all learn through multiple sign systems and that learners need to be inquirers in their own learning processes—as well as the academic training I received from my graduate studies. In the beginning of a new session, the children and I sat down to identify and to discuss topics of interests to them and then to select a common, shared theme for a focus study: one theme was usually pursued for one semester to a whole year, depending on the available resources as well as the level of the children's participation.

Each class period began with a sign-in activity in which children returned materials they had checked out the previous week, followed by a story-sharing

activity in which I read books to the children based on the theme we had chosen together. The children raised and discussed their questions during and after the story reading session. A ten- to fifteen-minute snack break was scheduled between the first and second half of the class. We reserved the second half of class for invitations and/or strategy lessons.

During the invitations, the children worked alone or with one to three partners to explore different activities that I had designed based on the theme we had selected to study. The strategy lesson was the time when the children practiced their oral and written language skills, such as using Mandarin Chinese to introduce themselves to the others in the class and practicing the stroke order of Chinese characters. Before the end of class each day, the children checked out materials to take home. When the weather permitted, we went to the playground of St. Mary's, a Catholic elementary school next to my apartment. There, the children played and waited for their parents to pick them up.

The Children in the Classroom

Having toured readers through the community in which my research participants lived and after describing the physical setup of the classroom, I would like to turn the lens to the children and situate them in the classroom context. By “opening” my classroom and inviting readers to a typical class session, I hope that readers are able to not only learn about these children, but also “see” and “know” them vicariously—how each child looked, what they did in my classroom, and how they interacted, verbally and nonverbally, with each other and myself. The

description of the class session is written in chronological order, beginning with the arrival of the first child and ending when the last one left my apartment.

3:05 PM. My doorbell rang. Opening the door, I saw 7-year-old Lucian, his Chinese father, American mother, and his 5-year-old twin siblings standing by the door.

“Hi, come in,” I said.

“Hi, Mei-Yu. How are you doing?” asked Lucian’s father.

“Hi, Mei-Yu,” Lucian’s mother greeted me then gently reminded her son as he stepped into my living room, “Lucian, would you take off your shoes?”

“Pretty good,” I responded to their greetings.

“Hi, Mei-Yu,” Lucian greeted me as he took off his shoes.

“Hi, Mei-Yu,” said Lucian’s sister, Mei-Mei, and brother, Di-Di, both smiling.

“We are not late, are we?” asked Lucian’s mother.

“No. As a matter of fact, you guys are the first. You know we Chinese are always late,” I joked.

All adults laughed.

“Oh, not again,” cried out Lucian as he walked toward the bookshelf and was ready to check in the books he borrowed from my library last week.

“OK, got to run. Have fun!” Lucian’s mother bade goodbye to her son.

“Study hard,” said Lucian’s father as he stepped out.

“Bye, Mei-Yu. See you later,” waved Lucian’s siblings as the family left.

“Hi, Lucian. How’s school?” I closed the door and sat by Lucian, a boy with a petite body frame for his age. Like most Asian-Caucasian biracial children, Lucian had dark brown hair and eyes, a fair complexion, and Caucasian facial features.

“It’s OK,” said Lucian. “Want to see what I bring today?” Slowly, he unzipped his backpack and pulled out an *Animorph* book, *The Change* (Applegate, 1997). “It’s the newest. I got it from Borders yesterday. You can borrow it.” He pushed the book toward me.

“Oh, thank you! Have you finished reading it?” I took the book from Lucian, the only child in my class who had introduced me to all his favorite books.

“Yeah, I did,” replied Lucian, with a grin on his face.

3:10 PM. The doorbell rang again. Lucian and I went to answer the door. Seven-year-old Maya and her mother stood by the door.

“Hi, Mei-Yu, nihao [Hi Mei-Yu, how are you]?” Maya’s mother greeted me. She then nudged her daughter and said in Cantonese, “what are you supposed to say?”

“Hi,” said Maya, a girl with medium body frame and a medium complexion. She had a full head of short, silky and dark brown hair to match her round, double-lidded, dark brown eyes.

“Wo henhao. Ni ne? Canting zuijin de shengyi zhenmoyang? [Great, how about you? How is the business in the restaurant recently]?” I asked.

“Haihao [It’s fine],” said Maya’s mother. Passing me a plastic shopping bag with a few boxes inside, she said, “it’s for you.”

Knowing that these boxes contained the Cantonese style pastries and bakery made by Maya’s father at the family owned restaurant, I took the treat with appreciation. “Oh, xiexie [Oh, thank you!]” I said.

“Maya, I am leaving,” Maya’s mother bade good-bye to her daughter in Cantonese.

“Mom,” Maya went back to her mother and whispered in Cantonese to her.

When I returned back to the seat, Lucian had already taken out a piece of paper from the bookshelf and was ready to write. He was practicing writing Chinese numbers. “*I am on T plus T,*” he announced.

“*What’s that?*” Maya came by and asked.

“*I am writing ‘seventy seven,’*” replied Lucian and showed Maya what he meant.

Maya leaned forward to see. After that, she took out a piece of paper from the bookshelf and asked me, “*Are the others coming?*”

“*Well, Jamie was sick today, and Emma is in Chicago visiting her grandparents, but Rosan and Aileen will be coming,*” I replied.

“*Yep, they are either coming very early or late,*” commented Maya and then asked me, “*what am I supposed to do?*”

“*Why don’t you write down as much Chinese as you can while we are waiting for others to come,*” I suggested.

Slowly, Maya began to write. Occasionally, she looked at the wall, trying to find some Chinese characters she knew.

3: 15 PM. Hearing footsteps running toward my apartment, I opened my door. Standing by the door were seven-and-half-year-old Aileen and her older sister, Eileen. “Hi, lu laoshi [Hi, teacher Lu],” said Aileen and Eileen, still panting from the running.

“Mama ne [Where is mom?]” I asked.

“Ta zai houmian [She is coming],” replied Aileen, a girl with a petite body frame and fair complexion. She had soft silky, dark brown, waist-length hair. A pair of twinkling, dark brown, doubled-lidded eyes, and chubby face made her look much younger than most children of her age. She went straight to the working table, chose a piece of purple construction paper, and began to write.

“Hi, Mei-Yu, duibuqi, wome chidao le. Wo ganggang cai cong gongsi huidao jia. Woman xiage libai you yige project han liang ge CD Rom yao jiao chuqu [Hi, Mei-Yu. Sorry for being late. I just got back from work. We have a *project* and two *CD-Roms* due next week],” said Aileen’s mother, an instructional designer at a private firm in Centreton.

“Meiguanxi. Niman bushi zuihou yige. Chi gui fan meiyou [Don’t worry. You are not the last one. Have you eaten rice yet⁷?]” I greeted her in the traditional Chinese way.

“Ganggang cai chi guo. Xiexie [We have. Thank you],” replied Aileen’s mother. “Got to go back to work, otherwise we will be late. See you later,” said Aileen’s mother as she walked out with Eileen.

As Aileen’s mother and sister went down the stairs, Rosan and her mother arrived. “Hi Lu laoshi [Hi, Teacher Lu],” said Rosan’s mother, carrying a portable, plastic aquarium with a baby red-ear slider in it. Rosan de biaojie get a zhezhi wugui. Ta xiang rang xiaopengyou zai show-and-tell de shihou kanyikan tade wugui, kebukeyi. [Is it OK to let the turtle stay in the classroom for a while? Rosan got it from her cousin, and she wants to show it to her little friends in the class during show-and-tell time.]”

“Meiwenti [Sure, no problem],” I took the box from her and left it on the bookshelves.

“*Good*,” smiled Rosan, a seven-year-old girl with a broad body frame and fair complexion. She had a pair of single-lidded eyes with soft and fine hair about shoulder length.

“Xiexieniyao. Na wo xianzai yaodao wo laogong de yiyuan chu bangmang le. Yihuier jian [Thank you. Now, I need to go to my husband’s clinic and help. See you later],” said Rosan’s mother and left.

3: 20 PM. I closed the door and walked back to the working stations where the children were engaged in their individual tasks. Maya and Lucian were working side by side on the same table. Lucian was practicing his number writing, and Maya was writing as many Chinese characters as she could. Sitting next to each other, Aileen and Rosan each had a piece of construction paper, and they talked with each other, in English, while working on their writing.

3: 30 PM. Ten minutes slipped by. I called the children to the sharing area. “*OK, let’s get together, so we can do our sharing.*”

“*But, I haven’t finished yet.*” “*Could I have five more minutes?*” “Teacher Lu, I just started it,” said the children, reluctant to come to the sharing area.

“*Don’t worry. Just come,*” I insisted.

The children dragged themselves to the sharing area.

“Lai, women kankan. Sheiyao diyige share [OK, let’s see. Who would like to be the first to *share*?]” I asked for a volunteer.

“*I will,*” Lucian raised his hand.

“*I want to be the last,*” said Maya immediately, followed by Aileen.

“*I want to be the second,*” said Rosan. She then changed her mind, “*No, I don’t care.*”

Lucian showed us all the numbers he had written in Chinese, from “seventy one” to “ninety three.” “*I wrote many Chinese numbers,*” said Lucian.

⁷ According to Sung (1981), the Chinese often suffered from famine in the past, and thus crop growing and consumption had been a major concern to them. Consequently, asking “have you eaten (rice) yet?” has become a common greeting phrase among the Chinese.

He then began to read those numbers in Chinese. “Qishiyi, qishier, qishisan [Seventy one, seventy two, seventy three],” he paused and asked, “*How do you say ‘four’ in Chinese?*”

“*How do you say ‘four’ in Chinese?*” I asked the children.

“Si [Four],” said Aileen and Rosan simultaneously.

“Si [Four],” said Lucian and looked at me, as if seeking for confirmation.

“Dui [Right],” I nodded and added, “*it also sounds very much like ‘ten’ in Chinese.*”

Lucian went on reading all the numbers he had written in Chinese.

“Rosan, huan ni le [Rosan, it’s your turn],” I cued her.

“OK,” said Rosan and held the paper she worked on earlier. On the paper, she numbered each Chinese word she had written. There were also zigzag lines to separate one term from the other. “*I wrote thirty six words,*” announced Rosan.

“Duoshao [How many]?” I purposefully probed her, wanting her to use Chinese.

“Sanshilliu [Thirty six],” replied Rosan in Chinese this time.

“Nian gei woman ting haobuhao [Could you read them to us]?” I asked.

Slowly, Rosan began to read. She paused when she encountered an unfamiliar character “子 [zi, seed/son/child],” which she had copied from the environmental print.

Aileen flipped the paper on which she had written the Chinese characters. “*What’s this?*” she hinted. (In Chinese, the pronunciation for “paper [zhi]” and “seed [zi]” is similar.)

Rosan, however, did not get the hint. She looked puzzled. “*Square?*” she asked.

“Budui, shi ‘zi’ [No, it is ‘seed],” said Aileen.

“Zi [Seed],” Rosan repeated after Aileen. She then proceeded to read the rest of her writing.

“Huan ni le, Aileen [Now, it is your turn, Aileen].” I called on Aileen when Rosan finished.

“*Could I share my turtle first?*” asked Rosan.

“*Wait. We will do that after we finish sharing our writing,*” I said to Rosan.

Aileen leaned on me. Slowly, she held the piece of paper on which she had written Chinese characters. On her paper, she had drawn horizontal and vertical lines to form cells for her Chinese characters. Like Rosan, she had also numbered each character she had written in Chinese. She pointed at each character as she read, “zhege shi ‘wo’. Zhege shi wode mingzi [this is ‘I’, this is my name],” said Aileen.

“Nide mingzi shi shenmo [What’s your name]?” I asked.

“Ai-leen [Aileen],” replied Aileen. She then went on, “zhege shi ‘san’, ‘niao’, ‘yu’, ‘ma’ [this is ‘mountain,’ ‘bird,’ ‘fish,’ ‘horse.]” Finally, she came to a character she didn’t know. “wo wangji zhege le [I forget what this is].”

“Wan xiong [Raccoon],” I helped out.

“Wan xiong [Raccoon],” followed Aileen. She then went on to finish the rest of the characters she had written.

“Hao, Maya [OK, Maya],” I invited Maya to share.

“*I have written some sentences,*” said Maya, holding a piece of white paper. She had numbered the sentences she had written.

“*That’s great! Read them to us.*”

“*In Chinese?*” asked Maya.

“*Of course. You wrote them in Chinese,*” I said.

“*But I don’t know how to read them,*” replied Maya, sounding worried.

“*Don’t worry. You read the same way as you would at home,*” I suggested for I knew that she was able to read her own writing in Cantonese, instead of Mandarin, one of the instructional languages in our classroom.

Maya began, “I love my daddy. I love my mommy. I love my brothers. I love my grandpa. I love my grandma.” She read the sentences slowly but steadily.

“*That’s great. Who taught you to write and read all these characters?*” I asked, since we hadn’t worked on all kinship terms yet.

“*My mom,*” replied Maya.

3: 45 PM. “*Can I share my turtle now?*” asked Rosan.

“Hao [Sure],” I said.

Rosan ran to the bookshelf to get her turtle and began to tell the class, in English, who had given her the turtle, where she had gotten it, and how to take care of it. The other children asked her questions and she answered them.

3: 50 PM. After Rosan finished, we began our reading as a group. Since the children and I had just started a focus study on dragons, I had searched through the Chinese books I had, trying to find if there were any books on that theme. I also checked out English books from the Centreton Public Library in order to form a text set. “*We have a few books about dragons. We will pick one to read today,*” I said to the children.

The children browsed and talked among themselves, and finally they agreed on *Lion Dancer: Ernie Wan’s Chinese New Year* (Waters, Wlovenz-Low, & Cooper, 1990), a picture book written in English and published in the US.

“*Can I read it first, since I was last when we read our own writing?*” requested Maya.

“OK,” I said.

Maya began to read the book without much difficulty. Occasionally, there was a miscue. After reading a couple of pages, Maya asked me, “*Should I stop here?*”

“*Yeah, I think so,*” I replied, glad that she would think of sharing the responsibilities with the others.

Maya passed the book to Aileen, who sat next to her. Aileen took the book and began to read. At times she hesitated and stumbled over words, but Lucian and Rosan jumped in to help her.

Lucian read after Aileen, followed by Rosan.

4: 10 PM. Snack Time. “Dianxin shijian [Snack time],” I announced.

The children ran to the kitchen and lined up, according to the order of their arrival time for that day, to wash their hands. I washed my hands and took the cut fruit from the refrigerator.

“OK, Lucian, shenmo yanshe [OK, Lucian, what color]?” I pointed at the different colored bowls we had.

Grinning at Rosan, Lucian answered, “lanshe [blue].”

“*Oh, no! You took my favorite bowl!*” Speaking in a dramatic and high pitch voice, Rosan pretended to whine.

The children and I all laughed.

“[women you putao, caomei, li, han pingguo. Ni yao shenmo] We have grapes, strawberries, pears, and apples. What would you like?” I pointed at each fruit as I told Lucian the names of fruit in Chinese.

“Pingguo, putao, han li [Apple and grapes, and pears],” said Lucian slowly, in Chinese.

I gave what he had requested, and he went to the snack table.

Maya, Aileen, and Rosan each chose their bowls and fruit, then joined Lucian.

By the table, the children were eating their fruit while talking in English. I joined them after I had put the left-over fruit in the refrigerator.

As I sat down, Aileen asked eagerly, “Teacher Lu, will we work on the dragon⁸, today?”

“Dui, nimen hui you shijian [Yep, we will have time to work on it],” I replied.

“*When?*” asked Maya.

“*We will have about 20 minutes to work on it before your parents pick you up,*” I said.

“*My mom said that she could give you some fabric for making the dragon,*” offered Lucian.

“*That’s great. Could you remind her of it and bring the fabric to class next time?*” I said.

Nodding, Lucian said, “OK.”

“*Are we going to have light bulbs for the dragon’s eyes? Where is Jamie? She is supposed to bring them today,*” asked Rosan.

“*Jamie jintian meilai [Jamie won’t be here today]. And I don’t think we will have light bulbs for the eyes. It may be dangerous,*” I said.

“Oh,” Rosan looked disappointed.

While I was talking with Rosan, Lucian and Aileen placed their bowls in the sink, went to the bookshelf, and browsed through the books they wanted to take home. Maya was still working on her snack.

“*Do you have more ‘Monkey King’ books?*”⁹ asked Lucian.

⁸ The Taiwanese Student Association in the University was going to host a Chinese New Year celebration party in early February, and the children in my class had volunteered to perform a dragon dance in the party. The children and I worked together to design and create the dragon as well as the costume for the performance.

⁹ “Monkey King” is a major character in a well-known Chinese epic, entitled *Journey to the West*. It was written by Wu Cheng-En in the 16th century. A publisher in China has re-adapted, re-written the story and translated it into English suitable for elementary school children.

“Well, I have requested an interlibrary loan with the university library, but I haven’t heard from them yet. I will let you know when they arrive,” I said.

Lucian kept searching for books he would bring home.

“Lu laoshi, pianpian zainali. Wo zhaobudao[Teacher Lu, where is ‘Pian-Pian, The Swallow Girl’ (Teng & Chang, 1991)? I can’t find it],” asked Aileen, looking for her favorite book, written in Chinese and published in Taiwan.

“Zai zhongjian nage shugui, jiu zai videotapes de pangbian [It is in the middle shelf, next to the videotapes],” I said.

“Ni keyi nian ge women ma, next week [Could you read this to us next week]?” requested Aileen, taking the book from the shelf. Sitting by me, she began to flip through the pages.

“Yao kankan women youmeiyou shijian [We will see if we have time],” I said.

Maya finally finished her fruit and put her bowl in the sink.

4: 25 PM. The children and I moved to the sharing area and sat in a circle. *“OK, we are going to have a ‘dragon hunt,’”* I announced.

“What’s that?” asked the children.

“Does anyone know how to say ‘dragon’ in Chinese?” I asked.

The children either didn’t know or said, *“I forget,”* so I said, *“‘Dragon’ in Chinese is ‘Dragon’ [long].”*

“‘Long Is a Dragon’ that’s, that’s a book,” said Lucian. He referred to the book written and illustrated by Peggy Goldstein (1991).

“That’s right. So, for the dragon hunt, I want you to see if there are any books on the shelves about dragons. If you find one, bring it here. Last time I tried it myself, I was able to find 25 of them.”

“I have one of your big, fat books that’s about a dragon in Chinese,” said Rosan.

“One question,” Lucian raised his hand.

“Yes,” I said

“Do we count them and come back,” asked Lucian.

“If you see a book with pictures of dragons, just bring it back here,” I answered.

Lucian, however, misunderstood me. He thought that I wanted the children to be able to identify the character “dragon” in Chinese. *“But what about Chinese, and we can’t understand it. We don’t know which one. Can you show us the writing of, um, ‘dragon’,”* requested Lucian.

I was just about to explain when Lucian added, *“And then we can look it up, well.”*

“You don’t need to know how the word looked like, just the pictures,” added Rosan.

“Good point,” I said.

“Well, if it doesn’t,” doubted Lucian.

“OK, this is a valid point, too. But don’t worry. What I want you to do now is to find pictures of dragons,” I said.

The children went over to the bookshelves and looked through all the books, searching for those with illustrations of dragons. They kept bringing books back to the sharing area. In less than 10 minutes, 28 books with pictures of dragons were piled up in front of me.

“OK, let’s count how many books we have so far,” I said to the children.

“One, two, three, . . .” Rosan began to count in English.

“One, two, three, . . .” Aileen, Maya, and Lucian counted in Chinese, and Rosan immediately switched to Chinese to join the other children.

4: 40 PM. After the “dragon hunt,” we moved to sit in front of the north wall, on which a big sheet of blank paper was taped. In the previous week, I had overheard Lucian and Emma express the wish that Chinese were an alphabetic language. So, I decided to explore this topic and asked the children to think about the differences and similarities between Chinese and English.

First, I asked Lucian, “*Lucian, were you and Emma saying that you wish Chinese had the alphabet?*”

“*Acrobat?*” asked Lucian. He looked puzzled.

“*Alphabet,*” I repeated again and continued, “*What’s the reason that you wish Chinese had an alphabet?*”

“*Um, because it would be easier,*” replied Lucian.

“*Why?*” came my next question.

Lucian was silent for about five seconds, but he finally said, “*I just thought so.*”

I tried to avoid putting him on the spot. So I opened up the question to other children. “*But, there must be a reason, right? Why do you think that if Chinese had an alphabet, it would be easier? This is a very good and interesting question. Anyone have any idea?*”

“*I thought, um, Chinese already had an alphabet because of the stroke,*” added Lucian.

I said, “*Well, I don’t know. . .*” Before I could say more, Maya chimed in.

“*No, there aren’t,*” said Maya.

“*Why?*” I asked.

“*I have already known that,*” replied Maya.

Rosan joined, “*There couldn’t be one because there is, in English. In English, you need to sound out the letters to read the word, but in Chinese you just don’t write how many letters. Like the word ‘cat’, you write three letters [in English]. C-A-T. But in Chinese there are two words.*”

“*Aileen, zhenmoyang [What do you think, Aileen?]*” I asked Aileen.

“*I don’t know,*” said Aileen.

“*Don’t worry. We will come back to you later,*” I said.

I asked the children to write what they knew about the differences and similarities between Chinese and English on the sheet of paper that I taped on the wall earlier. The children proceeded to write down their ideas.

4:55 PM. “*Is it time to make the dragon yet?*” asked Maya while finishing her last sentence about the differences and similarities between Chinese and English.

“Thank you for reminding me of that,” I said. “OK, finish your last sentence. I want you to think more about the differences and similarities between Chinese and English. We will talk more next week when Emma and Jamie get back to class. Now we can start to work on our dragon.”

“Hurray!” yelled the children.

I explained to the children the task for the day. *“OK, we will be working on the dragon’s head today. We have a box, old newspaper, and glue. What we will need to do is to tear the newspaper into small strips, dip them into the basin, and mix them with the water and wheat paste. Then, we will use these strips to wrap around the box to make a head. Any questions?”*

The children looked puzzled.

“Don’t worry. Follow me,” I began to tear the newspaper and put the strips into a basin and the children followed.

The children obviously had fun tearing the newspaper. While tearing, they talked and joked with each other in English. *“See, this one is fat!” “This one looks like a snake.” “Oh oh, mine is too fat.” “I can make a circle.”*

5: 15 PM. The doorbell rang again. *“Oh, no,”* cried out Lucian, *“Must be my mom.”*

I opened the door, there stood Lucian’s mother and his twin siblings.

“Wow, what are you guys doing?” she exclaimed.

“Dragon,” announced Rosan proudly.

Di-Di and Mei-Mei came in and looked at the children at work.

Another knock on the door and I opened it to find Maya’s two college-aged brothers standing outside. *“Hi, we have come to pick up Maya.”*

“Come in, she is wrapping up her stuff,” I said.

As I was about to shut the door, Rosan’s older brother arrived and said, *“Hi laoshi [hi, Teacher].”*

“Bye, Mei-Yu,” said Lucian’s mother as his twin siblings waved their hands.

“Laoshi Mei-Yu [Bye, Mei-Yu],” Lucian bade me good-bye.

One by one, the children left, until only Aileen remained.

“Aileen ni bang laoshi shoushi haobuhao [Aileen, would you help teacher clean up]?” I asked.

“OK,” said Aileen and helped me pick up the books and to put them back where they belonged. I picked up pieces of unused paper scraps and put things back to the shelves.

5:30 PM. Aileen and I finished cleaning up, and I asked her, *“Ni yao chi bingqilin ma [Would you like to have some ice cream]?”*

“Nayizhong [What kind]?” she asked.

“Caomei de, zhenmoyang [Strawberry, how about that]?” I asked.

“Hao [Yep],” said Aileen, smiling.

I gave Aileen and myself each two scoops of ice cream. Just as we were about to eat, the doorbell rang again. It was Aileen’s mother and Eileen. *“Dubuqi, women cidao le [Sorry, we are late],”* apologized Aileen’s mother.

“Meiguanxi, jinlaiba. Wemen zhengzai chi bingqiling. Ni yaobuyao yelai yi dian [Don’t worry. Come in, we are eating some ice cream. Would you like to have some, too]?” I asked.

“Um-hum,” nodded Eileen.

“Bu yao mafan le, Mei-Yu. Women yao zou le [Don’t trouble yourself, Mei-Yu. We are leaving],” said Aileen’s mother.

“Meiguanxi, wo you henduo bingqiling [Don’t worry. I got tons of ice cream].” I went to the kitchen and came out with two bowls of ice cream, for Eileen and her mother.

5: 45 PM. The ice cream was gone. Aileen, Eileen, and their mother thanked me for the treat. “Xiexie nide bingqilin [Thank you for the ice cream],” said Aileen’s mother.

“Zaijian, xiage libai jian [Bye, see you next week],” I said and walked them to the door.

“Lu laoshi zaijian [Bye, Teacher Lu],” Aileen jumped up, and I caught her in mid-air. She gave me a big hug and hung on me like “a koala bear on a bamboo pole,” according to her mother.

“Rang Lu laoshi xiuxi le [Give Teacher Lu a break],” Aileen’s mother half laughed and half scolded her daughter.

“Lu laoshi zaijian [Bye, Teacher Lu],” waved Aileen and Eileen as they walked downstairs.

Closing the door behind Aileen and her family, I went back to my living room-classroom. My meeting with the children for the day was over, but my teaching did not end as they left the classroom. Quickly grabbing a writing tool, I began to jot down some notes as I mentally went through the events that had happened in my class that day and planned for future sessions. I asked myself questions: Was there anything that struck, upset, or surprised me today? If so, why? How did the children interact with each other and myself today? What could I do next time in order to expand their learning, strengthen the concepts/knowledge they already possessed, and challenge their thinking? What kind of questions, materials, and resources are needed for an upcoming project?

These are some instructional and assessment, as well as theoretical questions I asked myself as a teacher from time to time. I believe that all decisions

made about instruction and assessment are never atheoretical, even though the theory behind these decisions may not be immediately evident to the outside observer. With these questions, I was able to examine how my personal theory developed out of my learning history has impacted my teaching and evaluation of the children in my class, as well as how various theories I learned from my graduate courses interacted with my personal theory while I worked with my students. All these become a part of *praxis*, “a continuing process of critical reflection and action involving a commitment to human well-being, the search for truth, and respect for others; . . . [a] continual of interplay between thought and action [that] involves interpretation, understanding, and application (Smith, 2002).” I believe that *praxis* is an essential and integrated part of teaching, whether one is a teacher in a privileged private school in Kenya, a child care provider in a low resource neighborhood in the US, an adult education instructor in a village in Thailand, or a principal of an international boarding school in Switzerland.

A Journey: The Chronology of My Fieldwork Experience

My three roles—learner, teacher, and researcher—intertwined in this research project as well as in *praxis*. By working with children and documenting their literacy development, not only did I understand how each individual child developed as a literacy user, but also how particular social and cultural contexts shaped the way these children perceived themselves as literacy learners.] In a sense, the children were not only my students, who came to learn from me, but also my teachers and informants, who taught and showed me what it means to

be literate. Just as my teaching is based on the theory developed from my personal learning history and courses I took in graduate school, so too is my research based on the same rationale. As a teacher-researcher in my own classroom, I needed to negotiate between the personal, implicit theory developed from conducting research in my own classroom and the grounded, explicit ones, which I learned from my course work in school. But these two threads of theories are not always compatible with one another, due to the participants, the contexts, and various issues involved in the research processes. Although these two theories differ from and sometime conflict with each other, they both are important in my inquiry process, for each of them provides me with a basis for *praxis*. My familiarity with the context and participants enabled me to identify issues that might not be fully addressed in the extant research literature and also to work with children and their families that are traditionally marginalized, minority groups. At the same time, I need the established theories to help me confront and/or confirm the interpretations I made based on my personal theory in order to sustain the trustworthiness of my research. I borrowed frameworks and methods developed and used by other researchers to better document, organize, and analyze my data because their scholarship has provided me with systematic ways of understanding and interpreting the data I had gathered for my study.

As the research product—the final report—and its process can never be separate entities, it is important to discuss events and elements crucial to this study and show readers how I went through this process before I share the narrative report in subsequent chapters. Therefore, I would like to describe my

research process chronologically—in terms of the significant events and issues that evolved as I tried to disentangle and to weave the myriad fabrics of human relationships and resources into this particular inquiry—so that my readers are able to determine the trustworthiness of my interpretation and also to understand the perspective from which I operated. Being a researcher, I also asked myself questions— before, during, and after I completed this research project—as I have been doing as a teacher. I will, in the next section, discuss these issues, events, and questions that have been perplexing and guiding me throughout this inquiry project.

Pre-Field Entry—My Acquaintance with the Focal Participants

A qualitative study is somewhat analogous to a theatrical performance. In the same way that a stage provides actors a place to perform, the field is the context in which the participants situate themselves. Without actors, a performance will not be able to take place. Similarly, the research participants are the soul of this research, for I intend to examine their literacy learning in a three-and-a-half year period. In the previous sections, I have set up the “stage” for this study by providing a holistic picture of the context—the community, the classroom, and the children in the class. I now would like to turn the spotlight on each of my focal research participants—Aileen, Rosan, Maya, and Lucian—and their families.

During the course of my data collection period, I had between 2 and 10 children enrolled in my class at any given time, except in the fall of 1995 when Aileen was the only child with whom I worked. In this study, I selected Aileen,

Rosan, Maya, and Lucian as the focal participants, based on the following criteria: (1) different family backgrounds, schooling experiences, and linguistic exposure to both Chinese and English, (2) regular and extensive participation in the Chinese class which I had been teaching, (3) parents' willingness to let their children participate in this study, and (4) the rapport I had built with these children and their families. I use the table below to provide information on individual children's names and birthplaces, language(s) used at home, schooling experiences, family backgrounds, and ages and years in my class.

Name and Birthplace	Language(s) Used at Home	Schooling Experiences	Family Backgrounds	Ages and Years in My Class
Aileen (USA)	PHL ¹⁰ : Mandarin SHL ¹¹ : English MT/L1 ¹² : Mandarin	Private early childhood programs and public elementary school in the US	Single parent family Both parents from Taiwan Mother: instructional designer	4.5-7.5 years old 3.0 years Fall 1994 to Fall 1997
Rosan (USA)	PHL: English SHL: Mandarin MT/L1: Mandarin	Private early childhood program and private elementary school in the US	Two-parent family Both parents from Taiwan Father: doctor Mother: homemaker	5.5-8.0 years old 2.5 years Spring 1996 to Fall 1998
Maya (Hong Kong, moved to USA at 4.5 years of age)	PHL: Cantonese ¹³ MT/L1: Cantonese	Private early childhood program in Hong Kong and public elementary school in the US	Two-parent family Both parents from Hong Kong Family owned a local Chinese restaurant	6.5-7.5 years old 1.0 year Fall 1997 to Fall 1998
Lucian (USA)	PHL: English MT/L1: English	Home-schooling before kindergarten and public elementary school in the US	Bi-racial family Father was from Hong Kong Caucasian (American) mother Father: engineer Mother: homemaker	7.0-8.0 years old 1.0 year Fall 1997 to Fall 1998

Table 2.1 Demographic data of focal participants

¹⁰ PHL: Primary Home Language; Primary language used at home at the time of this study

¹¹ SHL: Secondary Home Language; Secondary language used at home at the time of this study

¹² MT/L1: Mother Tongue/First Language

¹³ Cantonese is a popular Chinese dialect. It is widely spoken in Canton [Guang Dong] Province in China, Hong Kong, and Chinatowns in the North America. Like Cantonese, Mandarin is also a dialect, but it has been elected to be the national language of the Republic of China (Taiwan) and the People's Republic of China. It also serves as a language of choice in Singapore and some Southeast Asian countries. Although both Cantonese and Mandarin are Chinese dialects, they have very different phonetics systems and are mutually unintelligible. However, these two dialects, as well as other Chinese dialects, share the same written script.

With this table, I hope to help readers see, for themselves, the diverse backgrounds and experiences of the focal children with whom I worked. These four children were all born in 1990 and had at least one parent who was ethnic Chinese. However, they had very different levels of Chinese/Mandarin language proficiency due to the linguistic exposure and experience they had at home, as well as to the communities in which they resided. The educational experiences these children had also varied from home-schooling to private schooling and from a Cantonese-speaking environment in Hong Kong to English-speaking classrooms in the United States. In addition, the family backgrounds of these children differed in many aspects, such as the family structure (single-parent, two-parent, and bi-racial) and the parents' professions. The materials I provided for readers in the table are important but not sufficient, for they are unable to reveal the persona of the individual children. Hence, I will provide a profile of each child, in the order of my getting acquainted with them, in the next section.

Although I used the same criteria to identify my focal research participants, I had known each of the four children—Aileen, Rosan, Maya, and Lucian—and their families at different points of time and under different circumstances. The personality, linguistic, and cultural backgrounds of each child and his/her parents, of course, also contributed to the manner that we interacted and related with each other. It is unlikely that I could “pre-design the teaching condition” and then “provide the same treatment” to all four children as in a quantitative research, rather, I had to understand each child as an individual with their own idiosyncratic ways of learning, thinking, and behaving, and then work

with them accordingly. It is therefore important for me to reveal to my readers the process by which I came to know each child well and the rapport I developed with them and their families over the course of this study.

Aileen. I first met Aileen in the spring of 1992 when I was both the art teacher and the Chinese language arts teacher to a group of first and second graders at a parent-initiated, weekend Chinese School in a small Midwestern community. Due to the limited budget, the School had borrowed the Sunday school facility in a local church, a brick building which comprised of three floors. Early that year, Aileen's mother alone had relocated herself and her two young daughters from the metropolitan area of a southeastern state to the same community in which I was teaching. Barely two years old, Aileen trailed after her older sister, Eileen, and toddled among adults and older children in the Chinese school. The older children seemed to take a liking to her, especially those who liked to play house. Aileen, of course, was always assigned the role of baby in such activities. The next year, Aileen turned three and was enrolled in the Chinese class for preschoolers, as well as participated in the art class in the Chinese School in which I was the teacher. At 3:30 each Sunday afternoon, Aileen and Eileen, along with 10 other children would come to my art class after two hours of formal Chinese instruction. Sitting with other older children, Aileen would quietly and dutifully work on her projects. Among all art materials, the scotch tape was the favorite for her and the other children. Tearing one piece after the other, Aileen and her classmates quickly ran through one roll of 300-foot scotch tape in a couple of class periods. She also enjoyed drawing with markers and colored

pencils. Most of her earliest drawings were scribbles, but these evolved quickly into distinguishable human figures, hearts, and flower-like objects. Unlike many young preschoolers who have only about 5 to 10 minutes of attention span, Aileen was able to sit through a 50-minute class period without getting up from her seat or wandering around the art room. There were times that she was tired and rested her head on the table and fell asleep, so I carried her to a big cushion at a corner of the classroom and covered her with a jacket. Being a very young child with such an unusually long attention span, Aileen had drawn my special attention.

When Aileen was four and a half, she was enrolled in my Chinese language arts class, even though I was teaching kindergarteners at that time. Her preschool teacher had thought that the curriculum in her class was too easy for Aileen. From being with a group of children approximately her age to be enrolled in a class with older peers, Aileen seemed to be somewhat lost. Although she had known many children in my class and myself, she did not readily respond to my instruction. When other children signed their names and drew on a big sheet of paper on the wall upon their arrival at the class, Aileen looked at me and did not budge. “Why don’t you sign in over there?” I asked. “I don’t know how to write my name,” she replied in a quiet voice. I tried to encourage her and told her that she did not need to write her name but could draw anything she liked. Aileen finally selected a colored pencil and drew a small mark on the paper. After a few weeks, she began to copy the last character of her first name with a darker marker in the paper, and gradually her signature became more and more recognizable. In the meanwhile, she also was more active in the class, responding to the picture

books I read to the class each week, improvising movements for the music I played from a tape recorder, and initiating conversation with children during small group activities.

The bell rang at 4:30 to signal the end of the Chinese class. Many parents came to my art class on the second floor to pick up their children, while some waited in the lounge. Aileen's mother often came into my classroom and asked her two daughters to help me clean up afterwards. While working side by side, Aileen's mother and I chatted, from which I learned more about Aileen and her family. A graduate of the University of Iowa with a doctoral degree in education and a person of great hospitality, Aileen's mother had been a source of advising and moral support for many of her fellow graduate students from Taiwan in the same university. She and I soon became friends, and I was often given opinions and information regarding the situation of education in the US and was invited to their family's Christmas and Thanksgiving parties, and other activities. Aileen and Eileen continued to attend the Chinese school as well as my art class until the spring of 1995 when their mother decided to relocate the family to Centreton, in which this current study took place. In the summer of 1995, I had completed my master's degree and moved to Centreton as well. I began to work with Aileen in the fall of 1995, for her mother wanted me to tutor Aileen instead of sending her to Centreton Chinese School, where the teacher used a different approach and linguistic system¹⁴ to work with children. So, I resumed my work with Aileen and

¹⁴ Two methods—Mandarin Phonetic Symbols and Pin-yin—are often used to teach Chinese to beginning readers. The Mandarin Phonetic Symbols are employed in Taiwan, and the Pin-yin system is used in China as well as the Chinese programs in universities and colleges across North America. I will explain the differences of these two systems in the literature review section of

began my data collection for this research and other studies. In the spring of 1996, two teachers (PreK-K and First-Fifth grade) in the Chinese School resigned, and their classes were consolidated into one. I was invited to work with children of ages 5 to 10. Both Aileen and Eileen were my students at this time. The relationship I developed with Aileen and her family was both as a teacher and an adoptive aunt to the children. Being a teacher, I was responsible for supporting the children's Chinese literacy learning. Because of my academic background in language and literacy education, Aileen mother would also discuss Aileen's and Eileen's English literacy learning with me as well. There was a semester during which Aileen's teacher suggested that Aileen's mother use English exclusively at home with Aileen in order to promote her daughter's English development. Aileen's mother, however, wanted Aileen to maintain her Chinese language learning at home along with her English literacy development at school. In an interview I conducted with her in spring of 1996, she expressed her idea about her daughter's Chinese learning. "They [Aileen and Eileen] are Chinese, and it is important that they learn the language and culture." (Aileen's mother, personal communication, spring 1996). Therefore, she and I had discussed the issue of bilingualism. I assured her that bilingualism was feasible and beneficial to children's language, academic, cognitive development as well as family relationship. For approximately half a year, I tutored Aileen to help improve her English literacy skills as well.

chapter three. Aileen's mother preferred her daughter learn to read and write in Chinese with the Taiwanese system, i.e. the Mandarin Phonetic Symbols, but the teacher who taught children of Aileen's age at that time was from China and used the Pin-yin system.

As an “adoptive aunt” to the children, Aileen’s mother trusted me with her children. When she needed to be out of town for a business trip or family emergency, I would normally stay over at their house with Aileen and Eileen and take care of household duties, such as feeding the family pets and driving the children to and from home, school, and extracurricular activities. Aileen regularly attended my class until fall 1997, when the family moved to yet another state. However, Aileen’s mother and I remain in contact with each other, and she always updates me regarding Aileen’s learning in Chinese. Now a tenth grader, Aileen still attends Chinese class each weekend in the community where her family resides.

Rosan. My first meeting with Rosan took place in the spring of 1996, when I had just begin to work with the children in the K-5 class in Centreton Chinese School. In the previous semester, Rosan was enrolled in the PreK-K class of this School. The following spring, her teacher resigned and all her classmates either moved out of the community or their parents decided to switch their children to another Chinese school sponsored by students and scholars from China. Therefore, Rosan was the only child from that class who remained in Centreton Chinese School. Since she and Aileen were about the same age, and Aileen would be going to my class, she was therefore placed in the K-5 class which I taught. On the first day of the class, the children and I had already started the story telling session, when Rosan and her mother stepped into the classroom. Knowing that she was new to my class and probably did not know any children in the room, I had her sit by me. While tracing the movements of the children in the

classroom with her eyes, Rosan did not initiate any verbal interaction with anyone in the class. She, however, would respond when spoken to and she would usually follow along with whatever her classmates were doing. Her replies during our first few meetings were short and were done mostly by nodding or shaking her head. I had then attributed her behaviors to her personality and had thought of her as an introverted child. However, Lia, a co-teacher of mine in the School, who went to the kindergarten Rosan attended for as a class project visit later revealed to me a different aspect of Rosan. Lia had observed Rosan being an active and verbal child in the private early childhood program she had attended daily. I was surprised to learn the drastic differences in her behaviors in these two settings, but I was not sure about the reason, since she seemed to be able to follow along with the class most of the time. During an interview I conducted with Rosan in the spring of 2003 when she was in seventh grade, I asked her to provide me with her earliest recollection of being in the Chinese class. She replied, “the classroom’s really big. It’s bigger than the classroom in my [middle] school . . . The only thing I can remember is sitting there, not understanding what everyone else’s doing. And just being quiet and sitting there” (Rosan, personal communication, February 11, 2003). In time, Rosan became more comfortable in the classroom and with my co-teachers, Lia and Andy, who gave her special attention and made sure that she understood the class routine. By the end of the spring 1996, Rosan still did not often initiate verbal interaction with others, but she responded to questions and requests more readily and her utterances were also lengthier and more complex.

The summer of 1996 was a turning point in my work with the children. Upon consulting with Rosan's and Aileen's mothers, I decided to move the class from the borrowed university classroom to the living room in my apartment. Rosan and Aileen were the only two students in my class, occasionally joined by Jane, who moved abroad at the end of summer 1996. The change of environment and makeup of the class seemed to help Rosan get acquainted with the class routine and explore human relationships at her own pace. She began to develop a friendship with Aileen and gradually became familiar with the class structure. Because Aileen and Rosan were usually the only children in the class that summer, and they shared similar interests in art and were about the same age, I was able to spend time with each of them individually, as well as to design art activities especially catered to the interests of these two children. In the beginning of fall semester 1996, Rosan had transformed from a child who remained silent most of the time and who behaved as a follower of other children in the class to a child who was enthusiastic in volunteering and sharing ideas in my class. Rosan and Aileen became close friends, and she often invited Aileen to her house after the Chinese class or during weekends. Oftentimes Rosan and Aileen would cooperatively "hoodwink" their mothers so that they were able to stay longer at my apartment, after the Chinese class was officially over, playing with each other and postponing the time of returning to their homes.

Rosan remained in my class for her entire elementary school career, until the summer of 2002 when I decided to "hand her over" to another teacher, for I decided to retire from my teaching as I began to work full time and also needed to

complete my dissertation. Throughout the six years I worked with the children in Centreton Chinese School, Rosan had seen children come and go in her class, and she also knew that her parents would not force her to attend Chinese classes if she ever decided to quit. She, however, stayed on. An interview I conducted with Rosan's mother in spring 1996 clearly revealed the attitude she held toward her daughter's Chinese literacy learning: "It is good that Rosan likes to learn Chinese. But if she does not like it, I won't force her. I see Chinese class as one of her extracurricular activities." (Rosan's mother, personal communication, spring 1996). During an interview with Rosan in the spring of 2003, I asked her the reason that she remained in the Chinese class. Rosan replied, "I like learning and remembering [things in Chinese] so I don't forget everything [in that language] . . . So I can speak Chinese. And, like, once I do a class for a long time, it's hard to drop it." (Rosan, personal communication, February 11, 2003).

The attitude that Rosan's mother held about her daughter's Chinese language learning also reflected the pattern of home language use in Rosan's family. Instead of Mandarin, English was the dominant home language in which Rosan and her brother, who was older than she by 11 years, used when talking among themselves and to their parents, while Rosan's mother spoke Chinese with her husband and her children. Rosan's father was a doctor and had received schooling in Germany as well as at the American School in Taiwan. He was able to speak and understand oral language in Chinese very well, but his literacy skills in that language was limited. Therefore, he used English with his children. Since the spring of 1996, Rosan's mother was elected to be the principal of the Chinese

School by other parents. She was in charge of the finances as well as the administration of the school, such as filing forms for textbooks and applying for funding and teacher's workshops sponsored by the government of Republic of China, Taiwan. Because of her responsibilities in the Chinese school, Rosan's mother and I frequently contacted each other, and through such interactions I learned more about Rosan and her family. In addition to the Chinese school, Rosan's mother also was active in the Chinese community in Centreton and she often organized and hosted holiday parties at her house for Chinese/Taiwanese families in the area. I was always invited to such parties. As in Aileen's family, when Rosan's parents were both out of town for personal and business trips, I was also one of the persons that they would ask to take care of her, either staying over at their house or driving her to and from home, school, and extracurricular activities. Rosan often shared stories and events at school with me during these trips.

Maya. In the order of my getting acquainted with the focal children, Maya was number three. One morning in the summer of 1996, then five-and-a-half-year-old Maya showed up at my door with her uncle, Roger, and Cathy, a mutual friend of Roger and myself. Maya had come with Roger who was to help Cathy move a mattress from my apartment to her new studio near downtown Centreton. After the moving, we adults chatted. Occasionally, Cathy would tease Maya in Cantonese. Blushing, Maya would retort also in Cantonese. After they left, I saw neither Maya nor Roger for a year. Then in the summer of 1997 I received an e-mail from Roger, who inquired whether I would still take new students for my

class, for Maya's family wanted her to learn Chinese. I agreed to take Maya because I wanted to have more students in my class so that children would have opportunities to be exposed to different language use in Chinese and to acquire new vocabulary from one another. Maya became my student in the fall of 1997, the same semester she began second grade.

Hand in hand, Maya came with her mother to my apartment for her first day of the Chinese class. Due to my past experience with Cantonese speakers, I assumed that Maya's mother did not speak Mandarin, the Chinese dialect I grew up with and one I would use to teach Maya. Since I do not speak Cantonese, I greeted and began to talk with Maya's mother in English, but felt awkward immediately. After a few exchanges, Maya's mother suggested that we switch to Mandarin, and I was surprised and relieved to learn that she was very fluent and competent in that dialect. Before immigrating to the US from Hong Kong, a predominantly Cantonese speaking society, Maya had been enrolled in a local preschool when she was three years old. The literacy instruction in the program had focused on pre-reading and pre-writing skills in Chinese, such as learning to write personal names, copying simple Chinese characters, and recognizing words from readers designed especially for young children. When Maya's family moved to the United States, Maya's parents brought along with them some Chinese children's books, readers, and worksheets. Maya mother and two older brothers, who were much older than she was, also taught her to read and write Chinese at home when they settled down in Centreton. With this preschool and home literacy learning experience before attending my class, Maya had a basic understanding of

Chinese written language, such as the stroke order and the directionality of the text, even though she did not speak the particular Chinese dialect (Mandarin) that we used as a medium of instruction in the class.

When Maya was first placed in an English-only kindergarten after she arrived at the US, she had very limited facility in that language. In a conversation I had with Maya's mother, she described her own heart-rending experience the first semester Maya was in an all English environment at school: "Each morning I stayed with Maya in her classroom for a while. Before I left for work, I hid outside of the classroom and saw she was in tears the moment I disappeared from her sight. My heart was rent. Yet her teacher suggested that I leave immediately after I dropped her off at school and said that she would be OK. This situation lasted for almost a semester" (Maya's mother, personal communication, 1997). In my class, Maya experienced yet another second language learning experience, for the phonetics in Cantonese (her home language) and Mandarin (one of the two instructional languages in my classroom) are as mutually unintelligible as English and German. However, she seemed to fare better this time. Even though she did not understand Mandarin Chinese, her competency in English (the other instructional language in my class) enabled her to learn and communicate with others in my class.

Maya was not a particularly vocal nor was she a silent child in my class or in settings where I had opportunity to observe her interacting with adults. She responded to instructional and factual questions readily, but did not often vocalize her personal feeling toward things. I often wondered what she really thought

when she said “I don’t know” in replying to open-ended questions or questions that required her to reveal personal preference. Maya’s verbal and nonverbal behaviors did not change much throughout the years I knew her. I was therefore surprised when she invited me to the third grade science fair in her school to see her invention—a device attached to a water dispenser to help a person easily locate and get a glass of water in the middle of night. I thought that maybe I would be able to know her better after the science fair. However, she did not seem to change much. I had also, on various occasions, observed how Maya interacted with Cathy, whom the family regarded as “an adoptive grandaunt” to the children, and I asked Cathy about how Maya responded to her. My conversation with Cathy confirmed my observations that Maya seemed to interact to Cathy and me in a very similar manner.

Maya’s family emigrated from Hong Kong in the summer of 1995 when she was about four and a half. Most of her paternal relatives had left Hong Kong by mid 1997 when England handed over Hong Kong to the Chinese government. At Maya’s home, Cantonese was the language that both parents and children used to communicate with each other. Maya and her two elder brothers also spoke in Cantonese most of the time, occasionally code-switching between Cantonese and English. During my data collection period, two of Maya’s uncles, Roger and Bill, as well as Maya’s grandparents also lived near Maya’s home. Therefore, Maya had more opportunities to use Chinese language regularly with members of her extended family than other children in this study.

Maya's parents had owned a local Chinese restaurant, the Golden Dragon, and also served Cantonese style pastries and dishes—Dim Sum—on Saturdays. I was often given boxes of such delicacies when Maya's mother dropped her off at my class and on major holidays. The restaurant was also a favorite meeting place among my friends, both Chinese and non-Chinese, for Maya's father often made special dishes and treats for us. Both Maya's elder brothers were much older than her and had left home for college by the time she was eight. Therefore, she spent a fair amount of time in the family-owned restaurant after school during weekdays. When we went to the Golden Dragon, Maya oftentimes sat in a corner, working on her homework or artifact, or watching TV in the room at the back of the restaurant. When she was older, Maya also helped serve food to patrons and assumed the responsibilities of cashier. The restaurant was closed in the summer of 2002 due to Maya's father's poor health.

Maya stopped attending my Chinese class in the fall of 2001. Although her mother and I tried to figure out the reason for her losing interest in Chinese learning, we were unable to get an answer from her. After Maya no longer attended the Chinese class, I ran into her mother often in Centreton Farmer's Market, where people shopped for locally grown vegetables and produces, and I also visited her family several times with Cathy. Although she no longer took Chinese class, she still maintained her literacy and oracy to a certain degree. She watched TV, videotapes with her family in Cantonese, as well as decorated her room with cut-outs of Chinese characters.

Lucian. The child who entered the scene last was Lucian. In the summer of 1997 I received a phone call from Lucian's father, who was referred to me by the former principal of the Chinese School. Initially, I was not sure who would be enrolled in my class, the father or the child, for Lucian's father spoke of his desire to learn Mandarin Chinese, but lamented his lack of time. After we had talked for a few minutes, Lucian's father told me that he would like his eldest son, Lucian, to be enrolled in my class and to learn Chinese. "Sure," I said and invited him to bring Lucian to my class the following week. Lucian's whole family—his parents and his young twin siblings—accompanied him to my apartment the first day of the class. I asked whether one of Lucian's parents would like to stay and keep him company, for I assumed that everything in my apartment, including the written script, the children, and the set up would be unfamiliar to him. However, Lucian's parents said that he would be fine without their company. Before the family left, Lucian's father expressed his urgency for his son to learn Chinese and stressed that "he is Chinese, and he should know his roots." (Lucian's father, personal communication, summer 1997) and asked his son to "study hard." By contrast, Lucian's Caucasian mother apparently was more relaxed. She bade her son good bye and wished him a good time in the class.

A precocious reader, Lucian had learned to read in English through his mother's homeschooling before entering kindergarten. In the fall of 1997, he turned seven and was enrolled in first grade, because he was born a few days later than the official cut-off day for first graders in the Centreton public school system. Although physically petite, Lucian's reading ability made him stand out

among a group of first graders. When many of his classmates were still reading patterned texts or struggling in learning to read, Lucian was already devouring books intended for much older readers, such as the popular *Animorph Series* by K. A. Applegate, as well as the *Harry Potter* series by J. K. Rowling. An avid reader, Lucian shared his enthusiasm about books with me and often introduced and loaned his favorite books to me. From him, I learned more about the popular trends and titles in the children's book market in the US. The knowledge he had developed from English reading was reflected in his oral and written vocabulary in that language. There were times when I had to look up the dictionary, or ask him to spell or explain to me a particular word he had used. My collection of his early English story-writing in my class were often several pages long, with close to perfect spelling and words that more experienced writers used, such as "rescue" and "eruptions."

Having high expectations for himself, Lucian was conscious of his Chinese language and literacy skills and often compared his own learning with that of other children in my class. Aware of his lack of experience with and exposure to the Chinese language, Lucian worked hard to keep up with his classmates. In the first few sessions, he would come to the class and show me the Chinese characters his father had written in his notebook and told me what he had learned at home. He quickly remembered the crucial words used in the class, such as colors, numbers, and name of the fruits we usually had during snack time. In an interview I conducted with him when he was in sixth grade, he described his efforts in his Chinese learning experience during his primary years as follows:

I almost never could do [all the Chinese homework], for I only knew half the words and I had stumbled through it. But . . . , some of the other people, they already knew half of the words before they came to the class. At least [that's] what I knew of. So that's kind of hard [for me], but I was strongly motivated to study. (Lucian, personal communication, March 2, 2003)

Although self-conscious, Lucian seemed to feel safe in the classroom and was often willingly to try to sound out unfamiliar Chinese words and to make up sentences. The other children were supportive of him and offered him help in Chinese. His efforts paid off, for there were also times that he offered Chinese help to the other children in return. Through the years he was in my class, Lucian developed a close relationship with me. In addition to sharing with me his enthusiasm about books, he also talked to me about his views on various events at school and in his life. Now in his teens, he still gives me a big hug when I visit him and his family, and he talks to me just as he did in my class.

Lucian's father came to the United States with his mother from Hong Kong when he was a teenager. Although he lived in the United States for over three decades and married a Caucasian, some aspects of his life were still very Chinese. The first time I visited Lucian's family, I was surprised to see an altar on which Lucian's family offered fruits and incense to their ancestors on Chinese holidays and important dates, such as the Chinese New Year and the ancestor's birthdays. Lucian's father also held many traditional Chinese beliefs, such as valuing academic excellence, hard work, and respect for elders and authority.

These traditional Chinese beliefs were evident in the interview I had with Lucian and in my observation of his father's interaction with his children. In an interview with Lucian in the spring of 2003, he commented that "my dad wants me to try . . . since kindergarten, [he] has always thought that . . . if I would be raised in China, I would almost, . . . Like in kindergarten, they [the Chinese children] always learn multiplications. So I should be [able] to" (Lucian, personal communication, March 2, 2003).

Lucian's mother is a certified public accountant, but she did not work outside of the home until Lucian was in upper elementary school. She stayed at home and spent most of her time working with Lucian and his two young twin siblings, who were about two years younger than he was. Lucian was homeschooled by his mother until he entered kindergarten, by which time he was already reading chapter books. The home language was English for Lucian's mother did not understand any Chinese language, and it was also the dominant language used in the community in which the family resided. Although Lucian's paternal grandmother could only speak Cantonese and sometimes visited the family, the children did not develop an extensive Cantonese vocabulary other than basic greeting phrases.

While Lucian was attending my class, his father helped him in his lessons by doing some preparation for the class, and his mother also tried to help him by checking out dictionaries and reference resources from libraries. However, his paternal grandmother became very ill a couple of years after Lucian began to

attend my class, and his father had to stay with her most of the time after his work and was no longer able to provide as much help as he previously had.

Although I had always believed that all children in my class were different from each other in their approaches to Chinese learning, and each of them had individual strengths, Lucian appeared to feel somewhat frustrated when he compared his own learning with that of the others in my class. He stopped attending my class when he was in fifth grade, because the physician had recommended that he be involved in more physical activities to improve his health and also because the workload at school and the other activities in which he participated had also increased.

I have visited him and his family several times since then and am always updated on what the children have been doing since I last saw them. Although Lucian has not been learning Chinese for several years now and seemed to have forgotten much of what he had learned, he seemed to maintain a positive attitude toward that language and plans to continue learning it later in his life. He says:

But for me, . . . English is my first language. Chinese, looks like always be my second language, just because I am Chinese, and not Spanish or French, or whatever I hope to, soon, in the future, . . . I want to learn Spanish and Chinese, . . . Right now, I'm just way too busy. (Lucian, personal communication, March 2, 2003)

Entry into the Field

For researchers of qualitative inquiry, entering into the research site often involves countless preparations and negotiations beforehand if they are not

already members of their participant's community. Once in the research site, the researchers may continue to face more issues, and at the same time, constantly shift and redefine their multiple roles in that particular context, for the boundary of a human relationship is never a clear-cut one, and all individuals have idiosyncratic ways of responding and interpreting the world around them. For instance, a researcher may begin with an intention to investigate how children from disadvantageous backgrounds develop literacy skills and find herself/himself providing consultation for the participating children and advocating rights for the families.

The dynamics and multiplicity of human relationships inevitably complicates the research process, but also provides researchers with opportunities to reconsider their studies in a different light—that the study of human beings can be a collaborative and transactional, instead of a one-way process.

My role as a teacher-researcher offered me a different starting point in this particular study because I had been an insider of the classroom community where I conducted my study. My field entry experience also involved many issues which were both different from and similar to those of other qualitative researchers who were outsiders of their participant's community. In other words, I was restricted by my dual role as a teacher and researcher due to the multiple responsibilities I assumed in the research process. Yet the teacher-researcher role also enabled me to explore aspects that might otherwise have been unavailable to many researchers because the rapport I had established with my students and their families.

Being a teacher, I was unable to take an observer-only position, which allows the researcher to observe the focal participants, and which also provides flexibility for the researcher to decide on the degree of his/her involvement in the research site and with participants. I have defined myself as a teacher-researcher and view my teacher perspective as a tool for informing my research, with the goal of my research being to improve my teaching. While my familiarity with the classroom context allowed me to examine the interrelationship between children's learning and my teaching, my research also motivated me to improve my pedagogy and to exercise various instructional decisions that may not be accessible to a researcher who is an outsider in the classroom community.

An issue arose during my initial field entry, which many qualitative researchers encounter: establishing trust and obtaining permission for this research from participating children and their families. During the course of this research project, I had between 2 to 10 children in my class at any given time. The parents of the children in my class came from different socio-economic statuses and had different exposure to and experience with the type of research I was conducting in my own classroom. Some of these children and their families had been regular participants of the Chinese school in which I had been teaching, but some were new to the school. Therefore, the degree of rapport I developed with the parents and children also varied from family to family.

In spring of 1996, I sent out 10 letters of invitation to the parents of my students to explain the purpose and nature of my study in my class, but only received consent from two families (three children—Aileen, Eileen, and Rosan).

The lack of consent from the majority of parents presented a challenge to my study since children interacted with each other in my class freely, and I would not be able to collect the necessary data that involved both research participants and non-participants.

I tried to orally explain to the parents during a school function as well as to offer opportunities for them to review my research proposal, but that still did not work. To resolve this issue, I developed strategies which enabled me to observe both focal children and to work with non-participants and yet not violate research and teaching ethics. I invited two fellow graduate students from Taiwan—Lia and Andy—who either had experience working with children or was also an education major, to be part of the teaching force in my classroom.

In the class, the instruction was done in both small groups and as a whole group. During the small group activities, Lia, Andy and I took turns working in the same group that the focal children were participating in. After the class, Lia, Andy, and I shared our observations of the focal children with each other. This cooperative strategy allowed me to understand how my research participants interacted with others and how they developed language and literacy skills. It also helped me to see children's learning and development from different perspectives.

In addition to this team teaching approach, I also tape-recorded each class session, which had been a common practice that I used to improve my pedagogy and to record individual student's learning. The combination of these various strategies not only enabled me to review and evaluate my own instructional

approach, but also helped me to validate the materials that I observed and recorded.

In the summer of 1996, the number of students in my class had decreased to three because many of them and their families had left this university community. After evaluating my instructional as well as the children's learning needs, I converted the living room in my apartment into the classroom. The parents of all children (Aileen, Rosan, and Jane) kindly granted me permission to allow their children to be my research participants. When Maya's and Lucian's parents inquired about the possibility of enrolling their children in my class, I informed and explained to them the research project and requested their permission for allowing their children to be my research participants. Both their parents immediately granted me permission. In the same way, I had no difficulty obtaining permission from the parents of non-focal children, such as Emma and Jamie, who either only participated in my class irregularly or attended my class for a very short period of time.

Data Collection

Research in its widest sense begins with questions that one wants to answer. Professionals in different disciplines and trades have learned and trained to employ different approaches and specialized tools to find their resolutions. In qualitative inquiries, data collection—the process, the methods, and types of materials gathered—provides an avenue through which a researcher proceeds to answer his/her questions. Although appearing to be straightforward, the data collection method is never just a set of fixed techniques and rules, for the

researcher constantly makes conscientious decisions regarding various factors, such as the context and the participants, in the inquiry process. In addition, the type, quality, and quantity of data a researcher gathers depends on the nature of the study, kind of questions she/he wants to answer, as well as the availability of the materials and the context in which the researcher conducts research.

In this study, I intended to examine the literacy learning processes of four young ethnic Chinese children enrolled in a weekly mother tongue (Mandarin) class over a three-and-a-half year period. I hoped to gain a holistic understanding of a particular process which individuals go through in a specific social and cultural context. For such a purpose, I employed a qualitative case study approach as my research methodology because “by concentrating on a single phenomenon or entity (‘the case’), this approach aims to uncover the interaction of significant factors characteristic of the phenomenon. The case study seeks holistic description and explanation” (Merriam, 1988, p. 10).

This study began as an instrumental case study, for I intended to use it to examine and understand a specific phenomenon (Merriam, 1988; Stake, 1995), namely the language socialization process of linguistic minority children living in predominantly English speaking communities, as well as to improve my pedagogy in working with ethnic Chinese children and their families. However, the more I became involved in this research process and the more data I gathered, the more I was intrigued by the process through which the focal children developed their Chinese literacy, and I developed an intrinsic interest in understanding this specific case (Merriam, 1988; Stake, 1995). The combination

of instrumental use and intrinsic interest in this study allowed me to contemplate the universality of what it meant to becoming literate in a specific social and cultural context, as well as the idiosyncrasy each child exhibited in such a learning process.

In this research, I was interested in the “how” and “what” aspects of human interaction, instead of trying to identify the causal relationship or correlation between variables in human learning. Therefore, I did not ask children to complete tasks under a controlled clinic setting, nor did I administer tests to my research participants. Instead, I identified methods I employed and materials existing in my classroom, for research had always been an integrated component of my teaching.

As a teacher, I used various tools, such as audiotapes, journals, and portfolios, to maintain records of my own teaching practice and also to keep track of children’s learning in my class. To gain more information from my participants, I also conducted several interviews with them. Therefore, the methods for and types of data collected for this research include those used in traditionally qualitative research—observation, interview, and analysis of documents. I will, in the next few sections, describe the process, method, and type of data I gathered for this research.

Observation. My role as teacher-researcher enabled me to immerse myself completely in the research setting as a full participant observer, but it also limited the extent to which I interacted with individual children for the purpose of data collection. In my initial entry into the field, there were two approaches—

team teaching and audio-taping—I had employed in order to augment my observational data while conducting research in my own classroom.

Later on, when I moved the classroom into the living room of my apartment, I continued using tape recording for this purpose. Each Saturday afternoon, my students came to my class from 3:00 to 5:15. Prior to their arrival, I tested the audio-tape and the recorder, and marked the date on the tape. When the children came in and began to talk, either to me or with each other, I turned on the tape recorder until snack time. There were times when the children wanted to play back and listen to the recording during the snack time. After the break, I turned on the recorder again until the end of the class or until the tape, usually a 120-minute or a second 60-minute one, ran out.

I explained to the parents of all my students the purposes of using tape recording in my classroom, and I was granted permission to do so without any difficulty. I also explained to the children, first Aileen and Rosan, in plain language about the purposes of using a tape-recorder in our class, such as: “Like you, I need to do my homework. And I have decided to know how good you are learning Chinese in our class. I need to use the tape recorder, so I won’t forget what you said.”

Initially, Aileen and Rosan were curious and somewhat uneasy about the existence of a tape recorder in their learning environment. Even though I had the tape recorder hooked on my belt and covered it with my blouse, these two children either tried to make up sounds, or lower down the volume of their voices, or remind each other of the recording. While I played back the tape during the

snack break, Rosan and Aileen giggled and commented on each other's verbal behaviors on the recording. After a few sessions, however, they were accustomed to the recording and no longer paid special attention to the tape recorder. When a new child joined our class, Aileen and Rosan would also inform the newcomer that we used tape recording in the class. "But she [the teacher] just wants to know how good we learn Chinese," Rosan would usually added. I also offered new children the opportunity to play back the tape if they wanted to listen to themselves on the tape during the break.

When time and energy allowed, I began to transcribe the tape and type the transcription onto my computer after each class session. While typing, I would add comments, personal thoughts, or tentative assumptions onto the transcription (noted with an "O.C." or observer's comments and typed in different fonts for easy identification). When I was unable to work on my transcribing right away, I arranged the tapes chronologically and tried to work on them as soon as I was able to do so.

In addition to the tape recording and typed transcripts, I also used a journal/reflection log to keep my observational data. Each week, after the children left my house, I quickly ran through the whole class in my mind and jotted down notes in a notebook regarding the children's learning—what surprised, upset, or puzzled me, as well as what I could do to improve my teaching and children's learning in the future sessions.

Interviews. Among all data collection methods I employed in this research, interviews posed the greatest challenge to me. My difficulty in

conducting interviews was two-fold: it partially initiated from my own personal experience and my relationship with my research informants, and it was partially due to the participants' age and developmental stages.

My past research experience of interviewing Chinese adults had revealed that these informants tended to be tensed and/or feel obliged to say what they thought I might want to hear, especially when they were the parents of the children whom I taught. Interviewing under such a circumstance, not only often provoked unnecessary stress to my adult informants, but also made it difficult for me to understand their real feelings and thinking on particular questions and/or issues.

In addition, interviewing young children is usually less effective than older children or adults, for they often reply but do not directly answer questions researchers pose, and their short attention span also makes it difficult for a researcher to engage them in more in-depth, lengthy interviews. Thus, I did not conduct extensive interviews with my research participants and their parents. However, to gain information that I might otherwise have missed and to enhance the trustworthiness of my interpretation through triangulation, I conducted several interviews with the participating children, their parents, and those whom worked closely with them.

I conducted my first round of interview in the fall of 1995 with Aileen's mother and her kindergarten teacher regarding Aileen's Chinese literacy development at home and the private early childhood program she was enrolled in (Appendix A). I wished to understand the attitude that Aileen's mother and her

Caucasian, English-speaking teacher held toward her mother tongue literacy learning at different settings. Prior to the interview, I had provided a set of questions for both adults to review. With their permissions, I taped each interview session.

I used a semi-structured interview with these two informants so that I would be able to keep the content and flow of the conversation flexible. Although the interview questions I had originally written were in English, I had used the participant's mother tongues for the interview (i.e., Mandarin for Aileen's mother and English for Aileen's teacher). I hoped that Aileen's mother interacted with me in the same way that she had always done, even though she had a near-native proficiency in English through academic training and her professional work. Each interview lasted approximately 30 minutes, and I had transcribed the interview and sent the transcripts to both interviewees for their feedback and comments. However, I did not receive any oral or written reply from either Aileen's mother or her teacher.

I conducted the second round of interviews with Aileen's and Rosan's mothers when both children were enrolled in my class in spring 1996 (Appendix B). Based on the same rationale I applied to the first round of interview, I made two decisions: the use of the informants' mother tongue, Mandarin Chinese, and a semi-structured format for the interview.

I had known that both Aileen's and Rosan's mothers were fluent and competent in using English for various purposes in their life, but Mandarin was still the primary means they used to communicate with me. Before the interview, I

had typed the questions and shared them with Aileen's and Rosan's mothers. Upon gaining permission from these two parents, I audio-taped the interview so that I was able to concentrate on the interview process and to interact spontaneously with them. I transcribed and typed the tape after each interview. The interview lasted 30 minutes for each informant and yielded mostly factual information about each child and their families. From the interview data, I was able to compare and contrast my understanding of the children with the perspectives of their mothers.

After two rounds of interviews with adults, I made an evaluation regarding the process and results. I felt that I needed to develop different strategies to make my adult informants feel more comfortable while interviewing with me. Therefore, I decided that I would not conduct more interviews with parents of focal participants before I had improved my interview skills and learned more about the children and their families.

In the fall of 1996 when Maya and Lucian joined my class, I sent home a questionnaire (Appendix C) for the parents of all children in my class so that I was able to gain a basic understanding of each child and his/her family. All parents returned the questionnaire with information I requested. I considered the questionnaire to have served as part of the "paper-and-pencil" interview for me.

As electronic communication became more popular and readily available, the parents of focal children and I also used e-mails to communicate with each other. I made use of e-mail as a means of gathering interview information from parents, for it provided parents freedom to decide whether they would like to

answer my questions, and they could also decide how, what, and when they wanted to share with me.

As time progressed, I developed a closer relationship with the children and their families, and I discovered that casual conversations proved to be the most informative method in my face-to-face information gathering with my adult informants. It is natural that parents talked with me and among themselves when they came to pick up their children and during various social gatherings held by the Chinese School. As a teacher, I interacted with parents—listened, answered and asked questions—in order to inform them of their children’s Chinese learning in my class and also to learn about their children holistically. Because the conversation took place naturally and I did not obtain any consent from parents for gathering such type of data, information collected via this method is not used in this study, but served to enhance my overall understanding of the children and their family.

Interviewing children, especially very young ones, has always been difficult. I conducted my initial interviews with Aileen and Rosan in spring 1996 when they were both in kindergarten (Appendix D). Based on my assessment of these two children’s bilingual proficiency, I decided to use English, their second but dominant language, as a medium for the interview. Due to their age and experience, I also used a semi-structured interview and expected each interview to last about 10 to 15 minutes. The result of the interview was no more than 10 minutes of “I don’t know” and replies that did not answer most of my questions.

After re-evaluating the situation and going through some readings, I decided that such interview modes might not be applicable for these two children of such a young age. Therefore, I decided not to conduct further interviews until they were older. When both Rosan and Aileen were in first grade, I began to set up individual 45-minute sessions, in which children took turns each week coming to my class at 2:15 PM, so that I was able to work with them individually to provide specific instruction and to evaluate their Chinese language development. While I was working with the children individually, oftentimes they would comment or talk about issues that I had been contemplating. I used such opportunities to gather more information than I would have to by employing the more traditional interview methods used in qualitative research.

As these four children entered second/third grade, I decided to conduct an interview with each of them using *The Burke Reading Interview* (Goodman, Watson, & Burke, 1987, Appendix E). The interview protocols consisted of ten questions regarding personal beliefs in learning to read and strategies one uses in the reading process. With these interview questions, I intended to gather information regarding the process in which these children learn to read in Chinese and English, as well as how their personal beliefs influenced their literacy learning in both languages. Each interview lasted about 15-25 minutes, and the children were able to respond to the questions based on their experience and belief in learning the two languages. The interviews were tape-recorded and later typed into transcripts as soon as I was able to do so.

Five years after I finished my data collection, I conducted an individual retrospective interview with Rosan, Lucian, and Maya in the spring of 2003 when these children were in their sixth and seventh grades. The purpose of this interview was to understand the role of the Chinese class experience in their mother tongue literacy learning and their concept of the self as a bilingual learner.

I have divided the interview protocols (Appendix F) into three domains: Background information, Chinese class experiences, and the bilingual self. To kick off the interview, I first had the children draw their own bedroom on a piece of paper and then asked them to describe it to me. I used this activity as a springboard to help these children talk about significant items there, because many of the items in their bedrooms were from their family members. With such a strategy, these children were able to answer questions in the first domain which pertain to their concept of themselves and other people in their family, as well as the relationship between themselves and each of the members in their families. After the children finished the questions in the first domain, we went on to those designed for domains two and three. The children did not have much difficulty answering and explaining their perspectives to me. Each taped interview lasted between one and 1.5 hours and was typed immediately after each session.

An informal approach I employed to gather information with young children was through family visits. I was invited to all the children's houses at different points of time and occasions, either for holidays, children's birthday parties, or some other functions. During the visits, I listened to what parents and

children told me, and I learned tremendously from such interactions, especially with Lucian.

My prolonged relationship with Aileen and Rosan and friendship I developed with their parents yet provided me with additional opportunities to learn more about the children and their families. While their parents were out of town, I was often asked either to stay with the children or to drive them to and from various activities. There were many times that the children shared their personal views with me, regarding their life at school and thoughts about various issues.

Data gathered through family visits and babysitting commitments described above were not used in this research for I did not obtain any consent from the children and their parents. These materials were used to help me gain better understanding in working with children or to develop other data collection strategies in the later stage of this study.

In addition to the focal children and their parents, I also interviewed my co-teachers, Lia and Andy, with whom I had worked in the spring of 1996. The relationship between these co-teachers and myself had been a very close one, for Andy was a cousin with whom I grew up, and I considered Lia my “adoptive little sister.” The atmosphere of the interview, therefore, was more relaxed than the ones I had with parents of my research participants.

Through interviewing them, I intended to examine the interaction between children as well as children and adults in my classroom, and the role of adults in supporting children’s Chinese literacy learning in my class. Each interview lasted

about an hour, and I typed the transcript on computer as Lia or Andy answered my questions.

Documents/Artifacts. Throughout the course of this study, I collected various documents which can be grouped into three categories: work children created, instructional materials, and correspondence. Materials in the first category include those the children created in my classroom, such as samples of writing and artwork, as well as those that they did at home and brought to the class to share. Each week, after the children signed in on their library card (a small book) and returned the books they checked out the pervious weeks, they began to work on their writing. The sign-in booklet and writing served both as a record for me to keep track of children's literacy development and also as an important part of the documents I collected for this study. Also, in each class session the children were involved with reading, writing, art, and other literacy related activities, such as KWL, story-telling, group reading, and Language Experience activities. Materials these children created as a result of such literacy activities were also included in this category.

In addition to the work children created, the class lesson plans and printed instructional materials I used to work with children were also included in the second category of the documents for this study. In my class, I had approximately 200 children's books, games, audio and videotapes, both in Chinese and English about Chinese culture and China in general. Many of these books were used during both the individual and group reading sessions. Although I did not use the tapes and games extensively during the class sessions, the children were

encouraged to check them out. Oftentimes these children commented on the content or reflected on their experiences based on their perception of these audio-visual materials. There were also several posters and other printed materials, written in both Chinese and English, such as charts about numbers, names of animals, months of the year, hung around the walls of the classroom. Children often used this environmental print as guides as they wrote. I also used this print to show children the conventional forms of Chinese written systems as well as to present information about themes we were learning.

The third type of documents consisted of the correspondence between the parents, the children, and myself. This correspondence included notes that children wrote to their parents when we went out to the playground of St. Mary's, an elementary school nearby, after the class session was over and when the weather permitted. Sometimes the children and their parents also sent me greeting cards and postcards during holiday seasons and when they were traveling. Electronic mail also played a role in my correspondence with parents and the children. I had sent occasional evaluation reports to the parents and also received e-mail queries from parents regarding their children's learning in my class.

To summarize the methods I employed for data collection as well as types of data gathered via each method, I use the following table for such a purpose:

OBSERVATIONS	INTERVIEWS	DOCUMENTS
a. Transcripts of taped classroom observations	a. Transcripts of various interviews with focal children, their parents, and co-teachers	a. Samples of children's art work, reading and writing materials
b. Teacher's journal entries/reflection logs	b. Retrospective interviews with 3 focal children 5 years after the data collection was completed	b. Instructional materials, such as books, charts, and environmental prints
c. Feedbacks from two co-teachers (spring 1996)	c. E-mails with parents	c. Correspondences (e.g., notes, cards, e-mails) between children, their parents, and me

Table 2.2 Data collection methods and type of data gathered

Data Analysis: The Process and Procedure

The process of my data analysis and data collection took place concurrently. While collecting data for this research project between Fall 1995 and Fall 1998, I also conducted four pilot studies of different lengths. In chapter one, I provided a brief description and findings of each pilot study. Findings of these studies were instrumental in helping me to not only further explore different aspects of children's mother tongue literacy learning in my class, but also shape my research agenda.

Based on the patterns found in these four pilot studies, coupled with those emerging during the continued data collection process, I identified the research questions I wished to answer, as well as three theoretical frameworks—socio-cultural contexts of language and literacy learning, bilingual and biliteracy development, and socio-semiotics/multiple sign systems—for this study. These three theoretical frameworks serve as the backbone for chapter three, four, and

five respectively. I intended to explore one of my three research questions, as well as examine the focal children's literacy learning process via a specific, proposed theoretical framework.

While in the process of identifying the theoretical frameworks and reading relevant literature for this study, I also began to sort and organize the data I had collected. This was done both chronologically and thematically. While transcribing the audiotapes from classroom observations, I dated and numbered each transcribed page in chronological order. In addition, I incorporated my comments, hunches, and questions into my transcription, marking these as O.C. (observer's comments).

Due to the use of two languages in my classroom, as well as in consideration of my readers (most of them from English-speaking backgrounds), I created a transcription convention to facilitate my analysis and readers' understanding. I translated all utterances into English, but used a different font to signify language diversity: utterances made in English were shown in *italic*, and plain text was used to show that the original utterances were made in Chinese. To help readers develop a sense of place, time, and events, I included the context in which the verbal and nonverbal interactions took place. When necessary, Chinese pronunciation and characters were provided to help readers understand the relationship between the actual and translated language.

Such conventions were also applied to other types of data (i.e., interview and documents/artifacts). Typed transcription pages were then printed and filed accordingly. As I read and re-read the transcription each time, I added more notes

on the margin of the pages. The observer's comments and notes on the margin helped me to contemplate, categorize, compare, and contrast materials during the intensive data analysis later on. Transcriptions from interviews were also dated and numbered chronologically, with a folder for each child and her/his family. As with the observation transcripts, I read and re-read the interview data from each child (and her/his parents) several times in order to identify emerging themes and patterns. When the themes and patterns had been identified, I typed them onto a wordfile, with the quotes best exemplifying each theme/pattern. The process went on to the next child until all themes and patterns from the interview data for each child had been identified and typed. After the primary analysis, I printed out a hard copy for each child and stored them along with the original interview transcriptions into individual files, labeled with each child's name. The photocopied artifacts were also numbered chronologically and put into individual folders for each child. They were sorted and organized the same way as the interview data.

Because I intended to examine the children's literacy learning from three theoretical frameworks, each representing one aspect of this process, I had my focus of analysis on one proposed theoretical framework at a time. Bearing in mind both the literature review of a specific theoretical framework and the research question underlying it, I undertook a more intensive data analysis process by adapting the constant comparison method proposed by Glaser and Strauss (1967). Combing through all my data again, I focused on the patterns and themes that I had identified earlier and that were pertinent to the theoretical framework I

had selected in a particular chapter. I then began to form tentative assertions and assumptions by comparing and contrasting the data that showed similar patterns and themes.

Following this step was more re-reading and reviewing of data in order to identify rival evidence of the assertions and assumptions I had made initially. Once rival evidence was identified, I compared, contrasted, and then modified my original assertions and assumptions. This process went on several times until I was unable to find any rival evidence. Looking through the examples I identified earlier, I selected one (either from the observation transcript, a quote from interview, or a piece of document/artifact) that best demonstrated a specific assertion or assumption I had made. This concluded the analysis for a particular chapter/theoretical framework. The analysis for the rest of the chapters was done in the same way.

The next step of the analysis was to write up my interpretations of the analyzed data in chapter three through five of this dissertation. This was done as a case study. I begin each chapter with a piece of data which best demonstrates the points that I wish to make in that particular chapter, followed by the review of relevant literature that I used to support my interpretation, as well as provide readers a frame of reference and to show them the basis for my interpretation. After the literature review, I walked readers through the assertions I made in the chapter, supported by the most appropriate data I had gathered in the course of this study. The last step of the analysis was to develop and present a model of literacy by distilling information discussed in chapters three through five.

In this chapter, I described the context in which this study took place—the community, the Chinese school, and the particular class in which I was the teacher-researcher. I believe that as human beings, we all behave and identify ourselves in accordance with the context in which we play our roles. Through a description of the context and the actors therein, I wish to offer readers opportunities to get acquainted with Aileen, Rosan, Maya, and Lucian vicariously, so that they are able to “visualize” these children themselves and also to make sense of what each individual child’s verbal and non-verbal behaviors mean. The second half of this chapter is devoted to the research methodology, in which I walked my readers through the process and procedure of how I dealt with issues I encountered in my research, what types of data I gathered and how I gathered them, and how I organized and analyzed the materials I had collected in the course of this study.

Chapters three through five are a case study of how four children—Aileen, Rosan, Maya, and Lucian—embarked on a journey of biliteracy learning. It also is a journey that I, as a teacher-researcher, took with these children during a three-year period while also tracing, documenting, and analyzing such a learning process. And now I would like to extend my invitation to you, my readers, to enter the biliteracy world of these four children, as well as to explore the various aspects of their literacy learning and to examine my interpretation of this process.

CHAPTER THREE

SOCIALIZATION THROUGH LANGUAGE AND LANGUAGE

THROUGH SOCIALIZATION: WHAT “MY UNCLE IS A PIG” MEANS

The children and I were reading The Very Busy Spider (Carle, 1984; Chinese copyright, 1989), a picture book about a spider diligently spinning her web. While she was working, several animals came by and tried to distract her. The spider, however, concentrated on her task.

As we flipped through the book, the children commented on the animals on each page. When we came to a page in which a pig invited the spider to play in the mud, seven-year-old Maya was excited. Leaning toward the book, she pointed at the illustration and said loudly, “*My uncle! My uncle! My uncle! He is a pig!*” (Transcript, March 14, 1998)

I begin this chapter with a language story because it illustrates for me an important literacy lesson—language and literacy learning is a socio-cultural process—one which serves as the backbone of this research project. When contemplating what Maya meant by “*He [my uncle] is a pig,*” a European American, an Arab, and a Chinese might interpret this statement differently. For a European American, Maya’s uncle probably is perceived to be a person who is both greedy and inconsiderate (R. S. Stroup, personal communication, June 12, 2001). From an Arabic-Islamic perspective, Maya’s uncle is definitely an evil person, for being called “a pig” is deemed very negative in Islamic culture (M. Thomas, personal communication, June 16, 2001). To the Chinese, however, this statement may simply mean that Maya’s uncle was born in the Year of the Pig, according to the Chinese zodiac. Why does such a big difference exist among these three groups of people when interpreting the same statement?

Cheng (1987) proposes that there exists an intricate relationship between culture and the content of language situated in that particular cultural context. She

argues that “although the form of language is explicit, the content and use of language may be implicit and may require interpretation in the user’s cultural context—especially when people from different cultures use the same language” (p. 7-8). When we take into consideration Maya’s cultural background and examine her verbal statement—“*he [my uncle] is a pig*”—we come to realize that the meaning Maya makes is different from a person with a Caucasian or Islamic background, although all of them may make the same statement in the same language, i.e., English.

What Maya reveals to us is her understanding of a particular element of Chinese cultural traditions, the Chinese zodiac, which has been in use since the seventh century A.D. (Whitfield & Browne, 1998). The concept of the Chinese zodiac may be foreign to people with limited experience with or exposure to the Chinese language and culture. Growing up in Hong Kong, a Chinese (Cantonese) speaking society before immigrating to the United States at age five, Maya learned at an early age that each person has a zodiac sign. In our Chinese class, she could recall at ease the different zodiac signs of her family members and close relatives. Maya’s knowledge of this piece of specific cultural tradition, exhibited in her verbal response to an illustration of a pig, demonstrates a socialization process in which zodiac signs are recognized as a part of a cultural system, and in which inquiring about and knowing someone else’s birth sign is a common aspect of social practice (Cheng, 1987).

Lee (1997), a Whorfian scholar, contends that speakers from different linguistic backgrounds often pay attention to the different elements existing in the

same phenomenon due to the language enculturation process. Lee (1997, p. 144) cites Whorf's principle of linguistic relativity to support the relationship between such a process and cognitive perception: ". . . the way our attention is organized has a lot to do with linguistic enculturation in that different languages encourage their speakers to draw 'different essentials out of the same situation' (Whorf, 1956, p. 162)." Unless these speakers are conscious of the different isolates framed by their cultural experiences, they may not reach consensus in understanding and interpreting an event (Lee, 1997).

Heath (1986) also eloquently states that language learning is cultural learning, for we do not only learn how to speak, listen, read, and write a particular language; we also need to learn how to use it to function in a variety of contexts, for different purposes, and with different partners.

Combining both Heath's and Whorf's propositions regarding the role of language in cultural learning and cognitive perception, we can argue that the way we perceive and interpret the world around us via language is colored by our cultural stance, for language is an agent for acquiring, preserving, transmitting, and creating cultural knowledge. In a sense, learning about the world and the word takes place simultaneously as we develop our understanding of how to be a member of a particular group (Freire & Macedo, 1987).

It follows that an illustration of a pig in a picture book, to Maya, was no longer a pictorial sign that stands for an animal alone; it also is a distinctive element of a culture (e.g., one of the Chinese zodiac signs) that she had acquired through the language socialization process provided by members of her family

and the Chinese community in which she lived. Based on her knowledge about this particular piece of cultural information, the Chinese zodiac, Maya was able to think beyond what she saw on the surface, e.g., the illustration of a pig, and associated it with her lived cultural experience. And using her second language, English, Maya demonstrated her cultural understanding and created a statement which brings about a new interpretation to the predominantly English-speaking community where she has been residing since immigrating to the United States.

Language stories like Maya's above have been a major tool that I employed to investigate and examine the language socialization process of ethnic Chinese children who grow up in predominantly English-speaking communities. For more than ten years, I have been fortunate to witness and gather many such stories which have illuminated for me the socio-cultural aspect of language and literacy learning, and which also demonstrate that such a process cannot be separated from the context in which learners find themselves.

Being a teacher-researcher, I seek related literature in order to inform my practice, as well as to help me better understand the interplay between socio-cultural contexts and these children's language/literacy learning. I have identified research and theories in the following three threads that enlighten my thinking in this area: (1) definitions of culture, (2) language learning in socio-cultural contexts, and (3) Chinese language and culture. In the next section, I will share with readers my current best understanding regarding these three threads of literature.

Defining Culture

“What is culture?” This has been a question of perennial interest to anthropologists, sociologists, psychologists, and scholars from many other disciplines. Although a consensual agreement on a single definition of culture is quite implausible, it does not imply that there is no need for one. Because a focus of this research project is on the interrelationship between language socialization and culture, it is necessary to provide a working definition of culture on which this study is based. Therefore, I will first examine and summarize definitions of culture offered by various disciplines. I will then follow this with my own definition of this concept and conclude with a reflection on the relationship between culture and child development.

Approaches to the Study of Culture

Culture as a system is difficult to define in a narrow sense, for it is a broad concept that encompasses “all aspects of human life and the patterns for living” (Cheng, 1987). For a long time, scholars from different disciplines have tried to define this concept and to identify the elements that constitute it.

Edward Tylor, a 19th century British anthropologist includes the following elements in his definition of culture: knowledge, belief, art, law, morals, custom, and any other capabilities and habits, and he argues that culture is “acquired by man as a member of society” (as cited in Cheng, 1987, p. 1). In his view, culture is defined in terms of a set of objects and constructs, acquired through participating in the daily activities with other members of a community.

Kroeber and Kluckhohn (1952) examine more than 150 definitions of culture from an anthropological perspective, and they note that:

Culture consists of patterns, explicit and implicit, of and for behavior acquired and transmitted by symbols, constituting the distinctive achievements of human groups, including their embodiments in artifacts; the essential core of culture consists of traditional (i.e. historically derived and selected) ideas and especially their attached values; culture systems may, on the one hand, be considered as products of action, and on the other as conditioning elements of further action. (p. 357)

This definition is particularly attentive to the patterns of culture which distinguish members of one cultural group from those of the others. It also takes into account the symbolic nature of cultural transmission, which enables cultural elements to be acquired and passed from one generation to the next.

Spradley and McCurdy (1987) examine the concept of culture from an ethnographic perspective and identify three characteristics of culture: shared, learned, and adaptable. They also assume that “[h]uman beings cope with their natural and social environment by means of their traditional knowledge” (Spradley & McCurdy, 1987, p. 4). In other words, as a group of people agree on and practice the same or similar sets of beliefs, customs, and values, they collaboratively create a culture of their own. As the young members interact with more experienced ones in their community, these youngsters acquire the cultural knowledge and traits that are pertinent to their survival and development. While culture evolves from shared commitments and agreements among members of the

same group, it is also subject to change as group members work together to cope with the shift of physical and psychological environments.

Sociologist Parson (1949) argues that culture consists of “patterns relative to behavior and the products of human action which may be inherited, that is, passed on from generation to generation independently of the biological genes” (p. 8). Children do not automatically inherit their parents’ cultural experiences, but acquire these through socialization processes.

Parsons, Shils, and Olds(1951) further contest that

Culture has been distinguished from the other elements of action by the fact that it is intrinsically transmissible from one action system to another—from personality to personality by learning and from social system to social system by diffusion [A] complex external symbol structure . . . can bring about roughly the same type to orientation in any or all of the actors who happen to orient to it. And since the concrete referent of the symbol is not the external object but rather the “way of orienting” which it controls, we may say that complex symbols are transmissible from actor to actor. (p. 159-160)

These two scholars focus on the interaction between the external nature of the symbol structure and intrinsic transmissibility of the cultural elements. This transmissible nature of culture via various action systems enables human beings to internalize and use cultural elements to organize and direct their lives.

From a psychological perspective, Schaller, Conway, and Crandall (2004) consider culture less as a compilation of tangible objects and observable

behaviors than as an abstraction inferred from them. These three psychologists also purport the notion that culture is socially constructed and is shared among members of the group. They contend that

Culture is not a single observable thing, but is instead something of an abstraction inferred from the observation of many more specific things—beliefs, habits, actions, artifacts—that are more easily and directly observed It's also clear that in order for those more specific things to imply culture, they must be shared. Whether defined in terms of shared customs and rituals . . . , shared symbols and meanings . . . , shared values . . . , or shared personality traits . . . , culture does not exist unless those customs, symbols, values, or traits are perceived to be relatively common across some population of individuals. This means that many of the things that imply cultures are those things that psychologists refer to collectively as "norms." (p. 8)

Schaller, Conway, and Crandall recognize that cultures are distinguished from each other less by “visible” elements each exhibits, such as its artifacts, but more on the perception, use, and interpretation of the cultural elements which are collectively created and shared among members of the same group.

Attempting to examine the concept of “culture” from a Chinese linguistics tradition, I turned to dictionaries in order to identify the meanings of the two characters—“文 [wen]” and “化 [hua]”—that constitute this concept. The dictionaries define “文 [wen]” as “a sign system used for recording language”, “patterns,” and “gradual” (He, 1991, p. 276), while the character “化 [hua]”

stands for “change” and “influence” (He, 1991, p. 62). Inferred from the meanings these two characters represent, it appears that Chinese considers the development of culture a gradual process in which different forces influence and shape its direction, and thus culture is not a static but rather a dynamic concept. In addition, human beings need sign systems for acquiring, developing, and passing cultural values and beliefs from one generation to the next, and Chinese people recognize that language can be used for such purposes. Finally, elements of a particular culture, such as actions, behaviors, and thinking, are patterned, so members of a particular cultural group can identify and distinguish members of their cultural group from those of others.

My Definition of Culture

My own definition of culture is a synthesis of those discussed above. It interprets culture as a knowledge system shared by members in a particular group. Within each culture, there is a set of cultural specifics: principles, values, and behaviors which may be implicit or explicit, but which are acquired through observing and interacting with members of a particular community. Members of a cultural group use signs and symbols to learn, invent, and transact meaning, which is crucial to the survival and development of the individuals, as well as the whole group. While we create culture for personal as well as group development and survival, culture is also subject to change in order to adjust to the social, physical, and psychological changes in the group. In other words, culture is learned, shared, and adaptable (Spradley and McCurdy, 1987).

Human beings acquire the beliefs, values, and norms of their respective cultures and behave accordingly. With such knowledge, members of a group expect to see patterns and codes of rules when perceiving and interpreting meaning within their own cultural context. Because culture is learned and shared, children acquire elements of culture by participating in a variety of cultural activities, using a wide array of cultural tools and apprenticing with other more competent members of their cultural groups.

As each culture emphasizes different sets of values, beliefs, and norms as a way to adapt to its physical and psychological environments, the views on children's learning and child-rearing practice also vary from culture to culture. In the next section, I will discuss some literature regarding the relationship between culture and child development.

Culture and Child Development

Cultural contexts play an important role in children's development. Although children's physical growth does not vary much between cultures (e.g., birth weight and the age at which a child learns to walk), the values placed on cognition, psychomotor skills, and affect differ significantly from one culture to the next (Slonim, 1991).

Generations of adult members in each culture have accumulated experiences and knowledge as to what, when, and how specific skills and traits are deemed valuable and necessary in order for young members to survive and for the whole cultural group to prosper. Cultural groups may appear to share

similarities in educating their youngsters, but their purposes and underlying assumptions for a particular practice may be very different.

In a cross-cultural study of preschool education in Japan, China, and the United States, researchers Tobin, Wu, and Davidson (1989) found that although adults from all these three societies regard preschool as an important educational institution for their youngsters, they do not hold the same view in the role that preschools serve in children's cognitive/academic development. In Japanese preschools, little emphasis is placed on reading, writing, and mathematics. Rather, the focus is on character development, such as "perseverance, concentration, and the ability to function as a member of a group" (p. 192), traits which are traditionally deemed to be valuable in promoting academic success in formal schooling. In addition, the Japanese view preschool years as the final stage for children to be away from academic pressure and competition before they enter first grade. Therefore, the learning of socially and culturally sanctioned character traits, instead of academic subjects, forms the core of Japanese preschool curriculum.

In contrast, Chinese parents expect their preschoolers to have a head start in literacy and mathematic skills. This expectation, explained by Tobin, Wu, and Davidson (1989), is influenced by a long-lasting Confucian tradition which stresses the importance of early and strenuous education, as well as a half-century of Communist ideology dictating against frivolity. The preschool curriculum in China, therefore, focuses on developing children's reading, writing, and mathematics skills.

Adults in the United States are torn between two opposing positions regarding children's early education: "play is children's work" vs. "work [academics] is a form of children's play." Parents on one hand want to prepare their children for academic success. On the other hand, they worry about the danger of "hurrying" their children (Elkind, 1981). A mixture of play and academic skills thus permeates the preschool curriculum in the United States.

The different emphasis in preschool education in these three cultures not only reflects the traditional values that adult members in each culture want to instill in the youngest members of their groups, but also reveals the societal trend at a particular time in history.

In addition to the learning of cognitive skills, the view on the timing, types of skills, and approaches to teach psychomotor skills to children varies from culture to culture. The National Association for Education of Young Children (NAEYC) has published its position statement regarding developmentally appropriate practices in early childhood programs, wherein it proposes that there is not a single developmental path in young children (Bredekamp & Copple, 1997). Instead, children develop as competent members of their social and cultural groups by learning "to balance their needs and wishes with the constraints and freedom of the social world in which they live—to express their developmental predispositions in ways that are consistent with their family's and culture's practices" (Bowman & Stott, 1994, p. 120).

Ethnographies of child development in various socio-cultural contexts have revealed that when children apprentice with more experienced members or

collaborate with their peers in order to learn new skills, they are learning ways of being, doing, and thinking that bear specific meaning and significance to their cultural group. Slonim (1991) cites Mead's description that Manus children in New Guinea are able to achieve competence in swimming and canoeing by age 5 or 6, demonstrating the high value placed on psychomotor skills in that particular culture. In the same way, Chinese children of six or seven years of age are expected to be able to hold chopsticks properly and successfully feed themselves, this being yet another example of psychomotor skills learning in cultural context.

In addition to possessing diverse perspectives on cognitive and psychomotor development, people of different cultures view affect differently. Mead (as cited in Shaffer, 1993) conducted cross-cultural studies on child rearing practices among three New Guinean tribal societies: Arapesh, Mundugumor, and Tchambuli. Mead found that emotion and gender role development have more to do with social learning than biological differences. In her study, she reported that Arapesh men and women were raised to be cooperative, non-aggressive, and sensitive to the needs of others, traits which were traditionally regarded as a feminine role. By contrast, in the Mundugumor tribe, both men and women were socialized to be hostile, aggressive, and emotionally unresponsive to others, which are traits of a masculine role by the Western standard. Finally, the Tchambuli exhibited behaviors and emotional patterns of gender opposite to those of Western cultures: males were brought up to be passive, emotionally dependent, and socially sensitive, whereas females were taught to be dominant, independent, and aggressive.

Mead's research demonstrates the diverse socialization patterns across human beings, as well as reveals the importance of studying human development within socio-cultural contexts. Without such an approach, we might assume that there is but a single, universal developmental path for all human beings, thus leading us to an ethnocentric and restricted view of the variability of Homo Sapiens.

In this section, I have reviewed the role of culture in children's development in terms of cognition/academic learning, psychomotor skills, and emotion. To summarize, cultural learning is, in part, learning to be a member of a group—to think like and cooperate with other members of the group, to acquire skills deemed important to the survival of the person and the society, and to express feelings and emotions in accordance with the societal norms. In the next section, I will narrow the lens to focus on the relationship between child development and one particular aspect of culture—language and literacy learning—a major theme I wish to explore in this study.

Language and Literacy Learning in Socio-Cultural Contexts

Language and literacy learning takes place at least partially as a means of social participation (Goodman & Goodman, 1990). It is impossible for people to learn a language free of context because every instance of language is a social, cultural engagement (C. L. Burke, personal communication, July 16, 2001). While learners interact with others to acquire basic elements of the language (e.g., the sound, grammar, and meaning), they also learn the specific ways the language is used in accordance with the roles these learners play in the society. In the process

of learning a language and learning about a language (e.g., how, when, and with whom to use the language), learners also develop content knowledge through the use of language. In other words, learning language, learning about language, and learning through language (Halliday, 1975) are inseparable, for each of them represents one dimension of the interrelationship between language, context, and socialization.

Family: Where Language and Literacy Learning Begins

Language learning, both oral and written, begins at home. From birth, children are engaged in various interactions with family members long before they are able to speak, read, and write conventionally. In the process of learning language, young children are active agents because they constantly generate their own theories about the rules of language use through their interactions with other more competent language users (Newman, 1985). Lindfors (1987) contends that even very young children are capable of hypothesizing, trying out language as they encounter it in particular contexts. With feedback from parents and caregivers, as well as through further exposure and interaction, children eventually modify and/or confirm their hypotheses about rules and principles governing language learning.

Language and Literacy Learning in Communities

In addition to their experiences at home, children also interact with community members and encounter a variety of texts, such as flyers, billboards, and traffic signs, in their environments when they go shopping with families, visit doctors, and participate in various community functions. Heath (1983) in her book

Ways with Words documents the language use among children in two neighboring communities: Roadville, a white working-class community, and Trackton, a black working-class community.

She argues that in order to get along with people and accomplish social goals, children need to learn their community's ways of language use, which are acquired through experience in various community activities and interactions. Heath examines the concept of “story” and finds striking differences between children in these two communities regarding what constitutes a “good” story and how a story should be told. In Roadville, a story has a formulaic opening with a strict chronicity and usually ends with a proverb or moral, while in Trackton, a storyteller uses very few formulaic openings, moves from event to event, and ends without formal closure. As a consequence, Roadville’s children learn from a young age that storytelling is a formal event, and only certain community members are deemed to be good storytellers. Young children in Trackton, however, have learned that those who are successfully “aggressive in inserting their stories into an ongoing stream of discourse” (p. 185) are good storytellers.

Heath (1983) suggests that each community has specific ways of socializing its members and helping them function in the community, and there are several features in children's social and linguistic environments which vary strikingly from one community to the other. These features include:

The boundaries of the physical and social communities in which communication to and by children is possible; the limits and features of the situations in which talk occurs; the what, how and why patterns of

choice which children can exercise in their use of language; and the values these choices of language have for the children in their communities and beyond (p. 144).

Therefore, as children learn how to use the language of their community, they also develop a sense of identity, assume roles and responsibilities, and create meaning within the social and physical network in which they reside.

Language and Literacy Learning among Linguistic Minority Children

As children step out of their homes and immediate communities, they encounter a variety of language uses which may be very different from those they have experienced. In the United States, the number of children from diverse cultural and linguistic backgrounds has increased dramatically during the past three decades (U.S. Bureau, 2003). As these children enter school, many of them possess little or no English proficiency, but bring into classrooms the knowledge of their mother tongues and their cultural, linguistic values. Heath (1986) argues that in order for all children to achieve success in school, the ways children use language to learn must be given at least the same consideration as the specific language they speak. Because information about these children's previously acquired "ways with words" (Heath, 1983) often influences their academic learning in school, it is therefore important for schools to encourage language minority children to maintain the use of their mother tongue while learning a new language at school.

Researchers (Fillmore, 1983; Heath, 1986; Wong-Fillmore, 1989) have studied how linguistic and cultural minority children in America use language in

the classroom. Their findings reveal that children from linguistic minority groups have different ways of using language to learn than do their mainstream, Caucasian peers and teachers.

Fillmore (1983), Wong-Fillmore (1989), and Heath (1986) studied children from Chinese-speaking and Spanish-speaking families in the United States. The findings of their research have shown that Chinese-speaking children tend to be adult-oriented; they appear to interact frequently with adults and to be concerned about meeting their teacher's expectations. By contrast, Hispanic children are more peer-oriented in seeking assistance. Fillmore (1983) suggests that the class context strongly influences these children's learning in American schools. When in a classroom where most students are ESL learners, the teacher becomes the main resource in English language learning. In order to interact with each other, students need to use English as the primary means for communication. It follows that these students supply each other with a less conventional version of English. Under these circumstances, adult-oriented second language children tend to receive richer English input from their teachers and develop higher language proficiency than their peer-oriented counterparts.

In a classroom where native English speakers outnumber linguistic minority children, peer-oriented second language learners will have more opportunities to interact with native speakers, thus receiving more English input than their adult-oriented counterparts. It is, therefore, important that educators be aware of the cultural and linguistic differences among children of different groups in order to design a conducive learning environment for all students.

In sum, language and literacy learning is a socio-cultural process. To fully function in a particular language, one not only needs to understand the mechanics of a language, such as the grammar, but also needs to be able to use that language across contexts, with different audiences, and for a variety of purposes. It is through meaningful interaction with others as well as functional use in daily life that children develop competence, fluency, and creativity in language. With the increasing number of language minority children in the United States, the school systems need to take into consideration the cultural, linguistic knowledge these children possess in their native cultures and mother tongues in order to support their learning. The cultural and linguistic resources that these children bring into classrooms not only provides a foundation for learning English, but also offers schools and society multiple perspectives on learning and child development.

Chinese Language and Culture

As language serves as an essential tool for acquiring, creating, preserving, and transmitting cultural knowledge, it is impossible to discuss the development of a particular culture without giving attention to the language used by members of that group. Because a focus of this project is on a small group of children learning the Chinese language as their mother tongue or second language (in Lucian's case), it is important that I provide my readers some background information regarding Chinese language and culture. To begin, I will provide a linguistic sketch of the Chinese language and the use of that language in three major Chinese-speaking regions: China, Taiwan, and Hong Kong. This will be followed by an overview of Chinese traditions and cultural values.

Chinese Language and Literacy Practices

According to Cheng (1987), there are more than 80 languages and hundreds of dialects spoken in China; all of these language variations are categorized under “Chinese” even though the majority of them are as mutually unintelligible as Hindi and Swahili. In this section, I will focus mainly on Mandarin Chinese because it is one of the two major languages that my focal participants and I used throughout the course of this study.

Mandarin Chinese is the official language in China and Taiwan, as well as a language of choice in Singapore and some Southeast Asian countries. It is also called “putonghua (the common language)” in China and Hong Kong, and “guoyu (the national language)” in Taiwan and China. Spoken by approximately 885 million people, Mandarin is considered the most widely used language in the world (Grimes, 1992). Linguistically speaking, Mandarin belongs to an independent branch of the Sino-Tibetan language family, and it is devoid of deflection, lacking consonant blending, and has no clear indication of tenses. Like other Chinese languages, Mandarin is considered monosyllabic and tonal, with each stressed syllable having a significant contrastive pitch. Mandarin has four tones plus an unstressed one, while there are nine in Cantonese and six in Hakka (both widely spoken Chinese dialects).

Written Chinese is the world’s oldest living written language, having been in existence for more than three thousand years and having undergone many changes during that time. The Chinese writing system is an ideological one, using characters to represent concepts, which is very different from the alphabetic

writing systems used in the English and other western languages. The smallest meaning unit in Chinese is a character “字 [zì],” which is formed by strokes. Each character can stand alone to represent a concept/concepts or be combined with other character(s) to create new concept(s). For example, the character “火” in Chinese stands for “fire”, while “車” means “vehicle”. Combining these two characters, we thus create a new term “火車” which means “train.”

Although there are many dialects in Chinese, they all share the same script. For instance, the word “eat” is pronounced as “chī,” “sīhk,” and “jia” in Mandarin, Cantonese, and Taiwanese, respectively. However, it is written as “吃” regardless of the phonological differences between these three dialects. Each Chinese character has a radical, i.e., the semantic root that indicates the meaning of that particular character. Therefore, literate Chinese may not know the exact pronunciation of an unfamiliar character, but they can usually infer the meaning from the radical of the character, while English speakers are more likely to be able to sound out novel words in English without actually knowing the meaning.

Around 100 A.D., Chinese lexicographer Xu Shen differentiated six types of Chinese characters: pictographs (pictures representing objects), simple ideographs (symbols that represent ideas), logical aggregates (combining meanings of different characters to represent a new concept), phonetic complexes (combining meaning of one character with the sound of the other), associative transformations (extending the meaning of a character to a related concept), and borrowings (giving an unrelated meaning to a character). While a general misconception holds that Chinese characters are primarily pictographic, about

90% of Chinese characters are phonetic complexes (Tsao & Wang, 1983), in that the radical provides the class or category of meaning, and the other element offers some approximation of the character's sound (Sheridan, 1990).

Traditionally, Chinese texts are presented vertically and from right to left. In Taiwan most reading materials, especially literary works, still follow this convention. However, texts dealing with mathematics and science run horizontally and from left to right, due to the formulas and equations used in such texts. Interestingly, there is no standardization of public signings in Taiwan, and visitors to Taiwan will encounter some written horizontally from left to right, others right to left, and still others written vertically from top to bottom. In China, the texts run the same direction as in English, left to right in horizontal lines, although vertical writing is used occasionally.

Like all other written languages, the Chinese writing system has undergone several changes, with the one in the second half of 20th century being the most recent. Since gaining power in 1949, China's government has tried to reform the Chinese writing system in order to achieve universal literacy (Pope, 1982). To achieve this goal, the government has introduced and promoted the use of Chinese phonetic script, using Latin and Russian letters (Barlow, 1981).

Although efforts to Romanize Chinese written language were rejected, the government has developed a "Pin-yin" ("spell sounds") approach that uses the English alphabet for reading instruction in the primary grades. In addition, the traditional Chinese script was "modified and simplified, by using fewer strokes of the pen. Since 1956, over 2,000 characters have been simplified" (Pope, 1982).

As a result, people who have grown up in China and been educated since the late 1950's have little knowledge of the traditional Chinese written script. This simplified version of Chinese characters is also widely used in other overseas Chinese communities, such as Singapore, Malaysia, and Indonesia. In Taiwan, however, people still learn and use the traditional written script.

First grade language arts instruction in Taiwan includes ten weeks of training in Mandarin phonetic symbols [“zhuyin fuhao” or “bopomofo”], a system consisting of 37 non-alphabetic phonetic symbols, extracted from common elements found in traditional Chinese characters. Teachers generally believe that once their students have mastered all these symbols, they are able to compose by “sounding out” the words they wish to write, even though they may still not know how to write in “real” Chinese characters (F.-M. Wang, personal communication, 1995).

Although the learning of these symbols appears to be a major component of beginning reading instruction in Taiwan, they are rarely an integrated part of environmental print, such as newspaper and street signs. The use of such an approach in beginning literacy instruction in Taiwan has been debated by scholars in different fields over the last decade, and some linguists have proposed a Romanization approach, similar to the pin-yin system used in China, in the hope of promoting the internationalization/globalization of Chinese language, as well as to bridge the learning between Chinese and English, a required foreign language in Taiwan's secondary education (grades 7-12) system. The proposal,

however, has not been positively perceived due to political reasons, namely, its resemblance to the pinyin approach used in China.

Before Hong Kong reunited with China in 1997, traditional Chinese characters were used there, and the Cantonese dialect had been the dominant spoken language, both in the public and private sectors. To this day, Cantonese is still used in the public schools as the instructional language. Beginning literacy instruction in Hong Kong does not include pinyin or Mandarin phonetic symbols training, but rather involves teaching children characters directly (C. Chan, personal communication, March 2002). The students learn to read and write Chinese by “repeating after the teacher and recognising the sounds from the symbols in due course” (K. Ngeow, personal communication, February 20, 2004).

Since 1997, the majority of environmental print, such as street signs, remains in traditional characters, but the Chinese government has tried to promote the use of simplified characters and putonghua (Mandarin) in school and the mass media, as well as at the governmental level. Putonghua has gained prominence as a popular second or third language among people in Hong Kong, especially those who are involved in sales and tourism (K. Ngeow, personal communication, February 20, 2004).

Chinese Culture Consideration

Chinese culture is far from a homogeneous one because diverse groups of people—Han, Mongolia, Tibetan, and Manchurian tribes, as well as more than 55 minority groups—have contributed to its formation and development (Cheng, 1987). However, the Confucian code of ethics and morals that emphasizes

hierarchical relationships between people and harmony with nature plays an essential role in the life and thinking of all Chinese people (Slonim, 1991). Although the modern social system, family structure, and other aspects of Chinese life have undergone dramatic changes since Confucius' time (551-479 B.C.), the traditional values framed within the Confucian paradigm are still prevalent in many parts of Chinese-speaking regions (Huang & Ying, 1989).

The family serves both as the basic unit and the microcosm of the traditional Chinese society. The Confucian concept of family structure and relationship emphasizes a hierarchical and closely knit pattern in which each family member assumes specific roles and responsibilities clearly defined by a complex kinship system. Confucius identified the role of parents as being a loving and nurturing one, and in return the children need to obey and demonstrate filial piety to their parents; older siblings need to show fraternal love to the younger ones, and the young siblings should respect their older brothers and sisters.

The kinship terms help define the role and distance between family members and relatives; children are taught from a young age to address older relatives by their proper kinship terms and are not allowed to call elders by their first names (Cheng, 1987). The hierarchical relations and structured kinship terms also serve as a means to maintain the order and harmony of family life. Within the family, age and gender usually govern the level of open expression, initiation of communication, and structures and types of language use, as well as topics to be addressed (Hsu, 1988; Huang & Ying, 1989).

Communication is generally not explicit, and self-assertion is highly discouraged. In addition, face-to-face confrontations are often avoided, for they disrupt harmony and may violate the order within a family. Confucianism stresses the importance of home education and believes that as children are socialized into specific cultural rules and codes of behaviors at home, they will be able to function in society properly later on in adulthood.

Almost all Chinese families expect their children to do well academically, and children are taught that the only way to achieve success in life is to work hard and respect authority (Cheng, 1987). When a family member is successful, the whole family, especially the parents, receive credit. However, traditional Chinese families tend to be modest about individual achievement, and parents usually do not praise children readily. As a result, expressions of pride are usually considered arrogant and in violation with the idea of humbleness (Cheng, 1987).

An educator himself, Confucius stressed the importance of early education (Tobin, Wu, and Davidson, 1989) and proposed universal education regardless of students' backgrounds. His disciples came from a wide variety of socio-economic backgrounds. In Confucius' teaching, authority and age are highly regarded, and thus teachers and the elders are respected for their knowledge and experience. The teacher serves as a role model for morals and codes of conduct, as well as an authoritative figure who imparts knowledge to students; the students' roles are to obey their teacher's instruction, study hard, and follow the classroom rules. The relationship between the teacher and students is, therefore, not unlike that between parents and children. In Taiwan, the government dedicates Confucius'

birthday—September 28th—as Teacher’s Day and an official commemorative holiday, illustrating the high value that Chinese/Taiwanese place on education and respect for teachers.

In the previous sections, I have synthesized the literature regarding the interplay between language, culture, and child socialization, as well as provided my readers with an introduction to Chinese language and culture. In the sections that follow, I would like to share with readers some data I gathered from my classroom, which have illustrated for me the importance of socio-cultural context in children’s language and literacy learning. The information I present in the next sections is used to answer the following two questions: (1) how do social and cultural practices, such as naming, kinship structure, and human relationship, interact with language and literacy learning in these four focal children’s socialization process? (2) how does the cultural and linguistic knowledge these children acquire through social interaction and via the use of cultural artifacts influence the way they categorize the world around them, and help them construct meaning?

Culture, Language, and Child Socialization

The socio-cultural and linguistic environments plays an important role in children’s socialization and developmental processes. Although there appears to be a universal pattern of children’s physical development, the ways in which children develop their identity, interact with others, and construct their knowledge through the use of language varies from one cultural group to the next (Bowman, 1991). Children growing up in a hierarchical and collective society, such as

China, learn at a very young age that each person in their family has a very clearly defined role, and they need to comply with the cultural and social expectations while interacting with people. These children also learn to consider community members as part of their family and address them according to socially and culturally defined names/terms.

Conversely, children raised in a society, within the United States that emphasizes individualism, learn that being independent and self-reliant are highly valued in their culture. At a young age, they are often given personal space, such as an individual bedroom, in order to develop their independence. In addition, the personal relationships between the adult community members and the children is a relaxed one, and children are allowed to address an adult by his/her first name. Thus, their understanding and definition of social hierarchy and interpersonal relationships are very different from those of Chinese children.

Heath (1983) argues that each community has specific ways of socializing its young members and helping them function adequately in the community. Children acquire and exhibit language behaviors in accordance with the values of their respective families and communities. Heath (1986) summarizes the relationship between language and cultural learning as follows:

The learning of language takes place within the political, economic, social, ideological, religious, and aesthetic web of relationship of each community whose members see themselves as belonging to a particular culture As children learn their language and how to use it, they learn also about the roles people, who are given certain names—such as mother,

father, oldest, youngest, play in their lives Cultural learning includes all the learning that enables a member of a family and community to behave appropriately within that group which is critical to one's self-identification whose approval is necessary for self-esteem. (p. 146)

Heath suggests that children's language learning is an inseparable part of learning to be members of their community; through language, children not only learn ways of thinking, being, and doing in accordance with their community's value and belief systems, but also develop their own self-identity and self-esteem.

Although not all children in this study have been living in a Chinese-speaking community, they acquired this language and the Chinese culture along with their learning of English and American culture, due to the linguistic and cultural environment their family strives to provide, as well as the people with whom they interact. As people of different linguistic and cultural backgrounds develop their own idiosyncratic values and beliefs in order to meet the demands of their social and psychological worlds, my bilingual and bicultural students also showed a unique pattern of language socialization process which in some aspects is very different from their Caucasian peers.

In the section below, I would like to examine several aspects of the relationship between language and cultural learning among the four children with whom I worked. These include the development of self-identity, the development of kinship terms and human relationships, and linguistic thinking (Whorf, 1956)—the way language is used for analyzing, reasoning, and constructing meaning. I shall in turn describe the language and literacy acquisition process

these children went through while learning to be members of the two cultural and linguistic groups.

Developing an Identity: What's in a Name

As human beings, we seek our identity and develop relationships with others by positioning ourselves in social, cultural, economic, and political contexts. Identification and relationship come, in part, through the act of naming—both personal names and the categorization of the people and objects in our environment (Huang & Jia, 2000). As we learn our name(s) and role(s) in a society, we begin to develop a sense of the self—“part of our socio-psychological identity, signifying who and what we are” (Bloodgood, 1999, p. 342)—and gain an understanding of others.

Each culture has its unique child naming practice, which oftentimes reflects the expectations parents have of their children within that particular culture. For instance, many European and American parents name their children after close relatives in the hope that their children possess the same or similar character traits as their namesakes. Such a naming practice, however, is considered taboo among the Chinese¹⁵. Many Chinese/Taiwanese parents would often ask family elders to name their newborns. Alternatively, they may have their children named by scholars or fortune-tellers considered authorities in the field of child naming, so that their children will grow up healthy and successful.

¹⁵ According to Sung (1981), Chinese naming practice can be traced back to the Zhou dynasty (1027 to 256 BC), during which a custom called “avoidance [避諱, bi hui]” developed. This custom requires that everyone avoid “using orally or in writing any characters from the name of the emperor, one’s ancestors, or one’s seniors, including grandparents, parents, uncles, aunts, and sometimes even senior in-laws. This practice was considered respectful of those whose names were avoided” (p. 180).

As child naming bears important symbolic meaning to parents, a child's name also plays a critical role in his/her learning and development. Studies in early literacy development have revealed the significance of children's personal names in their literacy learning process. Researchers have found that personal names are often among the first set of words that children are able to write conventionally (Bissex, 1980; Bloodgood, 1999; Ferreiro & Teberosky, 1982). In addition, young children use the elements in their names, such as the letters, to begin their own writing (Harste, Woodward, & Burke, 1984; Lee, 1990; Osborne, 1995).

As reflected in the findings from studies mentioned above, personal names are also among the first set of words that all the children with whom I have worked are able to write independently and conventionally. Personal names, however, also provided my four research participants with opportunities to explore their identities—who and what they are (Garton & Pratt, 1998; Lieberman, 1985)—within the specific sociolinguistic environment in which they were members. The following is an example based on Maya's experience:

We were learning color names in Chinese. I put a poster, which Aileen and I created earlier, on the wall as part of the environmental print. In the poster, Aileen drew 12 cats of different colors. Under each cat, there was a label with the color name in Chinese.

After signing in, Maya sat down and was about to write. She sat by the poster and looked through the cats one by one. All of a sudden, I heard her say, *"Hey, that's the same."*

"What?" I didn't hear her clearly.

"That's the same as my name," she replied and pointed at the Chinese character "黃," which represented both the color "yellow" and her surname, on the poster.

"Yeah, this is your name," I pointed at the Chinese character "黃" and said.

"It's yellow. Oh, I am yellow," said Maya.

"Huh?" I wasn't sure what she said.

“I am yellow. So, I am Chinese,” said Maya.
“Are all Chinese yellow?” I asked, wondering how she drew such a conclusion.

“Well, some are half and half,” replied Maya.

“What do you mean?” I asked her to clarify for me.

“Well, Lucian is half Chinese, half,” she paused and then continued, *“American.”*(Transcript, June 28, 1997)

Maya’s statements *“that’s [that character “黃” is] the same as my [last] name”* and *“I am yellow. So, I am Chinese”* revealed how she identified herself through the multiple meanings attached to the character, “黃.” With the shared character that represented both her last name and a particular color name which she saw on an artifact in the classroom, Maya made an association between the color name and her clan affiliation. Because of the ideographic nature and the evolution of the Chinese written language over the centuries, each Chinese character often bears multiple meanings. While multiple meanings are associated with the character “黃 [huang¹⁶],” which is also Maya’s last name, the most commonly used meaning is “yellow,” according to dictionaries (He, 1991; Wu, 1983).

For Chinese, the color “yellow” as represented by the character “黃” bears significance because ethnic Chinese have claimed themselves to be the “offspring of Emperor Yan and Yellow [炎黃子孫, yan huang zi sun]” (Du, 1996), and the Chinese civilization also originates from the Yellow River [黃河, huang he] and the Yantze River. In addition, Chinese is often associated with the color “yellow”

¹⁶ Each Chinese dialect has a different pronunciation system, even though the written script is the same. For example, the character “黃 [yellow]” is pronounced as “huang” in Mandarin, “wong” in Cantonese (the language Maya used at home and school before her arrival at the States), and “ong” in Taiwanese.

in many English-speaking regions, probably due to the complexion of the people and stereotypical labels, such as “yellow peril” attached to this cultural group in the past.

Maya may not be familiar with the dictionary definitions of the particular character “黃” she saw on the poster and in her name, nor had she traced the origins of such social, historical accounts regarding Chinese. And unlike the first name, which is given by others and varies among family members, the last name is inherited when one is born into a particular family. Maya happened to be born into the “黃” family and was automatically granted that particular surname, which also means “yellow.” She, nevertheless, used this particular piece of linguistic information and tried to bridge two apparently unrelated concepts—the character “黃” and her Chinese ethnicity—and brought about a statement (“*I am Chinese. So, I am yellow*”) that signified her ethnic identity.

Maya also used her knowledge about Chinese to clarify a possible linguistic confusion associated with a social, cultural practice—introducing one’s surname to the others—when the situation demanded it.

The Friday before Halloween, I invited Maya and Jiayi, who was the daughter of a helper in Maya’s family restaurant, to go to a pumpkin party with me. While driving to our destination, I inquired about Jiayi’s last name since I didn’t know her very well.

“*Jiayi, what’s your last name?*” I asked.

“Wong,” replied Maya for Jiayi.

“*Are you relatives?*” I asked since both of them seemed to share the same last name.

“*No,*” said Maya immediately. “*My last name means ‘yellow’ and hers means differently. Well, I don’t know,*” she paused as if in reflection.

“*An old man?*” I asked, tentatively.

“*Right,*” said Jiayi.

“*I think so,*” said Maya. (Transcript, Late October 1998)

The homophone is a special feature of the Chinese language due to the numerous sound changes over several thousand years and the limited number of syllables existing in that language (Yan & Liu, 1997). Many Chinese characters have identical pronunciation and tone, but they neither share the written script nor the meaning. Because of this feature, speakers of Chinese often need to clarify and qualify their spoken utterances in order to facilitate understanding and prevent miscommunication.

In the example above, Maya tried to differentiate two homophones (her and Jiayi's last names) by explaining the meaning associated with their respective last names—“*My last name means ‘yellow’ and hers means differently [‘old man’].*” The strategy that Maya applied to differentiate her and Jiayi's last names is a common social and cultural practice among Chinese speakers when they introduce themselves or are introduced to strangers for the first time. It is used to avoid confusion caused by homophones, as well as to demonstrate the idiosyncrasy of each clan to which a person belongs (Sung, 1981).

This approach also corresponds with one that native English speakers use, i.e., spelling out the full surname (S-M-I-T-H vs. S-M-Y-T-H) after it has been said. While examining similar linguistic phenomenon existing in both Chinese and English, we come to realize that people in both linguistic groups employ socially and culturally approved practices to distinguish their identity (in Maya's case, their own surname) from that of others in accordance with the special features existing in their language—that is, explaining the meaning attached to

each character in Chinese since it is an ideographic language, and spelling out the word in English because it is an alphabetic language.

It might be presumptuous to assume that Maya acquired this strategy by observing and interacting with other Chinese speakers around her, for a similar strategy can be also used by speakers of English whom she observed and interact more on a daily basis. However, the availability and possession of this piece of information enabled Maya to demonstrate to us her understanding of two phonetically identical but semantically different sounds, which coincided with the social cultural practice in Chinese that is pertinent to Maya's clan identity.

I have used two examples above to illustrate how specific linguistic features in the Chinese linguistic system—semantics and phonetics (the meaning for the character “黃” and the homophones “wong” in Maya's and Jiayi's surnames)—play a role in Maya's ethnic as well as clan identity development, an important aspect of children's socialization process. In the first vignette, Maya demonstrated her linguistic knowledge of a particular character “黃” by pointing out that both her surname and the color name for “yellow” shared the same character. She also went one step further and associated a particular meaning of that character/her last name with the Chinese culture and identified herself as a member of this particular cultural group. In the second vignette Maya was able to differentiate two phonetically identical characters that represented her and Jiayi's last names by applying a socially and culturally appropriate practice, namely explaining the meaning associated with their respective names. Maya's verbal

behavior has illustrated the interrelationship between her identity development, Chinese linguistic features, and socio-cultural practice.

The unique linguistic features in any given language often influence how its language users construct identities (e.g. ethnic and clan identity) with socially and culturally sanctioned practices. By examining the two examples above, we are able to see that a particular phenomenon existed in Maya's language socialization process: although our interactions were carried out mostly in English, which did not necessarily share all linguistic features/values with those in Chinese, Maya was able to cross the linguistic borders, abstract the knowledge she possessed from Chinese language and culture, and then apply the information while expressing thoughts on her identity formation in English.

In the next section, I will show my readers yet another example of the intricate relationship between a specific aspect of Chinese cultural practices, namely, the animal signs in the zodiac, and the ramifications of such a practice associated with the Chinese linguistic features in children's personal identity development.

In my class, the Chinese zodiac had been a long-lasting, popular discussion topic. The children not only remembered their own personal animal signs, but also those of their family members. Some of my students, like Maya, could also easily recall the zodiac signs of their close relatives. Storybooks about the Chinese zodiac or zodiac animals were frequently enjoyed as part of the group reading activities and checked out to be read at home.

The vignette by Maya in the beginning of this chapter (i.e., her association of a picture of pig and her uncle's zodiac sign in Chinese) and the ones below both demonstrate a language socialization process, in which children developed self identify and learned the identifies of others through the use of cultural tools (i.e. language) and artifact (picture books). The following is an example from Lucian:

In an individual session, Lucian and I read a Chinese-English bilingual book, entitled *I Won't Bite* (Campbell, 1997). He and I took turns reading the text in English and Chinese.

On one page, a chimpanzee was pictured. Before I proceeded to read, I asked Lucian, "Would a chimpanzee bite you?"

Instead of answering my question, Lucian began to read the text. "*Chimpan-zee,*" read Lucian one syllable at a time. He then pointed at the picture and added, "*my sister, my sister is like this, and her zodiac sign is monkey.*"

"*But this is a chimpanzee,*" I said.

Lucian tried to reason with me, and he said, "*I know, but they are a kind of monkey.*"

"*I see,*" I got his point.

Lucian continued, "*And my father is a rabbit.*"

"*How about Mom?*" I asked.

"*Horse,*" answered Lucian without hesitation. (Transcript, June 6, 1998)

Like Maya in the beginning of this chapter, Lucian had no difficulty identifying the Chinese zodiac signs of his family members. Growing up in a bi-racial (American and Chinese) household, Lucian had access to both cultures, particularly the American one, due to the predominantly English-speaking community in which he lived and the language, English, his family elected to use as the primary means of communication at home. Nevertheless, he had developed an understanding of the signs used in the Chinese zodiac and was able to identify the different signs to which his family members belonged.

When he saw an animal—the chimpanzee—that fell into a similar category as the monkey in the Chinese zodiac, he “stretched” his knowledge and related this animal to his sister, who was born under “the monkey” sign. Although Lucian had less experience using and learning the Chinese language than the rest of the focal children in this study, yet he had learned about this particular aspect of Chinese culture, probably due to his personal experience—such as observing and interacting with his father and his grandmother at home and other children in his Chinese class, and via purposeful planning his parents made in introducing the use of cultural artifacts at home.

Such exposure and experience supported his learning of a piece of Chinese cultural tradition, and he was able to demonstrate his understanding of a specific aspect of Chinese culture (i.e. the zodiac signs) in English. While contemplating the conversation between Lucian and myself, I came across Lee’s (1997) summary of Whorf’s argument, which illuminated the relationship between cultural practice, language socialization, children’s bilingual and bicultural development:

As a word is acquired, the child develops a feel for its range of application. Learning its socially and culturally defined field of reference is part of knowing and being able to use a word appropriately. But range of application can vary sufficiently from language to language for it to be relevant to ask whether a word is *really* the same as its apparent counterpart in another language. A word and its conceptual ramifications are all part of the same phenomena, features of a person’s internalized

linguistic system, a system that cannot sensibly be imagined as existing independently of other cognitive systems that evolve over time in the course of physical, social, and intellectual domain. (p. 441)

There is little doubt that Lucian has acquired the sound, the meaning, and the zoological classification for the animals named “monkey” and “chimpanzee” (“*I know, but they [chimpanzees] are a kind of monkey*”) initially in English because it is the major language he has used to learn and communicate with others. In addition, Lucian also knew that an equivalent word for “monkey” exists in Chinese, for he was able to inform me that “monkey” is his sister’s Chinese zodiac sign. As he was learning both Chinese and English languages at the same time, he developed two “ranges of application” (Lee, 1997, p.441) attached to that particular word, “monkey,” corresponding to the two respective cultural systems.

The word “monkey” in Chinese and English may refer to exactly the same animal. However, it bears different ramifications in these two cultural systems because of the different relationships and experiences people in these two cultural groups have with this particular animal. The knowledge of two linguistic and cultural systems enabled Lucian to see beyond what is presented on the surface, i.e. the illustration of a monkey. Using the knowledge he possessed, he was able to cross different linguistic and cultural borders and to obtain two “ranges of application” (Lee, 1997, p. 441) to maintain a conversation, build up his own argument, and demonstrate his understanding of a personal identity through a particular element (i.e. the zodiac signs) used in the Chinese culture.

The example from Lucian also reveals that identity development cannot be separated from cultural values and belief systems, which children learn through the use of language as they interact and observe other more competent language users around them, as well as via the use of cultural artifacts in their environments. When children grow up with two languages and cultures, they develop two “ranges of application” (Lee, 1997, p. 441) associated with the meaning of concepts corresponding to the two cultures. Being bilingual/bicultural learners, the children with whom I work need to acquire and be able to use these two ranges of application in order to gain access to and function within both cultural and linguistic boundaries.

I discussed the two ranges of application using examples from Lucian and Maya in terms of self-identity, which is critical to a child’s social, emotional, and cognitive development. In the next section, I will expand the discussion to some aspects of human relationships, namely, structures and uses of kinship and appellation terms, both in and out of one’s household.

Kinship Terms and Human Relationships: How You Address People

A person’s given name, as shown in the previous section, in both Chinese and western societies bears significance for it often reveals parents’ expectations of their offspring and the desired traits they want their children to possess. Like our personal names, which help us understand who and what we are, kinship terms enable us to define our roles and responsibilities in a society. Kinship terms, as defined by Leach (1958), are “category words by means of which an individual is taught to recognize the significant groupings in the social structure into which he

is born” (p. 143). Huang and Jia (2000) also contend that kinship terms provide a system by which we “understand a culture’s power structure, particular interpersonal communication patterns, and normative elements of the family system, structure, and functions” (p.1). Members of each culture have created a unique set of kinship terms that define the roles they serve in society. Children learn how to use kinship terms to interact with members of their family and relatives in accordance with socially and culturally defined practices.

The Chinese kinship system is complex, reflecting the hierarchical nature of family structure, in which each individual needs to follow a set of rules in order to maintain harmonic relationships with others (Cheng, 1987). And Chinese children are coached to address relatives, especially the elderly, by their appropriate kinship terms at a very young age (Cheng, 1987; Erbaugh, 1992), as the mastery of kinship terms is regarded as part of learning to be a full person in Chinese society (Blum, 1997). As a part of language acquisition, the learning of kinship terms also requires children to be immersed in an environment where these terms are part of their lives, so that these young learners have opportunities to observe how people use them, as well as to apply them in various contexts and with different family members and relatives.

Rosan saw a photograph of my family, including my parents, my two sisters, their spouses, and children. I explained to her the relationship between the people in the photograph and myself.

Looking at the picture, Rosan said, “*My mom has a sister. She has, her sister has a Chinese name. Her sister’s Chinese name is named ‘the eldest auntie [da yi ma].’*”

I didn’t hear it clearly, so I asked “What’s her Chinese name?”

“Eldest auntie [da yi ma],” said Rosan. (Transcript, August 10, 1996)

In English, the term “aunt/auntie” includes all female relatives of one’s parents’ generation. In Chinese, however, there are at least five different terms still in use for the term “aunt/auntie” depending on whether a particular female relative is from one’s father’s or mother’s side, or whether she is biologically related or a marital relation. Below I use a table to explain the use of these terms¹⁷:

Relations to the Self	Chinese Term	Chinese Characters
Father’s sisters	Gu gu/Gu ma	姑姑/姑媽
Mother’s sisters	Ah yi /Yi ma	阿姨/姨媽
Wives of father’s older brothers	Bo mu	伯母
Wives of father’s younger brothers	Shen shen	嬤嬤
Wives of mother’s brothers	Jiu ma	舅媽

Table 3-1. Chinese kinship terms for “uncles” and “aunts”

Six-year-old Rosan had equated the Chinese personal name of her eldest maternal aunt to the kinship term [da yi ma] she would use to address and interact with this particular relative. The equation she drew between a kinship term and a personal name was not uncommon among many Chinese-speaking children. Cheng (1987) pointed out that Chinese parents often coach their children to use appropriate kinship terms with elder relatives, and children are not allowed to address people of their grandparent’s and parent’s generation by their personal names. As a result, children may not know the personal name of a particular relative, but only the kinship term associated with that person.

¹⁷ All kinship terms used in this research project are those commonly used in Taiwan by speakers of Mandarin Chinese. People who speak a different Chinese dialect (e.g. Taiwanese) or from other Chinese speaking regions may develop a more elaborated kinship system, and terms may also vary.

A quick survey among friends from different Chinese speaking regions revealed that acquisition of such knowledge (i.e., personal names of older relatives) either took place after their middle childhood or were learned as part of school's curriculum at age 6 to 8 (Fang, Hsieh, Kuo, Liang, & Sun, personal communication, March 2, 2004). It was also apparent from their recollection that they had learned the personal names of their older relatives either through formal schooling or personal interest, but not from active teaching by parents at home. These same friends, however, had acquired various kinship terms taught by their parents and were able to use these terms appropriately at a much younger age before they learned the individual personal names of their older relatives.

Rosan, no doubt, had learned the kinship term from her parents when her family visited relatives during holidays and breaks. In a causal conversation I had with Rosan when she was in fifth grade, she recalled the instance recorded above. She giggled and admitted her misunderstanding and the conclusion she drew between a personal name and a kinship term.

In addition, she revealed to me that she had also mistaken the Chinese kinship term for her older brother, "ge ge [older brother]" as his Chinese name. Therefore, when one of her Caucasian classmates, who happened to share the same English name with her older brother, asked what his Chinese name was, "ge ge [older brother]" was the answer Rosan gave him. She commented on such a verbal response she had in an e-mail communication I had with her when she was in the eighth grade as follows:

I probably already knew that gege meant big brother, but I was so used to calling my brother gege because that's what I was taught by my mom, that I didn't really think about the meaning of that word, and just assumed that it meant [my brother's name in Chinese]. (Rosan, personal communication, February 25, 2004)

Rosan's statement and the information I gathered from my friends regarding kinship terms and personal names of relatives illustrates a particular Chinese cultural practice in which the acquisition and use of kinship terms with those who are senior in the family tree is an essential part of children's language socialization process. Through the use of language, the children learned kinship terms which differentiate the hierarchy, roles, and relationships (e.g. blood, marriage, seniority, age, and gender) within a family before the acquisitions of individual personal names, which do not bear such distinctions.

In the process of acquiring kinship terms and their use, children also learn the relationships between relatives, and the respective kinship terms these people use to address each other. The acquisition of such knowledge, like that of language and literacy, also requires that children apprentice with members of their family and this can only take place when children have frequent interactions with relatives. An example from Aileen can be used to illustrate such a case.

Aileen had extensive experiences with kinship terms due to the closely knit relationship between members of her mother's family. Although residing in Taiwan, Aileen's maternal grandparents used to stay with Aileen's family for a few months each year, helping to take care of the household and children before

Aileen entered elementary school. Her maternal aunt and two uncles had also visited and stayed with Aileen's family frequently when she was young. The experiences of interacting with relatives from her mother's side provided Aileen opportunities to familiarize herself with different kinship terms and the kinship structure in Chinese. Not only did she know how to address her relatives appropriately, but she was also able to identify their relationships with one another.

Rosan was drawing bears for an art project. While drawing, she announced that she had just finished a book about bears. Rosan pointed out that some bears were taller than six feet, and she then commented that a bear can be taller than her eldest maternal uncle [da jiu jiu].

Earlier on, Aileen also mentioned that she had maternal uncles [jiu jiu]. So, I asked her "Aileen, you just said that you had maternal uncles [jiu jiu]. Who are your maternal uncles?" I tried to see how familiar she was with the Chinese kinship system.

Aileen paused as if in reflection.

I told Rosan, "Aileen has maternal uncles [jiu jiu]."

"Eldest maternal uncle [da jiu jiu]?" asked Rosan.

"One small and one big," said Aileen. Aileen had two maternal uncles. It is common in Chinese culture to use "big" and "small" to differentiate two individual's age, instead of their builds (Sandel, 2002).

"How do you call them," I asked.

"I called them 'maternal uncles' [jiu jiu]," replied Aileen.

"[Are they] your mother's older brothers or younger brothers?" I asked.

"Mother's younger brother¹⁸," said Aileen.

"Does your mother have an older brother?" I asked, because I had thought that Aileen had an uncle who was older than her mother.

Instead of answering me, Aileen went back to reply to my first question, "They [both uncles] are my maternal grandpa and grandma's *sons*." (Transcript, October 12, 1996)

In addition to the various Chinese kinship terms for "aunt/auntie," there are also separate terms for "grandparents" and "uncles" in that language,

¹⁸ In Chinese, there is no clear indication of plural. So when Aileen replied to me "xiao jiu jiu [younger maternal uncle]," I was unsure whether she meant one or two younger maternal uncles.

depending on the biological or marital relations. I will use the table below to illustrate this complex kinship system.

Relations to the Self	Chinese Term	Chinese Characters
Father's father	Ye ye	爺爺
Father's mother	Nai nai	奶奶
Mother's father	Wai gong	外公
Mother's mother	Wai po	外婆
Father's older brothers	Bo bo	伯伯
Father's younger brothers	Shu shu	叔叔
Mother's brothers	Jiu jiu	舅舅
Husbands of father's sisters	Gu zhang	姑丈
Husbands of mother's sisters	Yi zhang	姨丈

Table 3-2. Chinese kinship terms for elder relatives

According to Taylor and Taylor (1995), many Chinese kinship terms have doubled morphemes, such as “ma ma (mother),” “ba ba (father),” “ye ye (paternal grandfather),” and “nai nai (maternal grandmother),” and these terms closely resemble babblings in all infants, regardless of what language they would eventually acquire (Berk, 1991). As parents or caregivers interact with an infant, they often respond to the child's babblings by relating these sounds to those appearing in adult language (Erbaugh, 1992; Skinner, 1957, as cited in Shaffer, 1993). Because the mastery of kinship terms is considered an important aspect of Chinese culture, it is natural that parents or caregivers refer to the child's babblings as kinship terms so that they reinforce the frequency of such sounds (Erbaugh, 1992).

Gradually, through interacting with more relatives and via parents' coaching, Chinese-speaking children develop an understanding of the relationship between sound and the kinship terms. In the vignette above, Aileen demonstrated her familiarity with and ability to sort out the complicated web of Chinese kinship terms. Not only did she clearly know how to apply kinship terms to her mother's brothers and her maternal grandparents in Chinese, but she was also able to explain the relationship between her maternal grandparents and uncles.

The use of kinship terms in Chinese also extends to non-relative, community members. In fact, kinship terms in Chinese can apply to anyone, based on a particular person's gender and relative age. Baker (cited in Huang & Jia, 2000) contends that the use of these terms is "not merely a politeness" but bears "the expectation of commensurate respectful treatment" (p. 163). For example, it is customary for young children to address a close female friend of their parents as "aunt/auntie [ah yi]" (sometimes with the person's name added, such as "auntie Lu" or "auntie Mei-Yu"), and they may be called by adults as "little younger brother [xiao di di]" or "little younger sister [xiao mei mei]." Children have learned at an early age to address and greet others, especially adults, with appropriate "fictive" kinship terms." Below is an example from Aileen and Rosan:

Aileen's mother went to Taiwan for two weeks to attend her own father's funeral. Because Aileen and Eileen had not yet obtained their passports at that time, they were unable to go with their mother. Before leaving for Taiwan, Aileen's mother asked me to take care of her daughters and the house while she was away, and I agreed. Although I assumed the major responsibility of taking care of Aileen, her sister, and their house, some community members from Taiwan also pitched in. One Sunday afternoon the president of the Taiwanese Student Association and his friends offered to take Aileen and Eileen out on a

field trip. They bought Aileen a stuffed bunny, and Aileen brought it to our class for the show-and-tell the following Saturday.

It was Aileen's turn to do her show-and-tell. "Come, Aileen. Tell us what you have for our show-and-tell today," I invited Aileen to start.

"This is my bunny. Younger paternal uncle [shu shu] bought it for me," said Aileen and held the stuffed bunny tight to her chest.

"*Who bought it for you?*" asked Rosan.

"Younger paternal uncle [shu shu]," said Aileen, lightheartedly.

"*You mean your sister?*" asked Rosan, with an unsure look in her face.

Aileen shook her head.

Rosan asked Aileen, "*What is 'younger paternal uncle [shu shu]?'*"

Aileen looked at me, as if seeking help.

I explained to Rosan, "*'younger paternal uncle [shu shu]' is, um, like your father's friend, who is a man. Or your mother's friend, who is a man. Like sometime, if I am not your teacher, you can call me, 'maternal auntie [ah yi]', right?*"

Both Aileen and Rosan nodded.

I went on, "Then like your father's friend, or your mother's friend. And he is a man. You can call him 'younger paternal uncle [shu shu].' *Like uncle Frank, uncle Tim in English. Something like that.*"

"Yeah," nodded Aileen. (Transcript, March 8, 1997)

Here Aileen used the term "younger paternal uncle [shu shu]" to define the relationship between herself and the president of the Taiwanese Student Association, who had given her the stuffed bunny. It is not uncommon for ethnic Chinese children to use "fictive kinship terms" to address non-relatives due to the collective nature of Chinese culture and its extended family concept, both regarding community members and neighbors as a part of family (Baker, cited in Huang & Jia, 2000; Erbaugh, 1992). Cheng (1987) discusses how Chinese parents often bring their children along with them to attend a variety of social functions, such as weddings, dinner parties, and festivals, where parents coach their children to address other adults by proper fictive kinship terms.

Aileen's mother was not an exception. Although Aileen no longer lived with her father by the time I conducted this study, nor did she have any contact

with members of her father's family, she did know how to apply the fictive kinship term "younger paternal uncle [shu shu] to the president of the Taiwanese Student Association. On several occasions I had seen Aileen's mother ask her daughters to greet and address Taiwanese male graduate students as "younger paternal uncles [shu shu]" and female ones, as "younger maternal aunties [ah yi]." Those "uncles" and "aunties" also responded to Aileen and Eileen greetings positively, such as "how fast you have grown!" and "oh, you are so cute!" The experiences of interaction with real conversation partners in particular contexts in which these terms are used, coupled with positive feedback from adults, have helped Aileen develop an understanding of these kinship terms and apply them to non-relatives spontaneously and adequately.

The use of titles and appellations, like that of kinship terms, also reflects the values that Chinese people emphasize regarding social hierarchy and authority, as well as the definition of role(s) of the self and others. Because people who practice and are educated in professional fields (e.g., medical and law) are usually highly respected in traditional Chinese culture (Cheng, 1987), they are often referred to in terms of their professional title plus their last names, such as "Doctor Wang [wang yi shi]" and "Lawyer Tu [tu lu shi]." In Confucianism-based Chinese culture, teachers are highly regarded, for Confucianism emphasizes that "Heaven, Earth, ruler, parents, and teachers" are the five main organizational mechanisms [五常, wu chang] on which a society is based.

In my work with ethnic Chinese children and their parents in the United States, I was often introduced to the children by their parents as "Teacher Lu [Lu

lao shi].” Many parents would also call me “Teacher Lu” themselves in front of their children and before they knew me well enough to address me by my first name, Mei-Yu. What the parents demonstrated to their children is the cultural value which emphasizes education and respect for authority, because even though I was not teaching these parents, they would show their respect to me and address me by my professional title instead of my first name. These parents’ attitude, no doubt, also influenced the way their children perceived and identified my role in the classroom.

Before Aileen moved to Centreton, I worked with her in a weekend Chinese school in a small midwestern town. Aileen was four and a half when she began to attend my Chinese language arts class. Each week, I invited the children to sign their name, as well as write or draw anything they wanted on a big sheet of paper upon their arrival. After the sign-in, the children and I sat down in a circle, and we discussed each other’s writing and drawing. One week, I wrote down “我是盧玫鏞 [I am Lu Mei-Yu¹⁹, wo shi lu mei yu]” on the sign in sheet.

When we sat as a group and began our discussion, the children leaned forward, anxiously waiting for their turns. After all the children had finished, I started to read what I had written earlier. Word by word, I read and pointed at each character I wrote. Most of the children had no difficulties following me and reading aloud the first three characters I wrote, “I am Lu [我是盧, wo shi lu]”

I then pointed at the last two characters “玫鏞,” which stood for my given name, “Mei-Yu” and waited for children to read them, without first enunciating them myself.

The children, including Aileen, read in unison “Tea-cher [老師, lao shi]” (Transcript, October 2, 1994).

The preschool children with whom I worked, without exception, equated my personal name (Lu Mei-Yu [盧玫鏞]) with my last name (Lu [盧]) plus my professional title (teacher [老師, lao shi]), because the term “Teacher Lu [盧老師, lu lao shi]” was the one that their parents taught them to use while addressing me, and also when their parents referred to me. From observing interactions between

¹⁹ Unlike English names, which first names precede last names, Chinese last names always come before first names, in both written and oral forms.

their parents and me, the children probably have learned and internalized this term “lao shi [老師, teacher]” and such a practice into their knowledge system.

When reading my name, these children tried to match the print with the meaning they constructed, based on their understanding of a particular Chinese cultural practice in human interaction. It was natural for these children to interpret the remaining two characters as my professional title, teacher, instead of my personal name, Mei-Yu. For the older children and those who had been with me for a longer period of time, their parents and I often become good friends, and we would call each other by our first names. These children observed how their parents and other adults interacted with me, and they began to realize that I could be both “Lu Mei-Yu [盧玫鎬]” and “Teacher Lu [盧老師, Lu lao shi]” depending on the context and my relationship with the people with whom I communicated. Here I use an example from a class discussion between Rosan, Lucian, and myself to illustrate this point.

The children and I practiced pronouncing each other’s Chinese names. We first said our names out loud so that others could hear it clearly. I demonstrated to the children first, “*You can call me ‘teacher [lao shi]’ . . .*”

Before I finished the whole sentence, Lucian asked, “*Is that your real name?*” He looked puzzled.

“*My real name is . . .*” I was just about to explain.

“*Mei-Yu, right?*” asked Lucian, trying to confirm with me.

“*Yeah,*” I said and added, “*And my full name is . . .*”

Rosan replied for me this time, “Lu Mei-Yu.”

“Mei-Yu Lu,” said Lucian at the same time. (Transcript, April 4, 1998)

Having attended my Chinese classes for more than two years when this conversation took place, Rosan knew that I was both “Lu Mei-Yu” and “Teacher Lu [lu lao shi],” for she had heard Chinese parents, including her own mother, call me by my given name as well as my surname with my professional title “teacher

[lao shi].” In addition, she also learned my name from Aileen, who knew me since she was barely three. In the class, I also told the children my personal name, for I believe it is important that children learn that each person could have more than one “name” and identity due to the multiple responsibilities and roles one assumes.

Lucian had known my given name from the beginning of the class because that was what his parents always called me. He, however, was not familiar with the professional title “teacher [lao shi]” that most Chinese parents would ask their children to use while addressing me, since I did not insist that he call me “teacher (lao shi)” when his parents inquired how he should address me the first time we met. Therefore, Lucian was puzzled by the fact that I could go by a title, “teacher (lao shi).” The way Lucian arranged the order of my full name was also influenced by the Anglo-American culture, in which a person’s first name usually precedes his/her last name. Such an arrangement is probably due to the individualic nature of the American/English culture which stresses individual over group.

In Chinese the surname always precedes the given name in both oral and written forms, perhaps because of the collective nature of the Chinese culture emphasizing group over individual. Children, such as Rosan, who have been using both their Chinese and English names frequently develop a clear sense of when they should place their surnames before given names and vice versa, depending on the audience and the context in which a particular language is used. Lucian, however, had less experience than other children in my class with this

type of social practice in Chinese due to his life, linguistic, and cultural experiences. It was natural for him to place my first and last name in the way that he was most familiar with and that made sense to him, namely, first name preceding last name. Therefore, while Rosan knew my full name in Chinese as “Lu Mei-Yu”, Lucian knew it as “Mei-Yu Lu.”

To summarize, the development of identity and interpersonal relationships is part of the language socialization process, in which children acquire socially and culturally sanctioned practices and knowledge through apprenticing with more competent members in their cultural groups. While forming their identity and developing relationships with others, children use language and cultural artifacts to help them understand who and what they are, as well as to acquire terms for addressing others, defining the relationships between people, and interacting with other community members.

While in the process of learning to use these terms, children also acquire knowledge about different categories of relationship they need to maintain in order to interact with people around them, develop abilities to rationalize these different interactions, and make generalizations of various social rules. They also apply these social rules of categorizing, rationalizing, and generalizing in order to construct their understanding of the world around them. In the following section, I will address how the four focal children in my study developed and employed the knowledge of these social rules during the course of this research project.

Analyzing, Reasoning, and Meaning Constructing: Linguistic Thinking and Cultural Values

As human beings, we are born with the capacity for learning language and using it to support our social, emotional, and cognitive development. However, the way we use language to learn and the knowledge we acquire through language in order to meet our basic needs is colored by our cultural experiences. Whorf (1956), a half century ago coined a term, “linguistic thinking,” to explain the interplay between language and culture. He wrote:

Every language is a vast pattern-system, different from others, in which are culturally ordained the forms and categories by which the personality not only communicates, but also analyzes nature, notices or neglects types of relationship and phenomena, channels his reasoning and builds the house of his consciousness. (p. 252)

Language, both oral and written, is a means by which people organize thinking, interpret meaning, and direct actions. It is also a tool with which adult members in a particular culture induce their children to specific cultural practices, beliefs, and value systems. Children raised in a bilingual and bicultural environment come into contact with two sets of cultural and linguistic systems. Depending on the degree of exposure and experience, these children will have different levels of proficiency and understanding of the two cultures and languages.

Studies on bilingual children’s language and literacy learning have demonstrated that a bilingual child does not necessarily develop equivalent vocabulary in both languages due to the vast differences in lexical items across cultures (Heredia, 2001). For example, some ethnic food items are specific to a particular culture and may not have equivalents in another language. In the same

way, some specific practices may only exist within a particular culture due to its social, historical, and environmental reasons, and these practices may be perceived differently by members of other groups. For instance, slurping while eating is a sign of appreciation for food in traditional Japanese culture, but is often frowned upon in the western world. Therefore, children who learn more than one language often rely on the experience they have with culturally specific lexical items, as well as ways of thinking, being, and behaving in the particular culture with which they identify the most, and not necessarily in their first language/mother tongue for the purpose of analyzing, reasoning, and interpreting.

The children in my class have experiences with two languages and cultures because of their family heritage (Chinese) as well as the cultural-linguistic environment (American/English in the US) in which they live. In the same way, the community's dominant language and culture (English/American) interact with what they have acquired at home (i.e. Chinese), the way these children organize their thinking and make sense of their world is clearly influenced by the cultural and linguistic knowledge to which they are predominately socialized. The following is an example from a storytelling session in my class:

The children and I were reading Where Does the Sun Go at Night (Ginsburg, Aruego, & Dewey, 1981; Chinese copyright, 1993). There were a variety of animals in the book, and I asked the children to provide the Chinese names for the animals they knew. After naming several animals, Rosan pointed at a big goat and said "mama goat [ma ma yang]."

"Goat [san yang]" said Maya.

In Chinese, the character "羊 [yang]" can mean either "goats" or "sheep," depending on the context. To make a finer distinction between a "goat" and a "sheep," an additional character is added in front of the character "羊 [yang]." Therefore, a "goat" would be "山羊 [san yang, mountain goat]" and a "sheep"

becomes “綿羊” [mian yang, cotton sheep].” I explained this concept to the children. “The goats live in mountain area so we called them “mountain goats [山羊, san yang]” in Chinese. *They live in the mountain area. So, we call them ‘mountain goats, mountain goats.’*” I explained the concept in Chinese and then in English.

Lucian immediately raised his hand and said, “*When I heard it, ‘mountain goat [山羊, san yang], mountain. I thought of mountain bighorns, mountain sheep.’*” (Transcript, p. July 18, 1998)

Having traveled with his family several times to the Rockies and seeing the bighorn sheep there, Lucian learned about this animal, an abundant species in that area. Therefore, when we talked about the Chinese term, “山羊 [mountain goat, san yang],” the mental image he immediately formed about this particular term was the huge sized, curving-horned type bighorn sheep because this was the kind of animal with which he had direct experience. A native Chinese speaker, however, is more likely to associate this term with the smaller sized, short horned goat because this is what that particular term “山羊 [san yang]” means.

The mental image Lucian had about this animal was framed within his personal, social and cultural experience, for he had opportunities to see bighorns, and he also lived in the part of the world where bighorn sheep carried more prominence than the goats, which are more commonly found in Chinese speaking regions, such as in Taiwan. Therefore, when I explained what “山羊 [san yang]” meant in Chinese, he commented that ““mountain goat [山羊, san yang],’ *mountain. I thought of mountain bighorns, mountain sheep.’*”

This example has illustrated that for bilingual and bicultural learners, the linguistically defined meaning in one language may not be the same as that in the child’s other language. Personal, social, and cultural experiences shape the way

one interprets meaning constructed via the use of language. It is also evident that Lucian was aware that a concept learned in one language might not be readily transferred to another language, but must be put into context in order to understand its culturally and linguistically defined meaning.

While in the process of learning Chinese language and culture, Lucian did not passively accept what was offered to him, but actively sought connections between what he already knew and what was new to him. As he read a text, he gathered linguistic/text cues and constructed the meaning of a concept according to his best understanding of how the Chinese language functions. The example below demonstrated Lucian's efforts in this aspect.

I asked Lucian to name as many animals in Chinese as he could from the poster "The Lovely Animals." A label written in Chinese was under each animal. After identifying a few animals in the poster, he looked at the picture of a "hippopotamus [he ma, 河馬]" and commented, "*this looks like 'horse,' horse.*"

"Yeah, hippopotamus *means hippo, because we think that hippo . . .*" I began to explain to him.

Lucian chimed in, "*Hippopotamus looks like horse, like big horse.*"

"Big horse," I provided the Chinese equivalent for him.

"*Or water horse,*" said Lucian.

"*Why?*" I asked.

"This," Lucian pointed at the three strokes [氵] on the left side of the character "河 [he, river]," which served as the semantic root for that character and which meant "water."

"That's right, because the first character of hippo in Chinese means 'river,'" I said. (Transcript, June 8, 1998)

From "*hippopotamus*" in English to "water horse" in Chinese, Lucian shifted his ways of sense making in his familiar language to a less familiar linguistic system by gathering and making use of all the text clues available to him. The strategy Lucian employed in the example above was not unlike that used

by Chinese lexicographers when they coined new terms for foreign objects/concepts.

As described in this chapter’s literature review section regarding the Chinese language, the Chinese people usually do not invent new character(s) when a new concept/object is first introduced. Rather, the Chinese lexicographers combine a few characters that best capture the functions or attributes of the particular concept/object. Using the character “馬 [ma, horse]” as example, we can see such a pattern in several Chinese terms listed in the table below:

English	Chinese Characters	Meaning in Chinese
Hippopotamus	河馬	River horse
Polo	馬球	Horse ball
Centaur	人馬獸	Human horse beast

Table 3-3. An example of creating and introducing a new lexicon in Chinese using the character “馬 [horse]”

Cheng (1987) argues that lexical items originate in the specific needs of people from a certain culture and reflect the unique way of life of those people; labels define and differentiate concepts, phenomena, and objects that are crucial to a culture. Since the hippopotamus is non-indigenous to China, the Chinese therefore do not have a character to represent this animal. Instead, they resort to creating a new term by combining existing characters to represent their perception and understanding about this particular animal. The Chinese term for “hippopotamus” is represented by two characters—“河 [he, river]” and “馬 [ma, horse]”—perhaps because the Chinese people view a hippopotamus as a horse-like animal, which stays in the water most of the time. It is also likely that this

Chinese term might be influenced by Greek, from which the word “hippopotamus” originates [“hippos” means “horse,” and “potamos” means “river”].

As demonstrated in the “mountain goats/bighorn sheep” example earlier in this chapter, not all concepts can be readily transferred from one culture to another. Members of a cultural group create and accept a new lexical term based on their cultural and linguistic values, as well as their best understanding of the nature and attributes of a new object/concept. The linguistic/cultural framework that Chinese is based on was probably comparable to that of Greek while they tried to decide on the name of the hippopotamus for the first time. Regardless of whether the term for “hippopotamus” in Chinese is influenced in Greek or just coined by sheer coincidence, “river horse” has fitted into the mental framework of Chinese speakers regarding this animal and has been in use since its creation.

Prior to this conversation, Lucian already knew the Chinese character for “horse [馬, ma]” through the environmental print in the classroom, as well as his own personal interest in this particular animal. When he saw the two characters “河” and “馬” that stood for “hippopotamus” in Chinese, he recognized and identified the character “馬” immediately and commented, *“this [the Chinese characters that represent the term “Hippopotamus”] looks like horse, horse.”* As he looked at the other character “河 [he, river]” with which he was unfamiliar, he noticed the radical, the semantic root of a Chinese character.

In our class, we had several discussions on the radicals that the children saw in the environment and used in their writing. The children have learned to

identify several commonly seen and used radicals, such as “water [氵, shui],” “fish [魚, yu],” and “bird [鳥, bird].” Lucian had learned that the three strokes [氵] on the left of the character “河 [he, river]” meant “water,” and he was able to infer that the character “河 [he, river]” must be related to water. Putting together all this linguistic information, he made a conclusion that a “water horse” is the Chinese equivalent for “*hippopotamus*” in English.

The example from Lucian again demonstrates an interrelated relationship between language, culture, and child learning/development. As Lucian learned the term, “河馬 [hippopotamus]” in Chinese, he was attuned to general naming rules that Chinese named this animal through the use of linguistic elements and features in that language (i.e., combination of multiple characters to create new lexical term and the function of radicals) in order to make sense of the textual information.

The way people in a particular group use lexical items to categorize concepts, phenomena, and objects is often influenced by their experience with, as well as the importance of those items within the culture a particular learner resides. To acquire lexical items in a second language, the learners need to adjust their mental image framed by their dominant/native culture, for the same lexical item in different languages may carry different weights and meanings.

As bilingual and bicultural learners acquire new information through the use of language, one of three types of mental adjustment/transfer takes place. I have discussed two of them (i.e. “mountain goats/ bighorn sheep” and “hippopotamus/river horse”) using the vignettes from the Chinese class which I

have been teaching, and I will address the third type in the next section and also discuss the relationship between bilingualism and cognitive function. Before I start, I would like to use the table below to provide examples of these different types of cognitive process:

TYPES of TRANSFER	Familiar Language	Less Familiar Language
Familiar Concepts	No transfer takes place	Hippo. vs. Water horse
Less Familiar Concepts	Goats vs. bighorn sheep	Papaya vs. Watermelon

Table 3-4. Types of cognitive processing in knowledge transfers

In the example below, I will use an example from Rosan and Aileen to illustrate how these two children tried to make sense of an unfamiliar object/concept (i.e. the papaya) in a less familiar language (i.e. Chinese) by applying a concept (i.e. watermelon) they had already acquired in their familiar language, English.

We were reading a Chinese children’s book, *Spit the Seeds* (Lee, 1993), a story about a pig, Chubby, who accidentally swallowed papaya seeds. Chubby was upset when his friends told him that a papaya tree would grow on his head.

I read the text to the children, “after hearing what his friends said, Cubby began to cry.”

“*Because he swallowed the watermelon thing and . . .*” responded Rosan immediately.

Before she finished, Aileen corrected her, “*It is not watermelon!*”

“What is it then?” I asked.

“It is,” Aileen tried and paused. “I don’t know,” replied Aileen, in an unsure voice.

I explained to the children what a papaya was and showed a picture of this fruit to them. (Transcript, November 16, 1996)

In Chinese, a “papaya” is called a “tree melon [mu gua],” although it is not botanically related to the melons in the gourd family. Probably because the papaya fruit grows on a tree and has an appearance very similar to some of the fruits in the gourd family, the Chinese call it “the tree melon” and categorize it as “melon” (Chou, 1997).

In our reading, Rosan and Aileen heard the sound “melon [gua]” in Chinese when the word “papaya [mu gua, tree melon]” appeared in the story. To make sense of the meaning of “papaya [tree melon],” an unfamiliar lexical item in their environment, these two children needed to adjust their mental frameworks in order to assimilate and accommodate this information into their knowledge system.

In this assimilation and accommodation process, Rosan associated the papaya fruit [tree melon] with a kind of melon, “watermelon,” which she knew about, because both of these fruits shared one of the linguistic element, the sound “gua [melon]” in Chinese. So, when she tried to identify the kind of fruit that Chubby ate, her immediate response was “*the watermelon thing.*” Aileen, however, knew that the papaya was different from the watermelon because she did not hear the sound for “watermelon [xi gua]” in Chinese while I was reading. Therefore, she responded to Rosan’s statement of “*the watermelon thing,*” by saying “*it is not watermelon,*” even though she herself had not yet remembered/learned the Chinese term for a “papaya [tree melon, mu gua].”

This example, along with the two above regarding the relationship between language and concept acquisition, illustrated for me that “learning how to

mean (Halliday, 1975)” cannot be separated from cultural learning, for we always acquire and construct meaning in accordance with the cultural and linguistic values to which we have been socialized. It is impossible to “disintegrate” one’s own cultural and linguistic frames because they are an integral part of a person. Yet, learning another language and culture does provide us with opportunities to step back from our cultural, linguistic stances temporarily in order to reflect upon the way we perceive and interpret the words as well as the worlds around us.

Because no two languages and cultures are identical, the learners have to “put on the shoes of other people” and to think “in alternative ways,” as well as to constantly step in and out of their own native culture and language in order to appreciate the multiple perspectives held by people from different cultural and linguistic backgrounds. Lucian’s life and cultural experience with “bighorn sheep” in English (his familiar language) and his learning of “mountain goat” in Chinese (a less familiar language) has allowed him to compare and contrast the ramifications of the word meanings in two different languages. In the same way, his attempt to use linguistic cues, namely the radical, to understand that a “hippopotamus” in English was a “water horse” in Chinese has revealed his willingness to “put himself in the shoes of the Chinese” and think in “the Chinese way.”

While Aileen and Rosan tried to add a new lexical item, the papaya, into their Chinese vocabulary pool, they need to learn how Chinese people organize and perceive lexical items in order to fully grasp and integrate such a new concept into their knowledge system. As a consequence, these three children are given

opportunities to become more aware of who they are and what they are learning while they try to position, as well as reposition, themselves in two different sets of cultural and linguistic values.

As Rosan associated the sound of an unfamiliar object, “papaya [tree melon]” with that of a familiar object “watermelon” in Chinese, she was consciously making use of available linguistic information (the sound of “melon [gua]” in “watermelon” and “papaya [tree melon]”) in order to assimilate and accommodate new information into her knowledge system. Likewise, Lucian tried to make sense of the Chinese name of objects that he saw in his daily life. With both these linguistic and non-linguistic cues, he tried to identify patterns in the Chinese written script in order to organize his thinking, as well as to categorize concepts, objects, and knowledge in his world.

Lucian arrived at my class earlier than the other children, so I asked him to help me put up a small poster with different kinds of fruit on the wall. Each fruit was labeled in Chinese. After he was done, I asked him to name all fruits he knew in Chinese. Lucian pointed at each of them on the poster and began to read their names in Chinese.

After naming all fruits he knew in Chinese, he asked me a question. *“Um, why does, it is like only apple [ping guo], kiwi [qi yi guo]. They are like the only one, the only one.”* He paused then continued, *“Why don’t grapes [pu tao] and pears [li] have ‘guo’ at the end?”* (In Chinese, “apple” is pronounced as “ping guo” and written as “蘋果,” while “kiwi” is pronounced as “qi yi guo” and written as “奇異果.” Both of these two terms include the character “果” and the sound “guo [fruit].”)

“Good question. Do you mean why only ‘apple [蘋果, ping guo]’ and ‘kiwi [奇異果, qi yi guo]’ have ‘guo’ in their names, but not others?” I tried to rephrase his question.

Lucian nodded.

I wasn’t sure of the reason myself, so I tried to explain to him using my best guess at that time. *“The word ‘guo [果]’ in Chinese means ‘fruits’.* I think that you have already known about it.”

Another nod from Lucian.

So, I continued, *“I really don’t know why. And the only thing that I can think of, is, that maybe, in ancient China, we didn’t have apples [ping guo], and*

we didn't have kiwi [qi yi guo]. And they came to China very very late, so maybe that's the reason that they have the word 'guo'. 'Guo' means fruit. And for something that had already been named, perhaps the characters 'guo' was unnecessary." (Transcript, January 8, 1998)

While learning different fruit names in Chinese, Lucian not only paid attention to their sounds, but also to the written script of these terms. From his question, it is evident that Lucian tried to identify a linguistic pattern (the use of the character “果 [fruit, guo]” in names of different kinds of fruit) as he learned these terms in Chinese, both in oral and written forms. While in the process of identifying a linguistic pattern, Lucian encountered an anomaly, a deviation and/or conflict between the patterned, orderly categories of knowledge one already knows and expects. Short, Harste, and Burke (1996) eloquently describe the relationship between anomalies and our meaning seeking process as follows:

As we interact with people and texts, we search for patterns that connect our current experiences to past events, texts, and feelings. It is through these connections that we are able to make sense of those experiences, to create some kind of unity that allows us to understand the relationships across our experiences. As we share what's on our minds, however, we not only search for connection but we attend to difference. It is the “yet to be understood” that fascinates us and that serves our natural desire to learn. When we are faced with an anomaly, an unexpected occurrence or surprise, our attention turns to generating hypotheses to explain that anomaly. Once we reach a working solution, our attention turns elsewhere.

(p. 379)

Lucian interacted with me to explore a particular piece of text, the poster with different types of fruit, while he was learning how the Chinese language and particular lexical items connect with each other. With the chart, he identified a pattern—many fruits’ names in Chinese end with the sound “guo [fruit],” but he also noticed an anomaly—not all fruits’ names end with the sound “guo [fruit].” This anomaly pushed him to ask his own question and to make use of the available resources, his teacher, in order to solve his question. Through my explanation, Lucian had an opportunity to adjust his personal hypothesis on how fruits are named in Chinese.

While learning a new lexical item, we need to learn the sound and/or how it is represented in written form so that we are able to differentiate it from others. In addition, we also need to learn how to use it across contexts, with various audiences, and for different purposes. The acquisition of linguistic features and social/cultural use of language enables learners to gain the membership of their cultural group, and thus gain access to tangible and intangible resources, goods, and services. The particular lexical item we relate to and elect to use when a situation demands it reflects the way and degree we are socialized into a specific culture via the use of language. For instance, it is universal for people to think about food when they are hungry. However, the kind of food about which a person thinks when s/he is hungry varies from culture to culture. A person from the southern part of China is likely to think of a bowl of steaming rice when hungry. An American, however, would probably prefer something else. In other words, our perception and interpretation of a lexical item has more to do with its

culturally defined meaning than its scientifically or linguistically defined names. And the lexical items we acquire in our culture organize and frame our thinking about the world around us. The following are two examples from my students.

Vignette One:

We were doing a study on “cats” because this topic was among the children’s favorite animals, and the children all had cats as pets. I wrote books about the cat(s) each child owned, based on the information I knew. The books were written in a Chinese-English bilingual format.

It was Aileen’s turn to read the book I wrote for her. Holding her book, Aileen read in English first. She then proceeded to read the Chinese text. Toward the end of her reading, she encountered a sentence²⁰ that named the two kinds of food—fish and cat food—her cats ate.

Chinese text: 我的貓吃魚, 他們也吃貓食。

English text: My cats eat fish. They also eat cat food.

Aileen read the English text with fluency and confidence. While reading Chinese, she did it a bit slower but at a steady pace, until the last word “食 [shi, food].” She hesitated and then looked at me, as if seeking help.

“Go ahead. Try your best,” I encouraged her.

Aileen repeated the second last character [貓, mao], which means “cat” and hesitated. Finally, she read the last two characters as “cat rice [貓飯, mao fan].” (Transcript, April 26, 1997)

Vignette Two:

The children and I were reading *In the Forest* (Ets, 1944, Chinese copyright, 1996), a story about a boy and a group of animals parading through the forest. In one page, two bears were eating jams from jars. A label, “jam,” in English was on each of the jars.

“What do you see here?” I asked the children.

“Bears eating rice,” replied Rosan. (Transcript, April 4, 1998)

In Chinese, the character for “rice [飯, fan],” especially the cooked one, is often synonymous with “meal [餐, can]” or “food [食物, shi wu]” probably because rice has been a major crop and staple food for the ethnic Chinese over the

²⁰ As shown in the transcript, the use of punctuation in English and Chinese can be different. In this case, it requires two sentences in English, but one in Chinese, to express the same concept.

centuries (Sung, 1981). In addition to its importance in food production and consumption, rice also carries symbolic significance in many aspects of life among ethnic Chinese. The Chinese generally greet each other anytime in the day with the phrase “Have you eaten rice?” In many Chinese speaking regions, rice and rice by-products are used with symbolic significance on special occasions, such as Chinese New Year, children’s first birthdays, and funerals.

While English-speaking children learn that the three meals they consume each day are named as “breakfast,” “lunch,” and “dinner/supper,” ethnic Chinese children usually learn these terms literarily as “morning rice [cao fan],” “noon rice [wu fan],” and “evening rice [wan fan]” respectively. Bearing this information in mind, we will now examine how some lexical items commonly used in cultural practices, such as “rice,” influenced Aileen’s and Rosan’s Chinese literacy learning.

With her book in hand, Aileen read the English before she proceeded to do so in Chinese, even though the Chinese text was placed above the English one. By reading English first, she was able to quickly grasp an understanding of the meaning in the text, for it was her more familiar language. There is no doubt that she understood that the character “食 [shi]” had something to do with “food” in Chinese, because the meaning in Chinese and English texts matched closely, and both sentences also shared the same sentence structure, namely in the order of subject (they/the cats), adverb (also), verb (eat), and object (cat food). Therefore, while trying to figure out the Chinese equivalent for “food,” Aileen needed to choose the best one between a list of alternative words in Chinese, such as “food-things [ci de dong xi, 吃的東西],” “food [ci de, 吃的], and “things/food [dong xi, 東西].” She elected to use the word “rice [飯, fan]” over other alternatives, for its meaning matched the context better and/or the number of utterance she was able to produce also corresponded to that of characters left for her to fill in.

In Rosan's case, she also associated a particular food item (i.e., the honey) she saw and heard in the picture book with rice, even though the linguistic (the label "jam" in English, her familiar language) and pictorial (the jam jars that the bears hold) cues were both presented. These two miscues, linguistic and pictorial, that Rosan made should not be treated as resulting from her ignorance of or failure to pay attention to the textual information (the label "jam" in English and the jam jars illustrated in the book). Neither should they be regarded as Rosan's lack of understanding of the "bear's main diet—honey" commonly associated in English/American children's books for young readers, and which is a part of cultural knowledge often taken for granted by mainstream, white middle class people in the United States.

When taking into consideration the Chinese cultural stance on which Rosan was operating in reading this particular storybook, I would argue that Rosan's phrase "eating rice" in Chinese was equivalent to "eating a meal" in English, and the use of this phrase also showed her conceptual framework about food and food consumption. It is evident in the two examples above—using "rice" as a synonym for "food" or "meal"—that Aileen and Rosan demonstrate that the acquisition of meaning via the use of language cannot be detached from the socio-cultural contexts in which a learner resides, both psychologically and physically. To learn "how to mean" requires that a learner not only understand the linguistically defined meaning, but also the meaning, explicitly and implicitly, collectively defined by the social, cultural groups to which one belongs.

In children's socialization process, adult members of particular groups use language to introduce cultural specifics as well as linguistic specifics to their youngsters. Cultural specifics include all elements, both explicit and implicit, that constitute a culture, such as social practices, beliefs, and ways of being, doing, and thinking. Linguistic specifics contain all aspects of languages, for example,

the sound system, grammar, and orthography. The learning of cultural and linguistic specifics takes place simultaneously in children's language socialization process and is an integrated part of this process. The two examples above on "rice" usage demonstrate the cultural specifics that Aileen and Rosan acquired while they learned to be literate in a specific cultural context, Chinese. I will now show readers some linguistic specifics that my students learned through the use of language and other cultural artifacts in our Chinese class. Generally speaking, scholars in formal linguistics are concerned about the sound (phonetics and phonology), grammar (syntax), and meaning (semantics) of language. To be able to analyze, compare, and contrast different aspects of language, linguists often need to go through systematic training and years of education because of the specific knowledge required for performing these tasks. Experience with and exposure in two languages provided plenty of opportunities for my students, whom I would call "young linguists," to reflect about the differences and similarities about the sound, grammar, and meaning in two different linguistic systems, situated within their respective cultures. Their ability to analyze, compare, and contrast the different aspects of Chinese language not only demonstrates the rich linguistic knowledge they possess but also reveals their abilities to think like established linguists.

In this section, I will draw examples from the children in my class to show how these youngsters actively weave all linguistic information they have in order to construct meaning as well as the efforts they exert in "thinking the Chinese way." An example from Rosan regarding her analysis of a phonetic aspect of the Chinese language is as follows.

The children and I were reading The Silent Olympics (Lu & Chen, 1985) in which a mouse family planned to secretly bake a cake and then give it to

grandpa mouse as a surprise birthday present. In order to bake the cake, the mice needed to obtain several ingredients, such as pure sugar, flour, and eggs.

On page 14, I read, “‘We run out of white sugar,’ said mama mouse.”

Before I went on reading more, Rosan asked, “*What* white sugar [bai tang] mean?”

I tried to explain to her, “Do you know what ‘sugar’ is?”

Rosan nodded and said quickly, “*I know. It is hardy, and you eat.*”

“‘White sugar [bai tang]’ is ‘*white sugar*,” I explained.

“*Or the sound for ‘sugar’ can be candy [‘tang’ can be candy],*” added

Rosan.

“You are right. Very good!” I praised her.

Rosan went on, “*And the sound for “sugar” can be soup [‘tang’ can be soup].*”

“Right. You are very good. Could you think of anything else?” I probed.

“Soup is very hot [‘tang’ hao tang],” replied Rosan.

“That’s terrific,” I said, excitedly.

“Very hot, very hot [hao tang, hao tang],” said Rosan playfully.

(Transcript, September 14, 1996)

In English, the word “sugar” and “candy” do not share any phonetic or orthographic component, although these two terms used to have a similar origin at one point of time. In Chinese, however, the word for “candy [糖果, tang guo]” is directly derived from “sugar [糖, tang],” and it consists of two characters, “sugar [糖, tang]” and “fruit [果, guo].” A piece of “candy” in Chinese is therefore written as “sugar fruit,” and literarily means fruit-shaped item which contains sugar. In addition, the character and its sound for “sugar [糖, tang]” can mean either “sugar” or “candy,” depending on contexts and people involved in the communication process.

For instance, the question “要不要買糖? [ya bu ya mai tang]” may mean “should we get sugar” between a couple when they plan a grocery shopping trip, or mean “do you want some candies” between a grandparent and his/her grandchild when they are in a drugstore. Therefore, when I asked Rosan whether

she understood the concept “[糖, tang]” as in “*white sugar*” in Chinese, her answer, “*I know. It is hardy, and you eat,*” has indicated her understanding that “[糖, tang]” is a kind of edibles, and she probably referred to this character as candy.

After my explanation, she further specified the meaning she attributed to the word as “candy” (“Oh, the sound for ‘sugar’ *can be ‘candy’* [‘tang’ can be *candy*]”) again—the one being closer, no doubt, to her life experience. And with the sound “tang,” she provided me with two other homophones, “soup [湯, tang]” and “hot [燙, tang].” In addition, she associated the sound “soup [湯, tang]” with “hot [燙, tang]” and playfully made a new sentence “Soup is very hot (tang hao tang).” These examples have demonstrated Rosan’s sensitivity toward the phonetic aspect of Chinese language for she was able to furnish me with three homophones and to explain the meaning of each one.

Although Chinese is a tonal language, and the three words Rosan provided in the conversation, “sugar/candy [糖, tang],” “soup [湯, tang],” and “hot [燙, tang]” had different tones (second, first, and fourth respectively) and may not be considered exact homophones by adult linguists, she was nevertheless able to relate them with one another and put them in their proper context in order to make clear her meaning.

In addition to the phonetic aspect, the children in my class were most interested in the semantic aspect of the Chinese written language, one of the most critical aspects of any language learning. The Chinese written system is an ideographic one, in which each character, the smallest unit, carries one or more

meanings. And the meaning of each character, as it is in oral language, is context dependent. The vignette regarding “sugar” and “candy” from Rosan above has illustrated such a characteristic.

According to *The Explanation of Writing and Analysis of Words* [說文解字], written by Xu Shen [許慎], a Chinese lexicographer living in the later Han Dynasty (25-220 A.D.), each Chinese character evolved from one of the six principles: pictograph (imitative drafts), indicative (indicative symbols), ideative (logical aggregates), harmonic (phonetic compounds), transmissive (derived meaning), and phonetic loan word (arbitrary meaning) (Yan & Liu 1997).

The characters that evolve from pictograph are usually material objects, such as “tree [木],” mountain [山],” and “turtle [龜],” and they somewhat resemble the shape of the concepts represented even after many changes throughout the centuries. Although pictographs only account for about 4% of total Chinese characters (Kennedy, 1958), the children I worked with were very interested in the pictographic nature of the Chinese written system as I explained the origin and development of a particular pictographs or shared storybooks about different pictographs with them.

In addition, we discussed some of the frequently seen or used pictographs in the environmental print in the class as well as in their writing. Several parents, in particular Aileen’s mother, also taught their children some of these types of Chinese characters at home. Learning experiences and exposure like these provided the children with opportunities to familiarize themselves with this special feature of Chinese written language. The children often applied the

knowledge they possessed in analyzing a new pictograph when encountering a less familiar one. The following is an example from Aileen and Rosan:

We were reading The Thirty Six Chinese Characters (Xie & Hu, 1990), in which the author and illustrator made use of 36 Chinese pictographs to create a story. The children were interested in identifying the pictographs that resembled the objects or items they knew.

After we had read several pages, Rosan pointed at the characters that stood for “bird [鳥]” in Chinese and asked, “*What’s this?*”

“What do you think?” I threw the question back at her.

“*It has four legs,*” replied Rosan and she hesitated.

Before I went on to explain that the character was “bird,” Aileen chimed in, “*This is ‘bird.’*”

“*How do you know that,*” I was surprised.

“*I know, I know.*” Rosan tried to say something, but Aileen chimed in again.

Aileen’s index finger moved around the top, middle, and bottom of the character “bird [鳥]” and said slowly, “because that’s the head, that’s the bird’s body, and that’s, um, that’s the *wings.*” (Transcript, November 23, 1996)

Before Aileen and Rosan encountered the character for “bird [鳥],” they had already known how to write the character “horse [馬]” as it was their Chinese zodiac sign and also a favorite animal of theirs. Since the character for “horse [馬]” evolved from a pictograph, I showed the children how this character has changed from its original pictograph to the modern form when they asked me about “the correct way to write it.” I also explained to the children that the “four dots” [灬] in the bottom of the character “horse [馬]” indicated the number of legs of a horse.

Probably based on such information, Rosan formed a hypothesis—Chinese characters with four strokes [灬] may have something to do with “four legs”—and she decided to try out this hypothesis when she encountered an unfamiliar character, “bird [鳥].” While Rosan was testing her hypothesis, she

encountered a problem: Chinese characters with four strokes [馬] do not necessarily signify something with “four legs.” Therefore, she needed to revise her previous hypothesis in order to accommodate this new information into her own knowledge system. Although Rosan’s answer did not come close to the meaning of the character “鳥 [bird],” she was nevertheless applying the principles that Chinese linguists use for analyzing and explaining pictographs.

With more experience in Chinese, Aileen knew that the character was “bird” instead of “horse.” While observing how Aileen used her finger to trace each stroke of the character and listening to how she described each movement, it is evident that she also applied the pictographic principle to explain the meaning of each stroke of a particular character. What Rosan lacked was the experience and exposure necessary to differentiate whether the four strokes in the bottom of a character meant “four legs” as in “horse [馬],” “two claws” as in “bird [鳥],” or “a tail” as in “fish [魚].”

Language itself as a communication system includes several subsystems, such as phonetics, syntax, semantics, and orthography. The interplay between these subsystems and social, cultural practices reflects the worldview of speakers who belong to a particular linguistic group. Therefore, in the language socialization process, children not only learn the unique features/subsystems of language and the content knowledge through the use of language, but also learn about the various uses, purposes, and functions of language (Halliday, 1975).

Vygotsky (1986) argues that “[a] word without meaning is an empty sound, no longer a part of human speech [T]he primary function of speech is

communication, social intercourse” (p. 6). In other words, it is the meaning of a language that mediates our thinking and makes one of the most crucial human cognitive functionings—communication, possible. The meaning aspect of language also reveals how learners from each language group view their world.

The terms for “papaya [木瓜, tree melon]” and “hippopotamus [河馬, river horse] in Chinese, which I examined earlier in this chapter, illustrated how Chinese people categorize objects and develop lexical terms in accordance with the specific linguistic features in Chinese. In addition, the elaborative Chinese kinship system and the terms associating with different relatives also reflect the hierarchical nature of Chinese family and society.

The acquisition and use of language in order to construct meaning is also affected by different orthography. For example, children growing up using an alphabetic language, such as English, often use invented/functional spellings in their early attempts to construct meaning through written messages. In the process of learning to be literate in Chinese, an ideographic language, the children with whom I worked also developed unique meaning-making strategies in order to express themselves, as well as to communicate with others.

One day I stayed with Aileen and Eileen because their mother was out of town for a business trip. For dinner, the children and I made sushi, and I suggested that Aileen write down this event in her journal to share with her mother when she returned.

“I am going to write ‘I ate seven pieces of *sushi*,’” announced Aileen. Holding a pencil, she began to write in Chinese. The first character she wrote was “我” which means “I” in Chinese. After the character, she proceeded to draw seven horizontal lines to represent “seven” in Chinese.

“Hey, you forgot to write ‘ate,’” I reminded her.

“Ah, I forgot!” Aileen hit her forehead with her palms and asked me, “Should I write a ‘mouth’ first?”

“Why?” I asked, wanting to understand her reasoning. The children in my class have not yet learned the character “eat” formally except in a few encounters at their story reading sessions.

“Because you eat with your mouth,” replied Aileen.

“That’s right,” I said.

Aileen went on to write down “mouth [口]” and then asked me, “What’s next?”

I wrote down the second part of the character on a piece of paper for her, and Aileen copied it onto her paper. (Transcript, February 25, 1997)

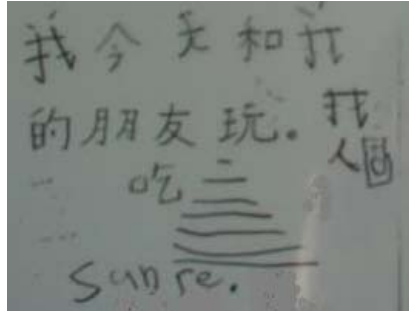


Figure 3-1. Aileen’s writing in Chinese. [English translation: I played with my friends today. I ate seven pieces of sushi.]

According to Yan and Liu (1997), Chinese characters are grouped into categories under radicals, “the component by which lexicographers arranged characters in dictionaries” (p. 36). There are 214 radicals in total, and each Chinese character has one radical, which bears semantic clues and helps readers to determine the meaning of a particular character. For example, a character with a “mouth [口, kou]” as the radical usually means that the character relates to the function of “mouth,” such as “to taste [嘗, chang],” “to curse [咒, zhou],” “to ask [問, wen].” The same radical can also be used to describe a state related to “mouth,” for example, “mute [啞, ya],” the inability to use one’s mouth to communicate with others.

In our class, we had a few discussions about the radicals in Chinese language when we encountered some common and frequently used ones, such as “fish [魚, yu],” “bird [鳥, niao],” and “water [水, shui].” I also saw on a couple of occasions when Aileen’s mother explained the concept of radicals to her daughters as Aileen or her sisters asked her how to write a particular Chinese character. From our Chinese class as well as through her mother’s demonstration, Aileen came to understand the function radicals served in the Chinese language. Therefore, she was able to make use of the knowledge she possessed in this particular semantic aspect of Chinese language when she needed to write an unfamiliar character “吃 [chi, eat]” in her journal.

With the radical “mouth [口, kou],” she first tried to confirm her hypothesis/understanding of the linguistic knowledge she possessed in Chinese with me, then she tried to obtain more information from me in order to finish her task: writing the Chinese character for “eat.” Aileen’s question “should I write a ‘mouth’ first?” and her answer, “because you eat with your mouth,” to my query illustrated how the understanding of this semantic aspect of Chinese language—the radical—has influenced Aileen’s Chinese literacy learning process.

To summarize, linguistic and cultural specifics intertwine with each other in children’s socialization process. The linguistic specifics of a particular language, such as the use of the radical in Chinese writing and the use of phonetics in English spelling, not only help to distinguish one language from another, but also shape the direction and the process in which learners socialize into a particular cultural group. Learners of a particular language group attend to

the specific linguistic features of their mother tongue and the specific ways of language use in their native culture as a way to categorize their world and to orient their thinking. There are, however, variations in the linguistic structures which we learn in order to fully function in our social, cultural, and linguistic groups. Therefore, what we learn about and learn through language also differs from one linguistic group to another.

Summary: Language through Socialization and Socialization through Language

In this chapter, I have described and analyzed the language socialization process as it had been manifested by four ethnic Chinese children—Aileen, Maya, Rosan, and Lucian—all of whom were developing their Chinese literacy skills while living in predominantly English-speaking communities. These four children possessed different proficiency and understanding in Chinese, due to the exposure and experience they had with that particular language, as well as the extent to which Chinese is valued and/or used at home, school, and the wider community as a whole. In this section, I would like to summarize the various materials that I presented in this chapter regarding the language socialization process these four children have gone through. The three themes in this summary include: development of identities, development of interpersonal relationships, and the roles of linguistic and cultural specifics in their thinking and learning.

Development of Identities

The development of identities is an essential part of the language socialization process. The formation of self-identity is social before it becomes

personal, for children develop their own identity via interactions with family and community members. As children are acquiring language in order to achieve their personal and social purposes, they learn to use language to define their roles and identities and those of others. Although not all children may learn to identify themselves in a particular ethnic group or a specific clan in the same way Maya did in this study, they all use language to construct their understanding of the ethnic and clan groups in which they are members, as well as to understand what it means to belong to such groups. The formation of identities also comes from an understanding of the specific cultural elements and practices which adult members in particular social groups deem important and worthy of passing on to their offspring through the use of language. The discussion of Chinese zodiac signs in this study demonstrates such a particular practice, which plays a role in the focal children's identity formation in this study.

Development of Interpersonal Relationships

The development of interpersonal relationships goes hand in hand with the formation of personal identity development, for it is through interacting with other members of a specific cultural group that learners develop a sense of the self and that of others. Without learning to use the appropriate terms to address other people and understand the rules governing the interaction process in their culture, children may fail to achieve their personal and social purposes. The kinship and appellation terms that members of a specific culture use to address and interact with each other reflect the structure of the society and rules of human interaction within that particular cultural group. In the process of learning these terms,

children also learn socially and culturally appropriate ways of interacting with each other and expect patterns of interaction in accordance with the rules they have acquired.

Roles of Linguistic and Cultural Specifics in Thinking and Learning

Linguistic features and cultural values are integral parts of children's socialization process. Growing up bilingually means not only to learn two languages concurrently but also to acquire two sets of values, belief systems, and ways of thinking and doing, which may be either be in conflict or comparable with each other, or in some instances, non-comparable. The acquisition of these two sets of systems, however, does not follow a parallel process, due to the individual learner's experiences and exposure, as various other factors may come in to play in their life.

Children who learn more than one language often rely on the experience they have with culturally specific lexical items, as well as ways of thinking, being, and behaving in the particular culture with which they identify the most, not necessarily their first language/mother tongue for the purpose of analyzing, reasoning, and interpreting. Therefore, when developing linguistic skills in a less familiar language, these learners will naturally make use of the knowledge and understanding they possess in their more familiar language. While in the process of transferring concepts from one language to the other, the learners often shift their cultural stance in order to assimilate and accommodate the new information into their knowledge system. The cultural values embedded in one's familiar language sometimes may be so implicit that the learners themselves are unaware

of it, and these values need to be understood and interpreted in their social, cultural contexts.

Finally, the specific linguistic features of each language, such as the radical in Chinese and phonic spelling in English, also shape the form and direction of the literacy learning process. Learners not only learn the specific literacy features and skills required to perform various tasks in written language, but also learn the particular ways in which language is used and learn how to use language to acquire knowledge across different texts and contexts.

To conclude this chapter, I would like to use a figure below to illustrate a language socialization process which includes the context, the text, and the linguistic triad—linguistic engagements, linguistic specifics, and cultural specifics.

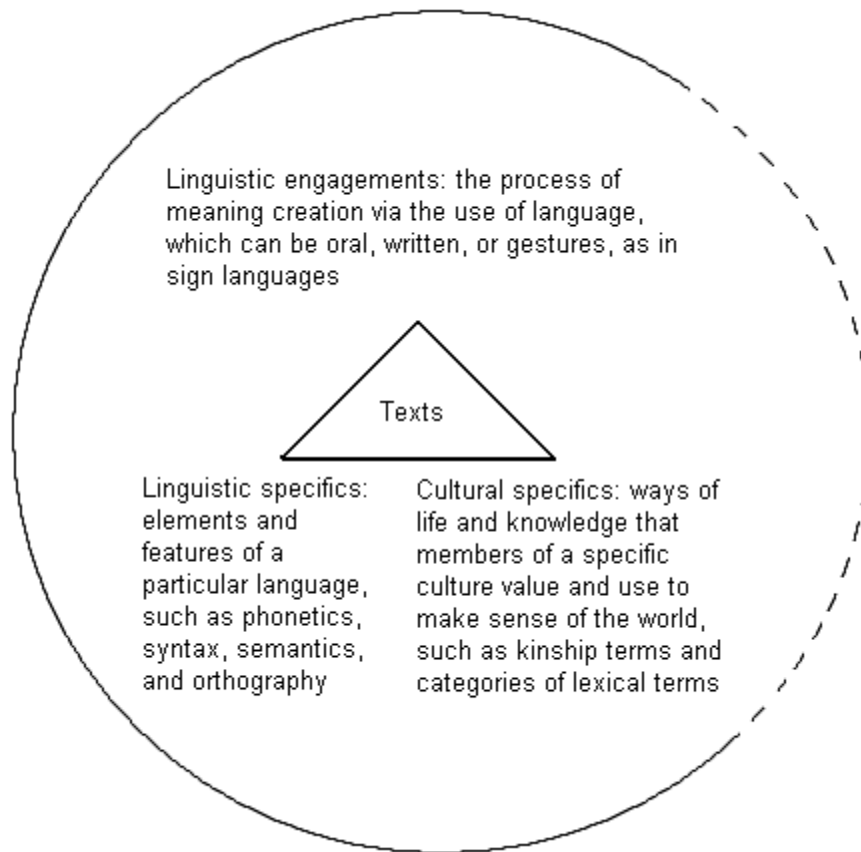


Figure 3-2. Language socialization in a specific sociocultural context

The circle outside of the triad represents a particular social and cultural context, in which adult members create, preserve, and transmit what they deem valuable and desirable to their offspring via the use of language. While a socio-cultural context may be a bound system and contains all critical elements to support the development of individuals and the community, any single culture also is subject to changes in order to adjust to the social, physical, and psychological changes within the group. These changes often occur when members of a particular group have opportunities to experience cultures other than their own and to interact with people from different societies; the knowledge they bring with them is manifested through such a communicative process. The dotted line in the circle represents the

flexibility of a culture which allows changes to take place while members of one culture meet those from another one. Because the focus of this chapter is on the language socialization process within a particular socio-cultural context, I will provide a more detailed description and discussion about the interaction of two cultures and two linguistic systems in chapter four.

For children to learn and become full members of their social and cultural group via the use of language, four “socialization agents”—texts and the linguistic triad—linguistic engagements, linguistic specifics, and cultural specifics—need to co-exist and orchestrate with each other. Texts in this study refers to the instance and/or product of language exchanges through which social interactions take place (Halliday, 1978); linguistic engagements are either mediated by existing texts or through the creation of texts. Linguistic specifics include components of oral and written linguistic systems, such as phonetics, syntax, semantics, and orthography of a particular language, while cultural specifics are comprised of values, customs, practices, and knowledge critical to the survival and prosperity of a particular socio-cultural group. Linguistic engagements include the process of meaning creation, which can take place during an oral or written communication. A linguistic engagement can be recorded in cultural artifacts/products (e.g., books, posters, and environmental prints) and become texts, or take place without leaving any concrete physical evidence, such as in dialogue between two people.

In a child’s language socialization process, adults or more experienced members of his/her group introduce linguistic specifics when both parties are involved in linguistic engagements by creating or responding texts, and such a

behavior is in accordance with the specific aspects of a culture. For example, while I used the sign-in chart (a linguistic engagement recorded in written text) to teach my first name (linguistic specifics, the sound and script of my name) to the preschoolers in my Chinese language arts class, these children's responses (equating my first name, "Mei-Yu," with my professional title, "teacher.") showed the cultural specifics (i.e. the use of title for an authoritative figure) they acquired from observing their parents interacting with me, as well as via their parents' purposeful coaching.

In addition to this reciprocal relationship, each of the socialization agents constantly interacts with each other in a single language socialization event, and such a process can help learners reflect what they have known and what is new to them, thus prompting the development of new knowledge. For instance, while learning the names of the goat (linguistic specifics, a lexical item) in Chinese through naming (cultural specifics, a common language/literacy practice in Chinese culture²¹) via joint reading of a book (a linguistic engagement involving the use of a written text), Lucian's question and our conversation (a linguistic engagement in the form of oral communication) between "mountain goats" and "bighorn sheep" (linguistic specifics, lexical items) reveal his lived cultural understanding (cultural specifics) in which he operated to understand and interpret the words as well as the world around him.

In this chapter, I have discussed children's language socialization process, drawing examples from my work with Aileen, Maya, Lucian, and Rosan in our weekly Chinese classes. I have examined the linguistic and cultural values to

²¹ See Heath (1986).

which these children are most socialized in order to form their identities, to define roles that other people serve in their communities, and to organize and understand the world around them. As these children were learning two sets of linguistic and cultural systems at the same time, these systems inevitably intertwined with each other and influenced the way these children perceived and interpreted their language/literacy and cultural learning, a topic that I will examine and discuss in more detailed in the next chapter.

CHAPTER FOUR

THE INTERPLAY BETWEEN FIRST AND SECOND LANGUAGE

ACQUISITION: WHEN YOU WRITE “FOUR [四]”

IN CHINESE, YOU WILL FIND TWO “J’S” IN IT

One Saturday afternoon, Aileen raced to my apartment in excitement. “Teacher Lu! Teacher Lu! I saw a *Chinese poster* at school yesterday,” announced Aileen, while still panting.

“How did you know that was a *Chinese poster*?” I asked.

Without hesitation, Aileen replied, “because I saw *Chinese words* in it.”

“Tell me more,” I tried to elicit more information from her.

“That *poster* had a lot of *Chinese numbers* in it. And I know how to write them,” answered Aileen.

“Could you write ‘four’ in Chinese?” I asked, curious to know how much she had learned from the poster.

“Of course,” said Aileen and began to write in the air. “*First*, you draw a *square*, then you put two ‘*Js*’ in it.” All of a sudden, her voice raised, “*Hey, when you write ‘four’ in Chinese, you will find two ‘Js’ in it!*” (Summer 1996)

Aileen’s answer “*First*, you draw a *square*, then you put two ‘*Js*’ in it” to my question “how do you write ‘four’ in Chinese” has revealed to me an intricate relationship between her first and second language literacy learning. Applying a “borrowed” orthographic element in English (i.e., the letter “J” to her writing of a particular Chinese character, “four [四]”, Aileen showed me how she crossed the boundaries of two distinctively different linguistic systems. Aileen’s ability to mentally manipulate a specific orthographic feature, transform it to create a new linguistic sign with a different meaning, and articulate such a process is not unlike that of other monolingual children when they learn to read and write in their mother tongue (Bissex, 1980; Clay, 1975).

While learning to be literate in both Chinese and English, Aileen has built a “linguistic bridge” between these two systems of language which share very few

surface structures. And with such a bridge, she was able to walk across each of the linguistic boundaries, make the differences similar, and bring about new meaning by using a similar orthographic element in these two languages. The metalinguistic awareness that Aileen possessed and demonstrated in her biliteracy learning process also demonstrates the reciprocal relationship between first and second language learning. When given opportunities, learners often draw on what they have possessed in one language to the learning of the other, as well as to compare/contrast between languages, even though their surface structures may be very different.

I use the example above to provide readers a glimpse of the type of learners with whom I worked—reflective and constructive. They were not merely my students, but more like my teachers, as they have helped me understand the multi-dimension and complexity of the biliteracy and bicultural learning process. The teaching-learning relationship also allowed me the opportunity to consciously compare, contrast, and connect my own language and literacy experiences with those of my students. Such a process became a full circle, for not only did I understand what it is that shapes my teaching philosophy and what I believe learning should be, but I also tried to relate and revise what did not seem to work in my own learning to my teaching, and to continue using approaches subsequently that I deem important to support my students' learning process.

Personal experience and reflection are important, for they provide a starting point for my inquiry. Without an understanding of other alternative perspectives, I will not be able to go beyond what I know and thus am limited by

what I might perceive to be “the one and only” reality. As this project is built on my learning, teaching, and research in bilingual, biliteracy, and bicultural learning, it is essential that I familiarize myself with relevant literature that addresses theories, studies, and issues in these areas. This body of knowledge not only explicitly and implicitly shapes my ways of thinking in the field, but also provides me with a firm foundation to interpret events, phenomena, and behaviors which might be otherwise unobservable and incomprehensible to me (Ferreiro, 1986).

As human beings, we constantly generate theories about phenomena around us. Some of these personal theories may eventually be polished and published, either in scholastic forums or during our informal interactions with others. Most of them remain implicit. However implicit they are, these personal theories do influence the way we further interpret our world, for they come from our experiences and also constitute a part of our socialization process. And our very own theory/theories of language and literacy learning originate from our experiences, such as schooling, family life, and other extracurricular activities.

With these experiences, we develop an understanding of the use and the content of language, as well as the learning process. Because we go through various phases in our life, the theories we develop during different life stages may also differ. As a result, it is likely that multiple, competing theories coexist due to the different paths we travel in our life. Being a language education major, I am fortunate to have the opportunity to formally study scholastic theories on language and literacy learning as part of my academic training. Naturally, what I

learned in classroom is often compared with and contrasted against the personal theories I have developed. Therefore, I will juxtapose my own theories of language and literacy learning based on my personal history with those I learn in academic settings in the literature review section.

Bilingual and Biliteracy Learning:

A Review of Relevant Literature

Language and culture are two inseparable elements in the socialization process. In Chapter Three, I discussed the triadic relationship between linguistic specifics, cultural specifics, and linguistic engagements and how such a relationship was mediated through texts in children's language socialization process. Using language as a tool, human beings learn and create cultural traditions, beliefs, and values, as well as preserve and pass these systems of knowledge from one generation to the next. Through apprenticeship with more competent members, children learn to use language in order to meet their social, emotional, and cognitive needs. As the world becomes more and more diverse due to the globalization and mobility, we also inadvertently experience different cultural values, knowledge, and practices. Take the U.S. as an example. American society has always comprised multicultural and multilingual groups, for many native tribes have been residing in this land for centuries. In recent decades, waves of immigrants have come to this country for political, social, economic, and other reasons. As the number of cultural and linguistic minority populations has soared over the past three decades (US Census Bureau, 2000), American society also faces a drastic change in the makeup of language and culture among

its people. Members of different groups bring with them their own cultural and linguistic knowledge, and each of these systems of knowledge in turn contributes to the richness and diversity of the society. At the same time, they also witness and/or learn mainstream ways of being and doing, which may be very different from or opposite to those of their own.

As educators, it is imperative that we understand the “funds of knowledge” (Moll, Amanti, Neff, & Gonzalez, 1992) existing in the particular culture and language that minority children bring from their home to schools, communities, and society. It is also important that we value the relationship between these children’s mother tongue/native culture and their second language/new culture in order to better support their learning.

In examining the relevant literature in bilingual and biliteracy development, I would like to first summarize various positions concerning children’s language/literacy learning and development in general, for such knowledge often serves as the building block for understanding second language/literacy development. Taking the same positions, I will then discuss how theories in this area can be used to inform second language learning, where applicable, as well as some major second language acquisition theories and research. To help me understand my students’ bilingual and biliteracy development, the second half of the literature review section will focus on the relationship between first and second language learning.

Psychological Foundation of Language Learning—Behaviorism

“How human beings learn language(s)” has been a central question that scholars in psychology, linguistics, education, and other social and applied sciences attempt to answer. Historically, theorists from a Behaviorist tradition believe that reinforcement and imitation play critical roles in children’s language learning process (Skinner, 1957).

While interacting with children, parents and caregivers often reinforce the correct linguistic forms and elements, such as the grammar, sounds, and meaning, in these youngsters’ speech. It is assumed that from these experiences, children then begin to develop correct pronunciation for words and conventional sentence structures, and they finally integrate all linguistic information together in order to communicate with others. Language and literacy instruction based on this Behaviorist model thus emphasizes imitating correct forms (e.g., copying words from worksheets) and both positive (e.g., rewards for giving conventional responses) and negative reinforcements (e.g., punishment for not doing so).

Although Behaviorist theory is able to explain certain aspects of children’s language learning, it nevertheless fails to recognize children as active agents who seek out linguistic structures in their own language learning process (Hakuta, 1986; Lindfors, 1987). For example, upon closely examining English-speaking children’s syntactic development, we often find that these young learners use many generative statements, such as “This is gooder,” and “I have three mouses,” which do not appear in adults’ speech, and thus could not have been learned through sheer imitation.

In addition, it is virtually impossible to reinforce and correct all linguistic forms and elements in the language learning process, for there are numerous rules and many exceptions in any given language. From the research he examines, Shaffer (1993) finds that parents or caregivers often have no difficulty responding to children's ungrammatical, but communicative sentences, such as "Sock daddy?" or "milk more" by answering their sentences or rephrasing questions to confirm the intention of the children. In other words, during the early stage of language learning, caring adults pay more attention to and respond to the semantics rather than focus on the accuracy of the syntax in children's speech.

Therefore, Behaviorist theory alone fails to capture the whole picture of children's language learning process; it is neither able to explain the generative aspect of children's syntactic development nor does it adequately address semantic and communicative aspects of language learning.

When examining the process of second language acquisition/learning from the Behaviorist perspective, we will also encounter similar issues found in first language learning. The Audio-lingual method, developed based on Behaviorist model, holds the premise that "language is a set of habits, and that a language is what its native speakers say, not what someone thinks he/she should say" (Diller, 1978, as cited in Weaver, 1994). Under such an assumption, learners are regarded as passive recipients of knowledge instead of active agents in charge of their own learning process.

In addition, this method also emphasizes reinforcing correct language structures and forming good habits, as well as repeated drill and practice to ensure

that learners develop correct pronunciation and sentences structures. Critics of the Audio-lingual method argue that this method is ineffective in teaching a second language because it focuses merely on modeling “the correct” answer/response, which limits the other alternative language variations/usage; it thus fails to recognize the creative aspect involved in language learning (Rivers, 1964; Jakobovits, 1968, both as cited in Weaver, 1994). As a result, many adults, myself included, who were taught a foreign/second language using this method in secondary schools or colleges are unable to use the target language to communicate effectively and efficiently (Freeman & Freeman, 1992; Weaver, 1994).

The most part of my schooling experience, both in my first and second language, was based on the Behaviorist model. In a classroom comprised of 50 or more children, the teacher was seen as the authority of knowledge. Learning in the classroom focused on repeating and imitating correct forms, structures, and responses. A typical Chinese language arts lesson in primary grades often began with an introduction of new characters, with the teacher showing the correct stroke order of each character on the blackboard. The children then copied the teacher by writing the characters in the air with their index fingers. Practicing newly taught Chinese characters was often the daily bulk of the homework throughout my elementary school years. Memorizing and reciting the whole text, either in front of the class or a teacher, was not an uncommon aspect of literacy practice in middle and upper elementary grades.

In junior high and high school, students were also asked to memorize classic literature or important historical documents (e.g., poetry from Tang dynasty and passages from Confucius's *The Three Principles of the People*) and then to reproduce these in writing during examinations. My experiences of schooling, especially in middle school, convinced me that the goal of education was to memorize the correct answers so that I would avoid being punished by teachers and I could then receive high scores in entrance examinations, a stepping stone for getting into a good high school and college. And in order to “get” the correct answers, it was important that I practiced repeatedly and worked industriously. The experience and theory of language learning I have had thus was very similar to the teaching based on Behaviorism, that is, an emphasis on imitation (reciting and copying characters), repetition (copious practice for memorization), correction (getting the “right” answer), and both positive reward (getting into “better” schools) and negative reinforcement (punishments and low grade). The second vignette in the beginning of Chapter One of this study illustrated such a learning process, especially in my second language.

Psychological Foundation of Language Learning—Nativism

In contrast to Behaviorists, Nativists hold the belief that human beings are biologically programmed for language learning. The language acquisition device (LAD), a concept proposed by Chomsky (1968), is often used to support such a theory. Chomsky contends that human language is far too complex to be taught by parents/caregivers or to be learned by young, cognitively immature children. However, since all normal-developing children learn to use language to meet their

needs and communicate with others, Chomsky concludes that there must be an innate, structured language model that children who have learned enough vocabulary use to combine words to form new, rule-governed sentences and to understand meaning while engaged in verbal interactions with others.

He goes on to point out that children make mistakes in their early stages of language learning due to their limited experiences in interacting with other language users, as well as because of insufficient data in their linguistic pool.

Nevertheless, as children keep receiving input from others, they develop a more sophisticated structure in their language and eventually approximate that of adults in their speech community (as cited in Shaffer, 1993)

Along with LAD, Nativists propose the Critical Period Hypothesis.

Lenneberg (1967) explains that a critical period exists between birth and puberty, when the human brain is specialized for language learning; after the window of this opportunity is closed, the ability is lost due to neurological changes in the brain. Several studies on feral children, most noticeably on Genie (Curtiss, 1977), are often used to demonstrate that when children are deprived of linguistic interactions over a sustained period of time, their ability to learn language, especially in the grammatical structure, later in life is minimal.

Reich (1986) finds that some of these children were merely able to attain linguistic proficiency equivalent to that of a normally developing four-year-old if they only begin to learn language after puberty. The study of Genie (Curtiss, 1977) and those examined by Reich (1986) and Ward (2005) have revealed a weak version of the Critical Period Hypothesis, namely the Sensitive Period

Hypothesis (Kelley, 1992), which claims that language acquisition after puberty is possible, although it may be incomplete.

In examining the relationship between second language acquisition and brain maturation, the Critical/Sensitive Period Hypothesis is often used to assert an “earlier is better” proposition—that young children can readily learn two or more languages simultaneously and speak without a trace of accent in each one; by contrast, adults often need to go through intensive study of a new language in order to achieve a near-native proficiency, and these learners usually speak with a “foreign” accent in the target language (Flege, 1999; Long, 1990; Patkowski, 1990). Lenneberg (1967) contends that puberty is “the termination of a state of organization plasticity linked with lateralization of function” (p. 76), and it marks the end of the critical period. While common sense and the Critical/Sensitive Period Hypothesis appear to provide evidence in support of “earlier is better” in second language learning, studies on adult and children’s second language acquisition are not as consistent (Birdsong, 1999).

Stern (1983) reviews research on age differences in second language acquisition and concludes that language learning may take place at different maturity levels from early childhood into adulthood, and no age or stage stands out as optimal or critical in second language learning. He also finds that each stage has its advantages as well as disadvantages in second language learning: young children respond more intuitively and readily to language acquisition in social and communicative situations, whereas adult learners benefit more from cognitive and academic approaches.

Krashen, Long, and Scarcella (1979) examine literature regarding the relationships between age, the rate of second language acquisition, and ultimate attainment in second language learning. They find that adults and adolescents usually learn a second language faster than children initially (“older-is-better” for rate of acquisition), but young second language learners are superior to their adult counterparts in ultimate attainment (“younger-is-better” in the long run).

Recent studies (Bialystok & Hakuta, 1999; Bongaerts, 1999; Eubank & Gregg, 1999; Weber-Fox & Neville, 1999) investigating different aspects of second language acquisition as it relates to the Critical Period Hypothesis also reveal a disagreement among scholars holding different theoretical orientations. From a neural science perspective, Webber-Fox and Neville (1999) examine the relationship between the age (before and after puberty) at which learners began to learn a second language and their linguistic process. The finding of their studies showed that older bilinguals are slower in linguistic-processing than their younger counterparts. Holding a neurobiological perspective, Eubank and Gregg (1999) review relevant literature, and they speculate that a critical period does exist in certain aspects of linguistic development in second language, such as syntax and phonology, whereas some linguistic aspects, such as lexicon development, instead show weak age effects.

Bongaerts (1999) conducts three experiments to test the relationship between Critical Period Hypothesis and second language pronunciation, an area most vulnerable to this age effect (Long, 1990; Scovel, 1988) of adult second language learners. Bongaerts’ research findings suggest that a significant portion

of successful adult second language learners are able to produce native-like accents, even though the pronunciation system of the second language is very different from that of their mother tongue (e.g., Dutch native speakers learning French). Bialystok and Hakuta (1999) caution against drawing a causal relationship between age and ultimate attainment in second language learning, even though they agree on the “early is better” proposition. Instead, the research they review and the studies they conduct both serve to demonstrate that linguistic and cognitive factors play important roles in determining the ultimate success of the second language learning process.

A recollection of my earliest ESL learning experience, which I described in the first vignette in the beginning of Chapter One, is reminiscent of the Nativist theory. At age seven, I “discovered” my innate ability to speak a foreign language without formally studying it at school. I subsequently developed a rudimentary theory that the learning of a second language was a natural process, just like that of my first language. This discovery, however, clashed with the school literacy (especially my second language) instruction, which was based largely on the Behaviorist model. The struggle I had in English learning throughout my secondary years was, for the most part, a result of such a conflict in beliefs and practice.

The tension between my personal, implicit Nativist theory and the explicit Behaviorist approach used at school was evident in my puzzlement—“if Chinese and English are both languages, why couldn’t I be good at and enjoy both of them equally?”—this was the question that challenged the Nativist theory I formed in

my early childhood about the nature of second language acquisition. It was not until I was enrolled in a graduate program and began to study various theories in language and literacy learning that I gradually learned to resolve these conflicts and puzzlements.

In summary, both Behaviorist and Nativist theories present a partial view regarding how children acquire language, be it their first or second language. The divide between Behaviorist and Nativist theories is due to the opposite beliefs scholars from these two traditions hold, namely the “nurture” vs. “nature” debate.

For Behaviorists, language learning is a matter of “nurturing.” Children learn language through imitation, repetition, and reinforcement of correct language usage from adults and more competent members in their speech community. Therefore, Behaviorists argue that it is important for adults to provide children with ample opportunities, both in the first and second language, to repeatedly model after conventional language usage, as well as to reinforce using rewards and correct language responses, so that young learners are able to form good language habits and develop adequate language skills.

From the Nativist perspective, children’s language learning is a result of brain maturation, a part of natural development in all human beings. Language learning will take place as children receive constant input, and the brain will process and sort all information accordingly. Because language learning is closely related to the level of brain maturity, it is therefore imperative that children learn a second language before reaching puberty, when the brain fully lateralizes, in

order to achieve native-like proficiency and speak the target language without a trace of a foreign accent.

Even though studies have revealed that both adult and young learners have different advantages in various aspects of language acquisition, and the Critical Period Hypothesis (Lenneberg, 1967)/Sensitive Period Hypothesis (Kelley, 1992) alone cannot account for children's success in learning a second language, it is generally agreed that "younger is better" leads to ultimate attainment of the second language learning.

Psychological Foundations of Language Learning—Interactionist Perspectives

Dissatisfied with the "nurture" vs. "nature" controversy, Interactionists propose that language learning is a result of the interplay between "nurture"—linguistic environment, and "nature"—biological maturation (Bates & MacWhinney, 1982; Piaget, 1970). On one hand, children need to have opportunities to interact with other more competent language users in their speech community in order to acquire the vocabulary, grammar structures, and ways of different language usage across contexts. Imitation does play a part in such a language learning process, for children do acquire similar linguistic elements and structure of the language as those imparted by their caregivers and/or parents (Shaffer, 1993). Research in children's language acquisition revealed that geographical location, dialect use, and family socio-economic status have an influence on children's vocabulary development, accents, and responses to different situations (Delpit, 1988; Heath, 1983; Purcell-Gates, 1995; Taylor, 1983; Taylor & Dorse-Gaines, 1988). In addition to imitation, reinforcement seems also

to play a role in children's language learning; children learn various functions of language when they are invited to be engaged in verbal interactions with others (Bissex, 1980; Martens, 1996; Taylor, 1988).

On the other hand, almost all children go through similar milestones in their early language development, such as babbling, holophrastic speech, and telegraphic speech, indicating that there must be a universal device in human's language development, and such a process is innate to all human beings. Piaget (1970), among other Interactionists, argues that cognitive growth and language development go hand in hand.

According to Piaget, infants learn first by physically exploring their environment to form mental schema so that they are able to understand events and objects in their surroundings. As their language develops, they talk about what they know and understand. Throughout his extensive study of children's cognitive development, Piaget also argues that all children proceed through similar stages both in their intellectual and language development. In other words, when children develop intellectually, their language also becomes more sophisticated because they are able to understand and process more complex linguistic input from other more competent language users in their environment; the knowledge these children possess will then help them form new linguistic hypotheses, resulting in even more complex language patterns and usage (Shaffer, 1993).

In this way, language development and cognitive growth go hand in hand, where the development in cognition will promote that in language. A proponent of the Interactionist theory in language learning, Piaget also develops a theory of

his own—Constructivism—which I will discuss in the next section along with another major Constructivist theory, namely Social Constructivism.

***Constructivism and Social Constructivism/Cultural Historical Perspective in
Language and Literacy Learning***

Piaget's Constructivist theory has played an important role in understanding the relationship between language learning and cognitive development in the Western world. In Russia, Vygotsky proposed a social constructivist view of language learning, which revolutionized the way people think about this subject. Piaget and Vygotsky developed their theories based on numerous observations and experiments they conducted with children. Their theories on the relationship between language and cognition share similarities as well as present differences.

Both theorists found a close relationship existing between children's language and cognitive development, and they also regarded children as active agents in constructing their understanding and making sense of the world around them. At the same time, Piaget and Vygotsky hold different views regarding the relationship between cognitive development and language learning, the importance of children's self-talk, and the role of adults in supporting children's language learning.

Piaget divided children's cognitive development into four continuous stages—sensorimotor (birth to 2 years), preoperational (2 to 7 years), concrete operational (7 to 11 years), and formal operational (11 years and beyond)—and he argued that all children go through these four stages in exactly the same order

(Piaget, 1972). In moving from one developmental stage to the next, Piaget contended that when children encounter novel, challenging tasks, they assimilate such experiences into their existing mental schema and then modify these existing schemata in order to accommodate their thinking of these experiences. The final product is adaptation, a state of equilibrium between children's cognitive structure and the environment. In other words, children benefit cognitively when they are given tasks slightly above their pre-existing schemata.

Piaget's stages of cognitive development reflected his view on the biological determination of cognitive development, although he also recognized that individual differences may exist, due to cultural and other factors (Shaffer, 1993). Based on his observation of language development among very young children, Piaget contended that the first words and sentences infants and toddlers (children of sensorimotor stage) produce are usually about the objects or phenomena that they have already learned through nonverbal, sensorimotor experiences; thus the language used by children of this stage is for demonstrating their existing schema, but does not play significant roles in their knowledge construction process (Shaffer, 1993).

By examining young children's utterances during solitary tasks (e.g., playing puzzles by oneself), Piaget found that approximately 50% of the total recorded utterances among the seven-year-olds (children of preoperational stage) he has studied were not addressed to anyone in particular nor were they intelligent to outsiders; Piaget called these utterances "egocentric speech" because it reflects the children's mental status, as well as their inability to understand alternative

perspectives and to communicate with others (Piaget, 1926). Piaget observed a decline of egocentric speech as children become progressively more “social” and less egocentric toward the end of the preoperational stage; he attributed such a developmental trend to the children’s increasing ability to assume the perspectives of others and thus their ability to adapt their speech to their listener’s level of understanding.

In conclusion, Piaget viewed that all children go through stages of cognitive development in the same sequences, that cognitive development leads the development of language, and that children learn better through tasks that are slightly beyond their pre-existing schemata. It is, therefore, not advisable for teachers to rush children through stages of development by drill and practice, such as teaching two-year-olds with flash cards, since their learning at that stage occurs mostly through the use of nonverbal, sensorimotor skills.

A Piagetian literacy program is a learner-centered one, in which children are regarded as active learners who bring their own understanding of written language into the classroom (Goodman, 1986). Literacy educators embracing Piagetian philosophy believe that each child goes through the same development milestones in their literacy learning process, but they also recognize individual differences; these educators try to understand their students from the children’s perspectives, instead of imposing a one-size-fits-all standard (Ferreiro, 1986). Literacy learning, like other types of learning, takes place as children are engaged in assimilating new information and accommodating such new knowledge to their pre-existing schema (Ferreiro, 1986; Landsmann, 1986). Therefore, a Piagetian

classroom is a print-rich one, in which teachers serve as facilitators who design a wide range of literacy activities and events, so that each individual child has opportunities to explore various functions and purposes of literacy at his or her own pace (Landsmann, 1986; Goodman, 1986).

Like Piaget, Vygotsky conducted extensive research to understand children's learning, especially in their cognitive functioning as it relates to the genesis and development of language (Vygotsky, 1986). Vygotsky's Cultural Historical Theory provides an alternative view to Piaget's Cognitive Constructivism. Vygotsky believes that children develop as competent individuals as well as members of a particular group through apprenticeship with adults and collaboration with more capable peers when they learn to use various cultural tools (Lee & Smagorinsky, 2000a).

Cultural tools, according to Vygotsky, are "the concepts, content knowledge, strategies, and technologies . . . that are drawn on in the act of meaning construction," (Lee & Smagorinsky, 2000b, p. 2) which have their roots in historical and cultural contexts where the learners reside. For Vygotsky (1978; 1986), language exists as a cultural tool to serve the needs of individuals for communication and thinking; and the path of language development is foremost social before it becomes individual (Lee & Smagorinsky, 2000b; Vygotsky, 1986).

From the findings of his research, Vygotsky (1986) concluded that as children encounter difficulties, they will initially seek assistance from adults; when such help is unavailable, they turn to talk to themselves (egocentric speech)

while working through their tasks. Vygotsky recognized the importance of this type of speech in promoting children's cognitive development for he found that egocentric speech serves both as a means for releasing tension and "an instrument of thought in the proper sense—in seeking and planning the solution of a problem" (p. 31).

He also noticed that the frequency of egocentric speech increases as children encounter difficulties in achieving their goals, and it decreases as children begin to internalize planning and problem-solving strategies into their knowledge system, and it eventually becomes inner speech (Vygotsky, 1986; 1978). From Vygotsky's perspective, both egocentric and inner speech help children organize their thinking and planning for actions, thus the development of language leads to cognitive growth of these young learners (Lee, 2000).

Holding a cultural historical/social constructivist perspective, Vygotsky (1978) believes that children's learning is mediated by cultural tools and takes place within a "zone of proximal development" (p. 86). Vygotsky explains that there are two levels of development—what children can actually do alone, and what they can do with assistance from adults or more experienced peers. He further defines the zone as "the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers" (p. 86).

Expanding on this concept, Bruner (1975) coined a term, "scaffolding," to describe the enabling process when a young or less experienced learner

apprentices with an adult or collaborates with more competent peers to solve a complex problem which he/she may otherwise be unable to do independently. The knowledge or skills the less experienced or knowledgeable children acquire through scaffolding are vital to their personal development which in the long run influence the survival of the social and cultural group to which these young learners belong.

A Vygotskian classroom is one where learners and their inquiries form the core of the curriculum (Wells, 2000), and all learners, regardless of their backgrounds (e.g., social, ethnic, linguistic, religious), bring “funds of knowledge” (Moll, Amanti, Neff, & Gonzalez, 1992) from their families and community into the classroom. Teachers who apply Vygotsky’s theory in literacy instruction recognize the importance of social interaction, cultural tools, and the zone of proximal development in children’s learning and development.

Vygotskian teachers provide an environment and tasks that encourage children of different abilities to work together, so that less experienced learners are able to move beyond their current level of development with the assistance of their more capable peers, and more advanced learners also have opportunities to reflect on and revise problem solving strategies. Instead of being the sole authority and transmitters for knowledge, teachers serve as mediators and facilitators, who provide modeling, demonstration, and resources to help children in their meaning construction processes.

In summary, both Piaget and Vygotsky provide constructivist perspectives in explaining the relationship between children’s language and cognitive

development. Piaget focuses on children's individual construction of knowledge, while Vygotsky stresses joint meaning construction in context. These two scholars also present different views on children's cognitive development, the nature of children's egocentric speech, and the roles of teachers. In emphasizing a developmental path, Piaget proposes a universal, invariant stage model of children's cognitive development and argues that children go through the process of assimilation, accommodation, and equilibrium in discovering new principles and construct knowledge in their learning. Vygotsky proposes the concept of "zone of proximal development" to explain the difference between children's actual and assisted performance through working with more competent peers or adults.

While considering the function of children's egocentric speech and its role in children's cognitive development, Piaget views egocentric speech as a reflection of young children's inability to take perspectives from others and concludes that such a speech plays little, if any, role in children's cognitive development. By contrast, Vygotsky argues that children use egocentric speech as a tool to plan strategies and solve problems while engaged in complex, cognitive demanding tasks.

Teachers who apply theories from Piaget and Vygotsky share similarities in their views of learning, that is, children are active learners in their knowledge construction process. However, Piagetian teachers play critical roles in creating a supportive curriculum and learning environment that challenge the children's current level of understanding in order to help them move to the next level of

development. Teachers who hold a Vygotskian belief regard learning as a socially constructive process, and view scaffolding children's zone of proximal development as an essential way to promote children's learning and development.

The role of teachers is thus to create curriculum and set up an environment in which children share their "funds of knowledge" (Moll, Amanti, Neff, & Gonzalez, 1992) as well as collaborate with each other. Both Piaget's Constructivism and Vygotsky's Social Cultural Theory influence various educational theories and practices at different levels throughout the second half of the 20th century. One of the most noticeably is the Whole Language Theory, which will be the focus of the next sections.

The Whole Language—Its Origin and Evolution

Whole Language began as a grass-root movement in the 1970s when several groups of teachers from various educational levels in different parts of English-speaking world engaged in educational reform (Goodman, 1986; Smith, 2003). Although relatively new to the education arena, the origin of Whole Language can be traced back to the Progressive Education Movement from the late 1800s to early 1930s, when John Dewey and other educators proposed a child-centered curriculum, as well as to the 1960s and early 1970s when advocates of Open Education Movement promoted the concept of individualized learning (Edelsky, Altwerger, & Flores, 1991; Newkirk, 1991; Weaver, 1994).

Although sharing some similarities with its predecessors, Whole Language stands out as a unique theory and philosophy in education. It brings together various disciplines, perspectives, and practices to form a theoretical view of

language, of learning, and of learners, teachers, and curriculum (Edelsky, Altwerger, & Flores, 1991; Goodman, 1986; Goodman, Bird, & Goodman, 1991; Weaver, 1990). Because of its historical and theoretical origins, the basic principles of Whole Language continue to evolve throughout its development, and educators' visions on Whole Language also vary. As an educational theory and philosophy, Whole Language does not lend itself to a "step-by-step" method; instead it embraces the following basic principles:

- (1) a holistic approach to the acquisition and development of literacy in all its aspects;
- (2) a positive view of all human learners;
- (3) a belief that language is central to human learning;
- (4) a belief that learning is easiest when it is from whole to part, when it is in authentic contexts, and when it is functional for the learners;
- (5) a belief in the empowerment of learners and teachers;
- (6) a belief that learning is both personal and social and that classrooms and other educational settings must be learning communities;
- (7) an acceptance of all learners, their languages, cultures, and experiences they bring to their education; and
- (8) a belief that learning is both joyous and fulfilling (Whole Language Umbrella, 2004).

Teachers apply these principles to develop their own instructional approaches, materials, and curriculum to meet the needs of their students and in accordance with the contexts. Therefore, it is not uncommon to have Whole Language classrooms look different from one another.

Three threads of research and theories—Psycholinguistics, Psychosociolinguistics, and Socio-semiotics—have also contributed significantly

to the direction and development of Whole Language. These theories also provide alternative perspectives for me to understand what it means to be literate. I will discuss the contributions of these three schools of thinking throughout this study for they have helped frame my thinking in my academic study on children's language and literacy development.

Whole Language and Psycholinguistics

As Whole Language is a theory based on empirical evidence, the researcher and oftentimes teacher-researcher observes and collects data directly from learners when they were engaged in literacy events (Goodman, 1986). Many of such early studies are conducted by Ken Goodman and his associates (Allen & Watson, 1976; K. Goodman & Buck, 1973; K. Goodman & Burke, 1968; Y. Goodman, 1976; Menosky, 1972; Nieratka, 1973; Page, 1973; Sims, 1976; Watson, 1973) as they listened to readers. Based on his Psycholinguistic model of reading, K. Goodman (1967) proposed the concept of "reading as a psycholinguistic guessing game". He also coins the term "reading miscue" (K. Goodman, 1965), which he defines as "a point in reading where the expected [response] (ER) and observed response (OR) are not the same" (Brown, K. Goodman, & Marek, 1996, p. vi).

Examining findings gathered from learners of various ages and backgrounds reading different texts, K. Goodman (1965; 1967) and other miscue analysis researchers (for an extensive list of these studies, see Brown, K. Goodman, & Marek, 1996) argue that while reading, all readers, regardless of their fluency, make use of three cueing systems—semantics, syntax, and

grapho/phonemics—when the focus of language is on meaning. Such a finding has become a fundamental principle of the Whole Language theory, has also influenced the way that educators teach and assess learners within this paradigm. Based on miscue research, Yetta Goodman and Burke (1972) developed the Reading Miscue Inventory along with Burke Reading Interview as alternative assessment tools to evaluate both qualitative and quantitative reading proficiency, as well as to understand the relationship between personal belief and instructional history of a particular reader. Whole Language educators also recognize the importance of context in learning and assessment. Instead of asking readers to perform isolated tasks, these educators strongly advocate assessing learners in context. “Kidwatching,” for example, is an observational and assessment tool developed by Y. Goodman (1978), which is used to provide learner-in-context information so that educators are able to better assess learners in a more holistic manner.

While Whole Language educators in the U.S. began to advocate, practice, and disseminate their theory, philosophy, and research in North America, Frank Smith, a psycholinguist, also taught and conducted literacy research in Canada, Australia, and South Africa. Smith’s view about language and literacy learning resonates with the basic Whole Language principles, but he also emphasizes another dimension: the social aspects of learning to be literate. Smith (1987) used a metaphor—joining the literacy club—to describe the social nature of literacy learning. He argues that we learn from others not so much by conscious emulation

as by “joining the club” of the people who we want to become, as well as by being invited to participate in their activities.

Smith also believes that the most significant people in each learner's life constitute teachers from formal educational settings, informal educators outside school (e.g., church, community, summer camp), and authors of books one reads. Smith's concern on the social aspect of language and literacy learning also reflects his perspective on the politics of learning to read.

Drawing theories from linguistics and human cognition and learning, Smith (2003) disputes the scientific and “evidence-based” reading instruction by the National Reading Panel (2000) which contends that explicit (read “isolated”) phonics instruction be essential to the early literacy learning and which favors a prescribed approach, instead of “context based, multiple strategies” (Burke, personal communication, 2006), used to teach children reading and writing.

Smith (2003) argues that “children learn to read by reading, provided they are interested in what they read and not confused by it” (p. 17), and he suggests that in order to help children become readers, teachers need to (1) find materials that are interesting and comprehensible to each child, (2) read to and with the child, and (3) get “out of the way and let the children get on with reading, which usually means protecting them against assessments, diagnostics, high-stake tests, interruptions, and other ‘educational digressions’” (p. 17). It is both the psychological aspect—the readers' interest and cognitive development, as well as the social aspect—the human interaction, instead of the political aspect, namely

certain mandated program, method, or assessment that supports children's literacy learning.

Whole Language and Psychosociolinguistics

Psychosociolinguistics has its roots in Vygotsky's social constructivism, and scholars from this theoretical orientation are concerned about both the psychological and social dimensions of language and literacy learning; many researchers in the Whole Language Movement come from this tradition (Crawford, 1995; Goodman & Goodman, 1990). Whole Language theory and philosophy have impacted all levels of education, particularly the early childhood field. Because this study focuses on young children's literacy learning and development, I will, in this section, discuss key Psychosociolinguistics-based Whole Language research and its influences on early literacy research and practice.

Since the late 1970s, scholars from various disciplines have conducted research to understand how young children learn to read and write before receiving formal schooling (Baghban, 1984; Bissex, 1980; Clay, 1975; Ferreiro & Teberosky, 1982; Graves, 1983; Hall, 1987; Harste, Woodward, & Burke, 1984; Martens, 1996; Newkirk, 1989; Strickland & Morrow, 1989; Taylor & Dorsey-Gaines, 1988; Teale & Sulzby, 1986). Their research yields the following major findings: (1) young children are active learners who construct their knowledge about literacy based on their personal experience with reading and writing, as well as on their understanding of the function of literacy; (2) young learners observe how other people in their environment use reading and writing in their life, and

their early literacy behaviors and samples also closely resemble those in their environment; (3) when children are invited to participate in and encouraged to use reading and writing in functional and meaningful ways, they will see literacy as a way of life, instead of work; (4) children's literacy development is both generative and rule-governed in that they systematically create, revise, and test their hypotheses on the conventions and functions of reading and writing. These findings not only provide an alternative perspective to the predominant reading-readiness program and skill-based literacy curriculum in early childhood education between 1960 and 1980s, but they also bring about a new line of research in understanding children's literacy development from a more learner-centered, holistic orientation.

Based on sociopsycholinguistics and Vygotsky's social constructivism, Whole Language scholars hold a view that is consistent with the three threads of research findings listed above. They are particularly interested in children's literacy development within social and cultural contexts. Among these researchers, Harste, Burke, Woodward and other researchers (Baghban, 1984; DeFord, 1980; DeFord & Hartse, 1982; Harste & Burke, 1977; Harste, Burke, & Woodward, 1981; Harste, Burke, & Woodward, 1983; Harste, Woodward, & Burke, 1984; Rhodes, 1981) at Indiana University focus on how children learn to be literate through the use of cultural tools and how they develop as competent literacy learners of their sociocultural groups. With the "language stories" they gathered from child informants in their research projects, Harste, Woodward, and Burke (1984) wrote "literacy lessons" which illustrate the nature and process of

young children's literacy learning, and they also proposed a model on the transactional view of language learning as follows:

A transactional view of language learning . . . assumes that meaning resides neither in the environment nor totally in the head of language learner, but rather is the result of ongoing sign interpretation. . . . Meaning is seen as triadic, the result of a mental setting actively attempting to make sense of a print setting. When such a triadic relationship is in place, a sign function has been established, and an instance of literacy is said to occur. Word meaning changes by the circumstances of use in transaction with the history of literacy which the language user brings to the setting (p. 57).

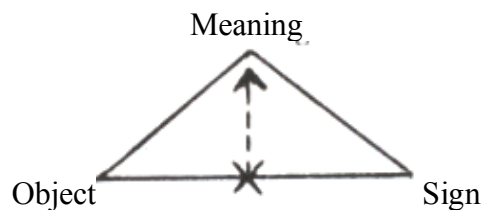


Figure 4-1. The triadic relationship in sign function (Harste, Woodward, Burke, 1984, p. 58)

This psychosociolinguistic view of early literacy learning and development has revolutionized our view of what constitutes literacy, for it does not consider literacy as a set of skills to acquire. Literacy, instead, is regarded as a process of continuous meaning interpretation in accordance with the contexts, the audience, and the experience learners bring to this process.

Whole Language scholars who hold a psychosociolinguistic view also expand our understanding of what it means to be literate to include other sign systems, such as music, art, and mathematics (Albers, 1997; Berghoff, 1998;

Hodge & Kress, 1988; Leland & Harste, 1994; Siegel, 1995; Short, Harste, & Burke, 1996). Such a perspective redefines literacy as a multi-modal and open system, rather than a “perfectable absolute” (Harste, Woodward, & Burke, 1984, p. 57), which sees meaning as fixed and invariable. Thus, learning to be literate involves both the ability to and process of orchestrating different sign systems with fluidity and flexibility to make sense of the world (Short, Harste, & Burke, 1996). In a sense, it is reading the world as well as reading the words (Freire & Macedo, 1987).

My Early Experiences with the Whole Language

My initial encounter with Whole Language was in the spring of 1992 when I took my first reading course at the University of Iowa. In that class, I was introduced to several theoretical perspectives as well as practices in children’s early literacy and language development. It is from that class that I first heard and subsequently employed “Kidwatching” (Y. Goodman, 1978) to observe and document the biliteracy (Japanese and English) development of Kenji, a 4-year-old Japanese boy, at a local day care center.

For six weeks, I observed Kenji in his classroom and playground while he interacted with his friends and teachers. It was a unique experience for me because I was able to apply what I had learned in class to an actual situation and was able to see how a child actually dealt with two very different linguistic systems. This experience instigated my intent to explore the interplay between children’s first and second language/literacy learning.

My second reading course from the University of Iowa was a topical seminar on Whole Language theory and philosophy. The class provided me with further first-hand experience on the theory into practice aspect of Whole Language, for it was designed within a Whole Language framework. The transition from a banking model of knowledge transmission to a transactional model where students and teachers shared responsibilities, and collaborated to create the syllabus and decide on the content of lessons and projects was not easy for me because almost all of the formal schooling I had received was done in a fairly traditional way.

Questions like “Is this what the professor wants?” and “Am I learning what I am supposed to learn and do what I am supposed to be doing?” were constantly on my mind each time I went to class, for there I was given choices and voice to pursue my own interests, a situation very different from my previous education experience. It was through weekly readings, discussions, and various projects that I began to gain an understanding of what Whole Language meant to me. While learning about the theory and reading studies on how researchers applied Whole Language philosophy in their classrooms in the U.S. context, two of my Chinese-speaking classmates and I began to speculate whether it was possible to employ such a theory/philosophy in a Chinese learning context. The community-based weekend Chinese School in which I was teaching each Sunday afternoon at that time became our research site.

There were eight children aged 5 to 7 in my class, and all of them had been introduced to English literacy at local early childhood programs they

attended daily. Half of these children were born in the U.S. and raised in families where Chinese (Mandarin) was the home language; the other half had recently arrived in the U.S. from Taiwan.

My two friends and I wanted to create a curriculum centered on learners' inquiry questions, so we asked the children what they would like to learn. Blank faces were our responses. Therefore, we decided to begin with "self-identify," a topic that we believed that children of this age group could easily relate to. I used a storytelling and art-making approach, which I described in Chapter One of this research project, to work with children. Instead of teaching the children the Mandarin phonetic symbols—the standard beginning literacy instruction in Taiwan as well as at the particular Chinese School where I taught—I worked with them on Chinese characters.

I had observed that my students enjoyed writing their names and other Chinese words on the attendance chart each week and were also eager to share their writing during our show-and-tell time. In addition to art, a friend in our research team also integrated music activities, which she regarded as "linguistic catalyst" (Own, 1993) into these children's Chinese learning experience. Gradually, the children began to take initiative in learning to read and write in Chinese.

One day a brother and sister pair came to class and proudly displayed a 10-foot long scroll, patched with many pieces of paper, on which they had written book titles and illustrated main characters from *Mr. Men and Little Miss* (books

by Roger Hargreaves), a series which they enjoyed reading at home and in the Chinese class.

Although my students were gradually becoming strong readers, writers, and learners as I saw them through a holistic perspective, several parents were concerned that their children might not have a solid academic foundation in Chinese language arts due to the lack of explicit phonics instruction (the teaching of Mandarin phonetics symbols) and weekly worksheets. During the summer months, these parents hired another teacher to work with their children on the Mandarin phonetic symbols and also asked her to continue teaching the children in the coming fall. I was assigned to work with a new group of 4 to 6 year olds.

It was from this incident that I realized my mistake in not including parents in their children's learning process, for I had assumed that they might be too busy or not be interested in what happened in their children's Chinese class. I began to select and photocopy some short articles which I thought would help parents understand what the children had achieved, and I also invited parents to visit our class to observe their children. A narrative report of each student's learning in class was also sent home at the end of the semester. Some parents tried to understand my approach to early literacy instruction and were willing to share what they saw in their children's mother tongue and literacy development. However, some parents, especially those who would eventually return to Chinese-speaking regions, still preferred a direct and explicit approach to a more holistic one, for they feared that their children might not be able to be literate in Chinese if they were not to learn the Mandarin phonetic symbols first.

I left Iowa with more questions than answers about Whole Language. As I continued to teach, conduct research, and study, my view and understanding of Whole Language also changed, in the same way its theory and philosophy also undergoes development as its advocates continue to redefine, expand, and defend it from opponents of different social, political, and theoretical orientations. In the midst of its continuous development, Social Semiotics has provided new influences and direction to Whole Language. In the next chapter, I will discuss social semiotic theory because it not only informs this research project but also serves a milestone in my academic study. I will now focus on the interplay between learner's first and second language.

Relationships between First and Second Language

In Chapter One, I have described three patterns of language use at home for children from cultural and linguistical minority backgrounds. I have also cautioned about the danger of oversimplifying the definition of mother tongue and second language as there is often a mismatch between common perception, dictionary definitions, and the reality of what constitutes these two systems of language. For the purpose of this study, "mother tongue" refers to the medium/media that children and their family members use to communicate with each other at home. It can be a predominant language of the community, a minority language, or a combination of both. I define second language(s) as any means of communication learned after one has a good command of his/her mother tongue(s); a second language may remain as one's secondary language or it may

eventually become one's primary language when the learner is able to use it competently and effectively across contexts.

From a Psychosociolinguistic perspective, the meaning of a word is never absolute and fixed, and it is always situated (Harste, Woodward, & Burke, 1984). Language users bring with them their unique experiences each time they engage in communicative acts. The cultural, historical, and other social contexts the language users reside in also influence their perception about certain phenomena and issues. The term "bilingualism" thus bears very different connotations in the U.S. context from that of other countries, such as the European Union, African Continent, and South and Southeast Asia. Furthermore, attitudes towards bilingualism and bilingual education in American history also have undergone several changes. I will begin this section with a brief historical overview of bilingualism in the United States, followed by a discussion of the relationship between first and second language framed in a Whole Language perspective.

Bilingualism and Attitudes Toward Bilingualism in the US:

A Brief Historical Review

The United States has always been a multilingual society, for each native American group has developed its own language, and several waves of immigrants have also contributed to the linguistic mosaic of this country. From the pre-colonial period to mid-1880s, bilingualism was common, acceptable, and protected, as well as considered a desirable personal and societal asset (Fitzgerald, 1993; Wiley, 1998). During this period, some states also passed laws that allowed

the use of a non-English language or bilingual education in public as well as private schools as the medium of instruction (Ovando, 2003).

From around 1880s to the first half of the 20th century, English gained its prestigious status of the most commonly used language in the United States. The rise in prominence was due to several social and political events, such as state enacted legislation that prohibited public instruction in a non-English language, increased job competition between immigrants and established U.S. citizens, and sentiments toward nationalism (Fitzgerald, 1993; Ovando, 2003). By the mid 1920s, 34 states had legalized English-only instruction for all private and public elementary schools (Kloss, 1998). Around the 1880s to 1960s, language minority children were taught using the sink-or-swim (submersion) model, and educators and policy makers at that time did not make necessary linguistic, cultural, and academic adjustments for these students, for it was assumed that these children and their families should be solely responsible for their assimilation into the American society (Ovando, 2003).

During the late 1950s and 1980s, American society faced challenges both abroad and domestically, and these influenced the government's educational and language policies. The launch of *Sputnik* by the former Soviet Union made the U.S. government realize that it needed to promote the learning of foreign language, mathematics, and sciences, because these subjects are critical to the military, business, and diplomatic endeavors of the country; such decisions led to the creation of the National Defense Act in 1958 (Ovando, 2003).

The 1965 Immigration Act put an end to the strict restriction on the national origin quota system, resulting in the dramatic increase in the number of Asians and Latin American immigrants moving to the U. S. (Molesky, 1988). The change of the makeup of the student population also influenced the medium of instruction used in elementary and secondary education. The enactment of the Bilingual Education Act (Title VII of Elementary and Secondary Education Act) provided funding “to support educational programs, to train teachers and aides, to develop and disseminate instructional materials, and to encourage parental involvement” (Crawford, 1999, p. 40). The 1974 Supreme Court Case *Lau v Nichols* (414 U.S. 5637) serves as a major precedent pertinent to the civil and educational rights of language minority children (Baker & Jones, 1998; Hakuta, 1986; Lyons, 1990).

The court decision states that “there is no equality of treatment merely by providing students with the same facilities, textbooks, teachers, and curriculum; for students who do not understand English are effectively foreclosed from any meaningful education” (*Lau v Nichols*, 1974). Although the bilingual policies during the 1960s and 1980 have helped the development and growth of bilingual education, very few LEP children (less than 10%) received adequate bilingual or ESL instruction during this period (Crawford, 1999).

In the last two decades, bilingual education has faced yet a new battle due to the political climate in the United States; the promotion of nationalism during the Reagan and G. H. Bush administrations set the impetus for an anti-bilingual education movement (Crawford, 1992). Even though English has never been

legalized as the nation's official language, more than 20 states in the U.S. have various forms of Official English/ English-Only legislation (for more detailed information, please visit James Crawford's website at the following URL: <http://ourworld.compuserve.com/homepages/jwcrawford/langleg.htm>). Crawford (1992) explains the binary positions that the advocates and opponents hold regarding such a policy:

For supporters, the case is obvious: English has always been our common language, a means of resolving conflicts in a nation of diverse racial, ethnic, and religious groups. Reaffirming the preeminence of English means reaffirming a unifying force in American life. Moreover, English is an essential tool of social mobility and economic advancement. The English Language Amendment would "send a message" to immigrants, encouraging them to join in rather than remain apart, and to government, cautioning against policies that might retard English acquisition.

For opponents, Official English is synonymous with English Only: a mean-spirited attempt to coerce Anglo-conformity by terminating essential services in other languages. The amendment poses a threat to civil rights, educational opportunities, and free speech, even in the private sector. It is an insult to the heritage of cultural minorities, including groups whose roots in this country go deeper than English speakers': Mexican Americans, Puerto Ricans, and American Indians. Worst of all, the English Only movement serves to justify racist and nativist biases under the cover of American patriotism (pp. 2-3).

The ideological, political debate on the English-only movement quickly becomes another anti-bilingualism controversy, which again influences the educational opportunities of children especially those who are learning English as a new or second language, as well as those who do not speak the standard version of American English (e.g., for those who speak black vernacular English). Among the recent English-only and anti-bilingual education legislation, the most noticeable one is probably Proposition 227 in California proposed by Ron K. Unz and Gloria Matta Tuchman in 1998.

In their proposal, English Language Education for Children in Public School, Unz and Tuchman declare that (1) English is “the language of economic opportunity,” (2) parents of limited English proficient (LEP) children want their children to acquire English to fulfill their “American Dream” of social and economic success, (3) the state government and public schools in California are obliged to provide English literacy to all children, (4) the public school systems in California has failed to provide adequate education to immigrant children, and (5) young children can easily learn a new language by being “heavily exposed” to that language; therefore, “all children in California public schools shall be taught English by being taught in English as rapidly and effectively as possible” (Article 1, Section 300). With such a premise, they propose to cut bilingual funding and suggest:

Children who are English learners shall be educated through sheltered English immersion during a temporary transition period not normally intended to exceed one year. . . Once English learners have acquired a

good working knowledge of English, they shall be transferred to English language mainstream classrooms. (Article 2, Section 305)

Proposition 227 passed by a 61-39% vote in California on June 2, 1998. Well-intended as it appears in the wordings of its proposition, this measure per se nevertheless impedes the linguistic as well as educational rights of at least 1.4 million (or 1 out of every 4) children living in California. Under this measure, all instruction in public schools needs to be conducted in English, and children with limited English proficiency (LEP) are expected to learn under “sheltered” or “structured” immersion, an instructional model that provides normally up to one year of ESL education and then quickly mainstreams these children into regular classrooms with their native English-speaking peers.

Such an instructional model is consistent with a deficit model which argues that students entering American classrooms without the adequate linguistic, cognitive, and social skills required for school success are often deemed at risk and in need of remediation (Gutierrez, 2002). It is therefore necessary to eradicate these children’s mother tongue so that they are confused by two sets of linguistic systems and thus able to fully assimilate and integrate into the society as a whole. Research findings based on such a deficit model also disregard the linguistic and cognitive schema that already exist in bilingual and/or LEP children, and they also failed to take into consideration the various factors that learners from different sociocultural groups may encounter (Gutierrez, 2002). Moreover, supporters of Proposition 227 argue that English is the only solution to help LEP children quickly develop second language literacy and academic skills.

These supporters clearly disregard research evidence which reveals that it normally takes between 4-7 years for children to acquire grade-level academic skills in a new language (Collier, 1987; Hakuta, Butler, & Witt, 2000; Klesmer, 1994), and that using children's mother tongue as the medium of instruction can be beneficial to both their academic and English literacy development (Clark, 2000; Cook, 1990; Lewelling, 1991; McCarty & Dick, 1996). Research findings on bilingualism and bilingual education based on holistic and multicultural perspectives have showed a very different picture from those based on a deficient model.

Instead of viewing children from non-English speaking families as being at risk in terms of academic failure and needing remediation, researchers in these two traditions are interested in examining the influence of bilingualism on children's social, emotional, cognitive and academic development, as well as in analyzing factors that contribute to successful bilingual education programs.

In Chapter One, I have discussed the importance of mother tongue maintenance along with English literacy acquisition among linguistic minority children, and I will, in this section, describe quality bilingual programs that have effectively supported the development of both language/literacy skills among these learners, with a focus on the North American context.

Two-Way Immersion (Dual Language) Programs: Theoretical Underpinnings

There are many forms of bilingual education programs in the United States, each with different purposes: some intend to mainstream linguistic minority children, some aim to integrate language majority and minority children

in the same classroom, and there are others that focus on the development of linguistic, academic, and cultural competence in language minority children. In addition, the ratio of languages used for instruction varies. Some bilingual programs use English as the major medium of instruction, supported by children's mother tongue in a supplementary role; there are also programs that provide a non-English language for initial literacy instruction for a significant portion throughout the school day and eventually introduce and integrate English into the curriculum. Among different types of bilingual programs, the two-way immersion (TWI) model has been documented to be one of the most effective in supporting academic, social, and language/literacy development of both linguistic minority and majority students (de-Jong, 2002; Howard & Christian, 1997; Landry & Allard, 1993; Lindholm-Leary & Borsato, 2001; Lopez & Tashakkori, 2003).

In a TWI program, both native speakers and language minority students (with each group making up between 1/3 and 2/3 of the total student population) are integrated in the same classroom, and both English and a minority language are used as media of instruction. In this way, the TWI program provides an additive bilingual environment, because the students are acquiring academic and literacy skills in a second language and are at the same time continuing their first language development in these two areas.

In this learning context, all students, regardless of their language background, have opportunities to be both first language models and second language learners. The primary goals of a TWI program are as follows: (1) to promote high the academic achievement of all students through the instruction of

two languages, (2) to develop language and literacy skills in two languages without the risk of home language loss for students from both dominant and minority language groups, (3) to encourage cross-cultural understanding and behaviors between language minority and majority students; and (4) to support the development of high levels of psycho-social competence (Baker, 1996; Centre for Applied Linguistics, 2001; Christian, 1994, 1996; Christian, Howard, & Loeb, 2000; Genesee, 1999; Howard & Christian, 2002; Lindholm-Leary, 2000).

The theoretical underpinnings of the TWI program come mainly from the research on the education of language minority students as well as on foreign language immersion programs (Howard & Christian, 2002). Collier (1992) and Lanauze and Snow (1989) found that language minority children with higher levels of literacy and academic skills in their mother tongue are also likely to attain higher level of skills in academic achievement in English. Research findings also reveal that second language learners perform better academically when they continue to receive instruction in their mother tongue along with their learning of a second language (Greene, 1998; Thomas & Collier, 2002; Willig, 1985).

Foreign language immersion programs based on an additive bilingual instruction approach in Canada and the United States also show that English dominant students are able to attain grade-level academic achievement as well as English literacy skills even when they receive instruction in a non-English language (Genesee, 1987; Lambert & Tucker, 1972; Snow, 1986). In other words, research evidence concludes that both language majority and minority children

can benefit academically as well as linguistically from an additive bilingual instruction model which effectively uses both children's mother tongue and a second language as media of instruction.

Another theoretical foundation that supports the effectiveness of TWI program comes from theories on the interdependence of bilingual proficiency. Cummins (1981b) proposed a Common Underlying Proficiency (CUP) hypothesis to explain the inter-relationship between one's first and second language as it relates to academic learning and cognitive development. This hypothesis is often presented pictorially in the form of two icebergs which represent learner's first and second languages.

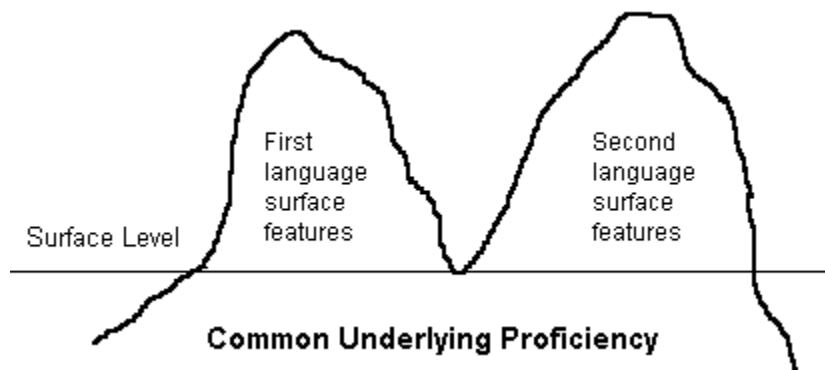


Figure 4-2. Cummins' (1981b) Common Underlying Proficiency

According to Cummins, the skills, concepts, and linguistic knowledge acquired in learners' first language are transferable into a second language even though the surface features of these two languages may be very different. Underneath the waterline or surface level, these two linguistic systems overlap and also share a common underlying/operating system. The concept and knowledge that learners acquire through learning and experience, as well as the cognitive and linguistic

abilities they possess support the development of the two languages, regardless of differences in linguistic surface features.

Cummins (1984) also coined two terms—BICS (Basic Interpersonal Communicative Skills) and CALP (Cognitive Academic Language Proficiency)—to illustrate two major continua of second language development, which can be represented in the matrix below:

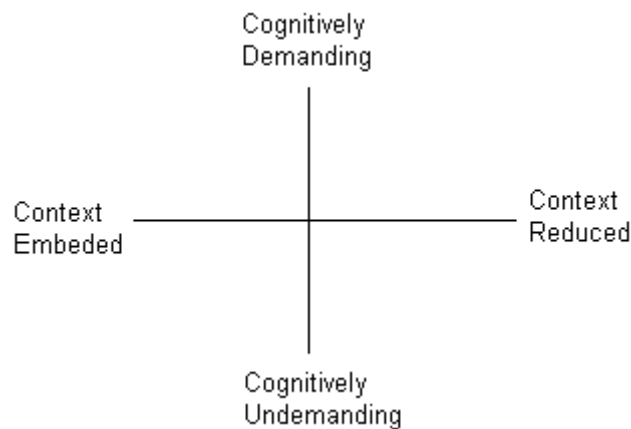


Figure 4-3. BICS and CALP (Cummins, 1984)

The vertical axis of the BICS/CALP matrix represents the degree of cognitive involvement in an activity, moving from less challenging to more cognitively challenging ones. The horizontal axis represents a continuum from “context-embedded” to “context-reduced”, ranging from situations in which the learner uses external clues and information, such as facial, gestural, pictorial, and other sources to understand materials presented, to the other extreme where the learners must rely on linguistic cues and knowledge about language and text to enable understanding. An activity in which students are asked to analyze an essay in the

classroom will belong to the upper right corner of the matrix (cognitive demanding and context reduced), for learners need to rely on an understanding of the words as well as structure of the text to perform the task; a playground conversation with peers, on the other hand, belongs to the lower left corner (context embedded and cognitive less demanding) because the speakers have access to various verbal as well as non-verbal cues for such a task.

Research by Cummins (1981b) and other researchers (Collier, 1987; Hakuta, Butler, & Witt, 2000; Klesmer, 1994) has found that it takes approximately 2 years for second language learners to achieve a social and communicative use of a second language, but 4-7 years for these learners to achieve academic, linguistic proficiency comparable to that of monolingual native speakers. Cummins' idea on the cross-linguistic interdependence and the BICS/CALPS continua illustrate the reciprocal relationship between first and second language, as well as the differences between academic/cognitive and interpersonal language learning.

Cummins, however, cautions that the benefits of transferability between first and second language academic learning will not take place automatically. Instead, a minimum threshold of first language cognitive/academic development is necessary for success in second language learning (Cummins, 1976; 1981; Toukomaa & Skutnabb-Kangas, 1977). Cummins (2000) states:

There may be threshold levels of proficiency in both languages which students must attain in order to maximize the cognitive, academic, and linguistic stimulation they extract from social and academic interactions

with their environment. . . . Continued development of both languages into literate domains (additive bilingual) is a precondition for enhanced cognitive, linguistic, and academic growth. By contrast, when bilingual students develop low or minimal literacy in L1 or L2 as a result of inadequate instructional support (e.g., in submersion programs), their ability to understand increasingly complex instruction (in L2) and benefit from their schooling will decline. (p. 37)

Cummins' (2000) view about the threshold levels of bilingual proficiency shows that students' first and second language academic proficiency can either mediate or intervene the quality and quantity of classroom interaction they receive, and thus influence their academic development. When learners lack a firm foundation in their first language, it will be more difficult for them to acquire new concepts with an unfamiliar language. However, when learners have a solid foundation in their first academic language, they can focus on learning new linguistic structure and need only to transfer content knowledge from their mother tongue to their second language.

After a brief review of the perception of bilingualism in the United States as well as a particular program model (i.e., Two-way Immersion) which provides a holistic view in bilingual education, I will now walk readers through the bilingual and biliterate learning process of my research participants who are learning Chinese and English concurrently. The following section will include my interpretation of such a process by examining the observation/field notes of the

children's interaction in my class, transcripts of interviews I conducted with the children, and the artifacts I gathered during my data collection period.

Bilingual Learners and their Literacy Learning Process

For the last three decades, scholars have been interested in various aspects of literacy and biliteracy learning among young children using alphabetic languages (Baghban, 1984; Bissex, 1980; Clay 1975; Edelsky, 1986; Hall 1987; Harste, Woodward, & Burke, 1984; Martens, 1996; Moll, Saez, & Dworin, 2001; Riojas-Clark, 1995; Saunders, 1980, 1988; Taylor & Dorsey-Gaines, 1988; Ferreiro & Teberosky, 1982; Whitmore & Crowell, 1994). Findings of their studies have provided valuable insights into how both monolingual and bilingual children in different parts of the world learn to be literate prior to and in the early stages of their formal schooling. There is, however, little research available on how children develop literacy skills in a non-alphabetic language (i.e., Chinese), and/or how they become biliterate concurrently in an alphabetic as well as a non-alphabetic language.

The research on the literacy learning process in these less studied areas is important because it not only reveals to us the universality, but also the uniqueness of this process, thus extending our understanding of what it means to be literate. In the literature review section of Chapter Three, I have described Chinese literacy practice and learning among children in three contexts: China, Hong Kong, and Taiwan, and I have also shown readers the Chinese literacy learning process among my four research participants. In the next sections, I would like to share my understanding of the four children's bilingual and

biliteracy learning process with a focus on their perception of the relationship between Chinese and English, as well as to examine the reciprocal, bilingual/biliteracy learning experience of these young learners.

Through their classroom interactions, my interviews with them, and the artifacts they created, I have identified three major themes: (1) Theorizing: comparing and contrasting between languages; (2) a two-way relationship in becoming bilingual and biliterate: the role of first language in second language learning; and (3) a two-way relationship in becoming bilingual and biliterate: the role of second language in first language learning.

Theorizing: Comparing and contrasting between languages

In my class, both the children and I use Chinese and English simultaneously for learning, instruction, and social interaction. Although a primary purpose of the class was to help my students develop and maintain their Chinese language and literacy skills, I did not impose a “Chinese-only” policy. Such a decision was based on my experience as a second language learner and as a teacher-researcher working with ESL/bilingual children.

Being an ESL learner myself, I have experienced the agony of not being able to fully express myself in English, the target language required of my academic learning and most social interactions in the U.S. The lack of adequate English proficiency made me self-conscious while being engaged in interpersonal communication in both academic and non-academic settings. From my work with my students, I have also found that these children had more experience and

exposure in English, the non-target language in our class, and thus they used English as a major means to interact with each other and also with me.

Allowing children to use English in my class did not mean that I gave a prestigious status to that language, nor did I neglect my responsibilities in supporting my students' Chinese language and literacy development. I, however, believed that the more opportunities these children had in reflecting on their personal language learning process and in discussing this process with others, the more they understood why they were learning a language, how they could be better language learners, and what they had learned through language. As we all use language to organize our thinking and communicate with others, the children's dominant language is likely to be more conducive to this type of cognitive process.

The freedom to switch between languages for the purpose of personal reflections and social interactions had yielded many thought-provoking conversations in our class. One of these prominent discussion topics had been the differences and similarities between Chinese and English language. From my study, I saw how when learning a new language, the children drew on the knowledge they already possessed in their familiar language to generate hypotheses about the new one. They then tested, confirmed, and/or refined their previously developed rules about this new linguistic system. I will first share an example from Lucian and Emma:

Lucian and Emma sat side by side and practiced writing numbers in Chinese. After working for a few minutes, Emma leaned toward Lucian and asked, "*Do you think Chinese have alphabet?*"

Concentrating on his writing, Lucian did not even look at Emma. He simply replied, “*Chinese don’t have alphabet.*”

“*I wish they did,*” said Emma.

Raising his voice, Lucian said, “*Chinese DON’T make alphabet!*” as if to emphasize his point.

I overheard their conversation and asked, “*Why do you guys think of that?*”

“*You don’t make alphabet. You just make, you just make all characters for words. You don’t have any alphabet,*” elaborated Lucian.

Emma proposed an argument. “*Wait a minute. You do have one part of the alphabet.*”

“*Like what?*” I asked.

“*You have ‘a’,*” said Lucian and Emma in unison. It seems that Lucian suddenly changed his mind.

“*You have ‘n’. You have ‘l’,*” added Lucian.

“*No, ‘A’,*” said Emma, somewhat impatient. She then continued, “*Because ‘A’ is also a word.*” She giggled.

“*What?*” I was lost.

Emma explained, “*Because like, ‘A’ is also word. ‘A’, hey, I want to know, I want to know if you cut off this. I want to know if this is an ‘A’.*” She pointed at a Chinese character, which was comprised of the Chinese character “一” [a/an/one] and other different elements.

At the same time, Lucian also proposed his argument, “*‘A’ is a word. ‘A’, a cat, the cat. There is an ‘A’.*”

I was unsure what the children meant, so I asked them to write what they thought to be the equivalent of “A” in Chinese. After Lucian and Emma each wrote down “一” [a/an/one] in Chinese, I asked them “why do you think it [this particular character] is an ‘A’ in Chinese.”

Lucian replied, “*‘A’ is a word, because letter ‘a’ is a word.*” (Transcript, November 15, 1997)

Unlike English which is an alphabetic language, Chinese is an ideographic one. The smallest meaning unit in Chinese is the character, which consists of one or more of the following eight basic strokes: (1) “一” horizontal stroke from left to right, (2) “丶” a simple dot, (3) “丨” vertical stroke from top to bottom, (4) “丿” or “㇇” hook appended to either horizontal or vertical stroke, (5) “㇇” diagonal stroke, rising from left to right, (6) “㇇” diagonal stroke, falling from right to left, (7) “㇇” short diagonal stroke, falling from right to left, and (8) “㇇”

diagonal stroke, falling from left to right. Among these eight strokes, “一” is unique in its own way, for it can stand alone as a character and also be a part of more complicated characters, such as “杏 [apricot, xing] (the top horizontal line), “上 [up, shang] (the bottom horizontal line)”, and “立 [to stand up, li] (top and bottom horizontal lines).” In other words, “一” can serve both as a smallest meaning unit (a character) as well as an orthographic element (a stroke) in Chinese, similar to the letter “A” in English, which is both a smallest meaning (word) and orthographic (letter) unit in that language.

In the beginning of their conversation, Emma proposed a question to Lucian, who in turn furnished her with his firm belief regarding the nature of Chinese written language (i.e., Chinese is not an alphabetic language). Although Emma’s comment “I wish they did,” revealed her acceptance of Lucian’s statement, she was not completely convinced nevertheless. Instead, she re-examined the alphabetic nature of the English writing system, identified a specific piece of linguistic information—that the letter “A” could be also a word in English—and tried to find its Chinese counterpart.

Through his conversation with Emma, Lucian also re-visited his own belief regarding the English and Chinese orthography. And he had decided to temporarily put aside his pre-existing schema to join Emma that “[*letter*] ‘A’ is also a word [*in English*].” With this new discovery they had in English, Lucian and Emma went on to test whether such a feature also existed in Chinese. These two children tried to confirm with me their newest finding—“一” is the Chinese

equivalent of letter “A” in English—by using an example they were able to identity in the environment.

Seeing this as an opportunity for the whole class to explore the different orthographic nature between Chinese and English, I decided to invite other children to participate in such a discussion as well. As we sat together the following class session, I asked the children what they thought about the nature of the orthographic system in Chinese and English. A portion of our class discussion is as follows:

During our group time, I asked Lucian, “*Lucian, were you and Emma²² talking that you wished Chinese had alphabet last week?*”

“*Acrobat?*” asked Lucian. He looked puzzled.

“*Alphabet,*” I repeated again and continued, “*Why do you wish that Chinese had alphabet?*”

“*Um, because it would be easier,*” answered Lucian.

“*Why?*” came my next question.

There were a few seconds of silence, but Lucian finally replied, “*I just thought so.*”

I opened up the question and posed it to the group. “*But, there must be a reason, right? Why do you think that if Chinese had alphabet, it would be easier. This is a very good and interesting question. Anyone have any idea?*”

“*I thought, um, Chinese already had alphabet because of the stroke,*” added Lucian.

“*Well, I don’t know. I,*” before I finished my sentence, Maya chimed in. “*No, there aren’t,*” said Maya.

“*Why?*” I asked.

“*I have already known that,*” replied Maya.

Rosan turned to Lucian and said, “*There couldn’t be one because there is, in English, because you have to spell, like ‘lamb,’ L-A-M-B. And in Chinese, there would have been, four letters, four Chinese letters.*” (Transcript, November 29, 1997)

The linguistic exchanges between Lucian and Emma had challenged Lucian’s belief about the orthographic nature of Chinese language, and he probably had been contemplating whether Chinese could be an alphabetic

²² Emma was absent that day when the children and I had this discussion.

language ever since Emma proposed the question. In the beginning of the vignette, Lucian replied that “I just thought so” to my question whether it would be easier to learn Chinese had it been an alphabetic language. This statement reflects his implicit, yet to be articulated, perception of the nature of language acquisition between an alphabetic and a non-alphabetic one, namely that an alphabetic language (e.g., English) is easier to learn than a non-alphabetic one (e.g., Chinese). As the discussion on the relationship between the orthography and the degree of difficulty in language acquisition went on, Lucian had decided to further revise his personal belief on the nature of Chinese orthography. With an understanding of linguistic terms in Chinese language, such as “stroke” and “character,” Lucian was able to explicitly explain his thinking—the stroke in Chinese was equivalent to the alphabet in English.

Possibly because they were more experienced in Chinese compared to Lucian, Maya and Rosan knew the Chinese language was not alphabetic in nature. Maya’s answer “*I have already known that [Chinese is not an alphabetic language]*” revealed her “the one and only” belief, which apparently was non-challengeable and un-contestable. Such a firm belief is, no doubt, an integrated part of her knowledge system. Rosan also reflected upon her literacy learning experience in both languages and explained to Lucian the non-alphabetic nature of Chinese language by using a piece of linguistic knowledge she had had in English (“Lamb” is spelled as “L-A-M-B” in English and has four letters). Although she did not further articulate that the word “lamb” in Chinese only consisted of two or three (fewer than four) characters—“小羊 [xiao yang]” or “

小綿羊 [xiao mian yang],” her statement “*there would have been, four letters, four Chinese letters*” implicitly revealed her understanding of this concept.

It is evident from the two vignettes above that as children engaged in linguistic exchanges, they created texts, with which they revealed and tested their personal theories and beliefs about the nature of language in general and also the specifics of a particular linguistic system. Such knowledge comes in two forms—tacit/uncontestable and formative/revisable—and exists on a continuum. The development of such personal theory and knowledge is closely related to the degree to which a child is socialized into the literacy practice through which an understanding of cultural/linguistic specifics is constructed. As children interact with each other, they have opportunities to examine and reflect on the knowledge they possess, and thus are able to further confirm, refine, or change their previous held theories and beliefs.

The two vignettes that describe the meaning co-construction process in which Lucian and his friends engaged are especially illustrative of this case. The question Emma asked not only challenged Lucian’s tacit/uncontestable belief about the orthographic nature of Chinese language, but also pushed herself to identify sources for the answer. When the question was discussed the second time, Lucian revealed yet another tacit/uncontestable belief about the differences in learning an alphabetic and an ideographic language. He further revised his formative belief that strokes were the equivalent of letters in the alphabet in Chinese written language. Such a statement immediately encountered opposition from Maya, who declared quite unfalteringly that Chinese could not be an

alphabetic language. Agreeing with Maya, Rosan further used an example from the two languages she knew to explain to Lucian the difference between an alphabetic and non-alphabetic language. The explanation affirmed Maya's uncontested belief as well as revealed that held by Rosan regarding the orthographic nature of Chinese language.

From the two examples above, it is also noteworthy that Lucian used correct linguistic terms in describing elements in Chinese language, such as "characters" and "strokes", even though he had less experience and exposure in Chinese language than Rosan and Maya. With more experience and exposure in that language, Rosan was able to articulate her own understanding by using an example. She drew heavily on the linguistic knowledge she possessed in English and applied it to her Chinese learning, for example, using "letters" or "word" to substitute "characters," as well as "spell a word" for "write a character" in Chinese. The different linguistic knowledge these children brought into the classroom, regardless of their levels of proficiency, presented opportunities for them to support each other's Chinese literacy learning.

By using "lamb" as an example, Rosan articulated her understanding of a phonetic rule in English language. Rosan's statement revealed her implicit belief of transferability (as well as non-transferability) of linguistic rules across languages, because she did not further elaborate and explain what she had said earlier. However, given time and opportunity, she was capable of demonstrating her knowledge explicitly, as seen in the vignette below.

The children and I were comparing and contrasting the Chinese and English writing systems.

Rosan talked about the differences first. *“In English, you need to spell the word. Like you spell the word, ‘the,’ you write three letters, T-H-E. And then in Chinese, you may be putting one Chinese word, instead of three. Because in English, you can sound out T-H-E, but in Chinese, you can’t sound it out.”*

Other children also contributed their ideas. After the group discussion, I invited the children to write down their ideas on a big sheet of paper on the wall. (Transcript, November 29, 1997):

Rosan wrote the following:

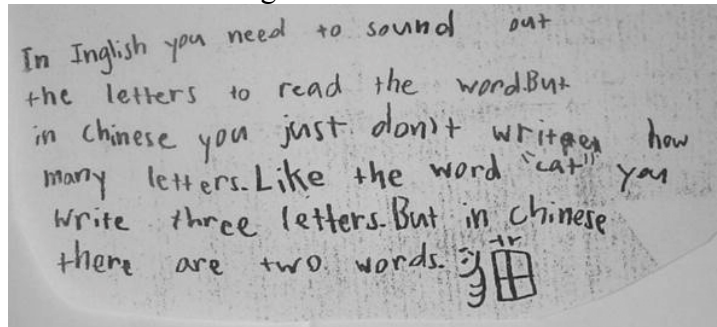


Figure 4-4. Sample of Rosan’s writing by which she explained the difference between Chinese and English writing system

[Transcript: *In English you need to sound out the letters to read the word. But in Chinese you just don’t write how many letters. Like the word “cat” you write three letters. But in Chinese there are two words, 猫苗.*]

Here Rosan explicitly articulated the knowledge she possessed in Chinese and English based on her understanding of the linguistic structure in both languages. Such knowledge was first delivered as a general statement: *“In English, you sound out the letters to read the words”*; whereas *“in Chinese, you just don’t write how many letters,”* followed by two examples, both orally and in writing (i.e., *“in English, you can sound out T-H-E, but in Chinese, you can’t sound it out”* and *“Like the word “cat” you write three letters. But in Chinese there are two words. 猫苗.”*).

The oral and written examples further demonstrated her ability not only to theorize, but also to explain the personal theory she developed. Interestingly, her

explanation on the applicability of the “sounding out” strategy resonates with her belief of English and Chinese literacy learning during an interview I conducted with her. She stated “you can sound out words in English, but not in Chinese” when I asked her the similarities and differences in learning to be literate in Chinese and English (Rosan, Personal communication, Summer 1998). And such belief evidently is a reflection of the literacy instruction she received in two different languages and contexts, namely her teachers at the elementary school taught her to “sound out” to read in English, whereas her mother and I did not use such an approach in supporting her Chinese literacy learning. Rosan had learned to write in Chinese not by practicing orthographic elements (such as strokes or radicals) and then assembling them together, but by writing down a character as a whole unit. The perceived linguistic specific in the Chinese orthography, namely the character being the smallest meaning unit, seemed to influence beginning literacy instruction in this particular language, such as teaching characters directly, instead of explaining to the children the various strokes and/or radicals and then combining these smaller elements to form a character. Such an instructional approach has become an integrated aspect of beginning literacy instruction in Chinese-speaking societies, and thus it is a specific part of that culture (cultural specific).

From her experience at the elementary school she attended daily, as well as home and our Chinese class, Rosan has acquired different linguistic and cultural specifics in English and Chinese, and thus was able to compare and contrast the nature of the orthography between these two languages. She had also

realized that a Chinese character might comprise more than one element even though she could not sound out each smaller unit to read the character.

As shown so far the children in my class apparently had different ideas regarding the nature of Chinese and English. Their belief and understanding of these two languages also underwent changes as they engaged in linguistic exchanges with their peers and with me. As I kept combing through the data I gathered, I began to wonder whether learning to read and write in Chinese, to my students, is more difficult than in English since they are unable to “sound out” the Chinese characters/words. Do different linguistic systems require different approaches to process information? The children with whom I worked had also contemplated these questions while they were involved in different literacy activities, such as class discussions, writing, and reading. And they had come up with their own answers regarding the differences as well as similarities in learning to be literate in these two languages. This is illustrated in the vignette where Lucian explained the different processes involved in learning to read in Chinese and English.

The children and I were discussing the differences and similarities between Chinese and English writing systems.

After a couple of children talked, Lucian began, “*Well, in English, you could just look at [the word] ‘shell’ and then like, just to try sounding out and figure it out what it said. In Chinese, it is hard, because when you look at it, then things look like something else, then you couldn’t figure out what it is.*”

“*What do you mean?*” I asked.

Lucian continued, “*Sometimes, you can look at a word. Sometimes, if a word looks like.*” He paused, as if thinking.

“*Could you give us an example?*” I probed.

Looking around, Lucian finally eyed the KWL chart, where the children had written several things they knew about “turtles,” the topic they had selected to study for this term. Lucian’s finger traced the character “turtle [龜]” as he pointed

out each element in that that character and said, “*For ‘turtle’, it is. You can see the head, the tail, shell, and the claws.*”

“*I see. So, you mean, sometimes you would know the meaning by looking at the characters,*” I said.

Lucian nodded and said, “*Yes.*”

“*Will you be able to do that in English?*” I asked.

“*No,*” Lucian shook his head. (Transcript, February 17, 2001)

Like Rosan, Lucian understood the phoneme-grapheme relationship in English and thus was capable of explaining to me that by sounding out the letters in a word, English speakers will be able to “*figure. . . out what it [a word] said.*” This “sounding out” strategy, like the example given by Rosan, was also part of the early literacy instruction he received in English. From Burke Reading Interview (Goodman, Watson, & Burke, 1987) I conducted with him, it was evident that Lucian’s understanding and belief concerning learning to be literate in English was strongly influenced by the phonics-based literacy instruction he experienced (Lucian, Personal communication, Summer 1998). In our interview, Lucian explained to me that he was taught to read in English by his mother at home, and she taught him how to sound out in order to read words. It is therefore not surprising to understand his perspective—“*it would be easier*” to learn Chinese were it an alphabetic language—in the earlier vignette in this chapter.

Because of the ideographic, rather than alphabetic nature of Chinese written language, Lucian found it impossible to apply the same phonetic strategies in English to his learning of Chinese writing, when it came to pronouncing a particular word/character [not pin-yin]. He, however, did understand the pictographic principle of some Chinese characters and thus was able to explain to me that the meaning of a Chinese character can sometimes be inferred from its

shape. Therefore, when I asked him to elaborate on his earlier statement, he demonstrated to me his understanding of this particular principle by using an immediately available environmental print, the character “turtle [龜]” on the KWL chart.

The statements made by Rosan and Lucian regarding the differences in Chinese and English writing systems and in the way each system works were largely a result of the interplay between their experience with and the instruction they received in both languages. Maya’s understanding of the orthographic nature in Chinese and English was also shaped in a similar way.

In a focus group interview I had with the children, I asked them “*What are the most difficult and easiest parts in your Chinese learning experience?*”

Maya described that Chinese written language was more difficult to learn than English. “*It is harder to write the [Chinese] word pretty. You have to write it in certain order, but it is like too complicated.*”

I asked, “*More complicated than English?*”

Without hesitation, Maya replied, “*Yep.*”

I questioned her, “*Why?*”

Maya replied, “*in English, even.*” She paused then hesitated. Finally she said, “*but in English, too. They are hard, too. Because, if it is like a really long word. But in Chinese, sometimes, um, I don’t know.*”

I tried to encourage her, “*say it. It’s OK.*”

Maya, however, was unsure, “*I don’t know.*”

I tried to encourage her again, “*You said it very well. Just say more.*”

Maya remained silent.

I tried to rephrase the sentence and confirmed with her, “*Do you mean that sometimes a Chinese word can be very difficult to write. And sometimes, English words can be difficult to write, too.*”

“*Um-hum,*” Maya nodded in agreement (Transcript, February 17, 2001)

While learning two languages concurrently, learners may develop different sets of beliefs due to the linguistic features of these languages, instructional approaches, and the socio-cultural contexts in which they reside. Some of these beliefs may be comparable, conflicting, or even bear no

relationship with each other. The learners themselves may not be aware of the relationship between these two sets of beliefs before they have opportunities to reflect on their own learning processes. The biliteracy learning process of Rosan and Lucian as demonstrated in the vignettes above is especially illustrative of this point. So was that in Maya's belief system.

Before coming to the US, Maya was enrolled in an early childhood program in Hong Kong for about two years, from age three to five. In that program, children were taught Chinese written language in a character-based approach. They first learned to write characters by either joining the dotted lines in their worksheets or copying their teacher, who demonstrated to children the "correct" ways of writing a particular character stroke by stroke. The children then were taught to combine different characters together to form words or phrases. Worksheets were used regularly for young children to practice handwriting and penmanship. These worksheets were then graded in terms of the correctness and neatness because traditional Chinese culture places high value on exactness and considers penmanship a reflection of the writer's personal traits (Lo, 2005).

When Maya was enrolled in my class (at age 7), two years after her arrival in the States, she was the only student who had a sound grasp of the stroke order in Chinese. The experience Maya had had in her previous Chinese language learning in Hong Kong had become an integral part of her belief system. And her concern for the accuracy and aesthetics of the Chinese characters was reflected in

her comment, “*It is harder to write the [Chinese] word pretty. You have to write it in certain order.*”

Maya’s belief about the degree of difficulty in the Chinese and English writing systems came under scrutiny as soon as she began to compare and contrast these two writing systems. As she reflected on her English learning experience, Maya identified counter evidences that held against her previous belief regarding the degree of difficulties in learning to write in Chinese, and she subsequently revised her own belief system and stated “*but the English [words], too. They are hard, too. Because if it is like a really long word.*” Her lingering thought, “*But in Chinese, sometimes, um, I don’t know*” also revealed that her thinking may have been undergoing yet another refinement.

While supporting her learning of particular linguistic specifics (e.g., the orthography), Maya’s English as well her Chinese teachers (her mother, her teachers in Hong Kong, and myself) each brought different instructional approaches in accordance with the cultural specifics to which we are socialized, such as the aesthetics in Chinese character writing and the correct spelling of an English word. Some specifics overlap, while others may differ. In the process of learning to be literate in Chinese and English simultaneously, Maya had also acquired universalities as well as the uniqueness of these cultural and linguistic specifics through linguistic exchanges with her peers as well as adults around her. For languages as different as Chinese and English, it seems unlikely for learners to identify shared linguistic features because they differ tremendously in many aspects, such as orthography, phonology, and syntax. In the previous example,

Maya reflected on her experience in Chinese and English learning and told me that both languages can be difficult to write, even though she had not perceived that to be so initially. Such a statement revealed her perception of the relationship between linguistic and cultural specifics. To Maya, the cultural specifics she had acquired through the Chinese literacy instruction in Hong Kong (i.e., that the aesthetics and stroke order in Chinese is important—“*It is harder to write the [Chinese] word pretty. You have to write it in certain order*”) had influenced how she saw herself as a writer. Likewise, an emphasis on the correct spelling in the English writing instruction she had learned in her school in the US also affected how she viewed English writing—“*English [words] . . . They are hard, too. Because if it is like a really long word, [it is difficult to write it correctly.]*”). Regardless of the vast difference in the orthography (linguistic specifics), Maya was able to identify the similarities existing in cultural specifics (i.e. instruction in both socio-cultural contexts has put an emphasis on accuracy). In the example below, she also shared with me yet another important discovery—even though English and Chinese have very different phonological systems, similar phonetic features, namely homophones, exist in both languages.

The children and I discussed types of strategies that they employed in order to learn Chinese. After sharing ideas orally with the group, each child took turns to write down what he/she had said on a big sheet of paper on the wall.

Maya raised her hand and said, “*Some words with the same pronunciation don’t have to be spelled the same.*”

“*Could you give me an example?*” I asked.

Maya thought for a few seconds and furnished me with her answer, “goose [鵝, e]” and “餓 [hungry, e].”

“*How about in English?*” I asked.

“*I know, I know,*” Rosan’s hand shot up and waved in the air.

Before Rosan said anything, Maya had her answer ready. “*I know, I know, ‘Eyes’ and ‘ice,’*” said Maya.

I asked Maya to write down the rules she generated, as well as the examples we came up with.

A few weeks later, Maya added “猩 [xing, gorilla]” and “星 [xing, star]” to the poster. (Transcript, November 29, 1997)

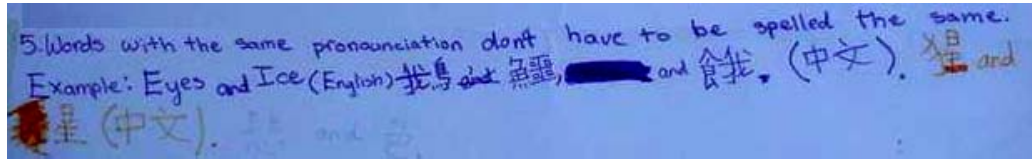


Figure 4-5 Similarities and differences between Chinese and English: homophones.

[Transcription: *Words with the same pronunciation don't have to be spelled the same. Example: eyes and ice (English). 鵝 [e, goose], 鱷 [e, crocodile], and hungry [餓, e] (Chinese).]*

Homophones are characteristic of Chinese language due to its limited number of syllables (Yan & Liu, 1997). Although two or more Chinese homophonic characters may share some elements in written forms, their meanings differ from each other. It is therefore virtually impossible to tell what a sound means without knowing the character or the context because an isolated sound can be represented by many different characters and each bears a different meaning. For example, the first character of my given name in Chinese is “玫” which sounds like “may” in Mandarin, meaning “rose.” Just by listening to the sound alone, no one can tell the word is because there are at least 15 possible characters in the dictionary (Wu, 1982) represented by the same sound. For example, its meaning ranges from “eyebrow [眉]” to “coal [煤],” from “berries [莓]” to “mildew [霉].”

Compared to Chinese, English has far fewer homophones. Maya, however, was able to identify several examples when I asked her whether she could find examples in English as well. The examples Maya provided above demonstrated that she was a reflective bilingual learner who did not rely solely on orthographic structure, but rather on her understanding of the features of each language, even though they may not be immediately evident at the surface level.

Smith (1986) proposes two ways of examining the structure of any written or oral language—surface structure and deep structure. Surface structure, according to Smith (1986) is the physical aspect of language which is observable or audible to readers/listeners, such as the written script, pitch, or tone; deep structure, on the other hand, is the meaning aspect of language, and it resides in the mind of the language user. Miller (1965) argues that “. . . differences can occur in surface structure that makes no difference to meaning, and that there can be differences in meaning that are not represented in surface structures” (as quote in Smith, 1986, p. 71). The vignette above supports Miller’s argument that similarities between the Chinese and English writing language do exist even though they have very different surface structure, such as in phonology and orthography. Without formal and academic linguistics training, Maya may not know the definition for the terms “homophones” and “同音字 [tong yin zi, homophones]”, or that both terms mean the same thing. She, however, had the concept that in Chinese and English, “*words with the same pronunciation don’t have to be spelled the same.*” And she readily furnished me with examples in both

languages, as well as was capable of adding examples when she came across new ones.

Each language has its own “linguistic border” (Burke, personal communication, July 16, 2001) where different linguistic specifics are marked. Linguistic borders overlap when languages of different surface structures share similar deep structures. While learning two or more languages, learners need to be aware of the linguistic border in each language so that they are able to conduct effective communication. Learning Chinese and English simultaneously, the children in my class constantly tried to figure out the invisible borders that bound each language, and attempted to locate the overlapping areas and the distinctive features characteristic of a particular linguistic system. The homophone examples in Chinese and English that Maya offered demonstrated her understanding of the overlapping AVF phonetic borders in these two languages. The two earlier vignettes in which children discussed the orthographic nature of Chinese and English language (ideographic vs. alphabetic) are yet examples of the individual boundary of orthography in both linguistic systems. The vignette below will show how children in my class defined syntactic borders in Chinese and English.

The children and I were discussing similarities and differences between Chinese and English during a focus group interview. I asked the children, “*What are the similarities and differences between Chinese and English?*”

Lucian talked about the differences. “*In Chinese, a lot of time, in our Chinese class, I had questions. In English, you say something like ‘What?’ ‘What is a turtle?’ ‘What type of’, and in Chinese, you have different ways of saying it.*”

I was not sure of what he meant, so I tried to verify my understanding of his statement with him, “*You mean the word order in Chinese and English is different, like we use ‘what’ in the beginning of a sentence [in English, but not in Chinese]?*”

Lucian replied, “*Yeah. Or even the words, you have to use words, like ‘de [的, a possessive particle] or something in ‘kind of.’*”

“And also ‘se [色] for color,” added Rosan.

“That’s right. We would say ‘red color’, ‘red’ [hong se, 紅色] in Chinese, but ‘red’ in English,” I said.

Rosan chimed in, *“That’s ‘red’.”* (Transcript, February 17, 2001)

Having access to two languages provided Lucian an opportunity to examine and identify the linguistic boundary of each language he was learning. It also allowed him to compare and contrast the specific linguistics features that distinguish one language from the other. Based on the knowledge he possessed in his more familiar language, English, Lucian examined the syntactic feature in Chinese (i.e., the word order in a question statement) and found it different from that in English. His questions about the word order and possessive particle [的] in Chinese clearly indicated he was aware of the differences in the syntactic structures of these two languages. His question also served as a linguistic catalyst and elicited a response from Rosan, who supplied another example to mark the distinctive boundary in Chinese and English language (*“And also ‘se [色]’ for color”*). The conversation between Lucian, Rosan, and I demonstrates how the children contributed to each other’s understanding of linguistic specifics through the oral text they created during an linguistic engagement with a specific cultural context, namely the classroom to which they belonged.

Summary: Children theorizing, comparing, and contrasting the similarities and differences between languages. I would like to sum up what I have discussed thus far with a model, which is an extension of the one I used in Chapter Three.

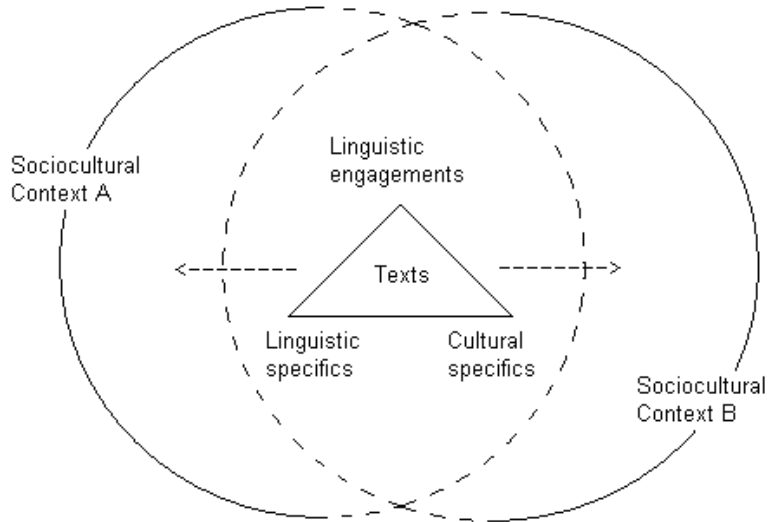


Figure 4-6. The relationship bilingual and biliteracy learning in specific social and cultural context.

The two circles in this Venn diagram represent the multiple sociocultural contexts—Chinese-oriented and English-dominated—in which my research participants resided. Each context has its linguistic and cultural specifics of which some are idiosyncratic and some are shared. The overlapping area represents the specifics shared by these two contexts, whereas those outside of the dotted lines indicate unique sets of cultural and linguistic specifics. The number of the specifics shared by and existing in individual contexts, however, is not fixed. It varies from child to child as the process of learning to be biliterate takes place at different paces due to individual experience, exposure, and other factors. The nature of these specifics also undergoes changes as the children begin to compare and contrast differences and similarities between linguistic systems, as well as when they formulate, refine, and confirm their theories of language learning in general and also about each particular language. The two arrows along the sides of the triangle are indicative of such changes. As described in Chapter Three, the

triangle in this model represents the relationship between linguistic engagements, linguistics specifics, and cultural specifics, which are mediated by texts created or used by the language learners in a specific context.

In examining all vignettes presented so far, we can see how various written and oral texts supported the children's linguistic engagements, in which these young learners demonstrated their understanding of linguistic specifics; these linguistic specifics reflected the multiple cultural values to which these young learners were socialized.

This triangle does not always remain in the same place. It is in the overlap area bounded by the dotted line as the children identify shared specifics existing in both languages and cultures via linguistic engagement mediated by texts (e.g., striving for accuracy for Chinese character writing and English spelling based on Maya's schooling experience, both in Hong Kong and the States). This triangle may also move to one side of the Venn diagram as the children "put themselves in the shoes" of native speakers of a particular language and begin to think in accordance with practice in the corresponding sociocultural contexts (e.g., pictographs in Chinese literacy instruction at the Chinese school and "sounding out" strategy in learning to be literate in English at their elementary school).

A two-way relationship in becoming bilingual and biliterate: The role of first language in second language learning

In the previous section, I used a model to illustrate how my students develop their theories of language and literacy learning through active engagement in linguistic exchanges, especially when they discussed with their

peers the similarities and differences between Chinese and English language. Such interactions not only challenged their uncontested, tacit belief of linguistic specifics, but also allowed them to explicitly affirm, refine, and revise such knowledge, thus expanding their understanding of what it meant to be literate. In a sense, these learners were formulating and developing their personal theories about language learning in general, as well as the specifics that existed in each of them via linguistic engagements with others in the class. In the next section, I would like to focus on how these children actively applied the linguistic knowledge they possessed in one language to support their learning of the other.

Research literature on second language acquisition has demonstrated that a firm foundation in learners' mother tongue enhances their second language acquisition (Cummins, 1976; 1981; Toukoma & Skutnabb-Kangas, 1977). From the data I gathered on my students' bilingual and biliteracy learning, I would like to add another dimension to the interplay between learners' first and second language, that is to point out that a bi-directional, instead of a one-way relationship exists between language learner's mother tongue and the second language (Cummins, 2004b).

Kenner (2004) also argues that bilingual and bicultural children experience their worlds as simultaneous, rather than separate linguistic and cultural entities:

Bilingual children tend to compare their language systems, thinking about how they are similar to each other and how they differ. As a result, young bilinguals often have a heightened awareness of how language works. This

metalinguistic awareness has been found in a number of research studies about bilingual children Some researchers . . . have focused on biliteracy and found that literacy learning skills can be transferred between different writing systems. (p. 35)

In the next section, I will show my readers such a process by providing samples of children's interactions with each other and me in our classroom, as well as the artifacts they created during the course of this research project. Before sharing examples of my students' bilingual and biliteracy learning, I would like to refresh readers' memory of the first and second language of my four research participants.

All girls—Aileen, Rosan, and Maya—in this study were from families where a Chinese dialect (Mandarin or Cantonese) was used, and they learned English in early childhood programs as in the case of Aileen and Rosan or elementary school as in the case of Maya in the United States. By the time they entered my class, these three children had developed strong literacy skills in their second language, English, due to the exposure and instruction they received at schools they attended daily, as well as within the communities they lived.

Lucian's situation was different, however. Living in a biracial (Caucasian and Chinese) family, Lucian's parents elected to use English as the home language, and Lucian had limited opportunities to use or learn Chinese, except in our class and when he visited his paternal grandmother, who had very limited English proficiency. English was, therefore, Lucian's first language/mother tongue. Lucian learned a few Chinese (Cantonese) phrases through his father's

coaching as well as via interactions with his grandmother, and later on he learned Mandarin in our weekly Chinese classes. In a sense, Chinese is his second as well as secondary language due to the limited experience, exposure, and utility he had had in that language. Although this language is his father's mother tongue, Lucian learned and used it like most sequential second language learners, that is, through formal instruction and acquired it only after he had a firm foundation in his first language.

As described earlier, our class was a multilingual one. The children used Chinese (Mandarin and Cantonese) and English, as well as code-switched between these two in class, for they had different proficiencies and experiences with both languages. I also used Chinese (Mandarin) and English interchangeably in order to help children understand concepts, clarify their questions, and facilitate interactions. The freedom to use these two languages not only provided opportunities for my students to reflect on the similarities and differences between these two linguistics systems, but also allowed them to make use of the knowledge they possessed in one language to make sense of the other.

In such a learning process, translating and transferring a concept acquired in one language to the other one was very evident among my students. The following is an example from Lucian who explained a mathematics concept to Rosan by employing the knowledge he had learned in his first language, English, to his less familiar language, Chinese.

The children and I were playing a card game which I invented, called "Big or Small." There are 100 cards in a deck, each with a different number from one to one hundred written in Chinese. After the cards have been shuffled, the card dealer will distribute five cards to each player and then leave the deck in the

center, face down. To begin, the card dealer selects either one biggest or smallest number from the 5 cards she/he has and puts the selected card face down. If the smallest card is chosen, the dealer will say “small.” The other players will then take out their smallest cards and have their respective cards face down as well. Each player then flips her/his card to reveal the numbers on the cards and also takes a new card from the deck. The dealer needs to read the numbers in Chinese, and the person who has the card with the smallest number wins the turn and takes all cards from other players. The same rules apply to the dealer who selects the biggest card for the game, except he/she would say “big” and the person with the biggest-number card wins the turn. The second person next to the card dealer begins the next turn.

It was Rosan’s turn. After selecting her card and having it face down, she said, “big”.

After all players had their cards face down and took a card from the deck, the children flipped over their respective cards. Rosan first tried to read Lucian’s card, which had the number “七十九 [seventy nine]” on it. She stared at the card for a few seconds and looked at me as if seeking for help.

“Lucian, *could you explain this to Rosan,*” I asked Lucian to help Rosan since I knew that he had a firm grasp of the numbers in Chinese.

Lucian began. He first pointed at the “七 [seven]” and said, “*this number is ‘seven’ and it looks like a ‘T’.*” He then covered the next character “十 [ten]” and said, “*and then you pretend this is not there.*” This action left only two numbers/characters “七 [seven]” and “九 [nine]” on the card. Lucian went on to explain, “*that’s ‘seven’ and that’s ‘nine’. What would you say ‘seven’ and ‘nine’? Seventy nine, right?*”

Rosan looked at the card, then Lucian, and she nodded.

“*So, how do you say ‘seventy nine’ in Chinese?*” I asked.

My question went unanswered.

Lucian continued his explanation. Pointing at the first character “七 [seven],” then the second one, “十 [ten],” he went on, “*or a hard way is that. Seven times ten is seventy.*” He then pointed at the last character, “九 [nine],” and continued, “*And then seventy plus nine equals seventy nine.*” (August 1, 1998)

Through his step-by-step instruction, Lucian demonstrated his cognitive flexibility in language and mathematics reasoning as well as his ability to transfer a concept he had acquired in his first language, English, to a less familiar language, Chinese. A variety of cognitive functions—both linguistic and non-linguistic—are in operation while Lucian explained to Rosan how to figure out what was on his card. He began to help Rosan remember a Chinese

number/character “七 [seven]” by relating it to an English letter, “T” (“*this number is ‘seven’ and it looks like a ‘T’.*”) because both of these two linguistic signs—“七” [sounds like “chee” as in “cheese”] and lower case letter “t”—looked and sounded alike. He then provided two methods to help Rosan read the number “79” presented in Chinese characters, “七十九”. In doing so, he tried “the easy way” first by covering up the middle character, “ten [十]” on the card so that only two characters “seven [七]” and “nine [九]” could be seen. The order of these two characters presented on the card corresponded to that in numerals, 79. With this, Lucian explained to Rosan “*that’s ‘seven’ and that’s ‘nine’.* *What would you say ‘seven’ and ‘nine’? Seventy nine, right?*” Next, he explained to Rosan via “the hard way” by employing the multiplication and addition principles in mathematics he already had a solid foundation in his first language, English. This knowledge, coupled with his understanding of how numbers represented in Chinese characters, enabled Lucian to articulate his thinking process “*seven times ten is seventy. And then seventy plus nine equals seventy nine*” to support Rosan’s Chinese literacy learning.

Lee (1997) in examining Whorf’s theory argues that language is a cognitive resource; while concepts in content areas are often acquired through language, the ability and skills learners have in a particular language affect how and what concepts are learned. Thus the more experience a learner has with language, the easier and faster he/she will be able to process content knowledge.

In learning more than one language, it appears to be natural that learners transfer and translate their well developed concepts in their familiar language to

the less familiar one. The example above demonstrated how Lucian employed his mathematics knowledge in English to help Rosan understand a concept in Chinese. The example below also illustrates another type of knowledge, science, which is transferable and translatable from learners' first language to a newer one.

We were about to read a picture book, entitled In the Forest (Ets, 1944, Chinese copyright, 1996). Before starting, the children asked to see the illustrations in the book. They took turns flipping pages and commented on what interested them.

As they came to a page where there was an illustration of two lions taking a nap under a tree, Lucian pointed at the lion and said excitedly, "Big cats, big cats" in Chinese.

I corrected him, "A big lion."

"*A big cat,*" insisted Lucian in English this time. (April 4, 1998)

Canale (1981) in his communicative competence framework proposes that, to compensate for the limited vocabulary and to enhance communicative effectiveness, second language learners develop various strategies, either linguistic or non-linguistic, in order to achieve their social and personal goals. The effectiveness of these strategies depends largely on the learners' experience and knowledge they possess in their first language. And this knowledge can be linguistics related, such as sentence structure, or content related, such as a particular subject matter. In the example presented above, Lucian pulled all knowledge he knew in biology (the lion belongs to the feline family, and it is a type of big cat) from his first language, English, and then used all of the words he had acquired in Chinese, a less familiar language (the meaning and sound for "big" and "cat") together to participate in and contribute to the classroom discussion in Chinese. The example also demonstrates that learning language, learning about language, and learning through language are integrated parts of

learning how to mean (Halliday, 1975). While interacting with other more competent language users and/or exposure to the available prints in his environment, Lucian acquired the sound and the meaning of a particular term (i.e., “big” and “cat” in both Chinese and English, and “lion” in English); he also learned the relationship between “lion” and “big cat” either through oral or written language in the English-speaking environment where he gained most his scientific knowledge. Being familiar with the classroom context, Lucian knew that he could safely state whatever linguistic and non-linguistic knowledge he possessed (i.e., “lions” equals “big cats”) without worrying about the risk of communication failure.

The two examples from Lucian illustrate how he had made use of content-specific first language knowledge (i.e., the principle of addition and multiplication in mathematics and species classification in science) to support his learning of a less familiar language, Chinese. It is also worthy to note that the illustrated texts in this vignette served as a linguistic catalyst, which provided Lucian an opportunity to articulate his knowledge, both in science and languages, to contribute to the classroom discussion. He sorted out the linguistic specific terms in each language (the sounds for “big cats” in Chinese and English) and then used the species classification information in the English-speaking world (cultural specifics) to express his ideas. Such a voluntary, verbal response can be an empowering experience for beginning second language learners, like Lucian, for they do not need to rely on others’ demonstration or wait for a translation to make

sense of a new situation. Instead, they are able to participate as well as contribute to interactions, just like speakers in dominant language groups.

Lucian's example shows how content knowledge in one's first language can facilitate the learning of a less familiar language. In the example below, Aileen also demonstrated how she applied her knowledge about a literary genre in Chinese (her first language) to her writing of English (her second language). She made use of one of her favorite Chinese folktales to create her own English text.

Toward the end of Aileen's first grade, Aileen's teacher, Mr. Groff, and her mother had a parent and teacher conference. Mr. Groff told Aileen's mother that her daughter needed extra help in English reading and writing at home. He suggested that Aileen's mother use English exclusively at home with her children. Aileen's mother was concerned because she would like Aileen to maintain her linguistic and cultural heritage, but she also wanted her daughter to be academically competent. She discussed her concern with me, and I agreed to tutor Aileen 45 minutes each week to help her develop English literacy skills. Aileen came to my house every Saturday 45 minutes before our Chinese class. Each week, I checked out books from the local public library, and Aileen selected books to read with me or by herself. I also asked her to write stories and read them to me. Aileen usually chose books with easy and short words, mostly intended for kindergarteners and preschoolers, such as *One, One Is the Sun* (Melser & Jones, 1990). When I asked her to write, she always told me, "I can't *spell*. I don't know what to write." I, however, insisted that she "write whatever you can, and don't worry about the *spelling*."

One day I asked Aileen to write a story of her own choice. Raising her voice, Aileen protested, "but I can't write."

"What do you mean you can't write?" I asked.

"I can't *spell*," replied Aileen, pouting.

I explained to her, "Well, I am not asking you to write in your *perfect spelling*. I just want you to *try your best and to write*. Why don't you give it a try?"

Reluctantly and looking at me suspiciously, Aileen picked up a pencil.

"What do you want me to write?" she asked.

"Anything you like," I said.

"I don't know," she was still resisting the idea.

I finally suggested, "Would you like to write some stories that you heard and love?"

Slowly, Aileen began. The result of the story was very similar to the storyline of her favorite children's book in Chinese, Ahlan and the Rainbow

Thread (Chen & Lu, 1983). After the writing, I asked her to read the story to me. (March 15, 1997).

In the next few weeks, Aileen added illustrations to her story.

To help readers compare and contrast the Chinese text with Aileen's English version, I have translated the original story from Chinese to English.

Once there was a little girl named Ahlan. She liked flowers and butterflies. She liked sky and river. She liked many beautiful things.

One day Ahlan went outside and found a string of beautiful rainbow thread. There were red, yellow, purple, and many other colors that she had never seen before in the thread.

Ahlan loved the rainbow thread so much that she took it home. Her mother saw it and asked, "Whose rainbow is this?" "This, this. . ." Ahlan stuttered and was unable to say anything. And her mother knew that the rainbow thread belonged to someone else and demanded that Ahlan return it to its original owner.

"Who should I return this to?" Holding the beautiful rainbow thread, Ahlan walked out and began to think. "I can use this rainbow thread to embroider pretty flowers. I can also use it to weave a lot of butterflies. Finally Ahlan walked up to a mountain.

High up in the mountain, no one was there. Ahlan wished she could hide the rainbow thread. No sooner had she thought of it, Grandfather Sun appeared. "Sweet child, where do you come from?"

Ahlan was startled. Hiding the rainbow thread behind her back, she randomly pointed to a direction. "I came from there."

Grandfather Sun knew that Ahlan was lying. He asked, "Is that a rainbow thread you are holding? Who does it belong to?" Ahlan was too scared to say anything. She turned and ran away.

Grandfather Sun was very angry and he yelled, "Ahlan, put the rainbow thread back in the sky, so the owner can get it back." Holding the rainbow thread tight, Ahlan ran faster.

Grandfather Sun was so furious that he grabbed one end of the rainbow thread from Ahlan. Red, yellow, purples, and the thread became a beautiful bow of rainbow.

Seeing the rainbow in the sky, everyone was delighted. Many people thought, "I wish I have a rainbow just like that." However, no one came to claim it.

Day and night, Ahlan's hands became tired. She regretted her act and cried, "Whose rainbow thread is this? Come and get it back." However, the beautiful rainbow thread remains in the sky. Poor Ahlan, she is still waiting for the owner to claim the rainbow thread back.



Figure 4-7 and 4-8. *Aileen's story and illustration, page 1 and 2. One day a girl went outside to play. The girl loved crabs and fishes.*



Figure 4-9 and 4-10. *Aileen's story and illustration, page 3 and 4. Then the girl found a rainbow. The girl decided to take the rainbow home.*



Figure 4-11 and 4-12. *Aileen's story and illustration, page 5 and 6. The girl walked home. The girl passed flowers. "Whose rainbow [is this]?"*

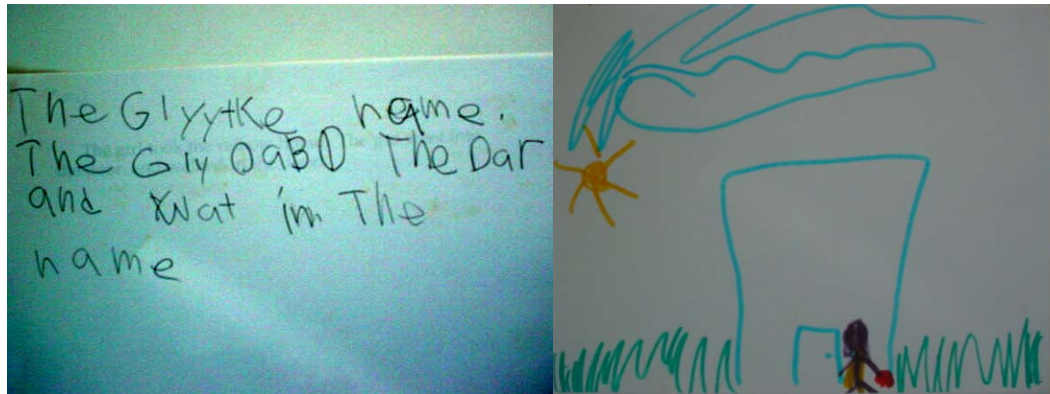


Figure 4-13 and 4-14. Aileen’s story and illustration, page 7 and 8. *The girl walked home. The girl opened the door and walked in[to] the home.*

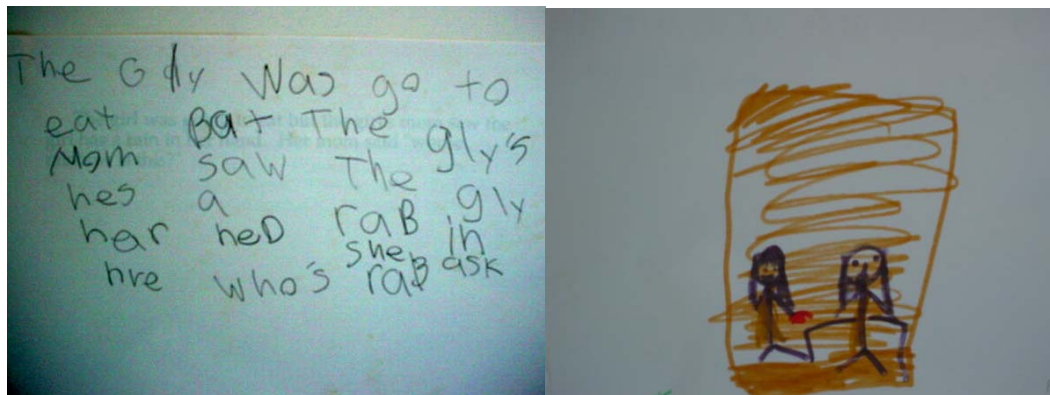


Figure 4-15 and 4-16. Aileen’s story and illustration, page 9 and 10. *The girl was going to eat, but the girl’s mom saw the girl has a rainbow in her hand. She asked her, “Whose rainbow [is this]?”*



Figure 4-17 and 4-18. Aileen’s story and illustration, page 11 and 12. *She went outside. She was thinking, “Whose rainbow it was [could this be]?”*

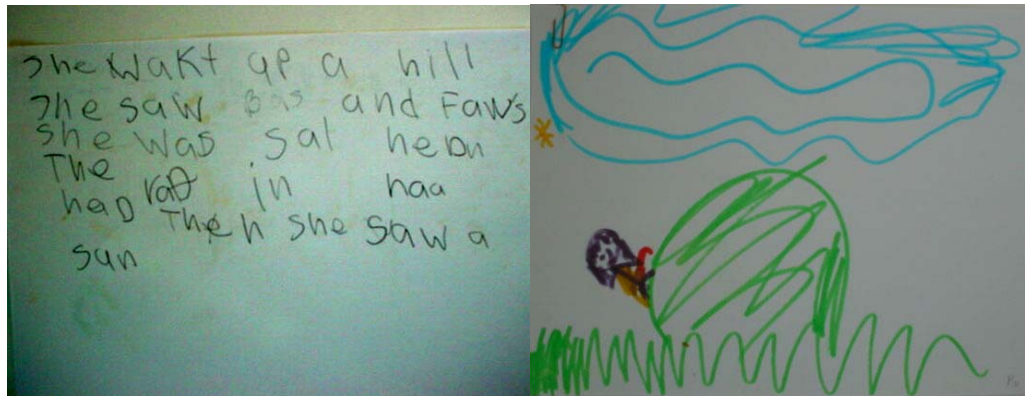


Figure 4-19 and 4-20. Aileen’s story and illustration, page 13 and 14. *She walked up a hill. She saw butterflies and flowers. She was still holding the rainbow in her hand. Then she saw a sun.*

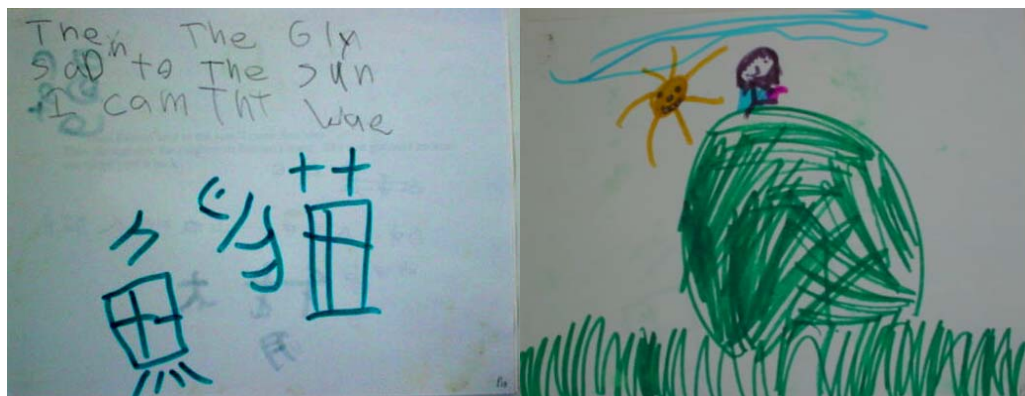


Figure 4-21 and 4-22. Aileen’s story and illustration, page 15 and 16. *Then the girl said to the sun, “I came that way.”*



Figure 4-23 and 4-24. Aileen’s story and illustration, page 17 and 18. *Then the sun saw the rainbow. The girl ran. The sun grabbed the rainbow.*

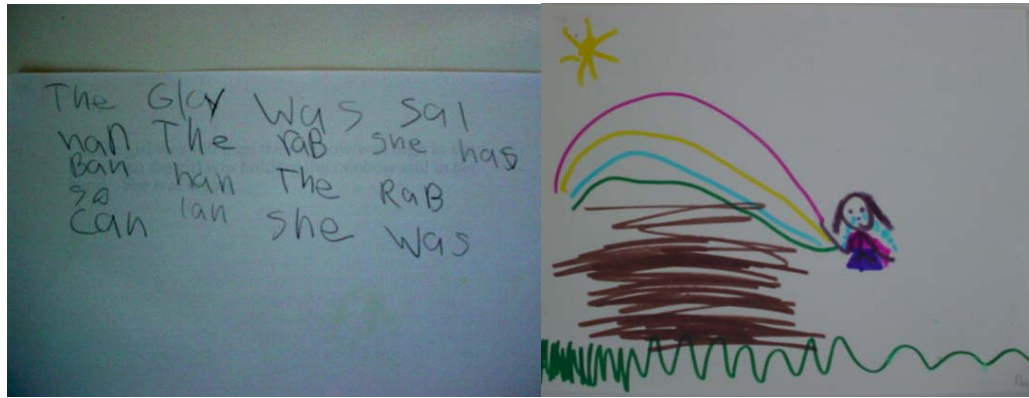


Figure 4-25 and 4-26. Aileen's story and illustration, page 19 and 20. The girl was still holding the rainbow. She has been hanging [on to] the rainbow [for] so long. She was crying.

Comparing this particular writing sample with those that Aileen was asked to produce at school, such as the weekly spelling lists and the commercially-produced autobiography writing activity (figure 27), I was not surprised at her initial reaction to my invitation. When the adult-directed and semi-prefabricated writing activities became typical school work, little time was reserved for her to explore and to understand the various genres, as well as meaning and purposes of writing. Aileen, thus, was uncomfortable and even apprehensive about her ability as a writer as well as the notion of free writing, an activity she believed that only those who knew how to spell conventionally were able to and should do.

Grudgingly, she decided to make use of the plot of her favorite story, which she had heard many times in her first language, Chinese, as the springboard for her English writing. The plot of *Ahlan and the Rainbow Thread* (Chen & Lu, 1983) had helped scaffold Aileen's efforts in creating an original writing herself. Not only did her writing clearly show some characteristics of storytelling genre

(e.g., the use of past tense, sequence of the actions), she also integrated elements of illustrations she saw in the original book and wove these into her story writing.

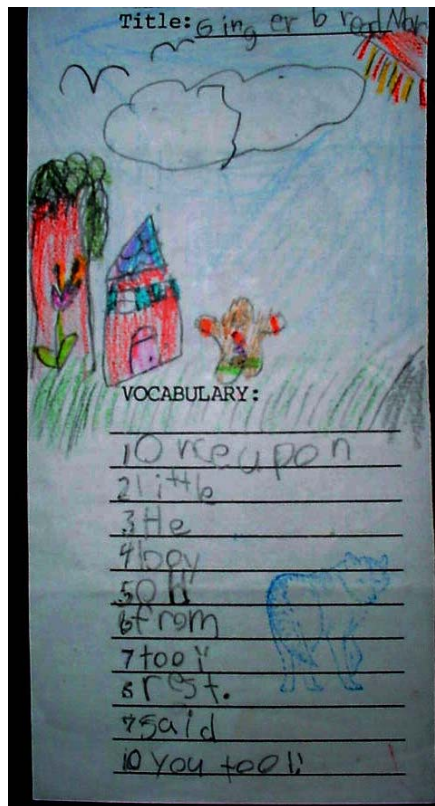


Figure 4-27. A sample of spelling list used in Aileen's class

When Aileen's first grade teacher proposed an English-only approach to support her English/second language literacy learning at home, he did not realize that he was making a potential threat not only to Aileen's mother tongue but also her second language literacy development. It is evident from Aileen's story above, that she was able to write in English, albeit her writing may not be as "good" as her teacher expected. Aileen's application of Chinese story structure, which shared many similarities with those in English, to her second language story writing has showed that a well developed knowledge can be readily transferred between two different languages, even though their surface structures may be

dissimilar. What Aileen needed was not yet another English-only environment at home, but more opportunities to be engaged in meaningful and purposeful literacy activities in both languages at home and school.

Heath (1986) categorizes six main types of speech usage in adult-child interactions at mainstream homes and classrooms in the United States. She called these speech usages genres.²³ Heath goes on to explain that each socio-cultural group recognizes and uses only certain kinds of the total range of genres that human beings are capable of producing. When children learn to communicate with other community members fluently and competently in their familiar language, they will acquire the full range of genres in that language.

Consequently, they can apply these genres in their primary language across a variety of contexts. Heath also believes that in order to be successful academically, children need to be able to apply the specific genres valued in school. When language minority children master the full range of genres in their primary language, these genres are very likely to include some or all of those valued in school. As these children enter school later, they need only to learn the sounds, vocabulary, and syntactical system of English, but they do not need to relearn all sets of use for English, such as the basic interaction skills at the same

²³ These genres include: (1) Label requests: Adults ask children to tell the name and attributes of objects. (2) Meaning requests: Adults infer what children mean or ask for explanation of what is intended. (3) Recounts: Adults request children to retell experiences or informations known to both tellers and listeners. The adults correct the telling experiences or information know to both tellers and listeners. The adults correct the telling as it begins to deviate from events. (4) Accounts: Children initiate a conversation providing new information or new interpretations of information. Adults judge accounts by both truth value and organization of the telling. (5) Eventcasts: This genre takes place when adults and children are engaged in an activity. Adults model eventcasts and ask children to predict future actions or to verbalize plans in which objects and people will be involved. (6) Stories: Adults tell stories about animate beings who move through a series of events with goal-directed behaviors.

time (Escobedo, 1983). Thus these children not only have the basic communication skills necessary for social exchange in the school, but they can also apply those genres valued by the school to display their cognitive and academic skills.

Although commonalities among different cultural and linguistic practices can sometimes be readily transferable and translatable from one context to another, differences do exist. Thus, when learners cross linguistic and cultural borders, they inadvertently make miscues. Miscues are often rooted in the learners' belief and knowledge on particular cultural and linguistic specifics into which they are socialized. Knowing their students' linguistic and cultural backgrounds, therefore, helps teachers understand the nature of miscues in these learners' learning process. From a holistic and psychosociolinguistic framework, miscues can be a powerful tool for assessing a particular student's language and literacy development. I will in the following sections examine some of the children's miscues which illustrate these points.

As discussed earlier, traditional Chinese culture is a collective and hierarchical one, which often values groups over individuals, while American culture tends to emphasize individualism. As a result, Chinese people usually place larger units before smaller ones in social practice, whether carried out in written and/or oral language. For example, a mailing address is always written in the order of province/state, city, district, road/street, and number, unless it is written in a foreign language and has to follow an established convention. In Chapter Three, I explained the miscues the children made in addressing someone

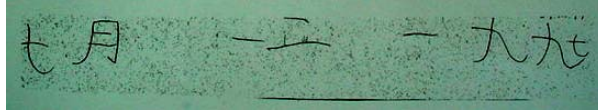
by his/her full name due to the difference in cultural practices in Chinese and English/American (surname precedes given name in Chinese vs. given name comes before surname in American English). Like the rule that specifies the address and the “surname-and-given name” order, so is the date. To record a specific date, Chinese always put the “big unit”—the year—in front of the month, and end with the day, whereas English speakers normally begin with either month or day and put the year at the very end. Such a cultural specific between two different linguistic systems can be confusing for a native English speaker learning Chinese as a second language or vice versa. Below, I will use Lucian’s learning to record dates as an example to illustrate my point.

As part of our class activity, I encouraged my students to write down the date on their sign-in sheet for two reasons: first, they would learn how to do it conventionally, and second, I could keep track of their literacy development. Knowing the date recording convention in English gave Lucian a headstart when he began to learn to do so in Chinese. As Lucian continued to develop his biliteracy skills via engagement with texts and people around him, his approaches to date recording in Chinese also underwent several changes. To help readers better visualize such a process and to compare Lucian’s writing with the Chinese convention, I have organized Lucian’s writing samples over a 14-month period in the following order: each entry is first represented in mm/dd/yyyy format, followed by Lucian’s actual writing, the conventional Chinese writing²⁴, the order

²⁴ In Chinese, the character “年” stands for “year” which is added after the numerals. And the characters used for representing a year correspond with the numerals. For example, the year 1997 in English is spelled out as “nineteen ninety seven”. When written in Chinese, it is “一九九七,” comprised of “one [一]” “nine [九]” “nine [九]”, and “seven [七]

in which Lucian recorded a date, and ends with the contextual information in which the writing took place.

Session 1: 07/12/1997 (Actual date)



一九九七年 七月 十二日 (Chinese convention)

July 12 1997 (Order in which Lucian recorded the date)

Figure 4-28. Lucian's date recording in Chinese for July 12 1997

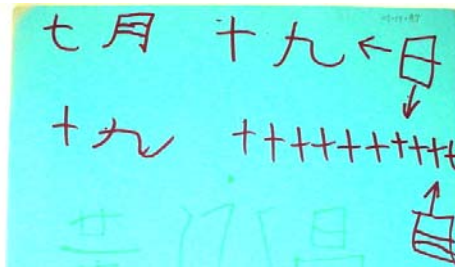
In our classroom, there was a 12-month poster on the wall. It listed the name of each month in both Chinese and English. When I asked the children to write down the date on July 12, 1997, Lucian first looked at the chart to locate “July [七月, seventh month]” and then copied it down onto his paper. He then wrote down “一二” for “the 12th”, followed by the year. He did not put down the character for “day [日]” after “12th [一二]”, nor the character for “year [年]”, after “一九九七 [1997]”.

The sequence in which Lucian recorded the date in Chinese—month, day, year—is in accordance with the American/English practice he knew and used. Lucian had already known how to write numbers from one to ten in Chinese through his father's tutoring at home. He, however, hadn't learned Chinese numbers beyond ten yet. So he invented his own way of writing “twelve [‘一二’, which should have been ‘十二’]” by using the mathematics concept he had in

], instead of “十九九十七 [nineteen ninety seven].” In addition, Chinese people name each month by using numbers plus the character “月 [month].” For instance, July [七月] is the “seventh month” of the year and is written as “七 [seven]” and “月 [month]” in Chinese. The character “日 [day]” is also added after the numerals.

English: putting the character for “one [一]” and then “two [二]” to represent “12.” And for the year, he wrote it conventionally, probably because he applied the same principle so that the four numerals in “1997” were conventionally represented in four Chinese characters—“one [一]”, “nine [九]”, “nine [九]”, and “seven [七]”.

Session 2: 07/19/1997 (Actual date)



一九九七年 七月 十九日 (Chinese convention)

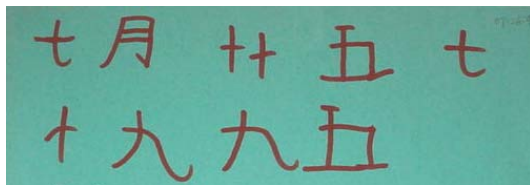
July 19 1997 (Order in which Lucian recorded the date)

Figure 4-29. Lucian’s date recording in Chinese for July 19, 1997

In the following week, Lucian told me, as soon as he stepped in the classroom, that his father had taught him Chinese numbers from eleven to twenty and also “day [日]”. He quickly wrote down the month “July” and the date “19th” on the paper since he had already learned them from confirmed sources, namely the chart and his father’s tutoring. The recording of year was different. First, he made use of the knowledge he had acquired at home and wrote down “nineteen [十九]” to represent the first two digits of “1997” in Chinese. The last two digits of the year “ninety seven [97]” posed a challenge to him since neither his father nor I had taught him how to write this. Using his mathematics knowledge, Lucian quickly wrote down nine “tens [十]” in Chinese to represent “ninety” for “nine ‘tens [十]’ would make ‘ninety’”. Finally, he added a “seven [七]” in the end and

also the character for “year” to complete his recording of the date. After he had finished writing, Lucian counted the number of “tens [十]” he had written and laughed, “*five, six, seven, eight, nine. Nineteen ninety seven.*” Another interesting feature in this particular writing sample is his inventive writing. He had written “目” to represent the character “year” in Chinese, which should have been “年” conventionally. His writing of this particular character was very likely based on the pattern he saw in the characters “day [日]” and “month [月].” Both characters shared a very similar orthographic structure: horizontal lines were arranged in between two parallel vertical/near-vertical lines. Put these three characters—日, 月, and 目—side by side, readers can also find a progression in the number of horizontal lines between the characters “day”, “month”, and “year”. The third unusual feature in this piece of writing is Lucian’s use of “→ [arrows]” to show the text directionality as well as the relationship between characters he wrote. The horizontal arrow (pointing to left) near the character “日 [day]” apparently indicates that it should belong to part of the time unit, the “19th day.” The vertical arrow which points downward denotes the direction of the text that Lucian himself or readers need to follow. Finally, the last arrow (vertical, pointing upward) near the character “目 [Lucian’s invented writing for “year”]” also shows that it is an integrated part of the time unit, “year 1997”.

Session 3: 07/25/1997 (Actual date)



一九九七年 七月 二十五日(Chinese convention)

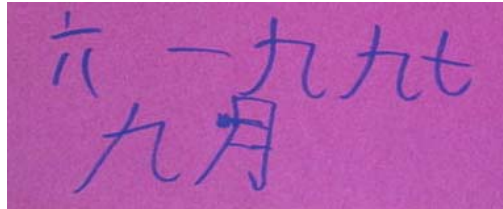
July 25 1995 (Order in which Lucian recorded the date)

Figure 4-30. Lucian's date recording in Chinese for July 25, 1995

In the third week, the sequence in which Lucian recorded dates was still the same as the previous two weeks, i.e., in the order of month, day, and year. Lucian wrote down “July” conventionally as he always did. He, however, invented his own way to record day and year for this particular date because he had just begun to learn to write numbers bigger than “twenty” in Chinese. Therefore, he, again, made use of his mathematics knowledge (i.e., “ten” plus “ten” equals “twenty” and put two “tens [十]” side by side to represent “20” in Chinese and then added a “five [五]”) in order to write “25” in Chinese. His writing of the year can be seen as a combination of experience learned at home and in our class. From his father, Lucian had learned to write numbers lower than 20. In the class, Lucian and Emma had been working on writing Chinese numbers for several weeks. They had worked out a one-on-one symbol corresponding system to record numbers bigger than 20 in Chinese, namely to represent each numeral in Chinese characters, instead of using the convention. For example, the number “97” would be written as “九七” by Lucian and Emma, instead of “九十七”, the conventional

way of expression in Chinese. In this sample, he also skipped the character for “day [日]” as well as “year [年]”.

Session 4: September 6, 1997 (Actual date)



一九九七年 九月 六日(Chinese convention)

6 1997 September (Order in which Lucian recorded the date)

Figure 4-31. Lucian’s date recording in Chinese for September 6, 1997

We did not have class for about one and a half months because the children and their families were out of town during the summer break. When our class resumed, Lucian recorded down his date in Chinese in the order of day (六 [6]), year (一九九七 [1997]), and month (九月 [September]). This was a curious change, and I was unable to identify any pattern in this writing sample. It seems that he was exploring different ways of recording dates in Chinese.

Session 5: 1/10/1998 (Lucian wrote down his birthday, 9/10/1990)



一九九〇年 九月 十日(Chinese convention)

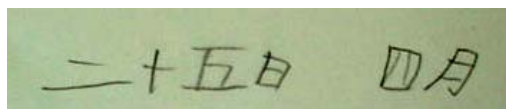
10 September 1990 (Order in which Lucian recorded the date)

Figure 4-32. Lucian’s date recording in Chinese for September 10, 1997

During the Christmas break in 1997, I gave the children questionnaires and asked them to fill out their personal information, such as their birthdays, ages, and the Chinese words/characters they could read or write. I also asked them to hand the questionnaire back to me the first day of class. I wrote the questions in English,

and the children needed to answer them in Chinese to their best knowledge. Using the questionnaire, I intended to understand what my students were able to do without the support of the environmental print and/or a supporting adult. Therefore, all children needed to answer the questions in Chinese by themselves. The sequence in which Lucian recorded the date underwent yet another change. In this writing sample, he put down the date of his birth in the order of day, month, and year, exactly the reverse order of the Chinese convention. After a five-month period of initial exploration and experimentation with Chinese numbers, Lucian had learned how to write Chinese numbers from “one” to “ninety nine” conventionally. Using the knowledge he possessed, Lucian had put down “十九九〇” to represent the year “1990” which was spelled as “nineteen ninety” in English. He, however, had not yet learned that when it comes to record year, Chinese people used the numeral-and-character correspondence rule, the same as that he and Emily had developed. Therefore, the year “1990” should be represented in four characters “一 [one]”, “九 [nine]”, “九 [nine]”, and “〇 [zero]”, instead of “十九 [19]” and “九〇 [90]”, as it was spelled in English. In addition to the missing characters which represented “day [日]” and “year [年]”, Lucian did not write down the character for “month [月]”, which he normally did when the environmental print was presented.

Session 6: 04/25/1998 (Actual date)

A photograph of a piece of green paper with handwritten Chinese characters in black ink. The characters are '二十五日' followed by a space and '四月'. The characters are written in a simple, slightly slanted style.

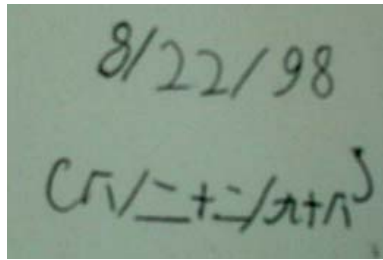
一九九八年 四月 二十五日(Chinese convention)

25 April (Order in which Lucian recorded the date)

Figure 4-33. Lucian's date recording in Chinese for April 25, 1998

In this particular writing sample, Lucian wrote down the day and month of the date but not the year. And the characters for “day [日]” and “month [月]” were both present. His date recording was also somewhat consistent with the one above, in which the small unit (day) precedes the big one (month).

Session 7: 08/22/1998



一九九八年 八月 二十九日 (Chinese convention)

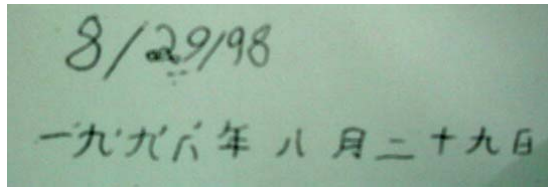
August 22, 1998 (Order in which Lucian recorded the date)

Figure 4-34. Lucian's date recording for August 22, 1998

Lucian recorded the date in numerals as well as in Chinese characters. He put the numerals on the top of the Chinese characters, and had probably planned to use them as a guide while he wrote the date down in Chinese. These two entries shared a couple of similarities. First, they were both done in the month-day-year sequence. Second, certain characters were missing, i.e., for “year”, “month”, and “day” in the Chinese entry, for Lucian appeared to adopt the English convention when recording this particular date in Chinese. A new development in this sample was his omission of the first two digits/characters in recording year, both in numeral and Chinese. He probably had acquired such a convention from the environmental print or via interacting with others in English and then applied such a rule to his date recording in Chinese. Like the earlier samples (January 10, 1998

and April 25, 1998), Lucian applied his knowledge in number writing in Chinese to his date writing and wrote “九十八 [nine ten eight]”, instead of “九八 [nine eight]” for the year. Another interesting feature emerging in this particular writing sample was his use of punctuation marks—the slashes—to divide different units of a date in both the Chinese and the numeral entries.

Session 8: 08/29/1998 (Actual date)



一九九八年 八月 二十九日(**Chinese convention**)

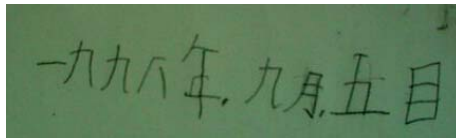
1998 August 29 (Order in which Lucian recorded the date)

Figure 4-35. Lucian’s date recording for August 29, 1998

August 28, 1998 was a milestone in Lucian’s Chinese literacy learning. Starting from this particular day, the sequence in Lucian’s date recording (in the order of year, month, and day) in Chinese was conventional, and it remained so for the rest of the time he was in my class. In this sample, Lucian used both numerals and Chinese characters to represent the date. And he was able to provide the appropriate sequence of different time units in Chinese and English (i.e., in the order of month, day, and year in English, and year, month, day in Chinese). Instead of the strict numeral-to-character sequence, he had used the convention in each culture and language to represent the same date. His use of a punctuation mark (i.e., the apostrophes) for the year in this entry, however, is interesting. At first glance, I was puzzled by his use of apostrophes. After looking at the numerals he also used to represent the year, it came to me that he again used the convention he had acquired in English writing into his Chinese learning. In

English, writers often put an apostrophe at the upper left corner of the first digit, when they only write down the last two, instead of all four digits of the year, such as '87 for 1987 and '94 for 1994. It is also curious that he did not elect to use these punctuation marks in the numerals (8/29/98), for he probably learned that conventionally when one used slashes to divide the day, month, and year, he/she did not need to add an apostrophe above the last digit in a year. When recording down a date in English without the dashes, such as Aug. 29, '98, one can add an apostrophe to the last digit in order to mean "1998" instead of just "98". Probably due to such a reasoning process that Lucian added one apostrophe to each of the Chinese numbers (i.e., 1, 9, 9, 8) for year.

Session 9: 09/05/1998 (Actual date)



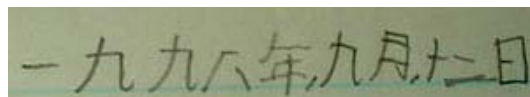
一九九八年 九月 五日(Chinese convention)

1998 September 5 (Order in which Lucian recorded the date)

Figure 4-36. Lucian's date recording in Chinese for September 5, 1998

In the following week, Lucian no longer wrote down the numerals in his date recording. Instead of the apostrophes, a new punctuation mark, a period, was used to separate different time units—year, month, and day. In this entry, Lucian had a writing miscue—namely, his use of the character “日” for “day [日]”.

Session 10: 09/12/1998 (Actual date)



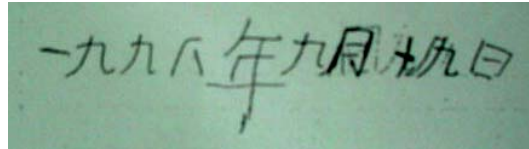
一九九八年 九月 十二日(Chinese convention)

1998 September 12 (Order in which Lucian recorded the date)

Figure 4-37. Lucian's date recording in Chinese for September 12, 1998

Lucian's date recording in this sample has no miscue, and the sequence in which he recorded date was also conventional. The only unconventional aspect of this entry was his use of commas to separate different time units.

Session 11: 09/19/1998 (Actual date)



一九九八年 九月 十九日(Chinese convention)

1998 September 19 (Order in which Lucian recorded the date)

Figure 4-38. Lucian's date recording in Chinese for September 19, 1998

After approximately 14 months of experimenting and exploring different ways of recording dates in Chinese, Lucian finally learned to do it conventionally. It was a day worthy of celebration!

The table below sums up such a learning process and provides readers with a quick review of the developmental pattern in Lucian's date recording in Chinese during this period.

Actual dates in numerals mm/dd/yyyy	Actual dates in Chinese yyyy/mm/dd	Lucian's writing (Also see Lucian's actual writing in the text)	Order in Lucian's writing
Session 1 07/12/1997	一九九七年 七月十二日	七月一二一九九七	July 12 1997
Session 2 07/19/1997	一九九七年 七月十九日	七月十九日 十十十十十十七目	July 19 1997
Session 3 07/25/1997	一九九七年 七月二十五日	七月十五十九九七	July 25 1997
Session 4 09/06/1997	一九九七年 九月六日	六一九九七九月	6 1997 September
Session 5 09/10/1990 ²⁵	一九九〇年 九月十日	十九九九九〇	10 September 1990
Session 6 04/25/1998	一九九八年 四月二十五日	二十五日四月	25 April
Session 7 08/22/1998	一九九八年 八月二十二日	8/22/98 八/二十二/九十八	August 22 1998
Session 8 08/29/1998	一九九八年 八月二十九日	8/29/98 一'九'九'八'年八月 二十九日	1998 August 29
Session 9 09/05/1998	一九九八年 九月五日	一九九八年. 九月. 五目.	1998 September 5
Session 10 09/12/1998	一九九八年 九月十二日	一九九八年, 九月, 十二日	1998 September 12
Session 11 09/19/1998	一九九八年 九月十九日	一九九八年九月十九日	1998 September 19

Table 4.1 The developmental process of Lucian's learning to record dates in Chinese.

The developmental pattern in Lucian's date recording during the 14-month period was not a linear one, but occurred as a result of the interaction between his life experience in different sign systems—linguistic (Chinese characters) and mathematics (number writing)—and the socio-cultural and literacy practices of

²⁵ The date "September 10, 1990" that Lucian put down in this entry was in response to my question regarding his birthday. He wrote down that date on January 10, 1998.

date recording in Chinese and English. Lucian's pre-existing schema regarding number writing in English and his newly acquired knowledge in this aspect in Chinese both at home and in our class also influenced how and what he put down on paper. Let's first examine how his knowledge in English date recording contributed to his learning of such a skill in Chinese.

The time unit "year" deserves the most attention because it comprises more characters than the other two, and its location in a date, when expressed in Chinese, is very different from that in English. Prior to August 29, 1998 (the 8th session) when Lucian finally learned to express the numerals in the "year" in Chinese characters conventionally, there were a few times that he was able to do it "correctly", especially in the first session (July 12, 1997). Did Lucian regress in his writing development since he was able to write down the numerals in year in Chinese correctly in the first but not in subsequent sessions?

My answer is "he definitely did not." Although he did write the numerals for the year in the same way as the first and in the eighth session and beyond, different mental operations took place during these two time frames. In the first week, he had only learned to write numbers from "one" to "ten" in Chinese. Therefore, he applied the knowledge he possessed and developed a numeral-to-character principle to write "一 [one]", "九 [nine]", "九 [nine]", and "七 [seven]" to represent each numeral in "1997". Such a principle is also evident and consistent in his writing of "twelve" for the "day" of the same entry, in which he wrote "一二" ("one" and "two" respectively to correspond with the numeral "12"),

instead of “十二” (“ten” and “two” in Chinese respectively), with the latter being the convention.

In the second session (July 19, 1997), Lucian had learned numbers in Chinese up to twenty. With this knowledge, he began to explore and tried alternative ways of writing numbers to represent the year. He used “十九 [nineteen]” to represent the first two digits in 1997, instead of “一九 [one nine]” because it is how English-speakers would say (i.e., nineteen for “19” in “1997”) and what he had just learned. However, Lucian was faced with a problem when he tried to write the last two digits for the year “1997,” because he had not received any formal instruction in writing numbers larger than 20. Given the mathematics skills he had, Lucian quickly wrote down nine “十 [ten]” in Chinese because “nine ‘tens’ makes ninety.” After the nine “tens [十]”, he added a “seven [七]” to represent “97” (it would have been “九七” conventionally) in Chinese. His way of representing numerals in “year” also underwent several variations, such as the use of last two digits and the apostrophe on the right-upper corner of each character.

It was not until the eighth session that he finally grasped the principle of how numerals represent a year in written Chinese. And after he had grasped this, the principle remained stable for all his subsequent date writing samples in our class. As Lucian kept exploring and learning mathematic expression in Chinese, he also developed a firm grasp of the Chinese number from “one” to “ninety

nine”, as well as “zero [○]²⁶” in Chinese writing toward the end of his first semester in my class. Therefore, when he was asked to write his birthday—September 10, 1990—in January 1998, he made use of all the knowledge he knew about Chinese numbers, and wrote down “十九九〇”, which corresponded to “nineteen ninety” in English.

As well as the development of numeral representation in year, the sequence of the time unit in Lucian’s writing was also influenced by his numeric knowledge in English, and it went through different phases. Although “year” was the last unit in most of Lucian’s writing samples above, it nevertheless appeared as the second unit once (September 6, 1997), and eventually moved up as the first on August 29, 1998 and beyond. The variations in Lucian’s date recording of year show how he developed from a monolingual English thinker to a bilingual/biliteracy learner. With more experience and exposure in English, Lucian began his date recording by following the convention in the English-speaking world, and gradually moved toward Chinese convention as he learned more about how Chinese people record time.

Another interesting aspect in Lucian’s date recording development is his use of punctuation marks from August 22, 1998 to September 12, 1998. During these four weeks, Lucian made use of four types of punctuation marks: slash, apostrophe, period, and comma. All of them, except period, have been employed by native English speakers in recording time. He probably had watched how other

²⁶ The character “○ [zero]” in Chinese writing is often used with year, phone number, page number, and documents that require a series of numbers, such as ID cards and bills. While used in such contexts, the zero is used to replace the multiple of ten.

English-speaking people used commas, slashes, and apostrophes when they recorded dates in his environment. Taking the knowledge from his real life experience, Lucian experimented with these different punctuation marks and used them in his date writing. Therefore, he used “八/二十二/九十八” for 8/22/1998 (in the order of August, 22, and 98), “一’ 九’ 九’ 八’ 年八月二十九 日” for August 29, 1998 (in the order of year, month, and day), and 一九九八年, 九月, 十二日(in the order of year, month, and day) for September 12, 1998. Lucian’s use of punctuation marks reflected his developing awareness of their functions in recording time.

When examining Lucian’s as well as other children’s biliteracy development, I found that these learners sometimes made miscues because they made use of their knowledge, both linguistic and non-linguistic, from their familiar language to their learning of the less familiar one. I was initially concerned about these miscues and tried to correct them on several occasions. However, some miscues persisted and no matter how many times I corrected, and reminded children, these miscues occurred repeatedly. “Does the use of the mother tongue impede these children’s learning of a second language?” “Are the research theories that I believe in unable to withhold the test of reality of my classroom?” I asked myself.

I had been concerned about the fossilization of children’s language use in their less familiar language as well as about the role of L1 in L2 literacy learning. As I examined these miscues and kept tracking my students’ biliteracy development, I realized that correction without further experience/exploration by

learners may offer a quick fix to the problem, but it seldom helps them to truly understand differences in fundamental concepts and linguistic specifics.

In Lucian's case, I could have, in the first session, listed all the rules about the conventional way of recording time in Chinese. Given his knowledge in written language, Lucian probably would have been able to apply these rules at once and "get it right." I elected not to do so, for I know that he would need to look at my guidelines repeatedly when he recorded the date in each session that followed, since such type of writing is rarely required of him, except in our Chinese class. Instead, I decided that the children would experience and explore different ways of recording date, and in the meantime, the class would discuss the different ways that Chinese and English speakers represent dates. With the class experience and exposure, coupled with his father's tutoring at home, Lucian finally grasped the concept of time recording in Chinese, and he was able to maintain such a skill for the rest of the time he was in my class, without the presence of environmental print or a watching adult.

The pattern in Lucian's biliteracy development, especially in his learning to record dates in Chinese, is unique but also common among other children in my class. It is idiosyncratic because of the duration and the complexity involved in the process. However, the miscues in such a learning process were inevitable for they took place as my students initially transferred the knowledge in their familiar language to their learning of a less familiar one. With further exposure and experience through real and purposeful activities, miscues eventually disappeared, and the children's writing also became more conventional. I will use

an example from Rosan below to further support this point. As in Lucian's case, a miscue occurred due to the deviation between two sets of linguistic and cultural specifics when he crossed language and cultural borders. Although Aileen, Maya, and Rosan had native or native-like proficiency in English by the time they participated in this study, I had found some first language (Chinese) based miscues in their learning of English.

After listening to The Leaf Birds (Sun, 1988) in Chinese, Rosan retold the story to me in English. While retelling, she flipped through each page. I have transcribed her narration according to the page number of the book below:

Once upon a time, there lived a bird. He, the bird landed on a branch. (p. 1-2)

Suddenly, the leaves fell down on the ground. (p. 3-4)

And they started to, turn to birds. One leave said, "hey, how come, that, you are not down yet?" (p. 5-6)

And he [the bird on the branch] said, "wait for me, I am coming." (p. 7-8)

And some people, some birds were telling secrets. And he said, "hey, can, should we go to the bird part, party?" One bird said, "you are a pretty bird." One bird said "you are fat." One bird said, "you are skinny." (p. 9-10)

Rosan stopped in the middle of her reading, as if in reflection.

"Very good," I praised her and hoped she would continue her storytelling.

Rosan went on, "*The big, giant bird said [to a mother bird with several little chicks], 'how come you born out so many babies?'*" (p. 11-12). (Transcript, October 26, 1996)

Similarities and differences exist when we compare these two terms "to give birth" and "to be born" in English and Chinese language. From the dictionary, it is evident that the two English words, "birth" and "born" originate from the same root: bher. In Chinese, these two terms also share the same characters. The term "to give birth" is "生 [sheng, born]" in most cases (and occasionally 生出, sheng chu, which literarily means "born out", is acceptable, when used colloquially), while "to be born" is usually "出生" (reverse word order

of “to give birth”).” The concept of “giving birth” in Chinese not only applies to human beings or mammals, but also to birds, which lay eggs. “Laying eggs” is often written as “生蛋 [sheng dan]”, which literally means “to give birth to eggs” in Chinese. In addition to using the phrases “*born out*” in English, I had also heard Rosan used “*born eggs*” instead of “*lay eggs*” in English consistently on several occasions before she started first grade. Such a miscue may be due to her unfamiliarity with the English usage in describing either the process of “being born” or “giving birth” in mammals and non-mammals. Therefore, Rosan made use of the concept she possessed in her first language, Chinese, to help her formulate an equivalent expression in her second language, English.

The miscue that Rosan made above is due to the different conceptual framework that Chinese and English speakers perceive in terms of the action of “giving birth [生, sheng, or 生出, sheng chu]” in humans and mammals, and “laying eggs [生蛋, sheng dan]” in birds. English speakers perceive that different agents (i.e., human/mammals vs. birds) have different ways of producing their offsprings and thus use different verbs to describe the action/process, while the Chinese-speakers do not make such a distinction, but apply the character “生 [sheng]” to both agents.

In addition to her oral retelling, Rosan also decided to write down the story in English. On a big sheet of paper, she used a marker to record her story back to back. The written version of this story was very similar to her oral retelling, but it included more characters and actions. The length is therefore longer than the oral one. In addition, this particular story also had an interesting

feature, namely Rosan’s code-switching between Chinese and English. Below is a portion of her writing which parallels her storytelling above:

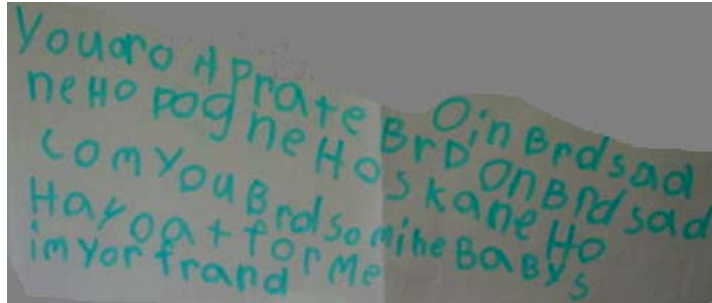


Figure 4-39. Rosan’s English story writing, “The Leaf Bird”

Phonetic transcription²⁷: *One bird said “you are a pretty bird.” One bird said “ni ho pog”. “ne ho skinny”. “How come you borned so many babies.” “Hey, wait for me. I’m your friend.”*

Semantic transcription: *One bird said [to another bird] “you are a pretty bird.” One bird said [to yet another bird] “You are too fat.” [To another one, it said] “you are too skinny.” [Another bird said to his fellow bird] “How come you gave birth to so many babies? [A giant bird said to smaller birds which ran away from him], “Hey, wait for me. I’m your friend.” (Transcript, October 26, 1996)*

While writing her story, Rosan did not stop even once to ask me to help her write or spell unfamiliar words. She wrote non-stop by using inventive spelling, and the result was a story of approximately 200 words in length. After she finished, Rosan seemed to be pleased with the speed and length of her writing, for she commented “*I wrote a lot today.*” Her writing miscue is consistent with her oral retelling, for she had used the same word “born”—“born out” and “borned” for “to give birth”—in her oral and written narratives, respectively. Both terms, when literarily translated to Chinese in verbatim, are acceptable expressions. As Rosan grew older and continued to learn English at school and

²⁷ The convention used in this transcript is as follows: []—Contextual information; Underlined: Unconventional expression in English writing.

use it in the community in which she lived, her English proficiency and word choice also became more sophisticated. It eventually became native-like. By the time she was in second grade, she rarely made first language-based miscues. And I no longer heard her use “born out” or “born eggs” to mean “to give birth” or “lay eggs” in English. When she was a third grader, she told me that her mother went shopping for baby clothing because her little auntie just “*gave birth to a little baby*” a few days earlier.

An interesting feature in this particular writing sample above is Rosan’s code-switching between Chinese and English, a phenomenon I would like to examine here. Language and cultural learning take place simultaneously when people learn to be members of a particular group. While acquiring two or more languages, learners not only expand their linguistic repertoire, but also gain insight into other culture(s). Some linguistic and cultural elements may be unique, while others may be shared, and bilingual learners thus have access to the specifics and universalities of two language and cultural systems. The wide range of specifics and universalities allowed code-switching to take place. Code-switch, a strategy where bilinguals “mix” different elements of two or more languages in a single expression (Gumperz, 1973), is a way to use languages to widen the total range of meaning that we, as human beings are able to construct and convey (Reyes, 2004; Kenner, 2004). Switching between codes also enables people to be engaged in linguistic exchanges in an efficient and effective way because learners are able to use available, alternative sources at hand to communicate spontaneously with each other.

The Chinese expression that Rosan used in this piece of English writing is “ni ho [you are too]” in “ni ho pog [ni hou pang, *you are too fat*]” and “ni ho skane [ni hou skinny, *you are too skinny*].” In Chinese, the term “ni hou” consists of two characters “你好 [ni hou, you are too/very]”, which Rosan transliterated and represented in the English alphabet as “ni ho.” Her code-switching in this piece of writing is a curious one, for this was the only Chinese phrase she used in her approximately 200-word story, and it appeared twice. Research literature reveals that young bilingual children use code-switch when they do not have immediate access to lexicon items in a particular language (McClure, 1981; Zentella, 1997). Reyes (2004) however argues that it is wrong to assume that bilingual children do not have complete knowledge in one language; it is likely that these children may temporarily have no access to a specific word/term to express a concept in one language, but have a more ready access in another one. Therefore, they switch to another language in order to maintain the flow of communication. Rosan’s oral and written samples exemplify such a case. It is evident that she was able to use English to express the meaning “*you are fat*” and “*you are skinny*” in her oral narrative, but might not have had ready access to this particular phrase while she was writing. To keep the momentum of her writing, Rosan had elected to code-switch to Chinese (first language) while she was writing in her second language.

Summary: The role of first language in second language learning

I, again, would like to continue using the model in the previous section to illustrate the role of mother tongue in my students’ learning of a second language.

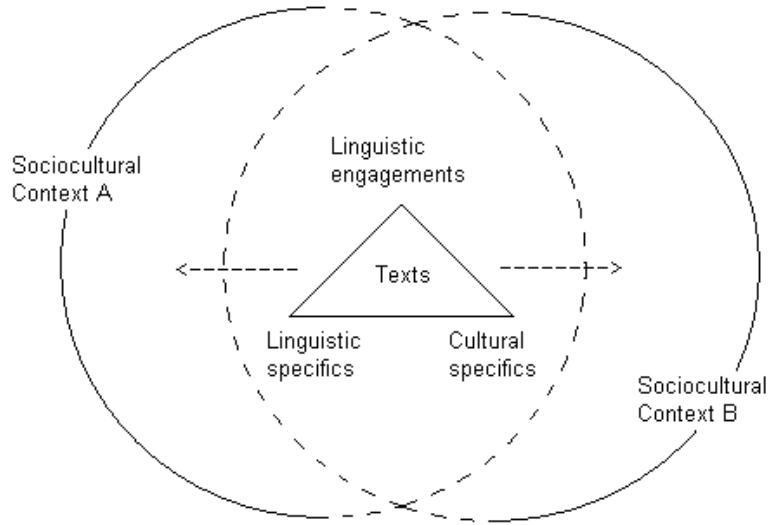


Figure 4-40. Bilingual and biliteracy learning in specific social and cultural contexts

When these children learned two languages and cultures concurrently, they all employed linguistic and cultural specifics from their mother tongue and culture in their second language. Such a learning process took place when the children were engaged in linguistic exchanges, either when they were creating or discussing concepts in texts. Lucian’s explanation to Rosan during the “Small or Big” game and the English story Aileen wrote are particularly illustrative of this social nature of linguistic exchange via the use of texts. Both children drew on the knowledge they possessed in their mother tongue to demonstrate their competence in a second or less familiar language while engaged in either discussing or creating orally or in writing. The similarities shared by linguistic and cultural specifics (the word order in teaching the principles of mathematics and the narrative structure in story writing) in both Chinese and English in these two examples allowed the knowledge transfer to take place, which is represented as the overlapped area in the model above.

In some instances, linguistic exchanges may not be readily observable, but their social origins are still traceable. Take Lucian's date recording as an example. While learning to record dates in Chinese during each class session, Lucian did not always consult with other children or me. The development of his date recording, however, was a result of social interaction between himself and other people in his life (e.g., his father's tutoring at home, his discussion with Emma, and his learning to write Chinese numbers in our class). With the knowledge he possessed about date recording and numerals in English (his first language), Lucian was able to use such resources to record dates as soon as he had learned to write corresponding numerals in Chinese (his second language). Such knowledge provided him with a foundation in his second language learning.

An interesting feature in my students' bilingual and biliteracy learning process is miscues. Lucian's learning to record dates in Chinese, and Rosan's English writing about "to be born", "to give birth", and "to lay eggs" are two examples that I found particularly illuminating. In Lucian's case, the cultural specific practices in writing dates (the order in which each time unit is arranged and the expression of numerals) in English- and Chinese-speaking cultures are very different from each other. Lucian thus did not get his date "right" immediately. With subsequent support and experience, however, his date recording eventually became conventional, and he was also able to retain such a skill for the rest of the time he remained in my class. When Rosan was learning two languages conventionally, she inevitably encountered linguistic specifics resulting from the culturally specific ways of categorizing a particular

action/process, namely, “being born”, “to give birth,” and “to lay eggs” in Chinese and English. The miscues she made in such case, however, were short-lived, for she continued learning English in her out of class environment. Thus, miscues caused by idiosyncratic linguistic and/or cultural specifics, can be seen as a point in transition. As discussed earlier, the triangle in the overlapped area of this model is not a fixed one, for bilingual learners will continue to revise and redefine their understanding of shared as well as unique cultural and linguistic specifics as they constantly engage in linguistic exchanges with others. Miscues take place when shared specifics (either linguistics and/or cultural specifics) do not exist and learners need to temporarily “make do” with all available resources they possess in order to make sense of the world there and then. In this model, the three corners indicate linguistic and/or cultural specifics no longer co-exist in the shared area, but in different social-cultural contexts. These miscues will eventually disappear, provided these learners have acquired the dissimilarities as well as the sameness in linguistic and cultural specifics of the two language and culture systems as they continue to participate in meaningful linguistic exchanges in which they had opportunities to join other people in creating and discussing texts.

A two-way relationship in becoming bilingual and biliterate: The role of second language in first language learning

As I have argued earlier, learning to be bilingual/biliterate is a two-way process. Learners constantly draw upon the knowledge they possess in their first language (usually the familiar one) to support their learning of a second one. If

their knowledge in the second language (often the community and school's dominant language) is better established, they can also use it to facilitate their mother tongue learning. In the previous section, I have demonstrated the role of first language (and culture) in my students' second language learning. In this section, I will illustrate how these children made use of the knowledge they had in their second language to support their mother tongue literacy learning.

For Lucian, English is both his first language as well as the medium that he used for social interaction and cognitive development. Chinese, on the other hand, was practically his second as well as secondary language for he had acquired it in a formal setting and had limited opportunities to use it. Lucian himself perceived Chinese was his second language in an interview with me:

. . . a second language is the second language you learn in your life, or at least you want to learn or going to be, because I don't know as much [of my second language compared to my first language]. But even if I learn like Spanish first, I am always probably going to think Chinese as my second language . . . just because I am Chinese, I am not Spanish or anything else. I don't know why. ” (Lucian, personal communication, March 2, 2003).

However even with little exposure and experience he had with Chinese, Lucian was still able to use what he had learned in that language to support his mother tongue (English) literacy development. In the sample below, I will show how Lucian adopted a concept in his second language (Chinese) to support the narrative genre in his English story writing.

After a show-and-tell, Lucian asked me, “Can we do our own writing in Chinese now?”

I was curious about what he wanted to write, so I asked, “What would you like to write?”

“I want to write something for you,” replied Lucian.

“For me?” I was surprised.

“I want to make a story in Chinese,” said Lucian.

“What kind of story?”

“I want to make a Mulan story,” Lucian replied without hesitation.

“Sure, go ahead.”

Lucian wrote a story by adopting part of the plot from a newly released animation, *Mulan* (Walt Disney Studio, 1998), in his story. He also used the Chinese characters he knew in his writing. Upon finishing his story, Lucian read it to me in English. The transcription of his reading is below his writing (Transcript, June 20, 1998)

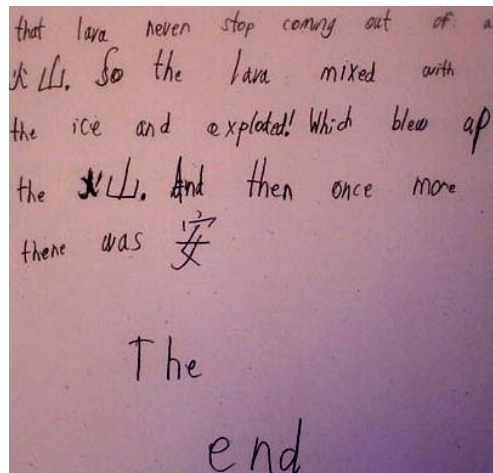
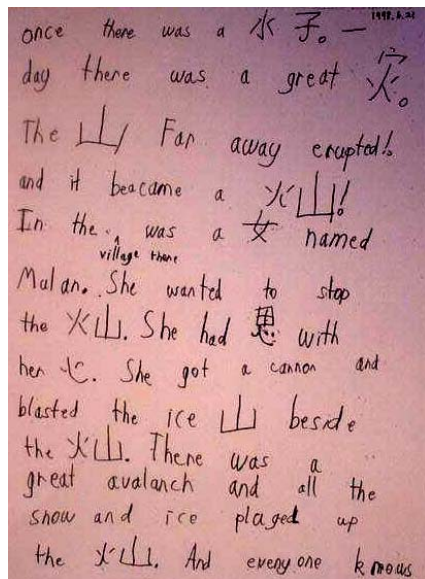


Figure 4-41. Lucian’s bilingual story writing—Mulan

Transcription: Once there was a child. One day there was a great disaster.

The mountain far away erupted! And it became a volcano! In the village

there was a woman named Mulan. She wanted to stop the volcano. She

had to think with her heart. She got a cannon and blasted the ice mountain

beside the volcano. There was a great avalanche and all the snow and ice

plugged up the volcano. And everyone knows that lava never stop coming

out of a volcano. So the lava mixed with the ice and exploded! which blew up the volcano. And then once more there was peace. The end.

Applying the knowledge he had in the English story structure in his first language, English, Lucian created this written narrative. And like traditional stories in English, Lucian's writing constituted the following elements: an opening line ("*once there was*"), which brings out the setting (village) and the main character (Mulan), followed by an issue/conflict (eruption of the volcano) the main character faces; one or multiple resolutions are then presented to resolve the problem ("*She got a cannon and blasted the ice mountain beside the volcano*"), and finally an ending ("*And then once more there was peace*") brings a closure to the story. His use of a formulaic closing phrase—"the end"—signified the culturally specific aspect of storytelling in the western world. It is also worthy of mention that the syntactical structure of the story remained English, although Lucian did code switch between Chinese and English when creating this narrative. While doing so, Lucian was attentive to the linguistic specifics in the languages he used. For example, in Chinese, the term "volcano" consisted of two characters, "火 [huo, fire]" and "山 [shan, mountain]." Lucian had learned to write this term in Chinese, his second language, from his father at home. After he finished composing his story, Lucian explained to me that "*volcano means 'fire mountain' in Chinese*". However, when he read his writing to me in English, Lucian elected to use "*volcano*" instead of "*fire mountain*" throughout the story even though he had written this term in Chinese characters and knew the meaning of these two characters "火 [huo, fire]" and "山 [shan, mountain]" respectively. His use of the

conventional “*volcano*” in English instead of “*fire mountain*” indicated his clear understanding of the different lexicon use in both languages.

Another interesting feature in Lucian’s *Mulan* story was his incorporation of a semantic concept in Chinese (his second language) into his bilingual story writing—“*She had 思 with her 心 (she had to think with her heart).*” The use of this phrase “to think with someone’s heart” may seemed to be unconventional from a non-Chinese speaker’s perspective since human beings use “brain” or “head” instead of “heart” to think. In Chinese, however, many characters or phrases that are associated with “cognition” and “emotion” have the “heart [心 or 忄, xin]” as their radical, such as “慮 [lu, to concern/to consider]”, “懷念 [huai nian, to miss something or someone]”, “憶 [yi, to memorize/memory]”, and “恨 [hen, to hate or hatred].” While learning the character “思”, Lucian also acquired its culturally specific usage at the same time and decided to incorporate it into his story writing. His integration of a newly learned concept in his second language (Chinese) into his first language (English) writing revealed his creativity and cognitive flexibility. This is described by Kenner (2004) in her research of children learning to be bilingual and biliterate:

The bilingual children in our project were well aware of the differences between their languages and literacies. . . . But they were also interested in exploring connections between these systems. When writing, they had two sets of resources present in their minds and could draw on either or both of them to make a text. This is the potential creativity and learning power of living in simultaneous worlds. (p. 108).

The two language systems provided Lucian with rich linguistic data pools that he could draw on during his writing process. By incorporating a new concept in his second language into his mother tongue writing, Lucian had not only expanded the meaning repertoire he was capable of expressing, but also begun to put himself into the “shoes of a Chinese” and tried to think “the Chinese way.” Such a process further manifests that language learning is cultural learning, in which the learner not only acquires the linguistic specifics, namely the sound, orthography, and radical in this case, but also learns to use them in a way which is pertinent to that particular culture. The availability of two sets of linguistic and cultural specifics allows Lucian to experience the similarities and differences of these two systems, as well as enables him to live “simultaneously” in both worlds instead of being caught in between.

To Aileen, Rosan, and Maya, English was their second language for they learned it after they had acquired their mother tongue, Chinese. English, however, was not their secondary language by the time they started formal schooling, because it gradually became the major tool that they used to be engaged in social interactions in the community they lived. English also served as an important cognitive vehicle for their learning at school. These children thus were more familiar with many linguistic aspects of English language, such as the grammar and the phonics structure, than those in the Chinese language. And they also applied linguistic rules in English, their second language to their mother tongue learning. The following vignette about Aileen shows how she employed the principle of directionality in English text to her writing of Chinese.

When I just started to work with my students as a group, I noticed that the children usually signed their name horizontally, like the way they would in English. To help them understand that Chinese texts can go both horizontally and vertically, I decided to sign my name vertically on the sign-in chart one day.

As soon as Aileen arrived at the class, she went directly to the sign-in sheet to write down her name as usual. After looking at what I had done with my name, Aileen proceeded to write her name vertically. While writing the second character of her given name, “琳 [leen],” which consisted three elements—“王”, “木”, and “木”—she arranged these three elements vertically, so they took three spaces, instead of one (the ones that was painted over with markers)

“OK, read your name to me,” I asked Aileen when she finished writing.

Aileen read the first two characters of her name [her surname and the first character of her given name] by pointing at each of them. Then with her index finger running down the three elements (“王”, “木”, and “木”) of the character “琳 [leen]” (the last character of her given name), Aileen read “leen” by elongating the sound as if to correspond the three elements with her enunciation. (Transcript, November 2, 1996).



Figure 4-42. Sample of Aileen’s name writing

Unlike English texts, which only go from left to right and run horizontally across pages, Chinese texts can run in three directions: (1) the same as that in English texts which can be seen in most of the China’s publications as well as in science or mathematics related books in Taiwan; (2) from right to left and run vertically, which are often found in books on social sciences and literature texts in Taiwan; (3) right to left and run horizontally, which can be seen in billboards and signs in Taiwan. The way Aileen structured the orthographic feature of the second character in her given name “琳 [leen]” revealed the influence of her second language, English, in her first language learning. The change of directionality in

name signing was a new experience for Aileen because she had always signed her name horizontally in both Chinese and English. Accustomed to the directionality in English text, she needed to adjust her mental schema in order to create the Chinese text that could run in different directions from that in English, which she used and saw daily. Instead of treating the last character of her name “琳” as a single unit with three elements (“王”, “木”, and “木”) standing side by side, she allocated one space for each of the elements and listed them vertically. When responding to my request to read her name, she had her index finger glide through the three elements, “王”, “木”, and “木”, and elongated the sound while she read. It is obvious from Aileen’s behavior that she tried to match the sound of the three elements (“王”, “木”, and “木”) in the Chinese character “琳 [leen]” with the four letters “L”, “E,” “E”, “N” in “Aileen”. Such an “unconventional” directionality in Aileen’s name writing was a short-lived one. As soon I asked her to compare what she wrote that day with those of the previous class sessions and those on her folders, she began to see the difference. She took the markers (green, pink, and blue) she used to write down the three elements—“王”, “木”, and “木”—and then painted over each of them. She then proceeded to use the same markers to write down the same three elements vertically, and she did it conventionally.

Aileen’s example above illustrates her “moments in transition” (Kenner, 2004) from an alphabetic to an ideographic system when she learned to be biliterate in Chinese and English simultaneously. Even though there are very few similarities in the surface structures between Chinese and English language systems these children were learning—English is an alphabetic language, and Chinese an

ideographic one—I had at times, witnessed that my students made use of phonetics rules in English to support their effort in learning to be literate in Chinese. The following is yet another example about Aileen.

The children and I decided to go out to St. Mary’s playground next to my apartment one afternoon. I asked each of them to write a note and tape it on the door so that the parents would know where we were. Aileen announced that she would write “Mom, I am at St. Mary’s playground playing” in Chinese.

With paper and pencil in hand, Aileen began. “Teacher Lu, how do you write ‘Mom’?”

Rosan chimed in, “*you need to write two ‘horses’*.”²⁸

Taking the suggestion from Rosan, Aileen proceeded and wrote down two “horses [馬]” in Chinese. “*Then what?*” asked Aileen.

Rosan, however, focused on her writing and did not answer.

Aileen turned around and looked at me, as if seeking for help.

Sitting by Aileen, I wrote down the character for “female [女, nu],” the other element to complete the character for “mom [媽]” in Chinese. I then explained to Aileen how she would write “Mom” in Chinese.

Aileen copied the character “女 [nu, female]” twice and put each of them by the two identical characters “horse 馬 [ma, horse].” She then proceeded to write down “I [我, wo]” in Chinese. The next character she would write was “being at [在, zai].” Without hesitation, Aileen wrote down “子 [son/seed, zi]” and she paused.

I saw what she put on the paper and was waiting to see what she would do next.

Aileen suddenly took an eraser and erased the character “子 [son/seed, zi]” she wrote earlier.

“Why did you erase it?” I asked her.

“I thought that there was a ‘子 [son/seed, zi]’ over there,” explained Aileen to me. She then looked at me and asked, “could you write ‘am at’ for me?”

I wrote down the character “在 [being at, zai]” for Aileen

Aileen copied the character onto her paper. (Transcript, March 29, 1997)

While attempting to write the character “being at [在, zai],” Aileen applied the phonics rules she had acquired in English to her learning of Chinese. From Aileen’s announcement—“I am going to write ‘Mom, I am at St. Mary’s playground,” it is obvious that she knew the sound of “being at [在, zai]” in

²⁸ In Chinese, the word for “mom” consists of two identical characters, “媽媽 (ma ma).” And the character for “媽” comprises two elements/characters—“female [女, nu]” and “horse [馬, ma].”

Chinese. She, however, did not know how to write that particular character. By applying an English phonics rule, Aileen tried to “encode” or “spell” an unfamiliar Chinese character. Knowing the sound of “在 [being at, zai]” in Chinese, she tried to find characters with those two sounds (i.e., “z/zi” and “ai”) so that she could put them together to form the character for “being at” in Chinese. From her linguistic data pool, Aileen first identified a character, “子 [zi, son/seed]” she had already known and proceeded to write it down on the paper, but she immediately encountered a challenge for she did not, at hand, know how to write Chinese characters with an “ai” sound. Such a discovery was probably owing to her realization of the limited stock of Chinese characters she possessed or due to her awareness of the non-transferable phonics principle between these two languages. The latter assumption seems to be more plausible since she did not ask me to show her how to write the character(s) with an “ai” sound(s). Instead, she wanted me to write the character for “being at [在, zai]” for her directly. Regardless of the reason, the act of Aileen’s application of the phonics rules in her second language (English) to her mother tongue (Chinese) learning enabled her to explore the possibilities of rule transfer from one language to the other, as well as allowed her to understand that different languages operate under different linguistic rules and discrepancies might occur.

How we learn and develop new concepts is often influenced by how they are taught in specific contexts, as well as how we relate those concepts with our extant experience. The children in my class had been taught using the phonics approach when they learned to be literate in English. It seems to be natural that

Aileen chose to decode her given name (a familiar character) and encode an unfamiliar character in accordance with the phonics rules, for such encoding and decoding skills were parts of the mandated English language arts curriculum in the state she lived. These two vignettes above also further illustrate that, as Aileen learned to be bilingual and bicultural, she experienced her dual cultural and linguistic worlds as simultaneous entities, rather than two separate ones (Kenner, 2004). She actively drew upon her most current understanding in language and literacy learning (in these two cases above, her second language, English), to support her meaning expression and social interaction.

In addition to specific phonics skills, the children in my class also transferred concepts in their English language arts class into their learning of Chinese. I will use the following two examples, one from Aileen and the other from Rosan, to illustrate the interrelationship between learning, instruction, and concept transfer in different contexts.

Vignette One:

I took Aileen grocery shopping one afternoon. While walking to the store, Aileen told me that she had been learning English rhyming words at her kindergarten. She also gave me a quiz on some rhyming words she knew. Aileen would ask me, “what rhymes with ‘cat?’” When I did not provide a satisfying answer, she offered one.

As we entered the grocery store, I put Aileen on the shopping cart and pushed the cart first toward the produce section. The cherries were in season, and they were placed next to peaches and other stone fruits.

As I wheeled her along to pick up some fruits, Aileen asked me, “Teacher Lu, do ‘cherry [ying tao]’ and ‘peach [tao zi]’ *rhyme*?”

“What do you think?”

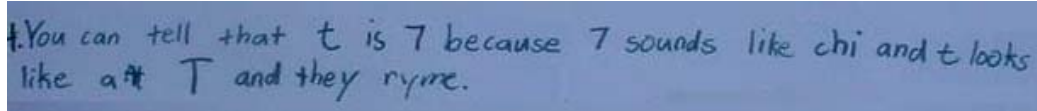
Aileen paused for a few seconds and then nodded.

“Why?” I asked.

“Because they *both* have ‘tao,’” replied Aileen. (Transcript, Summer 1996)

Vignette Two:

The children and I tried to generate strategies that would help them learn Chinese. I taped a big sheet of paper on the wall, entitled “*Strategies We Use to Learn Chinese.*” The children were invited to write down whatever strategies worked for them. Below is what Rosan wrote down: (Transcript, Summer, 1998)



†. You can tell that 七 is 7 because 7 sounds like chi and 七 looks like a T and they rhyme.

Figure 4-43. Rosan’s comparison of “7”, “T”, and “七”.

[*Transcription: You can tell that “七” is “7” because “7” sounds like “chi” and “七” looks like a “T.” And they rhyme.*]

I did not teach rhyming words formally in the class due to my lack of knowledge and experience in this particular aspect of Chinese language arts. Although I had introduced my students to Chinese nursery rhymes, and they seemed to enjoy the lyrics, it did not occur to me that this could be an opportunity to teach rhyming words. Identifying and pairing rhyming words, however, were parts of the language arts curriculum at these two children’s schools. At Aileen’s home, I had seen worksheets on rhyming words. I had also heard, on several occasions that Aileen and Rosan talked about the rhyming words they learned at their respective schools, and they were keen to test each other on the number of words each knew. In the two examples above, it is obvious that Aileen and Rosan had acquired the concepts of “rhyming” through linguistic engagements with their teachers and peers at school, and they brought such knowledge to my attention. The knowledge these two children possessed about rhyming words and their application of such a concept to their learning of Chinese revealed the useful influence of the instruction these children received in English, their second

language, in supporting their learning of Chinese, their mother tongue. I will explain my point below.

The first vignette took place during the summer when Aileen was just about to finish kindergarten. In her kindergarten class, the teacher had been teaching children English rhyming words since the ability to recognize and tell rhyming words had been part of the language arts standards mandated by the Department of Education in the state that she lived. The quizzes that Aileen gave to me on our way to the grocery store reflected the nature of the instruction: the initiation-response-evaluation, as well as the matching of two sight words with the same ending sounds. With the experience she had in her kindergarten class about rhyming words, Aileen applied the same instructional strategy to “test” whether I was able to perform such a task. When I did not meet her expectation, she proudly demonstrated her newly acquired knowledge. It was also through such a learning experience, that Aileen developed a hypothesis on how rhyming worked, that was, words which shared the same sounds would count as rhyming words. While seeing the cherries [ying tao] and peaches [tao zi] in the produce section side by side, Aileen decided to test such a hypothesis in her Chinese learning and sought confirmation from me. Although Aileen was still developing her understanding regarding rhyming (her hypothesis was somewhat different from the conventional sense), this specific piece of knowledge she had in English served as a bridge which enabled her to cross the different language borders and to identify similarities between two different linguistic systems.

In the second vignette, Rosan developed a mnemonic for a Chinese character by employing a linguistic concept, i.e., rhyming, she learned in her English classroom. The knowledge Rosan possessed about rhyming (“T” and “七 [7, chi]” rhyme) also allowed her to cross different linguistic borders to identify the similarities between the orthographic features that exist in Chinese and English (“七” looks like a “t”). It is also noteworthy that while writing this sentence, “*You can tell that 七 is 7 because 7 sounds like chi and 七 looks like a T and they rhyme,*” she used three types of linguistic systems—English words/letter, Chinese characters [七], and Chinese pin-yin [chi], as well as the numeral [7] in order to express and convey meaning. The use of multiple sign systems in the literacy learning process is not uncommon among the children with whom I worked, and I will discuss such a unique process and children as symbol weavers (Dyson, 1990) in their meaning construction process in the next chapter.

Using the four vignettes above, I have discussed how the children in my study applied the English grapho-phonemic rules in their learning of Chinese, such as the English phonics rules and the concept of rhyming. In the three vignettes below, I will show readers how the children made use of another aspect of linguistic knowledge—syntax—they possessed in English to their learning of Chinese. While studying syntax, linguists focus on the structure of language, such as word order. Word order in a sentence is critical to its meaning, for changing the order of words in a sentence often results in a change of meaning. The syntax of different languages shares similarities as well as presents differences. Therefore, when bilingual learners translate words in a sentence verbatim and in the exact

order from one language to the other, miscues are sometimes inevitable. Some such miscues are intelligible when listeners/readers pay attention to what the learner intends to mean rather than what he or she actually says or writes. Some miscues, however, may be linguistically and culturally specific, and can only be understood by speakers sharing the same language/cultural backgrounds. With more experience and exposure in English than Chinese, the children in my class often applied English syntax structure to their learning of Chinese, and their sentences were sometimes less conventional than those of their native Chinese-speaking age-mates.

We were doing a focus study on “Cats.” I first asked the children to write down what they knew about this animal.

Rosan sat in front of the wall and looked through the environment print, such as posters and other children’s Chinese writings on the wall. Finally she began to describe her own cat which was white. In a particular sentence, she wrote “我的白貓是聰明 [my white cat is smart, wo de bai mao shi cong ming].” (Transcript, November 1, 1997)

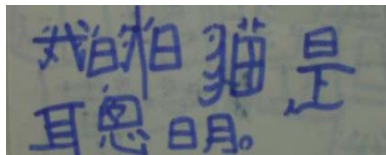


Figure 4-44. Rosan’s Writing in Chinese “My white cat is smart.”

The sentence Rosan wrote in Chinese was unconventional because literate Chinese would replace the fifth character (the last character in the first line) “是 [shi, to be]” with “很²⁹ [hen, to be very/very].” Therefore, instead of “我的白猫

²⁹ In Chinese, when using an attribute adjective to state a simple fact, it is common to avoid the linking verb “是 [to be],” but using “很 [(to be) very]” instead. Although “很” is usually translated as “very” or “to be very” depending on the context, it does not carry the same weight as its English counterparts. The word “smart” is an attribute adjective, describing the characteristic of Rosan’s cat. Therefore, it is not necessary to use the linking verb “to be [是]” after the head noun “my

是聰明 [wo de bai mao shi cong ming],” the sentence should be “我的白貓很聰明 [wo de bai mao hen cong ming].” It would appear that Rosan applied the English syntax structure while writing this particular Chinese sentence. When I asked her to read back what she had written, she read the sentence exactly the way she wrote it. However, in the oral conversation between Rosan and myself, she did use the conventional form in Chinese, namely “我的白貓很聰明 [wo de bai mao hen cong ming]” instead of “我的白貓是聰明 [wo de bai mao shi cong ming].” The difference between Rosan’s spoken and written language development in Chinese seems to indicate the degree of experience and exposure she had in writing and speaking in that language. The proficiency she had in speaking Chinese was better established than that in writing probably because she had more opportunities to use Chinese orally than in written form in her interactions in that language. Therefore, she had a clear understanding of how to express the same concept in both English and Chinese orally and conventionally. She, however, was less familiar with the syntax structure in the Chinese writing system, so she borrowed the syntax in English, and thus a miscue took place.

In addition to word order, punctuation is important in expressing the writer’s intention. Changes in punctuation alter the meaning of a sentence and emphasize different concepts. Chinese punctuation marks share similarities with those in English, but some of them are unique in their own way. There are several Chinese punctuation marks that are identical to those in English, such as comma, exclamation mark, and question mark. Some Chinese punctuation marks do not

white cat”. However, the character “很” is needed before “smart [聰明]” to complete this sentence.

look like their English counterparts but serve the same function, such as “。(period/full stop)” and “『』 and 「」 (double and single quotation marks respectively).” There are yet some punctuation marks which are idiosyncratic to each language, such as hyphen, “-” in English, and book title marks, “^^^” (used in Taiwan, place at the right side of the text when it runs vertically, and below the text when it runs horizontally). While learning two languages, the children in my class were aware of the punctuation marks that serve the same function but had very different appearance, such as the period. Rosan had asked me in the second semester she attended in my class, “*what does this little circle say*” while she noticed “the Chinese period” during one of our story reading session. There were several occasions that I heard Aileen or Rosan tell the newcomers to the class that “*Chinese period is a circle and you don’t color it in*” or “*Just make a circle and don’t color it in.*” Aileen and Rosan’s awareness of the difference between a “Chinese period” and an English one is probably due to their experience in both Chinese and English written language in their environment. For the punctuation marks which are less common and are idiosyncratic to a particular language, the children sometimes made miscues, especially when they were thinking in the mode of their second language. Miscues of such nature, like those mentioned earlier, usually disappeared quickly as children continued to learn to be literate in both languages.

After skimming through my bookshelf, Rosan finally decided to check out “小貓玫瑰 [xiao mao mei gui, Rosalind, das Katzenkind (Wilkon & Wilkon, 1982; original text in German, Chinese copyright, 1991)]” to read at home. The protagonist of the book is a cat, whose name is translated as “玫瑰 [mei gui, Rose]” in Chinese. Taking the book with her, Rosan tried to record the Chinese title in a booklet where she kept all titles of books she had read. After she had

written down the first three characters of the book title—小貓玫—horizontally, she did not have enough space for the last one, “瑰”, which is a part of the cat’s name.

I suggested to her, “you can write the last character in the next line.”

Pointing at the limited space after the third character, “玫”, she had written, Rosan asked, “*Do I need to put a line here?*”

“*No, you don’t have to because they are two characters,*” I replied. (Transcript, April 12, 1997)

A hyphen in English writing is often used to join words to form a compound word (e.g., self-employed), or to connect syllables of a long word when there is limited space at the end of a line. The concept of hyphen, however, does not exist in Chinese. In English, words are comprised of letters of various numbers, and the length of each word thus varies; every Chinese character takes the same print space, even though the number of strokes in each may differ. In the example above, Rosan apparently knew that by using a hyphen (“a line” in her language), she would be able to “hold” the elements in a meaning unit (in this case, the name of the protagonist in a book) together. Since the book was read aloud to children in the class and we also discussed the name of the main character that day, Rosan probably had remembered that the last two characters “玫瑰 [mei gui, Rose]” in the title was the name for the protagonist in the book. And she had considered the name of the main character “玫瑰 [Rose, mei gui]” an integrated unit, even though it comprised two characters. Because of the limited space in her library card, Rosan was unable to write down both the characters “玫 [mei]” and “瑰 [gui]” in the same line, and she decided to take my suggestion to separate these two into different lines. While doing so, she wanted to make sure that together these two characters still meant the name of the main character in the

book. And she considered putting a hyphen after the character “玫” so that the two words “玫瑰” would be seen as an integrated meaning unit.

In the vignette above, Rosan tried to apply an English punctuation rule to her Chinese writing so that she would be able to keep a meaning unit (i.e., the name of the main character in the book) “in line.” Her attempt to use a hyphen in this example reveals the influence of her second language on her mother tongue literacy learning, as well as the cognitive flexibility of a bilingual/biliterate learner. Rosan’s familiarity with English written language allowed her to explore and extract information from her second language and to apply it to her learning of Chinese, her mother tongue, when such a situation was called for. Therefore, when she needed more space for an additional character in her writing, a hyphen was put under consideration for such a purpose. Rosan’s behavior in this vignette should not be seen as an incidence of her confusion in the two language systems, but rather as an act she employed to solve a linguistic problem in her biliteracy learning process. Her question, “*do I have to put a line [a hyphen] here [between the character ‘玫’ and ‘瑰’]*” clearly indicated that she was seeking confirmation from me regarding her tentative hypothesis, i.e., a hyphen could be used to hold two linguistic elements together to keep the meaning intact.

In the vignette above, Rosan’s knowledge of the English punctuation had allowed her to experiment with alternatives in her Chinese literacy learning. In the example below, readers will see how she made use of her knowledge in English morphology to develop a hypothesis about learning to read and write in Chinese.

In the classroom, we had several posters each with a different theme, such as animals, colors, and months of the year. For the animal poster, I had cut out

animal pictures from various catalogues and magazines, glued them onto a big sheet of blank poster, and entitled it “Lovely Animals” in both English and Chinese [可愛的動物, ke ai de dong wu].

On the first day I put “The Lovely Animals” poster on the wall, Rosan noticed this new addition to our classroom. Pointing at the Chinese title—可愛的動物, Rosan asked, “*What does this say?*”

“This says ‘lovely animals [可愛的動物, ke ai de dong wu].’” Character by character, I read the title to her. I then pointed at the first two characters “可愛 [ke ai, lovely]” in the title and said, “these two are “*lovely*.” My finger then moved to the last two characters “動物 [dong wu, animals]” and said, “*these two are ‘animals’.*”

Rosan pointed at the first character [可, ke, to enable to] of the title and asked, “*Is this ‘love?’*” She then pointed at the second character [愛, ai, love] and asked, “*Is this ‘ly’? What does all this mean?*”

I explained to Rosan that there was not necessarily a correspondence between the number of characters in Chinese and syllables/morphemes in English when translating meaning from one language to the other. (Transcript, May 17, 1997).

This conversation and the one above (on the use of hyphen) all took place when Rosan was in first grade, the early stage of her learning Chinese in my class. They pre-dated those instances in which Rosan compared and contrasted the similarities and differences between Chinese and English, as recorded in the “Theorizing: Comparing and Contrast Between Chinese and English” section of this chapter. During this period, Rosan had many questions about Chinese written language, and she never hesitated to ask me or Aileen, her best friend in the class. Many of Rosan’s questions revealed her understanding of the structure of English language and her attempt to make sense of the Chinese written language (a less familiar one) by applying the knowledge she possessed in English. In this example, she made use of the morphological rule in English to her learning of Chinese even though she might not know the definition of morpheme. In English, the word “lovely” consists two morphemes, “love” and “ly”. Examining Rosan’s

English vocabulary development, I found that the word “love” appeared to be used frequently in her writing, such as notes to her mother each week, greeting cards to me for various holidays, and other writings she initiated in my class. It is probably because of her experience in using this a word, that she immediately “spotted” the morpheme “love” in the word “lovely” in the animal poster. Coincidentally, the number of morphemes [2] in this English word “lovely” was also represented in two Chinese characters, namely “可 [ke]” and “愛 [ai].” While trying to make sense of the Chinese written text, Rosan tried to match the number of English morphemes [“love” and “ly”, two morphemes] with that of Chinese characters (i.e., “可 [ke]” and “愛 [ai]”, two characters). And thus, she asked me whether “love” was equivalent to “可 [ke]” and then “ly” equaled to “愛 [ai]” in Chinese. The “matching” strategy that Rosan employed in making sense of an unfamiliar written text is very similar to one I used when I first encountered English print, described in the first vignette in the beginning of Chapter One. With more experience and subsequent exposure in both languages, Rosan eventually was able to come up with her own examples to explain the limited transferability between the number of Chinese characters and that of English morphemes in a bilingual text. She made the following statement spontaneously when children in the class discussed the similarities and differences between Chinese and English language half a year later:

In English, you need to spell the words, um, like you spell the word, “the” you write three letters, T-H-E. And then in Chinese, you may be putting one Chinese word. (Transcript, November 29, 1997)

In addition, Rosan also wrote down the following sentences to record her thoughts:

In English [English] you need to sound out the letters to read the word. But in Chinese you just don't write how many letters. Like the word cat you write three letters. But in Chinese there are two words 豸 苗". (Transcript, November 29, 1997)

From the oral and written example above, it is evident that Rosan finally grasped the concept regarding the limited comparability between the number of English morphemes and that of Chinese characters when translating a concept from one language to another. Even though she did have a few miscues on the linguistic terminology, such as using “letters” to substitute “characters” in Chinese, as well as the number of characters for the concept “cat” (“one” instead of “two”), she nevertheless was able to express what she had in mind. And these miscues also eventually disappeared as she became a more experienced and competent bilingual and biliteracy learner.

Summary: The role of second language in first language learning

In this chapter, I have shown how my research participants learned to become bilingual and biliterate while engaging in discussing or creating texts with their peers and other adults. The linguistic engagements provided these children with opportunities to explore various dimensions of linguistic and cultural specifics existing in the two sociocultural contexts in which they lived. I will use the model below to sum up what we have discussed thus far.

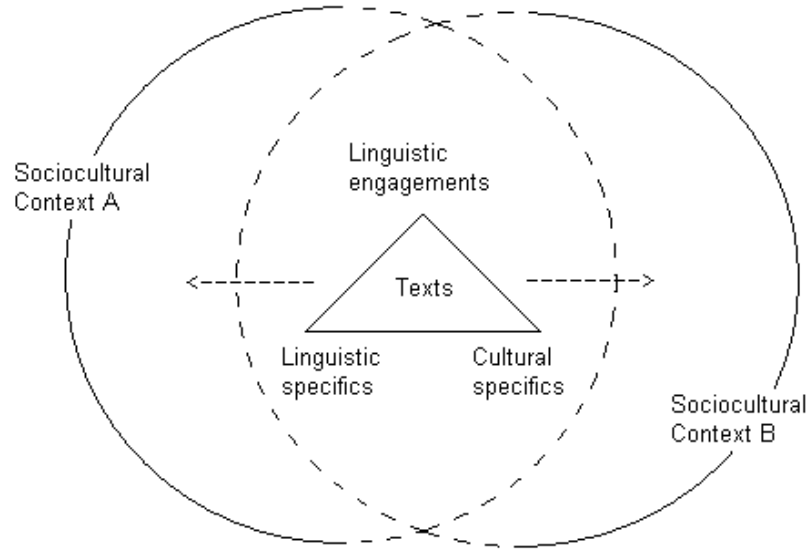


Figure 4-45. Language Socialization in Bilingual and Bicultural Contexts

To the children in my class, their second language offers the following opportunities to support their mother tongue literacy learning: (1) expanding the total range of meaning they are capable of expressing in both languages, (2) supporting their acquisition of particular literacy skills in their first language, and (3) forming hypothesis regarding the transferability of literacy concepts in two linguistic systems. I will discuss each of these areas.

Lucian used both English (his first language) and Chinese (his second language) to compose his Mulan story. His writing process, even though this might not be immediately evident, is nevertheless a social one. Through linguistic engagements with his parents at home, Lucian learned the concept “think with one’s heart” as well as several Chinese words, such as “volcano” [expressed in two Chinese characters, “fire” and “mountain” respectively]. The bilingual text he composed allowed him to show me what he had learned and what he knew about

the shared, as well as the distinctive linguistic and cultural specifics of the Chinese and English language systems. The structure and the majority of the words in Lucian's story were done in English, but he adopted a Chinese expression (i.e., thinking with one's heart) which is specific to the Chinese culture. In addition, he also used several Chinese terms, with specific meanings in both Chinese and English with which he was familiar: namely the word for "volcano" in Chinese is represented in two characters—"fire" and "mountain." The story that Lucian composed reveals that he constantly lives in two "simultaneous worlds" (Kenner, 2004) in which he not only has access to and is able to make use of the shared social and linguistic specifics, but also where he recognizes the different specifics existing in the two language and cultural systems for his meaning expression and social communication. By introducing and incorporating a concept in his second language into his first language writing, Lucian has widened the shared area of the model above, as well as added a new meaning expression in his mother tongue literacy development.

As the children in my class moved between linguistic and cultural borders during their biliteracy learning process, I have found that they often employed the skills they acquired in their familiar language, English, to their learning of a less familiar language, Chinese, in order to make sense of the world. To the girls in this study, it means that their second language (English) was often used to support their mother tongue (Chinese) literacy learning. Such a process is evident when Aileen tried to use an English phonics rule to write "being at" and to "spell" the last character of her given name, as well as when Rosan used the syntactic

structure in English to write down “My white cat is smart” in Chinese. These three examples also reveal how linguistic specifics, cultural specifics, and linguistic engagements interact with each other while children are involved in creating and/or discussing texts with others. In Aileen’s name writing, the text (her name) she created provided a springboard for me and her to discuss the different linguistic specifics (the directionality of a Chinese and English writing system), and from which she understood the various forms of cultural/literacy practices regarding directionality in both Chinese and English. In the case of Aileen’s note writing to her mother, Aileen first was involved in a conversation with Rosan and then with me. Through her linguistic engagement with different people, Aileen showed she had learned the linguistic specifics (e.g., how to write a note with Chinese characters) of letter writing applied in a culturally appropriate way (e.g., ways of addressing the receiver and representing the body text in accordance with her age and role). And it is also through further linguistic engagement with others that she realized the limited transferability between Chinese and English systems, and was able to refine and revise her presumed knowledge of linguistic and/or cultural specifics in both examples. In Rosan’s case, the linguistic engagement she had with me about the text (i.e., her writing of “My white cat is smart” in Chinese) she created enabled me to understand her knowledge in both language systems, with which I was able to further provide opportunities for her to examine the linguistic and cultural specifics in her biliteracy learning process.

As children in this study became more and more experienced language learners, they compared and contrasted the similarities as well as the differences between two language and cultural systems, and I have discussed such a process in the first section of this chapter. While reaching their final conclusion on the commonalities and the uniqueness of the linguistic and cultural specifics, these children formed tentative hypothesis, tested out various rules, and tried to confirm with sources that they believed to be authoritative, such as other peers in our class, their parents, and me, the teacher. The transition from a tentative miscue to a refined theory is inevitable during children's biliteracy learning process in my class. The examples I had listed in the section above include Rosan's use of a hyphen to "bridge" two characters due to the lack of space and Aileen's question regarding whether "cherry" and "peach" rhyme." Again, both vignettes exemplify that learning to be literate in fact also involves more than just the linguistic specifics, such as the writing system itself, but also ways in which learners in a particular culture use written language to communicate with each other and make sense of the world. Rosan had learned the function of the hyphen (linguistic specifics) in her English language arts classroom through linguistic engagements with either adults or children. Her experience with me in our class also made her believe that it is acceptable and appropriate to ask me to either confirm or correct her application of such a rule in her Chinese writing. The linguistic engagement between Rosan and me in discussing a piece of text she created, allowed her to test her hypothesis about the comparability of two linguistic systems, from which she was able to refine and redefine her personal theory of biliteracy learning.

Aileen's application of the rhyming concept from English to Chinese also showed how the instruction she received in the English language influenced her mother tongue, Chinese, literacy learning. With the knowledge she possessed in English rhyming words, Aileen set out to initiate linguistic engagements with me. This was done through oral text, delivered as quiz questions. Because of our pre-established relationship (teacher and student, family friend/aunt-like adult and children), she did not consider it inappropriate when she gave me a "quiz." As we were in the grocery store, she took the opportunity to exercise her newly acquired knowledge again when she saw "cherry [ying tao]" and "peach [tao zi]" were placed side by side on the produce section. Her question regarding whether the names of these two fruits rhymed [oral text] demonstrated her desire to sort out the specific rules that govern the use of rhyming in both languages. Again, the social and cultural roles I assumed allowed her to ask questions in order to further confirm or refine her linguistic hypothesis.

What I Have Learned So Far, and Where I Will be Going Next

In this chapter, I have discussed the interplay between children's two language and cultural systems as they learned to be bilingual and biliterate in our class. Expanding the model of literacy I developed in Chapter Three, I position the children in my class in two social and cultural contexts, namely Chinese and American/English. Through the vignettes, children's artifacts, and interviews I conducted with them, the children have showed me the following:

1. As children engage in linguistic exchanges through the texts (either oral or written), they demonstrate their understanding of linguistic

specifics; at the same time, these linguistics specifics reflect the multiple cultural values to which they are socialized.

2. Learning to be bilingual and biliterate means learning to compare and contrast the differences between two sets of linguistic and cultural specifics. In other words, the children in this study are actively forming hypotheses, testing rules, and confirming/refining their theories regarding the similarities as well as differences that govern the use of language and social rules during their biliteracy learning process.
3. When children learn two languages and cultures concurrently, they employ linguistic and cultural specifics from their stronger/predominant language/culture to their learning of their less familiar ones. As the learning of language and culture is a continuous, life-long, and two-way process, one's mother tongue and native culture can help support the learning of the second language and a new culture, and vice versa.
4. As the children in this study applied the linguistically and culturally specific knowledge they possessed in their familiar language and culture to their learning of the less familiar one, miscues sometimes occurred. Many of these miscues, however, are often short-lived; when the learners have opportunities to keep exploring, experimenting, and receiving feedback from other more

competent peers or adults through further engagements in texts, these miscues disappear from use.

5. Every instance of literacy learning is social, even though such a nature may not be readily evident. As children bring the linguistically specific knowledge in their familiar language into their learning of a less familiar one, they also bring their understanding of social rules that are associated with that particular information. These rules are acquired as children learn to be part of a member in a particular social and cultural group. Therefore, language learning and cultural language are integrated aspects of “learning how to mean” (Halliday, 1975).

These children’s bilingual and biliteracy learning, however, was not limited to the learning of linguistic language, but also applied to the language of art, the language of mathematics, the language of music, as well as other available, alternative sign systems. Therefore, I will show my readers how these children weave and orchestrate multiple sign systems as they are learning how to mean in the ext chapter.

CHAPTER FIVE

MULTIPLE SIGN SYSTEMS AND LITERACY LEARNERS:

WHEN “大 [BIG]” LOOKS LIKE A CAT’S MOUTH

Our class did a Language Experience Activity (LEA) after reading a picture book, entitled *Pupu, the Little Mouse* (Li & Yang, 1990). The children dictated to me, and I wrote down their sentences on a big sheet of paper. Both Aileen and Rosan mentioned a cat in the story, but they disagreed with each other regarding its size. So they checked the book and found out that it was a big cat.

I asked the children whether they wanted to write “big cat [大貓, da mao]” in Chinese themselves.

“I know, I know,” said Aileen eagerly. She took a marker then proceeded to write the character “big [大, da]” first.

Rosan followed and wrote down “大 [big, da]” on the paper as well. After finishing her writing, she commented, “*if you don’t put this line,*” she pointed at the horizontal line of the character “big [大, da]” then continued, “*it looks like a cat’s mouth. But if you put this on, and add more lines, you can put whiskers on.*”

“What?” I was not quite sure what Rosan meant until Aileen chimed in.

“*I will show you,*” said Aileen. Using a darker marker, she wrote over the character “大 [da, big]” she had written previously and added a few horizontal lines, which served as the whiskers of the cat she drew.

“*So will I,*” said Rosan and proceeded to draw “cat’s whiskers” as well.

After transforming the character “大 [da, big]” into “cat’s whiskers”, Aileen and Rosan added more features and drew two cats³⁰. (Transcript, September 21, 1996)



Figure 5-1. Aileen’s and Rosan’s drawings of cats.

³⁰ The Chinese character “big, [大]” is circled in the left side of the picture above, and both Aileen’s and Rosan’s “transformed drawings” of cat’s whiskers are shown at the right side of the pictures, indicated with arrows.

This chapter, like previous ones, begins with a vignette because it allows me to show, instead of merely tell my readers an early literacy learning process in which children employ and interweave multiple sign systems to generate meaning, express themselves, and interact with others (Dyson, 1990; Harste, Woodward, & Burke, 1984; Kenner, 2004; Kress, 1997). Sign systems, as defined by Short, Harste, and Burke (1996) are tools (e.g., music, art, movement, and language) that we have created to mediate our thinking and explore the world around us; each of these tools serves different functions and fulfills different purposes. Smith (as cited in Dyson, 1990) describes the interaction between young learners and the sign systems during their “learning how to mean” (Halliday, 1975) process as follows:

As part of this coming to know their world, children explore the symbolic materials available to them. . . . Each medium offers children distinctive physical and visual properties to explore (Golomb, 1974; 1988; Smith, 1979). And so, the child ‘does what he does, it [the medium] does what it does. . . . One discovery leads to the next as he responds to the material and as the material responds to him. (p. 21)

In other words, an interaction exists between the medium/sign system children use to create texts and the children as creators of texts through which meaning is generated. Each sign system affords children different meaning potentials and complements one another. As children employ and move among various sign systems, these young learners have opportunity to explore and expand the total repertoire of meaning that they are capable of expressing. At the

same time, they also learn the specifics of each sign system in relation to the cultural contexts in which they are members of that group.

The vignette above took place right after Aileen and Rosan had been engaged in a linguistic exchange with me through an illustrated and written text, namely the picture book, Pupu, the Little Mouse (Li & Yang, 1990). In responding to my invitation for a Language Experience Activity, these two children worked together and co-authored a written (the writing of “big [大]” in Chinese) and oral (a discussion of the size of the cat) text. They then playfully transformed the written text into an illustrated one (i.e., drawing of the cat’s mouth, the cat’s whiskers, and eventually the whole cat) via the use of yet another sign system, art. Aileen and Rosan in this example have demonstrated their ability to translate and to transform a sign from one system to another, a transmediational process which Siegel (1984, quoted in Short, Harste, and Burke, 1996) defines below:

Transmediation is the process of moving what you know in one sign system to another sign system. Because the content plane in language is different from the content plane in art (“love” does not have an equivalent single expression in art), to move an idea to art means that the underlying concept needs to be reconfigured. The twin processes, reconfiguring concepts and then convincing others that your reconfiguration is a good idea, constitute fundamental processes in literacy. (p. 341)

What Rosan and Aileen showed me in the vignette above is their ability to move fluidly between sign systems as well as to incorporate various meaning

making tools while communicating with others. When language alone failed to fulfill their desired result (i.e., enabling me to understand how they transformed the Chinese character “big [大]” into “a cat’s mouth” and “cat’s whiskers”), Aileen and Rosan added another sign system, art, to further explain the meaning they wanted to convey. While interacting with each other and creating linguistic texts (the talking and the writing of the Chinese character for “big” [大]), these two children also demonstrated their understanding of the linguistic specifics, such as how to write the Chinese character “big [大]” in a conventional way and how to use language to communicate with me and each other. From these two children’s drawing, it is also evident that they understood some semiotic specifics existing in the sign system of art.

In the process of transmediating a linguistic sign (the Chinese character “big [大]”) to an art one (a cat’s mouth and whiskers in drawing), Aileen and Rosan had elected a particular artistic genre/technique, namely realistic line drawing, to convey their meaning and to communicate with me. Even though the two cats by Aileen and Rosan in the example above look somewhat different from each other, their feline characteristics and body parts (e.g., the eyes, ears, whiskers, and legs) are apparent and in proportion, and they both resemble real-life ones to a certain extent.

As Aileen and Rosan wove the signs of language and art into their joint meaning construction, these two sign systems complemented one another and yet each stood alone to provide different types of information to me. Using language, Aileen and Rosan described what they had learned from listening to the story and

discussed their interpretation of the illustration in the picture book; with drawing, these two children transmediated the experience from narrative to visual images; each cat represented the reconfiguration of meaning from language to art and the individual child's ways of depicting an animal through the use of art.

In addition to understanding the specifics of each sign system, Aileen and Rosan were aware of the cultural specifics in our classroom and the roles each of us assumed. The relationship between myself and these two children was not a hierarchical (or a teacher-to-student) one, but more of a family friend/aunt-like adult to a friend's children/nieces, for I had known them for a few years and had been often invited to participate in their family activities, such as birthday and holiday parties. The small number of children and the semi-structured atmosphere of our classroom had allowed my students more freedom to take on various roles and develop a more personal relationship with me, compared to the schools they attended daily.

Therefore, Aileen and Rosan could and did reverse their role from students to teachers and helped me understand their intention by employing multiple sign systems. The phrase "I will show you" and "so will I" revealed the confidence they had as teachers in providing instruction to their "adult-student", me, in our classroom. In addition, speaking without asking for permission in this vignette, an act often discouraged in their formal schooling, also indicated these two children's relaxed attitude in such a context.

This vignette took place during my early data collection period. It not only shows me the dynamics and multi-facets of my students' literacy learning but also

helps me reflect on my own inquiry process. While working on this research project, I have been constantly shifting back and forth, thinking in Chinese and English, as well as sketching different diagrams in to clarify my own thinking and to make sense of the materials I have gathered. Tables and numbers, as well as recordings of the children's dramatic play, songs they sang, and various artifacts these learners created were also used to help me understand, analyze, and interpret findings.

This process has been comprised of multiple sign systems. The use of diverse, available sign systems in my study further allowed me to explore different ways to triangulate and present my interpretation of children's literacy learning, so that my readers are likely to gain a more valid and holistic picture of such a process. From this self-reflection, I began to think about two issues; firstly, what constitutes literacy and secondly, what children's literacy learning may look like when they have opportunities to learn and are encouraged to investigate the meaning of literacy through a wide range of sign systems. These two questions have become the focus of this chapter.

Learning to be literate has long been defined as the process in which one develops the ability to use both oral and written language for a variety of purposes and for personal as well as social development (Kirsch & Jungeblut, 1986). Literacy learning has traditionally been the focus of schooling (Fueyo, 1991; Siegel, 1995; Wright, 2002) with Moffett (1992) arguing that reading and writing are often prioritized in school curricula where "most traditional subjects are cast into language and cannot be learned without words" (p. 86). Consequently,

students' reading and writing ability becomes the sole criterion in determining their academic success across content areas, be it language arts, history, or other subjects.

Such a verbocentric approach forms the basis for several major government's efforts to boost students' literacy achievement, such as stances taken in *The Reading Excellence Act* (1998), *The National Reading Panel Report* (2000), and *No Child Left Behind Act* (2002). These politically-driven research agendas and legislations operate on a narrow definition of literacy, in that literacy is viewed as a set of skills and should be taught via a systematic phonics approach and/or a prescribed basal reading program (Allington, 2002; Goodman, 1998; NCTE, 2002; Yatvin, Weaver, & Garan, 2003). Aiming to promote the nation's literacy level as a whole, these well-intended efforts nevertheless have failed to take into account the multi-dimensional and multi-modal aspects of literacy and hence, they are unable to attend to the changing nature of literacy from a historical and cross-cultural perspective.

As the advancement of modern technology affords us additional tools, it at the same time also changes our perception of what it means to be literate, as well as our literacy behaviors and practices. The definition of literacy therefore undergoes changes. In viewing learning to be literate as a process, rather than a set of pre-determined skills, Harste (2003) contends:

Instead of thinking about literacy as an entity (something you either have or don't have), thinking about literacy as social practice can be revolutionary. When coupled with the notion of multiple literacies,

literacy can be thought of as a particular set of social practices that a particular set of people value. In order to change anyone's definition of literacy, the social practices that keep a particular (and often older) definition of literacy in place have to change. (p. 8)

This statement reveals a social semiotic view of literacy, for it regards literacy as social practice, and the definition of literacy shifts as social practice undergoes change. In addition, it does not limit the definition of literacy to basic skills, but widens the scope to include other sign systems, thus the term "multiple literacies" emerges. The concept of multiple literacies (Harste, 2003) or multiple modalities (Kress, 2005; Kress & Jewitt, 2003) opens up an avenue for us to reevaluate diverse sign systems involved in our literacy learning process and to examine the learners' roles in this process, instead of merely seeing literacy as one's ability to decode, comprehend, and create written texts, or regard written and oral language as primary tools for meaning construction (Freebody & Luke, 1990).

Through a social semiotic lens, I sampled an instance of my students' literacy learning process, in which they employed multiple sign systems to mediate their thinking, express themselves, and engage in social interactions with others. Before I go on to share more of such critical incidents and reveal more of my interpretation of their learning process, I would like to first lay out the theoretical frameworks on which my interpretation is based. A social semiotic perspective to literacy learning will be the focus of my literature review section, because it has expanded my view of what constitutes literacy, and it also allows

me to examine my students' learning from yet another alternative perspective. As in the previous chapter, I will interweave my personal experience with research and theory from a socio-semiotic perspective.

Social Semiotics and Literacy Learning:

A Review of Relevant Literature

We learn to use language long before we learn to analyze it formally. This process is essentially the same in our acquisition of other sign systems. The earliest recollection I have regarding my use of any meaning-making tool was when I was about three. Alone in the bedroom I shared with my two sisters, I stood in front of a freshly painted white wall. Grasping a pencil tight in my fist, I began to draw to my heart's content before anyone came to stop me. Posters of world-renowned musicians that my sisters put on the wall frowned at my creations and me intently, as if to show their disapproval. Not intimidated by their gaze, my hand reached as high and wide as I could; I drew things big and small, I pressed the pencil hard and gentle, and I moved fast and slow. I was ecstatic as I saw the emergence of marks of different sizes, shapes, and shades, and experienced the sheer joy of physical movement.

At three, while my age-mates were busy expressing themselves using their ever-expanding linguistic skills, I did not spontaneously engage in verbal interactions with others, even though there was no medical evidence indicating any physical problems which required intervention. My delayed language development worried my mother but not some family elders, who insisted that "bigger roosters learn to crow later" (implying "those who learn to speak late

become better speakers”), a common folk belief held by many Taiwanese before the concept of “learning disabilities” was widely recognized.

“You were actually a better drawer than a talker when you were very little,” my mother later recalled when I asked how I was viewed as a young language learner. Realizing my interest in expressing myself through art, my mother kept art materials stocked in our bedroom so that I would have ready access to them. Art opened a door for me to step out of my own world and begin to be engaged in social exchanges with others. My parents and sisters asked me about my drawings even though they did not recognize what was represented.

My mode of self-expression and social interaction moved quickly from exclusively art to a combination of art and language. By age four, I had become “quite a talker” (according to my mother) and quickly learned to read and write in Chinese. Art, however, remains a comfortable mode for me to be involved in interpersonal as well as intrapersonal communication throughout life, even though I use it far less than language on a daily basis, and I have limited, if any, formal training in this field.

As I reflected on such a childhood experience, I realized the role of art as an alternative sign system in supporting my own learning, as well as my development as a social being, which could not be achieved by using language alone at a particular stage in my life. This reflection further influences the way that I perceive language as one of the many, instead of the only meaning-making tool. Examining my professional life in working with children, I found that my students also frequently moved between and wove various sign systems,

especially when they were engaged in meaning co-construction with others. Such a socio-semiotic process is one aspect that I want to focus on and examine in this study.

In the following sections, I will begin with a brief introduction of semiotics, followed by a discussion of social semiotics because sign systems always need to be interpreted within contexts. I will then examine models and theories proposed by semioticians from different fields regarding the relationship between social semiotics and meaning making.

Semiotics as a Foundation for Understanding Meaning

Semiotics is the study of sign and sign systems, which are tools that members of each community use to create and share meaning (Berghoff & Harste, 2002). A sign is often defined as “something that stands to somebody for something in some respect or capacity” (Peirce, 1985, p. 5), and such a process is termed “signification” (Eco, 1976). There are three types of signs: (1) symbol—a sign that is given an arbitrary meaning to that which it represents (e.g., the word “happy” by convention stands for the feeling people identify with this word), (2) icon—a sign that bears a physical resemblance to that which it stands for (e.g., a painting of an apple looks like the fruit it represents), and (3) index—a sign that signifies an object by virtue of physical connection or as an indicator of a fact (e.g., thunder as an index to an upcoming storm) (Peirce, 1985).

Although semiotics is the study of both linguistic and non-linguistic signs, many semioticians focus primarily on its linguistic aspect. Saussure, a linguist and considered as a founding father of modern semiotics, argued that

“language is a system of signs that express ideas, and is therefore comparable to a system of writing, the alphabet of deaf-mutes, symbolic rites, polite formulas, military signals, etc. But it is the most important of all these systems” (Saussure, 1985, p. 34). Saussure proposed a dyadic model to explain the signification process using the figure below to represent that language, as a sign, is a two-sided psychological entity:



Figure 5-2. Sign and its components (Saussure, 1985).

For Saussure, a sign comprises a signified and a signifier. In the case of language, the signified represents a concept, and signifier, a sound-image. The linguistic sign unites the sound-image and concept, and each recalls the other, as indicated by the two arrows in this figure. A linguistic sign has two essential characteristics: arbitrary and linear. Saussure maintains that “the bond between the signifier and the signified is arbitrary” (1985, p. 37) for the idea of a specific concept does not bear any inner relationship with the succession of sounds it represents as signifier in any language. The linearity of the linguistic sign is due to its representation: the signifier of language, be it writing or speaking, is represented and understood in succession—in either spatial lines of graphic marks or a succession of sounds in time.

For Hjelmslev (1963), each sign consists of a content plane and an expression plane which are interdependent of, as well as connected with each

other by sign function; the expression of a sign presupposes its content, and vice versa. The content plane is the semantic territory for expressing and conveying meaning, whereas the expression plane consists of material elements, such as line, shape, syntax, etc., for meaning construction. The sign function positions itself between these two entities and unites them.

The content of a sign can have multiple expressions, and likewise, an expression of a sign can be represented in more than one content plane. In other words, we can use a sign to represent different meanings as well as to express similar meaning by using different signs (Berghoff & Harste, 2002; Hjelmslev, 1963). The latter is called transmediation, and the former can be found among signs that share similar (or identical) elements on the surface structure (for example, the “+” sign can either be interpreted as a “plus” in mathematics, or a “ten” in Chinese character, or “positive” in scientific terminology), all these interpretations belong to different systems of meaning-making.

Like Saussure, Peirce (1985) recognized that the dyadic relationship between signified and signifier (or object and representamen respectively, in his own terminology) is essential in a meaning making process. He, however, expanded and revised the dyadic relationship between signifier and signified into a triadic one, which includes object, representamen, and interpretant. Peirce uses a diagram, often called “semiotic triad,” to explain the meaning making process as follows:

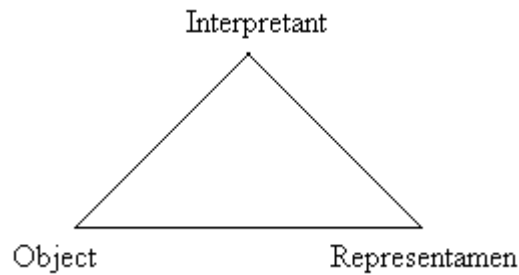


Figure 5-3. Peirce's Semiotic Triad (Peirce, 198)

Objects in Peirce's model denote things being represented and can be cultural constructs, which are not limited to those made of physical substances. A representamen does more than merely represent an object; it "tells something about the *meaning* of that relationship, and this requires a third component, which he terms an 'interpretant.' The interpretant is another sign that represents the same object as the representamen, as its position in the semiotic triad indicates" (Siegel, 1995, p. 459).

Based on Peirce's semiotic triad, Buczynska-Garewicz (1981) further explains that the interpretant serves as "a meaning of a sign and also another sign explaining the former one" (as cited in Siegel, 1995, p. 459); therefore, signs do not exist in isolation, but always in connection with others, and "meaning is created when one sign is translated into another and thus sets up the possibility of a 'chain of interpretation'" (Buczynska-Garewicz, 1981, p. 188, as cited in Siegel, 1995, p. 459).

Each of the forefathers of semiotics and their theories discussed above contribute to our understanding of the function of sign, its composition, and how elements of a sign interact with each other during the signification process. Among these scholars' works, Saussure's model illustrates the interrelated and

integrated relationships between the signified and the signifier during the signification process. Hjelmslev's sign function, content plane, and expression plane also help us understand the inter-dependent relationship between a sign's meaning (content) and form/representation (expression), which enables a sign to function in a context. Finally, Peirce's semiotic triad opens up the possibility for us to consider the social nature of meaning making, for signification is also situated. All these ideas build the foundation for the study of social semiotics and transmediation, which I will address in the next section.

Social Semiotics: The Social Nature of Meaning Making

Social semiotics is the study of "learning how to mean" (Halliday, 1975) in context. Human beings use socially and culturally constructed tools, i.e., sign systems, to make sense of their world and to interact with each other. It is therefore imperative that we take contexts into account when studying this cognitive and social process. One of the prominent figures in the field of social semiotics is M. A. K. Halliday, who approaches semiotics from a sociolinguistic perspective and views language both as actual instances of a linguistic system as well as a system of meaning potential, which "consists in the mastery of a small number of elementary functions of language, and of a range of choices in meaning within each one" (Halliday, 1978, p. 19). Halliday (1975) explores the social nature of learning how to mean through an intensive study of language development of his infant son, Nigel, from age nine to 18 months. Based on his research, Halliday (1975) concludes that as children learn language, they also simultaneously learn through and about language:

The learning of language and the learning of culture are obviously two different things. At the same time, they are closely interdependent. This is true not only in the sense that a child constructs a reality for himself largely through language, but also in the more fundamental sense that language is itself a part of this reality. The linguistic system is a part of the social system. Neither can be learnt without the other. (p. 120)

Meaning potentials of a culture is what the child learns “through” language, for language serves as a tool with which a young child develops an understanding of the cultural practices, customs, and knowledge which are passed from one generation to the next, and through which the child also develops identities of the self, others around her/him, and the relationships between and among different cultural constructs.

Halliday (1975) divides Nigel’s language development into three phases where the child learns concurrently the linguistic structure and the semiotic function of his mother tongue. The semiotic function refers to “learning about language” where the child learns to use language in accordance with the audience, purposes, and contexts, so that she/he is able to use it not only as a means of communication, but also for self-expression. Halliday contends that at the initial phase, the young child’s linguistic structure comprises only content (meaning) and expression (sound), but lacks form (grammar and vocabulary) which co-exist with the other two in adult language; he characterizes this phase as “learning of a set of functions, each with its associated ‘meaning potential’” (p. 54) which

includes six functions (p. 19-20). These functions are identical to their uses of language:

(1) Instrumental—the “I want” function of language; used to fulfill the child’s immediate material needs and enable him/her to obtain necessary goods and services, including general and specific expressions of desires, but not necessarily directed toward particular individuals.

(2) Regulatory—the “do as I told you” function of language; used to control and influence the behavior of others’, including generalized requests and particular demands toward specific individuals.

(3) Interactional—the “me and you” function of language; used to interact with people, especially primary caregivers, around his/her environment, including greetings, responses to calls, and some specific forms used to involve others.

(4) Personal—the “here I am” function of language; used to express the child’s own identity and personality, including the expression of personal feelings.

(5) Heuristic—the “tell me why” function of language; used to explore the environment, including the request for a name in order to categorize objects in the physical world.

(6) Imaginative—the “let’s pretend” function of language; used to create a world by the child, as the child is entering, taking over, and exploring his/her environment.

In this phase, each utterance the child makes serves to fulfill a particular function of language to meet one of his/her specific needs, and thus the meaning

potential is considered individual. In other words, the child is only able to use language functions one at a time—either as an observer (using language to encode his experience, as in interactional, personal, and heuristic functions of language) or as an intruder (adopting a role and using language for the purpose of social interaction, as in instrumental, regulatory, and interactional functions of language), but not both.

Halliday terms the second phase of Nigel's language development as transitional. While the child continues to learn language, as well as learn through and about language via interacting with other people in her/his environment, the third element in linguistics structure—form (including grammar and vocabulary) emerges. At the same time the child learns grammar, she/he also learns dialogue. The functions of language continue to develop (the seventh: informative function of language—"I've got something to tell you" emerges at this phase) while new meanings are incorporated into extant ones. The young learner's functional system undergoes changes, "from having been equivalent simply to 'use of language,' the functions come to be interpreted at a more abstract level, through a gradual process whereby they are even totally built into the heart of the linguistic system" (Halliday, 1975, p. 35). The change takes place in two stages:

First, by the generalization, out of the initial set of developmental functions, of a fundamental distinction between language as doing and language as learning—the pragmatic and the mathetic functions, as we called them; and secondly, by the process of abstraction through which this basic functional opposition is extended from the semantic system into

the lexicogrammatical system, so that it becomes the source of the systematic distinction in the adult language between the ideational component, that which expresses the phenomena of the real world, and the interpersonal component, that which expresses the structure of the communication situation. (p. 36)

The development of grammar and expanding vocabulary at Phase II enables the child to mean more than one thing at a time, and thus each utterance now does not merely serve one specific function, but instead can be combined with others to create different meaning potentials. There are two generalized functions in this phase: The pragmatic (doing) and mathetic (learning). The pragmatic function of language includes the instrumental, regulatory, and interpersonal uses of language, that enables the child to fulfill his/her needs (instrumental), control others' behaviors (regulatory), and interact with people (interactional). The mathetic function arises from the generalization of the personal and heuristic uses of language and allows the child to learn and find her/his own self-identity, as well as to explore the environment. The discovery that the young learner can mean two things/play two roles—learning (the observer) and doing (the intruder)—at the same time helps the child in Phase III mediate the uses of language through these twofold meaning potentials.

Phase III of Nigel's language development is characterized by its similarity to that of adult's language in terms of both linguistic structure (including content, form, and expression), and its meaning potential. By now, the meaning potential involves a social role, instead of merely individual, as

described in Phase I. The child's functions and uses of language now separate. In terms of functions, the grammar in adult language consists of three key components: ideational, interpersonal, and textual. The ideational function of language serves as an observer one, which the child uses to represent experiences and understand the world surrounding and inside him. The interpersonal function has an intruder role, representing the child's engagement in social interactions, such as his roles, attitudes, and feelings toward particular events or people. The textual function of language bonds the ideational and interpersonal meaning together because of its ability to create text, "through the options in this component the speaker is enabled to make what she/he says operational in the context, as distinct from being merely citational, like lists of words in a dictionary, or sentences in a grammar book" (Halliday, 1975, p. 17). At this stage, the child still has many uses of language (e.g., instrumental, regulatory, personal, interactional, heuristic, imaginative, and informative), "but all of them are actualized through the medium of the ideational and the interpretational 'functions'" (Halliday, 1975). It is clear in this phase, "function" is no longer synonymous with the "use" of language. However, those language functions in the original Phase I do not vanish but become generalized social contexts of language use, which plays a critical role in transmitting cultural values, knowledge, and practice to the child.

To summarize, Halliday (1975) regards cultural learning and language learning an interdependent process, for a child constructs her/his reality mainly

through language and the linguistic system is a part of the sociocultural system; one cannot exist without the other. He further explains:

We took the view of the social system as a semiotic, a system of meanings that is *realized through* (inter alia) the linguistic system. The linguistic semiotic—that is, semantics—is one form of the realization of the social semiotic. There are many other symbolic systems through which the meanings of the culture are expressed: art forms, social structures and social institutions, educational and legal systems, and the like. But in the developmental process language is the primary one. A child's construction of a semantic system and his construction of a social system take place side by side, as two aspects of a single unitary process. . . . In the process of building up the social semiotic, the network of meanings that constitutes the culture, the child is becoming a member of the species 'social man'. . . Social man is, effectively, 'sociosemiotic man', man as a repository of social meanings. (p. 121)

Halliday's social semiotics theory (1975; 1978) emphasizes the role of language in the meaning construction process, although he also recognizes the existence of other sign systems with social and cognitive functions. He regards learning how to mean via the use of language essential in children's learning to become a social being because the process of language learning and learning about the cultural system develop simultaneously.

Halliday's theory of social semiotics influences the thinking and theories of many other social semioticians, who expand the scope of social semiotics to

include other sign systems, such as mathematics, arts, and music. I will discuss the theories and studies of several scholars for they are instrumental to my understanding and interpretation of this research project.

Transmediation, Multimodal Approach, and Multiple Ways of Learning and Knowing

The availability of alternative sign systems other than language allows us to communicate and express meaning in a wide variety of ways. It also opens up the possibility for transmediation—“translation of content from one sign system into another” (Suhor, 1984, p. 250). The origin of the concept “transmediation” is often credited to Charles Suhor (1984), an English educator who adopts Morris’ (1938) categorizations of semiotics into three areas: (1) semantics, the study of culturally defined meaning; (2) pragmatics, the study of usage in context, and (3) syntactics, the study of structures.

Suhor’s discussion of syntactics is particularly relevant to our understanding of transmediation here. He states that there are two foci in the study of structure of sign and sign systems: medium-specific and transmediation. He defines medium-specific analysis as a “syntactic analysis that makes use of appropriate analytical tools” (p. 249). Suhor laments the lack of medium-specific training among English teachers who often take a literary analysis approach when teaching non-printed/visual texts, such as movies; he cautions against the negative consequence of this approach, for it deprives students of opportunities to “expand both their observational powers and their repertoire of analytical categories” (p. 249).

Drawing on the work of Cameron and Plattor (1973), as well as Dauterman and Stahl (1971), Suhor further identifies two types of transmediation: literal and imaginative. Literal transmediation refers to directly translating factual information from one sign system to the other, such as constructing a new object following the description in a manual; whereas imaginative transmediation involves taking different perspectives (e.g., that of a writer and musician) while transforming one's interpretation between and among sign systems, such as writing after listening to a piece of music.

Suhor regarded the imaginative transmediation to be more important than the literal one in students' learning because the former requires that learners reconfigure and coordinate different sets of underlying structures in order to recreate, interpret, and translate content from one sign system to another, thus supporting learners' development in terms of cognitive, aesthetic, and other domains. Suhor (1984) recognizes the significance of transmediation in student learning and proposes a semiotic-based curriculum model.

Within this model, art and media are integrated across the curriculum. Instead of applying a literary analysis approach to teach all subjects, Suhor advocates a media-specific one to help students understand and utilize individual sign systems. Like Halliday and other earlier semioticians, Suhor (1991) nevertheless elevates the role of language above other sign systems for he maintains that language takes the central stand across the curriculum, and that language often accompanies other sign systems to clarify their meaning.

Along a similar line of Suhor's transmediation, Kress (1998) proposes the concept of "synaesthesia", which he defines as "the transduction of meaning from one semiotic mode in one meaning to another semiotic mode, an activity constantly performed by the brain" (p. 76). He also stresses that "synaesthesia is essential for humans to understand the world. It is the basis of all metaphors, and of much of our most significant innovation" (Kress, 1997, p. xvii). Kress, Jewitt, and their colleagues (Kress & Jewitt, 2003; Jewitt, Kress, Ogborn, & Tsatsarelis, 2001b) also develop a social semiotic theory of their own. To better understand their theory and research, it is essential that we be familiar with several terms they created/coined. These include: medium and mode, materiality, modal affordance, and logics of mode.

- Medium and Mode: Medium refers to "the material substance which is worked on or shaped over time by a culture into an organized, regular, socially specific means of representation, i.e., a meaning-making resource or a *mode* (Jewitt, Kress, Ogborn, & Tsatsarelis, 2001b, p. 15)." Examples: the medium of sound is used in the mode of speech and music; the medium of light is shaped by different technologies into the mode of photography and visual arts; the movement of time and space as media are used in modern dance, ballet, and other modes to express meanings.
- Materiality: refers to "inherent characteristics of the material used by a culture for making meanings, with and out of which it shapes the different media, has its effects on what meanings can be made" (Jewitt,

Kress, Ogborn, & Tsatsarelis, 2001b). In other words, it is “what a culture provides as materials for making meaning. Materiality is everywhere and always physiological and semiotic” (Kress & Jewitt, 2003, p. 14). Examples of materiality are included in speech which is sequences of sounds in time; visual communication that is spatial and is experienced simultaneously through light as graphic substance; and gesture and action which include temporality (movement) in sequence, spatial (position), and displacement in (three dimensional) space.

- Modal affordance: Refers to what it is possible to allow sign users to represent, and express meaning effectively and efficiently with a particular mode, “given ‘its materiality’ and ‘the cultural and social history of that mode’” (Kress & Jewitt, 2003, p. 14). Examples: sign users may consider whether it is as effective to represent meaning using graphics as with speech, given available resources and in a specific social and cultural tradition.
- Logics of modes: Refers to “what (deep) orientation to the world is necessarily and inevitably embedded in the resources for representation” (p. 15). Examples: organization using the possibilities of time in speech is unavoidable as that of space and simultaneity in graphics.

Kress and Jewitt (2003) propose a multimodal approach to understand meaning making within a social semiotic framework. According to them, each cultural group has its own specific sets of modes that shape materials into

resources for representation, and each mode provides as well as limits sign users potential for representing meaning. Jewitt and Kress (2003) further argue that theoretically all modes are “equally significant for meaning and communication, potentially so at least” (p. 2). Almost all communications are multimodal. In a communicative event, each mode allows different affordances provided by materiality, and the logics of the individual mode involved enables sign users to orient their world in multiple ways to complement and transmediate between one another. Therefore, the use of more than one mode during a communication process widens the range of meaning that people are able to represent and helps them gain a more holistic picture.

Jewitt, Kress, Ogborn, and Tsatsarelis (2001a) maintain that while engaged in schools’ learning activities, students “actively remak[e] the information and messages (or complexes of ‘signs’), which teachers communicate in the classroom. In this way learning can be seen as the pupils ‘reshaping’ of meaning (‘signs’) to create new meanings (‘signs’)” (p. 6). Holding the perspective that meaning-making is always transformational in that “sign-makers express their interests through their selection, adaptation of elements presented, and introduction of new elements” (Jewitt, Kress, Ogborn, and Tsatsarelis, 2001b, p. 129), these scholars investigate how secondary school students organize and draw on multimodal resources available to them to interpret their understanding of a science assignment—describing the procedure used in conducting an experiment via written words (setting up a microscope to see onion cells) and

representing the result of the experiment (the cell of a piece of onion skin as seen under a microscope) in drawing.

The resources available to the students these researchers identified in this study include the teacher's verbal explanation and instruction, in particular his analogies referring to cells as "a building block" and "a honey comb", both served as templates for student's transformation; the worksheet that helped students with their tasks and models of science texts; materials and equipment (microscope, onion, slides, iodine, etc); and students' talk with each other while engaged in the task.

Focused specifically on two seventh graders, these researchers found that what these two students produced, both in writing and drawing, differed vastly from one another. Jewitt and his colleague conclude that both students drew on, selected, and integrated different elements from the resources available to them in order to express their understanding of a learning activity and scientificness; the differences in students' drawings and writings represented the stance each took to record their learning experience, and each representation also contributed to the individual learner's "realization of 'being scientific' and to the experience and meaning of the experiment for each" (p. 140).

The multimodal, social semiotic approach that Kress and his colleague employed to investigate student learning has broadened the view of communication beyond the linguistic, to include other modes of meaning construction. Each mode allows different affordances, that in turn enables meaning to be represented and shaped in different ways and which bears different

conceptual and cognitive consequences. Such an approach to student's learning also has different educational implications, compared to a verbocentric one, in which language is regarded as a primary means for understanding and meaning construction. In other words, a multimodal approach sees meaning making as a transformational and generative process, and it allows the use of many modes of communication that are appropriate to the context as well as pertinent to students' interests and experiences.

Within a multimodal, social semiotic approach, every instance of meaning making involves multiple modes and transmediation, as the learner constantly draws on and orchestrates among various types of knowledge in order to communicate with others and make sense of the world. Learning to read and write, traditionally associated with the linguistic mode, is not an exception.

A close examination of children's early biliteracy learning reveals that such a process is a complex one, involving more than language alone (Kenner, 2003; Kenner, 2004; Kenner & Kress, 2003; Kenner, Kress, Al-Khatib, Kam, & Tsai, 2004). In these studies, Kenner and her colleagues conducted case studies to investigate the biliteracy learning process of six British children who had access to various semiotic sources while learning to read and write in English and their mother tongue (Arabic, Chinese, and Spanish) at their schools, home, and also at the community language (mother tongue) schools they attended during weekends.

These researchers observed that as these case study children learned to use different written scripts, they simultaneously developed various types of knowledge in different areas, including, but not limited to actional, visual, and

cognitive aspects. They describe this type of learning as “embodied knowledges” and define it as “ways of designating symbols and using the graphic space of the page, and the physical process of writing” (p. 103). Such an understanding is a significant part of learning to be literate, for children not only need to know what individual symbols stand for (cognitive), they also need to be able to visually recognize the characteristics of each one (visual and spatial), as well as to produce them through motor movements (action).

Kenner and her colleagues also found that the bilingual/biliterate children in their studies lived in “simultaneous worlds” (p. 107) because these children constantly drew on multiple resources from different cultural/linguistic environments in order to make sense of and reinterpret their understanding of the world, a process called “transformation” by Kress (1997). In this process, children actively select, reorganize, and connect new and old information before representing and communicating such knowledge to others, and through this transformation, new meaning emerges. Kenner and her colleagues concluded that children in their research have demonstrated their ability to differentiate and make connections between different writing scripts by drawing on all knowledge and the semiotic resources they possess, and such an ability is an asset in helping them effectively communicate and express themselves in an increasingly multilingual and multimodal society.

Like Kress and other social semioticians discussed thus far, Lemke (2004) examines the role of social semiotics in student learning. With a focus on students’ mathematics learning, Lemke considers mathematics an integral part of

a multimodal meaning-making system which also includes other social semiotic resources. He states

Semiotics helps us understand how mathematics functions as a tool for problem-solving in the real world.... Mathematics is used and can only be learned and taught as an integral component of a large sense-making resource system which also includes natural language and visual representation. (p. 1)

Linking his work to that of Halliday (1978) and Hodge and Kress (1988), Lemke (2004) argues that social semiotics is a study of meaning construction process via the use of sign systems. Within such a process, “every system of meaning-related signs and the conventions for using them has evolved to enable us to make certain kinds of meaning” (Lemke, 2004, ¶ 9). Therefore, the essential aspect of mathematics as a sign system lies in its potential for meaning making—“a system of related social practice, a system of ways of doing things,” (Lemke, 2004, ¶ 6) rather than its forms, namely the symbols and formulas.

Lemke juxtaposes his interpretation of social semiotics over Peirce’s semiotic triad and explains that in Peirce’s model, representamen (R) is the interpretation of an object (X)—R-as-sign-of-X—and the interpretant (I) serves as our interpretation of R or the on-going process of interpreting R. With a focus on the context of meaning making, Lemke asserts that the important aspect in a signifying process is that there needs to be a system of interpretance (SI) in the context, so that “we have a sign when something (R) stands for something else (X) for somebody in some context (SI)” (Lemke, 2004, ¶ 8). Lemke argues that in

this aspect, all signs work essentially in the same way; what distinguishes one sign system from the other depends on the kinds of meaning it affords us.

Lemke compares and contrasts two types of meaning making in semiotics: topological and typological. He used a table and two figures below to further explain these two different kinds of processes:

Topological Semiosis

- Meaning by degree
- Quantitative difference
- Gradients
- Continuous variation

Typological Semiosis

- Meaning by kind
- Quantitative distinction
- Categories
- Discrete variants

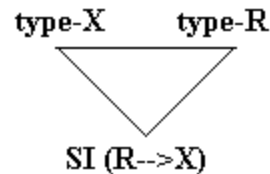
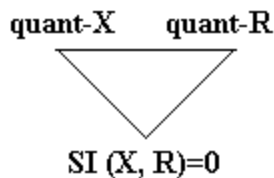


Figure 5-4. Topological vs. Typological Semiosis (Lemke, 1999).

Topological or “making meaning by degree” is usually presented in gesture or visually, giving specific information about the meaning of continuous variation; both R and X elements in Peircian semiotic triad are capable of continuous variation. In other words, “we represent continuous variability in something of interest (size, shape, position, color spectrum, pitch, temperature, etc.) by continuous variation in something that is convenient as a representamen” (Lemke, 2004, ¶ 19). Typological, on the other hand, is “meaning making by kind” which characterizes the specific way that natural language makes meaning;

“we represent types of categories by other types of categories (spoken/written word, mathematical symbol, chemical specifics, etc.)” (Lemke, 2004, ¶ 19).

Lemke (2004) asserts that no sign system can be purely topological or typological in their semiotic strategies because both types of resources exist in every sign system. For example, language (especially oral language) is often considered typological; it however has its topological resources, such as loudness for emphasis. Mathematics, on the other hand, originates from the extension of the semantics of natural language “to improve the description of quantitative differences, ratio, and relationship (Lemke, 2004, Mixed-mode semiosis, ¶ 2)”; it is considered topological due to its ability to represent degree or quantitative variation. It, nevertheless, has typological properties because mathematic expressions are constructed by typological systems of signs. Lemke also recognizes that mathematic meaning making can and often does combine with natural language and other sign systems, such as visual representation, because each sign system is able to provide learners different kinds of semiotic resources to complement each other in meaning expression.

One aspect of Lemke’s studies focuses on how students transmediate between available semiotic resources in their mathematics and science learning. In a case study of Australia’s secondary curriculum, Lemke (1997; 2000; 2004) traced the school routine of a high school junior, John, and documented his learning in mathematics and sciences classes. Lemke wants to learn how mathematical and scientific information is conveyed through different media and

channels, as well as what kinds of tools John uses to interpret this type of information.

To examine such processes from the learner's perspective, Lemke set up a camera close to John's seat so that it showed activities, classroom interactions, and organization from John's own perspective. In addition to classroom observations, Lemke had access to various artifacts, such as textbooks, teacher's overheads, handouts, and student's notes of the classes (mathematics, physics, and chemistry) in which John was enrolled. Lemke found that John constantly made use of and integrated different semiotic resources into his classroom learning. The resources available to John and which he employed in his mathematics and science classes included language (both written and oral), mathematics, and graphics. As he was learning the content via a particular semiotics mode, he also drew upon other types of resources to support, complement, and enhance his learning. For example, while John's chemistry teacher guided students through a chemistry question by using an overhead transparency (with both written language and chemistry formulas), John was simultaneously engaged in, and coordinated various actions involving the use of verbal, chemical-symbolic, and mathematical meaning systems: reading from the overhead transparency (written language and chemistry formulas), writing the formula from the transparency (written language) while listening to the teachers' explanation and student discussion (oral language), using his calculator to work on the equation (mathematics), and conferring (oral language) with his friend. From his observation of John's meaning-making process, Lemke (2004) concludes:

The total activity [of science learning] is an integrated whole with respect to meaning-making. . . it would not be possible to get a complete and correct meaning just from the verbal in the activity, nor just from the mathematical expression written and calculations performed, nor just from the visual diagrams, overheads, and chalkboard cues, nor just from the gestures and motor actions of the participants. It is only by cross-referring and integrating these thematically, by operating with them as if they were all component resources of a single semiotic system, that meanings actually get effectively made and shared in real life. (§ 34)

Lemke's statement above illustrates the nature of our day-to-day learning, which often requires that learners orchestrate and transmediate multiple semiotic resources in their learning process across knowledge domains. Each semiotic resource, such as mathematics and language, has its own unique ways of expression and semantics which required different ways of interpretation. It is therefore important that the teacher demonstrates their usage, as well as provides students with ample opportunities to explore various dimensions of meaning potentials.

Scholars interested in understanding the social semiotic nature of learning come from different disciplines and their research areas vary. Thus far, I have discussed works by Halliday, Suhor, Kress, Kenner, Lemke, and those closely associated with them; each of these researchers focuses on a particular area within a specific context. In the next section, I would like to turn the lens on the body of research conducted by Burke, Harste, Short, Woodward, and their thought

collectives. I will focus their research on the meaning construction process among preschool and young elementary school-aged children, with whom my research participants share similar milestones because of their proximate age.

Based on their research program of young children from diverse social, cultural, and economic backgrounds, Harste, Woodward, and Burke (1984) developed a transactional, psychosociolinguistic model regarding children's early literacy learning. It is transactional because these researchers argue that meaning can only be acquired through learners' active and continuous sign interpretations, instead of as a pre-existing condition in learners' minds or the environment. They find that the children in their studies develop sophisticated knowledge by being both participants and observers of literacy events around them. Through a wide array of experiences, young learners begin to seek patterns, generate and test their own hypotheses, and then further revise their theories about literacy.

Learning to be literate is both psychological as well as sociological in nature. A psychological aspect of literacy learning lies in its conservation nature, for it "affords a more precise memorability and retrievability of ideas over time and space (Goodman & Goodman, 1979, as cited in Harste, Woodward, & Burke, 1984, p. 121-122). In other words, literacy helps us remember and relocate our original intent when we write down notes to remind ourselves, read the newspapers about local and world events, and participate in activities that take place in specific communities where we are members (Berghoff, Egawa, Harste, & Hoonan, 2000).

Harste, Woodward, and Burke (1984) further assert that literacy learning initially may seem to be imitative or achieved through adult modeling, but it is “in fact based on the intent to make meaning within the social context” (p. 59) when we examine learners through an interpretative lens. While children are engaging and re-engaging in literacy learning process, adults or more experienced peers provide these young learners with opportunities and help them confirm and/or refine various strategies employed. Consequently, social interactions like these allow learners to shift perspectives psychologically in order to adapt to changes and organize evolving texts. And “because children grow up in a particular language or interpretive community, the patterns they discover about language inevitably share much in common with the language around them” (p. 58) and their ways of meaning making eventually become conventional, like those of adult members in their communities. Based on this transactional and sociopsychological model, Harste, Woodward, and Burke (1984) sum up their research findings as follows:

Literacy is multimodal. Involvement of alternative, available expressions of language (speaking, listening, reading, writing) and communication systems (language, art, math, music, drama, etc.) allow language users to psychologically and sociolinguistically shift stances and get a new perspective on their knowing. We label these shifts and moves “negotiation” and the process involved “triangulation.” (p. 216)

These scholars do not view literacy as a set of skills to acquire, nor is it learned simply because children reach a certain age or developmental stage.

Instead, literacy learning is a transactional process in which learners orchestrate different modes of communication, including both language and non-linguistic sign systems, to be engaged in literacy related events via interacting with other more competent members of their interpretive community. The diverse sign systems also allow learners to mediate their thinking, as well as serve as lenses for them to understand themselves and the environment.

Based on their research findings, Short, Harste, and Burke (1996) contend that an ideal curriculum framework should support educators “in thinking, planning, and evaluating curriculum ‘with’ . . . students, instead of ‘for’ . . . students.” (p. 28); learners bring their life experience into their own learning process, and the knowledge they possess forms the basis for them to be engaged in personally meaningful, communicative events.

Collaboratively, these researchers develop the “Authoring Cycle” and use it as a curriculum framework (Harste, Short, & Burke, 1988; Short, Harste, & Burke, 1996); the curriculum serves “as a metaphor for the lives we want to live and the people we want to become” (Short, Harste, Burke, 1996, p. 47). Three aspects of authoring cycles deserves a special attention:

First, the cycle calls attention to the underlying process of inquiry. . . If the cycle is our framework for thinking about education, then curriculum should focus on and support the underlying process of inquiry. . . Second, the cycle’s focus is on learning or inquiry. This is the larger purpose. Education, first and foremost, is about learning. It is about outgrowing ourselves through inquiry. . . , which [is] the very focus of the curriculum .

. . [and] a framework for viewing education. Third, the authoring cycle is a model for professional education too. Teaching is a matter of inquiry.

Children need to be our curricular informants and collaborators, but there is no getting teaching right. As professionals we too are always learning and growing. That is why the authoring cycle keeps changing. As we engage in teacher research we learn more and we grow. (p. 47-48)

Using a figure developed by these three researchers, I will explain how an authoring cycle serves as a curriculum framework with inquiry at the center of a curriculum.

There are seven major components in this figure: (1) building from the known through voice and connection; (2) taking the time to find questions for inquiry through observation, conversation, and selection; (3) gaining new perspectives through collaboration, investigation, and transmediation; (4) attending to differences through tension, revision, and unity of learning; (5) sharing what was learned through transformation and presentation; (6) planning new inquiry through reflection and reflexivity; and (7) taking thoughtful new action through invitation and repositioning. Each of these elements interacts with others to create a continuous inquiry process for learning and development.

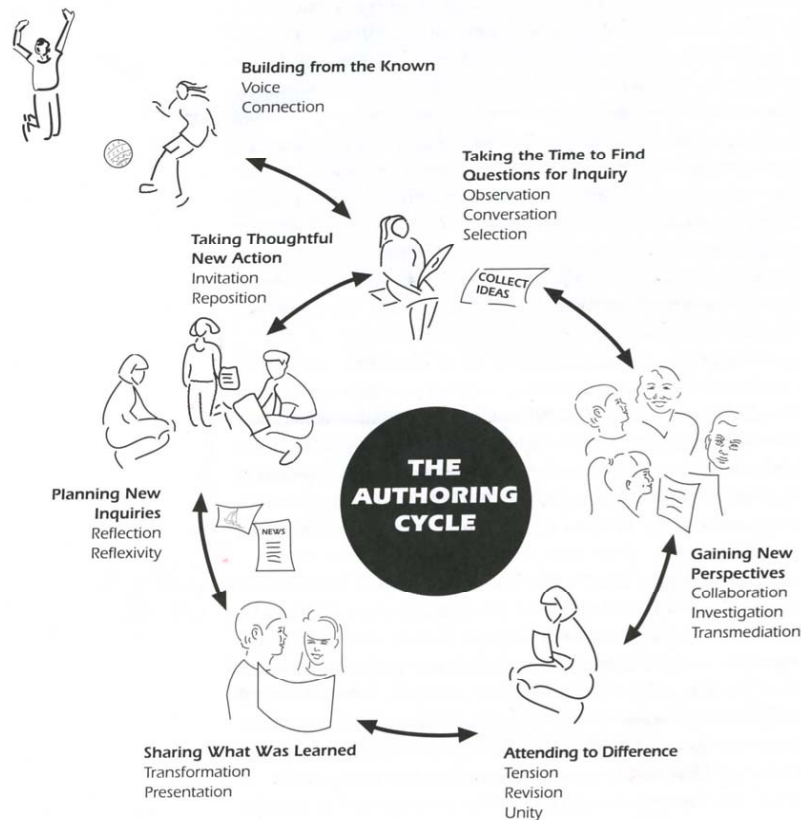


Figure 5-5. Underlying Processes of Inquiry in the Authoring Cycle.

(Short, Harste, & Burke, 1996, p. 52)

Building from the known through voice and connection. Children come to school bringing with them “funds of knowledge” (Moll, Amanti, Neff, & Gonzalez, 1992) and language, which should be regarded as legitimate ways of knowing, for these form the basis from which these young learners acquire knowledge. Although the experiences some children possess may be very different from those of their teachers and/or mainstream peers, the differences can provide an ideal starting point for conversation and reflection. The curriculum invitations thus need to be open-ended and allow children choices. To do so, it not only makes use of children’s strength to support their learning, but also expands

these learners' experiences to incorporate different ways of knowing, such as music, art, mathematics, and language. These researchers also argue that "the agenda ahead for educators is to learn to successfully negotiate family and school literacy rather than to assume that the function of schooling is to estrange one from one's roots" (p. 54).

Taking the time to find questions for inquiry through observation, conversation, and selection. An inquiry question is one that matters and is relevant to learners' lives, and it begins when they have opportunity to immerse themselves in society, observing and conversing with others. Sign systems provide all learners with tools to observe their environments and interact with others. Through observation, learners become aware of something new, which forms the foundation for their further learning. In addition to observation, conversation serves as a key to learning; when learners begin to share ideas with others, they also begin to notice what they already know and to "identify new possibilities for exploration. . . . [Therefore], learners need to be given time to find and select their own inquiry questions" (p. 56). Conversations allow learners to see different perspectives and in the process help them to choose an inquiry question which is of personal interest and importance. This process should not and cannot be hurried, for it is one from which human beings develop an intellectual position.

Gaining new perspectives through collaboration, investigation, and transmediation. There are three ways by which human beings develop new perspectives: dialogue, transmediation and investigation. Through dialogue,

wherein learners publicly state their beliefs and others provide critical feedback, new perspectives are gained. Through such a process, all learners are engaged in understanding, critiquing, exploring, and constructing meaning; each walks away bringing something new with them. Transmediation, taking what one learns and recasting it into different sign system, provides opportunities for learners to “get in touch with the qualitative dimensions of a topic,” (p. 57) which widens the range of meaning expressions that human beings are capable of creating. Another way to gain new perspectives is by investigating a topic through different knowledge systems, for each system has its own tools and focusing questions that help learners to assume different roles and examine an issue with completely different perspectives.

Attending to differences through tension, revision, and unity of learning. Learning takes place when learners identify patterns, connect what they already know to new knowledge, and are aware of the differences between these two. Our mind, according to Bateson (1979), actively seeks and connects patterns, and from such processes, we comprehend and acquire new knowledge. Tension results when differences arise between what we already know and what we are yet to learn. Short, Harste, and Burke (1996) also argue that:

A theory of difference is a theory of learning. Difference, not consensus, propels the learning process. The mind gravitates to the new and the different. Differences cause tension and put an edge on learning. . . .

Differences force us to revise what we thought we knew and to seek a new unity through the use of logic. (p. 57)

As learners make connections between old and new knowledge and revise their extant theory about how things work, their knowledge horizon expands and their thinking becomes more complex. Attention to differences, as well as tolerance of differences, and trying to make sense of the new, drive the learning process and human development.

Sharing what was learned through transformation and presentation.

While learning begins with finding patterns and making connections between familiar and new knowledge, insight is gained through sharing what one knows and presenting it to others. Because their audience comes from different backgrounds, presenters need to reorient their thinking in different ways so that they are able to effectively transform and share what they know to others. This process provides opportunities for presenters to reorganize their thinking and “clarify for themselves and others the contributions their work has made to the functioning of the various thought collective of which they are a part” (p. 59).

Planning new inquiry through reflection and reflexivity. A well-planned reflection allows learners to retrace the mental process they go through as well as to re-think each component involved in that process. By doing so, learners begin to pay attention to the successful and less successful components of this process, thus gaining an understanding of what is learned, as well as what needs to be changed to develop new plans/actions in the future. The reflexivity process involves re-examining and interrogating learners’ values with how they understand the world because language and other sign systems are never neutral. Learners need to be able to critically evaluate their knowledge and know how

such information can be used, as well as how it comes to play a role in their thinking and understanding of the world.

Taking thoughtful new actions through invitation and repositioning.

Reflection and reflexivity help learners reposition themselves mentally and physically, which in turns prepares learners for thoughtful new actions. The reflection and reflexivity experience transforms learners into different people, who reposition themselves, perceive, as well as interpret the world differently. Therefore, the inquiry process does not end with gaining new knowledge, but helps learners to act better and develop new inquiry topics for further exploration and learning. “It is here that inquirers invite themselves and others to take new and more responsible social action” (p. 369).

The authoring cycle begins when learners make a connection between past and new experiences to conduct their inquiry. Through the use of multiple sign and knowledge systems, learners engage in social interactions with others to share their knowledge, provide feedback to each other, explore and interpret their knowledge, and reflect as well as re-examine what they have learned. Although the last step of this process is to take new actions, the cycle does not end there. Each new action brings about new invitations and repositions that learners develop during their inquiry process. In other words, the authoring cycle process is organic, in which learners begin a new round of inquiry as each new action is taken. And as the authoring cycle process continues, our personal growth and the development of society also continues.

So far, I have discussed social semiotic theories based on the work of several groups of scholars. Each of these researchers provides me with concepts as well as theoretical frameworks through which I examine and analyze my data. To summarize this section, I recap some main points I have learned so far:

- (1) Halliday: As children learn language, they are concurrently learning the linguistic structure and learning about the semiotic function of their mother tongue. Furthermore, the learning of language and culture cannot be separate from each other because language is a tool through which human beings mediate thinking, develop identity, and engage in social exchanges. Therefore language learning, learning about language, and learning through language are integrated aspects of “learning how to mean.”
- (2) Suhor: Human communication often involves the use of multiple meaning-making tools. While learners are engaged in such a process, they actively reconfigure and orchestrate different sets of underlying structures to recreate, interpret, and present contents from one sign system to another one.
- (3) Kress, Jewitt, and others: Each community develops its specific sets of modes that shape materials into resources for representing meaning. Each mode has its potential as well as limitation for meaning construction. Almost all communicative events comprise more than one mode, and different modes provide different affordances that allow us to re-organize

our thinking and to transmediate between signs, thus widening the range of meaning that human beings are capable of creating.

- (4) Kenner and others: Children growing up in bilingual and bicultural backgrounds live in “simultaneous worlds” (Kenner, 2004, p. 107) because they constantly draw on resources from different cultural and linguistic environments to support their understanding and interpretation of their world. While doing so, these learners also actively select, reorganize, and make connections between old and new information to represent and communicate such knowledge to others.
- (5) Lemke: The essential aspect of a specific sign system lies in its potential for meaning construction, instead of its forms, such as symbols and formulas in science and mathematics. Each semiotic resource has its unique forms of expression and semantics which entail different ways of interpretation. The nature of our day-to-day learning requires that learners orchestrate and transmediate multiple semiotic resources in their learning process across knowledge domains.
- (6) Burke, Harste, Short, Woodward, and others: Instead of a pre-existing condition in learners’ mind or the environment, learning can only be acquired through a learners’ active and continuous sign interpretation. Literacy learning is multimodal learning in which learners make use of alternative modes of language (speaking, listening, reading, and

writing) and other sign systems that allow them to psychologically and sociologically change perspectives and gain new understanding.

Negotiating and Creating Meanings Across Boundaries:

Multiple Sign Systems and Alternative Ways of Learning and Understanding

In chapter four, I described how children in my class negotiated, constructed, and expressed meaning via the use of oral and written language, in both Chinese and English. Based on the findings from that chapter and the research literature discussed above, I am expanding my scope of analysis in this chapter to examine how my students orchestrated and transmediated between different sign systems, both linguistic and non-linguistic—such as language, art, music, drama, and mathematics—as well as how these young learners made use of these meaning-making tools to mediate their thinking and understand their worlds.

Because various sign systems were often used simultaneously by children in my class, I will first share examples from several of these systems of meaning making. I will also highlight the significance of such a process in their learning and development. Finally, I will summarize my findings with a diagram, which helps me to expand my understanding and theorize about a unique meaning construction process.

Sign Systems and Their Content and Expression Planes Across Contexts

Like many bilingual and bicultural individuals, my research participants have access to more than one set of sign systems because of their experiences in

multiple sociocultural contexts. As each sociocultural group has its unique ways of defining rules and conventions that govern sign use and functioning, these youngsters learned the specifics of each sign system through observing, participating, and receiving feedback from their mentors in each context.

When these young learners were engaged in semiotic exchanges in multicultural environments, they constantly adjusted their social and psychological stances, as well as switched between sign systems acquired from different contexts, so that they were able to understand and to be understood by others.

In addition, these children also developed a sense of “shared-ness” between different sign systems, or an awareness of a particular sign’s specifics in its corresponding context. The following example demonstrates how Aileen transmediated between the sign system of mathematics and languages (Chinese and English), as well as the strategy she employed in such a meaning-making process.

Aileen’s mother was out of town on a business trip one weekend, and I agreed to take care of Aileen. In the afternoon, I brought her to the local public library. Once in the library, Aileen and I headed directly toward the Children’s Department. Quickly selecting a few books she wanted, Aileen retreated to her favorite spot as I searched through shelves to locate books I needed. While skimming through books, I felt a tug on my sleeve. Looking away from my books, I saw Aileen.

“Teacher Lu, I have *found something very interesting.*” said Aileen.

“Let’s hear it,” I replied.

With a grin, Aileen began, “if you *flip the English ‘one’*, it will become a *Chinese ‘one’*.”

“What?” I did not understand what she had said.

“Oh, like this.” Aileen explained first by drawing a vertical line in the air and said, “this is an *English ‘one’* [1]. You write it like this.” She continued and at the same time drew a horizontal line, “if you *flip* it [the vertical line], it becomes a *Chinese ‘one’* [—].” (Transcript, Spring 1997)

In this vignette, Aileen toyed with the orthographic formation of the mathematic concept “one” represented in the commonly used Arabic numeral as well as in the Chinese writing system. In her daily experience at school and the community she lived, Aileen saw the “English one [1]” expressed as a vertical line, and she also known that the same concept can be represented as a horizontal line (i.e., “一”) from the Chinese instruction she received at home and the weekend mother tongue school she attended.

Working with Aileen as well as being one of her family friends for an extended period of time, I have learned that Aileen’s mother expected her daughters to be literate in both English and Chinese for “they [Aileen and her sister Eileen] are Chinese, and it is important that they learn the language and culture” (Aileen’s mother, personal communication, spring 1996).” Aileen’s mother spoke Chinese with her daughters at home and spent extra time working with them to practice Chinese in addition to the assignment given by the teachers at the weekend mother tongue school.

Writing and recognizing numbers in Chinese was among the first conventional literacy tasks Aileen was taught at home. The experience and availability of a particular mathematical concept (i.e., an object, in terms of Peirce’s term) represented in two sign systems, namely mathematics and Chinese language, provided Aileen an opportunity to reflect what she had known, as well as to explain to me her understanding of the relationship between these two sets of signs, which she termed “English” and “Chinese”. Through her gesture and verbal explanation, Aileen competently demonstrated to me her ability to manipulate the

formation of a particular sign and turned it into yet another one, each belonged to a specific system of meaning making.

The social semiotic process that Aileen went through resonates with that of the bilingual/biliterate British children, who participated in a series of case studies conducted by Kenner and her colleagues (Kenner, 2003; Kenner, 2004; Kenner & Kress, 2003; Kenner, Kress, Al-Khatib, Kam, & Tsai, 2004). In their studies, Kenner and her research collaborators examined the social semiotics nature of six 6-7 year-olds who are learning to be literate concurrently in English and their mother tongue (Chinese, Arabic, or Spanish). These researchers found that their child informants often playfully transformed and transmediated between sign systems, and they assert that

Young children enjoy . . . graphic play, exploring how one symbol can mutate into another, perhaps from a different system. They want to find out the range of possible meanings of a symbol whilst clarifying the limits which make it different from others. This is part of a continual mission for looking for similarities and differences, in which children manipulate symbols within and across semiotic modes. (Kenner, 2004, p. 114)

The definition that Aileen made regarding the “English ‘one’ [1]” and “Chinese ‘one’ [一]” through her gesture and verbal explanation implied her understanding that a particular concept can be represented in two different sign systems. The surface structure of a particular concept represented in two different sign systems may look different from each other, but the meaning remains the same. Playfully, Aileen rotated the “English ‘one’ [1]” by 90 degrees and made it

the “Chinese ‘one’ [一]” because these two signs are almost identical except for directionality/orientation.

In chapter four, I have shown examples in which the children in my class identified similar elements of the English writing system while they were reading a Chinese text, and vice versa; the example above, however, revealed Aileen’s ability to represent a concept via the use of different semiotics systems (language and mathematics) acquired in different contexts (Chinese- and English-speaking environments). Evidently the bicultural and bilingual experience and knowledge Aileen possesses in sign use allowed her to explore the similarities and differences across semiotic boundaries.

Aileen and other children in my class were not only aware that a concept can be represented by different signs, but also that a sign can be interpreted in multiple ways. The former one is transmediation, for the content of a sign can have multiple expressions, as when Aileen used two sign systems—language (Chinese) and mathematics—in the vignette above to express a mathematical concept. The latter indicates that a sign can have more than one content plane (Hjelmslev, 1963), for learners often bring their own experience into the sign interpretation process. I will illustrate this point with two examples.

Example 1:

The children were learning to record dates in Chinese, and I began the lesson by demonstrating to them how a specific date was conventionally written in the target language.

After writing down “year” and “month”, we did the “day” next. “Today is the 12th³¹ day. Do you know how to write ‘ten’ [in Chinese]?” I asked.

³¹ To write “12th” in Chinese for the purpose of recording a date, one needs to write a “十 [ten]”, a “二 [two]”, and then “日 [day].”

“*A cross?*” suggested Rosan. (Transcript, April 12, 1997)

Example 2:

Lucian and Emma sat side by side while recording the date “July 19, 1997” in Chinese, which was conventionally written as “一九九七年七月十九日” (in the order of year, month, and day). The children first looked at a chart on the wall that contained the months from January to December. Then I heard a disagreement between Lucian and Emma regarding the order of the time unit, so I walked to them and tried to intervene. “*The ancient Chinese,*” I began.

Before I finished my sentence, Lucian pointed at the character “七 [seven]” and said, “*This looks like a [lower case] T.*”

“*That’s right,*” I said.

He went on and pointed at the character “十 [ten]” and continued, “*And this is a ‘plus’ sign.*” (Transcript, July 19, 1997)

When “十” is used as a linguistic sign, it represents “ten” in Chinese language. However, “十” could also mean a “cross” as a religious symbol or a “plus sign” in mathematical expression. Examining the interpretation made by Rosan and Lucian, I have come to understand how these two children’s experience with ways of meaning making shaped their understanding and interpretation of a particular sign. Rosan had been attending a Christian school since first grade. Once a week, the school held an assembly to provide religious instruction to all children. Prior to this vignette, I had heard several times in our class that Rosan had talked about “Jesus Christ” and Easter, and she also asked the other children whether they believe in God.

It is probably because of such a schooling experience that she associated the linguistic sign “十” in Chinese language with the “cross” which is an essential symbol in Christianity. Although Rosan also used the term, “plus”, when interpreting this particular sign occasionally, I have never observed Lucian use “cross” to describe the same Chinese character. The use of both terms “cross” and

“plus” to describe a sign (i.e., the Chinese character “ten” [十]) in Rosan’s case may be due to her experience of Christian education in which religious and academic instructions were integrated aspects of school curriculum.

Lucian, on the other hand, did not share the same type of schooling or religious experience as Rosan. His family was not into any organized western religion, and he has been enrolled in public school system throughout his education career. Lucian’s early childhood education was home based, for his mother homeschooled him when he was preschool age; he learned language arts, mathematics, and other subjects in English under his mother’s tutorage, and his father placed an emphasis on mathematics learning and academic excellence. In my several conversations with Lucian during the course of his participation in my class, as well as in a subsequent interview with him when he was in sixth grade, Lucian talked about his father’s expectations on him.

Since kindergarten, [my dad] has always thought that... if I would be raised in China, I would almost, like, I don’t know, but maybe, he is always concerned. Like in kindergarten, they [the Chinese children] always learn multiplications. So I should, too. So, [now as a six grader] I am trying to learn algebra, on top of my other stuff. (Lucian, personal communication, March 3, 2003)

Lucian has always been good at mathematics and learned new mathematical concepts more readily than most other children I have worked with or known. In our class, Lucian often helped other children identify solutions when mathematical problems were involved. The examples in Chapter Four when he

taught Rosan the sum of a number card written in Chinese during our “Big or Small” game is one of such instances (Chapter 4, p. 252). His mathematical competency is also evident in the result of standardized and classroom tests, in which he always ranked at the top. It is therefore not a surprise that he should associate a linguistic sign “+” in Chinese language with “a plus” in mathematics.

The connections that Aileen, Rosan, and Lucian made in the three examples above illustrate the social semiotic nature of learning to be literate, a process where learners make use of the knowledge they possess in one sign system to make sense of new, unfamiliar texts in a different context. Such a process has its roots in learners’ social interaction with others, even though its origin may not be readily evident, and such a process will not take place without the use of sign systems. In other words, social interactions are in fact semiotic interactions because we all use sign systems, which are both sociologically and psychologically based, to make sense of our world and to be engaged in social exchanges with others.

Among these three children, Aileen learned the “English one [1]” from her schooling (may also be possibly from her mother or older sister, Eileen), and the “Chinese one [一]” from her mother’s and the Chinese classes she attended on weekends. With the knowledge acquired from two different contexts, Aileen mentally manipulated the physical structure of the “English one [1]” and the “Chinese one [一]” and demonstrated such a process to me, using both gesture and language. Lucian had learned and used the mathematical concept “plus” sign from his mother’s homeschooling and his formal education at school. He

recognized this sign immediately when he saw it in a new environment in his social interaction with others in our class, whereas Rosan's response "a cross", on the other hand, revealed her particular Christian schooling experiences, which framed her interpretation of a particular sign she encountered in our class. Aileen border-crossed between the two expression planes (the "Chinese one" as represented in a horizontal line and "English one" as written in a vertical line) based on her familiarity of a particular content plane, namely the concept of "one" in mathematics. In Rosan's and Lucian's experiences, the expression plane, i.e., the material elements of the sign, "+" is identical while the content plane, namely the semantic territory for meaning expression and communication, differs.

In these three vignettes, the texts either help children connect new and extant experiences or mediate semiotic interactions between themselves and those with whom they interacted. Through social exchanges, these young learners were given opportunities to demonstrate and/or develop their understanding of a general principle of semiotics: a sign can have multiple content planes, and a specific meaning can be expressed in different signs. The availability of various sign systems provides my students opportunities to explore and interpret meaning acquired in different contexts. They understood that an identical/similar sign can mean one thing in one context, but they also tried to connect this new knowledge with a meaning they have earlier acquired.

Lucian's and Rosan's interpretation of "+" are especially illustrative here. In the same way, some signs may appear different in terms of their physical property, but share similar/same meaning across semiotic and sociocultural

boundaries. Aileen's "Chinese 'one'" and "English 'one'" present an example here. The semiotic specifics Aileen, Lucian, and Rosan identified have revealed that within each particular context, the children were introduced to their respective cultural specifics, values that adult members of each group deem important to impart to the younger ones: in Aileen's case, the ability to "go back and forth" in Chinese and English; for Rosan, the significance of a religious symbol—a cross—in her Christian schooling; and Lucian, the importance of being mathematical literate.

Knowledge Transferring, Transmediation, and Miscues in Multicultural and Multi-semiotic Environments

When bilingual and bicultural children simultaneously learn the semiotic and cultural specifics that govern sign use and functioning in each context, they also learn to transmediate between sign systems within and across sociocultural and semiotic boundaries. While doing so, they transfer skills, concepts, and knowledge acquired through semiotic interactions in their familiar culture to create meaning using a different set of sign systems within a less familiar context. As signs across sociocultural and semiotic systems may have different expression and/or content planes, miscues sometimes happen as the result of this type of knowledge transfer and transmediation process. An example from Lucian's learning to write numbers in Chinese characters best exemplifies my point.

The children in the class had been learning to write numbers in Chinese. After I had demonstrated how to write from "one" to "ten" in that language, several of them had begun to write beyond "ten" either from their parents or older siblings' tutoring at home or by applying the mathematical knowledge they had acquired from the school they attended daily.

One day, Lucian announced excitedly “*I think I know how to spell ‘eleven [in Chinese]’*” as I was just about to start the monthly individual session with him.

“*Show me,*” I said and passed him a piece of paper and a marker.

Writing tools in hand, Lucian wrote down “一 [one]” and then “十 [ten]” to represent “eleven” in Chinese.

“*OK, how about ‘twelve’,*” I asked, trying to see whether there was a pattern to his number writing in Chinese.

He went on and wrote a “二 [two]” and then “十二 [ten]” in Chinese, which stood for “twelve” for him.

I assumed that Lucian had practiced these numbers at home, so I asked, “*Did you practice [writing numbers in Chinese] with your mother or father at home?*”

“*Both,*” replied Lucian and kept writing more numbers, from “thirteen” onward.

After finishing writing “nineteen”, Lucian said, “*I forgot how to do ‘twenty’.*” He paused and then said, “*Oh, I remember. You write ‘two [二]’, ‘ten [十]’.*” He then proceeded to write a “two [二]” and a “ten [十]” in Chinese. His “twenty” and “twelve” in Chinese were thus identical, for both of them were represented as “二十”.

When Lucian finished writing “twenty [二十],” I pointed at it and asked, “*So, you wrote this as ‘twenty’, right?*”

“*Yeah, because ‘twenty’ is ‘two ‘tens’*” explained Lucian.

After confirming with him, I pointed at the other two characters, which were identical to the “twenty” he wrote (also represented as “二十”). I asked, “*OK, let’s see back here. So, you said this one is ‘twelve’?*”

Lucian hesitated and pointed at the “twelve [二十]” he had written and said, “*This one is ‘twelve’.*”

Pointing at the “twelve” and then the “twenty” Lucian wrote, I asked “*Do they [the ‘twenty’ and ‘twelve’ that you wrote] look the same [to you]?*”

Lucian nodded.

I probed further, “*How come? Are ‘twenty’ and ‘twelve’ the same?*”

Lucian paused for a few seconds, and finally he said “*not exactly.*”

“*So, which one is ‘twenty’?*” came my question.

Lucian wasn’t sure, and he asked, “*So, I didn’t get it right?*”

I didn’t reply to him directly. “*Well, what do you think?*”

He pointed at the “eleven” [represented as “一十”] he wrote and said, “*I thought it was ‘one’ ‘ten’.*”

“*So, this would be ‘eleven’?*” I pointed at the “eleven” [“一十”] he wrote and asked.

“*Show me ‘twenty,’*” he requested.

On a piece of paper, I wrote down “二十 [twenty]” in Chinese, which is one “two [二]” then one “ten [十]”. “*This one is ‘twenty’,*” I told Lucian.

“*Well, what is ‘twelve’?*” asked Lucian.

I replied, “*twelve*, you just reverse it.” I wrote “十二 [twelve]” in Chinese for him.
 “*Oh, it’s backward,*” exclaimed Lucian. (Transcript, September 13, 1997)



Figure 5-6. Lucian’s initial writing of “twelve” (left) and “twenty” (right) in Chinese (September 13, 1997)

11	12	13	14	15	16	17	18	19	20
十一	十二	十三	十四	十五	十六	十七	十八	十九	二十

Figure 5-7. The conventional way to represent numbers from “eleven” to “twenty” in Chinese characters, written by Lucian on a later date (Late fall, 1997)

The convention used in a sign’s content and expression plane by members of a particular group is rule-governed and patterned, and it is in accordance with the values and practices held by those people to avoid potential miscommunication. The rule-governed, patterned principle of sign use is part of semiotic specifics, and the particular values and practices followed by members of a community constitute cultural specifics. As members of each community have their unique ways of defining both cultural and semiotic specifics, children who are learning to be bilingual and bicultural need to acquire two sets of specifics (both semiotic and cultural), which may either be similar, or in conflict, or bear no relationship with their counterparts in the other context.

The vignette above has demonstrated Lucian’s familiarity with some

particular aspects of semiotic specifics of mathematics (e.g., sequence and multiplication), which he acquired in a predominately English-speaking community. It also shows that he was in the process of learning to express the same concept in a less familiar and different sign system (i.e., Chinese language) in a minority context (i.e., our classroom mainly). While discussing and working with me, Lucian showed me a transmediation process in which he not only needed to cross different semiotic boundaries, but also cultural boundaries to represent meaning. The boundaries that define semiotic and cultural specifics in this case overlap to some degree but also present differences. And such differences became the source of Lucian's miscues when he transferred mathematics concepts across contexts and transmediated between different sign systems.

Even though Lucian's invention (i.e., his number writing from "eleven" to "nineteen" in Chinese) differs from Chinese convention, his miscues nevertheless were rule governed and were consistent with his understanding of particular mathematical concepts and English. When examining numbers expressed in Arabic numerals and in written English, we see that numbers represented in Arabic numerals from "11" to "19" all begin with "1" (the 10s place), then follow the same sequence as in writing from "1" to "9" [11, 12, 13, 14, 15, etc]; whereas their written English counterparts usually ends with a constancy—"teen" (which sounds and looks somewhat like "ten") except for "eleven" and "twelve" [i.e., thir-teen, four-teen, fif-teen, six-teen, seven-teen, eigh-teen, and nine-teen]. The arrangement of the letter string for each English word also shares a somewhat parallel pattern as from "one" to "nine", except "eleven" (for example, "twelve"

and “two”, “thirteen” and “three”, “fourteen” and “four”, etc.). The convention used to express numbers in the English language is opposite from that in which numerals are used, since in English, the “teen” [indicating the 10s’ place] is placed in the end of the word string, and in numerals the first digit—“1”—in any number from “11” to “19” represents the 10’s place.

In the vignette above, Lucian elected to follow the convention used to represent numbers in written English, instead of that in numerals when he tried to express the same concept with yet a different sign system: the Chinese written language. While crossing the semiotic boundary and transmediating between sign systems, Lucian inadvertently made miscues for he was not familiar with the Chinese writing convention. His writing of “twelve” and “twenty” in Chinese characters was identical. After listening to my explanation regarding rules of Chinese number writing, Lucian learned that the conventional way of recording numbers from “11” to “19” in Chinese is just the opposite of his invention. And he wanted to further explore the mathematical system across cultural and semiotic boundaries, by testing more of his hypotheses using the mathematical knowledge he already possessed and that which he newly acquired.

After I explained to Lucian the conventional ways of writing numbers in Chinese, we went on to practice those higher than “twenty”. He grasped the principle quickly.

I told Lucian, “*So, basically, you know how to write from ‘one’ to ‘ninety nine’ in Chinese.*”

“*Yeah, let’s try ‘a hundred’!*” said Lucian excitedly.

“*One hundred?*” I asked.

Lucian said, “*I think I know what ‘a hundred’ looks like.*”

“*Go ahead and do it,*” I encouraged him.

Lucian wrote down two “tens [十 十]” side by side. “*Did I do it?*” he asked expectantly.

“*That’s very good,*” I said.

“*Did I get it?*” he asked again.

I didn’t reply to him directly, but asked for an explanation. “*Tell me what you were thinking when you wrote this?*”

Lucian began, “*I thought it was two ‘tens’. I thought it was ‘ten’ ‘ten’, because.*” He paused then went on, “*ten times ten is a hundred.*”

“*That’s a very good way of doing this,*” I praised him. I then explained to him that “hundred” in Chinese is a bit tricky. I wrote down the character “hundred [百]” for him.

Lucian stared at the character for a while.

Since I assumed that literacy learning was rule-governed, I wanted to try out my hypothesis. Because Lucian had demonstrated his ability to do multiplication while he invented a character to represent “a hundred” in Chinese, I assumed that he probably would apply the same rule in his writing “a thousand” as well. So, I invited him, “*Want to try ‘one thousand’?*”

“*Um, one thousand,*” he repeated after me.

“*See if you can come up with a way to represent ‘one thousand’,*” I encouraged him.

Lucian paused and seemed to be thinking very hard. “*I don’t know,*” he said finally.

“*Give it a try. It doesn’t need to be correct, because we can learn the correct way later on. But I would like to know what’s in your mind.*”

Lucian hesitated for a moment and then finally wrote down a “ten [十]” and then one “hundred” [百] side by side, and thus his writing of “a thousand” looked like “十百.” He explained to me “*ten times a hundred equals a thousand.*” After the explanation, Lucian asked me “*how would you write ‘a thousand’ in Chinese?*”

I wrote down “a thousand [千]” the conventional way for him on a piece of paper. (Transcript, September 13, 1997)



Figure 5-8. Left—Lucian’s invented writing for “100” (two “tens [十]” stand side by side) and **Figure 5-9.** Right—“1,000 (one “ten [十]” and a “hundred [百]” stand side by side)” in Chinese characters.

This vignette demonstrates an intimate relationship between semiotic and cultural specifics. The vocabulary (both English and mathematics), grammar and sentence structure, and the explanation Lucian used in these two examples revealed his mastery of the linguistic specifics in English and of math theory for

he was able to use them conventionally and appropriate to the context. The mathematics vocabulary and the multiplication principle that Lucian employed, along with the result of the calculation showed his proficiency and competency in mathematics specifics (base 10) which he firstly and mainly acquired through English. Because language and other semiotic tools are cultural tools which human beings use to create, preserve, and transmit knowledge, Lucian no doubt has acquired these specifics through his interaction with mentors, such as his parents, or teachers, as well as from books he read. When the more experienced members in his life imparted such knowledge to him through linguistic and non-linguistic modes of communication, they also taught him the culturally specific ways so that Lucian was able to interact with others across various contexts and behave in accordance with the conventions, as well as demonstrate his understanding of particular concepts in his environment.

First grader Lucian had substantial knowledge in mathematics, and he had mastered multiplication by 10s (e.g. *“ten times ten is a hundred”*, as well as *“ten times a hundred equals a thousand”*). As Lucian transferred his mathematics knowledge acquired through English to his learning of Chinese, he also transmediated between these sign systems of mathematics and language as he created Chinese characters for “a hundred” and “a thousand.” These two sign systems that he used in the example each represents different semiotic specifics during his meaning expression and communication process. In mathematics, we multiply a number by 10 to increase it by 10 times its original value. And in numerical expression, a “0” is added to the last digit of a number to indicate such

a change. Thus, by adding a “0” to the last digit of “10” and “100”, we get “100” and “1,000” respectively, and each number becomes 10 times of its original value. In the vignette above, Lucian verbally explained this principle to me, and he also used the same rule to invent the two Chinese characters “100” and “1,000” that he had yet to learn.

The convention used to represent numbers in the Chinese writing system, however, operates under a different set of semiotic specifics compared to mathematics, a sign system where Lucian learned its specifics mainly through English. The result of his invention, therefore, inadvertently deviated from Chinese convention and became a miscue.

In Chinese written language, the basic and most commonly used calculating unit consists of numbers from “zero” to “nine” and a set of characters representing those with power of tens—“ten [十]”, “hundred [百]”, “thousand [千]”, and “ten thousand [万].” Unlike in numerical expression, the characters for “ten [十]” and “hundred [百]” do not share many orthographic features, nor does “hundred [百]” and “thousand [千]”. However, a strong resemblance exists between “ten [十]” and “thousand [千]”, and also between “hundred [百]” and “ten thousands [万]”. In other words, the four Chinese characters representing the name of the numbers with power of ten—“ten [十]”, “hundred [百]”, “thousand [千]”, and “ten thousand, [万]”—share physical similarities in alternate place positions.

Lam (1987) conducted historical research on the evolution of Chinese rod numeral system and its relationship with Chinese writing system. She found that a counting rod system was already in place during the period of Warring States (480 B.C. to 221 B.C.). This system consisted of three essential characteristics: (1) nine signs [1, 2, 3, 4, 5, 6, 7, 8, and 9] and the concept of zero [0], (2) a decimal number system and (3) a place value system. From various mathematical documents she examined, Lam identified two types of notation used in the rod counting system, horizontal and vertical lines, depending on the place value of each sign. She used a table to summarize the system with a table as follows:

Place position	1	2	3	4	5	6	7	8	9
Units									
Hundreds						⊥	⊥⊥	⊥⊥⊥	⊥⊥⊥⊥
Ten thousands etc.									
Tens	—	==	≡	≡≡	≡≡≡	⊥	⊥⊥	⊥⊥⊥	⊥⊥⊥⊥
Thousands etc.									

Figure 5-10. Chinese Counting Rod System (Lam, 1987, p. 365)

The difference in the two types of rod numerals is that if the rods are vertical for a particular place position, then the ones next to it will be horizontal, and vice versa. The Chinese use such a system to indicate alternate place positions, and such a device helps distinguish adjacent place values. Below is an example given by Lam:

A number such as 758139 is $\underline{\perp} \quad |||| \quad \underline{\perp} \quad | \quad \equiv \quad \overline{|||}$ in rod numeral notation.

Figure 5-11. An example of the Chinese Rod Numeral

Notation (Lam, 1987, p. 366)

In the example above, the unit is represented in four vertical lines below a horizontal one, and it has the place value of “9”. To its left, there are three horizontal lines, and it has the place value of “thirty”. The hundred again is represented with vertical lines, which is one, constitutes “100” in terms of its place value. Then when it goes to the “thousands”, again the horizontal lines dominate the presentation and it has the place value of “8,000.” The same principle applies to “5” represented with five vertical lines in “ten-thousand” place position, indicating a place value of “50,000” and the two horizontal and one vertical lines in the “hundred-thousand” place indicate a “700,000” place value.

According to her research, the Chinese written number system up to ten thousand, which can be found in various artifacts (e.g. bronze vessels and coins), was already well established in the 3rd century B.C. The name of the commonly used numbers with power of ten, which can be represented in a single character in Chinese includes “ten [十]”, “hundred [百]”, “thousand [千]”, and “ten thousand [万].” Lam (1987) quoted Qian’s (1965) translation of Sunzi, a Chinese classic which dated back approximately between 280 A.D. to 473 A.D., to demonstrate the similar orthographic structure shared by the alternative place positions [its English translation is given after the original Chinese text] as follows:

凡算之法，先识其位。一从十横，百立千僵，千十相望，万百相当。

In making any calculation we must first know the place positions [of the rod numerals]. The units are vertical and the tens horizontal; the hundreds

stand and the thousands prostrate; hence thousands and tens look alike and so do ten thousands and hundreds. (Lim, 1987, pp. 368)

The paragraph above illustrates the similarities of orthographic features between “ten [十]” and “thousand [千]” (both having a “cross” structure), and “hundred [百]” “ten thousand, [万]” (both having a horizontal line on the top and two parallel or semi-parallel lines perpendicular to it), due to the “alternate” principle. Such a system has been a part of the linguistic as well as the cultural specifics, for it has been used to record as well as to facilitate all social engagements involving mathematics (e.g., business, sciences, and technology) in Chinese-speaking contexts. The mathematical value assigned to each linguistic sign also allows people to participate in activities that support the personal and cultural development in various aspects across space and time.

After this examination of numeral expression in the Chinese written language, we now focus on its counterpart in English. The basic calculating units represented in English are the ones (from “zero [0]” to “nine [9]”), ten, hundred, thousand, and million. A person can express a number (under one billion) in English by using a combination of these words. For example, “614,803,297” is written as “six hundred fourteen million eight hundred three thousand two hundred ninety seven.” When written in English, the names of numbers that possess both “the power of ten” and “the power of 1000” bear certain significance to the numerical expression, in that a comma “,” is employed to group any three digits together. The place values that I underlined for the number “5,614,803,297” are all positioned in front of the comma in this long number string. The

correspondence between these two expressions, like that in Chinese rod counting systems and written language, reveals that semiotic specifics across sign systems sometimes can be parallel in a particular cultural context, in that a mathematical sign may share a similar “operation system” with a linguistic one and they both are aspects of a semiotic and eventually integrated parts of cultural specifics. The learners need to grasp the concept under which one sign system (e.g. mathematics) is transmediated into another (written language), and the interchange between these two expressions is recognized and used by members of the community in which they belong, to support the continuing growth of the community as well as individuals. Cultural and semiotic specifics are interdependent of each other, and their relationship develops as a result of long-term evolution.

Because each sociocultural group has its own unique cultural and semiotic specifics, learners are likely to produce miscues when they transfer knowledge and are engaged in transmediation across contexts. From Lucian’s example above, we can see clearly that he had a solid understanding of a particular aspect of mathematic specifics—the multiplication principle (Base 10)—for he was able to explain such a concept to me, as well as to employ this piece of information to invent Chinese characters for “hundred” and “thousand”. The miscue in Lucian’s number writing in Chinese occurred due to his lack of experience in and exposure to this language convention. However, his hesitation and questions to me in the vignette above also indicated his developing awareness of the possibility of a miscue during the cross-cultural/contextual knowledge transference and

transmediation process. The transmediation between the sign system of mathematics and language within each culture (i.e., the relationship between rod counting system and numerical expression in Chinese written language, as well as the use of “commas” to separate the place positions to mark the correspondence between English number writing and the numbers expressed in numerals) illustrates an interdependent relationship between sign systems in any given culture.

The inherent characteristics of each sign system, namely the use of numerals in mathematics, words in English, and characters in Chinese, as well as the social and cultural history of each sign system employed by members of mathematics and sociocultural communities afford users different ways to represent and convey meaning. (Kress & Jewitt, 2003; Jewitt, Kress, Ogborn, & Tsatsarelis, 2001b). The availability of multiple sign systems allowed my students to explore and experiment with ways of meaning representation and interpretation through different lenses. At the same time, the examples demonstrated by Aileen, Rosan, and Lucian in the first theme also showed the relationship between sign systems and social cultural practices, traditions, and values. Thus, the learning of the semiotic specifics cannot be separated from that of cultural specifics.

Each sign system has its unique way of expressing and conveying meaning, and its use and representation is closely related to its socio-cultural history and is contextually bound. At the same time, as demonstrated by Lucian’s example above, sign systems sometimes share similarities across cultures. From working with the children in my class, I have found that prolonged engagement

with alternative sign systems allowed these young learners to understand the shared and differentiated features between various systems of meaning making. The miscue Lucian made in the example above demonstrated his developing awareness of the shared as well as specifics of different sign systems as he crossed semiotic and cultural boundaries. In the next vignette, Aileen will show us how she transmediated between multiple sign systems while engaging in semiotic interactions with me.

As I explained in previous chapters, bilingual and bicultural children do not necessarily always possess two equivalent sets of linguistic and cultural knowledge because their individual experiences in and exposures to both systems vary. For young children who are just beginning to learn a new language at school, they sometimes do not have immediate access to a specific term that they wish to use to express and communicate. Under such circumstances, the availability of alternative sign systems not only allows young language learners both opportunities to construct meaning and interact with others without worrying about “getting the right word”; it also provides opportunities for them to explore different ways to communicate with others. The use of gestures, such as in describing an action, in conjunction with other sign systems, such as an illustration (art), immediately opens up a pathway for an effective two-way interaction.

Aileen and I were reading a picture book, entitled Spit the Seed (Lee, 1993), which was about a little pig, Chubby, who accidentally swallowed some papaya seeds. Chubby was worried, for he thought that a papaya tree would grow on his head.

“What can help a tree grow?” I asked Aileen.

Instead of answering me verbally, Aileen raised her right hand and turned her wrist outward slowly as if she was holding an imaginary watering can to water plants.

“What?” I tried to get her to answer to me orally.

Aileen pointed at the illustration, which showed Chubby’s friends watering his papaya tree. “Like this,” said Aileen.

“What is this?” I probed further.

“*Water*,” replied Aileen. (Transcript, October 6, 1995)

Aileen in this literacy event used three sign systems—movement, art, and language, to answer my question. Initially, she might not recall how to say “watering” or “to water” immediately in either Chinese or English. It is also possible that she had elected not to answer my question verbally at all. In the first case, with the assistance of gesture (the action of holding a watering can and watering plants) and art (the illustration from the book) she was able to answer my question in a way that was effective, understandable to both of us although I still insisted that she answer me using linguistic signs. Finally, she furnished me with the expected answer orally. Alternatively, Aileen demonstrated her ability to supply alternative solutions to a question, which traditionally required an oral response.

This vignette reveals how alternative meaning making tools can be used to support children’s communication and meaning construction efforts. While Aileen may not have immediate access to or did not wish to use the term “to water” or “watering” in responding to my question, she was able to keep our interaction moving along by substituting what was available to her—the gesture—and to fulfill her communicative need. When the gestural sign she employed did not produce the result I requested, Aileen again chose other sign systems—

pointing at the illustration, which is a combination of movement/gesture and art—to further support her communicative efforts. By using and combining different sign systems, Aileen demonstrated her resourcefulness, which ensured her intention to be understood without the use of language, the most common, taken-for-granted means of social interaction.

In our class, art was probably the most popular and commonly used sign system in addition to language. The children often self initiated art-related projects when given choices. Their parents also indicated, in the questionnaire I sent home each term or during our informal exchanges, that art was among their children's favorite components of our class. To keep a record of their artwork and other artifacts my students created in class, I gave every child a folder at the beginning of each term. The children took pride in designing the cover of their folders according to the theme/inquiry topic we would be studying. By midterm, the folders were usually bulging, full of children's artifacts, especially their artwork. This artwork was often created in conjunction with other sign systems, as these young learners were involved in semiotic interactions with others. The example below shows how Aileen integrated several sign systems: art, language (both oral and written), music, and dramatic play in a single literacy event.

The children in the class were learning a Chinese nursery rhyme, entitled Black Cat, White Cat. After listening to the song played on a tape recorder a few times, Aileen announced that she wanted to make a mask so that she could “pretend to be a black cat.”

Rosan decided that she wanted to work on her folder cover and put the design of a cat there.

Gathering the materials they needed, Aileen and Rosan sat side by side and began their projects. They discussed what they had in mind and gave suggestions to each other. After finishing her mask, Aileen asked me to play the tape for her so that she could act according to the lyrics. However, the rhythm of

the music was so fast that she had difficulty following the lyrics. In addition, the mask did not fit her face well. After evaluating the situation, Aileen decided to rework the mask by enlarging the two holes, which served as the eyes of the cat, as well as adding some details to the cat's face. When she was done with her refinement, Aileen brought her mask to show me. Pointing at the mouth of the cat she had added using a piece of construction paper, Aileen said, "Teacher Lu, look, this looks very much like a 'person [人, ren]'" Later on, she created her own version of the song by slowing down the pace and substituting the original lyric with her own words (Transcript, November 2, 1996)



***Figure 5-12.* Aileen's cat mask and a tail which she later glued onto the cover of her folder.**

Transmediation in my class often took place when children were engaged in uninterrupted, self-initiated activities in which they had opportunities to interact with other members of their learning community via the use of multiple meaning making tools. In this transmediation process, the more sign systems these young learners used to create meaning, the more they "stretched" their thinking. Through experiences and experiments, my students employed different sign systems to construct and represent meaning, and thus experienced their world through various lenses.

In the beginning vignette of this chapter, Aileen and Rosan were engaged in a literacy event where art and language, both oral and written, Chinese and

English, were used simultaneously to express meaning and communicate with other people. In the example above, Aileen was learning a nursery rhyme, which contains both rhythm (music) and lyric (language). Taking what she had heard and learned, Aileen naturally interpreted her understanding through a combination of various sign systems. While doing so, she was also involved in a process of transmediation between language, music, art, and dramatic play.

This process began with Aileen's listening to a nursery rhyme, which is both musical and linguistic. The mask Aileen created was done through the sign system of art when she and Rosan were engaged in verbal interactions. When Aileen finally finished her costume and tried it on, she was ready to use art and dramatic play to support her interpretation of a musical-linguistic text.

On her first try, Aileen did not achieve her intended goal, for the pace of the music was too fast to follow, and the costume she designed was not the exact size she had originally intended. Therefore, she revised her plan first by reworking on the mask until it met her expectation, and then by familiarizing herself with the lyrics from listening to the tapes repeatedly. After several attempts, Aileen eventually decided that she would not follow the original rhythm, but would sing the song her of own pace. And while re-working on her mask, she "discovered" the similarity between an art element (the mouth of a cat) and a linguistic sign (the Chinese character for "person [人]"), which she later shared with me.

In the vignette above, it is evident that the availability of multiple sign systems, with which Aileen created alternative texts, allowed her to transfer,

transmediate, and associate meanings between different meaning making tools. Such a process, as revealed in the example above, is often circular, in that learners go back and forth between different texts and sign systems, and they may also employ a particular sign system more than once in order to fine tune their meaning to more effectively and efficiently convey their ideas and interact with others. The fine-tuning process does not occur randomly or without any reason, but developed out of learners' growing awareness toward the limitation and potential of semiotic specifics, as well as their need to successfully express and communicate what is intended in a particular context.

In the example above, Aileen made two decisions on fine-tuning: reworking the cat mask (an artist text) and modify/developing a lyric (a musical text) for a nursery rhyme she heard several times. Aileen created the mask because she wanted to use dramatic play to interpret meaning originally represented in music and language. Her creating a mask can be seen as a significant element of drama and theatre, where actors/actresses put on costumes to transform themselves into different characters and to assume various traits and identities required of them. Under such circumstances, the use of masks constitutes a semiotic specific. The freedom to explore and transmediate between various sign systems, a cultural specific in our class, supported Aileen's learning and her use of a semiotic specific for social interaction and meaning construction. This cultural specific also allows Aileen to abandon the original rhythm and to create her own in order to fulfill her personal and social purposes. When Aileen tried to follow the rhythm to enact the nursery rhyme, she was trying to learn a

semiotic specific of music, framed within our classroom context. After several attempts, she finally decided that the extant, pre-established semiotic specific (the rhyme) did not meet her needs, and therefore she wanted to create something new which better suited her purpose.

Aileen's case signifies the beginning of a process involving meaning negotiation between convention and invention as did Lucian when we used math. As the extant text and semiotic specifics (the pace of the rhyme and its lyric) did not meet her expectation and needs, she decided to create a new one based on her previous understanding of how particular sign systems worked. Her invention is likely short-lived when she fulfilled her purpose at that particular time and then put it away. Alternatively, it could be in the process of becoming a new specific if Aileen continued experiencing and experimenting with the convention and modifying what she had already created. The new specific may eventually become an integrated part of a sign system within a particular context if other members in her group were also to acknowledge, accept, and adopt its meaning, and to use it extensively across a wide range of situations and with different people.

New Specifics: Their Origins and Paths of Development

Sign systems are both closed and open in nature (Burke, personal communication, spring, 1997). They are closed as each of them has its own boundary and semiotic specifics; learners need to understand and follow the conventions in order to express and convey meaning effectively within their social, cultural groups. At the same time, convention-bound, individual sign

systems also open up opportunities for multiple creations and interpretations. For example, the orthography and convention under which the language operates differs in Chinese and English. When a writer randomly combines different linguistic elements (e.g., morpheme, semantics, syntax, orthography, etc) in Chinese and English for interpersonal communication, his/her readers are unlikely to understand him/her. This failure is due to the lack of boundary, patterns, and rules, which represent some semiotic specifics of individual languages. However, within each linguistic tradition, authors have created more literary works than one can consume in her/his lifetime. The open nature of sign systems can be due also to the similar physical property, which may be shared by two or more semiotic systems.

In our weekly meetings, my students frequently identified, compared, and contrasted similar elements share by Chinese characters and other sign systems. Many of these discussions were based on their frequent encounters with a wide array of signs in their environment, such as home, school (both the school they attended daily and my weekend Chinese class), and community. As these children participated in different activities in multiple social contexts, they brought various cultural as well as the semiotic specifics with which they identified the most into their communication and meaning construction processes. Both miscues and new specifics are generated under such circumstances. I have discussed how miscues took place among my students earlier in this chapter, and in this section I would like to focus on the developmental path of new specifics, as well as to compare and contrast between these two.

When sign users of different backgrounds and experiences communicate with each other, they sometimes need to develop new channels to meet their needs and facilitate their interactions, for the convention in each group may either differ or bear no relationship with each other. The movement between creation and convention gives birth to new meaning and interpretation, which may eventually become new specifics, provided these are mutually agreed upon and continuously used by parties involved in the social exchanges and meaning co-construction process.

Children acquire cultural specifics of a particular sign system through observation and apprenticeship with adults and other more competent peers in their interpretative community (Harste, Woodward, & Burke, 1984; Heath, 1983; Vygotsky, 1978). In the processes of learning to be literate in these specifics, my students also discovered the closed and open nature of different semiotic systems along with their meaning construction and interpretation process. They produced some miscues because of their unfamiliarity with the convention of a particular system of meaning making, but they also explored and experimented with possible ways of meaning construction due to the open nature of sign systems. The newly generated meanings and interpretations could become a convention among their peers and/or eventually be adopted by their socio-cultural groups, thus establishing new semiotic specifics, which then becomes an integrated aspect of a culture to which these young learners belonged. Below are two examples from my fieldnotes which record the process by which my students created,

developed, and established a particular semiotic specific within the context of our classroom.

For a period of approximately two months, Lucian and Emma were enthusiastic about writing numbers in Chinese. Each week, these two children sat side by side as they practiced and continued their number writing from the previous week. One day, as Emma finished writing “seventy seven” in Chinese, she said, “*Hey, seventy seven. It’s T and T. T-T.*”

Lucian heard her and replied, “*TNT? Oh, that, does that mean. . .*”

Before Lucian finished, Emma interrupted. “*It’s just T and T. Not T and D.*”

“*TNT stands for ‘trinomo, neutral,*” Lucian paused, as if trying to think what the second “T” stood for.

Emma laughed and said, “*No, not neutral.*”

“*Yes,*” insisted Lucian.

“*No, T-T,*” insisted Emma.

“*No, T and N, T. I’m talking about the word, a TNT,*” Lucian tried to clarify.

“*You don’t even, you know what ‘neutron’ is?*” challenged Emma.

“*No, but...*” said Lucian frankly. He, however, still tried to sound out some possible words that used “TNT” as an acronym. (Transcript, October 18, 1997)

A few weeks later . . .

Emma continued her Chinese number writing as soon as she entered our classroom. When she had finished “seventy seven” she announced, “*I wrote to the number T-T.*”

“*What is T-T,*” I asked.

“*Seventy seven,*” replied Maya.

“*T-T is seventy seven,*” added Lucian.

“*I said that first,*” said Maya.

“*TNT is, is an expl, an explosive,*” added Lucian. (Transcript, December 6, 1997)

While learning to write numbers in Chinese, Emma drew on the knowledge she possessed in her mother tongue, English, in order to support her Chinese literacy learning. I had heard, on several occasions, when she and other children compared and contrasted the orthography of a Chinese character with an English letter or some other signs they had learned through English (e.g., “‘七’ [seven]” in Chinese looked like a lowercase “T [t]” in English, and “‘ten [十]” in

Chinese was very similar to a “plus sign” or a “cross”). Because of the open nature of sign systems, children associated a particular sign across different systems of meaning making, and at the same time learned the meanings represented in each system respectively.

Emma, knew clearly that she was writing a Chinese number, “seventy seven”, but she also knew that she could regard it as two identical English letters, “T” and “T.” The linguistic sign [“seventy seven” in Chinese] that Emma produced has mathematics as its content plane, for it represented a mathematical concept. Her expression plane was linguistically based because she conveyed her meaning via the use of language.

Lucian’s interpretation, however, has a different content plane (science) from Emma’s, even though they both shared the same expression plane, i.e., language. Lucian’s reaction to Emma’s statement likely came from his personal experience and enthusiasm in books. An avid reader, first grader Lucian enjoyed a wide range of printed materials, especially fantasy and science fiction. It was through his recommendation that I had learned and read several popular series of these genres, such as *The Animorphs*, *Harry Potter*, and *The Magic Tree House*. The content plane in Lucian’s verbal response is of a science one, namely “TNT [trinitrotoluene]” an acronym for an explosive. Evidently, his interpretation differed from what Emma had originally intended, and the communication between these two children was thus fractured.

From the vignette above, it is evident that the physical property (e.g. the orthography) of a sign alone cannot determine its meaning, which is always

contextually bound. Also as the learners bring their own experiences and interpretations with them during a signification process, in which they may inadvertently make miscues, this further modifies their own hypotheses, as demonstrated in Aileen's case of mask making earlier. In our classroom, when the children interacted with one another regularly, they began to be aware of the differences among their classmates communication and personal expression; likewise, they would also compare and contrast what they had already known about a particular sign with one they just encountered. As such, they could recognize, acknowledge, and eventually accept a new meaning that they themselves or their peers generate.

Alternatively, such an invention may be considered a miscue, which eventually disappears when it no longer fulfills its initial purpose. In the vignette above, Emma developed and shared her invention of a new semiotic specific (i.e., naming the Chinese numeral "seventy seven [which she wrote as '七七']" "T-T" or "T-and-T") during her social interaction with others. The new meaning of that particular sign manifested itself when the children in the class also used it in addition to the convention, and when they explained it to those who (myself in this example) may not yet have been a member of their peer culture.

In the second vignette, Maya's and Lucian's explanation clearly indicated that they both had adopted this meaning, and that it had no doubt become a part of their peer culture. The way these children interacted with each other, including their argument, discussion, and acceptance of a newly generated meaning,

constitutes a part of the cultural specific of our classroom, where this new semiotic specific was generated.

From Convention to Invention: A Summary of the Role of Multiple Sign Systems and Meaning Construction

In this chapter, I share with readers examples of how my students developed, expressed, and conveyed meaning using multiple sign systems, as well as how new specifics are created, negotiated, and adopted during such a process. With the diagram below, I will summarize what I have learned by kid-watching (Y. Goodman, 1978) my research participants. This diagram shares some basic features with those in Chapters Three and further Four, but it serves to expand my understanding of the nature of meaning making by the children in my class, based on theories and research framed within a social semiotic perspective.

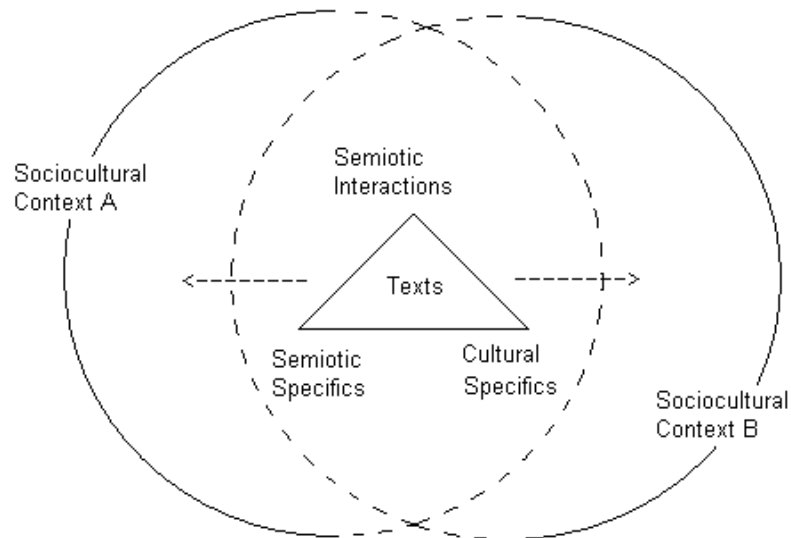


Figure 5-13. A model of literacy framed within a social semiotic perspective.

Like my earlier diagrams, each circle represents a different sociocultural context, which serves as the stage for all kinds of meaning making and transmediation to take place. Although each sociocultural group has its own unique ways of knowing, being, and doing, these specifics are by no means fixed. The dotted lines indicate the likelihood of exchanges and sharing in these specifics when members from one context come into contact with those from other cultures. In addition, members of each community also generate new specifics to cope with the social, physical, and psychological changes taking place in their environment and as a response to the new demands that arise when they interact with people from other groups. Because the children in this study live in and experience both a minority culture (home and the weekend mother tongue school) as well as a predominant one (school, community, and other social organizations), they are growing up concurrently within two socio-cultural contexts. Inside each context, these children learn the semiotic as well as cultural specifics through social interactions with more competent members of their interpretative community as they respond to or create texts individually or jointly with others. Some of these specifics (both cultural and semiotic) are common across contexts in which the children live; some are distinctively different from one another; and yet some are developed as a result of children's creating based on their understanding of the two sets of systems in their bilingual and bicultural environment.

In this diagram, the left crescent formed by the dotted and solid lines define the specifics idiosyncratic to sociocultural context A. Likewise, its

counterpart at the right of this diagram represents the specifics unique to context B. And the dotted lines that encircle the overlapped area between sociocultural contexts A and B represent the common specifics shared by these two contexts. As much as they are shared, the young learners in this study also generated new specifics or miscues, based on their understanding of the old, shared meanings and their awareness and needs for creating new meaning.

Central to the meaning making process is the semiotic triangle, which has always been socially and culturally situated. A semiotic triangle includes texts, semiotic interactions, semiotic specifics, and cultural specifics. Text, the element that learners created and/or responded to during their social interaction with others, is located in the center of the triangle. Texts served as a medium through which the children engaged in semiotic interactions either by responding to an extant or composing a new one, individually or jointly with others.

In addition to texts, three essential elements—semiotic interaction, cultural specifics, and semiotic specifics—co-exist to enable meaning construction to take place. As children created or responded to texts, they were engaged in semiotic interactions, for meaning is always created through the use of sign systems and has its roots in learners' social exchanges with people around them. While engaging in such interactions, learners also acquire semiotic specifics (the rules that govern the sign use) as well as cultural specifics (the rules when people in a community use for a particular sign system), and both in turn further help facilitate their meaning making process.

In the diagram above, I have drawn a triangle in the shared areas of sociocultural contexts A and B. The arrows on two sides of the triangle indicate the mobility of this triad because it can be in any location within the total boundary of these two contexts, depending on where the meaning making takes place, as well as the specifics on which learners draw to mediate their thinking and communicate with others. Its current position indicates that the children construct and convey meaning in an environment where some aspects of the dominant as well as minority cultural and semiotic specifics are shared. When the triangle is situated within the solid and dotted lines (i.e., the crescent at either the left or right side of the diagram), the meaning making and expression are in accordance with the values, knowledge, and practices abided by members of that particular context. And when one corner is located in each of contexts A, B, and the shared area, these children produce miscues, which are often due to their lack of extensive experience with the specifics, either in semiotic, culture, or both, across contexts. When the miscue is recognized, accepted, and used by learners and incorporated into their total repertoire of meaning communication, it becomes new specifics and an integrated part of the overlapping area, located between socio-cultural contexts A and B.

The children in this study had access to two sets of specifics due to their experience growing up in both Chinese and English-speaking environments. The semiotic and cultural specifics within these two contexts can either be shared, or be opposite to, or they could bear no relationship with each other. As these young learners transmediated between different sign systems during their meaning

making process, they were at the same time moving back and forth between the contexts in which each meaning making tool was defined. The multiple sign systems these children used provided alternative, additional means for them to express themselves and communicate with others when a particular one was not readily available.

Aileen's example of using gesture and art to substitute language is especially illustrative of this case. While I expected her to use language to convey the concept of "to water" or "watering", she did not immediately furnish me with a verbal answer, which may have been temporarily unavailable to her or which may not have been be a salient mode for her to express her intention at that particular moment. Therefore, she used gesture (the movement of watering and pointing a watering can in a book) and art (an illustration from a picture book we were reading) to represent what she had originally intended, before providing me with a verbal response.

Each of these two semiotic resources—the gesture and art—in this example transcended sociocultural boundaries; they were both capable of conveying meaning with minimum elaboration, and the semiotic specifics of each system were shared across contexts in this case. In other words, the gesture that Aileen used in this particular instance carried a similar meaning in both the minority and the predominant communities in which she lived. The use of this particular gesture and art was also recognized and considered an appropriate means for meaning construction in both Chinese and English-speaking contexts, so again the cultural specific aspects overlapped in this case. The semiotic triangle

thus is located in the shared area of the sociocultural contexts A and B (the dotted line area).

My insistence on a verbal reply forced Aileen to choose yet another new sign system—language—in which she had to follow the semiotic specifics of this language (e.g., sound, grammar). At the same time, she also needed to use it in a culturally accepted way, namely, orally respond to a question with a pre-determined answer, a common practice in the majority of English-speaking classrooms (Cazden, 2003) and also in adult-child interactions in Chinese-speaking contexts (Heath, 1986).

The children in my class actively transmediated between different sign systems, especially when they were engaged in self-initiated or less structured activities. The freedom as well as ability to transmediate between different meaning making tools also allowed these young learners to be engaged in thinking from different perspectives, to compare and contrast between what they had already learned to what they were yet to learn, and to reflect upon the similarities and differences between sign uses in different contexts. I will review examples from Lucian to further explain this process. Lucian's experience and interest in mathematics and sciences had supported his Chinese literacy learning all along the way. Among all my research participants, Lucian was probably the one with the least exposure to Chinese due to his linguistic and family background. His biracial family has elected to use English as the home language, and his Caucasian mother possesses limited Chinese proficiency. Lucian's father was able to help his learning initially, but eventually had to take care of his own

mother almost full-time due to her prolonged, bedridden illness. Lucian sometimes felt at a disadvantage under such circumstances. An excerpt from an interview with Lucian when he was in sixth grade reveals his feeling toward this particular constraint:

Unlike some of the other students who had at least some [Chinese] language background for some parents that can especially help them. I don't have as many sources. So, it was little harder for me. . . . I almost never could do [Chinese homework] all by myself, for I only knew half the words and I had stumbled through it. But, some of the other people, they already knew half of the words before they came to the class. At least what I knew of. So, that's kind of hard, but I was strongly motivated to study.

(Lucian, personal communication, March 2, 2003)

Disadvantages like these did not always prevent Lucian from participating in class activities. His knowledge in science and mathematics played an important role in his Chinese acquisition process. In Chapter Four, I have showed readers an example where Lucian coined a Chinese term “big cat [大貓, da mao] for “lion [獅子, shi zi]” because he reasoned that “a ‘lion’ is a kind of ‘big cats” (Chapter 4, p. 254). This specific knowledge supported Lucian’s Chinese literacy learning because it provided “materials” for him to create a new term and to use the target language in order to participate in, as well as to contribute to our classroom discussion.

Such an experience should also have been an empowering one for Lucian, because he was able to transfer some of the knowledge he possessed to support

his own, as well as to help his peers' literacy learning. Instead of someone who needed help, Lucian became someone who offered assistance. With his mathematical knowledge, Lucian taught Rosan how to read Chinese numbers by explaining the multiplication and addition principles he learned at home, when the class played the "Big or Small" game (Chapter 4, p. 252). In this example, Lucian transferred the mathematical knowledge (multiplication and addition) he learned in English at home to Chinese and then transmediated such knowledge into Chinese written language. The semiotic specific in this example was thus shared, because multiplication and addition rules are universal, regardless of the language involved in the calculation process. It was also different, because the rules that govern language and mathematical expression are different.

As a result of knowledge transferring and transmediation, the triangle moved between different parts of the boundary that define sociocultural contexts A and B in a single literacy event. In this example, the triangle was first situated in the majority sociocultural context because Lucian learned the semiotic specifics of mathematics from his mother, who was brought up in a mainstream Caucasian community. Along with Lucian's father, who emphasizes the important of mathematical and academic excellence, Lucian's mother also imparted the cultural specific ways of mathematics instruction and its value to Lucian. As Lucian demonstrated his mathematical knowledge to Rosan, the triangle then moved to the other sociocultural context. Here Lucian needed to learn how to use Chinese written language to represent a mathematical concept and to respond in a culturally appropriate way when he was called upon to answer or voluntarily

share such knowledge in a Chinese-learning environment. Eventually, the semiotic triangle moved to the overlapped area between sociocultural contexts A and B, for he was able to move back and forth and make use of knowledge he learned from both contexts to demonstrate his knowledge and support his peer's learning.

In this chapter, the knowledge that Lucian as well as his peers possessed in different semiotic systems also took them a step further in their learning, for it not only allowed these learners to support their own as well as their peers' learning, but also created new specifics across cultural and semiotic boundaries. The experience and knowledge these children possessed in sign use across sociocultural contexts helped them develop flexibility in accepting and creating new semiotic specifics, which eventually became integrated parts of their peer culture. When Emma and Lucian argued with each other about the meaning of "T-T" and "T-N-T", they inadvertently "sowed the seed" for a new semiotic specific, namely "seventy seven" written in Chinese can be expressed as "T-T" in English. The other children's adoption of this invention as well as their explanation also revealed the development of multiple perspectives, which characterized one of the cultural specifics they collectively created in our classroom.

While analyzing children's transmediation and meaning-making process, I find that miscues and new specifics are two sides of a coin, for they both grow out of learners' awareness of the limitation and potential of semiotic systems for creating meaning, as well as their need for effective communication and self-expression. The difference between a miscue and a new specific lies in the

developmental path each takes. Because of their lack of substantial experiences with the limitation of the sign system and its use, the children sometimes made miscues while crossing cultural and semiotic borders. Awareness of the differences that define sociocultural and semiotic boundaries and the open nature of sign systems allows children to examine a miscue, which may either remain as one or develop into a new specific. A miscue is usually short-lived, and it will either disappear quickly or it will change and eventually become conventional, provided learners have opportunities to be continually engaged in meaningful and purposeful communication.

A new specific, on the other hand, may change very little, and it often becomes an integrated part of a particular culture in which members of that group agree, adopt, and are able to explain to outsiders the particular meaning attributed to it. The use of a new term “T and T” or “T-T” to represent “seventy seven” in Chinese writing exemplifies the development of a new specific because the children in my class collaborated to contribute to its birth, and they also continued to use it throughout the course of their participation in my class.

Lucian’s example of learning to write in Chinese numbers with power of ten, such as “hundred” and “thousand” showed the developmental path of a miscue. Like new semiotic specifics, Lucian constructed these characters out of his need to communicate with others and to keep track of information for himself. Due to his lack of substantial experience with and exposure to the Chinese written language, he created new characters based on his understanding of how a particular number was represented in numerals and of multiplication principles in

English. Because of the different rules that under-gird different semiotic systems, namely the number represented in numerals and in written Chinese as well as in English, Lucian inadvertently made miscues when he crossed these cultural and semiotic borders.

I will use the diagram below to explain the developmental path of a miscue. Lucian's example of Chinese number writing started out as a miscue because his expression plane was not conventional, deviating from what literate Chinese writers would usually use. His miscue was due to his lack of extensive experience with and exposure to the semiotic specifics in Chinese number writing and therefore he needed to rely on the semiotic knowledge he possessed in English to invent a new sign in order to communicate with me.

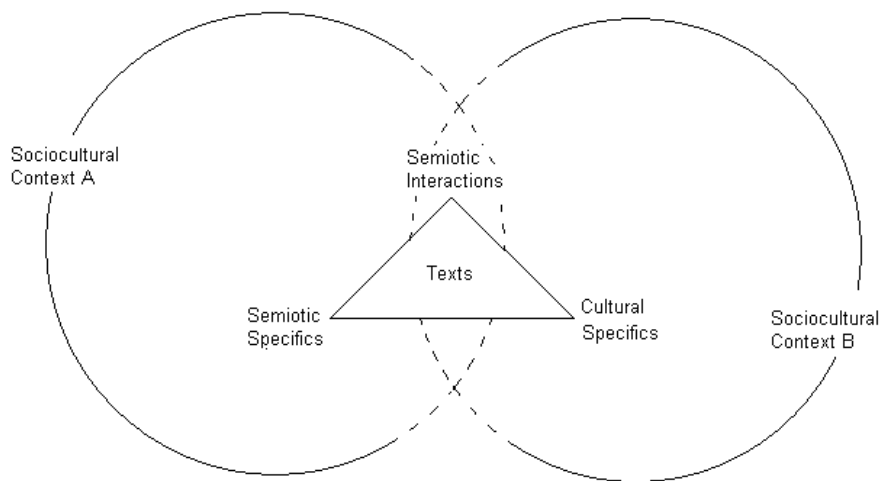


Figure 5-14. Miscue during transmediation and border crossing.

In this case, the semiotic triangle was originally located within the majority community, when Lucian began to draw on the knowledge he possessed and transferred it into his Chinese learning. While creating Chinese characters based on the multiplication principle he acquired through English, Lucian crossed

certain semiotic borders. In this process, he had made a miscue, for now the semiotic and cultural specifics were not in the same sociocultural contexts (namely the dominant and the minority ones). The corner that represented the semiotic specific is located in the dominant sociocultural context, while the social specific is found in the minority sociocultural context. There was a discrepancy between the meaning defined by the semiotic specific in one sociocultural context and the practice defined by the cultural specific in another sociocultural context.

Without knowing the situation in which this literacy event takes place, people from either the Chinese- or English-speaking context may not have known his intention, for the rule that undergirds the semiotic specific (Chinese) is mathematically based, but learned through English. The discord between semiotic and cultural specifics prevented him from conventionally expressing his ideas and communicating with others, who were not participants of this semiotic exchange.

The miscue underwent changes and eventually disappeared for Lucian was concerned about convention and requested a confirmation (and disconfirmation) from me. After I furnished him with the conventional ways of number writing in Chinese (a semiotic specific), and explained the use of numbers in Chinese documentation (a cultural specific), Lucian changed his approach to number writing in Chinese and his writing eventually became conventional. The semiotic triangle moved back to the overlapped area of sociocultural contexts A and B (instead of the minority sociocultural context, namely the Chinese), and its development was influenced by the conventional cultural and semiotic specifics in both contexts.

The new specific and the miscue shared the same beginning, because they were both not only unconventional, but were developed out of the learners' intention to communicate with others using a sign system (or across sign systems) and in an unfamiliar context where he learned cultural specifics along with semiotic specifics. The new specific began to develop "residency" in a particular context as members of this group recognized its existence and responded to it. In the example where Emma commented that "seventy seven" in Chinese is "T-T" or "'T' and 'T'" in Chinese, Lucian's responses and their argument about the relevancy of Lucian's comments all signaled these children's awareness of this potential specific. As these young learners continued to interact with each other and learned about the connection between the number "seventy seven" written in Chinese and "T-T" or "'T' and 'T'" in English, they recognized, acknowledged, and incorporated it into their meaning potentials in their interpretative community. Such a process added to the new dimension of a cultural specific, namely their flexibility and willingness to consider different interpretations, as well as to as to consider transmediation as a valid way of meaning making.

Closely examining the two vignettes regarding a particular number (i.e., 77) expressed in Chinese written language, we can see that initially, where all three corners of the semiotic triangle were located in the English-speaking community, it is how Emma and Lucian situated themselves and acquired mathematic concepts. As Emma began to learn Chinese language, she also started to cross the semiotic and cultural borders between Chinese and English. The

comment she made initially can be considered as a miscue for it deviated from the original interpretation and Lucian misinterpreted her original intention.

The corners that represent cultural specific and semiotic specifics were located in two different sociocultural contexts because Emma drew different specifics in this instance to represent her intention. As other children got caught up with the idea and began to use the same phrase and were able to explain this to outsiders, the new specific was thus born. And the three corners of the semiotic triangle moved to the shared area of sociocultural contexts A and B because its meaning was best interpreted in such a context; the argument, meaning negotiation, and flexibility these children exhibited in the two vignettes also revealed the cultural specific they collaboratively developed in the classroom, where the new specific was created.

Using the data I had gathered from my work with the children in my class, I have built up a personal model of literacy, from Chapters Three, Four, and Five. In each chapter, I try to understand how children learn to be literate via the meaning making process by using different theoretical frameworks. In Chapter Three, I drew on theories from sociocultural context of language and literacy learning; Chapter Four, from bilingualism with a knowledge/concept transfer, and Chapter Five, from sociosemiotic theory. Each theoretical framework has provided me with tools to understand and analyze this complex process, and also served as building blocks for the next chapter. In Chapter Six, my final chapter, I would like to provide a succinct summary and recap what I have learned from this personal, professional, and academic inquiry.

CHAPTER SIX

DEVELOPING A MODEL OF LITERACY

This research developed as a result of a continuous personal, professional, and academic inquiry, in which I was a learner, teacher, and researcher. My multiple roles not only provided me with different lenses through which I gained different perspectives, but also helped shape this research. A reflection at a personal level started me on this path of inquiry because it allowed me to examine my own belief about learning, particularly in second language and literacy, and to put myself in the shoes of the learners with whom I worked. An old saying—“one needs to be a student before becoming a teacher”—probably best captures the essence of this inquiry process.

Through self-reflection, I understood how my experience influenced the way I anticipate my students' learning. Coupling such realization with my academic training in children's literacy development, I selected appropriate approaches to work with my students and designed a curriculum to put theory into practice. Re-examining my own learning process also helped me scrutinize my subjectivity, a construct that is inevitable in any kind of research. As an insider who shared some aspects of cultures, both ethnic and classroom, with the children, as well as an outsider who did not have the same schooling experiences as them and who grew up in a different sociocultural and historical context from her research participants, I had to constantly remind myself not to take everything for granted. Rather I needed to examine things in their own context and to regard anomalies as a catalyst for further learning and thinking (Short, Harste, & Burke, 1996).

The triadic relationship between my learning, teaching, and research also characterizes this inquiry process. Within the framework of Whole Language philosophy, the children and I developed a curriculum which was child-entered and inquiry-based. Employing the “kidwatching” strategy (Goodman, 1978) in my teaching, I took a step back and invited the children to be the informants who told/showed me how they approached learning and what their literacy learning process was like-- two important aspects of this research project. This in turn enriched the content and enhanced the validity of this research, for I was able to understand and interpret these children’s literacy learning process from their own perspective rather than other secondary sources.

Through weekly meetings with my students, as well as kidwatching and systematically gathering artifacts these children created, I gradually gained a better sense of what it means to be literate in a specific sociocultural context, and what these children’s literacy process is like when viewed through various theoretical lenses. It is also from this process that I found that the longer I immersed myself in this research, the more questions and issues I encountered. In other words, as the research process unfolded, I answered some of the questions that I initially proposed to myself, but I also discovered some new ones, which propelled and challenged my thinking to the next level.

As I wrap up this study, I would like to first share with readers what I have learned in this process. I will then include implications of this research and my suggestions for educators, researchers, and those who live and work closely with children from non-mainstream household and communities. The last part will be a

discussion regarding some of my lingering thoughts on which I want to continue working and build a research program.

A Model of Literacy

The three inquiry questions I proposed in Chapter One serve as the backbone for the development of my personal model of literacy. Here I would like to recapitulate them below:

(1) In what ways does these four children's cultural experience influence their language and literacy development?

(2) What is the nature of the interplay between their first and second language learning?

(3) How does the construction of meaning in multiple sign systems influence their literacy learning?

These questions along with the three interpretative frameworks—sociocultural context of language and literacy learning, interrelationship between first and second language from a sociopsycholinguistic perspective, and social semiotic theory—serve as the backbone of this study through which I explore and understand particular events, issues, and phenomena during my inquiry process.

The development of my model is a gradual one, which spans three chapters—Three, Four, and Five. Each chapter is based on a specific theoretical orientation mentioned above and is an expansion of the previous ones. I have used diagrams to help distill my thinking and theorize my understanding of the literacy learning process my research participants went through. I will now walk my

readers through each of the diagrams and use them to explain the development of my model of literacy.

In Chapter Three, I focused on the relationship between language and culture, with particular attention on how these four children developed their Chinese language and literacy skills in a community where mainstream American culture and English language predominated. I would now like to show this diagram, but I want first to review the definition of terms that I used in this as well as other diagrams for they are essential to my interpretation and to my readers' understanding of my students' literacy learning process.

1. Sociocultural Contexts: the boundary, which could be physical, psychological or virtual, defines a set of knowledge systems (e.g., values, beliefs, and practices) that members of a particular group identify with. Within each sociocultural context, young members of the group learn “cultural specifics” as well as “linguistics specifics” through interacting with other more competent peers and apprenticing with adults while creating or responding to texts. The “specifics” in different contexts may be similar, in conflict, or bear no resemblance with each other. Individuals usually behave in accordance with the “specifics” in which they find themselves. The boundary of a particular sociocultural context is never fixed and may change as members of a group are in contact with those from different groups.
2. Text: a sociological event, through which meaning is manifested via the use of the linguistic system among individuals who are engaged in

social interactions. A text is always situated, and “the individual member is, by virtue of his membership, a 'meaner,' one who means. By his acts of meaning, and those of other individual meaners, the social reality is created, maintained in good order, and continuously shaped and modified” (Halliday, 1977, p. 197).

3. Linguistic engagements: Linguistic engagements include the process of meaning creation, which can take place during an oral or written communication. A linguistic engagement can be recorded in cultural artifacts/products (e.g., printed, audio, visual, or electronic materials) and become texts, or it may take place without leaving any concrete physical evidence, such as in dialogue between two people. In a child’s language socialization process, adults or more experienced members of his/her group introduce linguistic specifics when both parties are involved in linguistic engagements by creating or responding to texts, and such a behavior is in accordance with specific aspects of a culture.
4. Linguistic specifics: Distinctive aspects, conventions, and properties of language, such as phonetics, syntax, semantics, and orthography, that distinguish one language from the other and provide members of a particular group a tool to create and exchange meaning.
5. Cultural specifics: Cultural specifics include all elements, both explicit and implicit, that constitute a culture, such as social practices, and ways of being, doing, and thinking. Cultural specifics are manifested

through the use of sign systems, such as language, and they are created and shared by members of a particular group. Examples of cultural specifics include kinship terms and categories of lexical items.

6. Language socialization triad: Linguistic engagements, Cultural specifics, and Linguistic specifics which occupy the three corners of the triangle in the diagram. Together with Texts, these three elements allow the language socialization process to take place.

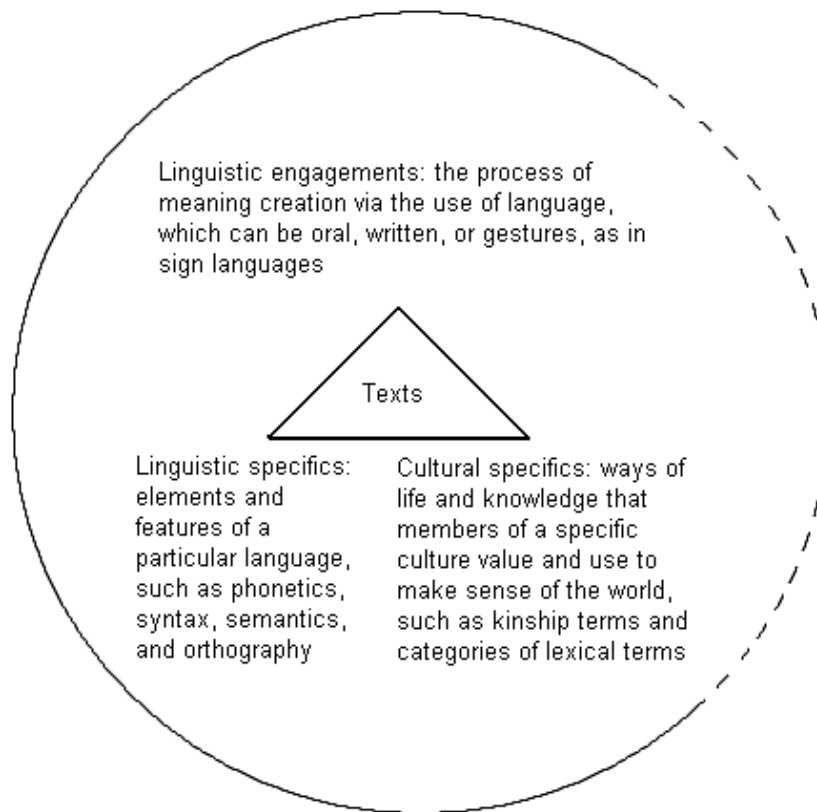


Figure 6-1. A model of literacy based on theories of social cultural context of language and literacy learning.

The sociocultural context in this diagram is the circle that surrounds the language socialization triad. The social cultural context serves as the stage where all meaning making and exchanges take place. Although it is defined and

constructed by members of a particular group, it is by no means a fixed one. The practice, knowledge, and values that members of a particular context create and follow may change, especially when people from different groups interact with each other or when new a technology or concept is introduced. Therefore, I used both solid and dotted lines to draw the circle because the solid line represents a defined boundary, and the dotted lines imply the possibility for changes to take place. In this diagram, “Texts” is located at the center of the language socialization triad because of its critical role as catalyst in this meaning making and exchange process. A text in this triad could be oral, written, or gestural (in the case of sign language), which learners often used in conjunction with other sign systems. Meaning is generated as children respond to a pre-existing text or create one themselves either individually or jointly with members of their sociocultural groups. Regardless of the nature (individual or collective) of the meaning creation, this process has its social root, which may not be always immediately evident. Through texts, young learners begin to be engaged in linguistic exchanges with more competent community members, who serve as socialization agents and provide models for children to acquire linguistic specifics, which enable the children to function in their particular linguistic community. Language learning and social learning are integrated aspects of “learning how to mean” (Halliday, 1975), at the same time children learn to use language, they also learn cultural values, social practices, and knowledge pertinent to the development of their community (and themselves as well) through language. And this type of learning constitutes the learning of cultural specifics.

The diagram above illustrates a language socialization process in which young learners make sense of their world via the use of language while involved in social engagements with other more experienced members of their interpretative community. Children who grow up bilingual and bicultural live simultaneously in two sociocultural contexts as they constantly cross boundaries and compare, contrast different specifics in these two environments. I will use another diagram below to show this process and to illustrate language socialization processes in such a context.

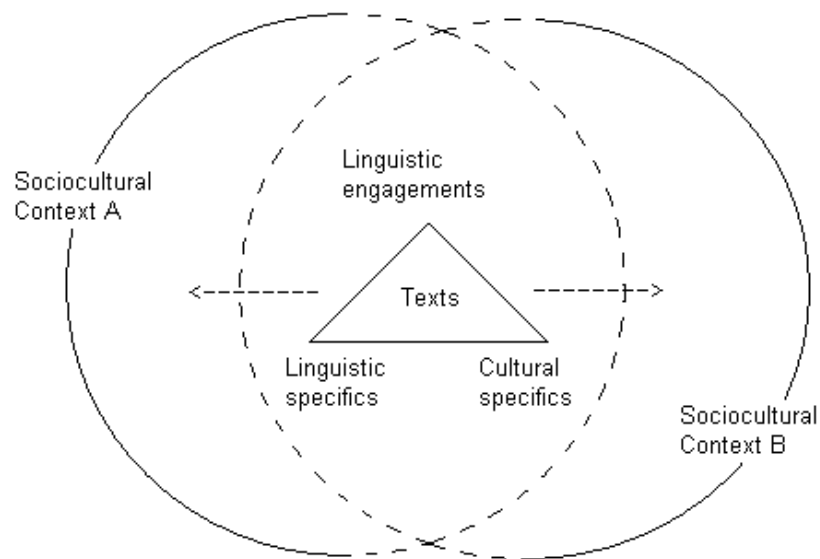


Figure 6-2. A model of literacy based on bilingual and biliteracy development from a sociopsycholinguistic perspective.

This Venn diagram consists of two solid-and-dotted-line circles to represent two sociocultural contexts (A and B), to which the children belong. When children grow up bilingual and bicultural, they will need to learn two sets of specifics, which may share similarities or bear differences across contexts. The area defined by the dotted line represents the shared specifics between two

contexts; the specifics in this area can also be the ones created by learners because they often draw on cultural and linguistic knowledge they possessed in both communities to make sense of their environment. The two crescent areas defined by both dotted and solid lines on either side of the shared one represent unique specifics existing in each individual sociocultural context. The size of each area is neither fixed nor predetermined, for learners constantly make connections, seek similarities, and identify differences between these two sets of specifics. When they find more similar specifics across contexts, the shared area expands; when there are more differences across contexts, the common area shrinks. The two arrows on the left and right of the language socialization triad indicate its mobility, for it may locate in any area within the boundary defined by these two contexts. And the location of the triad is closely related to the children's familiarity and understanding of the language and culture, as well as the person(s) they interact with during a particular literacy event.

Because the children in this study were more familiar with English and European American culture due to their schooling and life experience, the triad was often located in the crescent area that represents the community where mainstream English and American culture predominated. However, as children also learned both Chinese language and culture from home and the weekend Chinese class, they at the same time acquired specifics pertaining to that particular linguistic and cultural system. Under such circumstances, the triad moved to the crescent area opposite to the previous one. Because of these children's experiences in two languages and cultures, they often tried to identify

similarities between two sets of specifics, and so the triad moved to the shared area. When children transferred the knowledge they possessed in a cultural or linguistic specific in their familiar context to a less familiar one, miscues sometimes occurred. The diagram below shows how miscues take place while children are engaged in linguistic interactions with others.

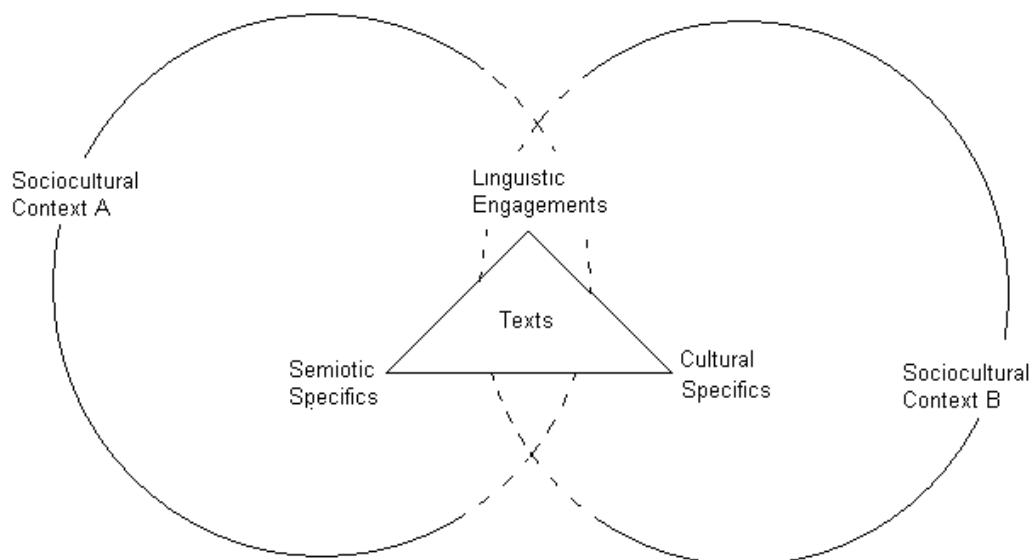


Figure 6-3. Miscues during border crossing.

Miscues arise usually because children are not familiar with the comparability between two sets of linguistic or cultural specifics as they try to make sense of their world and create meaning across borders. Because language learning is cultural learning (Heath, 1983) and both are integrated parts of “learning how to mean” (Halliday, 1975), miscues become inevitable when shared specifics (either linguistics and/or cultural specifics) do not exist and learners need to temporarily “make do” with all available resources they possess in order to make sense of the world there and then. In this model, the three corners indicate linguistic and/or cultural specifics no longer co-exist in the shared area,

but in different social-cultural contexts. Learners may employ a linguistic specific in one context to express or make sense of a cultural specific in the other context, or vice versa. Miscues caused by idiosyncratic linguistic and/or cultural specifics can be seen as a point in transition. As discussed earlier, the triangle in the overlapped (dotted-line) area of this model is not a fixed one, when bilingual learners have opportunities to continue revising and redefining their understanding of the shared as well as the unique cultural and linguistic specifics through meaningful, purposeful linguistic exchanges with others.

The children in this study not only learned to be literate in two linguistic systems, they also developed literacy in different languages, such as the language of art, music, mathematics, and science. These different “languages” (sign systems) provide us different lenses to help us construct meaning, mediate thinking, and communicate with others. As with language, the two sets of sign systems share similarities, present differences, or bear no relationship with their counterparts in the other context; their specifics and cultural specifics are closely related and develop as results of a long-term evolution by members of a particular community. The following diagram serves as the final version for my model of literacy.

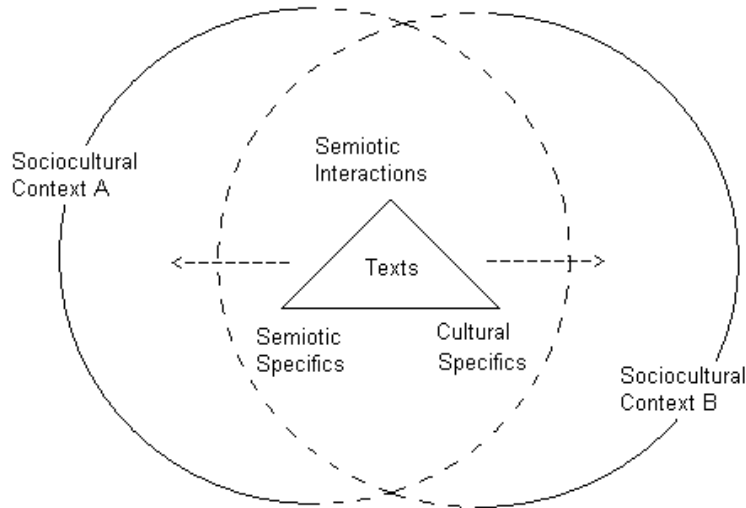


Figure 6-4. A model of literacy based on social semiotic theory

This diagram is somewhat similar to Figure 6-2, but I have changed the name of the “language socialization triad” into “semiotic socialization triad” for literacy learning is the learning of ways with signs in particular contexts and therefore a socialization process. As shown through vignettes in Chapter Three, four, and five, all literacy events include more than just the linguistic sign, but learners select and orchestrate different meaning making tools (both linguistic and non-linguistic) in order to achieve social, personal, and other goals in their lives. Because of the same reason, the term “linguistic specifics” used in Figure 6-1 and 6-2 becomes “semiotic specifics” in this figure above. In addition, I also change the term “linguistic engagements” into “semiotic interactions” for every instance of meaning making mediated by texts is done de facto through sign systems.

Like in figure 6-3, as children tried to make the unfamiliar familiar by applying the knowledge they possessed in one set of specifics (either linguistic or semiotic) to its counterpart in other context, they inadvertently made miscues because some particular semiotic and/or cultural specifics may not have shared similarities across contexts. Miscues occur when learners try to make use of the

knowledge they possess in cultural specifics to construct and express meaning in a less familiar sign systems, or vice versa. A miscue, however, may undergo changes and become a new specific when members of a group recognize, accept, and are able to explain its meaning to outsiders. Under such circumstance, the three corners of the triad move back to the overlapping area of sociocultural contexts A and B, and the meaning making process is the same as shown in Figure 6-4.

Educational Implications

In the last section, I summarized what I have learned from working with my students and theorized my understanding by presenting the developmental process of my model. Based on what I found in this inquiry, I would like to share some of my thoughts and suggestions for those whose work influences the lives of children, both from minority as well as mainstream backgrounds.

Roles of contexts and texts in supporting literacy development

As revealed in the findings of this study, contexts and texts play important roles in which literacy learning takes place. Situated within a specific context, learners define their role and create meaning using socially and culturally sanctioned sign systems in accordance with the social practices, beliefs and knowledge systems. The classroom the children and I created in this study shared similarities with many other educational institutions but it was also different from them. Like many learners, my students brought “funds of knowledge” (Moll, Amanti, Neff, & Gonzalez, 1992) from home with them into their learning process. The culturally and semiotically specific knowledge children possess

forms the foundation on which their learning is based. The other similarity lies in the social nature of learning and meaning construction. Even though some instances of learning and meaning making may seem to take place when children work quietly and individually, its social roots can always be traced.

It is from social, semiotic interactions that knowledge is developed and transacted. It is the reality in this study and many other classrooms around the world, whether it is a classroom that operates under a Behaviorist model, a one-room school in a remote area, or an elite, experimental program with a constructivist philosophy. The classroom in this study is different from others because it provided an environment where children were encouraged to take risks and find answers to their own questions; where tensions, discussions, and constructive arguments were important parts of their learning experiences; and where they had choices and voices. It is in this type of context that I decided to step back and to learn with these children, instead of constantly dictating their learning and be the authoritative figure who transmitted knowledge to them.

In my model of literacy, knowledge transaction and meaning construction are mediated through creating or responding to texts jointly or individually by learners. Different types of texts, like different types of contexts, can influence learner perceptions of themselves as well as the learning process. In this study, the texts were created as children engaged in semiotic interactions with each other, with me, or by themselves. The texts that these children responded to included those generated by themselves via the use of various sign systems selected by me, and those brought from home by these young learners and/or their parents. Each

of these spontaneously created/responded texts provided children with different opportunities to practice their newly acquired literacy skills, transfer the knowledge they possessed across cultural boundaries, and transmediate between sign systems. The texts selected by the children, their parents, and me represented a wide range of semiotic tools within which cultural specifics were embedded. Instead of using commercially produced basal readers, I decided to locate or invited children to create texts that would be relevant to their own inquiry topics. When children selected “cat” as their inquiry topic, one that held their perennial interest, they created oral, written, art, musical, and dramatic texts, which allowed them to explore this topic from multiple perspectives. Such an approach also broke a myth in learning to be literate for me: what matters is what is important to children, not what the teacher thinks that children have to learn. The word/character for “cat [貓, mao]” in Chinese consisted of 16 strokes and was traditionally not included in the readers for children of my students’ age because it was commonly thought too difficult to young learners. However, all of the children in my class learned to write this character without difficulty for they wanted to learn about this animal and they were engaged in many activities in which they had opportunities to practice writing it.

As discussed earlier, learners situate and define themselves in a specific context to which they belong. And, in the context, they generate meaning via using multiple sign systems. Both contexts and texts influence how they perceive themselves as literacy learners and what the literacy learning process entails. It is

therefore important that educators take these into consideration when designing and organizing curriculum to meet the needs of their learners.

The role of miscues in learning and development

The children in this study constantly made use of the linguistic, semiotic, and cultural knowledge they possessed in one context to support their learning of the less familiar one in the other context. Knowledge transferring and semiotic transmediation often served as a springboard for their learning in the other context, but could also become sources for miscues. The successful transferring and transmediation processes were probably less noticeable than the creation of miscues; the latter deviates from convention and sometimes cause tensions for it is different from or in direct conflict with those valued by schools and teachers from mainstream backgrounds. Instead of regarding miscues as “mistakes” that require immediate intervention or correction, findings from this study demonstrate that miscues can serve as an important tool for teaching and learning. From a teaching point of view, the miscues my students made allowed me to identify the cognitive process they went through and to help me design strategy lessons to help them move toward convention. By examining children’s miscues, I was also able to understand the developmental process of particular children as well as to predict possible patterns in their peers. From a learning point of view, the children’s miscues can be used as opportunities for them to collaboratively compare and contrast the similarities and differences between two sets of specifics, to clarify and redefine their understanding between these systems, and to develop their personal theory of bilingual and biliteracy learning. Immediate

correction without explanation or opportunities for further exploration may temporarily stop miscues from happening. Doing so, however, deprives children's opportunities of understanding how and why they make miscues and what differences miscues make in a communication process.

Multiple sign systems and learners of differences

As I observed, documented, and examined these four children's literacy learning through sociocultural, holistic, and socio-semiotic frameworks, I was able to see what these young learners were, instead of were not capable of doing at a particular point of time in their life. Each child in this study had different strengths and areas that needed support. The availability of multiple sign systems allowed them to venture into the learning process, without being taught "the basics" first, as well as to demonstrate to me their understanding of a particular concept via the use of an alternative meaning-making tool. For example, Lucian's knowledge in mathematics and science which he acquired through English from home and the school he attended daily provided him a foundation from which he began to make sense of the linguistic and cultural specifics of the Chinese language. Aileen's English literacy development was initially supported by her Chinese language experience. Based on a favorite Chinese picture book of hers, she created a story, both in English and drawing, to show me her ability to transfer concepts across linguistic borders and to transmediate between sign systems.

The freedom to move between and among various sign systems in my classroom also provided children opportunities to appreciate the semiotic specific

knowledge their peers possessed and supported each other's learning. Lucian may have had the least exposure and experience in the Chinese language among these four case study children, but his mathematic knowledge acquired through English helped him transfer mathematic concepts readily. Therefore, when Rosan needed immediate assistance in mathematics, Lucian gave her a hand and helped resolve her problems. It is evident that in a classroom where multiple sign systems are used and regarded as valid means of communication and meaning construction, learners are able to make use of the knowledge they possess to support their own as well as others' learning. A sense of democracy, under such circumstance, is likely to develop in this group of learners for one's value is not judged by a pre-determined, single set of standard, but differences and diversities are respected as a sources to support the growth of individual as well as the group.

Lingering questions

I began this inquiry with a general question: how do people learn to be literate in two very different language systems? As I continued to work with my students, conduct research on their biliteracy learning, and read relevant literature in my graduate courses, the number of my questions grew into three. I proposed them in Chapter One and answered each of them in Chapter Three, Four, and Five of this study respectively. As this research progressed, I encountered different issues and situations from which more questions are generated. These new questions not only intertwine with each other but also with the old ones I proposed earlier, thus they provoke my thinking, and push me to think beyond my

current self as well as to plan for future research. I would now like to share some of these lingering questions below:

(1) What will these four children's bilingual and biliteracy development be like as they move to young adulthood and adulthood? Being the teacher of Aileen, Rosan, Maya, and Lucian, I had been fortunate enough to conduct research in their early childhood biliteracy development while working with them. As these children moved toward their middle and late childhood, I had to stop my data collection in the fall of 1998, due to time and many other constraints, but I continued working with them until summer 2002. During this four-year period, I saw these children develop into competent and critical literacy learners. Not only did they become more comfortable in using Chinese, but they also began to think about the various roles different languages played in their life, and how minority languages and their learners were treated in the community where they lived. Although all children, except Aileen, are no longer participating in any type of Chinese literacy program on a regular basis, it does not necessarily mean that their continuing literacy learning in this area come to a halt. Lucian in an interview indicated his strong affiliation with Chinese and stated

Even if I learn like Spanish first [before I learn Chinese as a second language], I am always probably going to think Chinese as my second language . . . just because I am Chinese, I am not Spanish or anything else." (Lucian, personal communication, March 2, 2003).

Lucian also indicated in the same interview that he would like to continue his Chinese learning. "I hope to, soon, in the future. . . I want to learn Spanish and

Chinese, but. . . Right now, I'm just way too busy.” Rosan continued her Chinese literacy learning well into her high school, until there was no one available to work with her. She is the child who stayed the longest in my classroom, from kindergarten up to sixth grade, and she continued her Chinese learning for almost three years with another teacher. During these years, she saw children drop out of Chinese classes all the time, but she remained. When I asked her the reason, she said, “I [like to] keep learning and remembering [Chinese] so I don't forget everything. So I can speak Chinese. And, like, once I do a class for a long time, it's hard to drop it” (Rosan, personal communication, March 3, 2003). Maya still maintains most of her Cantonese because this is the language/dialect that her parents, two older siblings, and relatives used with her at home. Although her mother mentioned that Maya had forgotten some Cantonese, I have observed she uses it without much difficulty to communicate with other speakers of Cantonese and code-switched fluently with Cantonese-English bilinguals. Her family also subscribed to Cantonese TV programs, which she enjoyed tremendously. At this point, it may be presumptuous to assume that these four children will one day resume their Chinese literacy learning, enjoy it, and reach a certain level of proficiency. I believe, however, some of the linguistic and cultural specifics they acquired in Chinese in their early childhood will support their later literacy learning of the same area. And if they start to learn Chinese again, studies on the relationship between their early childhood and adulthood Chinese learning experiences will help us understand patterns/trends of their literacy development and maintenance of second/foreign language acquisition in a longitudinal sense.

(2) What are the differences and similarities between younger and older second/foreign language learners' biliteracy development from a sociopsycholinguistic and social semiotic perspectives? While I traced and documented these four children's early childhood biliteracy development, at the same time I also taught college students at the Chinese Program of the East Asian Languages and Cultures Department at the Indiana University. Working with both children and young adults, I found similarities as well as differences between these two sets of learners in terms of their learning behaviors, patterns of miscues, and their literacy development. As many second/foreign language studies on adults or teens focus mostly on linguistic aspects of literacy development (for example, phonetics, syntactic, and lexicon) it may be useful to conduct studies on this group of learners to examine this process from alternative perspectives as well as to compare and contrast their literacy development with that of younger learners. By doing so, we are likely to understand the universality and the uniqueness of learning to be biliterate among diverse learners.

(3) How does the literacy learning process of children who live in ethnic communities (e.g., Chinatown) differ and share similarities with those in this study? This study was conducted mainly in a mid-western university town, where mainstream American culture and standard English predominated, even though diversity can be seen and felt, such as in ethnic restaurants, religious centers, art and music performances, and students and scholars from around the world. Compared to the children living in an environment where Chinese language is used widely in their environment (and often even at school), and the Chinese

culture and practiced are an integrated aspect of the community, the four children in this study had less of this kind of experience and exposure. Stories of mother tongue literacy learning experiences from Chinese American friends growing up in ethnic communities revealed a very different learning environment and pedagogy compared to those in this study. Such experience often influences the learners' perception of what it means to be literate in Chinese to them. On the other hand, some of the learning strategies and human relationship these two sets of learners develop are very similar. Under such circumstances, comparative studies of children's literacy learning across different type of communities are useful because they are likely to help us to explore the similarities and differences between a wide range of sociocultural contexts and their role in children's literacy learning, thus expanding our understanding of the spectrum of the human possibilities.

(4) How is the bilingual and biliteracy development of these four children similar to and different from those in a two-way immersion (balanced bilingual) program? This question goes hand in hand with question (3) for both of them can be used to examine the influences of different sociocultural contexts in children's bilingual and biliteracy development and help us understand the relationship between experience/exposure, contexts, and literacy learning and development. In addition, the status of a language at school and communities in which the learners live often affect their perception of the particular linguistic system and their self-identity, thus affecting their acquisition of that language. In a quality, balanced bilingual environment, the status of the majority and minority languages are more

or less on a par with each other, and both languages are used across curriculum at school. The status of the Chinese language (and other minority language) at the weekend mother tongue school in this case study (and many other mainstream communities) ironically is less privileged than English, for it is not used widely at the schools these children attend daily or in the community where they live.

Research that examines the politics of language in school and community may help educational administrators and policy makers to reflect the current language and education policies to promote a more equitable society for all learners.

Coda

This study begins with language stories and I would like to end it similarly. Even though I officially stopped my data collection as of fall 1998, I continued working with these children and later on when they left my classroom, maintained a friendship with them and their families. I would like to share some stories of the continuing literacy development of Aileen, Rosan, Maya, and Lucian here. By the spring of 2006, the children are in their first year (Lucian) or second year (Aileen, Rosan, and Maya) of high school. Among all children, Aileen was the only one that left the community where this research was conducted and since moved several times, but she continued attending weekend Chinese classes whenever possible. At home, her mother still speaks with her and her sister Eileen (now a college student) in Chinese. Rosan continued participating in the Chinese class until ninth grade, when there was no one available to work with her and other ethnic Chinese children in the community. Lucian stopped attending the Chinese class since fifth grade due to health reason

and his academic workload. He, however, in a recent interview with me (Lucian, personal communication, March 3, 2003), indicated his willingness to continue Chinese learning in the future. Maya was no longer attending Chinese classes when she was in sixth grade. She, however, is the only child who maintains most of her Chinese language because her parents speak only Cantonese at home and her older siblings use that language to communicate with her and her parents as well. In a recent visit to Maya's home in late fall 2005, I saw she had decorated her bedroom door with Chinese character cut-outs, and she communicated with her relatives and family in Cantonese. From several home visits and casual conversation with these children, the level of participation in Chinese related activities varies in these four children, but they all appear to hold positive attitudes toward the learning of this language in the future.

As language learning is a life-long process, the learning of my mother tongue and English have gone through different phases during the course of my personal, professional, and academic development. While I learned English at secondary schools and college, it was a foreign language to me, because it had very limited use beyond school walls. As I embarked on my graduate study, English became my second and secondary language, for I learned it in context, but I used it mostly for academic purposes. Even when I wrote in English, I needed to initially organize and formulate my thinking in Chinese before putting English words on paper. My circle of friends at that time was mainly comprised of Mandarin speakers from different Chinese-speaking regions. And I worked largely with Chinese-speaking parents and their children at a local weekend

mother tongue school. English has gradually become my major language during my doctoral study, for I had been working in an English-speaking environment which required me to function in American/English, linguistically and culturally. While taking my coursework, I conducted research on children's Chinese and English literacy development and presented my findings in English-speaking conferences. My social life at the same time expanded to include both international and American students/scholars, as well as local residents of Bloomington. As a result, English has gradually become a major tool of communication and meaning construction in my life. When I took on language teaching positions, both at the weekend mother tongue school and the East Asian Languages and Cultures Department at the Indiana University, I became aware that a new type of language and literacy learning took place. I needed to re-learn my mother tongue (Chinese) analytically in order to explain it to my students and support them in making sense of this language. In this process, I needed to first tear apart what was familiar to me while identifying and tracing the cultural specifics that undergird the linguistic specifics and vice versa. It was not unlike learning a new language, even though it has been my mother tongue. As my major academic work is done through English, I will face another challenge upon returning to Taiwan, a predominantly Chinese-speaking society. In conducting research and teaching there, I will need to learn the academic discourse and re-orient my thinking in order to fully function in that context. This process seems to come to a full circle.

I am writing the last paragraph of this study now, but my thought flies back to my first meeting with each child and the many hours when they shared their “language stories” with me, from which I learned invaluable “literacy lessons” (Harste, Woodward, & Burke, 1984). This research journey is not only a transformative process in which I changed fundamentally the way I perceived language and literacy learning, but also the one that helped me find a research program that is worthy of a life-long pursuit. The language stories of Aileen, Rosan, Maya, and Lucian’s early childhood has come to an end, but I will continue to listen to stories and learning lessons from other children and those who work closely with them. This study is a beginning.

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- May 1995 M. A. Curriculum and Instruction (Early Childhood Education)
University of Iowa, Iowa City, Iowa, USA
- July 1989 B. A. English Literature. Minor: International Business
Chinese Culture University, Taipei, Taiwan, ROC

RESEARCH INTERESTS

Bilingualism and bilingual education)
Children's and young adult literature:
 multicultural and international literature, problem novels, and non-fiction
Early/emergent Literacy
English as a second language: methods and materials
English speaking, listening, reading, and writing
Qualitative research methodology
Second language acquisition
Social semiotics
Sociocultural contexts of language and literacy learning
Socio-psycholinguistics

TEACHING EXPERIENCES

- Summer 2006 *Instructor* for L 502 Socio-psycholinguistic applications
to Reading Instruction. Language Education
Department, Indiana University
- January 1996 to May 2002 *Chinese Language Arts Teacher*. Bloomington Chinese
School, Bloomington, Indiana
- August 1998 to May 1999 *Associate Instructor* for First-, Second-, and Fourth-year
Chinese. East Asian Languages and Cultures
Department, Indiana University
- Summer 1996 *Intern*. Language Education, Indiana University
- Spring 1992 *Art Teacher*. Saturday Children's Art Workshop, Art
Education Department, University of Iowa
- January 1992 to May 1995 *Chinese Language Arts Teacher*. Chinese School of Iowa

City, Iowa City, Iowa

OTHER WORK EXPERIENCES

- October 2004 to May 2006 Graduate Assistant. School of Education, Indiana University
- February 2002 to December 2003 Editor. Parents and Children Together Online Magazine, Family Learning Association. Bloomington, Indiana
- February 2002 to December 2003 Literacy Specialist. ERIC Clearinghouse on Reading, English, and Communication, Indiana University
- January 2001 to February 2002 Special Projects Coordinator. ERIC Clearinghouse on Reading, English, and Communication, Indiana University
- September 1999 to January 2001 User Services Coordinator. ERIC Clearinghouse on Reading, English, and Communication, Indiana University
- September 1997 to September 1999 Reference Specialist. ERIC Clearinghouse on Reading, English, and Communication, Indiana University
- September 1995 to September 1997 User Services Assistant. ERIC Clearinghouse on Reading, English, and Communication, Indiana University
- November 1989 to June 1991 Acquisitions Librarian. Preschool Education Resources Center. Hsin-Yi Foundation, Institute of Preschool Education

PRESENTATIONS

- May 2005 *Multiple sign systems and the biliterate learners.* Harste/Burke Retirement Conference. Bloomington, Indiana
- March 2005 *An internet based resource guide to multicultural children's literature.* Indiana Library Federation. Indianapolis, Indiana
- November 2004 *The nature and roles of multiple sign systems in the biliteracy learning process of four young children: A case study.* National Council of Teachers of English Annual Convention. Indianapolis, Indiana
- April 2003 *Language through socialization and socialization through language: What "my uncle is a pig" mean.* American

- Educational Research Association. Chicago
- November 2002 *Heroes and heroines in children's literature around the world.* National Council of Teachers of English Annual Convention. Atlanta, Georgia
- May 2002 *Children's literature: Path to character education.* International Reading Association Annual Convention. San Francisco
- December 2000 *Language and literacy learning of linguistic minority children in the U.S. (guest speaker).* E400/600 Migrants and Diasporas. Anthropology Department, Indiana University, Bloomington, Indiana
- November 2000 *All in a family: A survey of family reading habits and activities.* National Council of Teachers of English Annual Convention. Milwaukee, Wisconsin
- September 2000 *Social cultural context of literacy learning among four ethnic Chinese children living in dominant English-speaking communities (guest speaker).* L750 Theories of Reading and Literacy. Language Education, Indiana University, Bloomington, Indiana
- May 2000 *A survey of state-level reading/language arts frameworks and standards.* International Reading Association Annual Convention. Indianapolis, Indiana
- October 1999 *Literacy learning in alphabetic and ideographic print (guest speaker).* L545 Advanced Teaching Reading. Language Education, Indiana University, Bloomington, Indiana
- May 1999 *Hot spots: Pick of the Websites on language and literacy education.* International Reading Association Annual Convention. San Diego, California
- December 1998 *When you write "four" in Chinese, you will find two "J's" in it: A case study of one bilingual child becoming literate in alphabetic and non-alphabetic print.* National Reading Conference Annual Convention. Austin, Texas
- November 1998 *Ai-leen: A child learning to be literate in two languages.* Literacy Forum. Indiana University, Bloomington, Indiana
- November 1998 *What is bugging us: Parents, teachers, and publishers voice their concerns on language and literacy instruction.* National Council of Teachers of English Annual Convention.

Nashville, Tennessee

- May 1998 *Current parents' and teachers' literacy and language concern.* International Reading Association Annual Convention. Orlando, Florida
- December 1997 *Conversation on a model of situated literacy.* National Reading Conference Annual Convention. Scottsdale, Arizona
- November 1997 *Which sky's limits: the language teachers' dilemma in culturally diverse classrooms.* National Council of Teachers of English Annual Convention. Detroit, Michigan
- April 1997 *Literacy learning in ideographic language.* L599 Trade Books in the Elementary Classroom. Language Education, Indiana University, Bloomington, Indiana
- December 1996 *When extant theory falls.* National Reading Conference Annual Convention. Charleston, North Carolina
- March 1996 *Integrated art-making and storytelling in mother tongue learning for language minority children.* Gradforum. School of Education, Indiana University, Bloomington, Indiana

PUBLICATIONS

- Lu, M.-Y. (2006). *When you write "four" in Chinese, you will find two "J's" in it: A case study of four children learning to be literate in alphabetic and ideographic print.* Unpublished doctoral dissertation, Indiana University, Bloomington, Indiana.
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- Lu, M.-Y. (2001). *Children's literature at a time of national tragedy.* Bloomington, IN: ERIC Clearinghouse on Reading, English, and Communication.
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Lu, M.-Y. (1999). *Online resources for K-12 teachers: Children's and adolescent literature*. Bloomington, IN: ERIC Clearinghouse on Reading, English, and Communication. [Reprinted: Saap, J. (2002). (Ed.). *Teaching Reading through Balanced Literacy*. Bloomington, IN: Phi Delta Kappa International.]

Lu, M.-Y. (1998). *Language learning in social and cultural contexts*. Bloomington, IN: ERIC Clearinghouse on Reading, English, and Communication.

Lu, M.-Y. (1998). *Multicultural children's literature in elementary classrooms*. Bloomington, IN: ERIC Clearinghouse on Reading, English, and Communication. [Reprinted: Martin, A. Ashelman, P., & Searson, M. (2003). (Eds). *Perspectives on early childhood practice: Handbook of essential readings*. Dubuque, IA: Kendall/Hunt.]

Lu, M.-Y. (1995). *Art making and storytelling—Vehicles for language minority children to learn/maintain their mother tongue*. Unpublished master's thesis. The University of Iowa, Iowa City, Iowa.

HONORS

July 1996 to June 2003	<i>Professional Development Fellowship</i> . Language Education, Indiana University
August 1998 to July 1999	Fee Scholarship. College of Liberal Arts, Indiana University
Spring 1998	<i>Fee Assistantship</i> . Office of International Services, Indiana University
Fall 1997	<i>Ellen Ts'ao Eoyang Fellowship</i> . Dr. Eugene Eoyang and Mrs. Patricia Eoyang, Indiana University