


1979

Observations on the Language Acquisition of a Thai/English Bilingual Child

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I. THE STUDY AND THE BACKGROUND

Introduction and Rationale

This present paper was begun with the idea of observing the developing speech of Nathan B., a Thai/English bilingual child living with his Thai mother and American father. As originally proposed, it was to be a diachronic study of language acquisition, with emphasis on linguistic transference and interference along phonological and syntactical lines. However, as the author of the major - and perhaps only - study of the development of a tonal language in a child subject states, "pressure of work and a period of absence, during which time there were rapid changes in (the subject's) speech, resulted in a very unsatisfactory state of early records."¹

This author must plead similar problems, with the further complication of frequent relocations which had a telling effect on Nathan's emerging speech. Each time he was placed into a new environment, he noticeably reduced the amount of his vocalizing until familiarity was established. Since this occurred seven times prior to Nathan's second birthday, it was difficult to find a period of reasonable stability. Another factor springing from the nature of this observer's employment was the frequency of his out-of-town trips for various periods of time, each of which left a hole in the speech record.

It was therefore decided to confine this study to a synchronic format, making observations based on a "specious present" rather than over a time span.

Method

A speech diary was kept over a two-month period, during which time Nathan's home environment was stable and this observer was able to make daily entries. For the most part, entries were made in the morning during breakfast, in the evening at dinner, and at play before bedtime. Nathan was in his 25th and 26th months during this period.

Notations were in a notebook always at hand. Although not every utterance was recorded, it is thought that a representative cross-section of his speech was. In cases of anomalous or non-recurring examples of speech interference, these were labeled as such so as not to color the representative nature of the whole. These anomalous examples appear on these pages with untypical frequency because they more effectively illustrate the most obvious areas of transference and/or interference.

Notations were made in standard English orthography for utterances in that language, unless phonological exactitude was called for. Thai utterances are noted in the phonetic system employed by Mary R. Haas² and others, except that long vowels are doubled. Diacritical marks for tones are employed as follows:

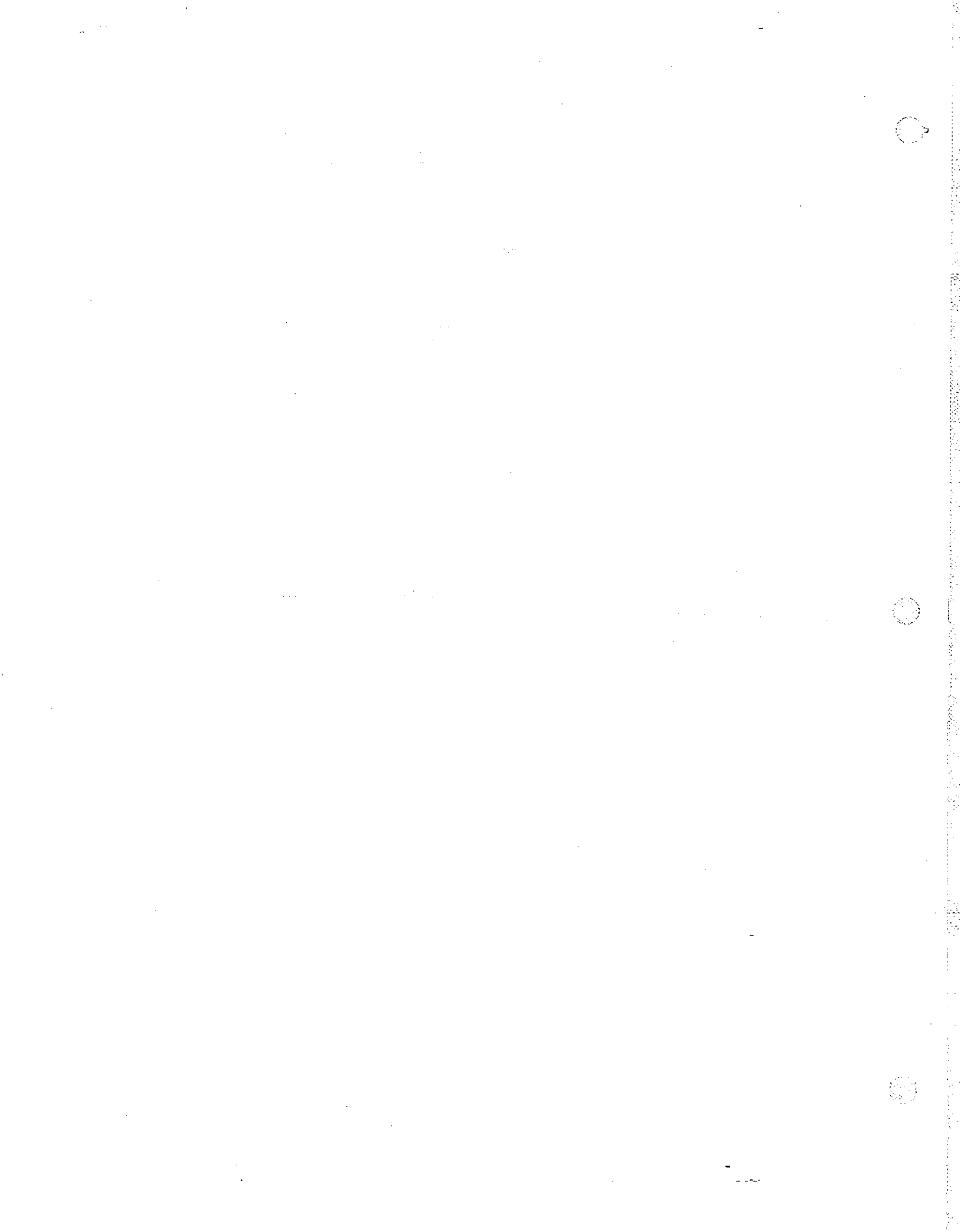
- \ - low level
- / - high level
- ∨ - rising
- ^ - falling
- nil - mid level

OBSERVATIONS ON THE LANGUAGE ACQUISITION OF A
THAI/ENGLISH BILINGUAL CHILD

MICHAEL A. BETCHER

"Submitted in partial fulfillment of the requirements for the Master of Arts in Teaching degree at the School for International Training, Brattleboro, Vermont."

May 30, 1979



This project/report by Michael A. Betcher is
accepted in its present form.

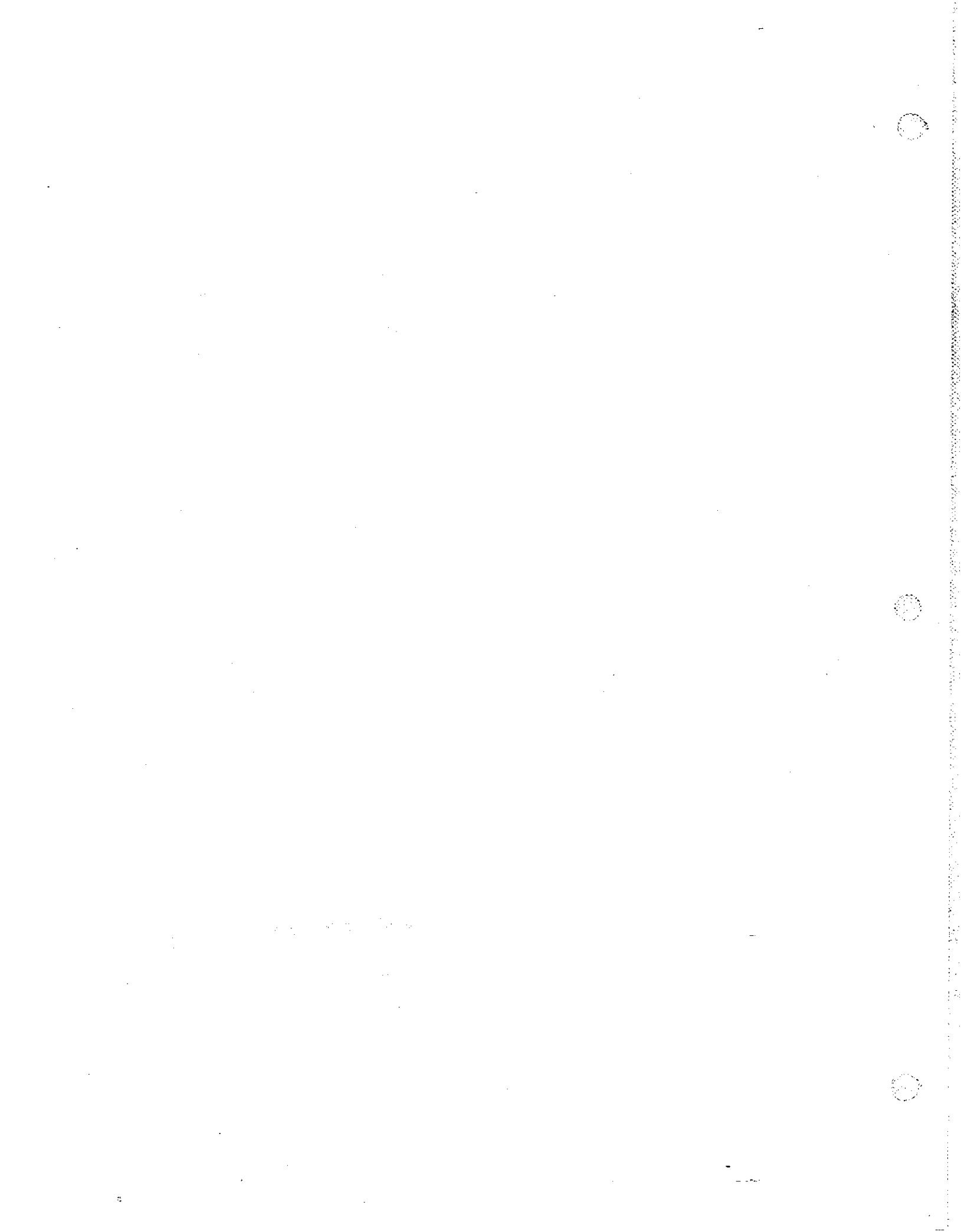
Alvino Fantini

May 30, 1979

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Alex Silverman



A child subject, bilingual in Thai and English, was studied during his 25th and 26th months for aspects of transference* and interference in his developing speech. A speech diary was kept on a daily basis. Attention was focused on prosodic features (intonation/tonality), word borrowing and code switching. Examples of all these phenomena were recorded, but the most significant was that of prosodic interference, wherein English intonation indicating stress, excitement or urgency was carried over into the strictly regulated Thai intonation system.

* A term which is used to avoid the negative implications of "interference" and to indicate the use of a syncretic language system which is chosen and controlled by the speaker.

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Unaspirated voiceless stops are represented by /p/, /k/ and /t/, while aspirated voiceless stops appear as /ph/, /kh/, and /th/. Voiced stops are in the usual notation: /b/, /g/, and /d/.

When appropriate, incorrect usages are marked with an asterisk and the correct form given. Translations are supplied when necessary, as are prosodic contours of particular significance.

General Linguistic Environment and Observations

To be truly revealing of Nathan's ability to sort out two language systems and master them, of course, this study would have to record the speech to which he was exposed and from which he drew his examples. It is difficult to speculate on exactly how much code switching and word borrowing took place in conversation between his parents, and such a study was beyond the limits of the time available to the author. A conscious attempt was made by both parents to keep a linguistic consistency in their speech, avoiding as much as possible the mixing of English and Thai within a single sentence. Exceptions were limited to those culturally bound vocabulary items which have no satisfactory (or a terribly convoluted) equivalent. Many foods fall into this category, so that a sentence of this type might be commonly heard: "Please bring the naam-plaa" (fish sauce/oil). Other vocabulary relating to parts of the body, bodily functions and some baby talk nearly always appeared in Thai.

For the most part, however, Nathan's mother spoke Thai with him while his father spoke English. It was also agreed between the parents that a question from Nathan would be answered in the same language in which it was posed whenever possible.

It was apparent during the observation period that Nathan had a fairly clear idea that two linguistic systems were at his disposal, and -- especially in the use of nouns - could and would switch when he felt it to be more convenient.

A vocabulary list maintained during the course of this study shows an extremely close balance in linguistic exposure Nathan had to the two systems, and a degree of overlap which developed.

THE SUBJECT

Nathan was born in January, 1975, in Bangkok, Thailand, the son of a Thai mother who speaks English with a large vocabulary but some typical Thai pronunciation problems, and an American father who speaks Thai at about an FSI 2 level but heavily accented. For his first eight months he lived with his mother, grandparents, assorted relatives and several servants, all of whom spoke only their native Thai to him.

He came to the United States with his mother in November of 1975 to live with his father, a student at the School for International Training in Brattleboro, Vermont. This basically English-oriented environment produced a marked change in Nathan's pre-speech habits. His mother reported that in his first few weeks in Vermont he had become much less vocal than he was in the noisy hubbub of his Bangkok home. Also, his favorite cry for pampering and comfort /Yay! /Yay! (A call for grandmother) did not produce the usual response and was dropped after several weeks.

After two months in Vermont he was taken by his parents to Zacatecas, Mexico for a three-month stay in that country. Although his parents continued their usual speech patterns around him, Nathan was exposed to a great deal of Spanish from the mother and the two daughters of the host family, as well as his father's students and friends. He seemed to be quite comfortable with the Spanish sound system, repeating words with great interest although his vocabulary only increased by a few items - bebé, frijoles, bravo!, tortilla.³

Returning from Mexico, Nathan and his parents were again in Vermont for three months and then in Washington, D.C. for six months, moving again in November of 1976 to Colombo, Sri Lanka.

In Colombo Nathan was once more exposed to a new linguistic environment, which included the Ceylonese variant of British English and some Sinhalese from the servants. Except for a few words and some playful babbling he was not greatly influenced by this exposure linguistically; however the presence of servants in the house - whom he identified as basically mono-lingual English speakers - was probably helpful to him in isolating that system from his parents' English/Thai proclivities.

II. PHONOLOGICAL CONSIDERATIONS

Prosodic Features

Perhaps the area of greatest contrast between the Thai and English phonological systems -- and therefore the area of greatest potential for interference -- is that of the prosodic structure.

As part of the total speech event, the intonation contours of non-tonal languages are receiving greater attention now than ever before. Prosodic features were not mentioned by de Saussure in his lectures from the early part of this century. Sapir (1921) apparently found such extrasegmental attributes beyond the bounds of linguistic study, noting that for the related category of interjections of surprise, etc. -- essentially pure prosodic phenomena -- "there is all the difference in the world between such involuntary expressions of feeling and the normal type of communication of ideas that is speech".¹

In recent years students of language have taken a wider view. Recognizing the inadequacy of traditional linguistics to describe the total speech event, many researchers have come to a realization of the importance of prosodic features, particularly in the perception and speech of the young:

The first feature of natural language to be discerned in a child's babbling is contour of intonation. Short sound sequences are produced which may have neither determinable meaning nor definable phoneme structure, but they can be preferred with recognizable intonation such as occurs in questions, exclamations or affirmations. The linguistic development of utterances does not seem to begin by a composition of individual independently movable items, but as a whole tonal pattern... Perceptually, the child reacts also to whole patterns rather than to small segments, and so the intonation pattern of sentence is the more immediate input rather than individual phonemes.²

It is at 6 to 8 months of life that Nakazima (1962) notes repetitive babbling and limitation of intonation. Immediately following this period changes in the rhythm of a single utterance are noted. This may be an indication of contrastive stress... The fundamental frequency characteristics and intensity changes in the vocalizations of infants during the first two years of life were sampled and analyzed and compared with the intonational patterns of adults (Tonkova-Yampol'skaya, 1969).

The experimenter states that patterns of intonation are developed and mastered (that is, they match adult patterns) much earlier than conceptual words and individual sounds. Intonational patterns similar to those found with adults appear at various stages. "Narration" and "assertion" utterances which rise gradually and then fall in fundamental frequency appear during the second month. "Commands" which have fundamental frequency contours which rise sharply, then fall, appear in the tenth month and "questions" which rise sharply at the end of the utterance appear at the beginning of the second year. All these types of utterances presumably display the distinctive characteristics of fundamental frequency contour and changes in intensity that are found in like types of adult utterances.³

As previously noted, Thai is a tonal language in which the pitch of the spoken sound has a phonemic value. It follows that the stress patterns and voice contours so commonly used in English to indicate emotion, doubt, query or command are completely precluded in spoken Thai, thus the communicative value these features carry in English cannot be exercised. This is not, however, to say that native speakers of Thai never modify the prosodic rules of their language. Most observers note some regular variance in tonal patterns which convey certain emotional nuances or appear in certain phonetic environments. As Herzog notes for tone languages in general, "the actualization of contrast -- given by successive distances between tone levels or by successive tone movements -- do shift all the time."⁴ But these variations, although undoubtedly conforming to internalized phonological rules, do not follow the same patterns as in English. In the absence of any definitive work on either the order of acquisition of tone features in Thai children's speech or the rule-governed modification of the Thai prosodic structure, it was difficult to analyze Nathan's Thai speech for possible interference of English in these areas. However, some generalizations can be made keeping in mind observations of researchers on the acquisition of other tonal languages. Chao notes that the subject of his study,

Canta, "acquired (Mandarin) tones early as most Chinese children do."⁵ Her use of these tones seemed to be generally stable, regardless of the extralinguistic content of the utterance. We shall look at Nathan's speech in this regard.

Ruth Weir, noting the dearth of literature on the acquisition of tonal languages, quotes Chao's observation made above and two studies which she herself conducted.⁶ According to Weir and her researchers, while Russian, Syrian, and American babies from 5 to 7 months in age showed little pitch variation over individual syllables in their babbling, several Chinese (Cantonese) infants of the same age showed great variation. She notes a markedly different babbling pattern in this respect, an observation which has been made informally by several Americans resident in Thailand who have had the opportunity to be near monolingual Thai children during the babbling stage.

Nathan was no exception. His babbling when he first arrived in the United States was distinctly tonal, with much less variation on CV themes than with the manipulation of tones over isolated vowels. As his vocabulary and ability in both languages grew it was natural to expect some degree of interference between the formalized tonality of Thai and the auxiliary intonation patterns of English, especially since limited lexical and syntactic resources require so much aid from intonation at this age.

Nathan's use of the rising intonation for asking questions and making requests, and the level or falling intonations for declarations was well developed in English at the time of this study:

N to F: What is this... Tea?

F to N: Yes

N to F: Oh. Tea.

F (yawns)

N to F: Sleepy?

F to N: No. Is Goot sleepy?

N to F: No sleepy.

Furthermore, his recognition of questions in English was very well developed, so that rarely, if ever, did he fail to respond appropriately. In this example he merely repeated the question -- an indication of his limited grasp of grammar -- but the distinct change in intonation contour clearly marked it as an answer (as the rest of the exchange graphically illustrates).

F to N: Did you poo-poo?

N to F: Did you poo-poo.

I poo-poo.

*Mem // (men) = smell bad //

Not a single incident was recorded during this two month period of incongruence between the (perceived) intent of Nathan's individual English utterances and the intonation pattern with which he formed them. In other words, there is no evidence that his Thai interfered with his English in this respect. The reverse, however, does not obtain.

At the beginning of the study period Nathan's use of tones in individual Thai words in question sentences was occasionally influenced by English question intonation:

N to M: All gone *mae^v æ^t? // = Is mother's (soup) all gone?//

and again:

N to F: Butter kitchen?

F to N: Pay kh^v mae[^] æ. // = Go ask mother for it.//

N to F: Kh^v *mae^v æ?

These examples gain added significance from the fact that the Thai word for "mother" (mae[^] æ) had been one of the original items in his lexicon, and he had heard it pronounced correctly in frequent daily use. Other Thai words occasionally underwent the same transformation when found at the end of a question sentence:

N to F: Nii[^] *gaa^v? // Is this a crow (gaa)?//

It should be noted that at no time was recorded Nathan's use of the Thai interrogative particle /ma^v/, although he clearly had questions to ask as illustrated above. Therefore, it is reasonable to assume that some of his utterances which were interpreted as assertions (because they ended in Thai words with tones other than rising) were actually questions.

This is difficult to document since the difference between these two types of sentences in his English at the same stage was intonation, and not syntactic structure.

His loyalty to the Thai tonal structure, then, seems all the more marked, since -- except for a few instances such as those noted above -- it took priority over an already internalized English prosodic system.

Another indication of Nathan's competence with the Thai tonal system -- and his ability to distinguish that fixed system from the varying intonations of English -- was his ability to recognize a question when posed without the familiar rising tone. The most commonly used question particle in Thai is /má/ in a final position -- and this gives a question intonation profile similar to that of English. However, there are several alternative interrogative particles which give a distinctly different pattern. These were used with Nathan to determine to what degree he relied on intonation to convey a question sense:

F to N: Goot, nom dii ləuplaaw? // = Is the milk good
or not? //

N to F: Nom dii. // = The milk is good.//

This same question posed in English with the identical intonation contour produced an equivocal response:

F to N: Goot, is the milk good?

N to F: (silence)

Other examples of Thai interrogatives are as follows:

M to N: ɔw khaaw ləuplaaw? // = Do you want rice
or not?//

N to M: *Noom. // = I want milk. (nom)//

M to N: Goot, non tua aray? // = What is that animal? //

N to M: *Khaa...*khaa // = Crow (kaa)//

Nathan was also able to produce the Thai rising tone correctly when it appeared at the end of a sentence, although in his English utterances such a terminal intonation would certainly indicate a question or request:

N to F: Jèp. // = It hurts.//

F to N: Jèp náy? // = Where does it hurt? //

N to F: Jèp húa. // = (My) head hurts. //

And another example, which contrasts with the highly stressed falling tone with which he customarily repeated a new word in English:

N to M: See bed...éey éey. // = (Thai baby talk for sleep)//

M to N: Mày, luuk. mǎn. // = No, son. It's a pillow. //

N to M: Oh! mǎn.

Also in this regard, one of his favorite words during this period was the Thai word for beautiful, "suay", which he applied with great largess to various objects -- mostly flowers and brightly colored objects:

N to M: Oh! tǎ, æ pʌl suay. // = The turtle and apple are beautiful.//

Who can account for another's idea of beauty?

Also near the beginning of this study period, Nathan would sometimes employ varying tones with a single Thai word. On these (rare) occasions, he was almost certainly being influenced by English intonation patterns:

N to M: *Nom̂ (demanding) // (nom) = milk//

*nom̃ (imploring)

*nom̂ (angrily demanding)

N to M: Phuud̂ dii dii. Nom. // = Speak nicely. Milk.//

N to M: Nom.

There was no indication in his manner during this exchange that he had moderated his interest in the milk. Indeed, he demonstrated an increasing stridency to get it, and was tugging at his mother's skirt by the time of his last request. But the reminder of the correct tone was enough to cause him to drop the more emphatic intonation even though the flat, level tone which he ultimately -- and correctly -- used would appear incongruent in the English system with the depth of his agitation.

On other occasions, he seemed to simply forget the proper tone for individual words until reminded of it:

(sees F eating hot curry.)

N to F: *Phet...*phet.// phet = spicy hot //

F to N: Phet

N to F: Oh! P[^] phet. // = Oh! It's hot for Daddy.//

For the most part, however, he was able to do a fairly good job of separately maintaining both a Thai tonal system and an English intonational system, and applying them appropriately. Some of the best examples are from the occasions when he mixed languages within a single utterance:

M to N: Pay kin khaaw. // = Go eat your rice.//

N to M: Khaaw...khaaw...rice...khaaw.

with the English word "rice" distinctly flat compared to the strongly falling tone of the Thai synonym. And this example:

N to F: May mil water? // = There's no water?//

Note that the intonational pattern is not what one would expect from a sentence constructed totally in English, which would more likely appear as: There's no water

It would seem that Nathan's internalization of the Thai tonal system was sufficient to hold him to the correct intonational contours of words in that system as long as appropriate, even though the language system itself was to be jettisoned by the final word. It is unknown, of course, as to whether the original intent was to complete this sentence in Thai, since the synonym for water was in Nathan's lexicon at this time and could have just as easily been used.

Also very significant as a measure of his internalization of prosodic rules of Thai are these sentences spoken with only a slight pause between:

N to F: (Hearing car pass.) Kha camin. // = Car coming.//
 (Returning to play) Khaa jep. // = The leg
 with toys. hurts. //

Note that, except for tone, the two words "car" and "Khaa" (leg) are identical in Nathan's pronunciation. It is apparent here that, in the mind of the speaker, the phonemic distinction of tonality was sufficient to avoid any ambiguity.

Compare this with the next example, the type of error which occurred ^{when} those few times when Nathan's internalization of the tonal system out-stripped his vocal mechanical ability to produce the proper tone. In this unbroken soliloquy he slipped from association to association as his imperfect vocalizing led him:

?a...?a // Thai baby talk; to ride//
 ^ ^
 khii...khii // = fecal waste; but he meant to say "khii",
 meaning to ride (in adult Thai).
 poo-poo (with puzzled look, stops bouncing)

This was more likely to occur when he was just playing with language rather than seriously trying to communicate. It illustrates, however, how deeply the idea of tonality has penetrated his concept of language. Even though his mind was fixed on one idea (a deep structure?) and anticipated how the produced word was supposed to sound as well as what it was to represent, it could not resist the pull of language even over such a seemingly large conceptual gap.

The implication of these above two diary entries is that, to Nathan, the most arresting feature of a word's phonemic structure is its tonal shape. Tone alone keeps Nathan's "car" and "khaa" separate, while the relatively small tonal inaccuracy between "khii" and "khii" far outweighs these words' similarity in consonant and vowel composition.

Vowel Quantity

It was hoped in this study to record and analyze the development and use of patterns of vowel quantity, a phonemic feature in Thai. However, due to the difficulty of measuring the duration of such features without sophisticated recording equipment (or an extremely acute ear) such an analysis was impossible. Nathan's mother, when asked to aid in this, also found it beyond her discriminatory powers, although she could have undoubtedly have done it for adult speakers. There is of course, a considerable amount of variation in vowel quantity as well as tonality permissible among native speakers of Thai. Presumably it, too, is regular and controlled by rules based on pre- and post-vocalic environments, but to my knowledge such an analysis has not been done.

In the one case described below, however, the correct vowel quantity was necessary to distinguish between two words, both of which could have been appropriate to that situation:

N to M: (approaches as with a request) *s[^]ɔ̃m

M to N: (guessing) Pay su[^]am máy? // = Do you want to go to the bathroom?//

N to M: Kin *s[^]ɔ̃m. // = (I want to) eat an orange (s[^]om).//

M to N: Oh! kin s[^]om máy?

N to M: Kin *s[^]ɔ̃m.

M to N: (correcting) s[^]om.

N to M: S[^]om...s[^]om.

He did not make this error again. Although many minimal pairs -- with regard to vowel quantity -- exist in Thai, other examples either were not in Nathan's lexicon or were rendered distinguishable in other ways in his idiolect.

One other entry in Nathan's speech diary deserves notice for its phonological form. He was observed pronouncing "ball" in this way:

N to F: *Bɔ̃n...*bɔ̃n.

F to N: Is that a ball?

N to F: Bɔ̃l.

This mistake was not repeated. Nevertheless, this single occurrence of the terminal /l/ being modified to /n/ will immediately catch the eye (and ear) of any TEFL instructor who has taught in Thailand. This is a very common error among students of English there, since the Thai character for the phoneme /l/ -- ล -- is always nasalized to an /n/ in the final position; therefore the terminal /l/, while written, does not exist in spoken Thai.

Nathan's mother never makes this error in her speech, so this occurrence was apparently a spontaneously produced error which conformed to the Thai usage. Yet why would a pre-literate child follow a rule which is based on a written language convention, when it would be more convenient for him to replace the unfamiliar sound with a glide or another terminal consonant of greater frequency and familiarity -- for example /m/? No other words ending in the /l/ sound were recorded during this period.

III. SYNTACTIC AND LEXICAL OBSERVATIONS

Word borrowing and code switching from one language into another was, as expected, observed in Nathan's speech. This certainly results, in part, from the fact that his parents occasionally found it convenient to name some objects or actions only in the language most appropriate in a cultural sense, as noted in Chapter 1. Still, the very large degree of overlap between his two languages gave Nathan a reasonably wide choice in his vocabulary. If he could say it at all, he could generally say it two ways. The way he chose to exercise this linguistic competence will be examined in this chapter and the next.

Borrowing

An analysis of Nathan's recorded utterances during this period -- excluding one-word sentences and/or exclamations -- reveals 75.4% consistency of language within his sentences. That is to say, three-fourths of the time he used only one language or the other to complete his thought. This number, however, is somewhat misleading. Many of the instances of language mixing within a single utterance are actually the use of an introductory word (usually "see"?) which introduces the sentence and is not properly a part of it. Nevertheless, the Thai equivalent "hen" was available to him and had appeared; it should also be noted that the use of "see" in conjunction with a Thai sentence had never been used by his parents. In other cases, he simply included the equivalent word in the other language along with the original, perhaps for reinforcement or emphasis:

N to M: Khaaw[^] rice. Want some khaaw[^] rice.

Except for two diary entries during this period, all negative particles used by Nathan correspond correctly with the object of the negative. Both of the incorrect usages were recorded before the first appearance of the Thai negative. After that, no incidence of this type of mixing was observed, either from Thai to English or English to Thai. One of the two incorrect usages noted was this one:

M to N: Pay ab naam. // Go take a bath.//
 N to M: No! ab naam.

A common area of lexical confusion for Nathan was the use of the two words "phet" (spicy hot) and "nahn" (temperature hot). Having noted the fact that the English equivalent for these two terms was the single word "hot" he experienced quite a bit of trouble applying them correctly:

N to F: (as F lights pipe) Phet...phet.
 F to N: May phet. Man nahn. // = It's not (phet.)
 It's (nahn)//
 N to F: Oh! Lahn...hot.

And in this example where he recognises his own error and corrects himself:

N (seeing food on table): Khaaw, khay hot...Oh! nahn.

As this example shows, at this stage he was aware of his frequent errors regarding the use of these two terms. His routine use of "hot" in combination with one of its Thai synonyms may have been a reflection of a lack of confidence in his choice of the correct Thai term. (This was one error which was always pointed out to him.) In this next example his mother's ambiguous response to his statement left him with three possibilities as to his error -- 1) wrong statement of fact, 2) wrong word choice, or 3) (and less likely) wrong tone. His response carefully covered all the possibilities, but did not alter the original opinion expressed:

M to N: Kin mákua. // = Eat the eggplant (curry). //

N to M: Phet. // = It's (spicy) hot.//

M to N: Máy phet. (disagrees)

N to M: Phet (confirms). (no response from M)

Hot. (tries another way)

*Phét. (tries another tone.)

As his experience increased, he continued to favor the use of both the Thai and English.

N (eating hot dog): Um! Hot...^{๑๑๑}.

but his accuracy in applying the correct Thai term improved. This would seem to indicate that his primary reason for employing the repetitive device had become emphasis, rather than clarification of an uncertainty in his own mind. There was also some indication that the frequency of this dual language usage was being reduced as the study went on, as if it would soon be dropped.¹

This particular lexical confusion, limited though it is to a brief period in this child's language acquisition process (i.e., before mastery of the two Thai terms was complete), may have some significance for the question it raises about the degree of influence which language exerts on the formation of concepts -- in this case sets. One could reasonably expect that a monolingual Thai child (or Spanish, or Sinhalese) would not encounter this problem, and that the two "hot" concepts would never be entangled, or for that matter connected. After all, the experiential difference between spiciness and temperature is great, even though an adult language learner could intellectualize a connection. Nathan could not have related his father's glowing pipe and his own stinging tongue from any objective experience of his own, but solely from the inclusion of these two things into the one set of "hot" phenomena which English offers.

But with the weight of objective experience, plus the availability and greater specificity of the Thai terms, why should such illogical and unnecessary interference occur while speaking -- and presumably thinking -- in Thai? The tendency to form sets must be strong, indeed.

Other Observations

Word order in Thai and English are much the same, so little problem was anticipated here. The only area of contrast is in the order of modifier-object, which in Thai is the reverse of English. Again, interference from English to Thai seemed to predominate in the instances noted:

N to M: *Maa phet.

M to N: Phet maak may? // = Is it very hot? //

N to M: Phet maak.

N to F: See? Naaw *phayon // = See? The fan (phatlom) makes it cold.//

However, this error was quite rare. Nathan showed a surprising ability to keep the correct order, most probably because certain adjectives came to be associated with certain objects. At no time did he mix languages in an object-modifier combination.

And finally, Fantini reports that his subject, Mario, made a colorful error in requesting that his father "...poner el fuego afuera", meaning to extinguish it.² A similar "translation" error was observed in Nathan's speech. As he was struggling to push closed a dresser drawer, he turned to his father with the request "tən əpf", which meant "turn off". The appropriate Thai word for this would have been "bit", which has the meaning of both "close" (the door) and "turn off" (the light). He had, of course, heard "bit" used many times in both contexts, and had also heard "turn off" used in reference to the lights.

IV. CODE SWITCHING

Another area in which Nathan showed evidence of interference between his two languages is that of changing linguistic codes -- languages -- within a single conversation or exchange with a single interlocutor. This was not an extremely common error, but was significant in its randomness of occurrence. An analysis of his speech diary indicates that in 86.5% of the cases in which he was addressed, either with a question or a comment that invited reply or enjoinder, he responded in the same language. It is important to note that the range of interlocutors was not great. For the most part only Nathan's parents, his nanny, and a few American and Ceylonese friends attempted to engage him in conversation. With this small account of experience, it was undoubtedly very difficult for him to establish the complex formula for determining language appropriateness that Fantini reports for his subject, Mario.¹ A far more likely explanation for the favorable degree of correspondence is that Nathan was beginning to develop an idea of separate language systems.

Random Switching

We will first examine some of the code switching "errors" which were noted in the speech diary. Aware of the fact that Nathan occasionally changed codes without apparent reason, the author attempted to elicit responses to questions which Nathan could have answered with equal ease in either language:

F to N: Look. What's that? (pointing)

N to F: Nok. // = bird //

and trying the other way on another occasion:

N to F: Non...non. // = Over there!

F to N: Non \ \ aray? // = What is it? //

N to F: Bird... bird here. Nice bird.

Nathan's mother was also enlisted in this experiment, but with similar results. This question followed immediately the first example above; note that the identity of the interlocutor does not seem to play a part in his choice of code:

M to N: Nôn, hên may? Tua àray? // = There, do you see it.
What (animal) is it? //

N to M: Bird.

These unwarranted code switches, as previously noted were the exception rather than the rule, but the complete randomness of his switching was a constant puzzle.

M to N: Nây gratay, luuk. // = Sit on the rabbit, son. //

N to M: No sit rabbit.

F to N: Kin may dáy. // = You can't eat that. //

N to F: No eat.

M to N: Do you want eggs this morning?

N to M: Khay...Khay. // = Eggs! Eggs! //

M to N: Wan nîi bay talaad máy? // = Today shall we go to the
market? //

N to M: No, no market.

As the word list makes clear, there was very little necessity for Nathan to change languages because of any lack of vocabulary in a particular language. On the one occasion when this situation did arise, however, he did not hesitate to respond with the only word he had at his disposal:

N to F: Jèp...jèp. // = (It) hurts. //

F to N: Jèp nây? // = Where does it hurt. //

N to F: Mouth. (actually mawf)

In general, however, there seems to be no apparent reason for these random shifts. For the most part, it would not seem to be a matter of convenience or lack of vocabulary in the other language, since almost always Nathan was responding to a question and could have used the same sentence in response. In English this could have been accomplished by a simple repetition with an affirmation intonation, or in the case of a negative response, with the inclusion of a negative particle. Likewise in Thai he had mastered the two types of response, which were a simple repetition of the question without the interrogative particle for affirmation, or the inclusion of the negative particle for a negative response. One has the unsubstantiated feeling that in electing to respond in a completely original way he was simply enjoying his ability with language, and perhaps asserting his individuality and independence.

Change in Interlocutor

On the few occasions when Nathan was observed communicating with those outside his family, it would seem that the controlling factor in his choice of linguistic codes was his identification of the interlocutor as a speaker of English (since Thai was only spoken in the house among the immediate family members). One day while Nathan was having one of his rare tantrums, he exhibited surprising attention to his audience.

N to M and F: [^]May! [^]May! [^]May! etc. // = No! No! etc. //

(Maid enters room) No! No! No!

(Maid leaves room) [^]May! [^]May! etc.

And on another occasion at the Embassy nurse's office as he saw an approaching hypodermic needle:

N to M: [^]May! [^]May! etc.

N to Nurse (approaching with needle): No! No! etc.

There is some limited evidence that Nathan beginning to identify his parents as predominately speakers of one language or the other. The high degree of language switching which went on in normal daily conversation certainly blurred this differentiation, but since his mother spent more hours alone with him in a monolingual Thai context she probably became more identified with that language than Nathan's father. These two diary entries are illustrative:

N to F: (showing cheese) Cheese...some cheese.

N to M: H^vɔɔ m...h^vɔɔm ma[^]ak. // = smells good. //

N to M: (shows book) Aan na^vys^vu. // = Read the book. //

M to N: Aan l[^]ɛ[^]w, k[^]ɔ ma[^]y fa^vŋ. // = I already read it but you didn't listen. //

N to M: Fa^vŋ. // = I listened. //

N to F: (giving book to F) Book?

No other code switches of this type were noted, so the evidence is very weak that Nathan differentiated his parents on dominant language grounds. Still, no examples at all of code switching in the other direction (that is, changing Thai for his father or English for his mother) were recorded under circumstances parallel to these.

Switching for Understanding

Sometimes his change of linguistic codes was related to what he apparently interpreted as unresponsiveness on the part of his interlocutor. If a request or command was not immediately complied with, he would often try another way:

N to M: *Zis... *kaa? // = What's this, a crow? //

M to N: (no answer)

N to M: *Ziz...bird?

N to F: (pointing) See plaa. // = See the fish? //

F to N: [∨]Nay? // = where? //

N to F: See plaa.

F to N: [∨]Nay? (still doesn't see it)

N to F: Fish! Fish!

Sometimes his declaratives were questioned, in which case he might respond with a changed code:

N to F: (carrying blanket) I see nap.

F to N: You see what?

N to F: [∨]May [∨]hen. // = I don't see (anything). //

N to F: (Pointing to bowl on table) Rice.

F to N: (incredulously; had not heard N use this before) What?

N to F: [^]Khaaw.

F to N: Oh!

N to F: Rice.

These exchanges indicate a surprising sophistication in Nathan's world view. Not only did he recognize in himself the potential to express himself in two ways, but he also recognized the ability (or inability) of his interlocutors to do the same. In addition, he had mastered the sociolinguistic indicators of doubt or non-understanding -- a puzzled look, hesitation -- as requiring that he try again to make himself understood. Nathan's high degree of linguistic competence in this regard was certainly the most surprising of the observations made during the course of this study.

Chap. III

1. This proved to be the case.
2. Fantini, Alvino (1976)
LANGUAGE ACQUISITION OF A BILINGUAL CHILD
Experiment Press, Brattleboro, Vermont, 1976.

Chap. IV

1. ibid

Chap. V

1. Chase, Richard Allen (1966)
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V. CONCLUSIONS AND SUMMARY

Not surprisingly, the foregoing notes and discussion raise considerably more questions than they answer. And, since this study has been in the nature of an observation rather than a scientific experiment with a thesis to support or disprove, nothing conclusive has been demonstrated. Let us, however, recapitulate some general findings.

In so far as phonology is concerned, these are some of the conclusions which the speech diary seems to support:

- 1) perception of tonal features precedes the ability to produce them.
- 2) there is some indication that tonal phonemic features more heavily influence Nathan's speech perception than vowel and consonant phonemic features.
- 3) interference between English intonation and Thai tonality did occur to a limited degree during the observation period.

The most significant observations are those that deal with the use of prosodic features and the consequent interference between English intonation contours and Thai tonality. Although very little work in this area has been done on non-tonal languages, all evidence to date points to a heavy dependence on intonation during the emergent states of language. Of tonal languages, there are only the general impressions of Chao and Weir as to the significance and early onset of tone acquisition.

Although many scholars take intonation to be a linguistic universal it is surprising to what extent the acquisition of prosodic features has been ignored. Nathan's speech indicates a significant degree of interference in this regard, though very quickly differentiation is taking place. Assuming that a child has nearly equal exposure to the two systems, which would be reflected in vocalizations from the crib? And up to what point? The answer might even help locate the stage at which "true" language emerges, that point

at which the verbalized reflection of somatic desire (intonation) is subjugated to the linguistic discipline required for effective communication (tonality).

Fry has indicated that the early acquisition of ability to reproduce patterns of adult speech reflects imitation of intonation patterns out of proportion to other formal properties of the speech of the adult. Intonation patterns are closely associated with the affective aspects of speech communication, and these observations support the position that vocalization behavior of the infant and young child assumes a disproportionate capability for communicating information about affective states (Spitz, 1957), to be supplemented at a later stage in development by proportional capability for the communication of more objective categories of experience, such as the operations of logical thought.¹

A tonal language, imposing a certain discipline on intonational contours, would illustrate this shift from affective to logical thought more effectively than would a language which allows the retention of prosodic "universals."

Incidents of word borrowing observed during the study period lead to the following general conclusions:

- 1) borrowing was fairly restricted in view of Nathan's ability in both languages.
- 2) in a few cases, borrowing was necessary to supplement his lexicon.
- 3) borrowing was random in most of the occurrences noted; that is, no apparent reason for it was seen.
- 4) occasionally the synonym in the other language was added to the sentence along with the original word possibly as emphasis.
- 5) concepts attached to the borrowed English word "hot" were also transferred to the Thai.

As with code switching, the pattern of his word borrowing is difficult to trace within the limited context and time period of this study.

Though correspondence in this regard is reasonably high considering the amount of overlap in his active vocabulary, the reasons for substitutions from the other language are obscure. Even more puzzling is the use of the synonym along with the original word. Presumably, this is a method of reinforcement, as has been observed in other bilingual studies, yet it does not seem to follow any pattern of urgency or importance in the occasions employed.

In regard to Nathan's code switching the following observations can be made:

- 1) it occurred fairly rarely considering the high degree of overlap in Nathan's competence with the two languages.
- 2) much of it was random without apparent regard for the identity of the interlocutor (though the narrow range of interlocutors and Nathan's recognition of his parent's bilingualism probably encouraged this). In a few cases, however change in interlocutor clearly brought about the switch in linguistic code.
- 3) Nathan demonstrated a high degree of awareness of the existence of two language systems, availing himself of both when he felt it was necessary for understanding.

The key to most of Nathan's switching of linguistic codes is difficult to find in the speech diary, as expected, given the limited contexts in which he was observed. Exceptions were those rare occasions when he had an interlocutor whom he definitely identified as a speaker of English, or when he felt he was not understood. On only one occasion did he use a Thai phrase while speaking to anyone but his parents, and that person was a Ceylonese -- his father's language teacher -- whom Nathan had seen in the home often speaking a language which clearly was not English.

Some of the questions raised in the foregoing discussion will be taken up in a future study for which this author has recently been presented with a new subject. For now he will be satisfied with having been spectator to one of the most surprising and profound processes which human life offers.

Footnotes

Chap. I.

1. Chao, Yuen Ren (1951)
The Cantian Idiolect
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SCIENTIFIC & ORIENTAL STUDIES
University of Calif. Press, Berkeley
2. Haas, Mary and Heng Subhanka
Spoken Thai
Columbia, University Press
3. There is an interesting postscript to this period. About a year after leaving Mexico, during which time he was exposed to no Spanish his mother found some frijoles and prepared them for dinner (no mean feat in Ceylon - they were acquired from a Colombian diplomat with some difficulty). Asked what they were Nathan responded "frilotos", with the unaspirated /t/; a good guess which indicated a surprising degree of internalization of Spanish phonological rules.

Chap. II

1. Sapir, Edward (1921)
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2. Lenneberg, Eric (1967)
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3. Menyuk, Paula (1971)
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"TONE LANGUAGES"
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5. Chao, Yuen Ren
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6. Weir, Ruth (1966)
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