

METALINGUISTIC DEVELOPMENT AND BILINGUAL ACQUISITION

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1. INTRODUCTION

This paper is a synthesis of two major strands of applied psycholinguistic research: one, the development of metalinguistic abilities in children, and the other the linguistic and cognitive effects of bilingualism. Our main concern is the effect that learning two languages at an early age has on the development of metalinguistic abilities in young children. Vygotsky (1934; 1986) was among the first to remark that the learning of a second language promotes the ability of the child to "see his language as one among many, to view its phenomena under more general categories, and this leads to awareness of his linguistic operations" (Vygotskii, 1986; p.196). It is this awareness of one's "linguistic operations", actually of one's linguistic system(s), which is referred to as "metalinguistic awareness".

A number of studies, such as those of Ianco-Worrall (1972), Ben Zeev (1977), Cummins (1978), Bialystok (1986a, 1986b, 1988), Galambos and Goldin-Meadow (1990) have indeed found bilingual children to exhibit superior performance on tasks requiring metalinguistic skills. A closer examination of these studies, however, reveals that, whereas bilinguals did perform better on certain tasks, on others they did not. Moreover, there are differences between different bilingual populations of the same age. So we are led to asking not only whether there is a difference between bilinguals and monolinguals in metalinguistic ability, but also to asking exactly what this difference is and how it develops. The purpose of this paper is to examine these questions in the light of special features of the bilingual acquisition experience and environment. Then, based on these findings, the research literature will be critically examined and a proposal made for further investigation.

2.0. LANGUAGE, CONTEXT AND BILINGUALISM

Language is always acquired in context. No language acquisition or for that matter metalinguistic acquisition theory today denies the role of environmental or input factors in acquisition and development. If we assume that bilingual acquisition does indeed stimulate metalinguistic development, we must address the question of just what factors are unique to the bilingual acquisition context which would promote such a development. Unlike the monolingual, the bilingual child is faced with a unique task: the separation of two languages, both when trying to make sense of his linguistic environment (i.e. the input) and when trying to express himself (i.e., his output). In cases of simultaneous acquisition (acquisition of two or more languages at the same time), the child is presented from the very beginning with at least two referents for every meaning. The argument made here is that this leads to an early realization of the arbitrary link between form and meaning and to the separation of formal linguistic system from context. This process of decontextualization is further reinforced by the resulting bilingual behaviours of translation, code-mixing (language mixing), and code-switching. The latter two in particular stimulate the development of a

special monitoring function, which, as we will see is present at an early age in all children. It is the development of this monitoring function, as well as the early understanding of the arbitrary nature of language, which underlie the differences in the research literature referred to above.

To demonstrate how the above process occurs, we will examine the types of such phenomena that occur naturally in children's speech in such an environment. The majority of the data we will look at is taken from Leopold's extensive observations of the simultaneous acquisition of two languages, English and German by his daughter Hildegard (Leopold, 1970). It will be supplemented at times with notes made of metalinguistic utterances made by other children. It should be noted that Hildegard acquired her two languages in a fairly strict one language, one parent environment where her father spoke only German to her and her mother English. The other children were raised in a similar environment, although the languages spoken by the parents were reversed.

2.1. Theoretical Considerations

In examining metalinguistic development, a number of recurring questions or ambiguities arise. We will now examine them in turn.

(1) What is metalinguistic (awareness)?

One important question is what exactly is meant by 'metalinguistic awareness'. This paper will adopt the working definition proposed by Tunmer and Herriman (1984) who regard metalinguistic awareness as being:

the ability to reflect upon and manipulate the structural features of language, treating language itself as the object of thought, as opposed to simply using the language system to comprehend and produce sentences. (Tunmer & Herriman 1984; p.16)

As Bialystok (1991) and Tunmer & Grieve (1984) note, it is important to isolate the notions of metalinguistic task, ability and awareness. In terms of task and ability, there is the need to link the performance of a certain task with the proper ability. Much of the confusion in the findings up to now arises from differences in experimental tasks and uncertainty as to exactly what is being measured. The real intractable difficulty arises, however, in differentiating the final two, ability and awareness. This is an epistemological problem that haunts the research: just when does a demonstrated ability to perform a certain task become a display of awareness. As this problem is really seated in the realm of a theory of consciousness, we will focus mainly on the notion of ability, keeping in mind that the distinction still expresses itself in terms of how 'conscious' or 'explicit' an ability is.

(2) Linguistic vs. metalinguistic

The second question arises out of the first; i.e., The difference between linguistic ability and behaviour and metalinguistic ability or behaviour. Put simply, at what stage is linguistic behaviour metalinguistic? This is a definitional problem for which the resolution must necessarily be an arbitrary one. Perhaps instead of insisting on a dichotomy of awareness, it would be more useful to view metalinguistic behaviour as a function of the degree of access the individual has to their linguistic systems, categories, and knowledge (Mattingly, 1984; Leong, 1987).

(3) Definition of bilingualism and role of linguistic proficiency

The question of linguistic ability leads us to the question of language proficiency and the definition of exactly what is meant by the term bilingual. Proficiency in both languages, or balance, is a key concept in bilingual research. Various researchers have noted that balanced or fully proficient bilinguals exhibit higher degrees of metalinguistic skill than monolinguals, whereas only partially proficient bilinguals do not (see Bialystok 1988; Galambos & Hakuta, 1988). Similarly, Bowey (1986) and Bowey & Patel (1988) have noted the high correlation between metalinguistic ability and general language ability in monolinguals.

(4) Acquisition context

The definition of 'bilingual' goes beyond the concept of proficiency in two languages. As Romaine (1989) notes, bilingualism is a social phenomenon, not just a linguistic one. The acquisition context defines the linguistic and (arguably) the cognitive outcome. The term acquisition context subsumes a number of parameters, but the context we are interested in here is what is referred to as simultaneous acquisition, where the child has been exposed to two languages regularly from a very early age, certainly before the acquisition of a first language.

(5) Cognitive vs. language oriented models of development

The fifth question that will arise is that of whether to adopt a cognitive or a language-oriented model of metalinguistic development. Extensive research on metalinguistic development in psycholinguistics and educational psychology has revealed that, generally speaking, metalinguistic abilities blossom at the age of 6 or 7. This has led many researchers to hypothesise that metalinguistic development is related to a more general change of cognitive structure which takes place at this time (Hakes, Evans & Tunmer, 1980; Van Kleeck, 1982; Bialystok & Ryan 1985). It is at this age, as the child moves into what Piaget has called the stage of concrete operations, that the metacognitive abilities develop which allow the child to view his own mental structures, including the linguistic system(s). The support from this position comes from experimental evidence which shows that before the age of 5, most children are unable to do a variety of metalinguistic tasks such as segmenting words into phonemes or sentences into phonemes, or grammatical judgement tasks (Hakes et al., 1980). The other view is that metalinguistic functioning is part and parcel of language acquisition (see Clark, 1978; discussion in Tunmer & Herriman, 1984). Taken in a strong form, it could mean that conscious manipulation of language is present from a very early age as the child actively hypothesises, generalizes, and induces rules from input and from the monitoring of the results of his output (feedback). A more mild version would assume that such active reflection on the linguistic system is indeed present in some form from an early age, but that its development is indeed linked to cognitive (and conceptual) development, although it is certainly not bound by it.

(6) Experimental vs. natural data

The choice of a development model one ascribes to is to some degree a function of the data one accepts. The cognitive development models are based upon experimental data, which are by their nature more conservative. The language oriented approach to development comes mainly from

observations of spontaneous metalinguistic remarks in case studies and field notes. Both have their strengths and both sources of evidence will be examined. First we will look at spontaneous speech data set within context, for in such a nebulous affair as deciding whether an utterance is metalinguistic or not, contextual and pragmatic variables are extremely important. Then we will examine the conclusions drawn from this analysis in the light of the empirical research literature.

(7) Age and onset of schooling

As can be seen above, age is a very important component in any developmental model. It is particularly important here since all Piagetan cognitive development models are predicated on maturational stages of development. Moreover, as is often noted in the literature, formal schooling and literacy have a very strong effect on metalinguistic development. In a bilingual context, Hakuta (1987) and Galambos & Goldin-Meadow (1990) have found that higher levels of performance exhibited by bilinguals disappear with age and after the onset of schooling. It is to minimize these confounding factors that this paper focuses on acquisition in young children.

3.0. THE DEVELOPMENT OF METALINGUISTIC ABILITIES

Clark (1987) has proposed that one of the basic mechanisms of language acquisition is a general principle which she refers to as the "Principle of Contrast." The Principle of Contrast basically states that the child assumes that every two forms contrast in meaning. This means that for every form the child encounters, he/she will posit a single meaning for this form. Clark sees this principle as being critical for allowing the conventional use of one form for one referent within a speech community. It also means that children give priority to known words and assign or create new words to fill gaps in their lexicon. This principle functions not only at the lexical level, but also at the other levels of language (morphological, syntactic, phonological, pragmatic). The application of such a principle in creating a linguistic system implies a constant interaction between the child and his environment, a monitoring of the input and the success or failure of his output in the social milieu. It is just this sort of monitoring which may be the basis of metalinguistic activity. We will now see what light bilingual acquisition can throw on this issue.

3.1. Bilingual/Monolingual Differences

When comparing monolingual and bilingual acquisition, the first question we must ask is: "Just how are they different?" The obvious answer is the learning of two languages vs. the learning of one. When we go deeper, however, this means that on all levels of language the bilingual child is faced with the task of sorting and systematizing two forms for every referent/meaning (or on the pragmatic level for every functions or speech acts) as compared to the monolingual's one. And he must learn to separate them in various contexts. This often involves two uniquely bi- or multilingual linguistic phenomena: translation and code-switching.

Like monolingual children, bilingual children also originally try to maintain a single meaning for each form. Where they differ from monolinguals, however, is that for every referent they have two forms in the input. This would necessarily present them with a violation of the principle of contrast. The acquisition literature does show some evidence that, at least in the early stages of acquisition, the bilingual child does indeed try to construct a single lexicon (see Taeschner, 1983;

Clark, 1987) and indeed a single syntactic system (Volterra and Taeschner, 1978). This single system is then split relatively quickly into two. (Miesel, 1989; Taeschner, 1983). This apparent violation of the principle of contrast and its resolution through separation into two languages is first evident at the lexical level, but it also occurs on the morphological and syntactic level. And it is this disengagement of word and referent, form and meaning, which leads the bilingual child to realize the arbitrary nature of language. And it is this, along with the constant monitoring required by switching between two systems, which spurs the development of a greater sensitivity to linguistic form and (non-language-specific) linguistic system, to view and reflect upon language as an object in itself, in other words to develop metalinguistic abilities.

We will now illustrate this process with examples of spontaneous metalinguistic utterances by young children.

3.2. Metalinguistic Expressions Common to All Children

We will first examine metalinguistic behaviour common to the speech of all children, whether monolingual or bilingual. Spontaneous metalinguistic expressions noted by Leopold (1970) and the author have been analyzed into a general functional classification scheme.¹ In general categories these include: 1) language play and creative use of language 2) self-corrections 3) corrections of others 4) comments on language 5) conscious learning.² These categories are not exclusive; they do, as we will see, overlap. We will examine each of these categories in turn.

3.2.1. Language play and creative use of Language

The first category we will examine is that of language play and creative use of language. Some examples of these phenomena are given in (1)-(4) below:

- | | | | |
|-----|-----|---------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| (1) | B - | di mɛkə di blɛtə di sɛkə di dɛkə | [3;10] |
| (2) | H - | mɪl - wɔk - ʔi
fɪʃ - past - ʔa | 'Milwaukee'
'Fischpasta'
[3;0] |
| (3) | H - | There's an awful smell of rapples around here. Do you know what rapples are? Rapples are apples. | [4;1] |
| (4) | J - | Kann ich bitte die <i>Ricardalada</i> haben.
'Can I please have the <i>Ricada-jam</i> ?
(repeated several times, with laughter) | [7;1] |

In the first example the child, Ben, has tied together a string of bisyllabic real and nonsense words with certain common phonetic elements, in this case the vowels. Onset and rime are separated with the rimes of the syllables (the vowels) being held constant. This would seem to indicate an ability to break up syllables into their constituents and to engage in rhyme. In the second example, Hildegard playfully segments a word into syllables, an ability which appears quite early, while in the third she also shows the ability to see rhyme and to split off and add segments to accomplish this. The fourth is an interesting case, because the child, John, has taken the first two syllables of *marmalada* 'jam', has linked it to the word *mama* 'mom' and then has substituted his

mothers name, *Ricarda*. This involves a sophisticated level of manipulation of the language and reveals an active and creative analytical skill in the child. While (1)-(3) demonstrate a certain knowledge of and ability to isolate phonological elements, (4) also involves play on the lexical level. The alliteration and rhyming play such as that noted in (1)-(4) can range from relatively random free association of like sounds/syllables/words to deliberate, explicit rhymes and limericks. As we can see from the data, the former occurs quite early and the latter quite late.

3.2.2. Self-corrections

Already at an early age children demonstrate the ability to correct their own mistakes as well as those of others. Correction implies monitoring of the utterance, recognition of the mistake, and access of the linguistic system to supply the correction. Thus, they can be viewed as metalinguistic acts. Some examples of self corrections (all from Hildegard) are given below:

- | | | |
|-----|---------------------------------------------------------------------------------------------------------------------------|-------|
| (6) | It don't ... It doesn't. | [3;0] |
| (7) | kennst du er ...den
'Do you know he...him' | [5;2] |
| (8) | Ich habe den Stein gewerft ... geworfen, nicht gewerft.
'I threw the stone ... <i>geworfen</i> , not <i>gewerft</i> .' | [5;5] |
| (9) | zweimal, dass ist das dreite ... das dritte.
'Twice, that's the third' | [5;4] |

These four examples are cases of morpho-syntactic corrections. At the age of three Hildegard is already able to correct the omission of the 3rd. person sg. marker in (3). In (7) she corrects her improper use of the nominative with the correct accusative form of the 3rd. per. personal pronoun, while in (8) she corrects the morphophonemics of the past participle. Example (8) is particularly valuable as it demonstrates an explicit attempt to repair. Hildegard has overgeneralized the German regular past participle suffix [-t] to the verb *werfen* 'throw', which actually takes the less regular inflection [-en]. She realizes her mistake, comments that it is really *geworfen* and not *gewerft*. Example (9) can also be interpreted as a morphophonemic correction. Hildegard realizes that she has incorrectly mixed the cardinal *drei* with the irregular ordinal *dritte*. What she has done is derive the ordinal according to the regular pattern, applying the regular derivational -te ending to the cardinal stem *drei*.

3.2.3. Corrections of others

Similar patterns are also found in children's corrections of others:

- | | | |
|------|---------------------------------------------------------------------------------------------------------------|----------------------------------------|
| (10) | F - Wir fahren auf's Boot.
B - Nein ... Wir fahren in's Boot. | 'we're driving into the boat'
[3;6] |
| (11) | B - What did the big chimley say to the little chimley?
S - Chimley...?! (laughs)
V - No! It's Chimney! | [4;6]
[Adult]
[4.0] |
| (12) | M - harter | |

H - härter, heisst es, mama

It's (should be) *härter*, mom. [5;3]

In (10) the child, Ben, corrects the adult's use of prepositions, stating quite reasonably that they are driving 'into' (*in*) and not 'onto' (*auf*) the ferry. One could see this as a semantic rather than a grammatical correction, but it, in any case, shows a conscious mental weighing of the use of prepositions. In example (10), we see a case of one child, Veronica, correcting a mistake in pronunciation made by another child, Ben. The adult (S) first identifies the form as being out of place, but Veronica is able to identify the mistake and, with contrastive stress, indicate the correct replacement for the violation. In (12) Hildegard corrects her English speaking mother's German, this time providing the umlaut which is part of the comparative morpheme. We can thus see this as a morpho-phonemic correction. And here the grammatical nature of the correction is not in doubt.

However, it could still be argued that the above examples are actually the product of linguistic processes and are not really metalinguistic in nature. Or, even if one accepts the label "metalinguistic", that they require implicit knowledge rather than explicit knowledge. Clark (1978) notes that children can implicitly reflect upon the knowledge of linguistic units such as words, syllables, and phonemes much sooner than they can explicitly; i.e. that they can identify and manipulate such units before they can explain or label them. This is once again a question of just how one defines "metalinguistic". Perhaps, as Slobin (1978) suggests, the ability to explicitly (i.e., verbally) analyze language into units and reflect on structures emerges quite late simply because children lack the metalinguistic vocabulary to express themselves. In any case, what the data do show is that children have the capability of monitoring their own utterances and those of others. In addition, when they recognize a mistake they are capable of correcting it systematically.

3.2.4. Comments on Language

Compared to those in the preceding categories, these expressions are more overtly metalinguistic in nature. The child indicates by his/her comments on linguistic structure that they are indeed aware of, or at least searching for, system. For example in (13)

- (13) Wenn Mutti Deutsch spricht, denn sagt sie: "Ich gehe draussen..."
Ich sage: "Ich gehe aus," draussen ist doch da (pointing to street)

'When mom speaks German, she says: "I'm going outside (*draussen*)"
'I say: "I'm going out (*aus*)". Outside is [out] there.

[5;5]

Hildegard explicitly comments on her mother's German and indicates, according to her evaluation, why it is wrong. In (14)

- (14) H - ...der Hamburg... (name of ship)
F - ...die Hamburg...
H - Ist der Schiff denn eine Frau. 'Is the ship a woman, then?' [5;6]

Hildegard reveals with her comment that she has equated grammatical gender with sex. She now seeks to discover the reason for the incongruence of this with adult usage. In (15), however, she notes inconsistency in usage between adults, and asks for clarification.

- (15) H - You know, grandpa says "yourn", "this is yourn", why does

he do that?

[3;9]

The next two examples of comments (16-17) show development of the first clear, explicit explanations of linguistic rules that Leopold notes.

(16) H - It's all ours ...it's yours and mine and mama's [3;7]

(17) H - If there is one , you have to say *schuh*
If there are two, you have to say *schuhe*. [4;2]

In (16) the child is expanding on the word 'ours', showing a clear understanding of what this possessive pronominal form encompasses. Example (17) is a clear explicit explication of the plural rule for this form in German. This is all the more interesting in light of the findings of Hakes *et al.* (1980) and others (see Nesdale and Tunmer, 1984) that generally before the age of 5 children tend to focus on the meaning of a subject rather than on the form.

3.2.5. Conscious Learning

One further dimension of metalinguistic utterances in children is that of conscious learning. The child makes direct requests for linguistic entities and structures, asks for definition and structure, and consciously practices new forms. Indeed, (14) and (15) above are good examples of this. Another can be seen in (18):

(18) H - lauf laufen (experimenting)
(Father indicates *lauf* is the correct form (of imperative)
(H. requests word for *go* in German)
F - gehen
H - geh [4;7]

Here, Hildegard is consciously practicing the German imperative. She asks her father for a vocabulary item and then tries out her rule with that item.

It is evident from the above data that the child is actively involved in monitoring and improving his/her language output from an early age. Moreover, he or she monitors the speech of others and reacts to feedback from others to his/her own speech. And some of the child's linguistic output in this context could definitely be labeled as metalinguistic, even granted the scepticism with which such "uncontrolled" (i.e., non-experimental) phenomena must be approached.

3.3. Uniquely Bilingual Phenomena

In examining the particularly bilingual phenomena found in Leopold's corpus, I will focus not on the previously mentioned categories, but on certain processes and contextual features which separate the bilingual from the monolingual. As we have noted, the bilingual child at first seems to try to develop a one to one form-meaning mapping. This can be seen in (19) below.

(19) F - Käse 'cheese'
H - dɛ:f

- diʃ

(her English word for 'cheese') [2;2]

For Hildegard this is actually a self-correction. In repeating her father she has blended two words, her English word diʃ with her father's German word. Realizing the incongruence of the expression, she corrects herself with her original English word, which she maintains for some time even when speaking to her German-speaking father. Leopold notes that Hildegard would often persist with a currently dominant form from one language in both languages.

Yet there is evidence that even at an early age Hildegard was starting to differentiate her languages. Note the example of translation found in (20):

- (20) M- What did mama tell you!
H- No, no
M- Don't you know what "no no" means!
H- Nein, nein [1;6]

This not only shows a translation capacity at an early age [1;6], it also demonstrates a particularly bilingual rendering of the metalinguistic verb *mean*. *Mean* in a bilingual environment is not only a request for definition or explanation, but also for translation. Indeed, Leopold notes that at age [2;0] Hildegard seemed to consciously ask for words in both languages for the same meaning, going first to one parent to get the English or German word, then to the other parent to get the word in the other language. As she got older she began to make specific requests for translations, as in (21) and (22):

(22) I say 'napkin' [napənt], you say it in German [dɔmən], mama [2;6]

(23) Papa, what is *deutsch specken* "practice"?
'Papa, how do you say "practice" when speaking German?' [3;6]

During this period there was an increase in translations, both requested and unrequested, as in (23) and (24), respectively.

(23) H- ...nose
F- Wie heisst das auf Deutch 'What does that mean in German.'
H- Nase. [3;0]

(24) *unterwäsche* means 'underwear'
(after hearing father mention underwear) [2;6]

The second example could also be seen as an example of conscious learning. Such conscious translation also takes place in the example of language play we can see in (25).

(25) schreibaby - schreibaby - squealbaby. 'crybaby' [3;2]

Hildegard also demonstrated the awareness of her two languages being two different systems in her self-corrections, both spontaneous and in reaction to feedback from others, as can be seen in (26) and (27), respectively.

(26) This is a *wasser* - water [3;3]

(to non-German-speaking cousin)

- (27) F- Ich glaube 'I believe so.'
H- Heglaubs (translating to mother) [3;9]

(Mother and father laugh. H pauses, reflects and asks if *He thinks* is correct.)

The correction of language mixing in (27) demonstrates quite clearly the effects of feedback in the bilingual environment. It is such feedback that draws attention to mistakes in output. This is not to say that negative feedback is the primary mechanism in linguistic or metalinguistic development. As we have seen, the child is also monitoring his/her own speech and is consciously interacting with and learning from others.

One last point should be discussed here. Tunmer & Bowey (1984) have noted that at the age of 5 phonemic awareness has not developed in most children. Hildegard, however, was faced with contrasting pronunciations of the same form due to differing pronunciations in the two languages. This is nowhere more evident than the metalinguistic comment on the pronunciation of her own name in (28):

- (28) *Opa* ('grandpa') might call me Hildegard [d], in German though: Hildegard [t] [4;9]

where she has marked the voicing contrast on the final phone (German having a final devoicing rule).

3.4. Summary and Discussion

The data show very clearly that even very young children can display a variety of metalinguistic behaviours in their spontaneous speech. Such metalinguistic behaviour is already evident before the age of 5 on the syntactic, morphological, lexical and phonological levels. As to differences between bilingual and monolingual development, the necessity of separating the two languages within the bilingual acquisition context very soon breaks down the tight union of form and referent assumed in Clark's Principle of Contrast. This results in a unique bilingual activity: translation. Indeed, as Malakoff & Hakuta (1991) have noted, translation is in itself a metalinguistic act. The mixing of languages and code-switching acts as a further stimulus to metalinguistic development in that communicative feedback from his environment constantly alerts the child to transgressions or success in this regard. This would arguably lead to a high degree of monitoring and a greater ability to separate the two systems. This would in turn result in an increased knowledge of languages as formal systems. Although this would be most evident at the level of the lexicon, one would expect to extend beyond it to the domains of morphology and syntax, and perhaps even to phonology. Thus, we would expect bilinguals to show higher metalinguistic degrees of skill in manipulating or reflecting on the nature of linguistic structure. Indeed this is the beginning of viewing language as an object in itself. It is important to note, however, that there is nothing in the acquisition context that suggests that bilinguals should know more about the structures of a particular language than a monolingual. This moves into the domain of proficiency. It should also be pointed out that the features of the bilingual context do not justify making any assumptions about increased abilities to define or explain metalinguistic terms such as 'word,' or to logical analytical functions such as those underlying metaphor. And this is indeed what is found in the experimental literature, which we will now examine.

4.0. EXAMINATION OF THE RESEARCH LITERATURE

As we noted earlier, the research literature shows bilinguals to be superior to monolinguals in the performance of some metalinguistic tasks, but similar or inferior to monolinguals on others. As Bialystok (1991) has pointed out, this seems to be largely a function of which task is used and which ability it taps. In the literature we find that bilinguals consistently outperform monolinguals on metalinguistic tasks which require separating form from meaning, such as demonstrating the arbitrary nature of words, as seen in studies by Ianco Worrall (1972), Ben Zeev (1977), Cummins (1978), Bialystok (1986a, 1988). Similarly they have been found to be superior to monolinguals on tasks requiring them to focus on form despite a distracting semantic context (Bialystok, 1986b, 1988). They have not, however, outperformed monolinguals on tasks such as articulating the concept of word (Bialystok, 1988), certain grammatical correction tasks (Bialystok, 1986b), overt explication of errors and corrections (Galambos & Goldin-Meadow, 1990), or metaphor interpretation (Johnson, 1991). Although there are some contradictions, as in the case of differential findings on grammaticality judgements (compare Bialystok, 1986b and Hakuta, 1987 with Bialystok, 1988), the tendency is clear: Bilinguals outperform monolinguals on tasks requiring sensitivity to form to the exclusion of meaning. This is particularly evident in Galambos & Goldin-Meadow's (1990) finding that, when they correct sentences, bilinguals show a completely form-based strategy while monolinguals tend to focus on content. Moreover, they display a similar tendency in their explications of grammatical errors.

One possible explanation of these results is to say that through their unique acquisition context, bilinguals have a greater awareness of linguistic form, but not supralinguistic functioning. Another is to view them in terms of a cognitive development model, as does Bialystok (1991). Bialystok regards metalinguistic development as being the product of two general metacognitive skills: control of processing and analysis of knowledge. She argues that bilinguals have a greater degree of control of processing, the cognitive executive function which directs attention and cognitive resources to tasks. This would explain bilinguals' better performance on tasks which require paying attention to form and ignoring distracting semantic contexts. They do not, however, have higher levels of the higher analytical function, analysis of knowledge, which is required for such tasks as explaining metalinguistic concepts or correcting grammatical sentences. The justifications for this differential development of abilities are logical in light of our discussion of the special features of the bilingual environment in metalinguistic development. The monitoring we have spoken of would be a function of the control executive in Bialystok's model. And it is the constant monitoring required to separate the two languages in his environment and own speech which stimulates the development of this cognitive function.

In a sense the two approaches we have discussed are congruent. They are really different perspectives of a similar process. The first is based on the function of acquisition principles in a special acquisition context; whereas the other is a cognitive model based on information processing theory. Both lead us, however, to similar predictions concerning metalinguistic development in bilinguals. There are some cases, however, where the study of the acquisition context may give us certain insights which might not be clearly indicated by the cognitive development model. One such area is segmentation tasks, which have been studied in monolingual children by a number of researchers (for reviews see Bowey & Tunmer, 1984; Leong, 1987, 1991). According to Bialystok (1991), segmentation and word counting require high degrees of both control of processing and analysis of knowledge. Although she herself hypothesizes that bilinguals should have an advantage on such a task (Bialystok, 1986a), given that high degrees of analysis are also involved, such

a hypothesis does not flow naturally out of the model. However, it does from an analysis of the acquisition context. The bilingual is constantly exposed to and uses two words for the same referent, and is constantly made aware of this, particularly in situations of code-switching and language mixing. This can be seen in cases like (27) above, *He glaubt*, where Hidegard has mixed English and German, using the German unbound morpheme *glaub-* 'think' with the English verb inflection *-s* while translating a sentence from German to English.³ Negative feedback to such utterances, as well as the need to shift from language to language to understand them in the speech of others, would suggest that the concepts of words as categories of form and referent matches would develop earlier in bilinguals, leading to better performance on word counting/segmentation tasks.⁴

5.0. CONCLUSION

Bilingual acquisition does seem to stimulate the development of certain metalinguistic abilities, and the seeds of this difference can be found in the bilingual acquisition context. Language acquisition is not only a function of certain universal developmental and language acquisition principles, it is also a function of context. In other words, the language a child uses is dependent on the input it receives. This extends to some degree to higher linguistic functions such as metalinguistic knowledge or ability. The bilingual acquisition context presents the child with an extra set of contrasts which accelerate the ability to separate form from meaning and the realization of the arbitrariness of language. This is strengthened through the activities of translation and code-switching (including language mixing). The former further weakens the notion of the indivisibility of form and referent and highlights differences in structure, while the latter promotes the development of the monitoring function which allows the child to monitor not only the external effects of his speech, but also his own utterances. This monitoring function can be seen in cognitive terms as a control processing function which directs thought. It is this control processor which many cognitively oriented researchers see as the basis of metalinguistic ability. This ability seems to extend mainly to the child's seeing language as a formal system and his being able to apply this perspective in approaching linguistic activities or tasks, such as symbol substitution, sentence correction, separating form from meaning. However, it does not extend to so called higher metalinguistic functions such as the explicit definition of metalinguistic vocabulary and linguistic concepts, or making logical connections as in the case of metaphor. In the case of the former this seems to be much more the product of learned knowledge (schooling), whereas the latter would seem to be a product of a more logical function requiring the juxtaposition and analysis of concepts. There is indeed nothing particular to the bilingual acquisition environment which would especially stimulate the development of such a faculty and this is exactly what the research literature bears out.

Finally, the examination of the bilingual acquisition context not only allows us to explain different findings in the research, it also permits us to make certain predictions which cannot be made with simple reference to a theoretical cognitive model alone. This highlights the value and necessity of viewing language acquisition as a social, interactive phenomena and not simply a formal or psychological puzzle.

NOTES

- 1 See Clark (1978) and Slobin (1978) for somewhat similar classifications.

- 2 Clark (1978) and other researchers have included metalinguistic acts which we will not address, such as ambiguity interpretation, riddling, and metaphor, but these are extremely complex phenomena and are generally truly acquired at a later stage than we will focus on here.
- 3 This kind of mixing is common in cases of bilingual acquisition in the following example from Ben [3:10]: *er hat mich gekickt* Such cases would make one suspect that the basic unit which would be salient and easiest to access (other than the syllable, which has a physical, acoustic reality (Leong, 1987)) would be the unbound morpheme.
- 4 This hypothesis is currently being tested by the author in a study of kindergarten children.

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