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Coming to Order:
Natural Selection and the Origin
of Syntax in the Mandarin Speaking Child

By

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A.B. (Oberlin College) 1970
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DISSERTATION

Submitted in partial satisfaction of the requirements for the degree of

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Approved: James A. Matisoff June 2, 1982
Date
Wallace L. Chafe June 10, 1982
Dan I. Slobin June 11, 1982

DOCTORAL DEGREE CONFERRED
JUNE 19, 1982

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IN LOVING MEMORY OF MY GRANDFATHER

FREDERICK MARION LINDLEY

1883 - 1961

HE ALWAYS SAID, "THE THINGS THESE KIDS SAY ARE WORTH A MILLION DOLLARS. SOMEBODY SHOULD WRITE IT ALL DOWN AND DO SOMETHING WITH IT."

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M.S.E.
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CHAPTER ONE

INTRODUCTION: THE SHAPE OF THINGS TO COME

SECTION 1.1 TYPOLOGY

Each language has its own characteristic shape. Young children who are learning Mandarin as their first language are sensitive to the most broadly-defining arcs and angles in the overall form of their mother-tongue. While many connections, sub-systems, elaborations, alternations, and details may be missing, the overall identity is clear. From their very first word choices, the language devices they use are those which are most generally characteristic of Sino-Tibetan languages in general, of the Chinese dialects in particular, and of Mandarin Chinese as a specific model. Children rely on a form of natural selection of word classes in making appropriate choices among the range of semantically-full morphemes whose sentential function is not marked on the surface for Chinese. They then order these morphemes appropriately into the templates for compounds, phrases, sentences, and discourse chains, which the language makes available but does not signal by case or inflection. Syntactic structure, the ordered and orderly, living body of the language, is a form which grows from within each word's meaning and semantic transitivity

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valences, rather than being molded from without by inflection or case marking.

SECTION 1.1.a FAMILY CHARACTERISTICS

Mandarin is the most widely-spoken language in the great Sino-Tibetan family which has been reconstructed back to Proto-Sino-Tibetan.[1] There are more speakers of Sino-Tibetan languages than there are of any other language stock other than Indo-European.[2] Sino-Tibetan is divided into two main branches, the Sinitic or Chinese branch, and the Tibeto-Burman branch. Tibeto-Burman is subdivided into the Tibetan languages and the Lolo-Burmese languages. These include: Burmese, Karen, and the Loloish languages which include Lolo, Lisu, and Lahu. These are spoken by peoples living in the hills of Thailand, Burma, and southwestern China. Japanese and Korean are completely unrelated to Sino-Tibetan and to each other, although both borrowed much Chinese culture and vocabulary, as well as the writing system. Thai is also genetically unrelated to Sino-Tibetan, although it is typologically similar to it in many ways. The same is true of Vietnamese.[3]

While we frequently refer to "the Chinese language" as though it were a uniform whole, Chinese is actually composed of a number of mutually unintelligible dialects. They are called dialects because of the political unity of China, and because of the Chinese and Western historical traditions of referring to them as a single language.

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However, they differ from one another roughly as much as the different Romance languages do; Cantonese is about as different from Mandarin as Portuguese is from Roumanian.[4] However, for Chinese, the differences are largely at the level of phonology and word choice; the syntactic differences are minimal. The lack of case and inflection gives Chinese less opportunity for morphological divergence. The traditional ideographic writing system is the same for all the different dialects; Chinese speakers from each dialect group can read the same written message silently, but would find it unintelligible if they heard it read out loud in a dialect other than their own. When the traditional, non-phonetic characters are transliterated into an alphabetic form, they can only tanscribe the pronunciation for a single dialect; the unity of meaning is lost.[5] For example, the characters for "citizen of Beijing" are the same in Mandarin and in Cantonese, but their pronunciations differ greatly:

	北	京	人
Mandarin	bei	jing	ren
Cantonese[6]	bak	ging	yaHm
	"Beijing"		"person"

Mandarin is the native language of about 70% of the Chinese population, or about 700,000,000 people. Since it is the official language both on the mainland and in Taiwan, it is fluently spoken by most of the rest of the

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population under the age of 25 or 30.[6] (The average age in China is about 15.)[7]

The most prestigious form of Mandarin is spoken in and around Beijing, but mutually intelligible forms of Mandarin are spoken throughout most of northern China. Other important dialect groups include: the Wu dialects spoken on the east-central coast around Shanghai, the Hakka dialect spoken in a number of places in southwest China, and in Taiwan; the Yue or Cantonese dialects, spoken in Canton and its evirons as well as in Hong Kong; and the Min dialects, spoken in Fujian province and throughout Taiwan. Cantonese is the dialect spoken by more than 90% of all Chinese-Americans.

The following qualities are characteristic of Sino-Tibetan languages in general, and of Mandarin in particular: 1) Lexical tone. 2) Invariant syllables, virtually all of which correspond to a single, semantically meaningful morpheme. 3) Isolating structure, rather than inflectional or polysynthetic variations on a root. There are no inflections, case markers, or marking for person or gender. Number is marked only on personal pronouns, and on a very few nouns. There is no active/passive distinction, no verb change for mood or voice. Aspect is marked extensively, but there is no tense system. Time and duration can be specified periphrastically where necessary.[8] 5) There is much compounding, but little prefixation, and only a limited amount of suffixation. Boundaries are

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fluid between the compound, the phrase, the clause, the sentence, the complex sentence, and the discourse chain. 6) Series of verbs express many of the relations which Indo-European either marks inflectionally, or with specific devices to signal co-ordination and subordination. 7) Strict word order templates for expressing sentential relations. Sentences are organized around a predicate core, and the arguments which a specific verb choice dictates. Subjecthood is not an important organizing principle. 8) Discourse-topic language orientation rather than a sentence-subject orientation, such as Subject-Verb-Object, Subject-Object-Verb, or Verb-Subject-Object order. 9) Zero anaphora once reference is established. Let us discuss these characteristics in more detail for Mandarin.

SECTION 1.1.b PHONOLOGY AND SYLLABLE STRUCTURE

All Mandarin syllables must come from a canonical inventory of about 400 possible phonetic sequences.[9] These are generally composed of an initial consonant; a medial vowel, or vowel + semi-vowel; and a final semi-vowel or nasal /n/ or /ŋ/. Mandarin no longer has final stops. Beijing-style Mandarin also allows a final retroflex on some forms, but this is not productive in Southern Mandarin, where all final nasals are fast disappearing as well. The Chinese language as a whole has been undergoing massive phonemic loss over the past millenium; Mandarin has lost the greatest number of phonemes of any of the

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dialects. As a consequence, compounded and periphrastic forms are more common in Mandarin than in any other dialect. Because of canonical syllable structure, /ba/ and /pa/ are both possible Mandarin syllables, but /bak/ and /pak/ are no longer allowed; /bə/ and /gə/ are not possible sequences, although /tə/ and /də/ are allowed.

In addition to its segmentals, each Mandarin syllable has one of four distinct pitch contours assigned to it; these are called tones. Chinese tone is phonemic, that is, word meanings are distinguished on the basis of tone alone. Virtually every Chinese word is also a morpheme with a full, referential meaning. (There are a very few two-syllable morphemes such as <u>putao</u> "grape" and <u>wasi</u> "cooking gas." These are virtually all loan-words.) The Mandarin tones are as follows:

媽	/ma/	high level tone	"Mama"
麻	/ma/	high rising tone	"hemp"
馬	/ma/	low dipping tone	"horse"
罵	/ma/	high falling tone	"to curse," "to scold someone"

Mandarin has fewer tones than any other Chinese dialect. Mandarin tones may be neutralized on an unstressed syllable, as in the <u>.ma</u> question particle. Neutral tones are romanized here by a period before the segment.[10] Tone alone determines whether a speaker is talking about horses, hemp, mothers, curses or questions.

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This analysis is automatic for native speakers of Chinese. Chinese children acquire tonal distinctions easily, marking tone on their very first words.[11] It is as impossible for a native to speak Chinese without tones as it is speak English without vowels, and just about as intelligible.

SECTION 1.1.c SYLLABLE STRUCTURE, MORPHEMES, AND HOMOPHONY

The above paradigm should make it clear that one must know the meaning and form-class of a particular word before one can parse a sentence. For another example:

Wǒ	mà	Lǎo	Zhāng.	"I curse Old Zhang."
I	curse	Old	Zhang	
Wǒ	Mā	jǐnzhāng.		"My mother is nervous."
I	mother	nervous		

These two sentences can be distinguished only on a lexical basis. The capitalization and separation of morphemes is conventional to romanization; there are no spoken stress or juncture clues to distinguish this pair. There are no morphological clues to tell us that Mā "mother" is the patient-subject of the stative verb jǐnzhāng "nervous," while mà "curse" is an active verb with Lǎo Zhāng as its patient-recipient. We rely on lexical knowledge, and the availability of an order template which dictates that agents of active verbs and patients of stative verbs are both sentence-initial. Notice also that there is nothing in the way of surface marking to tell us that mā, má, and mǎ are nouns meaning "mama," "hemp," and "horse," while

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mà "to curse" is a transitive verb, and can only be used as such. It is not possible to use mà as a noun meaning "a curse." The word for "a curse" is a huògēn (disaster root); one can also refer to foul language as mà - rén.de (curse person mod) huà (talk) "curse talk," "cuss words." Here is another minimal pair:

A. Jīnnián.de (this year mod) xuéshēng (student) zhòng.le (plant pfv) qié.zi. (eggplant)

B. Jīnnián.de (this year mod) xuéshēng (student) zhòng.le (heavy/pfv plant) wǔ (five) bàng. (pound)

Sentence A. can be translated as: "This year's students planted eggplants," "This year's student planted eggplants," or "This year's students planted an eggplant," depending on context. It is possible to specify any of these periphrastically, but Chinese does not routinely mark number. Sentence B. is a miminal pair, but the possible meanings are even more diverse. Zhòng "plant," is a homophone with zhòng meaning "to be heavy," "to weigh." These are written with different characters, but the spoken sentence could mean: "This year's student gained five pounds," or "This years students planted five pounds worth," as well as all the singular-plural permutations detailed above.

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In classical Chinese, virtually every character was a full, free, word; one morpheme equalled one word. This is why Chinese has been called a monosyllabic language. Now, however, there are only about 400 possible phonetic sequences which are possible Mandarin syllable-morphemes. We can multiply this by four possible tones, then subtract the empty cells for canonically-possible syllables which happen not to exist, comparable to English syllables like "blick" or "frǒp." This still yields only about 1,300 phonetically-distinct, morpheme-words for the entire language. Compare this with the 142,000 almost entirely distinct words in Webster's New World Dictionary, or the some 400,000 words in the Oxford English Dictionary. The syllable xin, for example, can mean: "heart," "new," "firewood," "salary," "bitter," "toil," "delight," "fragrant," and "to taste," in its high-level tone form alone. Most of these are written by different characters. Xin in its other tonal variants can mean, among other things: "to search for," "to believe," "arsenic," "quick," "to try a case," "forehead," and "to smear with blood." This is by no means an unusual example. Chao has written several paragraph-long stories using only a single syllable as a sort of tour de force to illustrate the distinctiveness of traditional characters, as opposed to the massive phonetic mergers in modern Mandarin.[12]

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SECTION 1.1.d COMPOUNDING

Phonetic loss is continuing at an ever-increasing rate in Mandarin. The language might have adapted by adding new tones or phonemes, by allowing variations in canonical syllablic structure, or even by filling in some of the unrealized cells in canonical form. It has not taken any of these options; neither has it moved toward any sort of inflectional morphology. What the language has done is very much in harmony with the balance of the language as a whole; it has increased the amount of compounding and periphrasis. A recent check through a modern Mandarin dictionary showed that about 67% of all listings were compounds rather than single-morpheme words.[13] That is, when one says 心 xīn "heart," to refer to the organ of the body, one now says xīncáng, 心臟 "heart-organ." When heart bowels

one uses xīn, "heart," in its meaning of "center," one now says zhōng xīn 中心 "center." When one uses 辛 xīn, middle heart

"pitiful," one now says xīnkǔ 辛苦 To use xìn miserable bitter

信 as a verb meaning "to believe," "to have the opinion of," one must now say xiāngxìn,[14] 相信. mutual believe

The issue of compounding is extremely complex, but for the purposes of this discussion let us just single out a few of the most important types of noun and verb compounds.[15] Compounded nouns may be composed of noun + noun, verb + noun, or be derived from a verb + verb compound.

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As a rough generalization, we can say that in noun compounds, the first morpheme describes the second. There are many possible relationships between the morphemes in the compounds. For example:

N1 denotes location of N2:	Tái-dēng, table lamp	héma river horse	"hippopotamus."
N2 is used for N1:	shū-jià book rack		"bookshelf."
N2 is caused by N1:	yóu-jī oil stain		"oil stain"
N1 and N2 are parallel:	fù-mǔ father mother		"parents"
	guó-jiā nation home		"country"
N2 is a product of N1:	jī-dàn chicken egg		"chicken-egg"
	Táiwān - huò Taiwan product		"Taiwan-product"
N2 is made of N1:	bō.li - bēi glass cup		"drinking glass"
	mián-ǎo cotton jacket		"padded jacket"
N2 is the place where N1 is sold:	fàn-guǎn food tavern		"restaurant"
	yào-háng drug store		"drugstore."

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N1 is the time for N2:	chūn-tiān spring day	"spring"
	zǎo-fàn early rice	"breakfast"
N1 is a metaphorical description of	gǒu-xióng dog bear	"bear"[16]

Many nouns are derived from verbs; for example dàibiǎo (stand for manifest) means both "to represent" and "a representative." The verb-to-noun derivation is very productive in modern Mandarin. The other very productive process is to form a descriptive verb phrase and follow it by the -.de suffix for modification and nominalization, as in nā-yī.fu-.de (take clothing mod/nom.) "the take down the clothing-er." This is the compound noun which the Chinese in Taiwan use to describe an everyday object, the bamboo pole with a metal form on the end, something like an apple-picker, which is used to reach up to reach up and lift down the bamboo pole which is used as a clothesline. It is significant that the Chinese prefer a verbally-derived noun to refer to this object, while English-speaking expatriates in Taiwan universally refer to the same object with a noun + noun compound, calling it a "clothes-pole." The Chinese derivation is contrastive with ordinary, unmodified two-morpheme compounds; it is also true to the verb-to-noun direction of derivation for the language.

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Many nouns, and adjectives, are compounds of two opposite qualities such as chángduǎn "length," (long short); hǎohuài "quality," (good bad); dōngxi "thing," (east west); mǎimai "business." (buy sell)

It is not possible to use nouns as verbs in modern Mandarin, although the classical language allowed this in some forms meaning to resemble a noun, or to create one. Noun-to-verb derivation is extremely productive for English and for other European languages; one can say "to frisbee all afternoon" or to "photo" or to "bicycle home." In modern Mandarin one must choose an appropriate verb to describe all of these actions: rēng feīpán "toss a frisbee" (toss, fly plate "frisbee"); zhào xiàngpiàn "flash a photo" (flash, image sheet "photograph"); qí zìxíngchē "ride a bicycle" (ride astride, self move cart "bicycle"); hú-jia, "ride a bicycle back home." (return home)

It is important to remember that the direction of a derivation is not always reversible, either in a single language, or, more importantly, across languages.[18] While in a Noun + Noun compound, the second morpheme is typically the head, in verb compounds it is the first morpheme which is the verb head, and the second and succeeding morphemes which describe the action. There are two main types of verb compounds. The first is the resultative verb compound. In it a main verb has linked morphemes which follow it to

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describe result, achievement, direction, "phase," or completion, as in wǒ dǎpò.le "I hit it broken," (I hit break pfv) "I broke it"; wǒ mǎi-dào.le shū "I managed to buy (I buy arrive pfv book) the book." tā tiào.xià-lái.le "S/he jumped down"; (s/he jump down come pfv) Tā bǎ shū kànwán.le "S/he finished reading (S/he obj book read finish pfv) the book."

Parallel verb compounds are the second verb compound type. In these, the parts of the compound are more-or-less synonymous, but the verb is compounded to make it phonetically distinct. Examples include: mō-cā "rub" (touch rub) and fàng-qì "give up." (loosen abandon) It is important to note that most Indo-European adjectives translate into full stative verbs in Mandarin and in Sino-Tibetan.[19] They can be negated and take aspect markers. For example:

hǎo pàng.de yì zhī gǒu "a very fat dog";
(very fat mod one classifier dog)

gǒu bú pàng "The dog is not fat," "Dogs are not fat."
(dog not fat)

(Definite as opposed to generic reference depends on context.) gǒu pàng.le "The dog got fat."
(Dog fat pfv.)

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SECTION 1.1.e WORD CLASSES AND COVERT CATEGORIES

The whole question of word classes in Chinese is a difficult one, since both word class and sentential functions are conventional and covert, rather than morphologically distinguished and overt. Ullman describes Saussure as making the distinction in this way:

> Saussure ... distinguished between two kinds of languages: the "lexicological" type, where conventionality is prevalent, and the "grammatical" type which prefers motivated words. From the examples he gave it is clear that he was thinking primarily in terms of morphological motivation. In his view, Chinese represents the extreme form of conventionality, whereas Proto-Indo-European and Sanskrit tend toward the opposite pole; English is far less transparent than German, while French, compared with Latin, shows a very considerable increase of the opaque element.[20]

In Saussure's terms, inflectional morphology makes word class and function transparent, while uninflected forms which have to be categorized by semantic scope alone are "opaque," and more difficult to process. Whorf makes a valuable distinction between overt and covert grammatical categories. He says:

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An overt category is a category having a formal mark which is present (with only infrequent exceptions) in every sentence containing a member of the category. The mark need not be part of the same word to which the cateogry may be said to be attached in a paradigmatic sense; i.e. it may be a detached word or a certain patterning of the whole sentence. Thus, in English, the plural of nouns is an overt category....

A covert category is marked, whether morphemically or by sentence-pattern, only in certain types of sentence, and not in every sentence in which a word or element belonging to the category occurs. The class-membership of the word is not apparent until there is a question of using it or referring to it in one of these special types of sentence, and then we find that this word belongs to a class requiring some sort of distinctive treatment, which may even be the negative treatment of excluding that type of sentence. This distinctive treatment we call the reactance of the category. In English, intransitive verbs form a covert category....

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> A covert category may also be termed a cryptotype, a name which calls attention to the rather hidden, cryptic nature of such word-groups, especially when they are not strongly contrasted in idea, nor marked by frequently occurring reactances such as pronouns. They easily escape notice, and may be hard to define, yet they may have profound influence on linguistic behavior. The English intransitive verbs as configuritively defined above are a cryptotype.[21]

With the exception of the -.zi suffix for nouns and the -.le perfective suffix for verbs, Mandarin word classes and sentential functions remain covert. It is nonetheless useful to distinguish some word class categories which pattern regularly on a distributional basis. The traditional Chinese distinction was between "full" and "empty" words, that is between semantically referential morphemes, and a small but much-used class of functors.[22] Attempts to find a traditional, Latinate, "eight parts of speech" were doomed to failure.[23] Chinese does not have a separate class for articles; adjectives, prepositions, adverbs, and conjunctions are subdivisions of a more general verbal class. Chinese does have a small inventory of pronouns very much like those for English, although

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gender is not distinguished. It does have demonstratives, and it certainly has a large class of concrete and abstract nouns. Chinese verbs may be stative, active, or process; each type has its own valance; Chinese also has modal auxiliaries. Indo-European adjectives are Chinese stative verbs; conjunctions and adverbs are quite similar members of the verbal class. Chinese also has some word types which European languages lack. There are numeral classifiers which categorize nours, and stand in place of them much as pronouns do,[24] as in nèi (that) zhī (classifier for animals) gǒu (dog), "that-animal dog," "that dog"; and wǒ (I) kàn.le (see pfv) nèi (that) zhī (animal classifier), "I saw that animal-one." Chinese also has sentence-final particles which are neutral-tone, non-referential, discourse-sensitive syllables which are added to the end of the sentence to add, among other things, a sense of current relevance, that information is obvious, that it is part of a series of related items, that it is a warning, or an emotionally warm statement.[25]

All these different form-classes are covert, conventional, and morphologically undifferentiated. Does this then mean that Chinese has no grammar? The eminent Sinologist, H.A. Giles, stated in the introduction to his Chinese-English dictionary, "This dictionary will supply sentences without number to which grammarians will have

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some trouble in making their rules apply; and it is in this sense that Chinese is essentially supra grammaticam."[26]

If we define grammar as being equal to inflectional morphology, then certainly Chinese has no grammar. We may consider its lexically-based organization to be either above grammar or beneath it, but it will not come inside the fold so long as our criterion is having a large set of functionally-distinct arrays of purely formal markers which have no referential meaning. According to this analysis, the only traditional grammatical device Chinese has is word order.

Surely no language was ever worse-adapted for a purely formal, generative-syntactic analysis.[27] In no language is it less possible to maintain a true "separation of levels" between syntax, semantics, and phonology. It is impossible to discuss Mandarin or any other Sino-Tibetan language without reference to the lexical properties of every morpheme and every syllable.

If Chinese truly had no grammar, it would be impossible to produce ungrammatical, starred sentences. Yet foreign and child speakers pronounce them by the score. If Chinese had no grammar, any arrangement of words would be permissible so long as meaning of the elements was clear. This is so far from being the case, that nearly any permutation of standard sentential order is a serious, meaning-impairing error. If Chinese had no grammar, it would be impossible to translate complex materials from inflected

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languages into Chinese; yet the Bible, Marx, Bertrand Russell, and Lewis Carroll, and Marcel Proust have all been successfully and economically translated.

Giles's statement implicates the linguists rather than the language. Once we define syntactic structures as all the linguistic devices which contribute to distinctive sentential reference, the problem disappears. These devices may be morphological, but they may also be inherent in the covert alignment of word-class reactive patterns. The relationships defined by transitivity relations are cryptotypic, but rigorous and complex. Cikoski has made the point very well:

> The science of linguistics has been invented many times over in many eras and nations, but its subdivision, the science of grammar, has, so far as I am aware, been invented only by speakers of inflected languages. (It is ironic that the Chinese, whose language Western analysts have obstinately insisted depends solely on sentence structure for its grammar, never devised a discipline that treats sentence structure; instead they have, with equal obstinancy, insisted on explaining their grammar solely in terms of lexical properties....) For some reason, that is, it seems to be morphology especially,

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> and, in particular the morphology of inflection, that forcibly directs the attention of an analyst to the sentence structure of a language in addition to the lexical properties of its words. However, when we try to look for the boundaries between morphology and syntax on one hand, and between morphology and the lexicon on the other, we find that although some things can be said to be clearly within one or another of these three domains, other things lend themselves equally well to being included in either morphology or syntax, or else in either morphology or the lexicon.[28]

A culinary analogy suggests itself here. Assuming that inflectional morphology is equal to universal syntactic categories is like defining a universal category of tableware as being equal to knives, forks, and spoons. If we start from this Euro-centric position, we will then claim that these three obligatory base-structures may be elaborated and differentiated in different languages as butter knives, fish forks, marrow spoons, and possibly gravy ladles. What then of the Chinese tableware system of chopsticks and soup spoons? Will we start claiming that chopsticks are some kind of primative form whose tines have been "deleted on the surface"? The Chinese

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tools are obviously more than equal to getting the job of eating done, especially if everything is cut up in the kitchen beforehand. It is more reasonable to assume that our definition of tableware has been parochial than to claim that Chinese has no tableware, that that chopsticks are "really" forks, that forks are in some way "more efficient," or that the Chinese would immediately adopt forks if they just knew what they were. The chopstick-and-spoon system has served a nation of gourmets for millenia; they show no signs of giving it up now.

SECTION 1.1.f VERB COMPOUNDS AND VERB SERIES

Nowhere is the barrier which divided the lexicon from morphology, and morphology from syntax, more porous than at the level of verb compounds and verb series. The subject-predicate compound and the verb-object compound are particularly problematic. In a subject-predicate compound a noun is compounded with a stative verb, as in tóu-téng. (head ache)

Such compounds may take negatives and intensifiers just as regular verbs do, as in tā (s/he) hěn (very) tóu-téng (head ache) "S/he has a severe headache." It can also be part of the verb-not-verb question form, as in nǐ (you) tóu-téng (head ache) bù (not) tóu-téng (head ache)? "Do you have a headache?" The same morphemes may also appear independently in a topic-comment pattern to form a full sentence, as in tóu (head) hěn (very) téng (ache) "(My) head aches

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a lot"; tóu chángchang téng, "(My) head often aches."
head often often ache

Many modern Mandarin verbs are verb + object compounds. Ideally, these are distinguishable from verb + object phrases because in the compound forms one or both morphemes are bound, the meaning of the entire unit is idiomatic rather than transparent, and the constituents have only limited separability. An example which meets all these criteria is gé-mìng "a revolution," "to have a
remove life
mandate
revolution." Many other compounds are made up of free morphemes which can be separated to mark quantity or aspect. For example: chī-fàn "to eat"; "to eat," shuō - huà
eat rice talk speech
"to speak." We can say chī-guò fàn "to have
eat experience rice
eaten"; and shuō yí jù huà, "say one
say one classifier speech
for speech
thing."

A series of verbs may be concatenated to form a verb phrase, as in xiǎng biān máoyī mài,
want to knit furry clothes sell
"sweater"
"to want to knit sweater(s) to sell." Out of context, this is a phrase; in context, it may be a fully-formed sentence as, for example, in answer to the question "what do you want to do?" Subject need not be stated if it is obvious. A verb phrase may be nominalized by the simple suffixation

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of the -.de particle which marks nominalization, possessive, and general modification. Therefore:

xiang bian maoyi mai.de is "the one who wants to
want knit sweater sell nom

knit sweaters to sell," "the prospective sweater manufacturer." A nominalized phrase followed by a verb becomes a relative clause in a complete sentence, as in:

xiang bian maoyi mai.de nei.ge xiao jie hao
want knit sweater sell mod that young lady very

nenggan. "That young lady who wants to knit sweaters to
capable

sell is very capable." Relative clauses are left-branching before their head. The facility with which serial verbs can become relative clauses and complete sentences is a general characteristic of Sino-Tibetan languages.[29,30]

SECTION 1.1.g SENTENCES

The predicate is the heart of the Chinese sentence. Many full sentences do not have a subject or a topic, but there is always a verbal core. Chinese does not use dummy subjects comparable to English "it" and "there." "It's snowing" is simply xia xue.le "down-ed the snow,"
down snow pfv

"it's snowing." Chao distinguished between "major" and "minor" sentences; major sentences have a subject and a predicate, while minor sentences only have a predicate.[31] Minor sentences are particularly common in casual speech and in answer to questions. Mei you.le is a full,
not have pfv

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minor sentence, but its interpretation is completely dependent on the prior speech context and the situation. It may be variously translated as: "I don't have any more." "There aren't any more." "It disappeared," "That's all," and numerous other meanings. In context, however, Chinese is no more ambiguous than English or any other language. It does spread its information load across more speech turns and sentences than Western languages, and it does use much more zero anaphora.[32] Without case or verb agreement, the notion of grammatical subject does not apply very well to Chinese. Chinese sentences are not grammatically self-referring units in the way Indo-European sentences are.

SECTION 1.1.h WORD ORDER

Word order is extremely important for establishing sentence meaning. Almost any deviation from standard order will make a sentence mean something entirely different, or make the whole utterance unintelligible. This is the word order template for Mandarin:

AGENT TIME-OF-EVENT PLACE-OF-ACTION MANNER NEG AUX ACTION PATIENT END-LOCATION DURATION.

This is essentially SVO order. Notice especially the very heavy load given to the pre-verbal sentential "slot" which marks event time, event location, manner of action, negation, and modal auxiliary. Virtually all adverbial markers come in this position. The problem is even greater when

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homophonous words are used in the same position, but have different meanings. For example zài is an adverb meaning "again," while zài "be at" marks both progressive and location of an event. Therefore, we have:

Lǎo	Zhāng	zài	túshūguǎn.	"Lao Zhang is in the library."
Old	Zhang	be at	chart book office "library"	
Lǎo	Zhāng	zài	niànshū.	"Lao Zhang is studying."
Lao	Zhang	prog	read book	

Only our knowledge that niànshū is a verb and túshūguǎn is a place disambiguates these sentences. While zuò 坐 means "sit;" zuo 做 means "to make." We get this quadruple ambiguity:

Nǐ	zài	zuò	zhèi.ge.	"Do this again."
you	again/ prog	do/sit	this	"You are doing this."
				"You are sitting on this."
				"Sit on this again."

It is possible to distinguish these periphrastically. In context, of course, one is likely to know whether someone is sitting on something or making it. One is also more likely to say "sit here" zuò zhèli (sit here), than "sit on this," zuò zhèi.ge (sit this). The classifier system also provides a special classifier for chairs, so one might say zuò zhèi (sit this) bǎ (classifier for chairs) "sit on this chair-thing."

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There is also an important prosodic clue to distinguish the zài progressive from zài "again." Zài "again" must obligatorily receive sentential stress equal to that of the verb which follows it, while zài progressive must not be equally stressed. It may in fact be de-stressed, and so have its tone neutralized. (ˊ Marks sentential stress.)

Ni	zai	zuo	zhèi.ge	"Do this again."
you	again	do	this	
Ni	zài	zuo	zhèi.ge	"You are doing this."
you	again	do	this	

Prosodic factors frequently have syntactic functions. Chao compares the interaction between lexical tone and sentence intonation to the ripples on a wave.

For actions which have a strong effect on a concrete object, it is possible to front the patient before the verb in what we can abbreviate as SOV order, as in

SVO	wo	màidiao.le	shū	"I sold off the book(s)."
	I	sell off pfv	book	
SOV	wo	shū	màidiao.le	"I sold off the books."

It is possible to elevate most sentence elements to a sentence-initial, contrastive, topicalized position if one is establishing a new discourse topic which one wants the hearers to focus on, as in shū, wo màidiao.le "as for the book(s), I sold (it, them.)" The basic sentence-order template establishes reference; topicalized order is a

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variant which only applies optionally in certain discourse settings.

Naturally, not all sentences have both agents and patients. Chinese patterns like ergative languages in that the agents of actions and the patients of intransitive verbs both come before the verb, while patients of transitive verbs come after it. Therefore:

Wǒ maidiao.le shū.		"I sold the book(s)."
I sell off pfv		
Shū maidiao.le.		"The book(s) were sold."
Book sell off pfv		
Shū hǎo duō.		"(There are) many books."
Book very many		

There is no need for an active/passive distinction in this sort of system. Notice how it is difficult to assign a definitive label of either subject or object to "book" in the second sentence. "Book" is the topic and "sell" is the comment. Our lexical knowledge informs us that books can only be patients, never the agents of actions. We know that some unmentioned agent has sold the book; the sentence itself merely focuses on the result of that action.[33]

We can now see that Chinese is a discourse and topic-oriented language, rather than a sentence and subject-oriented one, since subject is not marked morphologically, there is no agreement system between the verb and its arguments, many complete sentences do not have subjects,

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and zero anaphora means that sentential reference stretches far beyond the individual sentence and speech turn.[34]

SECTION 1.2 EASE OF ACQUISITION

Is Chinese an easy language for a child to learn, or is it difficult, if we compare it to European languages? If we visualize language acquisition as the accretion of more and more different morphologically-marked systems, then we would expect Chinese to be exceptionally easy to learn. What is there to acquire, we ask, if there is no case, inflection, number, tense, gender or agreement? All the child has to learn is vocabulary, plus some simple order rules. One has to learn those for any language; but Chinese has no grammar, it's all semantic, so it should be very simple to master. In fact, why bother to look at it, since there will be so little to see?[35] None of the "interesting" errors is even available for the child to make.

Beyond the model of language as an accumulation of "bytes" of information, there are several information-processing factors which should facilitate acquisition of Chinese. The number of syllable-morphemes is finite, invariant, and listable. Many sub-systems such as the pronouns, co-verbs, modals, and directional complements are listable as well. Invariant structure facilitates segmentation and a one-on-one correspondence of form to content. Nearly all segments are semantically full.[36]

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Word order is regular, sentences are short, and zero anaphora allows many short phrases to stand as grammatically full sentences. Discourse rather than sentence-orientation allows the child to express his emotional, pragmatic priorities freely, rather than to expend his energy on syntactic agreement "bookkeeping." The "Chinese is minimal" and supra grammaticam hypothesis predicts that Chinese would be acquired early, with little experimentation, variation, unclarity, or error; and that mastery of the complete grammatical system should be essentially finished by the time the child is four years old. It predicts that the child needs little instruction or correction in language use.

An opposing hypothesis predicts that the very covertness of Chinese should make its acquisition difficult. High homophony, the lack of redundant, automatic clues to sentential relations, and the requirement that the meaning of every morpheme and its transitivity relations be understood before a sentence can be de-coded or produced all place great burdens on the child, who must construct his own relational system with little in the way of explicit paradigms. Zero anaphora places burdens on short-term memory, since reference must be remembered without reinforcement far beyond the scope of the individual sentence. Pragmatic variations in order frequently conflict with the referential role order plays at the sentential level in establishing "who did what to whom." The "Chinese is

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cryptic" and "hidden is hard" hypothesis predicts that Chinese would be acquired with many persistent errors, frequent misunderstandings and unclarities, much experimentation, and much explicit meta-linguistic questioning and focused instruction which continues well into the grade-school years.

SECTION 1.3 EVOLUTIONARY PARALLELS

While it is a mistake to be literal in borrowing the theory of one discipline in applying it to another, it is only by sharing and adapting the most powerful generalizations which hold true across conceptual realms that our work can truly approach wisdom and significance. A number of general relationships from biological evolution, embryology, and cell biology are useful models for forming hypotheses about language acquisition.

The central paradox concerns the relationship between proto-forms and their distinct, speciated, descendants. At some levels of analysis it is surely as much of a mistake to argue that child forms are closer to one single adult-form than another, as it is to debate whether the pteranadon, the flying dinosaur, was really a bird or a reptile, when it was a form between both of them. The history of biological evolution also provides us with many examples of the extinction of maladapted species, as well as the survival of vestigial forms. Suitable environmental support rather than a completely self-contained standard

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of "elegance" or efficiency often dictated the survival of platypuses and the death of dinosaurs. Species can only live and react within an environment, never apart from it. The study of environments in the atmosphere, the forest, and within the organs of the body has led to the concept of ecosystems. It is useful to borrow the image of the dynamic equilibrium in which many transformations and adaptations may take place, but the overall balance and identity of the system remain the equivalent and stable. It is recognizable as the same distinctive entity, although it may be in quite different seasons or growth stages. The basic shape and balance are maintained through a conversation of matter.

Some parallels from cell biology are illuminating as well. The fertilized egg begins with undifferentiated cell division, but the genes which program the later development of arms, heart and eyes are present at conception. A simple increase in the number of cells is not development; division without individuation into a full system produces a tumor rather than a living animal. A simple accumulation of vocabulary or inflections does not yield a language system.

Just because we are not able to see the working units of a system does not mean that they do not exist. (There is of course, no guarantee that they <u>do</u> exist.) People have known that blood flowed hot, wet and red since earliest times, but they first looked at it under the microscope only

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about 300 years ago. When they did look, it seemed that there was nothing very interesting to see, just a smeary red mass. Only when better lenses were available was were we able to see that blood was "really" composed of hard red discs. The concept of blood cells as part of a complex environment which in itself composes a circulating organ of the body was not available without much methodical speculation about and investigation of the same substance which has been there waiting to be understood since the dawn of time.[37]

More recently we have discovered that there is not just one kind of "red blood cell," but rather several distinct types, each descended from a common stem cell ancestor. We are now beginning to understand the processes by which cells are able to recognize some transfused or transplanted cells as compatible, and so to accept them into the system, in contrast to others which they sense as non-self, and so to neutralize or to destroy if assimilation is impossible.

Some sorts of language shapes are more compatible and amenable to cross-transfusion than others. If the borrowed or innovated form is not compatible with the overall system, it will be rejected. The important question is not the individual cells, words, utterances, or individuals; but the overall dynamic balance, shape, and health of the system as it reproduces itself again and again time. A healthy, balanced system will survive and reproduce itself

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indefinitely if it does not suffer an overwhelming trauma. The system under stress will strive to regain its basic equilibrium. The speech of young children is not mature, but it is identifiably human speech, which reflects the overall shape of the particular language they are acquiring. While it is appropriate to talk about "slots" and "templates" for specific language forms, it is important of visualize these rather linear terms geometrically-full shapes which function within the multi-dimensional organ systems of the whole living body of the language.

SECTION 1.4 REVIEW OF THE LITERATURE ON CHILD CHINESE

Very little work has been done on early language acquisition in Chinese, and most of it concerns the acquisition of phonology. The most extensive inscope is Y.R. Chao's 1950 study of the phonological acquisition his 28-month-old granddaughter who was growing up in Berkeley. It has a list of her vocabulary and some notes on syntactic and semantic usage; Chao was ahead of his time in recognizing the importance of childish innovations and protoforms.[38] Clumeck (1976, 1977) did a Ph.D. dissertation on the acquisition of tone by several Mandarin-speaking children who were also growing up in Berkeley. He presented them with sets of objects whose names were tonal minimal pairs. Li and Thompson (1978a) did a similar study of the acquisition of tone by Mandarin-speaking children in Taipei, Taiwan. They designed a picture book of objects

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to elicit the desired tonal contrasts. Both Clumeck, and Li and Thompson found that tones were acquired easily and early, although there were a few difficulties in producing clearly-distinguished contour tones. Li (1979) is a more recent general description of acquisition of phonology.

I have found only three Chinese-language articles about early language acquisition; each is very short and general. The analyses are strikingly similar in all three. Kuo (1937) in Beijing used a diary method, and broke down word-class frequencies according to Western language parts-of-speech. Yuan (1977) in Taipei, taped a two-year-old as he looked at picture books with his mother. She broke down word frequencies in a similar way. Wu and Xu in Beijing, taped four children from birth to the age of three. They provide word-class breakdowns for a small sample of their speech, as well as examples of babbling. All three studies find more nouns than verbs, and some aberrant utterances.

There are two specialized articles about the phonology of Chinese-speaking children in the U.S. Light (1976) describes the loss of tone in a Cantonese-monolingual child who was brought to the United States at the age of fourteen months. This child also began adding a determiner before all Cantonese nouns, in an analogy with English "the." Hashimoto describes the tone-play experiments made by her Mandarin-speaking daughter up to the age of about 20 months. Level tones were easier to manipulate than the contour

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tones; the experiments focused on segmentation and contrasting segments.

There have been some very recent studies of Mandarin acquisition. Poggi (1982) investigates the role of imitation in Mandarin acquisition in a Hawaiian-Chinese child. Lee (1981) is an extensive study of the acquisition of negation by his Cantonese-speaking child growing up in Hong Kong. Zhu and Wu (1981) is an experimental study of comprehension and production of active/passive and double-negative sentences by hearing and deaf grade-school-age children in Shanghai.

There is an extensive and careful body of literature in Chinese concerning applied questions of child language and the teaching of reading, textbook design, teaching standard Mandarin to speakers of other dialects, and the special problems of deaf children, and blind children. This applied research has been crucial in raising the level of literacy from about 5% before 1949 to around 80% or higher in present-day Taiwan and mainland China.

This dissertation is the first extensive study of early first-language acquisition of Mandarin, or of any other Chinese dialect. There are no studies that I know of concerning the acquisition of any other Sino-Tibetan language. I can only hope to raise some of the most important issues here in the knowledge that other researchers, particularly native speakers, will explore them in more detail, and find others of even greater significance.

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Chapter Two of this thesis discusses methodology and the sociolinguistic setting. Chapter Three concerns word classes, segmentation, word choice and the one-word-stage; error types are discussed in detail. Chapter Four explores the role of order in word formation, sentence structure and discourse. Chapter Five discusses nominal forms, including: common nouns, coinages, names and their role in politeness routines, pronouns, classifiers, and questions. Chapter Six concerns predication. It is organized around the development of active, stative, and process verbs and their transitivity relations. It also discusses causatives, time and aspect marking, as well as some discourse-sensitive devices. There is an appendix which is a complete transcription of one child's telling of "The Three Little Pigs" in Mandarin at the age of two years, ten months.

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NOTES TO CHAPTER ONE

1. See Benedict, 1972 for description of Sino-Tibetan.
2. Matisoff, 1972, p. xxxix.
3. See Matosiff, 1973, introduction; also Chao, 1968b, pp. 96-97.
4. For general descriptions of the Chinese language, see Chao 1948, pp. 3-14; or Lehmann, 1975; or Li and Thompson, 1978b; or Li and Thompson, 1981, pp. 1-4. Wang, 1982, is a short overview which puts the language in an historical perspective. It has examples from the writing system. Forrest's 1948 description is still accurate, and includes many valuable sociolinguistic details. Kratochvil, 1968 discusses many trends in the sociolinguistics of language change. Kessen, 1975, pp. 177-184, raises many of the important issues for child language from the viewpoint of a child-psychologist who knows no Chinese but finds himself touring Chinese schools.
5. This description simplifies the complex details of the writing system in its classical and modern forms. There are a few characters which have been invented specifically to transcribe particular dialects. For a fuller discussion, see Chao, 1948, pp. 60-69, also Chao, 1968b, pp. 101-113; Li and Thompson, 1978b; or Wang, 1982. Chao always uses the National Romanization System, while Li and Thompson, most

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sources cited in this dissertation, and this dissertation itself all use the Pin Yin romanization. Pin Yin is the official system in mainland China, and now in the United States as well. A conversion table between the romanizations is included in Ching and Ching, 1977, pp. 248-264. I have altered romanization to conform to Pin Yin in the examples quoted which were not in Pin Yin in the original.

6. Cantonese in Meyer-Wempe romanization.
7. See Chapter Two for more discussion of the status of Mandarin as an official language in mainland China and in Taiwan. See also the articles in Lehmann, 1975b, and in Wang, 1975.
8. Whorf, 1956, p. 88.
9. For a brief description of syllable structure see Chao, 1948, pp. 21-32; or Li and Thompson 1981, pp. 3-9. Chao gives a much more detailed description of phonology in Chao, 1968, pp. 18-56. A comparison with the Lahu syllabic structure as described in Matisoff, 1973, pp. 1-37 will give a good understanding of the phono-tactics common to Sino-Tibetan languages as a whole.
10. There are also rules which change tones according to the sequential order in which they occur. These changes are called tone sandhi. For Mandarin, the only important sandhi rule is that when two low dipping tones occur in succession, the first one

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becomes a high rising tone. In other Chinese dialects, sandhi rules are much more elaborate, and many sequences are rarely if ever heard in citation tone. This is an important issue for language processing which merits much more research.

11. See Clumeck, 1976; or Li and Thompson, 1978a.

12. See Chao, 1968b, pp. 120-121 for a story about a rhinocerous that romps, plays, and gets into fights. It is written using only the syllable xi.

13. Li and Thompson, 1981, p. 14.

14. A revealing indicator of the importance of compounds is the textbook 201 Chinese Verbs, by Ching and Ching, 1977. It is one of a series of language textbooks which includes 201 French Verbs, 201 Russian Verbs, etc. For the inflected languages, the organization of the texts is straightforward; it lays out the conjugations for 201 of the most frequently-used verbs. The situation is very different for Chinese; here the authors chose the 201 Chinese characters for the verbs they felt were the most important. They then listed the most useful two-character compounds, not all of them verbs, which are derived from these characters. For example, for xiāng "mutual" or "reciprocal," there is also xiāngfǎn (mutual contrary) "to be opposite"; xiānghé (mutual together) "to be in harmony"; xiāngjiāo (mutual association) "to associate with." (This last is a homophone with

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xiāng - jiāo "banana.") The introduction to this
fragrant banana

book is an excellent overview of syntax and compounding in Chinese.

15. The issue of compounding is extremely complex, worthy of almost unlimited discussion and research. For a brief discussion, see Chao, 1948, pp. 33-34; or Ching and Ching, 1977, pp. xvi-xviii. For a more thorough discussion, see Li and Thompson, 1981 Chapter Three on "Word Structure," pp. 28-84; or, even more extensively, Chao 1968, Chapter Six on Compounds, pp. 359-480. For Lahu parallels, see Matisoff, 1973, pp. 53-64 on nominal compounds, 197-199 on compound verbs.

16. These examples are taken from Li and Thompson, 1981, pp. 47-54. Not all English compounds are transparent. For example, consider the child who looks up from his soup to ask, "Dad, what part of the chicken is the noodle?" ("Herman" by Unger. The San Francisco Chronicle, 3/30/82.)

17. See Li and Thompson, 1971, pp. 55-70.

18. The extremely high productivity of noun-to-verb derivations in European blinds European speakers of Chinese to their incompatibility with modern Mandarin. Nouns used as verbs are unintelligible rather than just ill-formed. It is difficult to provide language instruction in derivational possibilities.

19. See Matisoff, 1973.

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20. Ullman, 1966, pp. 222-223 quotes Saussure, 1949, p. 132.
21. Whorf, 1956, pp. 88, 89, and 96. Chao, 1968, p. 9, discusses Whorf and the notion of overt and covert categories with reference to Mandarin.
22. See Chao 1968, p. 501.
23. Chao, 1948, pp. 50-59, discusses Mandarin equivalents to English grammatical categories.
24. For discussion of classifiers see Li and Thompson, 1981, pp. 104-113.
25. For discussion of sentence-final particles, see Li and Thompson, 1981, pp. 238-317.
26. Giles, reprinted 1964, p. xiv. Thanks to Jim Matisoff for bringing this passage to my attention.
27. See Hashimoto, 1971, for the ultimate in careful and consistent treatments within the generative framework. Tang, 1972, is a case grammar of Mandarin.
28. Cikoski, 1978, p. 45.
29. See Matisoff, 1972, and Matisoff, 1973, pp. 203-220 for Lahu parallels.
30. Abbreviation of complex forms is extremely common and often drastic, as Chinese tries to preserve its mono- and bi-syllabic form under the pressure of increased compounding and paraphrasis. Many abbreviations are political slogans; many others are completely unintelligible without inside knowledge. For example, I once saw a signboard advertising 建农 literally

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"build insert". Eventually I deduced that the store was selling school-uniform jackets. I was in the neighborhood of the Jiàn Guó Zhōng Xué, build nation Middle School "Build-the-Nation High School." A jacket is called a jiákè a half-transliteration from English lined"ke" "jacket." Therefore, an official school jacket for Jian Guo High School is called a jiànjiá. See Kratochvil, 1968, for a discussion of the prevelance and opacity of abbreviation.

31. See Chao, 1968, p. 60.

32. See Roberts, 1968, on zero anaphora; also Li and Thompson, 1981, pp. 657-675.

33. Chapter Four discusses word order in more detail, while Chapter Six analyses the transitivity relations of predication. The ergative analogy is from Cikoski 1978. For a brief discussion of the importance of order in Chinese, see Li and Thompson, 1981 pp. 16-26.

34. See Tsao, 1978, for a general explanation; also Li and Thompson, 1976.

35. I was asked this question many, many times by both linguists and psychologists in the course of my research.

36. See Slobin, 1973, for a discussion of the "operating principles" which facilitate language acquisition.

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37. See Miller, 1978, pp. 216-232 for a discussion of the development of scientific concepts clear enough to allow people to "see" the structure and function of the blood system.

38. Chao, reprinted in Ferguson and Slobin, 1973.

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CHAPTER TWO

METHODOLOGY

SECTION 2.1 THE SETTING: TAIWAN

Taiwan became a Chinese province in the early 17th century although migrations of Chinese from Fujian and Canton provinces had been going on for some centuries before that time. Taiwan is an island, about 240 miles long, and 90 miles wide at its widest; about two thirds of the island is occupied by extremely high and beautiful and uninhabitable mountains. Therefore most of Taiwan's 17 million people live on the western coastal plain; two-and-a-half million of them squeezed into the capital, Taipei, which has an area of about 6 square miles.

The vast majority of the population is of Chinese ancestry, although there are about 200,000 aborigines who speak a variety of Malayo-Polynesian languages. Of the Chinese population, about 75% are descended from early emigrants from Fujian Province. These people are speakers of a Chinese dialect based on the Fujian dialect spoken around the city of Amoy; this dialect is known as in English as Amoy Hokkien, but is popularly referred to as "Taiwanese." The Chinese term is Mǐnnánhuà, or, popularly Táiyǔ. About 10% of the population is descended

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from a somewhat later series of migrations from Hakka-speaking enclaves in Canton Province. They are speakers of Hakka or Kèjiāhuà. An even smaller minority, 5% of the population, are Cantonese speakers. None of these three dialects is mutually intelligible. These three Chinese ethnic groups lived in separate rural encalves throughout Taiwan until after World War II. The Ming and Qing Dynasty Chinese governments had a very loose control over Taiwan Province.

Taiwan became a Japanese colony in 1895. The Japanese were determined to modernize their model colony by building roads, railroads, electrical power systems, as well as the first, very limited, public shcool system. The colonists imposed the Japanese language as the sole official language, not only for all government and military functions, but also in the media and the public schools. Traditional Chinese religion, fraternal organizations, and even some clothing styles were banned. After the defeat of Japan in 1945, the Taiwanese established a short-lived republic. In the chaos of the final days of the Chinese civil war, increasing numbers of mainland Chinese fled to Taiwan. These mainlanders eventually totalled about two million immigrants, most of them government workers and military personnel associated with the Nationalist government. The vast majority of them were from the northern provinces, and were native speakers of some variety of Mandarin.

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These mainlanders and their descendents compose about 15% of the population of Taiwan today.[1]

In 1950 Chiang Kai-shek declared Taipei as the provisional capital of the Republic of China. The Nationalist regime instituted martial law pending re-conquest of the mainland. The new regime, controlled by the mainlanders, established Mandarin as the official language for all media, military, government and educational purposes. Mandarin is the only language taught or used in the classroom. Only Mandarin is used in movie soundtracks; there is very little Taiwanese spoken on the radio. Only a few hours a week of TV programming are in Taiwanese, these are mostly soap operas and farm weather reports. Subtitles in Chinese characters are added to all movies and TV shows, making them somewhat more accessible to literate monolingual Taiwanese speakers. The subtitles also have the indirect effect of increasing literacy.[2]

Chinese people from all dialect groups support the use of Mandarin as an official language because of its great historical prestige. This broad popular support makes Mandarin nearly unique among officially designated languages world-wide. The Chinese have been unanimous in agreeing that Mandarin was the best-sounding, most elegant, and socially most useful dialect for many hundreds of years.

Mandarin is the official language both on the mainland and in Taiwan. It was made the official language as part

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of the vernacular literature movement in the 1920's.[3] For reasons having to do with political history, the Chinese on the mainland refer to Mandarin as pǔtónghuà "common speech," while the Nationalists in Taiwan call it guóyǔ or the "national language." The English word for Mandarin comes from Portuguese mandar "to order" because Mandarin was the language which the Portuguese sailors who visited China in the 16th century heard Chinese government officials using. The most prestigous dialect of Mandarin is spoken in and around Beijing, with mutually intelligible variations spoken all over many northern provinces including Hebei, Henan, and Shandong. Beijing-style Mandarin has been the language of Chinese officials and literati for millenia, since all high civil servants came to Beijing for their civil service exams, which were administered in Mandarin. Government officials were than rotated throughout a variety of Chinese provinces every few years, to encourage evenhandedness and to discourage graft. Service in their home province was specifically excluded. The entire scholarly and literary class as well as all language teachers came from this pool of aspiring, performing, failed, moonlighting or retired officials. There has never been an hereditary aristocracy in China.

Given the traditional Chinese adulation of literacy scholarship, which is paralleled only by the Jewish tradition, the prestige value and practical usefulness of learning Mandarin have been unequalled for centuries. This

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is a major factor in the amazing success of the government efforts toward universal literacy in Mandarin both on the mainland, and in Taiwan.[4]

While one does occasionally meet elderly people in the Taiwan countryside who speak Japanese but no Mandarin, everyone under 40 years old speaks some sort of work-a-day Mandarin. Everyone under 30 speaks at least functional if heavily accented Mandarin. This is not surprising since there is now universal education through the 9th grade, and the "Mandarin only" rule in school is very strictly enforced. While this linguistic situation has had complicated and unfortunate effects on equal opportunity for the native Taiwanese 85% of the population as well as for the aborigine .1%, it has indeed succeeded in making Mandarin the lingua franca in Taiwan. As of 1970 about 10% of the population was native Hokkien speaking, 10% Hakka speaking, 5% Cantonese speaking and 15% Mandarin speaking in the home.

Very few mainlanders speak more than a few words of Taiwanese, though some have learned to speak it very well on the playground, from their schoolmates. Kang Kang and Pang Pang's parents speak good Taiwanese outside the home for business purposes. Because of the success and prestige value attached to speaking Mandarin, a substantial minority of professional class of native Taiwanese speak only Mandarin in the home to their children, and to their spouses. They insist that they do not feel awkard in using

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their second language at home. (Remember, these university graduates recieved their entire educations in Mandarin, and probably use it on the job as well.) This use of Mandarin at home seems more common when the spouses are from two different non-Mandarin dialect backgrounds. (Spouses from different language backgrounds are nothing new in Chinese history.) While this gives the children some difficulties in speaking to their grandparents and elderly relatives, a surprising percentage of the elderly approve of this sacrifice of Taiwanese to Mandarin because of its prestige and practical value. While there had previously been little inter-marriage or socializing between mainlanders and Taiwanese, the amount is now increasing rapidly. In the 1950's, many mainlander children went to special schools for military dependents where there were no Taiwanese speakers. Such segregation is now very rare.

Why, then, go to Taiwan to study Mandarin acquisition? Are the children really learning Mandarin? Are they really "Chinese?" The answer to both questions is yes, certainly they are. It is important to remember that the mainland has also had enormous mass migrations and dialect mixture in both ancient and modern times. Despite Taiwan's enormous economic development, which puts the area second only to Japan in personal income and GNP for Asia, the Chinese people in Taiwan are extremely Chinese culturally in habits, outlook, tradition and language. It is well to remember that industrialization and technical development

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are not synonymous, an illustration being the tape-recorded sutras played over and over in Buddhist temples, or computer analyzed numerologies of "lucky" characters in people's names.

The traditionally Chinese world views of family, children, education, money, time, nature, and fate are alive and well in energetic, modern guise in Taiwan. The similarities between accounts of mainland and Taiwan Chinese social, educational, child-rearing and even interior decoration habits are overwhelming. Political ideology seems to be only an outer covering shaped by the powerful, distinctive bone structure of Chinese culture into its instantly recognizable form.[5]

Why did I do this study in Taiwan? Studying Mandarin speaking families in the United States was not a desirable alternative, since numerous cross-linguistic studies done in the United States have uncovered a number of differences between children learning their mother tongue in their native land, and children learning it overseas, away from general cultural and linguistic support. Hong Kong is Cantonese and English speaking. Singapore has English as its official language, with many southern Chinese dialects spoken among the Chinese population. Politically, as an American citizen, I was unable to go to mainland China both when I did the pilot study in 1976, and when I began the longitudinal study in 1978. Even at this writing, political and social regulations would make it very difficult for a

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foreigner to do a home taping study on the mainland. The primary problem would be freedom to choose the subjects to be taped in their homes.

The social sciences have been politically suspect in mainland China for decades, when they were not banned outright. Since 1979, however, institutes of the social sciences, departments of psychology, and linguistics have opened their doors, begun accepting students and pursuing research once again. After the thirty year break in relations, mainland Chinese scholars have started visiting the U.S. once again, some of them living here and doing long term research.[6] We can only hope that this exchange will blossom and grow, that we will see a great increase in Chinese authored research, as well as in more joint research efforts. Chinese scholars from Taiwan have been studying and doing research in the U.S. for decades; there is a well-developed modern linguistics circle in Taipei.

However, at the time of the field study, bureaucratic regulations restricting travel, research, access to subjects, taping, photographs, and acquaintance with Chinese citizens would have made this project nearly impossible to carry out on the mainland. Doing this project was not without political difficulties in Taiwan, because of the suspicion by the government that I might record subversive materials. But, overall, I could not have had a more welcoming or encouraging atmosphere, nor free-er access to libraries, teachers, and children than I found in Taipei.

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The second reason for carrying out this project in Taiwan was that I had already lived in Taipei previously for one year's intensive training in Mandarin. Since I had lived with Chinese families, I already had the social and bureaucratic connections which are indispensable for functioning in Chinese society. I also had first-hand knowledge of local family and child-rearing habits. For these reasons, as well as for purposes of continuity, I returned to Taiwan to carry out the longitudinal study, gladly seeking out the exceptional teachers, families, and friends whom I had known before and who were to help me once again.

My goal was to obtain an extensive, natural, and culturally representative sample of spontaneous speech in the child's home. I wanted to include as much family interaction in a variety of situations as it would be possible to obtain. I was eager to record adult-to-adult speech as well. Since this study was to be the first, major, taped study of the acquisition of Mandarin, my aim was to try to capture a very rich and fully-contextualized range of speech from a small number of children, rather than to try for small but less-representative samples from many children. As more and more is learned about the importance of context and individual learning strategies, it seems ever more clear that a comprehensive contextualized sample from a few children is worth more than a snippet from many. I wanted the corpus to be useful to future researchers whose goals might be very different from my own. My own

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approach to field methods has been strongly influenced by the structuralist, anthropological approach which was developed for recording and preserving exotic, non-Western languages. This approach begins with an accurate recording of all the relevant data without attempting to impose an a priori theoretical structure.[7] I have also been much influenced by the Cross-cultural Project on Language Acquisition at Berkeley headed by D. Slobin and S. Ervin-Tripp. The anthropologically-influenced, discourse-oriented approach of Schieffelin and Ochs is a related approach which I have used as a model as well.[8]

SECTION 2.2 THE SELECTION OF THE CHILDREN

This study combines data from the 4 children in my pilot and longitudinal studies as well as from miscellaneous sources. Both the pilot and longitudinal studies taped two-year-old children from Mandarin-speaking mainlander families at play with their families in their homes in Taipei, Taiwan. I taped one pilot child, 24 month old Lao Hu, for seven hour-long sessions spread over two weeks time. I taped the second pilot study child, 31 month old Zhong Rong, for 9 hour-long sessions spread over 8 weeks time (see Table 2.1).[9]

In the longitudinal study I selected children from nearly identical backgrounds and language development stages as the pilot children. They were: 22 month old Pang Pang whom I taped in 25 hour-long sessions, every other

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TABLE 2.1

THE TAIPEI CHILDREN

	PILOT		LONGITUDINAL	
NAME	LAO HU	ZHONG RONG	PANG PANG	KANG KANG
TRANSLATION	("Tiger')	("Glorious China")	("Chubby")	("Health")
SEX	Male	Female	Female	Male
AGE AT 1ST TAPE (years & months)	2.0	2.6	1.9	2.10
DISPOSITION	Placid	Obstreperous	Placid	Obstreperous
SIBLINGS	2 older sisters: 4 & 6 years older	none	1 sister, 3 years older	none
DURATION OF TAPING PROJECT	2 weeks	8 weeks	13 months	12 months
TOTAL HOURS TAPED	7	9	25	23
TAPING ASSISTANT	---	---	Yuan	Jiang

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week over 14 months; and 34 month old Kang Kang taped for 23 hours over 12 months time. The major methodological difference between the two studies was that for the longitudinal study I engaged one young Chinese woman assistant for help in taping each child. During the sessions, the assistant played with the child, and held the master microphone. I sat off to the side with a second tape recorder and microphone, whispering very detailed remarks in English about the context, the child and others' activities, and gaze direction. Later, the Chinese tapes were transcribed; English contextualization was inter-lineated with the Chinese text. I was careful to maintain event and speed time in the transcripts. This method worked extremely well for providing a very complete record of language and events during the session.

Given the factors described above, very careful investigation was needed to find children from the "purest" Mandarin-speaking backgrounds obtainable; not only because I do not speak Taiwanese, but also because I was setting out to do a baseline study on Mandarin acquisition, and so wanted as few language and social variables as possible. For the pilot I easily found referrals to the two children whom I taped, one being introduced by one of my Mandarin teachers, the other by a classmate. The mothers of both pilot children were teachers of Mandarin and classical

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Chinese; their mainlander, Mandarin speaking family backgrounds could hardly have been more suitable. For the followup longitudinal study I was concerned not only with a "simple" Mandarin background, but also with matching background and level of language development to that of the pilot children. I also wanted to obtain a large, rich sample in relaxed surroundings and good recording conditions. On my return to Taipei, I described the following desiderata to all my friends, former teachers, coworkers and acquaintances, as well as to the professors of early childhood education in the home economics department at National Taiwan Normal University. (A check through files listing the language background of some forty children in the younger class at the Normal University's model nursery school found no children of purely Mandarin speaking background at the right age level.)[10] Description of the ideal child and situation included the following:

1. Mainland families, on both the mother's and the father's sides.

2. Exclusively Mandarin-speaking at home, preferably a standard Northern dialect. No speakers of other Chinese languages living with the family, no native Taiwanese speaking servants.

3. Children around two years old; one perhaps under two, one probably two-and-a-half.

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4. One child to be just barely beginning to put two words together, the other child just starting to talk freely, often producing two and three word utterances.

5. Fairly talkative child, preferably with a loud, clear voice.

6. Sociable, happy child, not too shy or afraid of strangers.

7. Child has not yet started nursery school and so had a chance to learn Taiwanese from his classmates. (All nursery school instruction is in Mandarin; most middle class children are in nursery school by the time they are three.)

8. Family truly available, willing to be part of the project, to stay in the area and be on hand for an hour's taping every two weeks for about a year.

9. Family able to adapt to the non-directive project design, not to dominate each session insisting that the child recite or sing.

10. Prefer convenient transportation to the child's house, with relatively quiet recording conditions inside. (Zhong Rong had lived beside a freeway overpass.)

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Given the educated, urban, Chinese circles I moved in, as well as this list of criteria, the children I met were not completely typical of Chinese children. They were almost inevitably richer, from more sophisticated, powerful, educated urban families than is the norm. Looking specifically for talkative, sociable children from such families introduced subtle, and as yet poorly understood differences from less verbal, talkative children.[11] Nevertheless, such children are from the same background as the children of intellectuals who have served as subjects for most major language acquisition projects done in Europe, Turkey and Japan. Non-urban, non-literate children have been studied for Mayan, Kaluli, and Samoan.

I heard about approximately a dozen children through my connections; closer questioning, and phone calls to the parents for more information narrowed this group down to 8 children whom I visited with my Chinese introducer before selecting the two children whom I taped long term. I held these first and all subsequent conversations with parents and contacts entirely in Mandarin. The major problem was determining the language background of the family, both because of the prestige value of speaking Mandarin, and because of its very recent, widespread mastery by the vast majority of the younger generation in Taiwan. I first determined that the family was indeed of mainlander origins before I visited the home. Even here there were surprises, as I would arrive at the house to discover, for example,

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that the mother's family was from Shandong but the father's family was Taiwan Hakka, and that the Hakka monolingual grandmother lived with the family. I also eliminated several children from extended families where the child's parents and grandparents were indeed Mandarin speaking mainlanders, but an aunt or uncle by marriage, in residence, spoke another Chinese language at home. All the families I met were very eager for me to tape their child. There were many reasons for this, including: the families' pride in their child, their openness to the entertainment and curiosity value of having this type of social contact; and their generosity and helpfulness which were remarkable even by the formidable tradition of Chinese politeness and doing of favors. For some families, none of whom I decided to tape, there was also the hope that the contact with the American would somehow be an advantage to their child in nursery school and elementary school, eventually being an a boost for college admission. Others hoped that the child might learn some English from me. Even after careful explanations in Chinese, however, it was very difficult to convince people generally that I wanted to tape Chinese children who were learning Mandarin rather than English. Numerous people asked me, quite deferentially, if there weren't more English-speaking children in the U.S., that Taiwan must certainly be a difficult place for me to find American two-year-olds. (Certainly true.)

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Some others assumed this was just another weird American idea, and that I was planning to study Chinese by taping Chinese babies, and using them in the language lab. Some eager students of English even asked if I could introduce them to American infants whom they could "study" with. All assumed that I did this work primarily out of a love of children, which seemed to the Chinese quite natural, and very disarming. My being a woman was a great asset in obtaining confidence, and access to children. Generally, it overcame the sense of strangeness the children felt, since they saw me more as an adult woman who would naturally want to play with them, than as a foreigner.

I experienced a good deal of difficulty in explaining my research goals to parents, all of whom were extremely interested, but not all of whom were able to understand. I originally saw this confusion as a language problem, and prepared more and more carefully rehearsed psycho-linguistic explanations in Chinese. However, I now feel the real barrier was both people's lack of familiarity with linguistic, psychological, or anthropological research, theory or experiments. Still more important was the continued strangeness of my appearance as a perfectly normal-looking white woman. I was offering the families increasingly detailed theoretical and methodological explanations, but their real preoccupation was with my alien strangeness. Quite a few people were unable to assimilate the idea that

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I rather than my Chinese assistant was the actual researcher. (This impression was augmented both by my polite deference to my introducer, as well as by the asistant being the one who actually played with the child during taping while I sat off on the sidelines taping notes.)

I eventually realized that the situation may have seemed almost as incongurous as having a pair of proud American parents visited by a very polite, well-spoken collie dog researcher with a fancy tape recorder. They would be unable to forget about the inconguity completely, no matter how relaxed and familiar they eventually became with the visitor, and would continue to flash back now and again to the researcher's doggieness even after a very long acquaintance. Foreigners in China are asked frequent questions like "how are you able to breathe through such a big nose?" or "can you write your name in Chinese," asked after one has filled out a whole elaborate tax form in characters; or even "do foreigners eat?" and "are there mothers in the United States?" The problem, or my awareness of it, sometimes seemed to increase in direct proportion to my fluency in Mandarin and facility with local customs. Certainly people felt more able to articulate their sense of strangeness then.[12]

We tend, in the U.S., to take for granted the effect of the American population's general familiarity with research of some sort, and with people with a huge variety

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of physical, racial, and cultural differences; and so to underestimate the bizarre effects we may create doing fieldwork in a foreign setting. All the effects I mention would be very much stronger in rural Taiwan, even more in the Chinese mainland. The families I eventually did tape were much more than generally sophisticated about foreigners, since all had had some personal contact with them before. I do not feel that these incongruous effects invalidate the quality or representativeness of my study. On the contrary, they heightened my awareness of cultural influences, and made me much more careful about which factors I want to call "universal."

The most effective way of answering intellectually curious Chinese who wanted to know about the project was to raise examples of the types of semantic generalizations children seem to make worldwide; the all animals are "doggie," all men are "daddy" phenomenon. People were usually charmed, and able to offer examples of their own. Often these were of theoretical interest. Other specific examples of unusual child Chinese utterances such as

wǒ	yào	hóng	tā.de	jiǎo	"I want to red her feet,"
I	want	red	she poss	foot	

said when the child wanted to put nail polish on her doll's feet, usually made the point clear. If the questioner knew a good deal of English, (as they often did, since everyone in Taiwan must study English every semester from seventh grade on), a discussion of the English tense system, and

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the Chinese time marking without tense aroused people's curiosity and seemed far more accessible and interesting than the other goals of the study. Fortunately, Chinese culture reveres scholarship for its sake, whatever its mysterious purpose may be. People generally gave my research the benefit of the doubt on utility and interest value. The Chinese were also highly appreciative of possible language teaching applications of language acquisition studies.

A somewhat delicate point both in discussing my work, and, more importantly, in eliciting sample sentences and informant judgements of abberant or "erroneous" sentences like the preceding, was peoples' sense that calling a utterance "wrong" was a value judgement. Chinese adults see children as delightful, but centuries of the scholastic tradition have permeated all levels of society, and adults are quick to dismiss any aberrant child sentence brought to their attention (or which they notice, but do not find cute or "correct") as "talking nonsense" luàn jiǎng, literally "chaotic talk." This is often a highly critical set phrase which adults typically snap out to children whom they feel are speaking improperly. The typical adult comment about childish innovations was that the children were just "talking nonsense" with no structure at all; and that they should certainly be corrected immediately by an authority, preferably a school teacher, or someone who spoke "correct" Peking style Mandarin, or even a foreigner.

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They would not infrequently say they hoped I would correct their child's illogical speech, and to feel free to beat him if he got out of line, as he was a bad, undisciplined child who did not talk well, and was much in need of reform. They often said this barely concealing smiles of love and pride in their children. (I had this offer made by acquaintances whose children who were as old as sixteen.) The degree to which this comment was merely a formal, rote, self-deprecation varied quite a bit by family personality, and old fashioned manners. Butit was never entirely missing, or entirely insincere, since, in hierarchical Chinese society, all adults (especially all teachers) are free to discipline all children and underlings, whether they are acquainted with them or not.[13]

There was, however, an even touchier aspect of the seeming research concentration on speech errors. This was people's not completely unreasonable fear of a negative concentration on the child's "mistakes" to the exclusion of his achievements. Apart from the theoretical implications of the debate about this very criticism now going on in the literature, the stigma of making a "mistake" is particularly strong in Chinese society. Some people feared that Chinese children might not compare well to Western children. For some parents and students, an analogy of the child as the experimenter in the laboratory, making intelligent hypothesis after intelligent hypothesis was effective in dispelling their uneasiness. Sports analogies

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with obstacle races, thinking of having the child try many different ways to "jump over" or "crawl under" or "squeeze around" the rough places clarified the point for some people. Assurance that American children made comparable "experiments," with examples of English child anomalies were also reassuring, but the most effective and disarming didactic device was to name specific examples of the types of errors Americans make in speaking Chinese. Effective examples included: Tone errors, as saying "I came to China on a féijī, literally "on a fat chicken" rather (fat chicken)

than on an airplane, a fēijī. Selectional restriction (fly machine)

errors include the American who told a persistant souvenir hawker *wǒ yǒngyuǎn bú yào, "I eternally (I eternal not want)

don't want one." The contradiction between duration and negation make this an extremely bad Chinese sentence. Other examples include false slot-frame analogies; the American who reasoned that since the polite response to "thank you" xiè xiè, is bú xiè he should answer, (thank thank) (not thank)

"excuse me" duì.buqǐ literally "I cannot face you" (face not rise)

with bú duì, which is conventionally used, all (not correct)

right, but has the meaning "that's wrong! incorrect!" This yields an exchange like: "Excuse me please." "You're wrong!" After presenting the joke illustration, a comment along the likes of "you can see how that sounds

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very logical in a way, but there's something a little strange about that sentnece, isn't there?" usually clarified the issue, and often elicited interesting comments and examples.

Some other possible reasons for not taping a particular child included: the child's being very much more or less advanced linguistically than the level desired, his speaking very unclearly even by his mother's standards, or his being extremely shy and afraid of a foreigner, even after several hours of contact. My visiting procedure was first to find out about a child through a Chinese acquaintance, to call the family on the telephone and talk, and then to arrange a visit, accompanied by our mutual acquaintance. These visits always lasted at least an hour, usually several hours. I would introduce myself to the family and to the child, then sit, drinking tea, and chatting mostly with the parents, not approaching the child very directly until he became used to me. I would explain the project to the parents, talking also about my background, emphasizing that I was interested in taping children as they spoke in a relaxed way at home, doing their own "little experiment" on speech. I emphasized that I did not even want the parents to prod the child to speak now or in the future, but rather that silent lapses were fine.

The parents were very much inclined to urge the children to sing specific songs, tell stories, or even to

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recite Tang dynasty (900 a.d.) poetry to me, equivalent in comprehensibility to American children reciting long passages from Beowulf in Old English. I heard a number of two-year-olds recite Tang Dynasty poems with evident pleasure and total lack of comprehension at lightning speed. I found this unsettling. On 16 month old child, XiaoXing, was very sociable and, surrounded by 10 family members, gaily performed "kungfu" and Peking Opera routines to a delighted audience. But after a 3 hour visit she was still shy enough of my being foreign to refuse to sit beside me.

Most children were less unsettled by my being foreign. Some seemed to be indifferent; they had, after all, seen white people on TV and in the movies. The parents, however, coached the children in many routines about my appearance. Discussion of personal appearance, age, marital status, family background, disease, and income, rent paid, and of money in general all being "free goods" in Chinese, in diametric contrast to Western politeness conventions. Thus, Zhong Rong's mother coaxed her over and over to say "Auntie has a big nose!" and Kang Kang was taught to say Auntie's hair was coffee colored, and her skin very white, while his was yellow. He got confused talking about my eye color (not something Chinese people usually distinguish among themselves.) When he saw "Roots" on TV, he asked if he were a Black. All the two-year-olds, among the dozens

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whom I met, however, were extremely clear on the fact that they were Chinese. This was one of the first things children are taught how to say. After a few visits, all the children I taped became comfortable with my appearance, and my fluent but not-native Chinese.

At the initial screening visit, I would wait until half an hour of adult conversation had passed. I would then gradually turn my attention more and more to the child, greeting him, and offering toys, but mostly observing, and listening as he or she talked with his mother and other relatives. I found that careful, extended listening with note taking afterward were less disruptive, than taping at first visit; it was simpler, and equally reliable for determining the child's language level. I listened to hear the child's most complex output for that day, since all children did a lot of single word naming of animals and people, colors and numbers. I also asked the parents about the child's speech in some detail, the range of kinds of things he could say. I looked for one child who could occasionally put together two word sentences such as wǒ yào "I want" or chē.zi lái.le "car come + perfective" "The car came, has come," and for another who was also able to do occasional three word sentences like wǒ yào tiào "I want to jump" and fáng.zi hǎo piào liàng "the house is very pretty." Use of time words like: jīntiān "today" or of terms like jiéguǒ "the result," yīnwèi "because," suǒyǐ "so," "therefore,"

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or the zài progressive were clues that the child was at a more advanced initial level than I was looking for. Counts on children's taped initial mean length of utterance were not more reliable screening devices than careful listening and note-taking. I asked the parents not only about family background, particularly which speakers of what language lived in the house, but also about the kinds of things the child could and usually did say, about ritual greetings, saying, family language coaching and games.

SECTION 2.3 COMPENSATION TO HELPERS

Chinese society works by an exchange of mutual favors. These are generously made, but also incur mutual obligations which hold good through many years, generations, and collateral degrees of relatives and friends. Offering compensation or wages is always a difficult social question. It is considered insulting to offer money directly to friends and acquaintances. Pro forma or sincere refusals will always ensue and be repeated even when the person needs the money very badly. I offered both families in the pilot study an hour-for-hour exchange of taping sessions for my English language tutoring to any member of the family who was interested. (Native speaker teachers of English are in enormous demand at high wages. Strangers stop white visitors on the street many times a day with requests for English lessons.) Lao Hu's family declined repeated offers; Zhong Rong's mother accepted a short series of lessons.

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For the longitudinal project I offered a token taping fee equivalent to U.S. currency $3.33 per session. (This was, however, a day's wages for low-level jobs in Taiwan at that time.) I made this offer not only out of gratitude to the families, but also in order to insure more commitment and long-term availability at given hours and in given situations. It would have been difficult to ask for this if I were merely accepting an elaborate favor of free access to a family. Pang Pang's family accepted the fee only after two months of returning the "red envelopes" of money to me. I finally persuaded Pang Pang's grandmother to accept the fee after wryly accusing her of taking money out of the hands of her own grandchild. I suggested that she bank the money for the child's future education. Kang's family would not accept a fee under any circumstances. The situation was more problematic since Kang's mother was my former Mandarin teacher, as well as being a social acquaintance who was vividly aware that the money was coming out of my own pocket. I tried to present Kang with toys, books, games, and special clothing equivalent to the taping fee. In truth, all the families were quite prosperous and in no real need of money. Suitable gifts might have been more appreciated than cash, but gifts were far less convenient to arrange for than money would have been. Similar strictures caused my two taping assistants to maintain an absolute refusal of salary, although they did accept gifts of tapes, dictionaries,

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magazine subscriptions, and clothing after many embarrassed and sincere refusals at each presentation.

After repeated and completely sincere offers to transcribe gratis tapes for the experience alone, the poor college student who transcribed for me finally accepted a wage somewhat above the average for highly skilled white collar work, about $2.00 U.S. per hour. The situation was more clearcut in his case, since he did need a summer job and I was offering him hundreds of hours of quite tedious work. He enjoyed transcription and informant work very much, however, and swore that this had been the best job he had ever had.

I made two false starts in the longitudinal project with children whom I began taping and could not follow through on. One was Yi Zhen, just three years old. The week after I made her half-hour sample tape, Jimmy Carter announced withdrawal of recognition from Taiwan, and U.S. diplomatic recognition of the Beijing government. The taping assistant, who had introduced me to Yi Zhen's family was in ill health, and upset enough by de-recognition, to discontinue my contact with this child. Through another contact, I began taping Xiao Sheng who was 2 years 6 months old, a very fluent and advanced child. After the first formal taping session, her mother called to tell me she would be taking the child to visit the mother's sister who lived 200 miles south of Taipei. They would return in two weeks. After two weeks had passed I called the mother in

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the South, said I would be "in the neighborhood" and asked if I could drop by. She eagerly invited me over to tape. I made a special trip south, and we made a second tape with the very cooperative and talkative mother, aunt 8 and 10 year old cousins and the child, all playing together. After dinner I determined that the mother had decided to stay in the South with her daughter indefinitely because of marital difficulties. It would have been impossible for me to find this out over the phone, Chinese subtlety and politeness having prevented the mother from making a direct withdrawal from the project. I discontinued taping this child. Tapes from these two children supplement the data from the main project. I had already begun taping Kang. Fortunately, at this point my roommate's friend informed me that her niece, Pang Pang, was talking more every day. I was able to begin taping Pang immediately with great success. I had no problems of availability or commitment from any of the four main families in this study.[14]

I eventually found out that Kang Kang's mother had dreamed of her child being part of my research when she had been pregnant with him when she was my teacher two and a half years previously. I had no idea of this, even after my return when I asked her if she "knew of" any suitable children for me to tape. She was very tactful, and not wanting to put me in a bind, replied that she did have a little boy, but he was "very bad," "did not speak well,"

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and that she lived too far away for me to commute to the end of the bus line. Not wanting to pressure her, and knowing that she worked full time, I pursued the matter no further. She promised that she would keep her eyes open for suitable children. Several weeks later, the mother's co-worker, also a former teacher of mine, and the future taping assistant, "Auntie Jiang," told my American roommate to tell me that she (Jiang) said to tell me try asking Kang Kang's mother again. I did, and she was delighted to be part of the project, proving to be a most imaginative and sophisticated informant and elicitor. She had taped Kang from birth, but he had previously destroyed the box of tapes during a tantrum.

Still another difficulty concerns the prescriptive, idealized value attributed to the logic and beauty of Beijing-style Mandarin as opposed to locally accented Mandarin. It is best to continue asking the informant, "Would you say this? Would anyone in your family say this? Have you overheard people saying this? Would you be more likely to say it another way? Do little children say this? Would their teachers correct them? Is this cute or substandard, or just incomprehensible? Does it mean anything else?" Even then it requires great care to make sure that examples approved as "correct" are representative of colloquial speech, as well as formal classroom style.

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Before giving biographies for each child, let me write my deepest thanks to the families and children, who gave their time, generosity, ingenuity, and true kindness during both the initial visits and search; and most, then, even more during the very prolonged, sometimes inconvenient, always time-consuming taping project. Rarely did a session begin and end with mere taping; usually we had tea, conversation and snacks before taping, then often dinner and more talk afterwards, always in the most welcoming and hospitable environment imaginable. Not only was the immediate family gamely willing to have all their words and activities recorded hour after hour, but many assorted relatives, friends, students, business acquaintances, and other guests cheerfully walked in on the taping, and then allowed themselves to be recorded. I cannot offer enough thanks to: Lao Hu and his sisters, and his parents, the Zhao's; to Zhong Rong, and her parents, Zhang Jun-Zhu and Professor Lu; to Pang Pang, her sister, her parents, the Gongs, and to her grandparents, the Zhu's; and to Kang Kang, and his parents, Yang Jiu and Jiang Wen-Man.

SECTION 2.4 BIOGRAPHIES OF THE CHILDREN

2.4.a INTRODUCTION

All four children in the project came very close to meeting the desiderata listed above; three of the four mothers being so ideal as to be teachers of Mandarin and

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classical Chinese. All four children lived in metropolitan Taipei in nearly identical [illegible] modest but comfortable apartments with several bedrooms, a bathroom, a kitchen, a washing machine and a color TV set. All four Chinese two-year-olds were allowed very free access to the telephone, TV, radio, record player, doorbell intercom, and family tape recorder as is normal for Chinese children. All the children had taped songs into the microphone since they were tiny, although only one family had taped extended child speech. In addition, all four children owned numerous toys, books, and art supplies, tricycles and wagons, and were very familiar with riding real buses, trains taxis, and bicycles, with going to restaurants and to the movies.

Chinese people traditionally dote on children. Even male high school students love to talk and play with strange little children whom they meet on the street; my male research assistants expressed all sorts of warm interest in the children whose tapes they transcribed. Children are almost never left completely alone or ignored, and are included at all social gatherings.

Babies are constantly held, fed, and passed around. Men take pride in carrying their babies; children are remarkably calm and relaxed about being held and talked to by strangers. Although the Chinese generally do not see a child as "talking" until he is more than a year old and able to say a number of words rather clearly, adults do

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talk to babies in a way quite similar to American middle class whites.

While school-aged children are subject to extremely strict discipline which emphasizes obedience and studiousness, pre-school children enjoy a kind of "universal amnesty" for their behavior. People feel very strongly that children are only babies for a little while, and that early childhood should be as happy as possible, since the child will soon enough be old enough to go to school and come under the iron rule of the teacher. Everyone feels sorry for school-children, and feels that their life is very xīngkǔ "pitiful," "bitter" since they must study all the time, and learn proper behavior, zuò (make) rén.de (person mod) yàng.zi (resemble) "acting like a person."

In the mean time, the ideal for pre-school children is that they should be indulged in all their wishes which can possibly be met. The ideal is to have someone around to offer the child toys and things to eat at all times. Little boys and only children are the most indulged. Grandparents are more indulgent than parents. People found the American idea that the child should "cry it out" horrifying and cruel, and indeed, little Chinese children seemed to cry and fuss far less than their American counterparts. Chinese children are encouraged to cooperate and share with other children, but almost no objects, no matter how fragile seem truly off limits. I found myself

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far stricter toward little children than were the Chinese, but far more indulgent toward school-age children.

The children in this study did have unusually educated and "progressive" parents, several of whom followed Dr. Spock in translation. Kang Kang's mother was the most progressive in this way; she asked Kang to talk about his feelings and discuss what was in his heart in a way very seldom heard among Chinese. Nonetheless, a basically Chinese world view and child rearing habits seemed to be maintained, though in somewhat modern guise. Grandparents and other relatives were very influential, and often present in all four families. Pang Pang and her sister, were in fact, living with their maternal grandparents, although their parents rented an apartment adjoining the grandparents' flat. Pang Pang's parents own an international business which keeps them travelling more than 6 months a year. Being raised by one's grandparents is such a normal, traditional, Chinese experience that I feel confident including Pang Pang in the same social background as the other children. In some ways, this makes the sample more representative. I generally say "mother" here to include Pang's grandmother. There is general agreement than grandmothers do a better job on day-to-day child care than do mothers, since the grandmothers have far more knowledge and experience, and are also much more patient. Mothers, it is felt, should use their most energetic years to work outside the home. Many Chinese felt very sorry for

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American women after my account of the stigma attached to women who have relatives or babysitters look after their children while they work.

A similar attitude extends toward housekeepers. All four mothers worked full time, although Pang Pang's grandmother was home all day with the children. All four families had daily part-time or full-time housekeepers who cooked, cleaned, and helped care for the children, all fitting in with the family very equally, and harmoniously and stably. All housekeepers spoken excellent Taiwan style Mandarin. It is not particularly unusual to have household help in Taiwan; it is considerably more common than in the U.S.

SECTION 2.4.b INDIVIDUAL CHILDREN'S BIOGRAPHIES

2.4.b.i LAO HU

Lao Hu, "Tiger", his nickname coming from the animal associated with his birth year in the Chinese lunar calender, was just 24 months old when I began taping him. Contrary to his nickname, he was an unusually cheerful, and intelligent child, quite sociable though not particularly talkative. This may have been partially due to the fact that his charming, attentive, and talkative six and eight year old sisters spent a great deal of time playing with him, particularly since the taping took place during summer vacation. (In temperment and amount of speech he

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strongly resembled Pang Pang, who also had a very attentive and highly verbal older sister.) Lao Hu's mother, a Mandarin teacher, was born near Peking, while his father, an police officer, was born in the Jiangsu area, and spoke Mandarin with a Jiangsu accent. Also in the home were his paternal grandmother, the housekeepr who came every day and took care of him while his mother was at work, and two students boarding in the home. Both were English speakers who spoke good Mandarin to the family. One boarder was from Australia, the other from India. Lao Hu gave no signs of understanding English, his only English word being his Teddy bear's name, "Teddy", pronounced /tɛ̀dǐ/. The parents and boarders all assured me that they spoke only Mandarin in the household, though the boarders did speak to one another in English. I usually taped Lao Hu beginning in the late morning as he was finishing breakfast. His six-year-old sister An An and the housekeeper are the most frequent speakers besides Lao Hu and me. His father played extensive word games with Lao Hu on tape 3. The mother, who was usually at work, appeared rather seldom, and the boarders and grandmother not at all. LH's mean MLU for the seven sessions was 2.33, calculated according to Brown's criteria.[15] Taping went smoothly; LH had no health or social crises during the taping. (See Table 2.2.)

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TABLE 2.2

NUMBER OF SPEECHES AND UTTERANCES, MLU[13]

LH (24 months old)

TAPE	NUMBER OF SPEECHES	NUMBER OF UTTERANCES	MAXIMUM UTTERANCES IN A SINGLE SPEECH	MLU
1	69	173	12	1.99
2	197	339	10	2.69
3	286	483	9	2.57
4	200	369	17	1.99
5	69	213	32	2.40
6	98	234	24	2.45
7	165	345	13	2.24
TOTAL (7 tapes)	1,084	2,156		
MEAN	155	308	17	2.33

2.4.b.ii ZHONG RONG

The second child in the pilot study was a little girl, exactly 31 months old at the start of taping, Zhong Rong, "Glorious China." She was also called Xiao Niu "Little Cow" after her astrological birth year animal. Contrary to her nickname, she was an extremely intelligent, active, mischievous, much indulged, only child. She was very talkative, and did a lot of experimenting with words. The mother was a fulltime Mandarin teacher with a very correct accent whose relatives had come over from Fuzhou. Zhong Rong's father was born in Jiangxi, and spoke more heavily accented Mandarin. He was a teacher of classical Chinese at an elite boy's high school where the mother moonlighted as well. The parents spoke only standard Mandarin to each other; all relatives who visited spoke only Mandarin as well, as far as I could determine. As of the first recording session, a daily housekeeper and a young women boarder were also present, both of whom spoke Taiwan-style Mandarin. Neither of these people was involved with the household by the second session. Because of the parents' work schedule, Zhong Rong's father frequently took care of her in the late afternoons when I would come to tape her. Zhong Rong's mother was the next most frequent adult speaker. I taped nine hour-long sessions of Zhong Rong at play with her parents and me, the sessions being spread over 8 weeks time. After the fourth tape, Zhong Rong was hospitalized for a few days for bronchitis; her speech

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TABLE 2.3

NUMBER OF SPEECHES AND UTTERANCES, MLU

ZR (31-33 months old)

TAPE	NUMBER OF SPEECHES	NUMBER OF UTTERANCES	MAXIMUM UTTERANCES IN A SINGLE SPEECH	MLU
1	38	288	59	3.18
2	148	447	29	2.91
3	195	578	60	3.47
4	251	410	11	4.31
5 (45 min)	42	168	18	3.28
6	116	253	11	3.14
7	234	580	16	3.53
8	285	755	24	4.23
9	193	654	17	4.09
TOTAL (9 tapes)	1,502	4,133		
MEAN	166	459	27	3.57

was less frequent and elaborate for the two tapes which followed, but the remaining three tapes were complex. (See Table 2.3.)

2.4.b.iii PANG PANG

The younger child in the longitudinal study was a little girl, nicknamed Pang Pang "Fatty," 1 year 10 months old on the first of the 25 types I made of her every 2 weeks over 14 months time. Pang Pang was another very intelligent child, but of a rather placid, quiet temperment; very relaxed, sociable and cheerful, but not particularly talkative. She had a sister, Xiao Mi, who was exactly three years older than she, that is, 4 years 10 months at first taping. Xiao Mi was extremely active and verbal, chattering away constantly as she played cooperatively with her sister. Xiao Mi was understandably a little jealous of all the attention lavished on Pang Pang during taping, so I decided to be more tolerant of her talking with Pang Pang during the sessions. This proved to be a good idea, as Xiao Mi was very helpful to us. She was proud of her little sister, and gave us many glosses, interpretations, and accounts of Pang Pang's remarks and funny deeds which had not been taped. This pride, closeness, and cooperation among children is the norm in China, and a very pleasing sight it is. Eventually, I worked round to a routine where my Chinese assistant concentrated on taping Pang Pang, while I, handling the second contextualization tape recorder, would devote myself to Xiao Mi whenever she

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wanted a researcher and tape recorder to herself. She also played alone a good deal of the time. So, without planning on it, I ended up with a great deal of a Chinese five-year-old's conversation with adults and other children, as well as her storytelling, and musing to herself. Material from Xiao Mi is included contrastively with that of the other children, and forms the basis of many of the conclusions about later acquisition.

As discussed above, Pang Pang and Xiao Mi essentially lived with their maternal grandparents. The parents, both college graduates from mainlander Jiangsu area families, ran an export business, and so were out of the country travelling on business a great deal of the time. They seldom appeared on the tapes. Pang Pang's maternal grandmother, a Nanjing native, took care of the children full time and appears frequently on every tape. She was an unusually well educated woman for her generation. Pang Pang's grandfather had been largely bedridden with a stroke for some years; he very seldom appeared on the tape. He was a retired high school principal from coastal Jiangsu. Also in the home was the daily cook and housekeeper who spoke very good, Taiwan-style Mandarin. Pang Pang's aunt (the mother's younger sister) and her white, American husband, a fluent Chinese speaker, had lunch and dinner with the family every day, frequently staying afterward to play with the children. They spoke

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Chinese on their visits, as Pang's grandparents did not speak English.

Pang Pang had a quiet, happy year. For the first four tapings she wore leg braces for a few hours a day to correct the bowlegs she had developed from being so fat. However, her legs improved, she slimmed down as she grew, and was quite healthy all year. Her sister began nursery school during the year; Pang Pang started it when she was 2½ but came home after the first day asking to be allowed to stay home, because the toys and snacks were all better home with Grandma. Her wish was granted, though she started nursery school again six months later, this time continuing to go regularly beginning the week after the last tape was made. I usually visited this household in the late afternoon after Pang Pang had awakened from her nap. I socialized with this family frequently, often having dinner and spending holidays with them.

In the longitudinal project I engaged a different young Chinese woman to tape and play with each child while I made notes into a second tape recorder. (Technique described further below.) The assistant for Pang Pang was Ms. Baojane Yuan, an instructor in the home economics department at National Taiwan Normal University, who had done some of her own child language research which is described below, as well as authoring a book on enhancing children's creativity. However, most importantly for the project, she had a wonderfully relaxed touch with small

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TABLE 2.4

AGE AT TAPING SESSIONS: PANG

Birthdate: 4/22/77

TAPE NUMBER	AGE (YEARS, MONTHS, DAYS)	NUMBER UTTERANCES	MLU	% INTERPRETABLE
1	1.9.28	458	2.64	98%
2	1.10.20	286	1.73	93%
3	1.11.4	378	1.43	97%
4	1.11.18	465	2.48	90%
5	2.0.8	623	2.26	94%
6	2.0.21	626	2.18	98%
7	2.1.6	497	2.32	87%
8	2.1.20	336	1.86	82%
9	2.2.5	373	3.12	76%
10	2.2.22	492	1.76	98%
11	2.3.7	696	3.48	97%
12	2.3.21	493	2.72	99%
13	2.5.6	427	2.82	99%
14	2.5.19	458	3.23	98%
15	2.6.9	479	2.95	99%
16	2.6.23	405	2.58	97%
17	2.7.7	433	2.38	97%
18	2.7.18	504	3.17	99%
19	2.8.4	615	3.03	99%
20	2.8.22	651	2.71	99%
21	2.9.23	402	2.56	99%
22	2.10.6	627	2.91	88%
23	2.10.12	455	3.46	93%
24	2.11.3	583	3.44	97%
25	2.11.17	459	5.20	99%
	TOTAL	12,251	MEAN 2.73	

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children, and a real gift for making easygoing, non-directive conversation with a two-year-old. This proved expecially valuable with Pang Pang, a rather quiet child who might well have clammed up completely with a different assistant. Table 2.4 outlines Pang's taping schedule and amount of speech.

2.4.b.iv KANG KANG

The second longitudinal child was Kang Kang "Health Health," an only child, a boy, 2 years 10 months old at the first of the 23 tapings made every 2 weeks for 12 months. Kang was a very tall, handsome, energetic and intelligent child; highly verbal, very spoiled, much given to word play and jokes of all kinds in a loud, ringing voice. In his obstreperous temperment, high speech output, level and style at first taping he strongly resembled Zhong Rong.

Kang's parents both came from families from the Shandong area; his mother had an M.A. in classical Chinese, and taught Mandarin full-time. Kang's father worked for a British trading company. The maternal grandmother spoke a Shandong dialect extremely close to standard Mandarin. A housekeeper, a middle aged mainlander from northern China who had lived in Shandong and Hebei before coming to Taiwan, cared for Kang during the day during the early months of taping. After tape 17 he began nursery school, an exciting and much discussed event for any Chinese child. Kang had a hernia which surgery had been unsuccessful at correcting,

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and occasional colds, but no serious health problems during the year.

I usually taped Kang in the early evenings after his parents had returned from work, and the family had eaten dinner. Kang and his mother delighted in amazingly intricate playacting with each freely improvising roles of doctor and patient, dentist, nurse, baby, empress, chauffer, lion, anti-communist guerrilla, idol in a temple, restaurant owner, etc. This provided an amazing talking cast of characters in Chinese society, vastly extending the range of situations discussed. Generally, I did not set up any special topics or situations during taping. But after Kang persistantly confused his own surname, Jiāng high level tone, with the assistant's Jiǎng low dipping tone, I staged several playacting forced-choice situations with toys (e.g. feeding dolly the tāng "soup" high level tone, vs. the táng "candy" high rising tone, see Chapter Four 4.6 for more discussion.) His mother incorporated the toys and playacting very ingeniously into their regular conversational style, for most of tapes 12, 13 and about 10 minutes of tape 14.

I engaged an assistant for this child as well, Chiang Tz'u, who was director of instruction at the Inter-University Program for Chinese language studies in Taipei, an extremely intelligent, meticulous and insightful researcher, as well as being my former teacher and Kang Kang's mother's long-time co-worker and friend. In this

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TABLE 2.5

AGE AT TAPING SESSIONS: KANG

Birthdate: 2/5/76

TAPE NUMBER	AGE (YEARS, MONTHS, DAYS)	NUMBER UTTERANCES	MLU	% INTERPRETABLE
1 (½ hour)	2.10.7	316	2.82	100%
2	2.10.29	789	3.27	100%
3 (½ hour)	2.11.18	380	3.08	94%
4	3.0.9	597	3.96	92%
5	3.0.22	614	3.97	100%
6	3.1.16	637	3.52	100%
7	3.2.1	715	4.32	90%
8	3.2.13	789	3.02	90%
9	3.2.28	826	3.04	98%
10	3.3.11	646	3.48	98%
11	3.3.24	783	5.48	88%
12	3.4.8	957	4.25	96%
13	3.4.22	963	4.23	84%
14	3.5.6	838	2.30	96%
15	3.5.24	861	3.63	95%
16	3.6.3	666	3.51	92%
17	3.6.23	680	3.15	89%
18	3.7.7	726	3.54	86%
19	3.7.21	796	3.63	84%
20	3.8.12	904	3.15	78%
21	3.8.29	837	4.03	81%
22	3.9.9	941	3.66	84%
23	3.9.23	836	3.06	94%
	TOTAL	16,997	MEAN 3.56	

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study she is known as "Auntie Jiang." As with Pang Pang, the personalities of the assistant and the child meshed peculiarly well. Here Jiang's quiet, dignified, ingenuity charmed and fascinated the noisy, naughty child, and he came to adore and obey her. Kang Kang's mother had also been my teacher in the past; we became increasingly friendly, and I also spent a good deal of time socializing with this family. Table 2.5 outlines Kang's overall speech output.

SECTION 2.5 THE SESSIONS

2.5.a FREQUENCY

One pilot child, Lao Hu, was taped in seven hour-long sessions in two weeks; Zhong Rong was taped roughly weekly, 9 hours in eight weeks. For the longitudinal project I settled on obtaining an hour of continuously recorded tape every other week for twelve months as being a feasible compromise between comprehensiveness and manageability for an initial project of this kind. Even so, the 64 hour 5,000 page corpus for this project contains far more material than can be analysed here in detail. Every other week seemed to be about the minimum frequency with which I could visit a two-year-old and maintain a familiar relationship and routine without having to start over again with shy introductions, and fascination with the novelty of the mike.

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2.5.b TIME OF DAY

I tried to include a variety of family rituals and routines, particularly in the longitudinal project. However, I coordinated my own job and class schedule with the work hours of four sets of parents and two taping assistants, all of whom worked full time, many of them who moonlighted as well. Meshing all of these commitments with family preferences (no one welcomed taping on weekends or vacations) as well as with the mealtimes, nap times, tired, hungry, and cross times, and bed times of four two-year-olds all meant that I generally taped a given child at the same time of day, as described above. Nonetheless, I did manage to tape quite a range of activities, including eating, dressing and washing, as well as role play and doll play enacting a number of activities not directly taped. In addition, my very frequent social visits enlarged my knowledge of daily activities and routines in these households.

2.5.c EQUIPMENT

For the pilot, I used only one tape recorder, a Sony TC-66, and the microphone which accompanied it. In the longitudinal study, I used this machine and mike with TDK D-60 tape to make the whispered English notes. This setup also picked up a great deal of miscellaneous conversation in the room which the directional mike used for taping the child did not record. My assistant taped the child with an

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AIWA Mimorec TP 12 tape recorder using a Sony F510 directional mike, and TDK AD-60 tape. This gave excellent mobility, fidelity, and sturdy reliability.

2.5.d DUAL TAPING METHOD: ROUTINE OF THE VISIT

For both the pilot and longitudinal projects, I would arrive, greet the child, and chat with the family for quite some time before beginning to tape, in order to give the child a chance to relax and re-accustom himself to my presence, and to begin talking freely once again. We developed a ritual of having the child help me unpack the equipment, open the tape box, insert the tape and so on. This relaxing routine proved quite important to the quality of material I taped; I tried never to begin taping until the child was well relaxed. In Pang Pang's case, this was sometimes up to an hour after I arrived. Once recording began, everyone in the family spoke naturally and went about their business caring for the child, playing with her, doing housework, or whatever. Adult-to-adult conversations were not interrupted nor were arriving guests told to be quiet. Recording was continuous with only one exception. This was when Kang Kang had an exceptionally violent tantrum 15 minutes into tape 8, and I stopped recording for 45 minutes while he recovered, then finished taping the remaining 45 minutes on the tape.

In the pilot, I had played with the child and held the mike myself, trying to limit my conversation with the

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child, making quick whispered notes on the context in English. The parents frequently joined in playing. In the longitudinal study, I explained to the parents that I wanted to include them talking with the child. The assistant would follow the child around the house, playing, conversing with the child, and holding the mike in front of his mouth as much as was feasible. This was not always easy as the children jumped on beds, went to the bathroom, crawled behind couches, and rode their tricycles. The assistant was instructed to converse naturally and relaxedly with the child, but not to worry about trying to elicit speech during long silences, not to direct the conversation much, not to try to produce long lists of names, songs or recitations, but just to be encouraging of and responsive to whatever the child decided to remark on. The assistants were eminently conscientious and successful in adhering to these guidelines, as well as in being friendly but non-directive. This skill made them better recorders than the average family member, who in her desire to have the child recite, tended to pressure the child so much that he would not speak. I appreciated their skills even more when I had to call on substitutes on the three occasions described below.

2.5.e LESS SKILLED ASSISTANTS

On the second tape with Pang Pang, my assistant was not available, and so I asked the grandmother to help me

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and hold the mike. The grandmother was a very intelligent, conscientious woman, and listened carefully to my description of what I wanted. She then held Pang Pang on her lap, carefully keeping the mike in front of her, and spent the hour urging Pang to sing a song, tell a story or say an animal name. Pang said very little. This is also partly due to its being merely her second tape, with her and the grandmother both unfamiliar with the routine.

On Pang's tenth tape I again needed a substitute, and so called on my roommate, a young professional woman who adored children. She had, moreover, listened to hours of my discussions of the difficulties of finding and working with children families and assistants as well as to tapes of the children themselves. She arrived at the house, a total stranger. Pang Pang, most uncharacteristically, took to her instantly and became immediately lively and excited in her presence, and absolutely adored playing with her the whole hour. However, in the substitute's eagerness to please, her desire to elicit a great deal of speech, and her general adherence to normal Chinese speech style to children, the elicitor spent almost the entire tape with her own yes-no questions to Pang Pang, who produced very happy, one-word, rote responses. Another assistant, whom I "auditioned" but did not continue working with, spent an entire 30 minute sample tape urging her 2½-year-old god-daughter to say that the microphone looked like an ice cream cone. These incidents illustrate a normal adult and

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older child Chinese way of interacting with young children. I call these urgently directive question-answer routines the "quiz style" of conversation. The tapes made by the substitutes also illustrate the unusual skill of my regular assistants. Of more general significance, they illustrate the fact that skilled informant work is not the result of mere familiarity with or closeness to the child, and that strangers, even foreign strangers, can do very well in eliciting a great deal of relaxed speech. I could also be more directive with my instructions to assistants than I could to family members. Of course one criterion does not preclude the other, and some mothers were excellent elicitors.

2.5.f CONTEXTUALIZATION TAPING PROTOCOL

At the visit, both tape recorders would be started simultaneously; while the assistant followed the child and the family very closely, I held the second microphone to my mouth as I taped an extremely detailed, almost continuous running description of the situation, the child's activities, facial expression gestures and gaze, as well as major features of adult activities, and misunderstandings. This description was in English because I am more fluent in English than in Chinese. Even so, it was sometimes hard to find words fast enough to make an accurate "sports cast." Having the narration in English did have the unexpected advantage of making it unintelligible to the child, so he

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was not able to be fascinated, distracted, angered or made self-conscious by hearing personal comments on his activities.

I tried to stay in the corner, not to interfere, but still to be able to view all the action. Sometimes this meant moving around quite a bit. I did converse in Chinese with the child, and with other adults, whenever they addressed remarks to me. These conversations sometimes took priority over the narration. This was an entirely self-funded project, so I could not afford video recording. All in all, dual tape recording worked out very well for economy, mobility, comprehensiveness, and naturalness of environment non-interference, as well as in fidelity to the situation. Occasionally, the child would be baffled to hear me speak English, since I had been speaking Chinese just a few minutes before. Kang sometimes asked me to speak Chinese instead. Generally, though, we all got used to this as just another peculiarity of the visits from "Tape Recording Auntie," as the children sometimes called me.

It was a real advantage to have a second researcher adult on hand to help play with the child, handle the machines, pick up dropped items, and converse with the adults and other children. It also provided a second attentive witness to the child's utterances and activities. Making taped notes was not only far more comprehensive than written notes, but synchronized with the timing of

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child's speech which also showed up on the narration tape, though usually not vice versa. And, unlike written notes, it was possible to watch the child constantly while note taking. The second tape was also a safequard backup tape, as well as a source of secondary conversations going on about the room which showed up on the small cheap mike, but not always on the directional mike pointed toward the child.

After the hour-long tapes ran out, the children would help us pack up the tape recorders. We always chatted with the family awhile before leaving, often staying on for tea, a snack, or dinner. At this time we would praise the child's progress, check items that were unclear from the last tape, and collect examples of other things the child had said during the week. The visits usually ended with long rounds of friendly goodbyes, often with the family walking us to the bus stop.

2.5.g THE TRANSCRIPTIONS

I listened carefully to each child tape the same day it was recorded. For the pilot, I made all the transcriptions myself as soon as possible after they were recorded including all speech recorded by all speakers. I reviewed the first four Zhong Rong tapes syllable by syllable with dialectologist Dr. Chen Hsun-cheng of National Taiwan University, and continued to work with him as an informant on the pilot, and the longitudinal project as well. Of

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course any errors in interpretation are mine. For the longitudinal study, I transcribed the first 6 Pang Pang and 10 Kang Kang tapes myself. I personally added all the English contextualization, interlineating it with the Chinese text. (See Figure 2.1 for an example of a transcribed page.)

2.5.h PIN YIN ROMANIZATION

All transcriptions were done in romanized Chinese, using the standard Pin Yin romanization which is official for the mainland Chinese government, libraries and journals worldwide, and now, United States romanizations of Chinese. It is taboo for political reasons in Taiwan. I used romanized transcription not only because I can write an alphabetic transcript much more quickly than Chinese characters, as is also true for native Chinese; but also because romanization can be typed or put into a computer, and because romanizing an utterance, analogous to phonetic transcription, does not impose a rigid decision on the meaning of an unclear word, but preserves its phonetic form alone. Chinese characters do not allow this flexibility since they are all meaning-specific rather than phonetic. Because this is a study of acquisition of syntax, I used fine phonetic transcription only rarely, for very unusually pronounced, or unclear utterances. The transcription includes tone marker diacritics on every syllable. I also romanized Chinese words without a space between compounded

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morphemes, following romanized orthography rather than the morpheme-space-morpheme-space convention for writing Chinese characters. (I.e. diànhuà "telephone" electric talk rather than diàn huà.) The only aspect of romanization I had any difficulty teaching to my transcribers was writing compounded forms together. They understood the principle, and agreed to it, but the morpheme-by-morpheme motor habit was too strong for them to overcome regularly, except for words like zhèi.ge "this and zhèi.yang.zi, "this way."

2.5.i TRANSCRIPTION ASSISTANTS

After having done so many of the transcriptions myself, I hired a mainlander college linguistics student, Francisco Yun-wen Huang, to check my work. After he had mastered the romanization and the voices on the tapes, he began doing the child transcriptions for me. Having had him start out by checking my transcriptions against the tapes was an excellent training technique. Francisco learned Pin Yin very quickly and accurately, and much preferred transcribing in Pin Yin to transcribing in characters. He did meticulously accurate and thorough transcriptions at lightening speed. Our transcriptions were about equally accurate, but his were much faster. He transcribed Kang tapes 11-22, and Pang tapes 7, 8, and 9. Before he was inducted into the army, he trained his younger brother,

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Yun-wen Huang, a college sophomore, to do transcriptions. Yun-wu also did fine transcriptions. I did very extensive informant work with both brothers.

2.5.j CHECKING THE TAPES

After receiving a transcription, I checked it against the master tape, marking in the tape counter numbers at the top of each page, and putting a red line through all corrections, and points of disagreement, which I would then check with the transcriber. We agreed more than 98% of the time. Then I listened to the narration tapes, writing in the English narration coordinated typographically in time with the Chinese texts. I did all English contextualization myself because I had been present as a witness. The adult and other child conversations picked up on the narration tape would be included or expanded in the basic child transcription, which included all child, adult, family, guest or other remarks recorded on the tape. Overheard remarks from the TV, stairwell, adjoining rooms or street were included where they were clearly audible, or, in the case of electronic voices, closely related to what the child was saying. Otherwise, the narration tape merely included a description of what was happening on TV where relevant. (It was often very difficult, if not impossible, to record in the evening without some family member watching TV, though they would sometimes turn off the sound and merely read the subtitles.) It took about 2 hours to check

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an hour of tape, and 4 hours to add in the context. All in all, the transcriptions are extremely comprehensive with one handwritten page typically covering 15 seconds with 4 contextualized notes.

2.5.k CODING AND ANALYSIS

For the pilot study I typed and translated the transcripts. For the longitudinal study I worked directly from the hand-written, contextualized, corrected transcriptions. I coded the data onto grid-like coding sheets which checked for: sentence type, subdivided by imperative type, question types; word order including many permutations, predicate type; complex verbs including perfectives and many types of complements; aspect tallying many specific forms including the -le perfective, the méi "hasn't yet" perfect negative; progressives, iteratives, duratives; time distinctions, classifiers other than the general -.ge; uses of the -de affix as nominalizer, modifier and possessive; sentence final particles, locative co-verbs, and stative verbs. There was a section for writing in their entirety all highly unusual sentences with their utterance numbers; these include columns for tone errors, omission errors, order errors, and all other odd sentences, which were further sub-sorted. Later, all utterances with: -de, -le, hái "still," time expressions, object fronting, and reordering with or without the bǎ object marker; were written out with context, sorted into good and bad

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utterances, then further analysed syntactically and semantically. Totals were tallied by hand. More elaborate descriptions of individual coding schemes come below along with the text describing results for each target category.

FIGURE 2.1

SAMPLE TRANSCRIPTION

TRANSCRIPT OF ONE HANDWRITTEN PAGE

(Individual utterances are typed on separate lines and translations added for this manuscript. This typical page covers 15 seconds of interaction, and includes four English contextual notes, average for the corpus as a whole. Items in parentheses are in the original, while items in brackets are added in this typescript. Here Kang Kang has been playing store with his mother. He has gotten a little mixed up, and although he is the customer, is making change from a box of coins. Numbers in superscript refer to key to symbols below.)

K[ang][1] [Tape #] 10 [Page] -22-

[Tape Counter #]		
147	K[ang]	Àiyá, zhè, bú yào zhǎo.le. [oh dear this not want find perfective]
		["oh dear, no need to look for this one now."]
		(goes back to the money box)
	M[other]	Á? (n.[o] a.[nswer])[2] ["Huh?"]
		(mother laughs. K digs through box.)

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FIGURE 2.1 (Continued)

K[ang] Qián .a?
[money question particle]
["The money?"]
Jianzhuang, wo ba zhei.ge wu / [3]
[pretend I obj. marker this five]

Wǔmáo qián .... [4]
[five dimes money]

["Pretend, I with this five/ five/ fifty cents...."]

Hǎo.buhǎo?
[good not good]

["OK?"]

(gives more money to M[other])

M[other] Hǎo, jiazhuāng wǒ gěi nǐ
[good pretend I give you

.a.
affective particle]

["OK, pretend I give it to you."]

(M[other]) [5]

Zhǎo nǐ wǔmáo qián.
[change you five dimes money]

["I give you 50¢ change."]

(M[other] gives change) [6]

K[ang] Wǒ xiè xiè.
[I thank thank]

["I thank you."]

M[other] Hǎo, yǐhòu/ hǎoyòng.de.huà, .
[ok later good use mod possible]

zàilái mǎi, ha.
[again come buy affirmative particle]

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FIGURE 2.1 (Continued)

["OK, in the future, if it is useful, come buy some more, ok?"

K[ang] Hǎo.
[ok]

FIGURE 2.2

KEY TO SYMBOLS

1. All speakers' names indicated by initials. Unmarked actions in narration insets are all subject-child actions.
2. n.a. = "no answer" for at least 3 seconds.
3. / = a short pause of about 2 or three seconds without sentence final intonation.
   // = a longer pause of about five seconds, without sentence final intonation.
4. .... = sentence trailing off uncompleted.
   . = a full stop indicating sentence final intonation.
5. Speech turns continued onto the next page of manuscript, have speaker's initial in parentheses at top of page.
6. ↓ = Indicates continued activity marked from first notice in contextualization continuing till it ceases.

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FIGURE 2.2 (Continued)

K/10/31-186 -- location number in corpus Kang, Tape 10, Page 31, Counter number 186.

X = Stands in for each untranscribable syllable as in naX.X. "take"? ?

Tone markers are added where possible.

Bracketed underlining marks syllables transcriber is not sure of, wants checked. If they are not crossed out and remain in the text, transcription remains a best-guess rather than a certainty, as in fáng.zi ?"house".

Wavy underlining

Wavy underlining indicates simultaneous speech marked for the entire simultaneous segment, as in

K/10/31-186 (confused roles in playing "wash the baby")

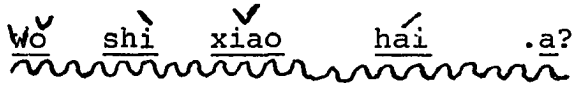
K éi, xiǎo hái, nǐ bāng wǒ cā.yicā
hey little child you help me wipe a wipe

Jiāng Zhèng Kāng.
Kang's given name.

"Say, little child, help me wipe off Jiang Zheng Kang, ok?"

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FIGURE 2.2 (Continued)

M 
wǒ shì xiǎo hái .a?
I copula little child question particle

"I'm a little child, huh?"

K (R) (emphatically disagreeing) Parentheses after the speaker's initial, indicate the person to whom the remark is addressed, if the addressee has not previously been included in the conversation, and self- address. Parenthetic English comments indicate manner of speech, and/or speech act function such as imperative, request, recitation and so on, where not clear from the contents of the utterance itself. Here Kang disagrees with me, the Researcher.

2.5.1 INFORMANT WORK

Besides being privileged to work with the brothers Huang, I was able to check most of the pilot study with Professor Chen Hsun-cheng from the Chinese classics department at National Taiwan University. He also taught at the Stanford Center where I was studying Mandarin. I did less extensive, but extremely useful informant work with two other teachers at the Center, Mrs. Chang Chou Hui-ch'iang

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and Ms. Wu Hui-chun. I also did frequent but informal checking with other Stanford Center Teachers, especially with Ms. Hong Hs'iu-fang and with Ms. Chiang Tz'u, also known as Auntie Jiang. Once I returned to the United States, I was fortunate enough to be able to have Ms. Ying-ling Wang Hansell, a trained anthropologist and field worker, work as my informant in checking all the utterances I found unusual or questionable, a truly monumental undertaking. All of these people did a superb job in terms of depth and ingenuity of their analysis, the breadth of their socio-linguistic judgements, and ingenuity in making their wonderful language somewhat more clear to a foreign researcher. There is no way in which I can thank them adequately. Any errors or problems with the analysis which follows are the result of my own mis-analysis rather than any flaw in their explanations.

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NOTES TO CHAPTER TWO

1. See Li and Thompson 1978 for discussion of Chinese dialects.
2. See Clough pp. 58-9 for language situation in Taiwan. See Gallin for a more general cultural history, also Wolf 1968.
3. See Chao, 1948 pp. 3-18 for history of the use of Mandarin as the official language. See Lehmann 1975 for current review of the sociolinguistic situation on the mainland. A review and summary of Lehmann is available in Wang 1980.
4. See Wang, 1975, ed. also Kessen Chapter 7, pp. 175-184.
5. Compare Yang 1945; Sidel 1973, and Kessen 1975 descriptions of mainland China to descriptions of Taiwan homelife by Wolf 1968, and 1972, as well as Gallin 1966, and Wilson, 1970.
6. We have had already the pleasure of having child psychologists Xiao-chun Miao and Zheng-yuan Xu come to do research at Berkeley.
7. See Dixon 1969 on data.
8. Representative works include Slobin 1967, Ervin-Tripp and Mitchell-Kernan's introduction to their 1977 anthology, and Ochs, 1979.
9. For full description of the pilot study see Erbaugh, 1978.

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10. I would like to thank Professor Su of the Department of Home Economics at National Taiwan Normal University for checking the nursery school registration file, and introducing me to several prospective subjects.

11. See Peters 1977.

12. It is well to remind oneself of the numerous Americans who think Asians can survive on one bowl of rice a day, or that Hong Kong is part of Japan, or that Asians must have trouble seeing through such slanted eyes.
I also realized after my return to the U.S. that it is not just the Chinese who see a foreigner's learning the language as a magical, impossible feat worthy of great comment. I was repeatedly asked by American linguists and psychologists how I could possibly have learned Chinese. (In the clasroom, as an adult.) Was I possibly half Chinese (a genetic facility?) or had my parents been missionaries in China?

13. This attitude of seeking correction is the source of the frequent requests for "criticism and correction" which Chinese officials make to Western tourists to China, and which the Westerners have found so confusing and unsettling.

14. Foreigners working with Chinese should remember that the Chinese find direct refusals, disagreement, and criticism most rude among social equals or addressed toward superiors. "Maybe" in Chinese very often should be translated as English, "I'm sorry, but no,"

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as should "another time" and "when it's convenient." The Westerner should remember to refuse at least twice to give the Chinese the space in which to withdraw from purely formal offers. The person making the offer will follow through with details, times, and dates on repetitions of any offer which he genuinely wants to commit himself to. Once an offer is accepted the maker of the offer must follow through with the commitment, no matter how inconvenient it might be. Newly arrived Americans should not inconvenience new acquaintances by accepting offers to live at their house for free, eat dinner with them every night, be given an escort to the airport, etc. They should also remember that if they do accept, then they and their families are obligated to provide comparable services to the Chinese acquaintance, his family, and friends.

15. Brown's rules for the calculation of Mean Length of Utterance, or MLU are described in detail in Brown, 1973, p. 54. In summary, they call for counting and averaging all the productive morphemes in each complete child utterance for 100 consecutive utterances beginning on the second page of the transcript. Incomplete, or unclear utterances are excluded, as are recitations, and fillers such as "um" and "uh." Exact repetitions are counted, as are emphatic repetions, but stuttered attempts at a single word are counted only once. Diminutives are counted as one word, as is irregular

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past tenses such as "went." Compounds, names, and ritual reduplications count as single words, but auxiliaries such as "can" and inflections for plural, possessive progressive, and regular past are counted.

There have been criticisms of the utility of MLU, particularly for coding highly inflectional languages. One is hard-pressed to determine how many morphemes are productively expressed by a single word article such as the Spanish definite, feminine, plural, article las.

On the face of it, Chinese would seem to be ideally suited to calculation by MLU, since nearly all morphemes are referential, and correspond to only one grammatical function. I did exclude sentence final particles with no clear grammatical function from the tally, that is only LE question and current relevant state, .ne series item, and question-forming .ma were tallied. The difficulties came in determining what was a full, free, productive morpheme for the child at a given stage of development. This had to be based on my estimate of the child's overall productive vocabulary. Generally speaking, both jiǎng and huà in jiǎnghuà (speak talk) "to speak," were counted since each was used separately in other combinations after the early one-word stage. The diàn "electric" in diànhuà (electric talk) "telephone," and diànshì (electric vision)

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"television," did not seem productive. These nouns were scored as single words. It did seem better to calculate an MLU and include it, rather than to omit it from the discussion altogether. The Chinese researchers count every single syllable, each of which is transcribed with a separate character. This gives a higher score than MLU; probably by about 1/3 higher.

Comparing Chinese MLU's cross-linguistically is problematic. The analytic structure of Chinese would tend to inflate MLU, while the strong preference for zero anaphora, and the complete lack of gender, tense, case, and inflectional marking, depress it. Mandarin MLU after the one-word stage seems to be roughly comparable to English, although child Mandarin MLU appears not to increase with age after about MLU 3.0 or 3.5. This is a somewhat lower average than that for English-speaking children for whom increased MLU as a reliable indicator of sentence complexity levels off around MLU 4.0. (Brown p. 54.) Semantic and grammatical complexity continue to develop.

A comparison of <u>adult</u> Chinese and English MLU in a matched setting such as the Chafe "Pear Stories" elicitation film would be more revealing of a cross-linguistic baseline for utterance length and complexity. (See Chafe, 1980, ed.) Cross-linguistic child MLU comparisons could then be adjusted and weighted according to a baseline established for each language.

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CHAPTER THREE

IN A WORD
TEMPLATE CLUES TO WORD CLASS, COMPOUNDS, AND SENTENCE RELATIONS: SEGMENTATION, OMISSION, AND THE ONE-WORD STAGE

SECTION 3.1 INTRODUCTION

Speakers of Chinese have five major syntactic puzzles to solve on hearing or producing any given syllable: 1) What form class does this use of this syllable belong to? Is it basically noun-like or verb-like? 2) In this usage can the syllable stand alone as a full, free word? 3) If not, how must it be compounded or complementized? 4) If the syllable is a predicate here, which of its arguments, actors and things acted upon must be stated within this sentence? 5) If it is not a predicate, what other sentential function does it have?

The cryptotypic,[1] covert nature of the Chinese language leaves word class and sentential functions morphologically unmarked in most cases. Many Chinese words are fluid in their range of possible syntactic roles. The essentially isolating word form, the small and fixed syllabic inventory, high homophony, and continuing phonemic loss all add to the difficulty of assigning a word meaning,

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defining a relationship among parts of a compound, and determining sentential function. At the one-word stage Chinese children have an advantage toward producing error-free speech, since nearly every segment they produce will have some meaning, and be well-formed. Beyond the one-word stage the establishment of form class in compounds and sentential relations becomes difficult. An additional problem is determining which segments are obligatory, and which may be omitted under the highly variable and context-sensitive Chinese system. Strict order rules for compounding and for sentence construction provide the primary clues. A slot-frame or template model works well for Chinese; the more difficult problems come with determining what goes into the frame, and how obligatory its realization is. Fortunately, the children have several advantages in decoding Chinese. These include phonological segmentation clues, as well as distributional clues by which the child is able to segment out one item to substitute into the slot-frame template. Order does not vary, so inserting a new "token" is easy. Questions play an especially important modelling role. Phonological segmentation clues are discussed in Section 3.2; distributional clues are discussed in Section 3.3. The most common child Mandarin error is omission of an obligatory segment. Omissions form about 58% of all child errors. They are about twice as common as misuse errors, which account for about 35% of all errors. Order errors account for only about 7%. Error

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types are discussed in detail in Section 3.4. The chapter concludes with a survey of word class distributions at the early one-word stage.

SECTION 3.2 PHONOLOGICAL CLUES TO SEGMENTATION

While Chinese children do not have many morphological clues to word classes, they do have some very powerful phonological clues for segmentation and class assignment. There is no doubt that a great deal remains to be done in the area of phonetic clues, segmentation, and "chunking" of related segments.[2] Of particular interest in Chinese are the issues of: 1) Neutralization of tone on unstressed segments. 2) Tone sandhi (where citation tone switches to another phonemically different tone before other tone segments.) 3) Baby-talk,[3] with its reduplication, hyper-correct tone, and problems of tone reconstruction. It is only possible to raise a few of the most major phonological issues in a dissertation of this kind.

The most important regularity the Chinese child hears is the small inventory of canonical syllables. There is never any doubt as to what the relevant syllable sequence is, or where a syllable/morpheme begins and ends. Unlike the Semitic speaking child who must struggle to determine how phonetic variants of a single root are related, the Mandarin speaking child has to determine which homophonous forms might have very different meanings and usages in different compounds or sentence roles.

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The second important phonetic clue is phonemic tone on each syllable, which serves as an additional clue to where each syllable/morpheme begins and ends. This is additionally crucial, since modern Mandarin has lost all of its syllable-final consonants other than /n/ /ŋ/ and /r/. These are fast disappearing as well. Open syllables ending with vowels or semivowels are perceptually much harder to distinguish from what follows. The task is a little easier since nearly all Mandarin syllables are consonant-initial rather than vowel-initial. In adult babytalk to children, tones are exaggerated in pitch contour. They are also pronounced on all syllables, rather than being neutralized on unstressed syllables as they are in adult-to-adult or older-child speech, e.g. tùzi "rabbit" rather than tù.zi. Very young Chinese children often have exaggerated pitch ranges on their tones partly because of this input. They may also need exaggerated tone for their own feedback. Gradeschool children, especially little girls, have a special form of babytalk they use to younger children. In it, the second syllable in a compound becomes a high level tone regardless of what the citation tone for that syllable may be.[4] This yields phonetically and semantically aberrant compounds which nonetheless are highly differentiated acoustically. This is especially true since the elongated high level pitch is the most perceptually salient of the tones. For example:

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gǒugǒu "doggie" becomes gǒugou
dog dog

diànhùa "telephone" becomes diànhuà
electric speech

Pang Pang used this special baby-talk register at age 2½ as she pretended to be the mother of her stuffed duckling toys as she bathed them and put them to bed.

The neutralization of tone on unstressed syllables during casual speech is also contrastive. Content words such as nouns and main verbs are very seldom neutralized, while demonstratives, classifiers, negatives, modifiers, co-verbs, and directional or resultative complements often are. In compounds, if both parts of the noun could be full, free nouns, they may not have their tone neutralized i.e. diànhùa, never *dian.hua, or *.dian.hua, with all neutral tone. The head verb in a complex verb with linked complements must also receive full tone, i.e.

nábùchūlai "can't get it out," or ná.buchūlai,
take not out come

but never *.na.bu.chu.lai, with all neutral tones. If the tone is neutralized, tracing meaning is very difficult. Therefore, it is only neutralized on more redundant segments.

This differential in possible tone neutralization can distinguish quite a few otherwise identical pairs. For example: zài "again," and zài "be at, progressive" are completely homophonous, although they are written with different characters. Positionally, they can both come in

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the slot before main verb. However, zài "again" obligatorily receives sentential stress equal to that of the main verb; it can never have neutral tone. In contrast, zài "progressive" can never be stressed as strongly as the main verb. It may, in fact, be de-stressed and given neutral tone.[5] Therefore, what are in isolation complete homophones are always preceptually distinct: (´ marks stress)

Nǐ	zài	zuò	zhèi.ge	"You do it again."
You	again	do	this	
Nǐ	zài	zuò	zhèi.ge.	"You are doing this."
You	be at prog.	do	this	

SECTION 3.3 DISTRIBUTIONAL CLUES

Given prosodic factors and context of usage, the number of truly ambiguous utterances in the corpus is extremely small. Chinese distributes its communicative load across sentences and speech turns far more broadly than does European. Context is always crucial for determining meaning in Chinese. In fact, the Chinese word for "context," shàngxiàwén (above below language) literally "above below language," is vividly evocative of the vertical Chinese writing system. It also suggests the way in which we must listen to the speech before and after a word in order to fully grasp its meaning and usage. In a young child's speech, the context is almost always present in the

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here-and-now. More difficult problems emerge where the context is either not available, where it refers to the "not-here not-now,"[6] or where the "story world"[7] is not sufficiently defined.

The "above and below" context in Chinese also describes the way in which successive Chinese sentences are constructed to have a parallel structure in the order both of form class and of sentential role.[8] For example:

Wǒ	jiějie	zuótiān	zhù.le	yí.ge
I	elder sister	yesterday	cook pfv	one

hóngshāoròu.
red cook meat

Nǐ	jīntiān	xiǎng	chī	shén.me?
You	today	want	eat	what

Translation with order preserved: "My elder sister yesterday cooked some red-cooked meat.

"You today (would) like (to) eat what?"

Parallel structure gives important clues to the child, whether he is merely listening, or actively trying to make an appropriate response. Most ambiguous forms are perfectly clear if context and prior speech are consulted. The preference for parallel form is so strong that, to foreign students of Chinese, the language seems to have been designed by the prolific writer of all the substitution drills ever written for language textbooks. Later, the student discovers that the language really is naturally

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unanimous Chinese opinion is that children must be taught to speak properly and intelligently. This meant that two-year-olds should be drilled on: names of people, animals, shapes, colors, numbers, address, phone number, children's poems, songs, and standard stories. Speech outside this pattern is characterized as "chaotic," luàn, and not rewarded.[11] Politeness routines other than names were not considered important until school age. The style strikingly resembles that presented to the white Appalachian children studied by Shirley Brice Heath.[12]

The Chinese children's substitution drill experience prepares them well for the school system. (Most children begin nursery school at three.) Given the emphasis on memorization in the Chinese school system (students through college are expected to be able to memorize and recite most of their textbooks verbatim),[13] and the morphologically undifferentiated nature of the Chinese language, it may be that the quiz style of conversation has evolved adaptively.

Questions are central to the quiz style of conversation. Both Wh- and yes/no questions set off a single word contrastively in a fixed sentence array. Recall that Chinese adults seldom vary word order in speech to children. The most frequent question to children is:

Zhè	shì	shén.me?	"What's this?"
This	copula	what	

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Here, the demonstrative plus copula pattern clues the child that a noun or stative verb will follow. Shén.me "what" is a nominal, so a nominal must be selected for the answer. A fully-formed answer matches the question form exactly except for substituting in a determiner and a noun, e.g.

Zhè	shì	yì-zhāng	zhǐ.	"This is a sheet of paper."
This	copula	one classifier for flat things	paper	

It is important to note that in Chinese the question word in an interrogative comes in exactly the same order slot required by the declarative form, an extremely powerful modeling device for both word order functions and word class properties. Standard order is: SUBJECT, TIME, PLACE, MANNER, NEGATIVE, VERB, OBJECT. (See Chapter Four on order.) For example:

"What" (subject)	Q.	Shén.me dōngxi hǎo-chī? What thing good eat	"What is good to eat?"
	A.	Yú hǎo-chī. Fish good eat	"Fish is good to eat."
"What" (object)	Q.	Nǐ chī shén.me? You eat what	"What are you eating?" "What do you eat?"
	A.	Wǒ chī yú. I eat fish	"I eat fish."
"Who" (subject)	Q.	Shéi chī yú? Who eat fish?	"Who eats fish?"
	A.	Wǒ chī yú. I eat fish	"I eat fish."
"Whom" (object)	Q.	Yú chī shéi? Fish eat who	"Whom does the fish eat?"
	A.	Yú chī huài rén. Fish eat bad person	"The fish eats the bad person/bad people."

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"When"	Q.	Ni shén.me shíhòu You what time chī yú? eat fish	"When do you eat fish?"
	A.	Wǒ wǎnshàng chī yú. I night on eat fish	"I eat fish in the evening."
"Where"	Q.	Ni zài shén.me You be at what dì.fang chī yú? place eat fish	"Where do you eat fish?"
	A.	Wǒ zài hǎi.bian I be at seaside chī yú. eat fish	"I eat fish at the seashore."
Amount	Q.	Ni chī.le You eat pfv duōshao? much little	"How much did you eat?"
	A.	Wǒ chī.le sān I eat pfv three wǎn. bowl	"I ate three bowls full."
"How" agent-subject (also means "how come" or "why")	Q.	Ni zěn.me chī yú? You how eat fish	"How do you eat fish?" "How come you eat fish?"
	A.	Wǒ zhèi.yang chī I this way eat yú. fish	"I eat fish like this."
	A.	Wǒ yīnggāi chī yú. I must eat fish	"I must eat fish."

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"How" (patient-subject)	Q.	Fàn yào zěn.me chī? Rice want how eat	"How is rice eaten?" "How (does one) eat rice?"
	A.	Fàn yào zhèi.yang chī. Rice want this way eat	"Rice gets eaten this way." "One eats rice like this."
		(Note: Yú zěn.me chī? Fish how eat	is ambiguous out of context between "How is fish eaten?" and "How do fish eat?")

Notice how all the above questions make perfect substitution-drills for inculcating that: subject or topic-nouns come sentence-initial; patients are sentence-final; and verbs are medial between the subject and the object if both are realized. The pre-verbal slot for marking time, place, manner, and negative is also highlighted in a very regular way.

Yes/no questions are formed by a verb, followed by a linked negative, then a repetition of the verb. This is the V-not-V construction. Since Chinese has no single word for "yes" or "no," the verb must be repeated in the answer, in negated form where appropriate. For example:

Nǐ chī bù chī yú? You eat not eat fish		"Do you eat fish?"
Wǒ bù chī yú. I don't eat fish		"I don't eat fish." (Habitually)
Wǒ chī yú. I eat fish		"I eat fish." (Habitually)

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While children do well at answering simple V-not-V questions, they have difficulty segmenting compound verbs, particularly verb + object compounds, such as jiǎnghuà (speak talk) "to speak." In such cases, it is the head verb which must be copied in the reply. Copying the object complement is optional. Kang and the other children had some trouble with this:

Example 3.1 Kang Tape 8 (3.2)

(Mother reprimands him, reminding him of an earlier scolding.)

Mother	Māmā jīntiān gěi nǐ Mama today give you jiǎng.le hěn duō huà, talk pfv very much talk shì .bù shì? copula not copula	"Mama said a lot of things to you today, didn't she?"
Kang	*Méi yǒu ø huà. Not have talk	*"Haven't talk."

Here the proper answer might have copied the copula, producing bú shì (not copula) "(you) didn't." Evidently Kang was aiming for an alternative reply, the fullest well-formed version of which would have been, méi yǒu jiǎnghuà, (not have speak talk) "(you) didn't say (anything)."

Copying any of the verbs in the mother's question would have produced a well-formed answer. Kang, however, only copied the incorporated noun complement, huà, "talk."

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The full verb, "to speak," is either jiǎnghuà, literally "speak talk," or shūohuà "say talk." They are very common in child speech.

It is important to note here that Kang's utterance, out of context, is a perfectly well-formed utterance with an entirely different meaning. The phonetic sequence /huà/ means "draw." It is written with a different character. With this meaning, méi yǒu huà (not have draw) means, "(I or someone) haven't drawn (one.)" As such, it is well-formed as an answer to a question like, "have you drawn (one)" nǐ huà.le méi yǒu? (You draw pfv not have) Note that context and word meaning alone allow differential interpretation of the identical phonetic strings. About 10% of the children's errors consisted of sentences which are well-formed with a different meaning.

Compound verbs and compound nouns are often indistinguishable on the basis of surface form jiǎnghuà (speak talk) "to speak," and diànhuà (electric talk) "telephone" have identically divisible surface structure, yet one can be used only as a noun, one only as a verb. The verb morphemes can be separated by negatives and a variety of linked complements and aspect markers. The noun dianhua "telephone" is not separable, and not usable as a verb. Unlike English, Chinese nouns can never be used as verbs; this is not a productive process in the modern language.[14] However any

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very may be used nominally, or nominalized with the -.de affix, e.g. dǎ mǎtǒng.de literally "what you 'do' the
do toilet nom

toilet with," a "plunger." The child's task is to learn which forms are nouns, which are verbs; which compounds are separable, which not, where and how.

This is the area where Chinese children expend most of their energy on word-play, variation, joking and experiment since this is truly the central puzzle the language presents to them.[15,16] Note how this contrasts with the almost total lack of play and experimentation with word order, something which is quite fixed and so already "out there." Similarly, we do not find sound-play with segmentals to form syllables which do not already exist in the language, although there are many canonically possible syllables which simply happen not to be realized. These are analogous to English syllables like "blick." Children do play with systematically varying tone; this enters into their word-class play.

For example, Pang looked around the room and chanted rhythmically to herself as I bounced her on my knee.

Example 3.2 Pang Tape 14 (2.5)

Dìanhùa.	Dìanhùa.	"Telephone. Telephone."
electric talk	electric talk	
Shùijiào.	Shùijiào.	"Sleep. Sleep."
Sleep rest	sleep rest	

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Dianhua	haoma.	"Telephone number."
electric talk	number figure	
Deng,	deng,	deng.	"Lamp, lamp, lamp."
Lamp	lamp	lamp	

Here Pang uses parallel forms all the way through three sets of two-morpheme compounds. This childish word-play is very similar to the metrics for Chinese verse, and the prescribed form for traditional rhetorical style in which lines of equally numbered and stressed syllables are also matched by class. In verse, tones are matched in parallel series as well. In Pang's speech the first two lines are all high falling tones, the third line is three high falling, then a high rising. The fourth line is all high level tones; also in the fourth line, all the words begin with /d/. Dianhua "telephone," and shuijiao "sleep," are both bi-syllabic compounds; but one is a noun, and one a verb.

This analytic strategy and awareness of homophones across form classes shows up in one of Kang's jokes. Here it is important to remember that the hua meaning "talk," is a homophone with the verb "to draw," as well as with the noun meaning "a drawing."

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Example 3.3 Kang Tape 19 (3.7)

(waving mike in air)

Kang	"Kè!" Hùa, huàzi.		"Bam! Draw, draw-character."
	Bam draw draw character		
Mother	Um? Nǐ shūo shén.me?		"Huh? What did you say?"
	Huh? You say what?		
Kang	(laughs) Wǒ shūohùa/		"I'm talking / I'm draw character-ing."
	huàzi.		
	I speak talk draw character		

Kang was not only making a pun on hùa to mean both "write" and "draw," but he has also coined a new verb, quite an evocative one given the ideographic nature of Chinese characters. "To draw-write," "to draw - characters," huazi, is formed on an analogy with the standard draw character word for "to write," xiezi, literally to "write-characters." Kang was three-and-a-half years old when he said this, not yet able either to write, or to draw very representationally. The concepts are understandably melded together in his mind.

Zhong Rong independently produced a very similar coinage:

Example 3.4 Zhong Rong Tape 8 (2.8)

(drawing)

Jiejie	xiehua.	"Big sister write-draws."
elder sister	write draw	

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Determining which segments of a compound may be separated by a noun or quantifier and which must stay compounded is quite difficult for the child. For example, Kang once said:

Example 3.5 Kang Tape 4 (3;0)

(wants to talk to Mother)

*Wǒ	yào	jiǎng	nǐ	huà.		*"I want to talk you."
I	want	speak	you	talk.		
(for: Wǒ	yào	gěi	nǐ	jiānghuà.		"I want to talk to you.")
I	want	give	you	speak talk		

Kang had been led astray by the models of infixed quantifiers, direct objects, and negatives, as in:

Wǒ	jiǎng.le	hěn	duō	huà.	"I said a lot of things."
I	speak pfv	very	much	talk	
Wǒ	shēngqì.le.				"I got mad."
I	birth anger pfv				
Wǒ	shēng.le	tā.de	qì.		"I got mad over him."
I	birth pfv	him/her mod	anger		
Wǒ	kànjiàn.le.				"I saw (it)."
I	look perceive pfv.				
Wǒ	kàn.bujiàn.le.				"I couldn't see (it)."
I	look neg perceive pfv				

Kang did not yet understand that while it is possible to divide a verb compound in the above constructions, indirect objects where an action is directed toward another person may not be infixed. Shēng tā.de qì "get mad (birth him mod anger) over him/her," expresses the source of one's anger; the anger may not have been displayed toward that person at all.

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If one wants to express having displayed one's anger toward another person, the same stricture holds. One must not break up the compound shēngqì "get angry," but say:

Wǒ	gēn	tā	shēngqì.le,	"I got angry with
I	with	him/her	birth anger pfv	

him/her," "I showed anger toward him/her." Mis-segmentation of compounds is evidence of the child's analytic, monosyllabic hypothesis.[17]

Other than words in isolation, the constructions most amenable to crossed or merged form-class usage are those whose pivotal morpheme may be followed by the greatest variety of word classes. These include:

1) Shì, the copula, which may be followed by a noun or by a stative verb followed by nominalizing .de, as in:

Zhè	shì	Māmā.	"This is Mama."
This	cop	Mama	

Zhèi.ge	shì	hǎo	nánkàn.de.	"This is really ugly."
This	cop	very	ugly nom.	

Shì also co-occurs with the zài progressive in emphatic constructions:

Tā	shì	zài	niànshū.	"S/he is studying."
S/he	cop	prog	read book	

2) Yào, "want," may take either a nominal or a verbal complement, including a full clause. There are no surface markers distinguishing these different types of complementation. For example:

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Wǒ	yào	Māmā.	"I want Mama."
I	want	Mama	
Wǒ	yào	tiàowǔ.	"I want to dance."
I	want	dance	
Wǒ	yào	Māmā tiàowǔ.	"I want for Mama to dance."
I	want	Mama dance	

3) Lái, "come," and qù "go," mark both movement and future action.

E.g. Wǒ	lái	tiàowǔ.	"I'm going to dance."
I	come	dance	
Wǒ	lái	Táibei tiàowǔ.	"I come to Taipei to dance." (habitual.)
I	come	Taipei dance	
Wǒ	lái.le	Táibei tiàowǔ.	"I have/had come to Taipei to dance."
I	come pfv	Taipei dance	
Tā	yào	qù Táibei.	"S/he wants to go to Taipei."
s/he	want	go Taipei	
Tā	yào	qù Táibei tiàowǔ.	"S/he wants to go to Taipei to dance."
s/he	want	go Taipei dance	

4) Méi yǒu, "haven't," can mark either perfective negative or non-possession:
not have

Wǒ	méi	yǒu tiàowǔ.	"I haven't danced."
I	not	have dance	
Wǒ	méi	yǒu qián.	"I don't have any money."
I	not	have money	

While European languages have special de-verbalized forms such as participles, gerunds, and infinitives for use in constructions calling for nominalized case, the Chinese verbs are invariant even when a verb functions as the subject. For example:

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Wǒ	zài	tiàowǔ.	"I'm dancing."
I	prog.	dance	
Wǒ	huì	tiàowǔ.	"I can dance."
I	can	dance	
Wǒ	xǐhuan	tiàowǔ.	"I like to dance."
I	like	dance	
Tiàowǔ	zhēn	hǎowán.	"Dancing is really fun."
Dance	true	good play	"To dance is really fun."

It was just such a flexible sentence frame which evoked another of Kang's cross-word-class jokes. Here it is crucial to know that the jiǎng in jiǎnghuà "to speak" or "to say" is an exact homophone with the surname of Kang's Auntie Jiang, who had just handed him the microphone.

Example 3.6 Kang Tape 11 (3.3)

(Playing TV show announcer about to introduce "Auntie Jiang" at his mother's suggestion.)

Wǒ	jiǎng,	wǒ	jiǎng,	wǒ	jiǎng,	"I say, I say, I say, I say, I'm Auntie Jiang!"
I	say	I	say	I	say	
wǒ	jiǎng,	wǒ	Jiǎng	Àyí!		
I	say	I	Jiang	Aunt		

Here the allowable copula deletion permitted Kang to switch meanings midway through the sentence as he searched for a proper nominal object-complement to jiǎng "say."

In Chinese, positional clues help indicate word class and sentential function. However, relying on order alone means that if an element of the sentence is missing, then the segment which is realized seems to slip and occupy the

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slot for the omitted sentence function. The realized word seems to shift form classes and meanings. The very frequent omission of main verbs in sentences which have adverbs means that the adverbs sound like main verbs, and appear to function as verbs by default:[18] For example:

(wants another toy)

*Wǒ	hái	Ø	zhèi.ge		*"I also Ø this."
I	also		this		
used for: Wǒ	hái	yào	zhèi.ge.		"I also want this."
I	also	want	this		

Auxiliaries frequently seem to slip as well:

*Wǒ	huì	Ø	gǒugǒu.		"I can Ø doggie."
I	can		doggie		
used for: Wǒ	huì	huà	yí.ge	gǒugǒu	"I can draw a doggie."
I	can	draw	one	doggie	

Very rarely, the missing main verb may also cause a noun to slide into the sentence-medial verb slot:

Example 3.7 Lao Hu Tape 4 (2.0)

(watches sister feed doll)

*wǒ	tāng	Ø	tā.				"I soup her."
I	soup		her				
(for wǒ	bǎ		tāng	gěi	tā	chī.	"I give her the soup
I	object marker		soup	give	her	eat	to eat.")

It seems fairer to score such omissions of obligatory sentence elements as omissions of the segment required rather than to assume an intentional cross-class usage.

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That is, this example is better classified as missing the main verbs gěi "give," and chī "eat," than as a verbal use of the noun tāng "soup," translatable as "to soup someone." A purely order-based strategy would suggest a verbal meaning to "soup." Such a usage would be in harmony with the historical pattern for Sino-Tibetan, which does allow some nouns to be used as verbs. It is not possible for modern Chinese; and the children almost never produced forms with the noun in the verb slot. It is better to code this as an omission error.

SECTION 3.4 ERROR TYPES

Child Mandarin errors fall neatly into three major categories: omitted obligatory elements, misused elements, and order errors. "Sins of omission" outnumber "sins of commission" by about two to one. Omission errors are overwhelmingly the most frequent, comprising about 58% of all errors. Misuse errors are only about half as frequent at 35%, while only 7% of all errors are order errors. (See Table 3.1) While coding order and misuse errors is fairly straightforward, and not much different from what one finds for European languages, the classification of omission errors merits some further discussion.

It may seem a risky enterprise to characterize something that "isn't there" and to fault the child for its non-occurrence, but it is almost always possible to reconstruct the element which is missing in a given context

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TABLE 3.1

OVERALL ERROR RATES FOR FOUR CHILDREN

CHILD	OMISSION ERRORS		MISUSE ERRORS		ORDER ERRORS		TOTAL ERRORS	
	#	% all errors	#	% all errors	#	% all errors	#	% all utt.
LAO HU* (2.0.0 to 2.0.14)	95	60%	52	31%	15	9%	159	7%
PANG (1.9 to 2.11)	390	56% (rising)	277	40% (rising)	31	4% (rising)	698	6% (rising)
ZHONG RONG (2.6 to 2.8)	269	56% (rising)	128	30% (falling)	48	12% (falling)	445	10% (rising)
KANG (2.10 to 3.9)	866	59% (falling)	565	37% (constant)	53	4% (constant)	1,484	10% (rose, then fell.)
MEAN FOR ALL FOUR CHILDREN:		58%		35%		7%		8%

* Lao Hu was only taped for two weeks, so there is no longitudinal change for him.

decisively as a main verb, auxiliary, possessive, or some other specific part of speech. It is usually possible to supply the specific word omitted on the basis of prior or following speech. Of course, it is impossible to be absolutely certain of the child's intention, particularly if he appeared not to feel that a missing form was required as evidenced by not attempting self-correction or expansion.

Bloom has cautioned against rich interpretations of non-realized elements in utterances such as her "mommy sock" example, because of the very broad range of possible meanings for such concatenations. She argues that early, child-designed, usage classes are not isomorphic with adult usage.[19] Accepting Bloom's cautions, I have nonetheless scored the corpus for errors of omitted obligatory sentential elements. These are omission of: main verb, head verb in compound, auxiliary verb, co-verb, linked verb complement, locative complements, the bǎ object marker, part of a compound noun or compound verb, modifier, possessive, or determiner. 'Obligatory' means that, in the discourse context, the simplest grammatically-full form requiring the least number of possible added elements is used as a comparison. Where possible, the reconstructed form retains the child's original order of elements.

I feel confident of the worth of this procedure for several reasons. First, in context it is nearly always possible to determine what the child's target meaning was. Secondly, the nature of the Chinese language makes omission

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of obligatory elements profoundly disruptive and confusing, more so even than similar omissions in English, not to mention in more highly inflected languages with greater redundancy, where omissions are easily tolerated, or even preferred. Omissions were extremely frequent in child Chinese, and were by far the greatest source of misunderstanding and requests for clarification from the adults. Finally, and most importantly, classifying, counting, and analyzing the omissions proved to be an illuminating means for investigating the child's generalizations. The omissions pattern in a way that is highly regular across children, clearly rule-governed, and developmentally ordered. It is unconscionable to discard such a valuable part of the data. It is always possible in later analysis to merge several categories of omissions, and to treat them as undifferentiated non-occurrences of many potentially elaborated adult forms. But if a broad, preliminary, coding category merges a variety of error types, it is not possible to analyze them in more detail without doing a re-coding, generally a tremendous task. Ignoring omissions or scoring them together with more fully realized utterances is not faithful either to the child's successes with fuller forms, nor to the ingenuity of his working generalizations which reveal so much about his mental processes. With these caveats in mind, I count omissions as full-fledged errors.

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It is as important to understand the patterning of omitted forms in child language as it is to analyze the realized forms. The "holes" or openwork sections in a piece of lace are just as important to the overall design as are the individual stitches or threads which one actually touches and twists in knitting, or in mending and reconstructing the design.

At the earliest one-word stage, the Chinese child has an advantage over European language speakers. Almost any syllable he produces will have some meaning assignable to it which his hearers will eagerly reconstruct. Zero anaphora and the lack of inflectional morphology make single morpheme utterances acceptable and well-formed in many contexts. Lao Hu and Pang, the youngest two children, had the lowest overall error rates; 7% and 6% respectively.

Speech errors as a whole rise as the child grows more mature and enters the two-word stage. The possibilities for omitting a sententially important segment increase greatly with greater sentential complexity. (See Table 3.1, Graph 3.1.) Speech errors for the two youngest children show statistically significant overall rises for both of them.

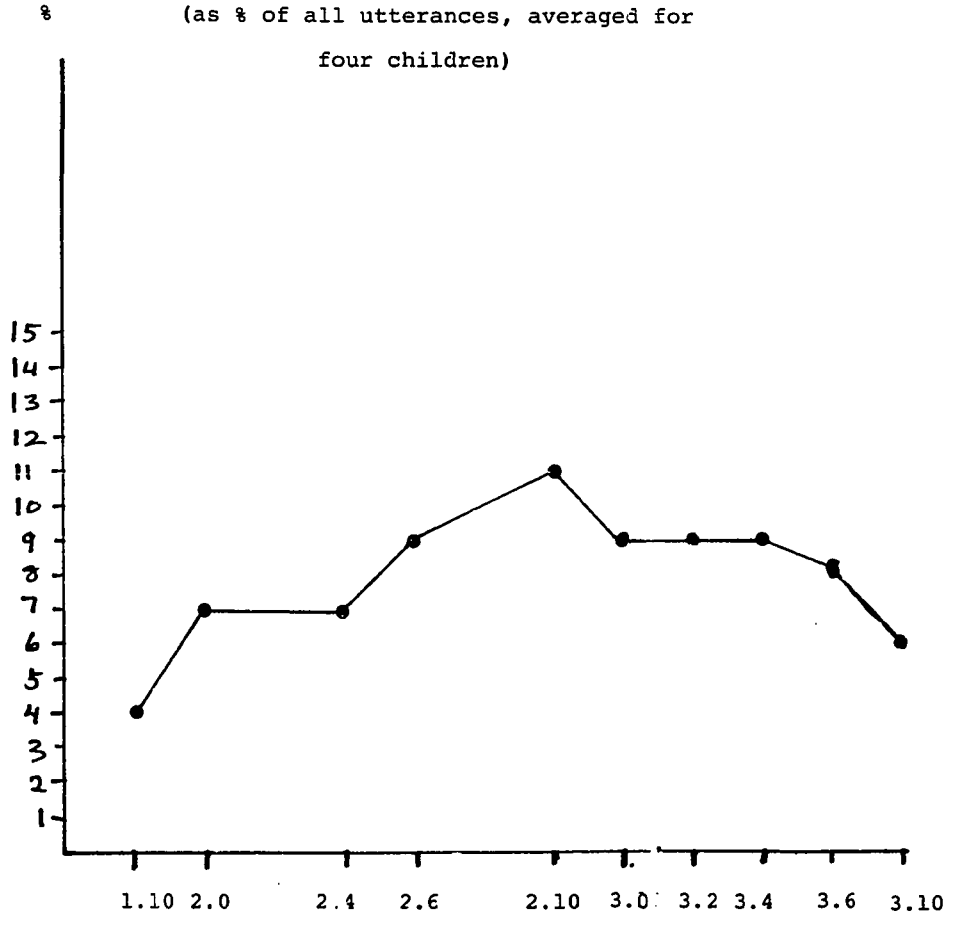
Pang's omission, misuse, and order errors all increased during her entire year's taping span. (Refer to Graphs 3.2, 3.3, 3.4, 3.5). There was a huge jump in her error rate from 7% on the penultimate tape up to 20% on her last tape at 2.10. This same last tape also showed a

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GRAPH 3.1

AGE AND ERROR RATE

(as % of all utterances, averaged for four children)



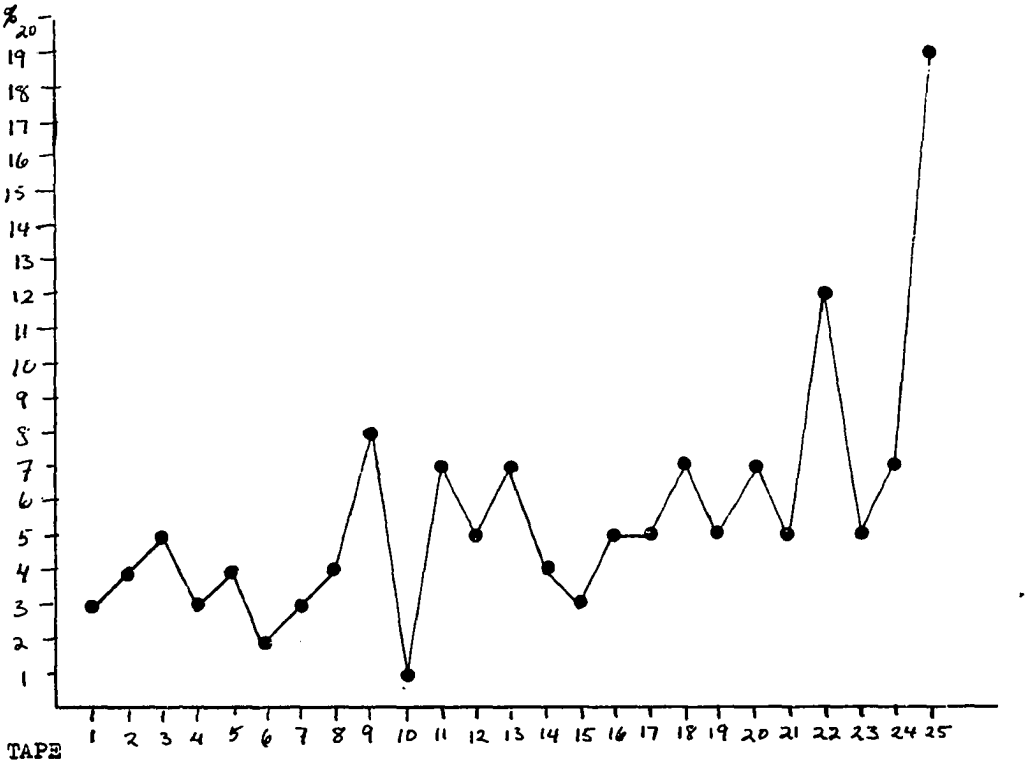
r = .56

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GRAPH 3.2

ERROR RATE - PANG

(As % of all utterances)



Total number of errors N = 674

Mean overall error rate, 6%

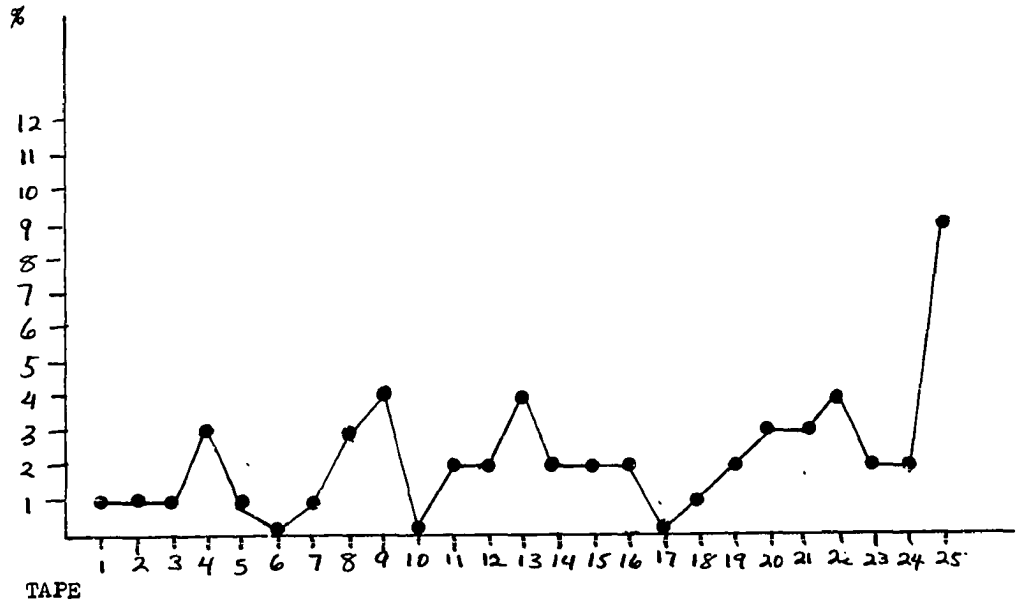
r = .36

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GRAPH 3.3

MISUSE ERRORS - PANG

(as % of all utterances)



Total misuse errors N = 246

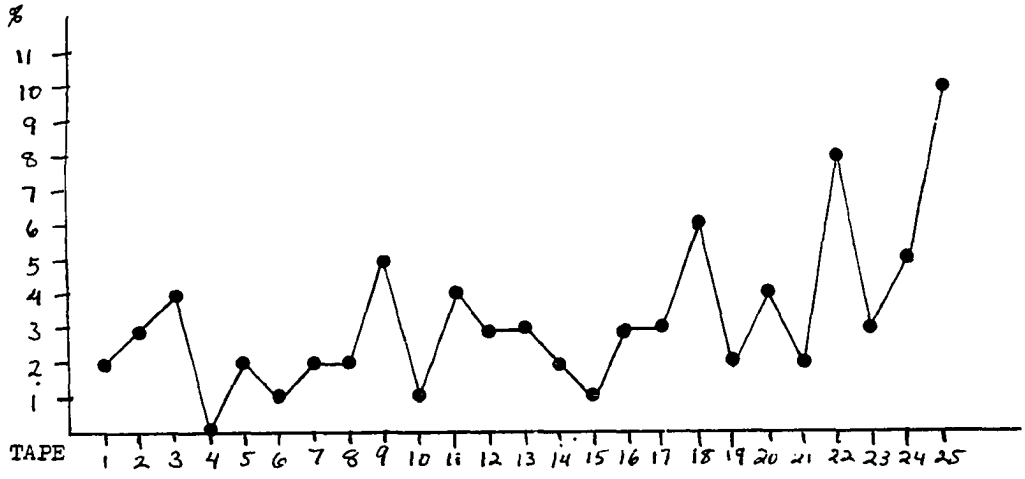
Mean rate 2%

r = .32

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GRAPH 3.4

OMISSION ERRORS - PANG
(as % of all utterances)



Total omission errors N = 397

Mean omission rate 3%

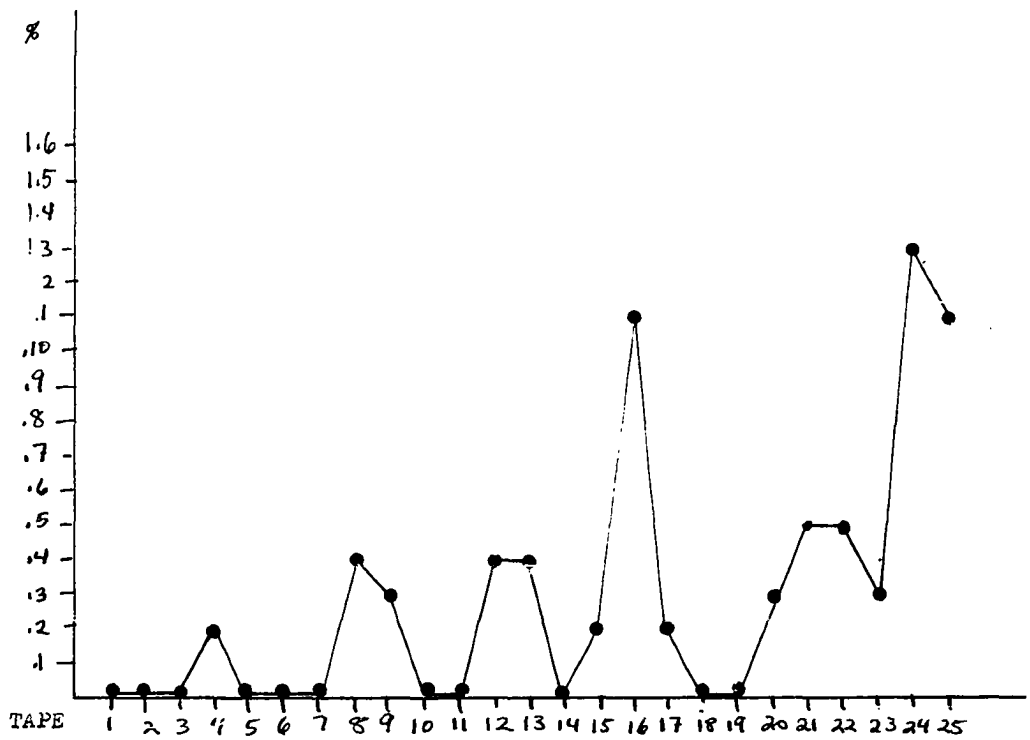
r = .53

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GRAPH 3.5

ORDER ERRORS - PANG

(as % of all utterances, to .1%)



Total number order errors N = 31

Mean overall order error rate 4%

r = .54

(constant order error rate for Kang)

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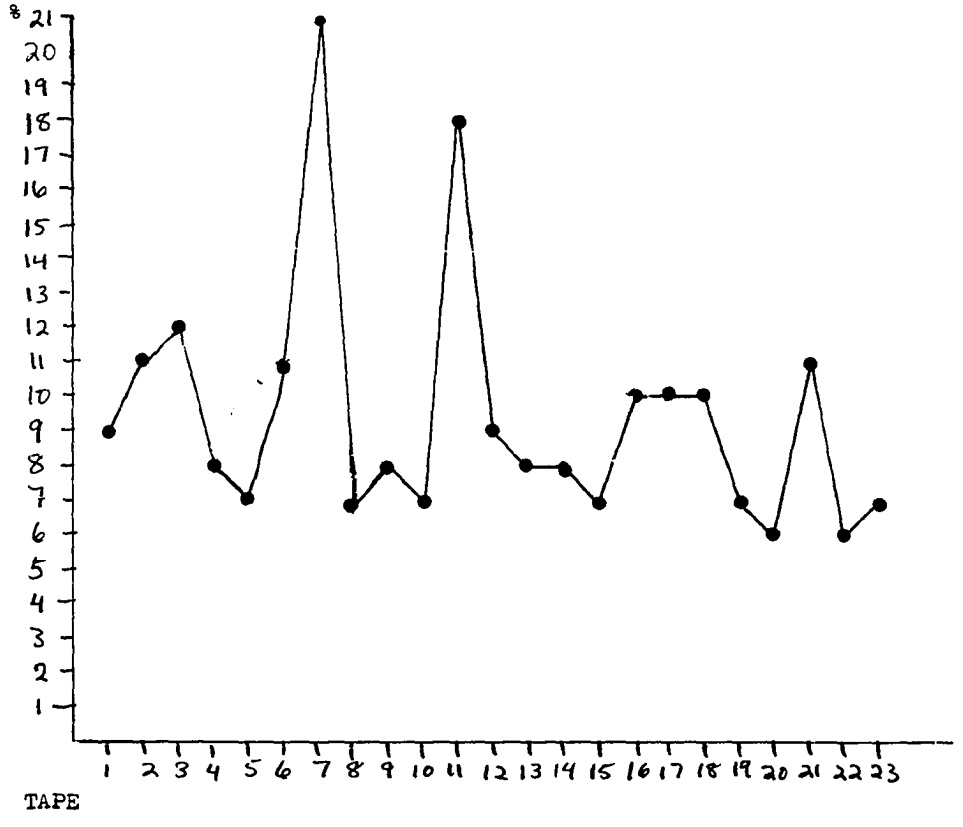
tremendous increase in object fronting, time and manner marking, cohesive devices, and many other complex forms. Pang had evidently reached a kind of "critical mass" for syntactic complexity shortly before the end of the study. Her greater error rate reflects her greater innovations. The only error type which decreased at a statistically significant rate was misuse of -.de for nominalization and possessive. All other error types increased, including: misused bǎ object marker, verb choice, adverb choice. Order errors increased, as did problems with omission of obligatory: auxiliary verbs, coverbs, -.de for modification of object, time adverbs, instrumentals, perfective -.le, and main verb. Nearly all Pang's order errors reflect her struggles with marking either the location of an action, or in doing discourse topicalization.

Kang's overall error rate rose, then declined. (Graph 3.6.) This indicates that after age three he had acquired most important sentential relations, and was increasingly likely to include all the sentential elements required. Evidence for this hypothesis comes from the fact that his omission errors declined while his misuse and order errors remained constant. The fall in omissions was strong enough to make his overall error rate show a decline despite there being no change in order or misuse errors. (See Graph 3.7) Kang's order errors, like Pang's, nearly all involved discourse reordering and topicalization with bǎ. His misuse errors were usually inappropriate choice of a co-verb,

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GRAPH 3.6

ERROR RATE - KANG



Total number of errors N = 1,448

Mean error rate 10%

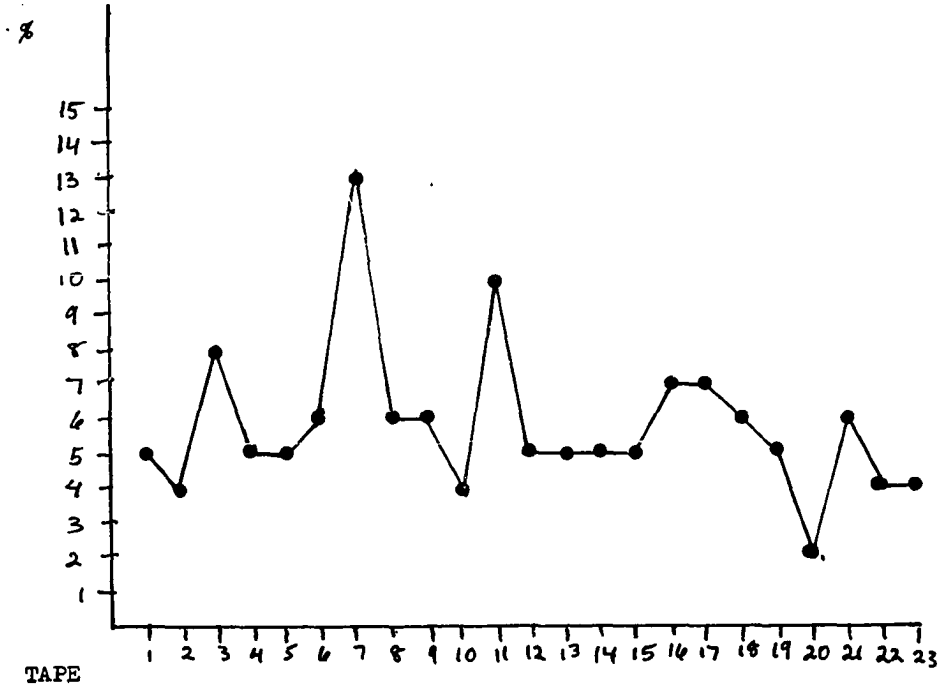
r = -.32

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GRAPH 3.7

OMISSION ERRORS - KANG

(as % all utterances)



Total omission errors N = 866

Mean rate 6%

r = -.31

(Total misuse errors N = 529, mean rate 4%. No statistically significant change in frequency, r = -.18.)

(Total order errors N = 53, less than 1% of all utterances. No significant change in rate.)

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verb, or adverb. His most common omissions were missing auxiliary or main verb. Usually in these cases he had produced one verb, either an auxiliary or a main, but generalized that the verb "slot" only had room for one verb, either an auxiliary or a main verb, but not both. In contrast to Pang and Zhong Rong, not one of Kang's error types showed a statistically significant increase. Misuse error types showing significant declines were: time; auxiliary; directional or resultative complement; extra determiner; and extra gěi "give" benefactive. This indicates that he was passing out of the stage of double-marking of reference and directionality. Omission errors which showed a statistically significant decline were: omitted yào "want," yòng "use," or instrumental; missing head-verb in a compound; and missing verb complement. This shows that at the word-formation level, his speech was nearly mature, while problems remained in the sentential and discourse realms.

An analysis of the five most common errors Pang and Kang made is revealing. (Table 3.2) The five most frequent errors account for 44% of all of Pang's errors, and 31% of Kang's. (Kang made many more different sorts of errors than Pang, 56 possible sorts rather than 28.) The results for both children are strikingly similar. For both the most frequent error is lack of a main verb. Almost invariably such constructions do have an auxiliary, a negative, a time, or a manner word which is "occupying" the

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TABLE 3.2

FIVE MOST FREQUENT ERRORS

PANG AND KANG

PANG				KANG			
RANK	ERROR	N	% ALL ERRORS	RANK	ERROR	N	% ALL ERRORS
1	No main verb	81	12%	1	No main verb	159	11%
2	Bad verb choice	65	10%	2	No -de modifier	122	9%
3	No -de modifier	61	9%	3	Bad verb choice	91	4%
4	Bad adverb	51	7%	4	No object	81	4%
5	No auxiliary verb	44	6%	5	No auxiliary	74	3%
TOTAL			44%				31%

verbal slot before a noun object. The inverse of this situation, omission of an auxiliary verb, is also among the five most frequent errors for both children. Typically, auxiliaries mark potential actions rather than actions which have already taken place. Their omission indicates difficulty with describing a hypothetical situation as opposed to one which has actually happened. Both missing main verb and missing auxiliary indicate limited space in the verb slot. These two errors combined formed 18% of all of Pang's errors, and 14% of Kang's.

"Bad verb choice " errors include using fàng "put," rather than cā "wipe," to describe applying salve; or using lái "come," to mean "bring." These were the second most frequent error for Pang, and third most frequent for Kang. Omitted -.de modifier was the second most frequent error for Kang, and the third most frequent for Pang. Pang's -.de errors are mostly on undermarked possessives and nominalizations, while Kang's problems are usually unmarked manner adverbial, and unmarked relative clause. The only error of the top five not shared by both children is ranked fourth for both of them. For Pang this was bad adverbial choice, usually a bad time or aspect modifier. The fourth-ranked error for Kang was missing object. Kang's omitted object usually occurred in a complex sentence where topicalization with or without bǎ required a dummy placeholder object.

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Looking at these errors cross-culturally, bad or inappropriate verb choice is a problems for children world-wide before their vocabularies mature. The other errors seem to be particular to Chinese. This is especially true of the missing main verb and missing auxiliary problems which are the result of a tight slot-frame analysis favored by the great fluidity of possible predicates in Chinese. The missing -.de modifier is also peculiar to Chinese although, as a grammatical functor, its omission resembles errors of unmarked number, case, gender, possession, and relativization produced by speakers of inflected languages. The very broad scope of possible -.de functions merges many categories of error under misuse of one form. Bad adverb and missing object, while not unique to Chinese, have more serious consequences in a language where all time relations and most aspect relations are marked adverbially, and where there is no inflectional marking of objects.

The predominance of omission errors over usage errors reflects the lexically-oriented, semantically full structure of Chinese. The relative rarity of order errors is tribute to the great clarity and regularity of Chinese order, as well as to its critical role in establishing reference. The children's mastery of order demonstrates both its accessibility to children and the importance they attach to its proper use.

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Complete tables of all errors types for both Pang and Kang follow. Table 3.3 lists Pang's omission errors; Table 3.4 is Pang's misuse and order errors. Table 3.5 is Kang's omission errors, Table 3.6 is Kang's misuse errors, and Table 3.7 is Kang's order errors. These detailed tables are intended to serve as references for all the more specific discussion of errors in subsequent chapters.

SECTION 3.5 THE ONE-WORD STAGE AND EARLY WORD CHOICE

Even at the very beginning of speech in the early one-word stage, vocabulary is spread across a variety of the most representative form classes. Words which are reduplicated, compounded, or complex in more advanced baby-talk, or in standard speech, are reduced to a single morpheme. This reflects the basically monosyllabic organization of Sino-Tibetan. The single-word utterances express a large range of speech acts including: naming; general declaratives; vocatives; questions; requests; exclamations for happiness or frustration; imitations of animal noises; and some social routines. These include thanking someone or wishing them a happy Chinese New Year, then requesting the New Year's gift of money which children traditionally receive wrapped in a red envelope. The most important semantic and speech act functions are there from the very beginning; the range of early usage is similar to that for Western children.[20]

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TABLE 3.3

OMISSION ERRORS - PANG
(AS % ALL UTTERANCES in 1/10's of a Percent)

OMITTED ELEMENT	TAPE 1		2		3		4		5		6		7	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
SHI COPULA	1	.2	-	-	1	.2	-	-	-	-	3	.5	-	-
YAO "WANT"	2	.4	-	-	-	-	-	-	-	-	-	-	-	-
YONG "USE"	-	-	-	-	1	.2	-	-	-	-	-	-	-	-
AUXILIARY	1	.2	1	.4	-	-	-	-	-	-	-	-	2	.4
CO-VERB	-	-	-	-	-	-	-	-	-	-	2	.4	-	-
MAIN VERB	1	.2	2	.8	7	1.9	-	-	-	-	-	-	1	.2
DIRECTIONAL COMPLEMENT	-	-	2	.8	-	-	-	-	2	.3	-	-	-	-
RESULTATIVE COMPLEMENT	-	-	-	-	-	-	-	-	1	.2	-	-	1	.2
BA OBJECT MARKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
OBJECT	-	-	-	-	1	.2	-	-	-	-	-	-	-	-
TIME	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-.DE MODIFIER	1	.2	1	.4	1	.2	1	.2	3	.5	1	.2	2	.4
LE PERFECTIVE	-	-	-	-	-	-	-	-	1	.2	-	-	2	.4
DETERMINER	3	.7	1	.4	-	-	-	-	-	-	-	-	1	.2
PART OF NOUN COMPOUND NOUN	-	-	-	-	5	1.4	-	-	3	.5	1	.2	-	-
TOTAL OMISSIONS	9		7		16		1		10		7		9	

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TABLE 3.3 (Continued)

OMITTED ELEMENT	TAPE 8 #	8 %	9 #	9 %	10 #	10 %	11 #	11 %	12 #	12 %	13 #	13 %	14 #	14 %
SHI COPULA	-	-	-	-	-	-	1	.2	-	-	-	-	1	.2
YAO "WANT"	-	-	-	-	-	-	7	1.4	-	-	1	.2	-	-
YONG "USE"	-	-	3	.9	-	-	1	.2	-	-	-	-	1	.2
AUXILIARY	-	-	2	.6	-	-	4	.7	3	.6	-	-	-	-
CO-VERB	-	-	-	-	1	.2	-	-	-	-	3	.6	-	-
MAIN VERB	-	-	1	.3	2	.4	4	.7	2	.4	5	1.2	1	.2
DIRECTIONAL COMPLEMENT	-	-	-	-	-	-	-	-	2	.4	-	-	-	-
RESULTATIVE COMPLEMENT	-	-	3	.9	-	-	-	-	2	.4	1	.2	-	-
BA OBJECT MARKER	-	-	1	.3	-	-	-	-	-	-	-	-	-	-
OBJECT	-	-	1	.3	-	-	-	-	1	.2	-	-	-	-
TIME	-	-	-	-	-	-	-	-	-	-	2	.4	-	-
-.DE MODIFIER	2	.7	3	.9	1	.2	5	.8	3	.6	-	-	8	1.8
LE PERFECTIVE	2	.7	1	.3	-	-	2	.3	1	.2	1	.2	-	-
DETERMINER	-	-	1	.3	2	.4	-	-	-	-	-	-	-	-
PART OF NOUN COMPOUND NOUN	1	.4	1	.3	-	-	3	.5	-	-	-	-	-	-
TOTAL OMMISSIONS	5		17		6		27		14		13		11	

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TABLE 3.3 (Continued)

OMITTED ELEMENT	TAPE 15 #	15 %	16 #	16 %	17 #	17 %	18 #	18 %	19 #	19 %	20 #	20 %	21 #	21 %
SHI COPULA	-	-	-	-	-	-	1	.2	1	.2	-	-	-	-
YAO "WANT"	-	-	-	-	-	-	-	-	-	-	2	.3	-	-
YONG "USE"	-	-	-	-	-	-	3	.6	-	-	3	.5	-	-
AUXILIARY	-	-	-	-	5	.8	4	.8	5	.8	3	.5	-	-
CO-VERB	-	-	2	.5	2	.5	7	1.4	1	.2	1	.2	-	-
MAIN VERB	2	.4	3	.8	2	.4	4	.8	4	.7	6	.9	1	.3
DIRECTIONAL COMPLEMENT	-	-	-	-	-	-	3	.6	-	-	1	.2	-	-
RESULTATIVE COMPLEMENT	1	.2	1	.3	-	-	-	-	1	.2	1	.2	1	.3
BA OBJECT MARKER	-	-	-	-	1	.2	4	.8	-	-	-	-	2	.5
OBJECT	1	.2	-	-	-	-	-	-	-	-	-	-	-	-
TIME	-	-	-	-	-	-	2	.4	-	-	-	-	-	-
-.DE MODIFIER	-	-	3	.8	1	.2	2	.4	2	.3	1	.2	2	.5
.LE PERFECTIVE	-	-	1	.3	-	-	-	-	-	-	3	.5	2	.5
DETERMINER	-	-	-	-	-	-	-	-	-	-	3	.5	-	-
PART OF NOUN COMPOUND NOUN	-	-	1	.3	1	.2	4	.8	-	-	-	-	2	.5
TOTAL OMISSIONS	4		11		12		34		14		24		10	

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TABLE 3.3 (Continued)

OMITTED ELEMENT	TAPE 22 #	22 %	23 #	23 %	24 #	24 %	25 #	25 %	TOTAL N	STATISTICALLY SIGNIFICANT TRENDS r = ____
SHI COPULA	2	.4	-	-	2	.4	1	.2	14	-----
YAO "WANT"	1	.2	1	-	-	-	1	.2	14	-----
YONG "USE"	5	.9	-	-	2	.4	1	.2	20	+ .34
AUXILIARY	2	.4	-	-	6	1.1	6	1.3	44	+ .35
CO-VERB	4	.7	-	-	3	.5	2	.4	28	+ .44
MAIN VERB	11	2.0	9	2.1	4	.7	9	2.0	81	+ .49
DIRECTIONAL COMPLEMENT	3	.5	-	-	-	-	9	2.0	22	-----
RESULTATIVE COMPLEMENT	2	.4	-	-	3	.5	2	.5	20	-----
BA OBJECT MARKER	-	-	-	-	-	-	-	-	8	-----
OBJECT	4	.7	-	-	2	.4	4	1.0	14	+ .42
TIME	1	.2	-	-	-	-	4	1.0	9	+ .38
-.DE MODIFIER	4	.7	2	.5	4	.7	8	1.8	61	+ .33
-LE PERFECTIVE	5	.9	-	-	1	.2	3	.7	25	+ .37
DETERMINER	1	.2	-	-	-	-	3	.7	15	-----
PART OF NOUN COMPOUND NOUN	-	-	-	-	-	-	-	-	22	-----
TOTAL OMISSIONS	45		12		27		53		397	

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TABLE 3.4

MISUSE AND ORDER ERRORS - PANG

MISUSED FORM	TAPE 1		2		3		4		5		6		7	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
RESULT	-	-	-	-	-	-	-	-	-	-	-	-	1	.2
-.DE	1	.2	-	-	-	-	7	1.6	5	.9	1	.2	2	.4
COINAGE	1	.2	1	.4	1	.2	2	.4	-	-	-	-	1	.2
SHI COPULA	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.LE PERFECTIVE	1	.2	-	-	-	-	-	-	6	1.0	-	-	-	-
BA OBJECT MARKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SENTENCE FINAL PARTICLE	-	-	1	.4	-	-	-	-	-	-	-	-	-	-
VERB CHOICE	-	-	1	.4	1	.2	1	.2	-	-	1	.2	-	-
DIRECTION	-	-	-	-	2	.4	-	-	-	-	-	-	-	-
EXTRA AUX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BAD NOUN	-	-	-	-	-	-	-	-	1	.2	-	-	-	-
BAD ADVERB	-	-	-	-	-	-	-	-	-	-	1	.2	-	-
ORDER	-	-	-	-	-	-	1	.2	-	-	-	-	-	-
TOTAL	3		3		4		11		12		3		4	

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TABLE 3.4 (Continued)

MISUSED FORM	TAPE 8 #	8 %	9 #	9 %	10 #	10 %	11 #	11 %	12 #	12 %	13 #	13 %	14 #	14 %
RESULT	1	.4	-	-	1	.2	2	.3	1	.2	2	.4	-	-
-.DE	1	.4	3	.3	-	-	2	.3	3	.6	4	.8	-	-
COINAGE	4	1.6	2	.6	1	.2	-	-	1	.2	3	.6	-	-
SHI COPULA	-	-	-	-	-	-	-	-	.1	.2	-	-	-	-
.LE PERFECTIVE	-	-	-	-	-	-	-	-	-	-	2	.4	-	-
BA OBJECT MARKER	-	-	1	.3	-	-	1	.2	-	-	1	.2	.1	.2
SENTENCE FINAL PARTICLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VERB CHOICE	-	-	2	.6	-	-	3	.5	5	1.0	4	.8	1	.2
DIRECTION	-	-	-	-	-	-	1	.2	-	-	-	-	-	-
EXTRA AUX	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BAD NOUN	-	-	1	.3	-	-	1	.2	-	-	1	.2	-	-
BAD ADVERB	-	-	3	.6	-	-	1	.2	1	.2	1	.2	2	.4
ORDER	1	.4	1	.3	-	-	-	-	2	.4	2	.4	-	-
TOTAL	7		13		2		11		14		20		4	

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TABLE 3.4 (Continued)

MISUSED FORM	TAPE 15 #	15 %	16 #	16 %	17 #	17 %	18 #	18 %	19 #	19 %	20 #	20 %	21 #	21 %
RESULT	-	-	-	-	-	-	-	-	-	-	1	.2	2	.5
-.DE	-	-	1	.3	-	-	-	-	-	-	-	-	-	-
COINAGE	-	-	-	-	-	-	-	-	1	.2	4	.6	3	.8
SHI COPULA	-	-	-	-	-	-	-	-	-	-	1	.2	-	-
.LE PERFECTIVE	-	-	-	-	-	-	1	.2	2	.3	3	.5	-	-
BA OBJECT MARKER	-	-	-	-	-	-	1	.2	2	.3	3	.5	1	.3
SENTENCE FINAL PARTICLE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
VERB CHOICE	6	1.3	2	.5	1	.2	3	.6	8	1.3	2	.3	2	.5
DIRECTION	-	-	-	-	-	-	-	-	-	-	1	.2	-	-
EXTRA AUX	-	-	-	-	-	-	1	.2	-	-	-	-	-	-
BAD NOUN	-	-	1	.3	-	-	-	-	-	-	1	.2	-	-
BAD ADVERB	3	.6	-	-	-	-	1	.2	3	.5	2	.3	6	1.5
ORDER	1	.2	4	1.0	1	.2	-	-	-	-	1	.2	1	.3
TOTAL	10		8		2		7		16		19		15	

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TABLE 3.4 (Continued)

MISUSED FORM	TAPE 22 #	22 %	23 #	23 %	24 #	24 %	25 #	25 %	TOTAL N	STATISTICALLY SIGNIFICANT TRENDS r =
RESULT	-	-	2	.5	-	-	1	.2	14	-----
-.DE	-	-	-	-	-	-	3	.7	33	- .32
COINAGE	2	.4	1	.2	-	-	3	.7	31	-----
SHI COPULA	-	-	-	-	-	-	-	-	2	-----
.LE PERFECTIVE	2	.4	-	-	-	-	3	.7	20	-----
BA OBJECT MARKER	1	.2	-	-	1	.2	1	.2	14	+ .47
SENTENCE FINAL PARTICLE	1	.2	-	-	-	-	-	-	2	-----
VERB CHOICE	4	.7	2	.5	5	.9	11	2.4	65	+ .60
DIRECTION	-	-	-	-	-	-	-	-	4	-----
EXTRA AUX	-	-	-	-	-	-	-	-	1	-----
BAD NOUN	1	.2	1	.2	1	.2	-	-	9	-----
BAD ADVERB	6	1.1	4	.9	4	.7	13	2.9	51	+ .66
ORDER	3	.5	2	.5	7	1.3	4	1.0	31	+ .54
TOTAL	20		12		18		39		277	

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TABLE 3.5

OMISSION ERRORS - KANG
(as number, and as % all utt.)

OMITTED FORM	TAPE 1 #	1 %	2 #	2 %	3 #	3 %	4 #	4 %	5 #	5 %	6 #	6 %	7 #	7 %
YOU "HAVE"	1	.3	-	-	1	.3	1	.2	-	-	-	-	-	-
SHI COPULA	2	.6	1	.1	-	-	-	-	1	.2	3	.5	1	.2
YAO "WANT"	3	1.0	3	.4	2	.6	4	.8	3	.6	7	1.1	9	1.4
YONG "USE"	1	.3	-	-	-	-	1	.2	1	.2	2	.3	-	-
AUXILIARY	1	.3	2	.3	3	.9	3	.6	4	.8	3	.6	10	1.6
MAIN VERB	-	-	6	.8	3	.9	8	1.6	6	1.2	6	.9	20	3.1
CO-VERB	-	-	-	-	-	-	1	.2	1	.2	2	.3	5	.8
TIME	-	-	-	-	1	.3	-	-	-	-	-	-	2	.3
DIRECTIONAL COMPLEMENT	-	-	-	-	2	.6	-	-	-	-	-	-	1	.2
RESULTATIVE COMPLEMENT	-	-	-	-	-	-	1	.2	-	-	1	.2	4	.6
-DE MODIFIER	4	1.3	5	.6	7	2.0	-	-	3	.6	2	.3	3	.5
SUBJECT	-	-	2	.3	-	-	-	-	3	.4	-	-	1	.2
OBJECT	3	1.0	4	.5	-	-	4	.8	4	.8	2	.3	10	1.6
BA OBJ MARKER	-	-	2	.3	-	-	-	-	1	.2	2	.3	2	.3
OBJECT IN CLAUSE	-	-	3	.4	2	.6	-	-	-	-	-	-	-	-
HEAD VERB IN COMPOUND	1	.3	2	.3	2	.6	1	.2	2	.4	-	-	3	.5
COMPLEMENT IN VERB COMPOUND	-	-	-	-	2	.6	1	.2	1	.2	-	-	-	-
NOUN IN COMPOUND	1	.3	7	.9	-	-	1	.2	-	-	1	.2	8	1.2
-LE PERFECTIVE	-	-	2	.3	2	.6	2	.4	-	-	7	1.1	2	.3
ADVERB	-	-	-	-	-	-	1	.2	-	-	-	-	2	.3
LOCATION	-	-	-	-	-	-	1	.2	-	-	1	.3	-	-
GEI "GIVE"	-	-	-	-	-	-	-	-	-	-	-	-	1	.2
DETERMINER	-	-	-	-	-	-	-	-	-	-	-	-	1	.2
COUNTERFACTUAL	-	-	1	.1	-	-	1	.2	-	-	-	-	1	.2
TOTAL	17		40		27		31		30		39		86	

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TABLE 3.5 (Continued)

OMITTED FORM	TAPE 8 #	8 %	9 #	9 %	10 #	10 %	11 #	11 %	12 #	12 %	13 #	13 %	14 #	14 %
YOU "HAVE"	-	-	-	-	-	-	-	-	-	-	1	.1	-	-
SHI COPULA	-	-	1	.1	2	.3	6	.9	4	.4	2	.2	2	.2
YAO "WANT"	1	.2	3	.4	1	.2	3	.4	1	.1	1	.1	-	-
YONG "USE"	-	-	1	.1	-	-	-	-	1	.1	2	.2	-	-
AUXILIARY	4	.6	1	.1	-	-	6	.9	4	.4	2	.2	4	.4
MAIN VERB	5	.8	2	.2	5	.8	16	2.3	12	1.3	11	1.4	2	.2
CO-VERB	2	.3	1	.1	1	.2	1	.2	3	.3	5	.6	6	.7
TIME	-	-	-	-	-	-	-	-	-	-	-	-	3	.3
DIRECTIONAL COMPLEMENT	-	-	1	.1	-	-	1	.1	-	-	3	.3	-	-
RESULTATIVE COMPLEMENT	1	.1	1	.2	1	.2	1	.1	1	.1	1	.1	3	.4
-DE MODIFIER	8	1.3	7	.9	8	1.3	11	1.6	8	.9	3	.3	6	.7
SUBJECT	-	-	2	.2	2	.3	3	.4	-	-	-	-	1	.1
OBJECT	2	.3	7	.9	2	.3	5	.7	4	.4	3	.3	3	.3
BA OBJ MARKER	4	.6	1	.1	-	-	2	.2	-	-	2	.2	1	.1
OBJECT IN CLAUSE	-	-	-	-	-	-	1	.1	1	.1	-	-	-	-
HEAD VERB IN COMPOUND	2	.3	-	-	1	.2	-	-	3	.3	1	.1	-	-
COMPLEMENT IN VERB COMPOUND	-	-	-	-	-	-	-	-	-	-	-	-	1	.1
NOUN IN COMPOUND	1	.1	1	.1	1	.2	1	.1	2	.2	2	.2	2	.2
-LE PERFECTIVE	1	.2	7	.9	3	.5	1	.1	-	-	3	.3	3	.3
ADVERB	1	.2	1	.1	-	-	1	.1	1	.1	-	-	2	.2
LOCATION	-	-	2	.2	-	-	-	-	1	.1	1	.1	2	.2
GEI "GIVE"	-	-	-	-	-	-	1	.1	-	-	-	-	-	-
DETERMINER	1	.2	-	-	-	-	5	.7	2	.2	-	-	-	-
COUNTERFACTUAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	33		39		27		65		48		43		41	

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TABLE 3.5 (Continued)

OMITTED FORM	TAPE 15 #	15 %	16 #	16 %	17 #	17 %	18 #	18 %	19 #	19 %	20 #	20 %	21 #	21 %
YOU "HAVE"	-	-	1	.2	1	.2	-	-	-	-	1	.1	1	.1
SHÌ COPULA	-	-	1	.2	-	-	3	.5	2	.3	-	-	1	.1
YÀO "WANT"	3	.4	-	-	1	.2	1	.2	-	-	1	.1	-	-
YÒNG "USE"	-	-	-	-	-	-	1	.2	1	.1	1	.1	-	-
AUXILIARY	5	.6	4	.7	6	1.0	3	.5	4	.6	3	.4	1	.1
MAIN VERB	7	.9	2	.4	9	1.5	10	1.6	7	1.1	2	.3	9	1.2
CO-VERB	-	-	1	.2	3	.5	3	.5	3	.5	-	-	2	.2
TIME	3	.4	3	.6	-	-	-	-	-	-	-	-	2	.2
DIRECTIONAL COMPLEMENT	-	-	-	-	-	-	-	-	-	-	-	-	-	-
RESULTATIVE COMPLEMENT	3	.4	-	-	-	-	-	-	1	.1	2	.3	3	.4
-DE MODIFIER	8	.9	9	1.3	8	1.3	6	1.0	2	.3	1	.1	3	.4
SUBJECT	2	.2	1	.2	-	-	2	.3	-	-	1	.1	-	-
OBJECT	1	.1	5	.8	1	.2	4	.7	3	.5	-	-	5	.7
BǍ OBJ MARKER	1	.1	4	.7	1	.2	1	.2	-	-	-	-	1	.1
OBJECT IN CLAUSE	-	-	-	-	-	-	-	-	-	-	-	-	2	.2
HEAD VERB IN COMPOUND	-	-	-	-	-	-	-	-	-	-	-	-	1	.1
COMPLEMENT IN VERB COMPOUND	-	-	1	.2	-	-	-	-	-	-	-	-	-	-
NOUN IN COMPOUND	-	-	4	.7	4	.7	-	-	-	-	-	-	3	.4
-LE PERFECTIVE	3	.4	2	.4	2	.4	-	-	-	-	2	.3	6	.9
ADVERB	1	.1	-	-	1	.2	1	.2	3	.5	-	-	3	.4
LOCATION	-	-	-	-	-	-	1	.2	-	-	-	-	5	.7
GĚI "GIVE"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DETERMINER	-	-	-	-	1	.2	-	-	5	.7	-	-	-	-
COUNTERFACTUAL	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	37		38		38		36		31		14		48	

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TABLE 3.5 (Continued)

OMITTED FORM	TAPE 22 #	22 %	23 #	23 %	TOTAL N	STATISTICALLY SIGNIFICANT CHANGE IN USAGE RATE
YOU "HAVE"	-	-	1	.1	9	---
SHI COPULA	1	.1	-	-	33	---
YAO "WANT"	-	-	-	-	47	r = -.73
YONG "USE"	-	-	-	-	12	r = -.35
AUXILIARY	-	-	1	.1	74	---
MAIN VERB	9	1.1	2	.2	159	---
CO-VERB	2	.2	3	.2	45	---
TIME	-	-	-	-	14	---
DIRECTIONAL COMPLEMENT	-	-	-	-	8	---
RESULTATIVE COMPLEMENT	1	.1	1	.1	26	---
-DE MODIFIER	5	.6	5	.6	122	---
SUBJECT	-	-	-	-	20	---
OBJECT	3	.3	6	.8	81	---
BA OBJ MARKER	2	.2	3	.3	30	---
OBJECT IN CLAUSE	-	-	3	.3	12	---
HEAD VERB IN COMPOUND	-	-	-	-	19	r = -.71
COMPLEMENT IN VERB COMPOUND	-	-	-	-	6	r = -.33
NOUN IN COMPOUND	-	-	1	.1	40	---
-LE PERFECTIVE	6	.8	4	.5	58	---
ADVERB	-	-	-	-	18	---
LOCATION	-	-	-	-	14	---
GEI "GIVE"	-	-	-	-	2	---
DETERMINER	-	-	-	-	15	---
COUNTERFACTUAL	-	-	-	-	3	---
TOTAL	29		30		866	

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TABLE 3.6

MISUSE ERRORS - KANG

MISUSED FORM	TAPE 1		2		3		4		5		6		7	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
RESULT	1	.3	1	.1	1	.3	-	-	1	.2	-	-	-	-
DIRECTION	-	-	5	.6	1	.3	1	.2	2	.4	3	.5	2	.3
-.DE	-	-	2	.3	1	.2	1	.2	1	.2	3	.5	2	.3
COIN NOUN	-	-	1	.1	-	-	-	-	3	.6	4	.6	3	.5
COIN VERB	1	.2	2	.3	-	-	-	-	-	-	-	-	2	.3
SHÌ COPULA	1	.3	1	.1	-	-	1	.2	1	.2	-	-	1	.2
-.LE PERFECTIVE	3	1.0	6	.8	2	.6	-	-	3	.6	-	-	5	.8
DOUBLE -.LE	-	-	-	-	-	-	1	.2	2	.4	-	-	-	-
BǍ OBJECT MARKER	-	-	1	.1	-	-	-	-	-	-	-	-	-	-
SENTENCE FINAL PARTICLE	-	-	4	.5	-	-	-	-	-	-	1	.2	-	-
VERB CHOICE	2	.6	5	.6	1	.3	-	-	4	.8	5	.8	11	1.7
NOUN CHOICE	-	-	-	-	1	.3	1	.2	2	.4	-	-	-	-
ADVERB	2	.6	3	.4	2	.6	-	-	2	.4	2	.3	4	.6
EXTRA AUX	-	-	-	-	-	-	1	.2	1	.2	1	.2	1	.2
BAD AUX	-	-	1	.1	-	-	1	.2	1	.2	3	.5	1	.2
GĚI "GIVE"	-	-	1	.1	-	-	-	-	-	-	-	-	-	-
TĀ "S/HE"	-	-	1	.1	-	-	-	-	1	.2	-	-	-	-
EXTRA DETERMINER	-	-	1	.1	-	-	-	-	-	-	-	-	-	-
BAD DET.	-	-	2	.3	-	-	-	-	-	-	-	-	-	-
TIME	-	-	3	.4	-	-	2	.4	2	.4	2	.3	-	-
NEGATIVE	-	-	-	-	1	.3	-	-	-	-	-	-	2	.3
LOCATIVE	-	-	-	-	1	.3	2	.4	-	-	-	-	-	-
CONJUNCTION	-	-	-	-	1	.3	-	-	-	-	-	-	-	-
REFLEXIVE	-	-	-	-	1	.3	-	-	-	-	-	-	1	.2
QUESTION	-	-	-	-	-	-	1	.2	2	.4	-	-	-	-
CLASSIFIER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YǑU "HAVE"	-	-	-	-	-	-	1	.1	-	-	-	-	-	-
TOTAL	10		40		13		13		28		24		35	

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TABLE 3.6 (Continued)

MISUSED FORM	TAPE 8 #	8 %	9 #	9 %	10 #	10 %	11 #	11 %	12 #	12 %	13 #	13 %	14 #	14 %
RESULT	1	.2	-	-	1	.2	2	.2	-	-	-	-	-	-
DIRECTION	-	-	-	-	2	.3	4	.6	1	.1	3	.3	2	.2
-.DE	-	-	-	-	1	.2	2	.2	6	.7	2	.2	1	.1
COIN NOUN	-	-	2	.2	1	.2	3	.4	-	-	1	.1	2	.2
COIN VERB	1	.2	1	.1	-	-	2	.2	-	-	-	-	-	-
SHÌ COPULA	-	-	-	-	2	.3	3	.4	3	.3	1	.1	-	-
-.LE PERFECTIVE	1	.2	2	.2	1	.3	4	.6	1	.1	1	.1	4	.4
DOUBLE -.LE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BǍ OBJECT MARKER	1	.2	1	.1	-	-	-	-	1	.1	-	-	-	-
SENTENCE FINAL PARTICLE	-	-	1	.1	1	.2	-	-	-	-	-	-	-	-
VERB CHOICE	3	.5	3	.3	3	.5	15	2.2	2	.2	2	.2	2	.2
NOUN CHOICE	-	-	2	.2	3	.5	-	-	1	.1	1	.1	1	.1
ADVERB	1	.2	2	.2	1	.2	5	.7	2	.2	2	.2	7	.9
EXTRA AUX	-	-	-	-	1	.2	-	-	2	.2	-	-	2	.2
BAX AUX	-	-	-	-	1	.2	-	-	2	.2	-	-	2	.2
GĚI "GIVE"	1	.1	-	-	-	-	-	-	-	-	-	-	-	-
TĀ "S/HE"	-	-	3	.3	-	-	-	-	-	-	1	.1	1	.1
EXTRA DETERMINER	-	-	-	-	1	.1	-	-	3	.4	1	.1	2	.2
BAD DET.	1	.2	1	.1	-	-	-	-	-	-	-	-	-	-
TIME	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEGATIVE	-	-	-	-	-	-	4	.6	3	.3	1	.1	-	-
LOCATIVE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CONJUNCTION	-	-	-	-	2	.3	7	1.0	5	.6	1	.1	-	-
REFLEXIVE	1	.2	-	-	-	-	2	.2	-	-	1	.1	-	-
QUESTION	-	-	-	-	1	.1	-	-	-	-	2	.2	-	-
CLASSIFIER	-	-	1	.2	-	-	-	-	1	.1	-	-	-	-
YǑU "HAVE"	-	-	-	-	-	-	2	.2	1	.1	-	-	-	-
TOTAL	11		19		22		55		34		20		26	

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TABLE 3.6 (Continued)

MISUSED FORM	TAPE 15 #	15 %	16 #	16 %	17 #	17 %	18 #	18 %	19 #	19 %	20 #	20 %	21 #	21 %
RESULT	-	-	2	.4	-	-	-	-	-	-	-	-	-	-
DIRECTION	-	-	1	.2	-	-	-	-	1	.1	3	.4	-	-
-.DE	-	-	1	.2	-	-	-	-	1	.1	3	.4	-	-
COIN NOUN	1	.1	-	-	5	.8	2	.3	1	.1	-	-	4	.6
COIN VERB	-	-	1	.2	-	-	5	.8	-	-	-	-	-	-
SHÌ COPULA	3	.4	-	-	2	.4	-	-	1	.1	-	-	-	-
-.LE PERFECTIVE	3	.4	-	-	1	.2	3	.5	2	.3	6	.9	5	.7
DOUBLE -.LE	-	-	1	.2	-	-	2	.3	-	-	1	.1	-	-
BǍ OBJECT MARKER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
SENTENCE FINAL PARTICLE	1	.1	3	.6	-	-	2	.3	1	.1	-	-	-	-
VERB CHOICE	1	.1	12	2.0	1	.2	2	.3	2	.3	-	-	6	.9
NOUN CHOICE	1	.1	-	-	-	-	-	-	-	-	1	.1	-	-
ADVERB	-	-	-	-	1	.2	1	.2	1	.1	6	.9	9	1.3
EXTRA AUX	-	-	-	-	-	-	-	-	1	.1	-	-	-	-
BAD AUX	-	-	-	-	1	.2	-	-	-	-	-	-	-	-
GĚI "GIVE"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TĀ "S/HE"	-	-	-	-	3	.6	-	-	-	-	-	-	2	.2
EXTRA DETERMINER	-	-	-	-	-	-	-	-	1	.1	2	.3	-	-
BAD DET.	-	-	-	-	-	-	-	-	-	-	1	.1	-	-
TIME	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEGATIVE	1	.1	-	-	-	-	2	.3	-	-	2	.3	2	.2
LOCATIVE	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CONJUNCTION	-	-	-	-	-	-	-	-	-	-	1	.1	-	-
REFLEXIVE	-	-	-	-	-	-	1	.2	-	-	-	-	-	-
QUESTION	2	.4	-	-	2	.4	1	.2	2	.3	1	.1	-	-
CLASSIFIER	-	-	-	-	-	-	-	-	-	-	-	-	-	-
YǑU "HAVE"	-	-	-	-	-	-	-	-	1	.1	1	.1	-	-
TOTAL	13		21		16		21		15		28		28	

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TABLE 3.6 (Continued)

MISUSED FORM	TAPE 21 #	21 %	22 #	22 %	TOTAL N	STATISTICALLY SIGNIFICANT CHANGE
RESULT	-	-	-	-	10	r = -.41
DIRECTION	1	.1	1	.1	33	r = -.30
-.DE	-	-	1	.1	28	----
COIN NOUN	4	.5	3	.3	40	----
COIN VERB	1	.1	-	-	16	----
SHI COPULA	-	-	-	-	20	----
-.LE PERFECTIVE	-	-	2	.2	55	----
DOUBLE -.LE	1	.1	-	-	8	----
BA OBJECT MARKER	1	.1	-	-	5	----
SENTENCE FINAL PARTICLE	1	.1	-	-	15	----
VERB CHOICE	4	.5	5	.6	91	----
NOUN CHOICE	-	-	3	.3	17	----
ADVERB	2	.2	4	.5	59	----
EXTRA AUX	-	-	-	-	10	r = -.30
BAD AUX	-	-	-	-	13	r = -.46
GEI "GIVE"	-	-	-	-	2	----
TA "S/HE"	1	.1	-	-	13	----
EXTRA DETERMINER	2	.2	-	-	13	r = +.32
BAD DET.	-	-	-	-	5	----
TIME	-	-	-	-	9	r = -.54
NEGATIVE	-	-	-	-	18	----
LOCATIVE	-	-	-	-	3	----
CONJUNCTION	-	-	-	-	17	----
REFLEXIVE	-	-	-	-	7	----
QUESTION	-	-	-	-	14	----
CLASSIFIER	-	-	-	-	2	----
YOU "HAVE"	-	-	-	-	6	----
TOTAL	18		19		529	

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TABLE 3.7

ORDER ERRORS - KANG

TAPE	#	%
1	1	.3
2	3	.4
3	1	.3
4	5	1.0
5	2	.4
6	5	.8
7	11	1.7
8	2	.3
9	2	.2
10	-	-
11	1	.1
12	3	.3
13	1	.1
14	1	.1
15	1	.1
16	4	.7
17	2	.2
18	3	.5
19	-	-
20	2	.3
21	-	-
22	1	.1
23	2	.2
TOTAL	53	

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The Chinese quiz style of speech to children centers around eliciting the names of many concrete objects, proper names, and kinship terms. Semantic fields for culturally important objects are differentiated from the first. Of the twenty-five nouns in the sample for 16-month-old Xiao Jing, nine are kinship terms. They include the words for maternal and paternal grandmother, younger brother, and maternal uncle. There are separate words for "cooked rice" fàn, and "uncooked rice," or mǐ, among her twelve concrete nouns. Xiao Jing also knew the words for four numerals. (See Table 3.8.)

Most early verbs describe physical actions. They typically include: lái "come," bào "carry in the arms," and zǒu "go away," "walk." The number of stative verbs is smaller; most of these are experiencer-verbs such as pà "fear," or yào "want." The locative co-verbs shàng "on," and xià "off," "down" are used in requests to be picked up and moved, or to have items moved away from the child. In the later one-word stage, as represented by Niu Niu, Table 3.9, statives describing objects or actions begin to appear. Zài "again," "more;" gòu "enough," guāi "well-behaved," and tàng "burning hot," are prominent at this stage.

It is significant that the difference between durative and bounded events is expressed from the first. The distinction is made by word choice rather than by functor. All the children at the one-word stage whom I sampled had

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TABLE 3.8

SAMPLE VOCABULARY AT THE ONE-WORD STAGE:

XIAO JING

XIAO JING "Little Classic" (child's name)

(FEMALE, age 1.4.14)

KINSHIP NAMES	Mā	Mama
	Nǎi	for Nainai "granny" paternal grandmother
	Bà	Papa
	ØYí	for Ayi "Aunt" (maternal and general)
	Pó	"Granny" for all older women
	Gū	"Paternal Aunt," for paternal aunt and for researcher whom this aunt had introduced to the home
	Gōng	Paternal grandfather
	Dì	for dìdi "younger brother" used appropriately for younger cousin living in the same house
	Jiù jiu	"Maternal uncle"
NOUNS	Huā	"Flower"
	ØMǎ	"horse" for mùmǎ "rocking horse" wood horse
	Jī	"chicken"
	Mǐ	"uncooked rice"
	Fàn	"cooked rice, food"
	Miàn	"noodles"
	ØBāo	"envelope" for hóng bāo the red envelope used for giving gifts of money to children at Chinese New Year which was coming up two weeks later (hóng = red; bāo = envelope)

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TABLE 3.8 (Continued)

NOUNS	DianØ	"electric" for: dianshi "television" (electric vision)
		dianhua "telephone" (electric talk)
		dianxian "electric cord" (electric cord)
	ØBiao	"watch" for shoubiao "wristwatch" (hand watch)
	Zhong	"clock" often zhongbiao "clock" (hour watch)
	/əŋ/	for dēng "lamp"
	ØDing	for liúding "orange"
NUMBERS	Yi	"one"
	Er	"two"
	San	"three"
	Bā	Eight
ANIMAL NOISES	For chickens, ducks, cats, tigers	
VERBS	Papà (fear fear)	"fear, scared" pats heart and says this as part of routine, and as reason for not sitting by the researcher
	Yao	"bite"
	Zou	"go away, walk off"
	Qù	"go"
	Lái	"come"
	Niào	"pee"
	Bào	"carry in arms, hug"
	ØBan	for shangbān "at work, go to work" (on work)

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TABLE 3.8 (Continued)

NEGATIVES	Bú yào not want	"dont want" for both refusals, and to mean yào "want" as when she wants a drink. Yào alone is not yet in her vocabulary.
	Mó	Taiwanese for méi yǒu "not have"
EXPRESSIVES	Xièxie	"Thanks"
	Gòngxǐ respect joy	"Congratulations, Happy Chinese New Year" As part of a routine: Says gòngxǐ then holds out hand and says bào for hóng bāo red gift envelope of money she knows adults will be giving her soon

COMMENTS: Bú yào is the only two-word phrase at this stage according to parents and relatives living in the house. Xiao Jing cannot say the word hǎo "good" or "ok" but can answer many verb-not-verb questions with the proper verb. She can point out different people as they are named, and follow instructions to go over to them, given them specific toys, shake hands, hug them and kiss them.

Xiao Jing is an only child although her slightly younger male cousin also lives in the home with his parents, Xiao Jing's parents, and the paternal grandparents of both children, as well as the children's paternal aunt. This is an extremely relaxed, sociable, highly verbal family. The grandmother is a Peking opera star, and Xiao Jing shares the family vivacity and joy in acting out routines. On request she can act out: thanks, bowing, shaking hands, kissing, "singing" Peking Opera with a high pitched, conventionalized "yiiii" and stage gestures, kung-fu fighting maneuvers, waltzing, animal noises, washing her body and hair, and pulling her grandfather's ear to make him "cry out" as part of a family joke routine.

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TABLE 3.9

SAMPLE SENTENCES FROM LATER ONE-WORD STAGE

NIU NIU

(Female, 1.10, only child)

(Grandmother feeds her soup. Niu wants more:)

*Zài Ø tāng.le again soup perfective/current relevant	*"Again soup"
*ZàiØ tāng.	*"Again soup."
*ZàiØ tāng.	*"Again soup."
(needs a verb; zàiláí "again come" is standard Chinese babytalk for "more.")	

(Grandmother spooning more soup into Niu's bowl:)

*GòuØ. enough	*"Enough."
*GòuØ. enough	*"Enough."
(needs a .le perfective marker to show completion. Without this the utterance sounds like there is only a potential for having enough. There is no good translation for expressing this lack of completion in English.)	

(Hears sounds outside the house, thinks someone is out there, asks:)

Shéi? who	"Who?"

(No one seems to be there. Remarks:)

*Méi yǒu Ø not have	*"Hasn't"
(for méi yǒu rén not have person	"There isn't anyone")

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TABLE 3.9 (Continued)

(A few minutes later her Aunt (Kang's Aunt Jiang, in fact) asks:)

Aunt Jiang	You rén méi? exist person not have	"Is there someone there or not?"
Niu Niu	You. have	"There is."

(Correct copying of verb in answer.)

(Points to large memorial photograph of her deceased great-grandmother hanging on the kitchen wall. Says:)

Nainai Paternal grandmother	"Paternal Grandmother."
Zou.le. go perfective	"Gone."

(zou "go" is a euphemism for "deceased" just as "gone" is in English.)

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both the perfective negative and the general negative. The perfective negative is méi yǒu "has not." It is used
not have

to describe states in which some action is still possible or to note the lack of some possession. These are unbounded states. Interestingly, the Taipei children often used the Taiwanese equivalent to méi yǒu, the single word form mó.[21] This was usually the only Taiwanese word in their vocabularies, but its closeness in meaning to the Mandarin form, and its single morpheme "packaging" made it readily accessible to the child. The general negative, bù "not," expresses bounded states which do not show an immediate potential for change. Boundedness is the ancestor of the perfective relation which is the first aspectual relation to be marked. The bù negative often appears only in combination with yào "want." Bú yào is often used as a general negative, since there is no single word meaning "no" in Chinese. Xiao Jing had only bú yào; yào never appeared on its own. Often in early speech, bú yào is pronounced as an unanalyzed single word, /biào/. Chao records this merged form for Canta at 28 months.[22]

These generalizations come not only from Lao Hu and Pang's samples at the late one-word stage, but also from the eight one-word stage children whom I visited in my quest for prospective subjects. I took notes at these visits, but did not make tapes. The sample from Niu Niu came from a social visit to a friend's mother and niece

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who lived one hundred miles away from Taipei.[23] At each visit I asked the parents in detail about the child's earliest and current language use. Since the focus of this study is on syntactic development beyond the one-word stage, these small samples will have to suffice until such early speech can be studied in detail.

There are two articles in Chinese which discuss the one-word stage. Wu and Xu of Beijing University have done a frequency analysis of the speech of five children who were taped at intervals from birth until they were three years old. Table 3.10 is compiled from a corpus of 342 utterances taken from the period when the children were between age 1.6 and 2.0. At that stage, 37% of their utterances were single characters.

While Wu and Xu do not define their categories, which are translated from Western linguistic terminology, it is quite clear that they also found a broad distribution of word-class uses from the beginning of speech. Re-classifying "adjectives" as stative verbs, a reliable assumption here, we find that active verbs such as ná "take" and lái "come" are about five times more frequent than stative verbs such as piàoliang "pretty" or guāi "well-behaved." Recall that Xiao Jing at 1.4 also had five times as many active verbs as statives.

These results strikingly parallel those of a taping study made by Yuan of National Taiwan Normal University. Yuan taped several two-year-olds as they looked through

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TABLE 3.10

BEIJING CHILDREN'S WORD CLASS USAGE FROM AGES 1.6 TO 2.0[24]

NOUNS	366	38.5%
VERBS	299	31.5%
ADJECTIVES	62	6.5%
ADVERBS	88	9.3%
PRONOUNS	41	4.3%
CONJUNCTIONS	6	.6%
CLASSIFIERS	11	1.2%
ONOMOTAPOEIA	9	1.0%
EXPRESSIVES	6	.6%
SUFFIXES	62	6.5%
TOTAL	950	100.0%

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books at home with their mothers. Her analysis concentrates on one little boy who was taped in seven half-hour sessions from when he was 2.0 until he was 2.2. This child was beyond the one-word stage, since the mean number of characters in each utterance rose from 3.0 to 5.6. I include the word class breakdown for this child because they are strikingly parallel to Xu and Wu. Yuan's corpus is much larger, including a total of 942 utterances. Yuan breaks down word classes for each tape of the seven tapes made, and also provides series of mean overall percentages of usage which I translate and quote here:

TABLE 3.11

YUAN'S TAIPEI CHILD'S WORD CLASS USAGE AGE 2.0-2.2[25]

Nouns	40.4%
Verbs	22.0%
Adjectives	11.2%
Quantifiers (adverbs)	9.9%
Demonstratives (personal and demonstrative pronouns)	8.8%
Conjunctions	1.9%
Expressives	5.8%

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The resemblance between the Beijing children, Yuan's Taipei child, and the Taipei children in my study is very strong. This not only allays worries about the Taiwan children having greatly different language use from their mainland Chinese brothers, but also, more powerfully, indicates a gross uniformity in the distribution among word classes. Concrete nouns are the largest early group, but active and stative verb use combined nearly equal nouns in frequency. Active verbs are more than twice as frequent as statives. The sample sentences quoted both in Xu and Wu and in Yuan are nearly identical to typical sentences produced by the children in my study.

The data available indicate that the Chinese children make an initial fundamental split between a class of concrete nouns, which contrasts with a very broad "proto-verbal" class. They make frequent but undifferentiated use of sentence-final particles to express emotional warmth and relevance. Interpreting a single word in a clear context is usually possible; deciphering it out of context or with the context unclear can be especially difficult in Chinese. Homophony requires choosing the actual meaning intended from an embarras de richesses.

Unclear pronunciations made the task still more difficult. Even Pang's grandmother and sister could not always tell whether Pang was saying wǒ "I," or pó "Granny." This led to a number of misunderstandings, although Pang would always protest a wrong gloss until her

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hearer produced her intended meaning. Lao Hu, the other younger subject, was also soft-voiced and occasionally unclear in his pronunciation. Conveniently for the study, both older children, Zhong Rong and Kang, had exceptionally loud, precise pronunciation. Overall, there were extremely few misunderstandings in the corpus which were not clarified in subsequent discussion, or occasionally after transcription with the aid of the contextualization tape. Sequences which remained unglossable were transcribed phonetically, but these averaged no more than one word in 300 utterances.

The Chinese hearer's tactic on hearing a sequence of sounds which does not correspond to any reasonable meaning is to try and see if the segment makes sense as a part of a compound. If no match occurs here, he will try possible permutations of the initial consonant or consonant cluster, particularly if the child has produced an initial stop consonant which might correspond to an adult affricate, e.g. /d/ for /ʤ/. If this strategy does not produce a meaning, the adult will try substituting a different tone. The two Mandarin rising tones, the high rising tone and the low dipping tone, are frequently indistinct in child speech, (as in <u>Pó</u> "Granny" and <u>wǒ</u> "I".)[26] High level and high rising tones also often sound like high falling tone.

Several of these decoding strategies are employed in attempting to understand the following one-word comment by Lao Hu. The translations gloss his intended meaning from

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the first usage, but this meaning was not clear to his hearers until six speech-turns later:

Example 3.8 Lao Hu Tape 3 (2.0)

(points toward bridge of nose)

Lao Hu	Bi /ʒə/ close affix, (sounds like "nose," bí.zi, with a wrong tone)	
Researcher	á? huh?	
Lao Hu	Bì /ʒə/ close affix	
Researcher	a?	
Lao Hu	Bì /ʒə/ close affix	
Researcher	(gloss) Bí.zi, dùi. nose right	"Nose. Right."
	(L. points to his eye)	
Lao Hu	(loud, correcting) Bí/ /ʒə/	
Researcher	Nà shì yǎnjing. That copula eye	"That's (an) eye."
Housekeeper	(gets correct gloss)	
	Bì-qǐ - lái. close rise come (for vertical closure)	"Close it up."
Lao Hu	(satisfied, repeats)	
	Bì/ʒə/. close affix	"Close."
Housekeeper	Chī .ma. Eat emphatic particle	"Come on, eat."

Lao Hu was trying to tell us that he was going to close his eyes, but since he pointed vaguely toward the

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bridge of his nose, I glossed his statement as a simple labelling of a body part, a frequent utterance type with him. Bì "to close on a vertical plane" and bí "nose" sound very much alike if the tone and affix are unclear.

SECTION 3.6 SUMMARY

Lexical meaning and potential syntactic valence are the core of Chinese linguistic relations. Grammatical functors are peripheral in their usage; an order-based template of grammatical relations is constructed around the lexical meaning of the predicate. Enormous homophony and lack of surface-form class markers make analysis difficult. The child does have some important prosodic clues to form class, particularly stress on most semantically full words, compounds, and sententially central words, as opposed to de-stress and neutral tone on functors and suffixed forms. A finite, invariant syllable inventory is another important aid in determining word boundaries.

The lexical orientation of Chinese means that omission errors are serious barriers to understanding. They are the most frequent error type, about 60% of all errors. They outnumber misuse errors by about two to one for all age groups studied. Order errors are even rarer, about 7% of all errors. Chinese children have an early advantage at the one-word stage in that any syllable they produce is likely to be well-formed and meaningful. Errors rise in direct correlation with length of the utterance until the

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child is about three years old. After this, basic sentential relations are likely to be reliably marked, so omission errors fall. Misuse and order errors remain roughly constant in frequency as the child struggles with more elaborate vocabulary and with discourse-sensitive reorderings, and topicalization.

The one-word stage shows a range of all the basic form classes. Nouns for concrete objects and kinship terms are the most numerous items; this reflects a cultural emphasis as well as a natural perceptual salience of concrete objects.[27] Active verbs are about twice as common as statives. The child uses both the general and the perfective negative from the beginning, which shows an early understanding of the fundamental aspectual distinction between durative and bounded events. A variety of socially expressive routines are also present from the first words; these include appropriate answers to many adult questions. The ancestors of all later speech acts are alive in the child's very early words.

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NOTES TO CHAPTER THREE

1. Whorf, 1956, p. 88.
2. See Peters, 1980, on the importance of "chunking" and segmentation in language acquisition. See Leben, 1973, on the role of tone in segmentation.
3. See Ferguson, 1977, on characteristics of baby-talk.
4. Thanks to Hong Hsiu-fang for this observation.
5. Foreign speakers of Chinese have great difficulty with such contrasts.
6. Slobin 1981.
7. Bowditch 1976.
8. Strictly parallel rhetorical structure is the core of poetic and literary style.
9. Yuan, 1977.
10. Poggi, 1982.
11. See Slobin, 1975; Cross, 1977, and other articles on language input to children in the 1977 Snow and Ferguson anthology.
12. See Heath, in press.
13. "A less obvious indicator of the strength of a leader is in the memorization training in school. A friend told me that he noted that with the children of the family he lived with, it was not the multiplication method that was memorized, but each individual problem. A Chinese friend once mentioned to me that success on exams depends purely on whether one was asked a

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problem which had been memorized. There is no training in initiating because the leader provides this; all that is necessary is that one memorized the correct response.

" At the country public school, in connection with a lesson on the meaning of the Mid-Autumn Festival, sentences were written on the board. They proceeded in tone from the meaning of the festival itself to why we should be thankful, and to the enemy who may destroy this happy occasion. These two question-answer sentences are samples: 'Whom should we most revere? Our soldiers.' 'Who are the worst in the world? Not just the Communist bandits but the Russians.'" (Second grade classroom)

"On this poster were several pictures, all of which were described by the teacher. One was of a farmer being whipped. The last was a scene showing a person being shot, and when the teacher arrived at this point, she asked the class who this person was. 'A dead person' the class responded. 'Who did it?' the teacher asked. 'The Communist bandits' came the answer. 'Are the Communist bandits bad or not bad?' was the next question. 'Bad' the children all said. Finally the teacher asked the class what they were going to do about it. Two boys immediately sprang up, one exclaiming 'Retake the Mainland' and the other

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saying with equal feeling 'Destroy the Communist bandits.'" (Wilson 1970, p. 75)

14. This was possible in the classical language; see Cikoski, 1978.

15. See Garvey, 1977, for discussion of English word-play.

16. Hashimoto 1980 discusses word-play for a Cantonese-speaking child growing up in Seattle. Chao, 1973, discusses word-play for his Mandarin-speaking grand daughter who was growing up in Berkeley.

17. The analytic, one-syllable/one-free form strategy is so strong that it carries over into the second-language when native speakers of Chinese speak English. Their division of syllables follows the rules for canonical Chinese syllable formation, rather than being guided by English etymology and morphology.

For example:	Tā char-bù-charming?	"Is he/she charming."
	He/she char not charming	
	Nǐ pro-bù-promise wǒ?	"Do you promise me?"
	You pro not promise me	
	Why are you xiào-ing me?	"Why are you laughing at me?"
	laugh at	

Both child and adult bilinguals make these slips. The first example was produced by a bilingual wife speaking to her bilingual husband. The second was produced by an eight-year-old, the third was a deliberate joke made by a four-year-old. Both children were born in Taiwan but had been living in California for several

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years. (Thanks to Mark and Ying-ling Hansell for the first example, and to Shirley Johnston for the second and third.)

Sometimes the interpolations are even more elaborate. Mrs. Chang Chou Hui-chiang, my informant and teacher from the Stanford Center, provided me with this example. Her three-year-old daughter was not bilingual; she had lived all her life in Taiwan, and her parents spoke only Mandarin at home. Nonetheless, her father had shown her some of his English reference books, and taught her to read some English picture books. The mother spoke and read very little English. One day the mother came home from work, sat down, and talked with the whole family for awhile. The daughter began to cry. When her mother asked her why she was crying, she said, Ni mei you bao wo,
you not have hug me
"You haven't hugged me." The mother exclaimed, "But you never asked me to!" The father intervened and said, "yes, she did. But what she said was:

bao daughter, bao daughter.'"
hug hug

The daughter knew the Chinese word for "newspaper," baozhi, Bao "report," is homophonous with bao
report paper
"hug," "carry in arms"; although the two words are written with different characters. The phonetic

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resemblance between "daughter," "newspaper," and zhǐ "paper" led the child to a cross-linguistic segmentation of syllables, and a re-compounding based on Chinese, Identical English and Chinese word order for these forms reinforced her analysis. She was very likely troubled by the Chinese homophony between the two meanings of bào, and so sought to disambiguate her speech with a contrastive construction which incorporated both English and Chinese. Apparently she did not see English and Chinese as separate languages, but rather as extensions of one broad language system.

18. There is a parallel form in Lahu which Matisoff calls "independent use of adverbials." See Matisoff, 1972.
19. Bloom, 1973.
20. For discussion of English at the one-word stage see Bloom, 1973; E. Clark, 1979; Greenfield 1979; Peters 1977; Scollon 1976.
21. Mó has a Cantonese cognate.
22. Chao 1973.
23. The friend was Chiang Tzù, the Auntie Jiang, who helped me tape Kang.
24. Wu and Xu, 1979, my translation.
25. Yuan, 1977, my translation. She is the Baojane who later helped me tape Pang.
26. See Clumeck, 1977a; Li and Thompson, 1978.

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27. See Gentner, in press, for discussion of cognitive reasons for the cross-cultural predominance of concrete nouns at the one-word stage. She discusses English, German, Turkish, Kaluli, Japanese, and Mandarin. The Mandarin data come from my study.

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CHAPTER FOUR

COMING TO ORDER: ACQUISITION OF ORDER IN COMPOUNDS, SENTENCES, AND DISCOURSE CHAINS

SECTION 4.1 ORDER IN MANDARIN

SECTION 4.1.a GENERAL TRENDS

"It is often said that all Chinese grammar is syntax, all Chinese syntax is word order, and therefore all Chinese grammar is word order."[1] Chao noted the prevailing cliche before he went on to discuss Mandarin syntactic relations in terms of an interaction between selectional restrictions, order, and phonological clues. There is no doubt that strict order is central to Chinese syntax, since morphological clues to word class are few, and there is no inflectional system for case, number, gender, tense, aspect, mood, or active/passive distinctions.

As Western linguists who have worked within an inflectional model we have tacitly assumed that sentential relations are something which come from the outside, and are added onto base forms as extra bits of structural information. Chinese sentential relations come from the inside out; they are inherent in the valences of word meaning and

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selectional relations. These relations are then arranged into one of the strictly-ordered templates which the language makes available for different sentence types. The number of possible templates is quite small; basically all of them follow topic-comment order. Given the variations in emphasis which may be desired in a discourse setting, Chinese also has a few topicalized word orders available for contrast with the tacitly-assumed base order.

Chinese word class and sentential functions are seldom morphologically distinct. High homophony makes differentiating functions even more difficult. Chinese word order is even stricter than that for English; it goes beyond the contrast between gǒu yǎo rén (dog bite man) "Dog bite(s) man," and rén yǎo gǒu (man bite dog) "Man bite(s) dog." The most common Mandarin order is agent-verb-patient, which we will call SVO here as a sort of shorthand. Other Chinese sentence pairs are more problematic, for example:

a.	Yīshēng yào mài.	Doctor want sell	"(The) doctor(s) want to sell (one.)"
b.	Yīshēng mài yào.	Doctor sell drug	"The doctor(s) sell drug(s)."
c.	Kàndào.le gāng.	see reach pfv jar	"(I, or someone) saw (the) jar."
d.	Gāng kàndào.le.	jar see reach pfv	"(Someone) saw the jar." "The jar was seen (by someone)."

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e. Gāng kàndào.le. "(Someone) just saw
just see reach pfv (something)."

f. Nǐ hǎo .ma?[2] "How are you?"
You good question

g. Nǐ mā hǎo? "How's your mother?"
You mother good

As these examples make clear, it is absolutely essential to know the word meaning in order to understand sentential relations in Mandarin.

Zero anaphora is the norm in Chinese. Once reference to an agent, time, location, or patient is established, it will not be mentioned again until there is a change in reference. Chinese seldom uses dummy subjects and objects like English "there is" or "it," as in "there is a lot of smoke in here," or "it's a lot of fun." The predicate is the heart of the Chinese sentence, and predicate alone can form a complete sentence if reference is clear. The Mandarin equivalents to the above English sentences are

zhèli yān duō, "a lot of smoke here." and
here smoke much

zhēn hǎo wán, "really fun." The metric of a "complete
true good play

sentence" being one which has both a subject and a predicate does not apply to Chinese. Many complete Chinese sentences have only a predicate. Chao calls these "minor sentences";[3] they often are the preferred Chinese sentence type.

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While zero anaphora is preferred in many inflected languages, the basic organizational unit is the sentence. The inflectional scope applies within the range of the sentence, and inflectional markings give clues to the unstated full forms. Chinese is a discourse-oriented rather than a sentence-oriented language. One must trace reference several sentences back to determine the unstated subjects, agents, times, locations, and patients in most casual speech. Since sentences are not organized around subject-verb agreement and inflectional scope, the sentence unit itself is less tightly defined for Chinese than for European languages.

It is much easier to describe a prescriptive template for Chinese sentence order than it is to characterize the elements in the template in modern linguistic terms. There has been a great deal of debate over whether Chinese word order is Subject-Verb-Object or Subject-Object Verb, (hereafter abbreviated SVO and SOV;) whether Chinese might be an ergative language; or whether it is better described as a topic-based language; or even a discourse-based one. All of these models have something to contribute to our understanding of the Mandarin and Sino-Tibetan word order systems which are indeed not fully-describable in traditional syntactic vocabulary.

It is important to keep the following variables in mind when discussing Chinese word order: 1) the centrality of lexical meaning, and the selectional valence of the verb.

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2) Contrastive word classes in a series of words. Since most word classes are not morphologically distinct, and sentential functions are seldom contrastive on the surface, the Mandarin preference is for avoiding a series of words from the same form-class if their relationship is not marked. The most common and basic word order is agent-verb-patient. This order pattern is maximally contrastive, since it separates the two nouns by a verb. This way we are not likely to mis-analyze two successive nouns as a single compounded noun, or to be unclear as to which was agent, and which patient. Even in naming a series of objects or actions Chinese requires that the series of items be separated and distinguished. In English it is quite possible to say things like, "I bought eggs, tea, soysauce, and pork." It is not good Chinese to say

*wǒ	mǎi.le	jīdàn,	chá,	jiàngyóu,	hé	zhūròu.
I	buy pfv	egg	tea	soysauce	and	pig meat

The items should each be separated by a particle or by a full conjunction, as in,

wǒ	mǎi.le	jīdàn	.a,	hé
I	buy pfv	egg	part	and

chá,	hé	jiàngyóu	hé	zhūròu.
tea	and	soysauce	and	pig meat

"I bought eggs, and tea, and soysauce, and pork." Without the conjunctions, all the nouns seem to blend into one huge compound food. Many common items are compounded this way; in the market the vegetable man always adds free green onions cōng, and ginger jiāng, to a large purchase. These are referred to as a compound cōngjiāng, "ginger-and-onions,"

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something like "a baker's dozen." The use of contrastive word classes in a series becomes particularly important in topicalized, object-fronted SOV sentences.

3) The third factor for Chinese order is the importance of a basic slot-frame template. Since individual words, classes, and functions are not tagged on the surface, the hearer's expectation that sentential functions will be ordered in a predictable way becomes crucially important. Chinese sentences spoken outside the standard order patterns become gibberish, rather than merely order-variants or order-errors.

4) There is an important difference between referential order and topicalized order. Referential word order is the basic working unit for any language, although its relative degree of importance in the syntactic system as a whole may vary for different languages at different times in their histories. Referential order establishes who did what to whom. In Chinese, referential order has very few variations. Topicalized orders are optional elaborations or variations of referential order. Topicalized orders highlight specific parts of an utterance in order to focus the hearer's attention on some aspect of the situation which contrasts with the predictable, neutral, order of relations. The item to be topicalized is re-ordered to sentence-initial position. Topic is often set off from the rest of the sentence by a special particle or phrase corresponding to English "as for," as in, "as for

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the dog, it bit the man,"[4] nèi.zhī gǒu
that class. for animals dog

.a, yǎo.le nèi.ge rén. Topicalized
topic particle bite pfv that person.

re-ordering is less central to the syntactic system, since it is an optional embellishment which is sensitive to the discourse situation. One may speak a language correctly and intelligibly using only correct referential order, but the reverse is not true, since topicalized order only exists as a variant of the referential core. Referential order is quite fixed; there are few choices, and each choice will produce a different, discrete meaning. Topicalized order is scalar. Many different sentence elements may be selected as the topic. The variations are difficult to describe because they are intimately connected with speech register, style, and the specific conversational setting.

This section discusses referential order for sentences, and the development of descriptive terminology to characterize them. Topicalized variants on the base order are discussed next, with particular attention to object fronting, the bǎ object marker, and the bèi agent marker. The last section in the introduction discusses historical trends for Mandarin word order, and the controversy over the degree to which the Mandarin is changing in overall order type.[5]

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SECTION 4.1.b REFERENTIAL ORDER - SENTENCES

In a full Mandarin sentence where both predicate and arguments are marked, standard referential order is:

AGENT TIME PLACE MANNER ACTION PATIENT DESTINATION DURATION.

Not all these relations are markable in a single sentence, but some complex examples come close:

wǒ	jīntiān	wǎnshàng	zài	jiālǐ	jēng.le
I	this day	evening on	at	home in	steam pfv

yì	tiáo	yú,	"I this evening, at home steamed a fish."
one	class	fish	

Chinese referential order is very strict. It is a serious error to re-order this Chinese sentence in accordance with standard English word order for time and place, "I steamed a fish at home tonight." *

wǒ	jēng.le
I	steam pfv

yì	tiáo	yú	zài	jiālǐ	jīntiān	wǎnshàng.
one	class.	fish	at	home in	this day	evening on

This is because the post-verbal slots for time and location are reserved only for end location and duration. The pre-verbal slots are the only place where static location of an action, and indexed time reference may occur. Thus the Chinese sentence which is re-ordered like idiomatic English doesn't just sound badly ordered, it sounds as though it has a different and impossible meaning, something like, *"I steamed the fish to home for an evening."

Static marking of both time and location of an action comes before the verb. Both index and background , the

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main story-line of the action. As such, they are put in the same pre-verbal modification slot as manner, negation, and auxiliaries. This pre-verbal marking is contrastive with post-verbal marking for dynamic location and time, that is, destination and duration.[6]

TABLE 4.1

CONTRASTIVE ORDER FOR STATIC AND DYNAMIC LOCATION AND TIME

STATIC LOCATION AND TIME	AGENT	LOCATION OF ACTION / TIME OF ACTION	ACTION.
DYNAMIC LOCATION AND TIME	AGENT	ACTION	DESTINATION. / DURATION.

These minimal pair sentences are contrastive:

Xiǎo hóu.zi zài zhuō.zi-shàng tiào.
Little monkey be at table on jump

"The little monkey is jumping on the table."

Xiǎo hóu.zi tiào zài zhuōzi-shang.
Little monkey jump be at table on

"The little monkey jumps up onto the table."

A contrastive pair for event-time versus duration is:

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Lǎo Sān jīntiān pǎo.le "Lao San ran today."
Lao San this day run pfv

Lǎo Sān pǎo.le yì tiān. "Lao San ran for a day."
Lao San run pfv one day

A sentence marking manner might be,

wǒ hǎo hǎo.de huà.le yìzhāng huà,
I good good mod draw pfv one class picture

"I very carefully drew the picture." Again, any other order for manner will be erroneous, e.g. *"hǎo hǎo.de wǒ huà.le huà, "Very carefully I drew the picture"; or, even worse, *"wǒ huà.le huà hǎo hǎo.de, *"I drew the picture very carefully."

Word order for questions is the same as that for declaratives; there is no re-ordering of sentence elements, or use of auxiliaries as there is in English. English "you want to eat," is changed to "Do you want to eat?" "What do you want to eat?" "When do you want to eat?" and so on. In the Mandarin equivalents, the verb is simply negated then repeated for yes/no questions. This is the verb-not-verb construction. For Wh- questions, the question word is inserted in the same sentence slot as its declarative counterpart. That is:

Nǐ yào chī. "You want to eat."
you want eat

Nǐ yào.buyào chī? "Do you want to eat?"
You want not want eat

Nǐ yǒu méi yǒu chī? "Have you eaten?"
you have not pfv have eat

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Ni	yao	chi	shen.me?	"What do you want
you	want	eat	what	to eat?"
Ni	shen.me	shihou	yao	chi? "What time do you
You	what	time	want	eat want to eat?"
Shei	yao	chi?		"Who wants to eat?"
Who	want	eat		

Identical order for declaratives, questions, and imperatives strengthens the word order template, and increases its power by making it predictable. The hearer knows what word class to expect in the template order, so his energy can be freed for a more careful analysis of the semantic scope and transitivity relations of the specific word inserted into the slot. Questions are discussed in greater detail in Chapter Five Sections 5.9.a,b, and c.[7]

Chinese is a left-branching language in that relative clauses come before their head, in an order opposite to that for English. Order of elements within relative clauses matches that of the basic word order template. For example:

Lo	Daifu	jintian	xiang	pei.de		yao	zhangjia.le		si	bei.
Surname	doctor	today	want	prescribe	mod	drug	increase	price	4	times
								pfv		
	AGENT	TIME	AUX	ACTION						
			RELATIVE CLAUSE							
						PATIENT	PROCESS	QUANTITY		
						SUBJECT	PREDICATE			

"The drug which Doctor Lo wants/wanted to prescribe today has quadrupled in price."

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Sino-Tibetan languages, including Mandarin, do not favor nearly as much relative clause formation as is common in Indo-European. They prefer to spread the information across a series of sentences. This is very natural, given their lack of inflectional morphology and relative pronouns with which to index complex relationships within a single sentence. However, relativization is becoming much more common in modern Mandarin. This is another result of the influence of European languages on Mandarin.[8] Relative clauses are discussed in more detail under the heading of "Definitionals" in Chapter Five, Section 5.4, and in the discussion of "Serial Verbs", Chapter Six, Section 6.5.i.

Of course, not all sentences have both an agent and a patient. If they do, standard order for reference is agent-verb-patient. Topicalized variants, agent-patient-verb, and even patient-agent-verb do exist. There is also an abbreviated version, patient-verb, where the action referred to is being performed by an unstated agent, as in jímù fàng zhè-lǐ, "(someone) put(s) the block here."
block put here
The semantic valence features of the verb determine the sort of patient or agent. Action-verbs take agents, while stative, experiencer, and process verbs all take patients. These verb-type features call out the appropriate referential order template, which may then be varied for topicalized re-ordering if desired. Notice that it is best to describe these sentential relations in case grammar

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of sentences that have no object. Basque, Samoan, Kaluli, many Australian and Caucasian languages are ergative.[11]

While Chinese, of course, has no case markers, a semantically-based, order-marked ergative pattern has been a central organizing principle for sentential relations since ancient times. The classical Chinese ergative system is organized around a basic division between a class of neutral verbs and a class of ergative verbs. Neutral verbs are indifferent to subject and object; their subject may frequently be omitted. The subject of the neutral verb is the person or thing that performs the action described in the verb, whether there is an object stated or not. (Examples include verbs such shòu, "receive," gù "leave," "depart," tīng "listen," néng "able," zhī "know," and gǎn "dare.")[12]

Cikoski states that: "For ergative verbs, the relation to the subject depends on whether an object is present or not. The two cases are just inverses of each other: if no object is present, the subject is the one that performs the action. If an object is present, the subject is the one that causes the object to perform the action."

Compare:	zǐ child	shēng, give birth	"A child was born."
	shēng give birth	zǐ. child	"(She) bore a child."[13]

While Cikoski was describing the classical Chinese written and spoken in Northern and Central China between

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500 B.C. and 200 B.C., his categorization of Chinese verbs as basically neutral or ergative is descriptively accurate for modern Mandarin, although many more compounded forms now exist, particularly for causatives. In summary, then, if a Chinese verb has both a subject and an object, that is, an agent and a patient, the agent will come before the verb and the patient after it, in basic, referential, SVO order. Patients which are produced by causative actions come after the verb, whether or not the agent is stated. In single-argument verbs, all arguments come before the verb. This includes agent of an intransitive action, the patient of a descriptive or an experiential state, and the patient of a process. These all come sentence-initial in topic, "subject" position. Table 4.2 below summarizes these possibilities.

TABLE 4.2

ORDER OF AGENT AND PATIENT WITH RESPECT TO THE VERB

	AGENT OF ACTION	VERB	PATIENT AFFECTED
	AGENT OF CAUSE	VERB	PATIENT AFFECTED
Fronted Variants	AGENT OF ACTION, PATIENT	VERB	Ø
	AGENT OF CAUSE, PATIENT	VERB	Ø
	PATIENT DESCRIBED	VERB	Ø
	PATIENT EXPERIENCER	VERB	Ø
	PATIENT DESCRIBED BY PROCESS	VERB	Ø
	Ø	VERB	PATIENT PRODUCED BY PROCESS

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Therefore, for sentences in basic referential order, we have the following:

AGENT ACTION PATIENT	Bàbà chī.le lìzhi. Papa eat pfv lichee	"Papa ate lichee(s)."
AGENT CAUSE PATIENT	Wáwā hùà.le yì Baby draw pfv one tiáo lóng. classifier for dragon long things	"Baby drew a dragon."
PATIENT DESCRIPTIVE-STATE	Lóng hǎo cháng. Dragon very long	"(The) dragon is very long." "Dragon(s) are very long."[14]
PATIENT EXPERIENTIAL-STATE	Gēgē hǎo elder brother very gāoxìng.[15] happy	"Elder brother is happy."
PATIENT DESCRIBED BY PROCESS-STATE	Huǒ miè.le. fire extinguish pfv	"The fire went out."
	Lóng sǐ.le. Dragon die pfv	"The dragon died."
PATIENT PRODUCED BY PROCESS	Gài.le yí.ge build pfv one fáng.zi. house	"(Someone) built a house."

These examples should make abundantly clear the difficulties involved in labeling Chinese sentence arguments as either subjects or objects in traditional grammatical terms. It is reasonable to refer to the very common

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agent-action-patient pattern as SVO if one understands it as a sort of convenient abbreviation for most common pattern in Mandarin word order. It is also reasonable to call its patient-fronted, topicalized variant SOV if one understands that this is an abbreviation for an order pattern, rather than a prescriptive norm implying full traditional patterns of subjecthood and objecthood for all Chinese sentence types.

There is another very important Chinese sentence type which confounds traditional subject-object analyses. This is the double-nominative construction, in which the sentence is composed of two noun phrases with a linking verb. Rénjiā shì fēngnián, (people cop bumper year) is translatable as "These people are a bumper year." "As for those people, they are having a bumper year."[16] It is not possible to designate either "people" or "year" as commanding the verb. Often such sentences define, describe, or quantify a person or a situation. Frequently these are shì.....de (copula nominalizer) constructions, as in tā shì niànshū.de (s/he cop study book bod/nom) "s/he is a studier," "s/he is a student." Double-nominative constructions without a linking verb are best described as including both a discourse topic and a subject of the verb before a comment as in, nèi kē shù (that class for trees tree) yè.zi hěn dà, (leaf very large) "As for that tree, its leaves are very

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large,"[17] or dàxiàng bí.zi cháng, "elephants (have) long noses"; "as for elephants, (their) noses (are) long." Topic is defined as the focus of attention for a whole discourse chain whose scope extends beyond the individual sentence. Since topic is basically a discourse notion, its discussion is deferred to 4.1.e below. It is important to have a firm grasp of referential word order within the sentence before moving on to cross-sentential units.

SECTION 4.1.c FRONTED PATIENT: A VARIATION OF REFERENTIAL ORDER

In sentences which have both an agent and a patient, as well as an action verb which expresses a strong, bounded effect on the patient, a variation in standard template order is possible. This variant fronts the patient to before the verb. This may be done with or without the ba object-marker for fronted patient objects.[18] The order is simply: (AGENT) (BǍ) PATIENT VERB. For example:

(wǒ) bǎ mùguā chīwán.le I obj papaya eat finish pfv	"I've finished eating the papaya."
Wǒ mùguā chīhǎo.le, I papaya eat finish pfv	"I've finished eating the papaya."
Lǎo Sān (bǎ) qiáo gàihǎo.le. Lao San obj bridge build finish pfv	"Lao San has finished building the bridge."
Tā (bǎ) yī.fu xǐ.de hǎo gānjìng. s/he obj clothes wash mod very clean	"S/he washes the clothes very clean."

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The object-fronted constructions have a number of features governing their use; violation of any of the features results in a bad sentence. They are: 1) The bǎ noun phrase must be definite, specific or generic. One cannot say *wǒ bǎ yí.ge gǒu màidiào.le, because
I obj one dog sell off pfv
this is a reference to an unspecified, indefinite dog. 2) The verb must involve some sort of act of disposal. The term "disposal" was first suggested by L. Wang, who said, "The disposal form states how a person is handled, manipulated, or dealt with; how something is disposed of; how an affair is conducted."[19] Therefore verbs of cognition, experience, or description cannot take bǎ, e.g. *wǒ bǎ tā rènshi *"I bǎ her/him know." Spontaneous processes cannot take bǎ since there is no agentivity involved in the action, e.g. *Píngguǒ shù
apple tree
bǎ huā kāi.le, *"The apple tree bǎ flowers
obj flower open pfv
opened," *"The apple tree blossomed its flowers." It is rather easy to understand the exclusion of states and processes, since only action verbs take bǎ.

The strictures on the types of action verbs which take bǎ are more difficult to categorize, and depend, to some extent, on the situation being described. Generally speaking, however, bǎ is not used with verbs which describe a patient which is an inherent result of their activity, e.g. *wǒ bǎ gē chàng.le, *"I bǎ the
I obj song sing pfv

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song sang." If, however, the activity is bounded, that is marked for completion, duration, or quality, such constructions are allowed, as in:

Tā	bǎ	gē	chàngwán.le,			"S/he bǎ the song finished singing."
s/he	obj	song	sing finish pfv			
Tā	bǎ	gē	chàng.le	sān	cì.	"S/he bǎ the song sang three times."
s/he	obj	song	sing pfv	three	time	
Tā	bǎ	gē	chàng.le	yì bàn.		"She bǎ the song sang one half."
				one half		
						"S/he sang half the song."

These strictures mean that object-fronting with or without bǎ is very strongly associated with certain types of constructions. Object-fronting with other constructions is not invariably wrong; but it will be odd, and frequently incorrect. The constructions associated with object-fronting are:

1) Use of a first person pronoun as agent.
2) Topicalization of the object.
3) Definite reference in the first object.
4) A tendency to patient meanings for the first object.
5) Special features of the main verb, such as polysyllabicity with a verb + complement, verb + cognate object, or special V-O compounds.
6) Verbal meaning of completion or disposal.
7) Benefactive or dative verbs.[20]

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For example, it is odd but not completely ungrammatical to say, ?wǒ bǎ zìxíngchē qí.le, "I bǎ the bicycle rode." (?wǒ = I; bǎ = obj; zìxíngchē = bicycle; qí.le = ride pfv) Since bicycles are made to be ridden, and, presumably being ridden has no notable effect on the bicycle, it is odd to use object-fronting in this sentence. Why bother to highlight a normal activity which doesn't cause any change of state? The sentence evokes a scenario of a test rider of vehicles of all kinds who goes up to tell the boss that he has now tried out the bicycle, and has something special to report about the experience. It is comparable to the English sentence, "Well, as for the bicycle, I've ridden it" as opposed to "I rode the bicycle."

Use of contrastive word classes for items in a series is especially important in object-fronted constructions where agent-noun and patient-noun come side-by-side. This is one factor in the preference for use of proper names or personal pronouns in fronted constructions. Both belong to limited sets of words, and both are recognizable as possible human agents. Many fronted sentences are much less acceptable if a common noun is the agent, because of the much greater difficulty in distinguishing agent and patient. The problem is even worse if both agent and patient are animate common nouns. This is especially true for frontings without bǎ. For example:

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Wǒ bǎ hé.zi tīhuài.le. I obj box kick break pfv	"I bǎ the box kicked till it broke."
Wǒ hé.zi tīhuài.le. I box kick break pfv	"I the box kicked till it broke."
?Lǎo Sān hé.zi tīhuài,le. Name box kick break pfv	?"Lao San the box kicked till it broke."
?Mǎ bǎ hé.zi tīhuài.le horse obj box kick break pfv	"The horse bǎ the box kicked till it broke."
*Mǎ hé.zi tīhuài.le. horse box kick break pfv	*"The horse the box kicked till it broke."
Wǒ bǎ mǎ tī.le yí cì. I obj horse kick pfv one time	*"I bǎ the horse kicked one time."
*Wǒ mǎ tī.le yí cì. I horse kick pfv one time	*"I the horse kicked one time."
**Niú mǎ tī.le yí cì. Cow horse kick pfv one time	**"The cow the horse kicked one time."

(**means unintelligible.)

Word order in any language is not something which can be freely permuted like peas in a shell game. In Mandarin, the template expectations about the order of patient, agent and action are critical. Lexical factors concerning the directionality and transitivity of particular verbs and their arguments are also crucial. But even when all these conditions are met, the real-world situation is plausible, and the referents are the same for noun, pronoun, and name paraphrases of the same sentences, the need for contrastive word classes still affects the possibility of re-ordering. This is true for English, but it is even more critical for Chinese.

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These factors explain Xiao-chun Miao's finding that adult native-Chinese speakers performed randomly in using toys to act out Mandarin sentences in any order other than agent-verb-patient, or SVO. They performed well on sentences like "the horse kicked the cow," but could not process Mandarin equivalents to "the cow the horse kicked," or "kicked the horse the cow." Animacy was very important to the Chinese. They did very poorly on sentences like "the box bumped the deer," while they had no trouble with its SVO doublet in which the animacy relation was reversed, "the deer bumped the box." Miao tested a control group of native-English speakers who spoke good-to-excellent Mandarin; most of this group had lived in China for at least two years. The native speakers of English were able to process SVO, SOV, and VSO Chinese sentences; animacy was not important to them. Many of the English speakers later remarked that they had simply "inserted" a bǎ or a bèi to "make the utterance grammatical."[21]

Miao's results demonstrate a profound difference in basic language-processing for native-English and native-Chinese speakers. The Chinese speakers are true to the basic "shape" of their language which is maintained by lexical factors, semantic transitivity, and strict, linear expectations about sentential order. If these determiners are not satisfied in a specific sentence, then it will simply be unintelligible. They adhere to basic template order despite the availability of "grammatical" markers

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which would might the aberrant orders acceptable. Their basic operating strategy is analytic rather than syntactic.

The English natives carried over a basically grammatical strategy into their analysis of Chinese. This held true despite the increasingly analytic nature of English, the decay of its inflectional system, and the relatively rigid English word order system which is much like that for Mandarin. The basically inflectional, morphologically-oriented, "shape" of Indo-European molded their performance in their second language. The basic organizational shape of a language overrides recent and more superficial historical changes, no matter how dramatic and noticeable these may be.

Use of object-fronted forms has increased very rapidly in Mandarin since the vernacular literature movement of the 1920's. The influence of Western literature has been an important trigger of this effect. The increase in SOV constructions is one of the reasons linguists have debated whether or not Chinese is changing from an SVO to an SOV language-type.

SECTION 4.1.d AGENT MARKING WITH BÈI

Another form which has increased greatly under the influence of Western languages is the bèi agent-marker. It is sometimes referred tc somewhat misleadingly as the "Chinese passive." Traditionally it was reserved for marking agents of unfortunate actions, such as

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tā bèi wǒ dǎ.de hǎo lìhài "She was beaten
s/he agent I beat mod very severely

very badly by me." When both agent and patient are expressed, bǎ and bèi usage are contrastive, since both come before the second noun. Tā bǎ wǒ dǎ.de
S/he obj I beat mod

hǎo lìhài, means "She bǎ me beat very severely,"
very severe

"She beat me very severely." The agent need not always be expressed in bei sentences. In this use it is something like English passive, fáng.zi bèi shāodiào.le,
house agent burn off pfv

"The house was burned down (by something)." Recently the stricture against bèi use for neutral or positive meanings has been loosening, and one does hear such formerly unacceptable sentences as shēng chéng
province capital

bèi jiefàng.le, "The provincial capital was liberated."[22]
bei liberate pfv

SECTION 4.1.e TOPICS AND TOPICALIZATION

In Mandarin, as in many languages, a sentence-initial position is available for the topic of a conversational exchange focused around a particular subject. It is useful to reserve the use of the term topicalization to refer to occupants of this special, discourse-governed, sentence-initial slot.[23]

Many Chinese sentences are double-nominative constructions like the following:

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nèi	kē		shù	yè.zi	hěn	dà.
this	class.	for	tree	leaf	very	big
	trees					

This type of parallel form construction has been central to Sino-Tibetan since its earliest times. It is impossible to call shù "tree" the subject, and yè.zi "leaf" the object. Chao would describe this sentence as having a main subject, shù "tree," which later analysts prefer to call the topic. In Chao's terms, yè.zi "leaf," is a "minor subject." It seems better to consider this sentence as having both a subject and a topic. A reasonable translation might be "As for this tree, its leaves are large." The topic is the focus of attention for that discourse unit, while the subject is an argument of the verb.

The importance of topics in Chinese syntax, the difficulties of determining clear subjects and objects in a language without case markings or verb agreement, and the extremely high rate of zero anaphora and predicate-only sentences led Li and Thompson to propose a new language type, topic-oriented languages.[24] Topic-oriented languages stood in contrast to the case and order-defined SVO, SOV, and OSV language types formulated by Greenberg, then refined by Lehmann and others.[25]

Mandarin has many characteristics of both SVO and SOV languages; it is difficult to categorize it as either type, although there has been much debate.[26]

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TABLE 4.3

SOV AND SVO FEATURES OF MANDARIN[27]

SVO LANGUAGE FEATURES	SOV LANGUAGE FEATURES
VO sentences occur	OV sentences occur
Prepositions exist	Prepositional phrases precede the verb (except time and place phrases)
Auxiliaries precede the verb	Postpositions exist
Complex sentences are almost always SVO	Relative clauses precede the head noun
	Genitive phrases precede the head noun
	Aspect markers follow the V
	Certain adverbials precede the verb

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There are some problems with calling Mandarin a topic-oriented language. While agreeing with Li and Thompson's critique of the impossibility of describing Mandarin as decisively SVO or SOV, Tsao has strongly criticised the definition of Chinese as topic-oriented. He proposes that it should, instead, be called discourse-oriented. His reasoning is as follows:[28] 1) Topic and subject are different levels of analytic notions. Topic is a discourse notion, and subject a sentential one. 2) Chinese sentences may have both a subject and a topic, either, or neither, depending on context and cohesive relation. 3) The sentence in Chinese is far less clearly defined and syntactically internally self-determined by obligatorily-marked relations than is the English sentence. Chinese sentences, taken in isolation, are thus often ambiguous where English sentences are not. Once contextualized, the Chinese sentence is usually unambiguous. 4) In English, topicalized elements are generally clearly marked off from the sentence by phrases such as, "speaking of," or "as for," without this element playing any important role in the grammatical organization of the sentence. In a discourse-oriented language, discourse elements like topic interact with the syntactic organization of the sentences under their domain. As a result, topic, subject and object often become indistinguishable when sentences are taken out of context.

Tsao also points out that Chinese topic is always sentence-initial and definite. It may frequently be

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un-marked, and thus liable to confusion with other sentence elements which happen to come sentence-initially in the absence of a topic. Agent, time, and patient of a stative verb are often sentence-initial without being discourse topics. True topics, however, always have the potential for being distinguished because they can always be followed by a topicalizing particle to set them apart from referential sentence elements. Tsao gives the following sentence as an example of the topic, and other discourse factors which govern reference and cohesion beyond a loosely-defined, subject-predicate pair.[29]

Zhèi	kē	shù	.a,	yè.zi	yòu
This	classifier	tree	topic particle	leaves	and

xì,	yòu	cháng,	shùgān	yòu	cū,	yòu	dà,
small	and	long	tree trunk	and	rough	and	big

zhēn	nán-kàn,	wǒ	bú	yào	mǎi.le.
really	ugly	I	not	want	buy pfv

"This tree (topic), (its) leaves are small and long; (its) trunk is rough and big; (it) is really ugly; I don't want to buy (it)."

We can think of referential sentence order as basic, with topic being a sort of optional flag-bearer which precedes the parade to signal its arrival and identity. Not every sentence in the conversational parade has a topic flag-bearer. In fact, in cohesive, mature speech, quite a few sentence-rows of marchers will follow a single flag-bearer. It is possible for almost any meaningful sentence element to be "promoted up front" to sentence-

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initial, flag-bearer position as the topic. Topicalization, by definition, requires promotion beyond the rank-and-file. Therefore, topicalized sentence elements are exempted from their referential sentence rank-order; this allows them to "pass ahead of" normally sentence-initial elements such as agent and subject. For example:

TIME TOPIC
Sān-diǎn-zhōng .a, wǒ kǒngpà yǒu shì.
three o'clock topic I fear have thing

"As for three o'clock, I'm afraid I have something (to do then.)"

PLACE TOPIC
Běijīng .a, tā nèi.bian.de péngyǒu
Beijing topic s/he there mod friend

bù duō.
not many

"As for Beijing, he doesn't have many friends there."

PATIENT TOPIC
Mùguā, nǐ chīguò méi yǒu?
Papaya you eat experience not have

"As for papayas, have you ever eaten one?"

Referential order is fixed within a very limited set of variations, each of which has a specific, functional difference regardless of the discourse setting. Topicalized re-ordering is a scalar phenomenon with many possibilities, none of which is uniquely contrastive with regard to meaning. Referential order is relatively autonomous; its variants can be listed and prescribed. Topicalized reordering is a fluid range of possible elaborations of referential order which cannot be inventoried exhaustively.

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SECTION 4.1.f HISTORICAL CHANGE IN WORD ORDER

Several of the most prominent changes in modern Mandarin syntax are associated with SOV word order, rather than with SVO. The enormous increase in object-fronted constructions with bǎ and agent marking with bèi are particularly prominent.[30] This increase led many analysts to suspect that Chinese was undergoing a word order change from SVO to SOV. The struggle to define Chinese in rigid SVO or SOV terms has led to a much more profound and appropriate understanding of the role of word order in Chinese, and in language generally. While object-fronted and topicalized SOV sentences are becoming more common for Mandarin, it is best to see these as topicalized variants of a basic template word order of topic-comment which has not changed since ancient times. The order of agents and patients with regard to the verb is based on an ergative model of transitivity relations which are determined by the verb. Referential order is quite rigid, and almost invariably SVO if both agent and patient are stated. However, almost any sentence element may optionally be promoted out of its fixed, referential order sentence position up into the sentence-initial, topicalized, discourse-sensitive flag-bearer slot for topicalization.

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SECTION 4.2 DEVELOPMENT OF ORDER IN CHILD CHINESE

In looking in detail at the Chinese children's developing use of order, it is as important to note where order never varied as to describe where it did; to note the developmental constants as well as the changes. This chapter first considers the scope over which order issues were relevant, next the measures used for measuring order among children and adults. It then considers the systems where order was constant before discussing the developmental trends from Stage I Proto-Order, to Stage II Immutable Order, Stage III Sentential Re-ordering, and Stage IV Discourse Re-ordering.

Order issues were important at the sentential level, but caused little difficulty for word-formation. Referential order for sentences was acquired easily, while topicalized variants presented some problems and were acquired later. Even at the two-word stage, most words were inserted correctly into pre-designated order templates. Less than 1% of all orderable sentences had any order errors. The order errors which did occur were almost invariably mis-analyses of the selectional restrictions governing completely correct usage of a given order form, rather misplacement of component in the wrong "slot." Order errors involving misuse of bǎ and bèi were about twice as common as unmarked order errors. The bǎ and

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bèi errors also violated selectional restrictions . . . rather than being misplacements, further indicating the centrality of the prior semantic-syntactic sort before distribution into an order template. Almost all other order errors could be traced to a conflation of correctly ordered phrases which should have been broken apart and reordered in a particular context. For example:

Example 4.1 Pang Tape 9 (age 2.2)

(Commenting on a fat teddy bear)

*Bú	hùi	dù.zi	biǎn.le.la.	*"Can't stomach get flat."
not	can	stomach	flat pfv affective particle	

(for standard:

Dù.zi	bú	hùi	biǎn.le	"Stomach can't get flat.")
stomach	not	can	flat pfv	

Here Pang has been misled by analogy to the enormous number of sentences which she can say with bú hùi "can't," such as "bú hùi tiào" "Can't jump." Dù.zi biǎn.le is also a standard noun plus change-of-state verb construction, along the lines of

hūa	kāi.le	"The flower opened."
flower	open pfv	

The concatenation leads to a mis-ordered sentence. It also incidentally illustrates the force of her preference for VO over OV.

More typical of the order problems where no actual misplacement is involved are the following. Two are fronted without obligatory bǎ, one with a misused bǎ.

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Example 4.2 Pang Tape 25 (2.11)

(Re: buying gun.)

*Ránhòu Ø huài rén dǎ-sǐ-diào.
Later bad person hit die off

*Hái yǒu Ø muóguǐ dǎ-sǐ-diào.
Also exist monster hit die off

*"Later the bad person kill. *And also the monster kill."

(for: "Later kill the bad person. And also kill the monster.")

Example 4.3 Kang Tape 1 (2.10)

(Taking coins to play shopping with.)

Kang *Wǒ bǎ wǒ.de qián mǎi dōngxi,
I object marker I poss. money buy thing

wǒ jiù yòng zhèi.ge. *"I ba my money buy things, I'll just use this."
I just use this

Mother Nǐ shuō shén.me? "What are you saying?"
You say what?

Kang *Ø qián mǎi dōngxi wǒ *"Ø Money to buy things, I'll just use this."
Money buy thing I

jiù yòng zhèi.ge.
just use this

Mother (gloss) Òu. Nǐ mǎi "Oh. (When) you buy things you ... just use this."
Oh. You buy

dōngxi nǐ jiù yòng
thing you just use

zhèi.ge
this.

In 4.2 Pang Pang has omitted the obligatory bǎ, making the sentence sound as though the monsters were to do the

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killing rather than she herself. In 4.3 Kang has used bǎ as a full verb-equivalent to mark transitivity. In his second try he attempts to front qián "money," but this instrumental use still requires a yòng "use," verb which is not supplied.

SECTION 4.3 WORD-INTERNAL ORDER

As the above examples indicate, most order difficulties occur at the sentential level. The children had almost no difficulty with word-internal order, despite the potentially free nature of most high-frequency morphemes, their semantic transparency, and their possibility for use in reversed or otherwise re-ordered compounds. Even in Chinese, the word has a strong enough phonological, prosodic, and semantic unity to be internally ordered and not reversible. Naturally, many if not most, words are learned as unanalysed wholes. Re-orderings would amount to producing a kind of unintelligible Pig Latin if people were ever to say *zi.zhūo (nominal table) for zhūo.zi (table nominal) "table." Children learn very early on to form complexly-ordered directional-complements on verbs, such as ná.bùqǐlái "can't get it out." This is literally ná "take," bù "not," qǐ "rise," lái "come." They very seldom make order errors constructing these, though they may contatenate too few or too many elements.

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Kang and Pang had very few word-internal order mistakes, but the ones they had were interesting. Pang had trouble choosing which directional-complements to affix in a complex action.

Example 4.4 Pang Tape 22 (2.9)

(Pang has been fanning herself with a paper fan. Baojane asks if she isn't cold. Pang closes the fan saying)

*Hái shì guān-qǐ-hǎo-le-lái.	*"Still close it better up."
Still cop close rise good pfv come	

(to mean "It's better to close it up.")

She could have used either the adult form:

guān- qǐ - lái hǎo.le,	"closing it up is better"
close rise come good pfv	

Or, she could have said:

lái guān -hǎo -le	"going to close it up good."
come close good pfv	

This type of confusion is similar to that produced by verb + preposition sets such as "close up," and "set down" in English speaking children.

In another set of word-internal order errors, erroneous placement of the negative meant the scope of negation was wrong. The source of this error was analogy with two extremely common and productive patterns. There are the verb-not-verb question form, and the verb + negative +

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result compound, e.g. kàn-.bu - jiàn "can't see,"
see not perceive

xǐ - .bu - diào "can't wash it out."
wash not off

Example 4.5 Pang Tape 19 (2.8)

(Fed up with the responsibilities of being the well-behaved, unselfish, "older sister" to the neighbor baby.)

*Wǒ dāng - .bu - jiějie.
I take role not big sister

(Adult form: wǒ bù dāng jiějie.le.)
I not take role big sister pfv

This coinage may have been influenced by an analogy with a Taiwanese form in which verb + negative + nominal is an acceptable compound. The Taiwanese construction can be transliterated as Mandarin kàn-bu-rén, "not to see anyone."[31]
see not person

The closer the morphemes in a compound were to the extremes of: full free use, semantic transparency, same word class, and phonologically full pronunciation resembling free-form pronunciation, the more likely they were to be transposed. All of these factors combined in the two reversals of compounds which the children did produce. (This is only two reversals out of 35,557 utterances!)[32]

Zhong Rong at 2.6 overheard me say fēngmì "bee honey," "honey," for mìfēng "honey bee," in talking
bee honey
honey bee

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about to the little bees in a popular cartoon show. She first looked puzzled, then repeated my error. Two weeks later she used the reversed form spontaneously. Kang Kang reversed kěkǒu "delicious," and kǒukě "thirst" (kěkǒu: suitable for mouth; kǒukě: mouth thirst) "thirsty," under another set of unusual conditions. In both these cases there was a known, reversed, form available, while the stress, tone realization, and other pronunciation features of these relatively - transparent compounds were also known. The reverals are comparable to English spoonerisms, or the type of error an Israeli friend of mine made in referring to his hangovers as "overhangs." Many sorts of code-languages and in-group argots also rely on the comprehensibility and productivity of this sort of reversal.

Example 4.6 Kang Tape 12 (3.4)

(Mother is testing Kang's discrimination between words for "soup" tāng, and "candy" táng, which differ by tone in minimal pairs. She is asking him to feed each to a doll, but wants to avoid prompting him by saying the words themselves.)

Mother Nà, nèi.ge Lù Guāiguāi dù.zi hǎo è
Well, that Lu Dearie stomach very hungry

.a. Gěi tā chī yì-diǎn dōngxī,
part. Give her eat one little thing

hǎo-bu-hǎo?
good not good

"Well, that Lu Darling is really hungry. Give her a little something to eat, ok?"

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Kang	*Nǐ / tā yào kě-kǒu You she want suitable to mouth thirsty mouth	*"You/she want delicious hasn't she?"
	méi yǒu? have not	
Mother	Á? Huh?	"What?"
Kang	Tā kǒu-kě .ma? She mouth thirst question particle	"Is she thirsty?"
Mother	Kě .a. Thirsty particle.	"(She's) Thirsty."

In Kang's first utterance the sounds he utters, kěkǒu, suitable for mouth can only mean "delicious." This interpretation is supported by his grammatical construction; he could easily add a nominal and ask "does she want something delicious?" However, the méi yǒu not have "hasn't (she)," tag-question implies that the doll has had some experience. This construction is closer to asking whether the dolly is thirsty, and hence would prefer soup to candy. No wonder the mother is confused. Given the homophony, it is impossible to say how much Kang has shifted his intention when he reverses the compound to ask "Is she thirsty?" tā kǒukě .ma? In a pretend-play situation reference is hard to establish definitively.

Such errors assume a level of metalinguistic awareness. They are extremely common among foreign adult speakers of Chinese. Few of them have learned much of their vocabulary as unanalysed forms, most work from a character-by-

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character, dictionary-based analysis more amenable to learning to read the classics and to pronouncing distinguishable citation tones than to producing connected, casual speech. Reversed compounds are so common among foreign speakers, that Chinese people with many foreign students or friends become quite adept at trying to reverse misunderstood utterances in a sort of constant, oral, game of anagrams.

Nevertheless, the semantic basis for ordering linguistic elements into their proper form-classes is not different in principle for native Chinese speaking children or adults. Each is often given sequences of equally-stressed forms with no clear semantic referents. Without semantic pre-sorting, order becomes arbitrary and extremely hard to preserve even in imitation. The closer the input comes to the single-morpheme, potentially-free, equally-stressed units common in the classical language, the greater the latitude for reanalysis and misinterpretation. The occasions on which literary Chinese is pronounced aloud provide the most fertile grounds for such re-analysis. In written Chinese, the different characters disambiguate most forms that would be unanalysable if spoken. Modern speech also uses extensive periphrasis, as well as much reordering. In both written and spoken Chinese, however, linguistic and situational context is crucial in interpretation. Teachers of the classics always tell confused students to look "up and down" the page for contextual clues. Tsao's point that

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most of the so-called ambiguous sentences cited in articles on Chinese linguistics are completely unambiguous in context is further evidence of the discourse-oriented organization of the language.[32]

The lack of segmentation and meaning clues in a classical phrase so confused Kang that he was unable even to imitate and repeat the name of his favorite and most frequently-watched TV show, Xīgòng Fēngyún, "Saigon Fortunes." Kang had very little to help him decode and remember this title. The Chinese words for "west" and "offering" are used to transliterate "Saigon" as Xīgòng, west offering The invariant syllable structure of Chinese means that all foreign names are assigned one of the 400 canonical syllables to transliterate them, if they are not translated completely.[33] Fēngyún is a compound, literally "wind" + "cloud." This is a conventional literary phrase which implies the viscissitudes of fortune. It is often used in titles of artistic works. Each morpheme in this title is pronounced with equal stress and tone, making it sound as much like a four-word phrase as a two-word title.[34] There are no morphological clues to word class. The structure of this title is very much like a traditional, four-character literary proverbs or chéng yǔ, another form which Kang had difficulty imitating. (See Chapter Six, Section 6.6.c.)

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Going on a principle of semantic segmentation and re-analysis, Kang tried repeating Xīgòng "Saigon," as gōngyuán "park." He then repeated it as gōnggòng, public park public common as in the first part of the often-used gōnggòng-qì-chē "public bus." This was one of the rare cases in public common gas car which a child transposed and reordered morphemes across word boundaries, and in which the child was unable to imitate the model utterance in the proper order. Omissions in imitated strings were very common, but reorderings other than this example are rare. There is virtually no sound play involving re-ordering. The entire extended example is included here to give an idea of the scope of the confusion, and its persistence. Semantics outweigh order in this typical speech exchange between mother and child. Two weeks later Kang said the title correctly and spontaneously; he was surprised to be told he had ever had trouble with this phrase. It is impossible to be sure exactly what allowed him to master what had previously been such a difficult puzzle. Developmental growth, increased experience with the name, watching the show at least two more times in which Xīgòng "Saigon" was frequently referred to as a place, and the mother's retelling of his difficulty to the father and friends, each undoubtedly played a role. Whatever the balance among these causes, this example is a powerful reminder that the children's almost uniformly correctly-

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ordered production is not automatic, but is founded on an invisible, but all-powerful, semantic classificatory pre-processing.

Example 4.7 Kang Tape 15 (3.5)

(wants to watch a TV drama series about the plight of the Vietnamese boat people entitled "Xīgòng Fēngyún.")

Kang		Wǒ yào kàn "Xīgòng Gōngyuán." I want watch Saigon Public Park
Mother	(checking)	"Xī Fēng Gōngyuán .a? West Wind Public Park question particle
Kang		*Wǒ yào kàn "Xī Fèng I want watch West ?Phoenix ?Wind Gōng yún." Public Cloud (Here his effort to imitate leads to a wrong tone on fēng as fèng is replaced into the sequence.)
Mother		Bú duì. Not correct
Kang		eí!? Huh!?
Mother	(models)	"Xīgòng Fēngyún." (lit) West offering wind cloud "Saigon Fortunes"
Kang	(imitating)	*Wǒ yào kàn "Xī fēng I want watch West wind Gōng yún" public cloud (Here the phrase "west wind" xī fēng is semantically compelling enough to reorder and override the totally unfamiliar "Saigon" Xīgòng.)

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Mother		Bú dùi. Kàn shén.me? not correct Watch what?
Kang		*um, (laughs) "Xī Fēng Gōng"/ West Wind Public
		wǒ yào kàn nà gāng nèi.ge I want watch that just now that
		diànshì jù. tv show
		"Um, "West Wind Public"/ I want to watch that tv show we just saw."
Mother		Nèi.ge jiào zuò "Xīgòng Fēngyún." That call make "Saigon Fortune"
Kang	(imitating)	Wǒ yào kàn "Xīgòng Fēngyún." I want watch "Saigon Fortune."
Mother	(laughing)	hà!
		(Kang slaps knee in laughter.)
Kang	(laughing)	heéei! wǒ yào kàn nèi.ge ha ha I want watch that
		liánxù jù .ma. series show emph.
Mother	(models)	Wǒ jiào nǐ shuō, "Xīgòng." I teach you say "Saigon"
Kang	(imitating)	"Xī gōnggòng West public common."
		(The gōnggòng seems to be triggered by the word for "bus" which Kang uses very frequently, gōnggòng-qìchē, literally "public common gas cart", "public car" i.e., a bus.)
Mother		Bú shì. (models.) "Xīgòng." Not copula "Saigon"
Kang	(imitates)	"Xīgòng Fēngyún." "Saigon Fortune."
Mother		Duì.le. (laughs.) Correct pfv

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Kang		*wǒ yào kàn "Xī fèng I want watch West ?phoenix ?wind
		Gòng yún." Public cloud
		(laughs) hiiiii.!
Mother		(laughs) hàà!
		(Kang waves hand in air)
		Nǐ yào kàn shén.me? You want watch what?
Kang		Nǐ jiǎng .a. You say expressive particle.
Mother	(models)	"Xīgòng fēngyún." "Saigon Fortune."
Kang	(imitates)	Wǒ kàn "Xī Fèng Gòng Yún." I watch West ?Phoenix Public Cloud." ?wind
		(laughs) héii.
Mother	(laughing)	hēi. hēi. Nǐ bú huì shuō ha ha You not can say
		"Xīgòng Fēngyún." "Saigon Fortune."
Kang		Um, nǐ zài shuō yícì. Um, you again say one time.
		Wǒ yào qù kàn shén.me? I want go see what?
Mother	(models)	Kāng Kāng yào kàn "Xīgòng Kang Kang want watch "Saigon
		Fēngyún" .a. Fortune" particle.
Kang	(imitating)	*Wǒ yào kàn "Xī fèng I want watch "West ?Phoenix ?wind
		Gòngyún." Public cloud."

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Mother (laughing) heiii.
ha

Kang (laughing) yiiii. Wǒ yào kàn diànshì.
ha I want watch tv

Example 4.8 Two weeks later Tape 16 (3.6)

(Kang has been playing doctor while the show "Saigon Fortunes" is on tv. Mother directs his interest to the tv.)

Mother Yīshēng, nà shì shén.me?
Doctor, that is what?

Nà shì shén.me?
That is what?

Kang Shén.me?
what

Mother Shì/ nà shì shén.me yǐngpiàn?
Is that is what show?

Nèi.ge liánxù jù jiào shén.me?
That serial show call what?

Kang "Xīgòng Fēngyún."
"Saigon Fortune." (correct.)

(takes a coke, walks across room.)

Mother Òu, "Xīgòng Fēngyún." Xiànzài
Oh "Saigon Fortune" Now

huì jiǎng.le.a.
can say pfv part

Kang "Xīgòng Fēngyún."
"Saigon Fortune."

Mother Nǐ shàng.ge lǐbài bú shì
You last week not be

zhèi.yang jiǎng.de.
this way say mod.

"That's not how you said it last week."

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Kang	Zěm.me jiǎng.de? How say modifier.
Mother	Nǐ jì.bujì.de? You remember not remember modifier? Nǐ bú jì.de.le? You not remember modifier perfective. (Kang wanders off and does not answer.)

SECTION 4.4 METHODOLOGY OF THE ORDER ANALYSIS

Ordered relations affect every utterance in the child and adult samples. Order relations are significant at many different levels of analysis, and sensitive to a variety of different formal, developmental, conversational, and contextual signals. Therefore, doing the order analysis was an enormously time-consuming task. Because of the limited amount that is known about order relations in Chinese generally, and the very low frequency of some of the more significant indicators, it seemed worthwhile to look at all child utterances in the 64 hours of child recordings. Nonetheless, because of the nature of the sample and the ages of the children, this study has most information about children in Stage II Immutable Order, and Stage III Sentence-internal Re-ordering, since three of the four children studied were at that level. Less advanced data comes from Lao Hu, the youngest and least advanced child, who was not taped longitudinally, as well as from notes on the children whom I visited in selecting subjects for the longitudinal study. More advanced data comes from the most

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advanced Kang tapes, as well as from the extensive sample from Pang's older sister who was 4 years 11 months old at the start of the study. All told, the data base coded for the children consists of 32,228 interpretable utterances, about 95% of all utterances produced, with cries, laughs, pure sound play, and unglossable utterances excluded. There are 1,771 interpretable utterances for Lao Hu; 3,333 for Zhong Rong; 11,661 for Pang; and 15,463 for Kang. See Tables 4.4 and 4.5.

I also did a random-sample, adult-control analysis to establish norms for certain order types. This was to help determine which trends might be truly developmental, as opposed to which were so discourse-sensitive that there was great individual and situational variation. This is the first frequency analysis of adult Mandarin syntax. The adult data base is much smaller than that for the children, but not inconsiderable: 5,248 utterances. This yields a total data base for order relations of 37,476 utterances. Tables and graphs giving further detail of the frequency analyses are included in the sections describing the individual stages of development. This section details the coding schema itself: first, in greatest detail, for the children studied longitudinally, then for the adult control, and then a comparison with the method of analysis for order in the pilot study.

For the longitudinal-study children, Pang and Kang, I first counted the total number of utterances. My

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TABLE 4.4

TOTAL NUMBER OF UTTERANCES: PANG

TAPE	TOTAL UTTERANCES PER HOUR	INTERPRETABLE UTTERANCES	PERCENTAGE INTERPRETABLE
1	458	449	98%
2	286	266	93%
3	378	368	97%
4	465	430	92%
5	623	588	94%
6	626	511	98%
7	497	432	89%
8	336	273	82%
9	473	357	76%
10	492	484	98%
11	626	610	97%
12	493	488	99%
13	427	423	99%
14	458	446	98%
15	479	476	99%
16	405	393	97%
17	433	419	97%
18	504	501	99%
19	615	605	99%
20	651	644	99%
21	402	400	99%
22	627	552	88%
23	455	420	93%
24	583	563	97%
25	459	453	99%
TOTAL	12,261	11,651	
MEAN	490	466	95%
		r = .26	

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TABLE 4.5

TOTAL NUMBER OF UTTERANCES: KANG

TAPE		TOTAL UTTERANCES PER HOUR	INTERPRETABLE UTTERANCES	PERCENTAGE INTERPRETABLE
1	(½ hour)	316	314	99%
2		789	789	100%
3	(½ hour)	380	355	94%
4		597	549	92%
5		614	614	100%
6		637	637	100%
7		715	641	90%
8		689	619	90%
9		826	809	98%
10		646	632	98%
11		783	690	88%
12		957	916	96%
13		963	811	84%
14		838	805	96%
15		861	815	95%
16		666	613	92%
17		680	603	89%
18		726	626	86%
19		796	669	84%
20		904	703	78%
21		837	675	81%
22		941	789	84%
23		836	789	94%
	TOTAL	16,997	15,463	
	MEAN (hourly)	739	701	84%
			r = .36	

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transcribers and I took great care in marking sentence-final intonation with periods, distinguishing these from slashes for short and long pauses, and ellipses for utterances which trailed off without being completed. (See Chapter Two, Methodology) Despite the theoretical problems for making tight theoretical definitions of Chinese sentences, there was no problem at all in marking sentences by intonational cues. I next counted the number and percentage of interpretable utterances for each tape. Frequencies are detailed in Tables 4.7, 4.8, and 4.9 for the adults and Tables 4.4, and 4.5 for the children. The interpretable utterances are the data base for all the analytic studies in this thesis.

Moving from the most general linguistic units to those which are most restricted and most intimately connected with order relations, I did the following finer-grained analyses. As described in detail in the previous section, mis-ordered morphemes in compounds were extremely rare. While I noted each example, the great majority of the coding analyzes order relations at the sentential level, and the discourse topicalization level.

While the pilot study analyzed order in an SVO framework, the difficulties of coding SVO appropriately in Chinese, and the desire to produce a much more fine-grained analysis prompted me to design a Fillmore-type case-relations coding scheme. It gives special attention to the distinctions between statives as opposed to action

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verbs; and to existential and presentative utterances as opposed to actions. Because of the importance of sentential order in contrasting location of an activity with end location of an action, I included a number of cells for different permutations of order expressing locative relations with agents and patients. The entire list of coding categories with examples of each is contained in Table 4.6. Single-word utterances are excluded as not orderable. The grammatical structure of the sentence as a whole is coded. To be included an utterance had to have some orderable sentential elements, generally a verb as well as an agent, a patient, an experiencer or a location. Double-nominal constructions which were potentially reversible such as

zhèi.ge	[shì]	gǒugǒu,
This	[copula]	dog dog

"This [is a] doggie," were included. These were mostly identifications which are acceptable in highly-referential, casual speech. Most of the relations coded had potentially permutable variants. The chief exception was agent or experiencer + verb.

Wǒ	tiào	means "I jump," but *tiào wǒ *"jump I" is
I	jump	

not acceptable or meaningful.

Wǒ	lèi	is "I'm tired,"
I	tire	

but *lèi wǒ is meaningless. Both these permutations are virtually non-occurring. Agent and experiencer relations seem to be highly salient and expressible by the youngest children.

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TABLE 4.6

ORDER CODING CATEGORIES FOR KANG, PANG, AND ADULTS

Only "orderable" utterances fit into this schema which therefore excludes all uninterpretable utterances, laughs, exclamations, one-word utterances, and those which contain neither an agent nor a patient or object to be commented upon. In addition to being tallied in these categories, all fronted and aberrant order utterances are copied in full for more analysis and included in the computations. All utterances with bǎ are similarly copied in full and analysed.

CODING CATEGORY	EXAMPLES
AGENT-ACTION	wǒ tiào. I jump
EXPERIENCER-STATE	Wǒ hǎo lèi. I very tired.
THING-STATE	Zhèi.ge hǎo gāo. This very tall
PATIENT-VERB	Zhèi.ge ná xiàlái.le. (referring to some object) This take down come perfective. (Someone) took this one down. Zhèi.ge gěi nǐ. This give you. (Someone) gives you this one. Mùguā chīhǎo.le. Papaya eat good perfective. (Someone) ate up the papaya. The papaya's all eaten.
VERB-PATIENT	Hùa yí.ge xīngxīng. Draw one star. Gei wo. Give me.
PATIENT-VERB-RANGE	Lùyīnjī gěi mèi.mèi ná. Tape recorder give little sister take. Take the tape recorder for Little Sister.

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TABLE 4.6 (Continued)

CODING CATEGORY	EXAMPLES
AGENT-VERB-RANGE	Wǒ lái kàn diànshì. I go watch tv Xiǎo gǒugou tiào zhèli bù xíng. Little puppy jump here not permissible.
VERB-RANGE	Kěyi cóng zhèi.bian jìn-lái May from here enter come. (Something) can come in from here. Huàhǎo.le jiù bú yào huà.le. Draw finish pfv just not want draw pfv. When (I) finish drawing this, (I) don't want to draw any more. Jiǎzhuāng wǒ zài chī dōngxi. Pretend I prog. eat thing. Pretend I'm eating.
AGENT-VERB-PATIENT (includes Experiencer-Verb-Patient where patient is single concrete object)	Wǒ chī dōngxi. I eat thing. Nǐ hǎo xǐhuān xiǎo gǒugou. You really like little puppy.
POSSESSOR-POSSESSED	Zhè shì wǒ.de. This copula I possessive This is mine. Wǒ.de shì zhèi.ge. Mine is this one.
EQUIVALENT (mostly shì copula, xiàng "resemble," dàng "take on the position of.")	Zhè shì shén.me? This cop. what? Zhèi.ge xiǎo gǒugǒu. This little pubbpy. This is a little puppy.

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TABLE 4.6 (Continued)

CODING CATEGORY	EXAMPLES
	Hěn xiàng bīngqílín. Very resemble icecream.
	Kàng Kāng dāng yīshēng. Kang take on position doctor.
	Kang Kang is a doctor.
EXISTENTIAL (mostly with yǒu "to have," "to exist.")	Yǒu rén zài lǐmiàn. exist person at inside
	There's someone inside.
	Shàng.miàn yǒu hǎochī.de. Top side exist good eat modifier.
	There are delicious ones on top.
AGENT-PATIENT-VERB	Wǒ lùyīnjī fànghǎo.le. I tape recorder put good pfv.
	I put down the tape recorder.
	Wǒ bǎ lùyīnjī fànghǎo.le. I obj. marker tape recorder put good pfv.
PATIENT-AGENT-VERB	Lùyīnjī wǒ fànghǎo.le. Tape recorder I put good pfv.
	As for the tape recorder, I've put it down.
EXPERIENCER-VERB-RANGE (mostly yào "want")	Wǒ yào zhǔ dōngxī. I want cook things.
	Xiǎo gǒu ài chī bīngān. Little dog love eat cookie.
VERB-LOCATIVE (end location)	Fàng zhèli. Pǎo zhèli hǎo.buhǎo? Put (it) here. Run here ok not ok
	Run over to here, ok?
LOCATIVE-VERB (location of action)	Zhèli pǎo hǎo.bu hǎo? Here run ok not ok
	Do your running here, ok?

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TABLE 4.6 (Continued)

CODING CATEGORY	EXAMPLES
AGENT-VERB-LOCATIVE (end location)	Nǐ lái zhèlǐ. You come here
AGENT-LOCATIVE-VERB (location of action)	Nǐ zài zhèli chàng. You at here sing.
PATIENT-VERB-LOCATIVE	Zhèi.ge fàng zhè-lǐ. This put here.

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"Thing-state" is the labeling category for nouns or pronouns in subject position which are neither agents, experiencers, nor patients, but which are simply being described by a stative verb, e.g. Zhèi.ge hǎo gāo
This very tall
"this is tall." These are often translatable by English copula + adjective, or predicate nominative. Another stative relation is "equivalents." These are definitions, resemblances, and existentials, generally with the presentative verb yǒu "to have, to exist" followed by the item presented. Possessive relations are also marked. Possessives are potentially reversible in contrastive utterances.

Other relations marked are: Patient-verb where a semantic analysis of the verb shows that the verb must have an agentive subject, but the named preverbal element is a patient, as where the child finishes her fruit, and says mùguā chīhǎo.le "(someone) ate up the papaya."
papaya eat good prv
It is clear that the verb "eat" must have an agentive subject. A similar semantic, grammatical and situational analysis screens for: Verb - Patient; Agent - Verb - Patient; Agent - Patient - Verb; Patient - Agent - Verb; Verb - Locative; Locative - Verb; Agent - Verb - Locative; Agent - Locative - Verb; and Patient - Verb - Locative. A few more words of explanation are required for the category "range." Here "range" generally includes any complex or relativized relation, usually a complement, more complex than a simple patient. It subsumes a number of

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complex embeddings which were not analysed further than their role in the main clause, although order relations within the "range" category were carefully analysed for aberrant orders. Therefore the "range" categories included: Agent - Verb - Range; Experiencer - Verb - Range; Patient - Verb - Range; and Verb - Range.

There were few difficulties with this scheme; those that did exist were hardly unique to Chinese. Deciding whether body parts were agents, experiencers, or patients was sometimes difficult, as in shǒu fàng zhè lǐ, hand put here, "Put (your) hand here." This was analysed in context as Patient - Verb - Locative. Dù.zi è.le, stomach hungry pfv/current state "I'm hungry," was analysed as Experiencer - State. Things undergoing a change-of-state as in shuǐ lěng.le, water cold pfv went in the Thing-State category, although occasional overlap with potentially causative relations was a problem. Most were coded as Patient + Verbs when unexpected, non-spontaneous changes-of-state occurred, e.g. lùyīnjī huài-diào.le, tape recorder bad off pfv "The tape recorder is/got broken."

All interpretable utterances were tested for these order categories, then the number which could be coded for order was totalled to form the figure "Total Orderable Utterances." The "Percentage of Utterances Orderable" is "Total Orderable" as a percentage of "Total Utterances

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Interpretable." Each of the following utterance types was copied out in full, with context, and often with preceeding and following utterances: all bad or unusual utterances; all bǎ or bèi utterances; all utterances which displayed any sort of fronting or topicalization, generally including Patient - Verb, Agent - Patient - Verb, Patient - Agent - Verb, Patient - Locative; and sentence-initial topicalizations. The number of utterances fronted was calculated from the total of fronted utterances copied in full, rather than merely taking their counts on the coding grid. "Percentage of Orderable Fronted" calculates fronted utterances as a percentage of the all orderable utterances to give a more meaningful figure for utterance complexity and productivity of ordering variants than calculating fronted utterances as a percentage of all interpretable utterances would have done.

All bad or aberrant orders were checked with a native Chinese-speaking informant for goodness or deviation from an adult norm. I scaled "typically childish" utterances as contrasted with truly unusual and unexpected utterances coined by the child. The informant judged the acceptability of aberrant utterances in adult Chinese baby-talk, and typical talk to children. Utterances were checked in the contexts of the situation with prior speech, sometimes going far forward or backward in the transcript, since prior mention often determined whether or not a given fronting is appropriate or grammatical.

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Once this checking was finished it was possible to calculate a percentage of frontings which were good for utterances with and without bǎ or bèi. (See Table 4.14, Graphs 4.8 and 4.9.) For the purposes of this analysis, "typically childish" utterances which adults would not use to other adults or to non-infant children were scored as "bad." One can argue about this either way, but since the goal of the study is to trace children's development toward more standard, adult-like forms, not to single these out would flatten and make invisible many significant developmental trends. The "bad" category also includes totally ungrammatical or incomprehensible usages; it was not possible to separate these off completely from the "childish" category and so they were merged. All bǎ, bèi and fronted utterances were subjected to further analysis, as were all "bad" utterances.

Other measures of the development of order variations included: number of Patient - Verb utterances as a percentage of the number of Verb - Patient utterances; the relative percentages of Agent - Verb - Patient, Agent - Patient - Verb, and Patient - Agent - Verb utterances among utterances in which all three of these relations were expressed (excluding embedded "range" clause order.) There was often more than one try at using a bǎ in a given utterance; inconclusive false starts were scored as good, so occasionally the number of bǎ uses is greater than the number of bǎ sentences.

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The approach to the adult data was very similar, although the focus on child language, and the enormous size of the corpus necessarily restricted the range of the analysis. To obtain a controlled sample of adult-to-adult speech, I used the previously uncoded transcripts of the tapes I had collected of 20 Chinese women's narratives. These were descriptions of Wallace Chafe's narrative-elicitation film, a loosely defined story, filmed with sound but without dialogue.[35] The story is about picking pears. Fortunately, but not accidentally, the interviewer and one of the subjects for the experiment was Kang's Auntie Jiang; while another subject was Kang's mother, who was taped when Kang was three months old. I coded their samples, as well as those of two other subjects, one a fellow-teacher of theirs, one a college freshman. Each 10-minute narration was coded in its entirely. I did not calculate as many relations among the data for them, but concentrated on these key indicators: percentage of utterances orderable; percentage of orderable utterances fronted; number of bǎ utterances; and bǎ utterances as a percentage of fronted utterances. This formed an adult-to-adult speech narrative corpus. Results are summarized in Table 4.7.

Also summarized in 4.7 is a control sample of adult-to-child speech taken from Kang's 10th tape. In it Kang's mother spent about five minutes instructing him as he reassembled a mixmaster so it would fit tightly into its

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TABLE 4.7

ADULT WORD ORDER

SPEAKER	# UTTERANCES	% ORDERABLE	% ORDERABLE FRONTED	# BA	BA AS % FRONTED
CHAFE PEAR NARRATIVES:					
Freshman 1	21	98%	15%	3	66%
Teacher Liang	79	100%	9%	6	87%
Kang's Auntie Chiang Tz'u	49	94%	24%	12	90%
Kang's Mother	43	100%	21%	8	89%
KANG TAPE 10:	Mother's speech instructing Kang on assembling a cake mixer				
Kang's Mother	401	56%	13%	13	45%

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box. This sample was different enough from the narrative speech to prompt me to do more analysis which would show individual speaker variation, developmental trends, and variation by speech situation, and context.

A breakdown of adult-to-child speech for Pang and Kang is shown in Tables 4.8 and 4.9. For each child tape I selected an adult sample from pages 80-95 in the transcripts. This is well into the typical activity for each approximately 150 page transcript. These pages encompassed between five and ten minutes of speech, depending on how much was spoken. The amount of adult speech varied, but averaged around 88 utterances. For Pang, I excluded my own speech and that of Pang's five-year-old sister. Almost all adult speech came from the child's grandmother, and from my research assistant, Baojane. I included all speech addressed toward Pang or toward both Pang and her sister. Adult-to-adult speech, and speech directed only to the sister was excluded. For Kang there was never any other child present; most adult speech came from Kang's mother and the assistant, Auntie Jiang. Again I excluded my own speech. For each of these samples I include a capsule description of the speech setting. I coded according to the same scheme described above.

The pilot study children, Lao Hu and Zhong Rong, had had their data analysed in a slightly different way; all bad, aberrant topicalized, bǎ, and bèi utterances were pulled out, copied, and further analysed; but the basic

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TABLE 4.8

ADULT WORD ORDER SAMPLE: PANG

TAPE	NUMBER UTTERANCES	% ORDERABLE	% ORDERABLE FRONTED	# BA	BA AS % FRONTED	ACTIVITY
1	83	57%	14%	--	--	picture book, draw, eat egg
2	80	54%	--	--	--	blocks
3	101	67%	3%	--	--	comic book, play doll, bottle
4	123	42%	10%	1	20%	animal book, eat cookies
5	93	45%	12%	--	--	run, snap on recorder cover
6	75	55%	--	--	--	ring bells, story book
7	96	42%	2%	--	--	singing, climbing
8	91	51%	4%	--	--	climbing, playing ball
9	60	53%	3%	1	100%	doll play, spill powder
10	159	48%	14%	2	20%	put on shoes and socks
11	140	38%	5%	1	50%	jump, slide, eat melon
12	100	77%	3%	--	--	run, put on bathing suit, work pencil sharpener

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TABLE 4.8 (Continued)

TAPE	NUMBER UTTERANCES	% ORDERABLE	% ORDERABLE FRONTED	# BA	BA AS % FRONTED	ACTIVITY
13	96	53%	10%	1	20%	blocks
14	102	66%	8%	--	--	book, take medicine, ride tricycle
15	161	41%	8%	2	40%	peel longan, look for bugs
16	96	45%	5%	--	--	animal book
17	83	72%	3%	1	50%	play with puppy
18	112	42%	11%	1	20%	climbing, puzzle pieces, blocks
19	71	44%	10%	--	--	play ball, eat cookie
20	75	66%	16%	8	100%	live crabs
21	100	55%	4%	--	--	play with clay
22	67	73%	10%	3	60%	putting on bandaid
23	58	62%	11%	--	--	clay, struggle over toys
24	77	56%	6%	2	33%	climbing
25	76	57%	16%	1	14%	calisthenics
MEAN	89	55%				
TOTAL				24		

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TABLE 4.9

ADULT WORD ORDER SAMPLE: KANG

TAPE	# UTTERANCES	% ORDERABLE	% ORDERABLE FRONTED	# BA	BA AS % FRONTED	ACTIVITY
1	100	68%	7%	-	--	looking for lost blocks
2	117	62%	15%	2	18%	play baby, wrap quilt
3	136	49%	12%	1	13%	blocks
4	128	58%	3%	-	--	M describes drawing
5	125	40%	10%	2	40%	playing cops
6	146	52%	8%	5	67%	tracing coin
7	105	50%	6%	2	66%	blocks
8	104	48%	21%	7	70%	build garage
9	74	57%	12%	3	60%	play spouses sharing money
10	80	54%	--	-	--	look through gift catalog
11	56	79%	5%	-	--	play cops
12	71	55%	8%	1	3%	M plays baby
13	96	59%	--	-	--	play doctor

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TABLE 4.9 (Continued)

TAPE	# UTTERANCES	% ORDERABLE	% ORDERABLE FRONTED	# BA	BA AS % FRONTED	ACTIVITY
14	83	54%	--	--	--	M tries to understand K's unintelligible utterance
15	74	58%	14%	3	30%	search for blocks
16	51	45%	13%	2	66%	drawing, inserting batteries
17	95	50%	12%	2	33%	spin top, inspect school bag
18	99	67%	--	--	--	play baby
19	104	47%	--	--	--	cut & paste, horseplay
20	100	64%	27%	16	94%	assembling pre-fab table kit
21	77	44%	15%	2	40%	fix doll, eat peanuts
22	125	50%	11%	5	8%	M instructs fortune telling
23	134	61%	10%	2	25%	discuss nursery school, put on gloves
MEAN	87	55%				
TOTAL				55		

coding scheme was Subject - Verb - Object and variations thereof, rather than case-oriented. This makes that sample less sensitive to case relations than the longitudinal study. Still, it provides basically compatible information about ordering, particularly for aberrant orders, so it can be incorporated without great difficulty.

To calculate random variation as opposed to statistically significant developmental trends, I plotted linear regressions for the order indicators detailed further below. These were calculated for each child over time, from first through last tape. I calculated linear regressions for order relations in adult-to-child speech as it varied with the child's age and maturity as indicated by the tape sample-number. I also calculated correlation coefficients between the percentage of certain order measures in the child's speech and in the adult input in order to determine which adult re-orderings had a statistically significant influence on the child.

Calculating trends for each individual child is more reliable, interesting, and statistically significant, than pooling figures for a small group of children. Individual calculations are the only statistically significant method for a study with only four subjects. Nevertheless, the four children in this study showed such strong commonalities in their language development that we can derive strong developmental trends from the individual longitudinal data. The ordering strategies which are common to both the adults

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and the children give us a far clearer vision of the ordering networks which route Mandarin speech traffic as a whole.

SECTION 4.5 CONSTANTS IN ORDERED RELATIONS

One surprise that came from the frequency analyses was that there seem to be quite constant baseline frequencies for the percentage of utterances which are complex enough to be ordered, and for the amount of fronting in adult speech. The percentage-orderable seems to be a fair indicator of the complexity of speech in a given situation. The children reach something near the adult percentage-orderable when they are around three years old. Percentage-orderable does vary by speech situation, however. Looking at Table 4.7 for adult speech, the percentage-orderable is strikingly uniform, very high at about 98% for all four speakers in the adult-to-adult narrative. Extended adult-to-adult narrations elicit a high percentage of fronting as well. There are strikingly high, uniform, levels for the percentage-fronted with <u>bǎ</u>, a mean of 83%. This is far higher than the percentage of <u>bǎ</u> fronting in the adult-to-child sample.

Percentage-orderable, the percentage of utterances which have the potential to be re-ordered, varies by speech situation and addressee, but is constant for all speakers in the adult-to-child play situation. The mean percentage-orderable is 55% for adults speaking to Pang; it is also

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55% for adults speaking to Kang. The sample for Kang's mother alone in a highly directive speech situation is also 56%. (See Tables 4.7, 4.8 and 4.9.) The adult percentage-orderable does not increase with time and the child's increasing linguistic sophistication, although it might be depressed for children much less advanced than those in this study. Percentage-orderable should be a reliable measure of many sociolinguistic variables in Chinese. It appears that it nears adult level when the child is about three years old, then levels off and stays constant at a rate near that of adults. Table 4.10 and Graph 4.1 show that Pang's percentage-orderable rose steadily over a year's time from around 20% to around 40%. It reached the remarkable rate of 74% orderable on her last tape, as alternative orders suddenly became productive for her. The correlation between percentage-orderable and time is highly significant at r=.69. For Kang, however, there is no increase. His percentage-orderable remains quite constant throughout the year with a mean of 41%. This is close to the mean of 55% for adult-to-child speech in the play situation. Percentage-orderable is the baseline of complexity. Re-ordered variants are departures from this baseline.

For Kang Kang's adults the percentage-fronted does not increase over time, nor does it vary consistently with the speech situation. Adult percentage-fronted remains relatively constant across speakers within speech

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TABLE 4.10

WORD ORDER: PANG

TAPE	# INTERPRETABLE UTTERANCES	% ORDERABLE URRERANCES	% ORDERABLE FRONTED	# BA	BA AS % FRONTED
1	459	24%	2%	-	--
2	266	14%	-	-	--
3	368	21%	1%	-	--
4	430	26%	3%	-	--
5	588	22%	5%	4	75%
6	611	24%	3%	-	--
7	432	25%	-	-	--
8	273	18%	6%	1	33%
9	357	35%	10%	8	62%
10	484	19%	2%	1	50%
11	610	27%	4%	1	14%
12	488	22%	10%	1	8%
13	423	37%	8%	2	15%
14	446	19%	10%	1	13%
15	476	22%	6%	3	17%
16	393	35%	3%	5	100%
17	419	25%	3%	2	20%
18	501	39%	3%	1	17%
19	605	48%	3%	-	--
20	644	37%	5%	2	18%
21	400	32%	5%	1	17%
22	552	37%	5%	5	36%
23	420	39%	9%	6	36%
24	563	34%	7%	-	--
25	453	74%	17%	7	12%
				N = 51	

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TABLE 4.11

WORD ORDER: KANG

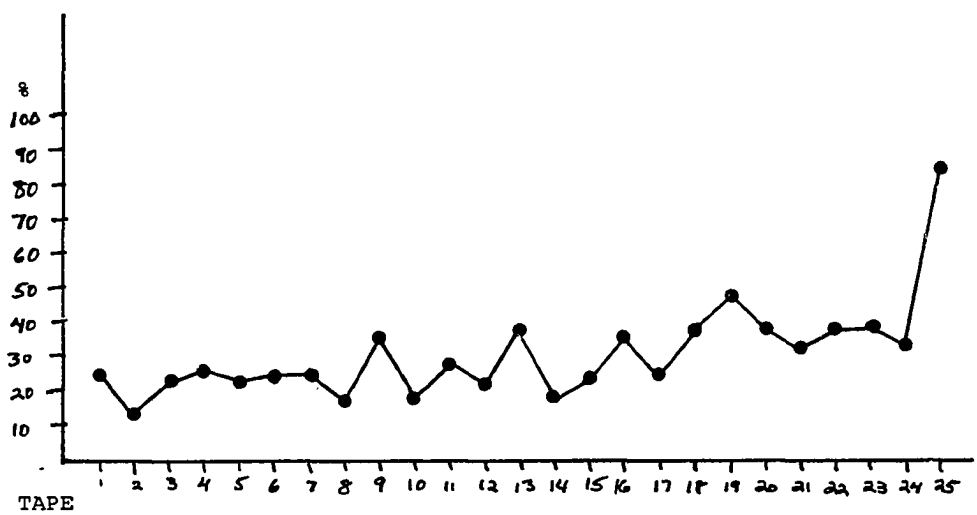
TAPE		# INTERPRETABLE UTTERANCES	% ORDERABLE UTTERANCES	% ORDERABLE FRONTED	# BA	BA AS % FRONTED
1	(½ hr)	314	32%	8%	1	13%
2		789	37%	6%	3	18%
3	(½ hr)	355	47%	8%	1	8%
4		549	38%	7%	1	7%
5		614	40%	9%	11	42%
6		637	32%	7%	5	20%
7		641	46%	14%	9	29%
8		619	35%	13%	15	52%
9		809	34%	16%	8	17%
10		632	45%	10%	9	25%
11		690	55%	8%	8	28%
12		916	47%	5%	12	57%
13		811	44%	10%	23	64%
14		805	44%	10%	21	57%
15		815	44%	13%	16	33%
16		613	44%	9%	13	54%
17		603	41%	9%	4	19%
18		626	44%	12%	7	21%
19		669	48%	22%	19	28%
20		703	34%	10%	14	61%
21		675	38%	16%	22	52%
22		789	44%	17%	23	41%
23		290	37%	13%	16	41%
		MEAN	41%		N=261	

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GRAPH 4.1

ORDERABLE UTTERANCES - PANG

(as % all utterances)



r = .69

(No significant relationship
between adult and child % orderable.
Not significant for Kang.)

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situations, both for the pear stories with adult-to-adult narrative, and adult-to-child speech. (Tables 4.7, 4.9.)

One other order constant should be discussed before going on to developmental variables. Word order does not typically vary for either children or adults during repeated utterances urging or requesting some action, nor during requests or clarifications. Given the referential value of Chinese sentential order we would not really expect order to be varied in what are essentially re-statements of the same message. However, this unvarying order contrasts sharply with the situation in Turkish, Russian, and even in English. The Chinese are likely to use periphrasis, substitutions, different sentence final particles, and differing prosodic emphasis, but not re-ordering to re-state and clarify the same message. Some examples:

Example 4.9 Zhong Rong Tape 3 (2.6)

(Father tries to persuade Zhong Rong to eat.)

Father	Nǐ chī-wán. you eat finish	"You finish eating."
	Nǐ kuài-mian chī-wán. You fast side eat finish	"You quickly finish eating."
	Kuài-mian chī-wán. Fast side eat finish	"Quickly finish eating."
	Wǒ men kuài-dian chī-wán. I plural fast rate eat finish	"Let's a little more quickly finish eating."

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Example 4.10 Kang Tape 23 (3.9)

(Kang has seen TV picture of a man processing some very large lucky gourds. These are dried as good luck charms, and used as storage boxes in traditional society. Notice that neither the mother nor the child varies order in clarification.)

Kang	Húlú, Mā, húlú gàn shénme? gourd Ma gourd do what?	"Gourd(s), Ma, gourd(s) do what?"
Mother	Húlú lǐ-tóu kěyǐ zhuāng dōngxi. Gourd in side can put thing	"Gourd(s), inside can put things."
Kang	Húlú lǐ-tóu hùi gàn shén.me? Gourd in side can do what	"Gourd(s), inside can do what?"
(Kang)	Húlú hùi gàn má? gourd can do what	"Gourd(s) can do what?"
Mother	Á? huh?	"Huh?"
Kang	Húlú hùi gàn má? gourd can do what	"Gourds can do what?"
Mother	Húlú kěyǐ zhuāng dōngxi .a. Gourd can put thing particle	"Gourds can (have) things put (in them.)"

(notice the neutrality of passive / active, subject / object relation in this sentence which translates as well as "Gourds can have things put in them," OR "(You) can put things in gourds.")

Kang (angrily)	Húlú hùi gàn má? gourd can do what	"Gourds can do what?"
Mother	Húlú bú hùi gàn má. Gourd not can do what	"Gourd(s) can't do anything."

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	Tā jiù shì yí.ge //	"They are just //
	It/they just copula a	things."
	dōngxī .ma.	
	thing emphatic particle	
Kang	Ou.	"Oh."
	Oh	

This example also illustrates Kang's preference for agent-action, S-V constructions rather than patient-state or patient-process.

SECTION 4.6 DEVELOPMENTAL TRENDS

There are four stages in the acquisition of Mandarin word order. The scope of orderable relations moves from the phrase, to the referentially full sentence, to discourse-sensitive re-ordering and topicalization. Stage I is essentially pre-order, Stage II establishes rigid SVO order, Stage III begins variable re-ordering with and without bǎ and bèi, while Stage IV is a prolonged effort to master discourse-sensitive re-ordering. Before discussing these stages in detail, this section gives an overview of the acquisition of order from the point of view of which order relations increased, which decreased, and which remained constant. Table 4.12 describes which order effects showed a change for each child, while Table 4.13 breaks down order effects according to increase, decrease, or constant frequency. Table 4.13 includes both child figures, and adult-to-child figures.

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TABLE 4. 12

ORDER DEVELOPMENT BY CHILD

INCREASING WITH TIME FOR PANG ONLY:

% orderable

PV as ratio to VP

PAV (perhaps of limited productivity)

INCREASING WITH TIME FOR BOTH PANG AND KANG

% orderable fronted

Ba usage

% ba good

INCREASING WITH TIME FOR KANG ONLY

Number interpretable utterances

APV

CONSTANT THROUGH TIME FOR BOTH CHILDREN

% interpretable utterances

% non-ba fronted good

DECREASING FOR BOTH CHILDREN

AVP

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TABLE 4.13

ORDER EFFECTS BY INCREASE, DECREASE, CONSTANT:
PANG, KANG, ADULTS

INCREASING WITH TIME:		
	Number of interpretable utterances	- for Kang
	% utterances orderable	- for Pang
	% orderable fronted	- for Pang, Pang's adults, and Kang
	PV as ratio of VP	- for Pang
	APV	
	Bǎ as % of fronted	- for Kang, Kang adults (for Pang overall rate of bǎ usage increases as rate of fronting steadily increases)
	% bǎ good	- Pang and Kang
DECREASING WITH TIME:		
	AVP	- for Pang and Kang
CONSTANT:		
	Number interpretable utterances	- for Pang
	% interpretable	- Pang and Kang
	% orderable	- Kang, adults
	% orderable fronted	- Kang's adults
	PV as ratio of VP	- Kang
	APV	- Pang
	PAV	- Kang
	Bǎ as % fronted	- Pang, Pang's adults
	Non-bǎ fronted good	- Pang, Kang
ADULT INFLUENCES CORRELATION:		
	Bǎ as % fronted	- Pang, adult influence stronger than longitudinal
		- Kang, longitudinal stronger than adult

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When we see an increase for Pang but not for Kang, we can assume that the order relation is one which develops in very young children, but which is essentially mastered by the time the child is three years old. Order relations which increase for both Pang and Kang are those which take much longer for the child to resolve. Relations which do not occur for Pang, but show an increase for Kang are the ones which occur only in relatively fluent speech, and with will be mastered only slowly throughout childhood.

The relations which increased for Pang but not for Kang were basic, referential sentence constituents. These are: 1) percentage-orderable, which measures sentential complexity. This increased significantly over time, r=.69. (See Tables 4.10, 4.11 and Graph 4.1.) Percentage-orderable was constant for both Kang and the adults. 2) Patient-Verb utterances increased for Pang but not for Kang. This is a measure of variable order, since all of these could have been Verb-Patient sentences. These increased at r = .38. There were no examples of Patient-Verb in the early tapes, but as the form became productive. (See Graph 4.2.) Patient-Verb was a high-frequency construction for Kang; it did not increase with time for him. For Pang, Lao Hu and Zhong Rong, Patient-Verb utterances like zhèi.ge (this) fàng (put) zhèli (here) "this put here," were their earliest efforts at true fronting. These frontings were sentence-internal, did not require a discourse-topic choice, and were not

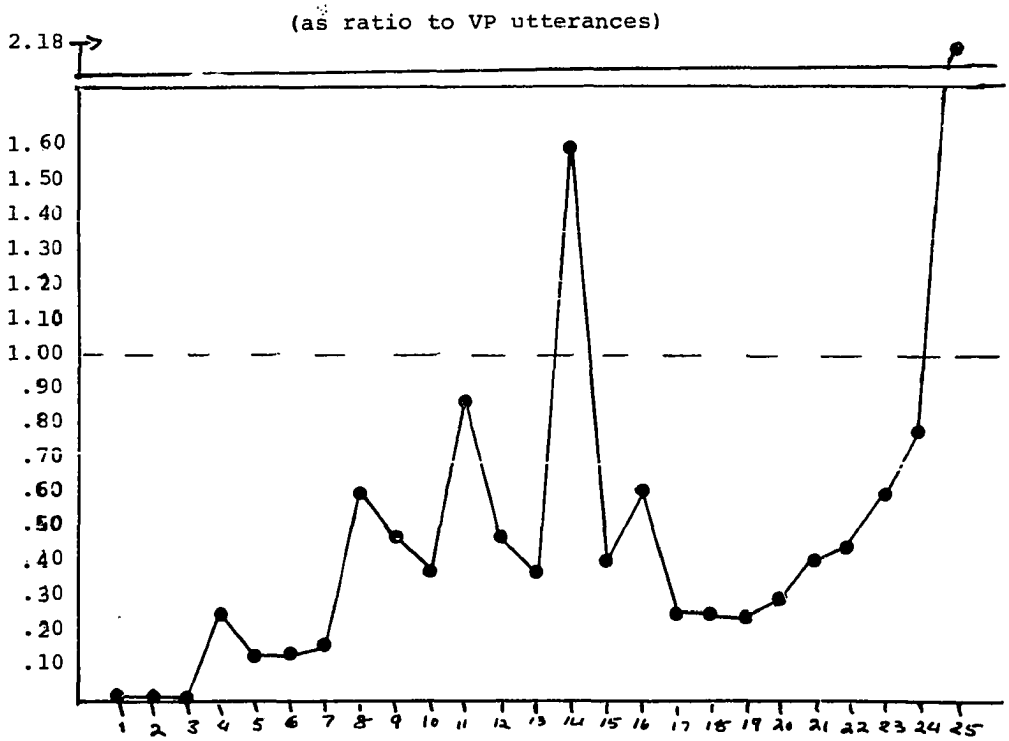
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GRAPH 4.2

PATIENT-VERB UTTERANCES -

PANG

(as ratio to VP utterances)



r = .38

(not significant for Kang)

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contrastive. Early examples of PV were almost entirely Patient + Locative.

3) The last item which increased for Pang but not for Kang is the percentage of utterances with Patient-Agent-Verb order. This is a contrastive, topicalized, discourse-sensitive order. It is comparable to English "Eggcreams, I like," although the order is more productive for Chinese than for English. It may be of limited productivity for Pang because although the curve of increase was highly significant at r = .99, this was a sudden rise after total non-occurrence for 22 tapes. It signals her burgeoning discourse awareness, which showed an enormous growth spurt in the final sessions.

The following measures were constant for both children: 1) The percentage of utterances interpretable was constant over time for both children. Hereafter, the term "utterances" refers to "interpretable utterances." Pang made about the same number of utterances throughout, but for Kang the number of utterances increased. (See Tables 4.4 and 4.5.) That is, while the amount of speech and its intelligibility were established early, its complexity increased greatly.

2) The second constant was more surprising. Sentences fronted without bǎ were almost perfectly correct from their very first appearance, e.g. zhèi.ge (This) fàng (put) zhèli (here). These were, however, were extremely low-frequency or

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non-occurring on the early Pang tapes. This suggests that that the "ergative subject" relation is easy for the children; they had no trouble learning that agents of active transitive verbs, and patients of active verbs where agent is not marked, both come before the verb. Most early uses of PV without bǎ did occur with demonstratives, and verbs where an agent changes the location of a patient, as in the above example. Their order problems came with putting patient before verb in a three-term utterance. Pang's PV's without bǎ were 94% correct; for Kang, it was 99% correct. Pang's rate of correctness fell slightly during her last four tapes at the same time that her rate of fronting was increasing. This suggests that she was experimenting with moving into active, variable uses of this contrastive form.

Factors which increased with time for both Pang and Kang were the most sensitive indicators of long-term order development. These include the percentage of orderable fronted, overall bǎ usage, and percentage of bǎ usage good. (Tables 4.10, 4.11 and 4.14 give the frequencies while Graphs 4.8 and 4.9 show the curves.) The only adult input influence which held up as a statistically significant influence on child order was the adult rate of bǎ usage. This is important in that it demonstrates that a lexical unit bǎ is accessible as a model to Mandarin-speaking children, while permutations among the order of units do not directly influence their pre-existing order strategies.

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TABLE 4.14

PERCENTAGE OF FRONTINGS GOOD: PANG AND KANG

PANG			KANG		
TAPE	GOOD BA	GOOD NON-BA	TAPE	GOOD BA	GOOD NON-BA
1	--	100%	1	--	100%
2	--	100%	2	66%	100%
3	--	100%	3	100%	100%
4	--	100%	4	100%	100%
5	75%	100%	5	87%	100%
6	--	100%	6	100%	100%
7	--	--	7	90%	93%
8	--	50%	8	100%	100%
9	25%	100%	9	62%	100%
10	100%	100%	10	78%	100%
11	--	83%	11	100%	95%
12	100%	100%	12	92%	100%
13	50%	100%	13	100%	100%
14	100%	100%	14	96%	100%
15	100%	100%	15	94%	100%
16	60%	--	16	85%	100%
17	100%	100%	17	75%	100%
18	100%	100%	18	71%	100%
19	--	100%	19	100%	100%
20	100%	100%	20	100%	100%
21	100%	100%	21	91%	100%
22	80%	87%	22	87%	100%
23	87%	87%	23	94%	100%
24	--	100%			
25	86%	84%			
MEAN	78%	94%	MEAN	89%	99%

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The percentage of utterances which were fronted proved to be a highly significant indicator, strongly correlated with increased speech complexity and discourse-sensitivity as it increased with time for both children. For Pang the rate of increase with time as r = .53. (Graph 4.3) Adult speech to Pang also increased the amount of fronting at a significant rate, r = .31. This is strong evidence that the adults selectively increased the complexity of their speech as the child's comprehension and attention span improved. However the correlation between the amount of fronting in child and adult speech was not statistically significant, (r = .16.) This indicates that developmental variables were more important than either the speech setting or adult input in increasing the amount of child fronting.

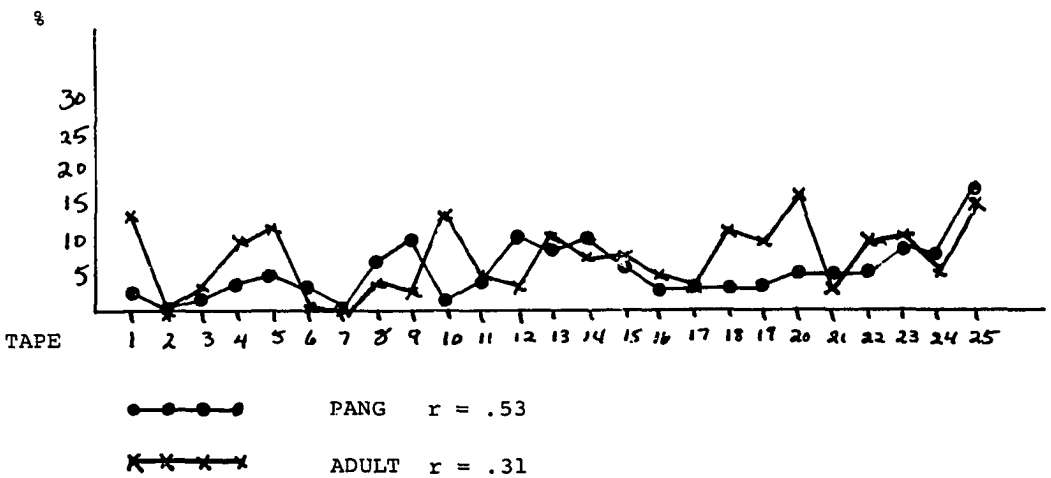
The picture was similar for Kang. Fronted utterances increased significantly with time at r = .55, a rate almost the same as Pang's r = .53. This shows that acquisition of fronting is a central, longterm, ongoing process. For Kang both percentage-orderable and percentage-fronted were substantially higher than those for Pang. (See Graph 4.4, Tables 4.10 and 4.11). Pang was still bringing her percentage-orderable up to an adult-like criterion, while for Kang percentage-orderable was stabilized at a mean of 41%. Since percentage-orderable and percentage-frontable are both measures of complexity, their joint increase for Pang indicates a drastic increase in utterance complexity, as we

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GRAPH 4.3

FRONTED UTTERANCES - PANG AND ADULT

(as % orderable utterances)



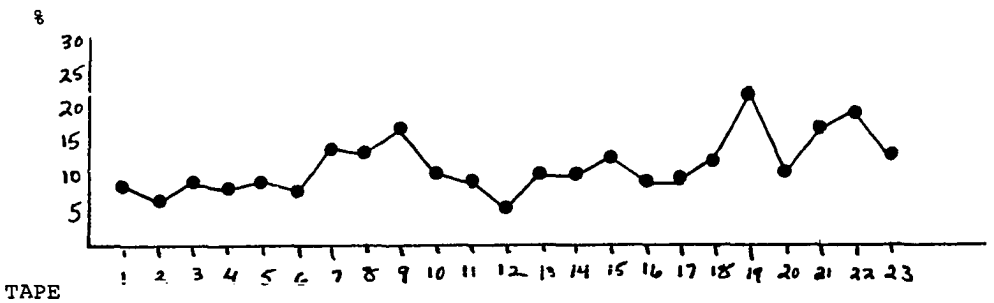
(Correlation between adult and child fronting not significant)

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GRAPH 4.4

FRONTED UTTERANCES - KANG

(as % of orderable utterances)



r = .55

(adult rate constant,
no significant correlation between
child and adult.)

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would expect between the ages of two and three. For Kang, like Pang, adult input was not a clear influence on fronting. Adult fronting increased with time, but not significantly, at r = .17; there was no correlation between the amount of overall fronting in the adult speech addressed to Kang and the amount in his own speech, (r = .005.)

The other significant measure of order was bǎ usage, both absolute frequency and degree of correctness. Both increased for both children. For Pang calculating bǎ usage as a percentage of utterances fronted did not show an increase with time, but calculating bǎ as a percentage of orderable utterances showed an increase, r = .41. (Compare Graphs 4.5 and 4.6.) Pang used a total of 50 bǎ's. The rate of bǎ usage in adult speech to Pang did not increase with time, but the correlation between the amount of bǎ usage in Pang's speech and that in the adult speech addressed to her increased at a significant rate, r = .32. This suggests that children are particularly receptive to the ba morpheme, and able to access it into their own speech production much more readily than numerous other non-lexical linguistic devices. Pang was just beginning the prolonged task of grappling with bǎ use.

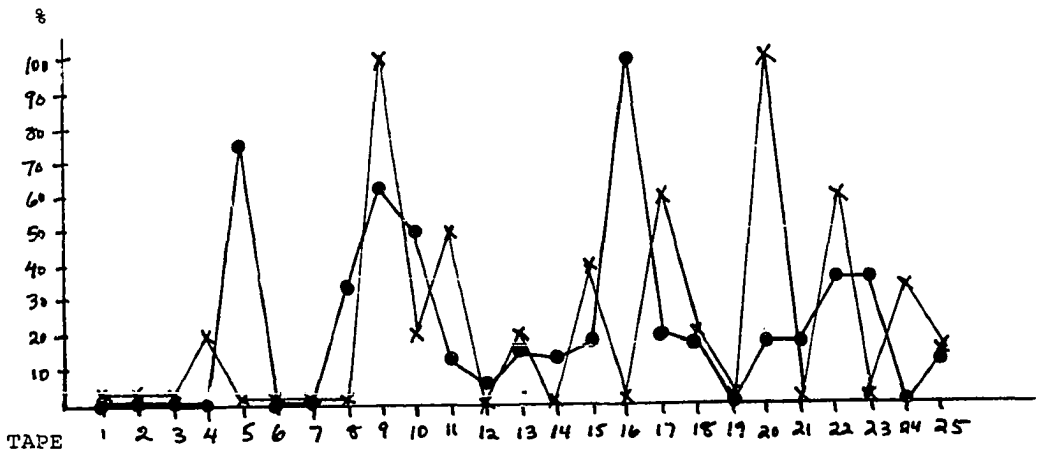
The picture for Kang is related but a little different. He began at a low level of bǎ frequency and correctness which looks like a continuation of Pang's graph. (Connect Graphs 4.5 and 4.7) For Kang, bǎ use as a percentage of fronted increases significantly with time, r = .51. He

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GRAPH 4.5

BA FRONTING AS PERCENTAGE OF UTTERANCES FRONTED -

PANG AND ADULT



PANG constant over time, r = .007 N = 51

ADULT constant over time, r = .07 N = 24

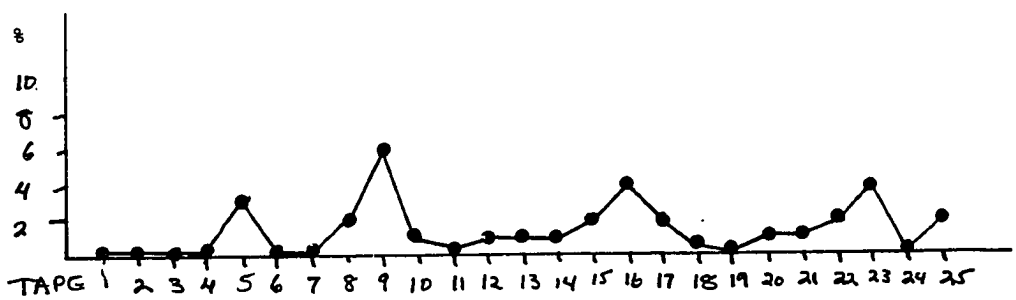
Correlation between adult and child ba use

r = .32, significant

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GRAPH 4.6

BA AS PERCENTAGE OF ORDERABLE UTTERANCES FRONTED - PANG



N = 51

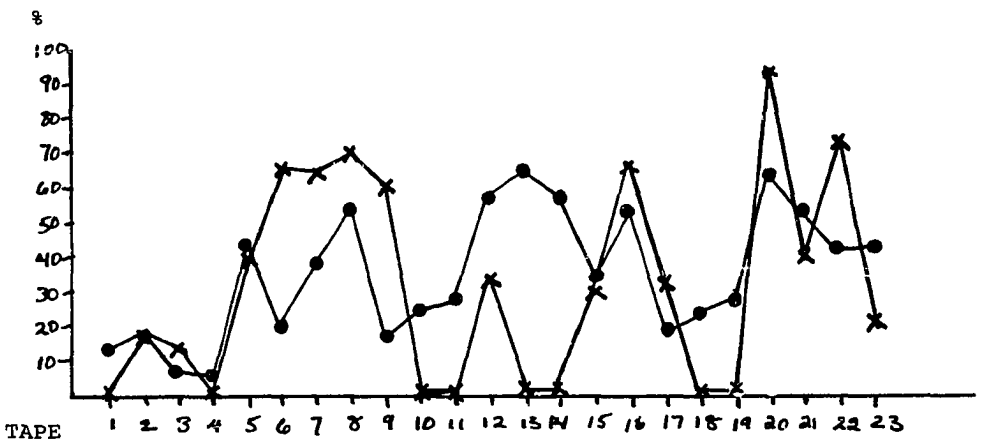
r = .41

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GRAPH 4.7

BA AS PERCENTAGE OF UTTERANCES FRONTED -

KANG AND ADULT



KANG N = 261, r = .51

ADULT (Mother and Auntie Jiang) N = 55, r = .37

Correlation between adult and child

ba use, r = .37

(no increase in ba as % fronted for Pang)

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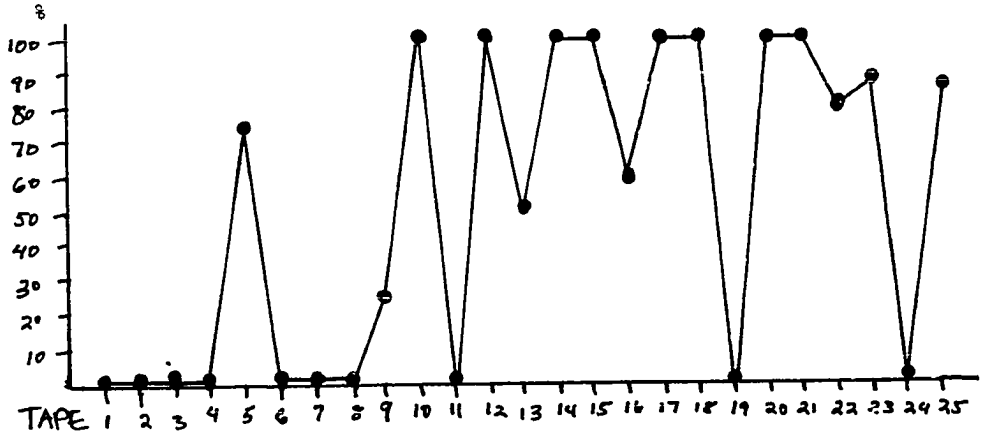
used 241 bǎ's. Adult usage of ba in speech to Kang also increased significantly with time (r = .37.) The correlation between child and adult bǎ usage is also significant at r = .37. Adults do systematically increase their rate of bǎ use in tandem with the child's increasing control. Nonetheless, developmental factors measured over time are stronger than adult input factors in determining correct bǎ usage. Child maturation over time is also more influential than adult input in determining the amount of ba usage which is good. This increases significantly for both children r = .30 for Pang; and r = .32 for Kang. (Graphs 4.8 and 4.9 .) The graphs look quite different, however, owing mostly to the lower frequency and productivity of ba usage for Pang which leads to the higher numbers when ba is calculated as a percentage. Still, she moves from almost total non-use to a relatively high mastery. Kang is evidently struggling with refinements in bǎ usage. Overall, bǎ use is 78% correct for Pang, 89% correct for Kang. This compares with non-bǎ fronting rates of 94% correct Pang and 99% for Kang. (Table 4.14)

Clearly bǎ is more restricted, harder to master, and evidently much more context-dependent than unmarked fronting. The question of adult input leaves the issue of context as a determiner of bǎ use unresolved. There is great variation in adult bǎ use since situations with a large number of imperatives and physical objects to be manipulated favor the occurrence of bǎ. Looking back to

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GRAPH 4.8

PERCENTAGE OF BA GOOD - PANG

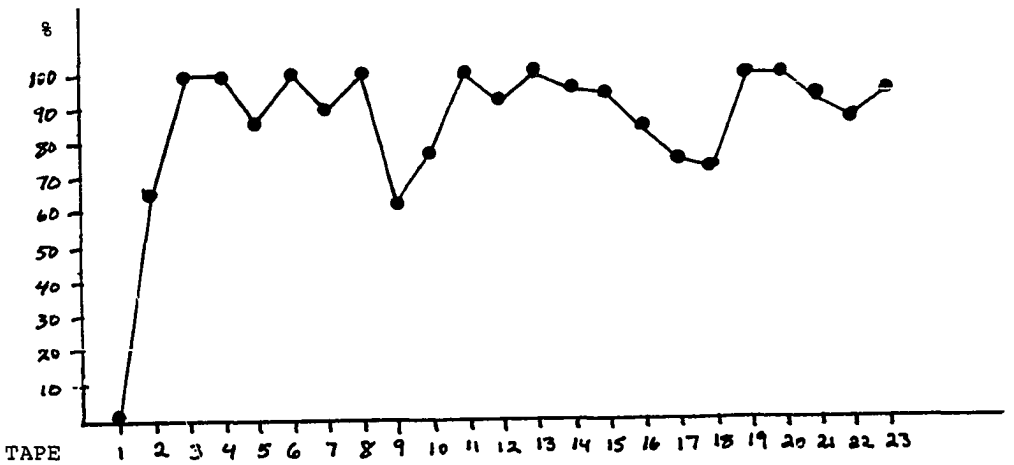


r = .30

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GRAPH 4.9

PERCENTAGE OF BA GOOD - KANG



r = .32

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the situation sketches appended to the adult word order Tables 4.8 and 4.9, we see that for these ten-minute samples, horseplay, reading picture books, naming or description games, and fantasy play do not favor bǎ fronting. Manipulation of physical objects in a context which requires instruction, whether learning to trace something, to peel a longan fruit and scrutinize it for bugs, or to care for an animal, elicits many bǎ's. The situational effect seems stronger for Kang than for Pang, probably because he was capable of more sustained activities and able to follow more detailed instructions. The five or ten-minute samples for Pang generally encompassed several different activities. The environment was constant for all sessions for each child. The situation was almost identical for all children. All four always had blocks, dolls, drawing materials, and all sorts of games available for adult demonstration. Overall, the developmental variable is stronger than either adult speech or environmental context. Bǎ use is a good metric of increased linguistic complexity, rather than being a fluctuating, optional, variant.

The final measure of ordering flexibility is the permutation of agents, verbs, and patients to indicate topicalization. SVO or Agent-Verb-Patient is the neutral order. SOV, Agent-Patient-Verb, with or without a bǎ

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object marker, is a fronted variant which highlights the patient within the utterance. Still, it is relatively discourse-neutral. It is, of course, an intimately-related variant of PV sentences, particularly since agent/subject deletion is normal in colloquial contextualized Chinese. For example:

a.)	Wǒ I	nònghuài.le make bad pfv	diàn-guō. electric pot	AVP
b.)	Wǒ I	bǎ object marker	diàn-guō electric pot	nòng - huài - .le. make bad pfv	A bǎ VP
c.)	Wǒ I	diàn - guō electric pot	nòng-huài - .le. make bad pfv	APV
d.)	Diàn - guō electric pot	nòng-huài -.le. make bad pfv	PV

All these variants express essentially the same idea, that I broke the electric rice-cooker. The first is neutral; the second is more focused on the result of the action. It is now the preferred form for actions with results affecting the patient. The third is a less-specified abbreviation of the third. The fourth is perfectly complete but focuses on patient to the exclusion of agent, because agent is obvious from context, unknown, irrelevant, or in need of concealment. The scope of these variants is essentially sentential, though they are discourse relevant. Topicalized PAV, however, can only be

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contrastive, and must used in a context of prior discourse where it must fit cohesively.

e.) Diànguō .a wǒ nòng - huài.le. PAV
electric pot topic I make bad pfv

f.) Diànguō .a wǒ bǎ tā nòng-huài.le
electric pot topic I obj. it make bad pfv

Either of these utterances seems incomplete standing alone, though they are grammatically full. They cry out for a discourse and situational context to make them "part of the story." "The rice cooker, well, what happened to it was I broke it." "As for the rice cooker, well, I broke it. The discourse-central quality is further marked by the fact that sentence-initial diànguō "rice cooker" can be separated off from the rest of the sentence by the sentence-internal topicalizing particles a or .ne. These particles would be ungrammatical in of the examples a., b. and c. where diànguō is not sentence-initial, and therefore not a topic.[36] None of the children in this study were able to use PAV or sentence-internal topic particles correctly; Pang's six-year-old sister was still struggling with this at the end of the samples. Such discourse cohesion is beyond young children.[37]

However, as Graphs 4.10 and 4.11 indicate, AVP slowly gives way to other order variants for both children. There was a negative correlation between AVP and time for both of them; for Pang r = -0.44, for Kang r = -0.41. This

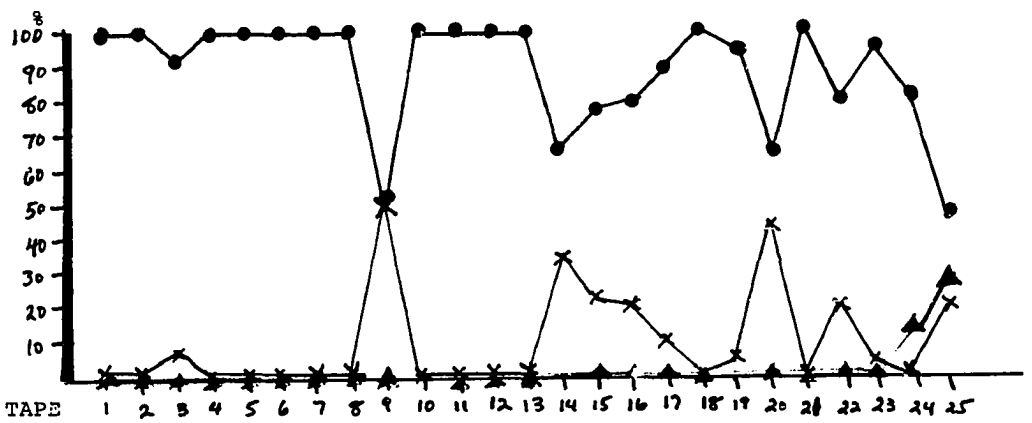
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GRAPH 4.10

AGENT, VERB, AND PATIENT ORDERS -

PANG

(as % of all utterances having an agent, a patient, and a verb)



Agent-Verb-Patient Order, r = -.44

Agent-Patient-Verb Order, r = .27 (not significant)

Patient-Agent-Verb Order, r = .99 (calculated from tape 22)

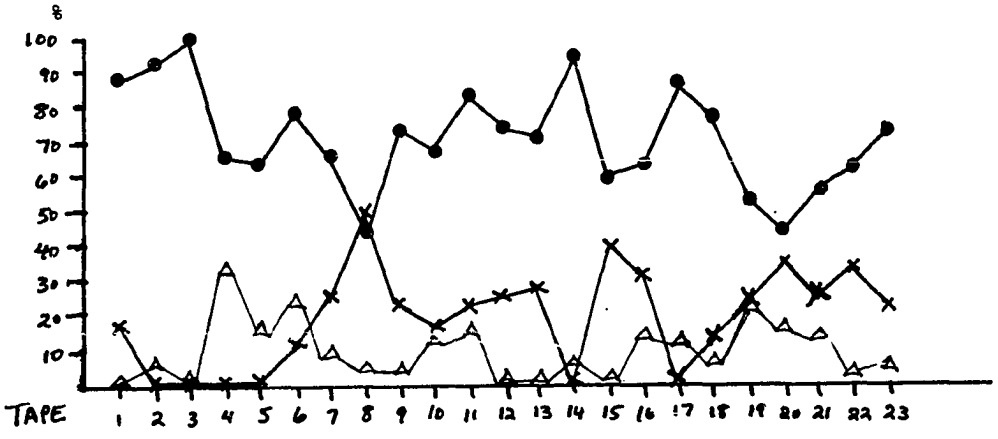
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GRAPH 4.11

AGENT, VERB AND PATIENT ORDERS -

KANG

(as % of all utterances with an agent, a verb, and a patient)



Agent-Verb-Patient, r = -.41

Agent-Patient-Verb, r = .42

Patient-Agent-Verb, r = .008 (not significant)

(No correlation between adult and child use)

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simply meant they were doing more fronting and re-ordering. Pang increased both APV and PAV over time. The increase in APV was not quite significant (r = .27), the increase in PAV was highly significant (r = .99) but only if it was calculated from tape 23 on.

Kang used more fronted APV orders with time (r = .42). However, topicalized PAV, the most discourse-sensitive order, did not increase it was still only used intermittantly by the last sample. Somewhat surprisingly there was no significant correlation between adult input order and child order preferences for either child. It may that adult bǎ input was an effective model because of its highly specific, local influence on one grammatical component which was strongly correlated with only a limited number of variables and invariant in usage. It may be that the sentence-wide and discourse-wide scope for reorderings of AVP, APV, and PAV were too large and diffuse for the child to hold in memory and use as direct models having an easily measurable influence on his speech. The number of finely-graded, non-referential variants of focus expressed by these orders may be too diffuse for the child to employ as a clear model, at the early stages. The child turns instead to a more conservative and reliable preference for "immutable SVO." This is not to deny all adult modeling influence, but it does suggest that the key receptive stage for discourse-sensitive variants applies to children who were older than the ones in the study. Table 4.13 diagrams the order

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relations for children and adults according to whether they increased, decreased, or remained constant, and so is a variant of Table 4.12 as well as a summary of this section.

SECTION 4.6.a OVERVIEW OF THE STAGES OF ORDER DEVELOPMENT

Considering the four stages of order development in detail with examples, we gain a far clearer view of the overall movement from local, word, and utterance-oriented order use, to the flexible and generalized cross-sentential discourse use. The Mandarin-speaking children in Taiwan virtually never play with permuting word order. This contrasts sharply with the frequent order play observed in children learning most other languages which have been studied world-wide. Order play is particularly common among children learning inflected languages. For the Mandarin-speaking children, however, word order is almost the only device they have for marking sentential reference. As such, it is truly "nothing to play around with."[38] The four stages of word order acquisition are summarized in Table 4.15.

STAGE I, PROTO-ORDER, is phrase-oriented rather than applying to a full, grammatical sentence. It is used by young children approximately 2.0 and under, who are just able to use two words in an utterance, with a few three-word utterances appearing as well. Most utterances are

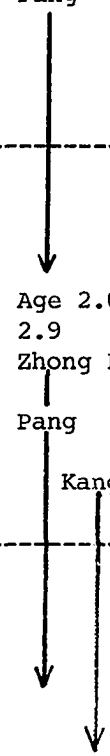
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TABLE 4.15

STAGES OF ORDER DEVELOPMENT IN CHILD MANDARIN

	BASIC SENTENCE TYPE	REORDERED VARIANTS	DISCOURSE STRUCTURE	AGE, CHILD
ORDER STAGE I: PROTO-ORDER				
Phrase-oriented. Vertical constructions.	Just over 2 words, few 3-term. Mostly Agent-Action, Action-Patient, Patient-State. Few complemented forms	Some aberrant "new-old" orders, but order nearly all standard.	Heavily adult structured limited hearer, topic sensitivity.	Age 2.0 and under Lao Hu Pang
ORDER STAGE II: IMMUTABLE ORDER				
Sentence-oriented, Reference-establishing order.	Over 3 words. Begin aspect distinctions, between perfective and durative. Some existentials	Very strict SVO. Much VP for PV. First bǎ, bèi, Begin unmarked fronting for Patient-end location.	Much adult structuring. More connected speech.	Age 2.0-2.9 Zhong Rong Pang Kang



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TABLE 4.1-5 (Continued)

	BASIC SENTENCE TYPE	REORDERED VARIANTS	DISCOURSE STRUCTURE	AGE, CHILD
ORDER STAGE III: SENTENCE-INTERNAL REORDERING				
Sentence-internal reordering for focus on patient	Little constraint on sentence length. Many orderable sentences; some relativization; APV, PV, but not PAV. Start marking time, manner, direction, instrumentality; fuller aspect; Sentence-final particles begin.	Reordering fronting within sentence, but no discourse-topicalizing. Bǎ, bèi becoming productive, but conflated as "supertransitives" for action verbs. Unmarked fronting fine.	Little adult structuring. Spontaneous narratives.	Age 2.10 3.6 Kang
ORDER STAGE IV: DISCOURSE-SENSITIVE REORDERING				
Cross-sentence topicalization and reordering among many contrastive possibilities	Co-ordination of non-continuous elements. Time aspect, causality, counterfactual, habituals, durations marked but unreliable. PAV productive; sentence-internal particles	Productive reordering. Topicalization in discourse chain across speakers. Good, distinguished use bǎ, bèi	Fluent speech; long, increasingly cohesive narratives; increasing hearer and register sensitivity	Over Age 3.6 thru late childhood; Xiao Mi

Agent-Verb, Verb-Patient, or Object-State; there are few complex verb complements. Additional complexity is expressed in "vertical constructions"[39] where several successive utterances express information normally included in one sentence. Nearly all the orders which occur are standard, correct, Chinese orders, so the children do have productive order notions at a very basic level. However, they occasionally use non-standard orders in which the most informative item is mentioned first regardless of standard order, as in *yīnyuè tīng, for tīng yīnyuè, music listen listen music *"Music · · listen" for "Listen (to) music." This is the "new-given" order described by Bates and MacWhinney for children learning a variety of European languages.[40] Discourse is still very heavily structured or "scaffolded" by the adult. The child produces little extended, spontaneous, speech, and has only limited, overt linguistic sensitivity to topic introduction and maintenance. The children at the pre-order stage were Lao Hu (24 months old; 7 samples in 2 weeks) and the first five samples for Pang (1 year 9 months to 2 years .0 months). The children in Wu and Xu's study also showed this "new-given" order.

STAGE II, IMMUTABLE ORDER, is sentence-oriented. It appears when the children move from vertical constructions to consistent, fully self-contained sentences for a given proposition. (There may still be numerous omissions within the sentence.) Sentences are frequently longer than

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three words; a few serial-verb complements appear. Aspectual contrasts between perfective and progressive start to be marked, and some existentials appear. Children have a strong notion of sentential relations being organized by a strict "SVO" template, and are loath to reorder for any reason. They often use SVO for obligatory SOV. There is much VP for PV, although the first few unmarked frontings begin with patients of locative verbs. The first instances of object-marking by bǎ and agent-marking with bèi occur, but they are extremely rare and often ill-formed. There is still much adult scaffolding, but more spontaneous connected speech occurs. Two and three-utterance narratives can be elicited if carefully scaffolded by the adult. The age range for this stage is roughly 2.0 to 2.6 with Zhong Rong and most of Pang's production falling into this stage.

STAGE III, SENTENCE-INTERNAL REORDERING, develops when the children are secure about marking the referential sentential relations with SVO order and appropriate predicate choice. They begin to vary their SVO sequences by fronting the patient-recipients of an action in order to focus attention on them. This stage does not develop until there is little constraint on utterance length. The children begin regular marking of location, direction, time, manner, movement, instrumentality. Fuller aspect relations including resultatives, progressives and chained aspectual

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relations between two actions, or between an action and its consequences, begin to be used regularly.

Re-ordering is still sentence-internal, rather than discourse-oriented. Unmarked patient-fronting is nearly perfect. Bǎ and bèi become productive, first conflated as markers of "enhanced transitivity," a redundant marking of actions which strongly effect patients. Little adult scaffolding is required for most speech, though it may be needed for clarification or for extended narration. The child starts producing spontaneous extended narratives and making metalinguistic comments. The age range is around 2.6 to 3.6, with the last five Pang tapes, and the first 16 Kang tapes falling into this stage.

STAVE IV, DISCOURSE-SENSITIVE REORDERING, develops after the child is able to produce fluent sequences of related sentences. At this point he uses sentence-internal markers of discourse-topics whose scope extends across several sentences. The child is able to choose among a graded variety of available discourse-sensitive orders to modulate his speech for his listeners. He is gaining control of the coordination of non-continuous sentence elements, and reliable marking of time, aspect, causality, counterfactuals. Patient-Agent-Verb topicalized order becomes productive at last, a strong signal of discourse sensitivity. Good, differentiated use of bǎ and bèi is established. There is almost unlimited, fluent speech, with little or no scaffolding required. Narratives become

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increasingly coherent, and the child shows greatly increasing hearer and register sensitivity. There is a tendency to double-mark topic, or to select more than one topic for a single sentence. The age range extends from around age 3.6 through late childhood. Data for this stage come from Kang's later tapes, and from Pang's five-year-old sister.

SECTION 4.6.b ORDER STAGE I: PROTO-ORDER

During Stage I, Proto-Order, both Pang and Lao Hu nearly always used standard order. Whether they could distinguish agent from patient by order alone is an open question, since they had very few three-term utterances. Those they did produced were not reversible, with agents being almost entirely animate or vehicles, and nearly all patients inanimate. This parallels production for children in other languages studied so far.[41] Fifty-five percent of Lao Hu's utterances were either a single noun, or an adjective + noun; another 18% was a single verb. This means that 73% of his output is classified as "non-orderable," and only 27% was "orderable." He did not produce any bǎ or bèi utterances, or any correct object frontings. It is safe to say that re-ordering was not productive for him, that he was still at the stage of building up sentential reference tc a basic, "critical mass." More potentially-orderable utterances, more three-term utterances, and clear SVO notions would be required before he could develop a full order-based template. Only

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then can he move on to re-ordering within a single sentence, and then beyond it. Among his order errors (N=28,) 30% were bad object-fronting; half that many, 15%, had VP where PV was required. Another 30% were completely non-standard orders, 25% VS and 5% VSO. This shows that his concept of sentential order as opposed to phrasal order had not yet been fully formed. His aberrant orders tended to be in new-old order rather than in standard old-new, topic-comment order. Some interesting non-standard orders he produced include:

Example 4.11 Lao Hu Tape 1 (2.0)

(Driving toy car)

*Kāi zhèi.-bian zhèi.ge. *"Drive here this."
Drive this side this one

(this is V LOC P for what should be P V LOC,

Zhèi.ge kāi zhèi.bian) "This drive here."
This one drive here

Here his "patient after the verb," VO, strategy has led him astray. He is unable to use order contrastively to mark location of action preverbally and end-location post-verbally. Instead, he puts end-location in the same general-modifier pre-verbal slot where time, place, manner, negative, and modals all belong. This example illustrates his new-old strategy:

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Example 4.12 Lao Hu Tape 2 (2.0)

(re: his many toys)

*Hǎo duō, wǒ. *"Very many, I (have.)"
very many I

(for Wǒ hǎo duō.)
I (have) very many

Example 4.13 Lao Hu Tape 3 (2.0)

*Wánjù zhèi.ge *"Toy this (is.)"
Toy this

(for Zhèi.ge wánjù.)
this (is a) toy

Example 4.14 Lao Hu Tape 3 (2.0)

(The housekeeper, Zhou Mama, has just gone out shopping.)

*Chūqù Zhōu Māmā.la. *"Goes out Mama Zhou."
out go Zhou Mama expressive particle

This is a highly unusual, ungrammatical VA for AV.

Unlike Pang, Lao Hu did engage in long, spontaneous pattern-practice sessions where he talked out loud to himself, often using vertical constructions. His speech in conversation with others needed a great deal of scaffolding, but his speech to himself did not. He did quite a bit of experimenting and self-correction while talking to himself, including some contrasting of order variants. None of the other children in the study did this, possibly because their order templates were already more stable. This extended vertical construction is a good example:

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Example 4.15 Lao Hu Tape 4 (2.0)

(Dipping toy car in cup of water, talking to himself as sister and researcher watch.)

Chē.zi. "Car."
car

Zhuāngdào.le. "Crash."
crash reach.

Chē.zi zhuāngdào.le. "The car crashed."
Car crash reach pfv

*Chē.zi Ø shī Ø . *"The car Ø wet."
Car wet

(incomplete, needs potential or perfective.)

Shàng.mian yě shī.de. "The top is wet too."
Top side also wet modifier

Shàng.mian yě shī. "The top is wet too."
Top side also wet

Yí xià - qù. "Just go down."
One down go

*Zhuāngdào chē.zi Ø . *"Crash into car."
crash reach car

(needs perfective or potential modal.)

Shàng.mian yě shī. "The top is wet too."
Top side also copula

*Zhuāngdào chē Ø . *"Crash into the car."
crash reach car

(needs perfective)

*Chē.zi zhuāngdào Ø . *"The car crash."
Car crash reach

(needs perfective)

*Chē.zi zhuāngdào Ø . *"The car crash."
Car crash reach

(needs perfective)

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Lún.zi ye.	"A/The wheel also Ø"
wheel particle	or: "It is a wheel."
or "also"	
Zhuāngdǎo.le.	"Crashed."
crash reach pfv	
Lún.zi.	"Wheel."
Wheel	
Lún.zi yě zhuāngdǎo.le.	"The wheel crashed too."
Wheel also crash reach pfv	
Lún.zi yě zhuāngdǎo.le.	"The wheel crashed too."
Wheel also crash reach pfv	
*Lún.zi yě zhuāng Ø .	*"The wheel crash too."
Wheel also crash	
(needs perfective.)	

This last example is interesting as an example of a vertical-construction where two utterances are linked to make a full sentence. It is more important as evidence that Lao Hu's uncharacteristic but systematic variations of order come in a situation which is particularly equivocal as to agent and patient. Standard order is agent-action-patient, SVO, but is a car in a crash the agent or the patient? To complicate the situation even further, this is a play situation in which Lao Hu is crashing the toy car. He is splashing it in and out of the cup of water making the car the literal recipiant of the action. But which relation does he want to express in speech? No wonder he experiments!

Pang's speech is more advanced than Lao Hu's; she did not produce any new-old orders. Even so, her first seven tapes were at Order Stage I. The majority of her speech

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was one and two-word utterances, with a gradually increasing pool of utterances with a re-ordering potential she does not yet employ (see Table 4.10, as well as Graph 4.1.) She has a very low percentage of utterances-fronted. (Table 4.10, Graphs 4.2 and 4.3.), and a very low rate of Patient-Verb fronted constructions. She has no bǎ usage at all for 7 of her first 8 tapes. (See Tables 4.10 and 4.14; Graphs 4.3, 4.5, 4.6, 4.8) Three of the four uses which do occur on tape five were part of a single speech sequence of requests for clarification. In earlier tapes she had responded to bǎ questions without using bǎ in her own answer. The way in which she answers is interesting, and also gives evidence of her ability to produce an occasional patient-verb utterance with a concrete patient and a movement-location verb. She is less inclined than Lao Hu to use long vertical constructions or to make long speech experiments while talking to herself. Like Lao Hu, most of her early conversation with others is heavily structured by the adult.

Example 4.16 Pang Tape 1 (1.9)

(Playing favorite game of trying to snap her hand under the tape recorder cover.)

Pang	Shǒu guān -qǐ -lái. Hand close rise come	"Hand close in."
Baojane (gloss, expansion)		
	Òu, bǎ shǒu guān -qǐ -lái. Oh, obj. hand close rise come.	"Oh, bǎ hand close in." "Oh, get your hand closed in."

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Pang Dùi. "Right."
Right.

Example 4.17 Pang Tape 3 (1.11)

(Re: torn page in story book.)

Baojane Nǐ bǎ tā sī -pò .le "You torn it,
You object it tear break pfv huh?"

.a?
particle?

Pang *Bèi wǒ sī -pòØ. *"Tear by me."
Agent-marker I tear break

This last is interesting, in that Pang changes the adult's bǎ, a neutral object marker, to a bèi agent-marker which expresses an unfortunate consequence visited upon some object. (See Section 4.1.d on bèi, often somewhat misleadingly called the passive.) Pang's use is syntactically extended since it takes the point of view of the page torn rather than the actor or a neutral observer. It is semantically appropriate, however, because bèi expresses an unfortunate action. Bèi does focus on the agent, Pang herself, while bǎ focuses on the patient.

The following is the Stage I bǎ sequence which was mentioned above:

Example 4.18 Pang Tape 5 (2.0)

(Pang had dropped a bunch of wilted chyrsanthemum petals into a little basket and stirred them with their stem a minute or so before. She looks up at Baojane and says,)

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Pang	Bǎ tā chǎoØle. object it stir-fly pfv	"Ba it's fried."
Baojane	Á? Huh?	"Huh?"
Pang	Bǎ tā chǎo.le Object it stir-fry pfv	"Ba it's fried."
Baojane	Nǐ shūo shén.me? You say what?	"What are you saying?"
Pang	Bǎ tā chǎo.le. Object it stir-fry pfv	"Ba it's fried."
Baojane (gloss)	Nǐ bǎ tā You object it	"You ba it have fried?"
	chǎo.le? stir-fry	"You've fried it?"
Pang	Dùi. Right	"Right."
Baojane (checking, expanding)		
	Chǎo -cài .a? stir-fry food huh	"Fry food, huh?"
Pang	Dùi.liao. Right current relevance	"Right."

This example is interesting because it shows that Pang did not re-order to clarify her remark. Her meaning was cryptic without a clear context, and an agent-pronoun, or a referent for the tā patient which could mean "he" or "she" or "it." Nonetheless, the sentence is formally well-formed in a way in which her only other early bǎ use was not:

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Example 4.19 Pang Tape 5 (2.0)

(Wants to snap hand into tape recorder cover.)

Pang	*Wǒ	bǎ	shǒu	guān	-qǐ-lái	.de.	*"I	bǎ hand
	I	object	hand	close	rise	come		(is)
						nominal		closed."

Here the .de nominalizer is incorrect. In most bǎ utterances, the verb has a .le perfective suffix to mark completion. It may be that the task of ordering and controlling discontinuous grammatical elements is too much for her. She could have chosen a shì ..... .de nominalized construction, or a patient-fronted, perfective bǎ .... .le construction, but not both. What she has done is to mix the two constructions. Young Mandarin-speaking children frequently confuse neutral tone .de and .le. They assign both of them to a kind of sentence-final, neutral-tone, grammatical limbo where they put many sorts of particles whose functions they do not fully understand.

The importance of grammatical elements being continuous rather than interrupted by another word has been demonstrated for first and second language acquisition studies world-wide. Continuous rather than interrupted marking is an important help to mental processing at many non-linguistic levels as well. In Chinese, a number of the most important grammatical relations are marked by discontinuous, ordered, pairs. The most important of them are:

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1) shì + NOUN or STATIVE VERB + .de
copula — nominal/possessive

as in, Zhè shì wǒ.de — "This is mine."
This cop. I possessive

Wǒ yào.de shì yí.ge hóngsè.de — "What I want is a red one."
I want mod cop one red color nom.

2) Bǎ PATIENT VERB + DISPOSAL .le — "(Someone) finished reading the book."
suffix pfv

bǎ shū kàn -wán -le
obj marker book read finish pfv

A number of other important discontinuous matched pairs mark aspectual relations; these are discussed in Chapter Six on predication.

The consequences for order relations are that when a discontinuous pair is required, one or the other of the two elements is likely to be omitted. Usually it is the second. This motivates many omissions but no actual misorderings; sentences may be incomplete, but they are not actually "disordered." However, when a normally fixed-order element must be moved from its highest-frequency location to an unusual position in order to express a more complex relation, there may be problems. The most frequent case is possessives and nominals with shì .... .de. Children have early control of shì .... .de only if .de is made additionally salient by being sentence-final. This is the case with unmodified pronouns, or stative verbs as above. However this ".de goes last" rule does not work where the .de must be suffixed to the possessor rather

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than the possessed, as in wǒ.de shū, "my book." The Chinese children's early mastery of predicate-nominative possessives contrasts with their problems with possessive + noun. This shows that it is not enough to look for the age at which the child has a "concept" of possession, or even marks one syntactic form of possession reliably. Syntactic and ordering factors skew the potential for marking a single "concept." All four children made errors of the following type:

Example 4.20 Pang Tape 3 (1.11)

Baojane	Zhè shì shéi.de wáwā?	"Whose doll is this?"
	This copula who poss. dolly	
Pang	*Nǎinai wáwā-de.	*"Granny doll's."
	Granny doll poss.	
	(for "Nǎinai.de wáwā."	"Granny's doll.")
	Granny poss doll	

This example is one of the very few cases where the child's pre-cast order template was strong enough to alter the order in answering parallel adult input question. The importance of word order in Chinese is revealed particularly clearly in the question-and-answer pairs which form the favored adult speech-style to children. Order for questions and declaratives is the same; answers should be formed in parallel order with the questions. This, combined with Chinese speaker's reluctance to re-order for clarification and repair, gives the child a great deal of important reinforcement in his efforts to decode

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grammatical and semantic relations by using an item-by-item matching strategy in a slot - frame template.

Verb-not-verb question constructions where the answer is the verb, or its imbedded negative, are highly salient. There being no single word for "yes" or "no" in Chinese; one must either provide the appropriate affirmative verb or its negative. This is one of the favorite speech games between Chinese adults and children; it is one the children master very early, almost without error. For both Lao Hu and Pang, adult scaffolding was extremely important in structuring all that they had to say. The most succinct and diverse example of the importance of linear order in adult scaffolding of child speech happens to come from Zhong Rong's mother. It is not at all different in kind from most of the speech addressed to Lao Hu and Pang. Indeed, the vast majority of Pang's grandmother's speech to her was elicitation of names of animals and objects, and requests that she sing a song or tell a story. The frequent adult requests for recitation of poetry also reinforces the importance of canonical order.

Example 4.21 Zhong Rong Tape 3 (2.6)

(Mother shows a tiny, pink, plastic poodle to Zhong Rong.)

Mother	Zhè shì shén.me?		"What's this?"
	This copula what		
	(mother points to dog)		

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Zhong Rong	Xiao gou little dog	"Puppy."
Researcher	Uh-huh.	"Uh huh."
Mother	Ke -bu -ke -ai? suitable not suitable to love	"Is it cute?"
Zhong Rong	Ke -ai. suitable to love	"Cute."
	(correct copying of verb)	
Mother	Ni yao -bu -yao? You want not want	"Do you want it?"
	(no answer)	
	Xi -bu xihuan? Like not like please	"Do you like it?"
	(no answer. Mother, who has just returned from work, changes the subject of her questioning.)	
	Mama shang-ban, ni Mama on work you	"Did you cry when Mama was at work?"
	you mei you ku? have not have cry	
Zhong Rong	Mei you. not have	"I didn't."
	(correct copy; bu "not" for non-perfective would have been incorrect.)	
Mother (repeats)	Mei you. Not have	"(You) didn't."
Zhong Rong	Xia-ban Baba you mei Off work Papa have not	"When Papa got off work, did he cry?"
	you ku? have cry	
Mother	Mei you. not have	"He didn't."
Zhong Rong	Dou mei you. All not have	"Didn't at all."
	Dou mei .ne. All not have	"Didn't at all."

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Here it is the mother who structures the conversation, making it possible to have a much more sustained conversation than Zhong Rong would spontaneously be able to conduct with another person. Zhong Rong's answers to the questions are correctly modeled on her mother's verb forms, while she uses her mother's theme and the strongly linear sentence structure in framing her own contributions. Zhong Rong takes the basic order-frame "Did you cry when Mama was at work," then substitutes in "Papa" for "you," and "off" for "at." This yields "Did Papa cry when he was off work?" This meaning isn't very plausible, but both the child and the adult accept the contribution as a pleasurable way of sustaining the speech chain rather than critiquing its information value. This happens in all harmonious conversations, however old or young the speakers may be. Zhong Rong may also have been making a little joke, although her tone of voice did not suggest this.

SECTION 4.6.c ORDER STAGE II: IMMUTABLE ORDER

STAGE II, IMMUTABLE ORDER, marks the period in which the child has finally succeeded in identifying and producing agents, experiencers, action and stative verbs, and patients by order, producing them reliably within a single sentence. Vertical constructions almost disappear even when the child is talking to herself; fully formed, self-contained sentences become the norm. The number of orderable utterances increases greatly. There is minimal

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experimentation with word order; reordering cannot be expected even where fronting is obligatory. The very few re-orderings which do occur are often incorrect. There is some fluctuation, but agent-verb-patient is by far the dominant order.

Averaging together all nine of Zhong Rong's tapes which were between 2.6 and 2.8, 35% of her speech counts as "orderable," that is coded as SV SVO or OV. Eleven percent of her utterances are SVO. VO is 20 times more common than OV. Both Pang and Zhong Rong produced many utterances where obligatory fronting is not carried out. For Zhong Rong, 31% of her order errors were VO rather than obligatory OV. Still, there is much more frequent experiment with bǎ and bèi which were essentially non-existent before. However, they cannot be said to be reliable or productive; all nine of Zhong Rongs bǎ uses were bad. Patient + Verb + end location order is reliably correct at this stage, though OV does not extend to anything other than verbs of motion with any reliability. The child makes extensive use of the most important aspect markers, LE for change-of-state, perfective, and current relevance; and sustained stative marked by hái "still." There are some existentials but virtually no time, manner, or duration. While much scaffolding is required, the children are capable of quite a bit of sustained spontaneous conversation with adults. Sustained spontaneous narratives do not occur; Zhong Rong's longest narrative was

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Example 4.22 Zhong Rong Tape 4 (2.7)

(Re: photo of a little girl looking sad.)

Zhong Rong Tā māmā zǒu,le. "Her mother left."
She Mama go pfv

Tā jiù kū,le. "She simply cried."
She simply cry pfv

This simplicity also illustrates the strictly parallel order pattern. For Pang, Stage II began at 2.1 with a burst of productivity and flexibility on many scales, and then stayed fairly static for about eight months. (Stage III began with another burst of linguistic complexity and reached a kind of critical mass which blossomed in her last three tapes, particularly in the final tape at age 2.11.)

The following indicators fluctuated but showed no significant rise during Stage II, tapes 8-22, age 2.1.20-2.10.6:

Percentage of utterances orderable, (Table 4.10, Graph 4.1.)

Percentage fronted; (Table 4.10, Graph 4.2.)

Patient-verb as a ratio to Verb-Patient, (Graphs 4.2, 4.10.)

Bǎ use, (Table 4.10, Graphs 4.5 and 4.6.)

Such fluctuation indicates a period of experimentation before fronting becomes productive. Ordering variants measured as permutations among agents, verbs and patients are still later. Nearly 100% of three-term utterances are AVP until tape 13 at age 2.5. Experimentation begins, but

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the model, however, is still sentence-internal with a few instances of APV. PAV, the truly topicalized order, does not occur. Discourse topicalization is still in the future. There is still very little complementation or serial verb use.

Still, there are many interesting variants illustrating the child's increasing sensitivity to the complexity of differing orders. At this stage the adults around Pang are gradually doing more fronting, which gives her a more varied model. (See Table 4.8, Graph 4.3.) The following illustrates some of the major trends for this stage. First, a VP in a "typically childish" construction which an adult would front to APV:

Example 4.23 Pang Tape 16 (2.6)

Pang	*Yào dài - huí -jiā yì Want bring back home one	*"(I) want to bring back home a dog."
	zhī gǒu. classifier dog. for animals	
Baojane	Dà gǒu.... Á? Big dog... Huh?	"A big dog ... what?"
Pang	Wǒ. *Wǒ yào dài-huí-jiā I I want take back home	*"I. I want to bring back home a dog."
	yì zhī gǒu. one class. dog	

Notice how this parallels the English-speaking child's reluctance to break apart a set phrase like "bring back

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home" in order to say "bring a dog back home." The following is also VO for adult OV:

Example 4.24 Pang Tape 9 (2.2)

(Has some towels to pass out.)

Pang	Gěi jiějie zhèi.ge Give elder sister this	"Give sister this."
	(adult would front this)	
Baojane	Á? Huh?	"Huh?"
Pang	Gěi jiějie. Give elder sister	"Give sister."
	(has two towels, gives one to sister)	
	Zhèi.ge gěi jiějie This/these give elder sister	"Give one to sister."
	yí.ge. one	
	Gěi nǐ yí.ge. Give you one	"Give you one."
	Zhèi.ge. This.	"This."

The pull of VO order remains strong even when she is using object-fronted forms. Here she changes her mind midway, and uses a simple transitive verb and patient countermanding the ba object-fronting pattern.

Example 4.25 Pang Tape 9 (2.2)

(pulling on cord to electric fan.)

Pang	*Wǒ bǎ / lā zhèi.ge I object marker pull this	"I this/ pull this."

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In the following she constructs a properly formed ba sentence, with a verb plus directional-complement suffix. But then she can't bear to stop there, and so goes on to add a "zhèi.ge" "this" after the verb. This construction is labeled "typically childish" by Chinese adults.

Example 4.26 Pang Tape 13 (2.5)

(Playing with clay, objecting to Baojane's putting flat pieces in place.)

Pang	*Bú yào bǎ tā	"Don't step on this one."
	Not want object it	
	cǎidiào zhèi.ge	
	tread off this.	

This is also in line with the concurrent trend to redundant marking of the relations she does control, parallel to Zhong Rong's marking both nominalization and possessive on a single word. Both are marked with -.de, but when both relations are expressed in one word, one of the -'de's is omitted.

Example 4.27 Zhong Rong Tape 4 (2.7)

*Zhè shì wǒ.de.de.	
This copula I possessive nominal	
(for zhè shì wǒ.de)	
this is mine	

In some cases Pang's aberrant bǎ double-marks transitivity on an already transitive verb. It is used where the gěi "give" benefactive would be more appropriate:

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Example 4.28 Pang Tape 11 (2.3)

(Re: sister helping her up onto a swingset.)

Pang	*Dōu shi jiejie All copula elder sister	*"It's all what sister made me get lifted on."
	bǎ wǒ bāoshàngqùØ .ma. object I lift on go part.	
Baojane (gloss, correction)		
	Jiejie gěi nǐ Elder sister give you	"Sister helped you ride, huh?"
	dāng.de .a? ride mod. part	
Pang	Um. Uh-huh.	"Uh-huh."

Here Pang has also omitted the final .de in the discontinuous shì ..... -.de pattern.

Most uses of bǎ, like this one, are correctly ordered within the utterance. The problems arise with control of all the selectional restrictions on bǎ use, including remembering that bǎ must express kind of "disposal" action on an object as a whole. Only the gěi "give" benefactive-directional is appropriate if only a part of the patient is affected. A very common, typically childish, aberrant bǎ use is as follows:

Example 4.29 Pang Tape 9 (2.2)

(Powdering doll)

*Bǎ tā cā -cā.		*"Make her a rub."
Object her rub rub		

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Example 4.30 Pang Tape 9 (2.2)

(Combing doll's hair.)

*Bǎ tā shū -shū. *"Make her a combing."
Object her comb comb

Bǎ requires a "disposal" verb, marked in most cases by a resultative of a directional complement. The child may neglect to add the complement. Or, child may not remember that bǎ must be followed immediately by a patient. One child in a doctor's office, playing cars with his little sister, was overheard going though pattern drills of bad bǎ sentences.[42]

Example 4.31

*Wǒ bǎ nǐ pengØ.le.
I object you bump pfv

(no resultative complement)

*Wǒ bǎ Ø peng -dào -le. *"I bumped into Ø."
I object bump reach pfv

At Stage II Pang is able to order end-location of actions correctly the end of a sentence. She is sometimes able to order end-location contrastively with the static location of an activity. But static location is a lower-frequency relationship, semantically more sophisticated, and not so reliably ordered. As an example of one of her well-formed, complex, Stage II object-frontings with end-location, this will serve as well as any:

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Example 4.32 Pang Tape 11 (2.3)

(Demonstrating "swimming")

Pang	Tou hai yao fang Head still want put	"(The) head still goes in the water, right."
	shui -li, dui .le. water in right current relevance	

Given the much greater frequency of utterance-final end-locations, it is not surprising to find a false analogy putting static, backgrounded location sentence-finally rather than preverbally. A somewhat confused question-and-answer set is as follows:

Example 4.33 Pang Tape 15 (2.6)

(Inspecting beds in bedroom.)

Baojane	Shei yao shuijiao, Who want sleep	"Who wants to sleep, (who) sleeps where?"
	shui zai nali? sleep at where?	
Pang	*Wo zai shuijiao, I be at/prog sleep	"I'm sleeping, here."
	zheli. here.	
	(Ambiguous because zai marks both progressive, and locative.)	
Baojane (gloss)	Ou, ni zai Oh, you prog.	"Oh, you're sleeping."
	shuijiao. sleep	
	Ni yao shui zai You want sleep at	"Where do you want to sleep?"
	nei.bian. what side	

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Since children this young mark neither event time nor duration, the order contrast between these two time elements does not occur. There are intriguing examples of scope of negation being mis-marked by a mis-ordered negative.

Kang's first seven tapes, age 2.10-3.2, also place him in Stage II, where the strength of his SVO model frequently overwhelms other orders. Looking at his percentage fronted, (Graph 4.4), there is a steady state through tape six, then a spurt and continued increase. The real rise in ba use comes only after tape six, though there is a spurt on tape five. (See Table 4.11, Graph 4.7.) As for the correctness of ba, Kang's pattern is much like Pang's. There is a sharp rise to extremely good ba use for his first eight tapes, then a drop and more variability as ba use becomes more frequent and flexible. (Graph 4.9 , Table 4.14.) Variable order for agents, verbs, and patients comes a little earlier; after tape 3 (Graph 4.11.) All this indicates limited variability at the sentential level.

Much of Kang's early speech is scaffolded. There is little spontaneous narrative, and quite a bit of "pattern drill" type speech experimentation. There is almost no marking of time, irrealis, or other mood. Discontinuous grammatical patterns are hard to control. The force of his SVO template is shown by the following:

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Example 4.34 Kang Tape 5 (3.0)

(Building a steamshovel with Lego blocks, wants to twist the shovel part around.)

Kang	Um, wo yao ba tā Um I want object it	"I want to twist it around, the steam shovel."
	zhuǎnguòlái, wātūjī. twist over come dig earth machine	
Mother	Ǔm? Huh?	
Kang	*Wǒ yào zhuǎnguòlái wātūjī. I want twist over come dig earth machine	

Both sentences are SVO for SOV. In the first, Kang made a successful, object-fronted ba construction, but then was unable to resist re-stating the patient. This made a kind of SOVO construction. It differs from an adult after-thought in that the adult would have used a demonstrative or an adjective phrase before the after-thought, as in wo yao ba tā zhuǎnguòlái, nèi.ge wātūjī. (I want to twist around that steam shovel.) His mother was unable to understand him, so he went back to his more conservative SVO strategy, which conforms to a more limited, tidy, and typically childish model. This, however, is SVO for what must be SOV in adult speech because of the active, directional, causative nature of the verb.

In the next example, taken from a tape made one month later, Kang's SVO strategy is impervious to his mother's repeated corrections. He is not even able to repeat her

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correction in the proper order more than once. The verb in question is xíng, etymologically "to go." This is now a stative verb which has the meaning "permissible." It may be appended after a long sentence to indicate whether or not some action is permissible, as in zài (be at) jiā-li (house) qǐ (in ride) jiàotāchē (bicycle) bù (not) xíng (permissible), "riding a bicycle in the house is not permitted." However, using stative xíng sentence-medially as a transitive is an increasingly common baby-talk form which can be translated as English "is a no-no." Pang uses it, as do coy young women in Taiwan.

This construction is not acceptable to Kang's mother, however. (She has a master's degree in classical Chinese.) She tries repeatedly to stop Kang from using xíng before a complement. The contexts in which Kang misuses xíng usually involve discussion of traffic signs and regulations, forms for which ritualized classical syntax is the norm, much like the archaic English in "no entrance" and "yield right-of-way." Kang insists on following xíng with a complement, rather than using it as a stative. He is obviously working on an analogy with the very common, kěyǐ "may" co-verb which is obligatorily followed by a complement, and may never be used as a stative. This is exactly the inverse of the rules for the similar but much rarer xíng, "permissible."

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Example 4.35 Kang Tape 7 (3.2)

(Playing with cars and stop signs.)

(Blocks mother's car.)

Kang	*Bù xíng jìnlai. Not permit enter come	"Coming in is a no-no."
Mother	Kāng Kāng, a, Kang topic particle	
	yīnggāi shuō, should must say	
	"Bù xǔ jìnlái" Not permit enter come (classical)	"Kang, you should say 'No entrance.'"
	.a. particle	
Kang	Um. Dǎ kāi ! Hmm Open come	"Hmm. Open up!"
	(fifteen minutes later, similar game)	
Kang	Bù xíng zǒu. Not permit go	"Going there is a no-no."
Mother	(correcting)	
	Bù xǔ zǒu. Not permit go (classical)	"Lane closed."
Kang	Bù xu zǒu. Not permit go	"Lane closed."
	*Bù xíng keyi zǒu. Not permit can go	*"It's a no-no may go."
	(three minutes later)	
	Xiǎo péngyǒu bu xíng Little friend not permit	"Children going in is a no-no."
	jìnqù. enter go	
	(ten minutes later, does not want mother to move a cake)	

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Bu	xing	dong.	"(It's) a no-no to move
Not	permit	move	(it.)"

Here both register and order anomalies work against Kang's producing a standard form. Notice that he tries a periphrastic solution in "bu xing keyi qu[43]
not permit may go
"(it's) a no-no may go," rather than a reordering solution.

SECTION 4.6.c ORDER STAGE III: SENTENCE-INTERNAL REORDERING

During Order Stage III, Sentence-Internal Reordering, the child gains good control over the reordering devices used within the sentence to focus on a patient; or, occasionally, on a place or a manner. Secure in referential relations, he is willing to permute within the sentence. By this time there is little constraint on utterance length, little adult scaffolding, a good deal of spontaneous narrative. There are almost as many orderable sentences as in adult speech, and quite a lot of relativization (all left-branching in Chinese), which the children seem to acquire without ordering difficulties.[44] Relativization is formally simple, regular, and often unmarked. Relative clause order is identical to mainclause order. However, relativization is not the preferred form for elaboration. If there is more than one relative clause, a proposition will be split into two or more Chinese

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sentences.[45] Chinese children do not do a great deal of relativizing.

At this stage the children begin marking a fuller range of temporal and aspectual possibilities, as well as manner, movement, directionality with end location, and some instrumentals. They begin controlling the sentence-final particles which mark mood, question, and obviousness. There is a great deal of reordering and experimenting within the sentence, but discourse-topic fronting, and topicalization sentence-internal particles very seldom appear. While unmarked fronting is perfect, bǎ and bèi usage is still often conflated to mark enhanced transitivity. In contrast to the previous rigid order, children often to use bǎ and bèi excessively. Fronting is possible with a much greater range of verb types than simple motions. As the order variants increase a much more adult-like cohesive and stylistic range emerges. Order Stage III comes after age 2.10. It includes Pang's final three tapes as well as Kang's tapes 8-17. Fronting, bǎ incidence and goodness, and AVP variations show a sudden growth spurt for Pang. Kang has a growth spurt followed by a fairly level five-month, ten-tape series of variations and experiments. (For fronting, see Tables 4.10 and 4.11, and Graphs 4.3 and 4.4. For bǎ use see Tables 4.10 and 4.11, and Graphs 4.6 and 4.7. For correctness of fronting and bǎ see Table 4.14, and Graphs 4.8 and 4.9. For AVP variations see Graphs 4.10 and 4.11.) An example of Pang's

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increased sophistication with relativization and topicalized PAV fronting is as follows:

Example 4.36 Pang Tape 24 (2.11)

(Proud of lifting her gigantic teddy bear.)

Pang	Hao da hao da -.de xiong Very big very big mod. bear wo bao -de -dong. I hold mod move	"I can lift a bear that's very very big."

However, in complex utterances the lure of VP can be very strong. There is a tendency to order stative verbs before the patient, just as active verbs must be ordered. (Patient - State order is obligatory for statives.) Nonetheless, Pang topicalizes successfully here in a very coherent conversation that went on for 10 speech turns:

Example 4.37 Pang Tape 25 (2.11)

(Discussing how Kiddyland was too crowded to be enjoyable.)

Pang	Ertong Leyuan, Son youth pleasure park tai duo ren le, too many people current relevant hao ji .ou. very crowded emphatic sentence final particle	"Kiddyland (it had) too many people, (it was) very crowded!"

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Baojane (reacting to Pang's bringing up a subject for conversation.)

Ou. Ni shen.me shihou "Oh. When did you
Oh. You what time go?"

qu.de .ma?
go mod. question particle

Pang *Shao.de ren wo jiu *"Few people I'd like
Few mod people I just to go."

xihuan qu.
like go

(Should be Ren shao.de shihou.....
people few mod time

"When there are only a few people....")

Tai ji.de. "(It's) too crowded."
Too crowd mod

*Bu xing Ø *"Kiddyland Ø a
Not permissible (need no-no."
verb)

Er-tong Le -yuan.
Son yough Pleasure park

Here Pang uses the same bu xing + complement order which Kang favors. She is unable to put ren "people," before shao "few." However she is quite successful in stating conditionality, and consequences of actions.

Once the children acquire fronting with and without ba, they overextend its use, often using it where adults would use VP as in:

Example 4.38 Pang Tape 22 (2.10)

(Blowing up a balloon.)

Pang *Ni lai ba ta chuiØ. *"You come make it
You come object it blow blow."

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(for adult: Ni lai chūi tā.)
You come blow it

Example 4.39 Kang Tape 9 (3.2)

(Wiping dolly's bottom.)

Kang *Wǒ bǎ tā cā pìgū. "What I'm doing to her is wiping her bottom."
I object her wipe bottom

(typically childish, for adult "wǒ gěi tā ...)
I benefactive her

Example 4.40 Kang Tape 9 (3.2)

(Washing potty)

Kang *Wǒ zhèi.ge pénpén xǐ. *"What I'm doing to this potty is washing it."
I this potty wash.

(APV for adult AVP)

Apparently the child's intention is to emphasize what is happening to the patient. This is indeed the normal function of bǎ fronting. However, to adult ears, these situations are banal enough and, in context, non-contrastive enough, that only unmarked AVP is appropriate. For the wiping example, there is an additional selectional restriction problem, since bǎ operates only on patients as a whole, but pìgū "bottom" is only a part. Bǎ also implies "did to" (c.f. "disposal,") while the situationally-appropriate verb is "did for" the benefactive gěi "give." These sentences can be translated, "What I am doing to her is wiping her bottom," "What I'm doing to this pot is washing it."

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This enhanced transitivity usage means that bǎ and bèi are still confused with one another, since the critical feature to the children is "marks acted upon." Here Pang was talking about getting her hand stuck in the door.

Example 4.41 Pang Tape 22 (2.10)

(Baojane has asked how she got a sore on her hand.)

Pang	*Yǒu yì tiān, hò, exist one day topical particle	*"(There was) one day, I had just finished washing, (I) pushed open the door, which with my hand/ which squashed my hand."
	wǒ yì xihaozaò, I one wash good wash	
	jié -kāi mén, separate open door	
	bèi shǒu / "passive" hand	
	yādaò shǒu.le squash reach hand pfv	

This is an unusual situation in which the hand is the implicit agent of opening the door, but also needs to be made the explicit patient which was crushed by the door, since the whole point of the story is to describe how the heavy door had cut Pang's hand. In the above order it sounds as though the door was damaged rather than Pang's hand. This impression is particularly strong since she has started out by setting herself up as the agent/subject in the verb chain. Because of zero anaphora, reference to an agent will be maintained until explicitly changed. A correct sentence would have to mention "door" as an agent

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to make this situation explicit, i.e. mén ya-dào
door press to

shǒu.le "the door squashed (my) hand."
hand pfv

Besides the selectional restrictions problems, there are still a few unmarked order problems, particularly with order of locations of actions, negatives, and manner, all of which come in the very heavily-used preverbal position. These have a tendency to get "bumped" out of position when there is too much information in the pre-verbal slot for the child to control. Nevertheless, Order Stage III speech is very complex propositionally; almost any relation can be expressed.

SECTION 4.6.e ORDER STAGE IV: DISCOURSE-SENTENCE RE-ORDERING

By Order Stage IV, beginning around age 3.7, referential ordering, and sentence-internal re-ordering are nearly perfect. During this stage sentences become much more propositionally complex, and cohesive devices extend across utterances and speech turns. Metalinguistic awareness increases greatly. Rather than being dependent on order alone to mark reference, the child can now visualize a whole range of stylistic re-ordering gradations of speaker awareness, knowledge, and interest. He is beginning to be able to mark irrealis, counterfactuals, and contingent actions. Co-ordination of discontinuous elements is much

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more reliable. Time and aspect marking are fairly full, although duration tends not to be expressed.

The child learns to topicalize by setting off a sentence-initial discourse topic with sentence-internal particles such as: .a, the neutral topic marker; .ou emphatic or warning; and .ne for an item in a series. The child is able to topicalize times, locations, and whole states of being, as well as patients. PAV order is a particularly sensitive indicator of topicalization.

At the early stages of topicalization, the children have trouble choosing only one topic for a speech chain. They tend to mark topic redundantly, for example with fronting, particles, re-statement, and additional deictics. There are additional difficulties in maintaining reference to the topic. All these problems are gradually refined throughout late childhood when they gradually taper off into individual differences among more-or-less clear, cohesive, and generally "good" adult speakers.

This is not to say that younger children lack awareness of pragmatic variables, that they previously controlled none of the discourse markers, then magically on "entering" Stage IV mastered them all completely. Stage IV is internally consistent in that it marks the level at which a full range of sentential reference orders and topicalized re-ordering variants are consistently and contrastively employed, although refinements will continue for years to come. The corpus for Order Stage IV is Kang's

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tapes 18-23, age 3.7.7 through 3.9.23; as well as selections from Pang's five-year-old sister, Xiao Mi.

The following example illustrates Kang's finesse in getting his hearers' attention by topicalizing an existential with a particle in the standard form for beginning a story. He then follows through with a highly contrastive PAV order in telling his anecdote of nursery-school life.

Example 4.42 Kang Tape 18 (3.7)

(Adults are talking among themselves. Kang gets their attention.)

Kang	Mā! Yǒu yí.ge xiǎo Mama Exist one class little péngyǒu .a. friend topical particle	"Mama! There was this child."
Mother	Ùm. Uh-huh.	"Uh-huh."
Kang	Bǐnggān /tā diào-dì-xiàØ. Cookie s/he drop ground down	"His/her cookie, he/she drop it on the ground."
Mother	Òu. Oh	"Oh."
Kang	Tā zhǐ chī .a, tā S/he only eat part s/he zhǐ chī liǎng piàn. only eat two slice (laughs) Heeeeeee!	"S/he only ate, s/he only ate two parts of it."
Mother	(gloss) Òu, qí -tā-de beside it mod. diào dì-shàng-qù-la. drop ground on go pfv	"Oh, the rest (he/she) dropped on the ground."

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Interestingly, Kang's first sustained use of contrastively-fronted order occurred in an earlier Stage III tape. It was a situation well-suited to elicit contrastive PV fronting; Kang was pretending to be a vegetable vendor who was sold out of most vegetables, but trying to satisfy the customer with those few he did have in stock.

Example 4.43 Kang Tape 9 (3.2)

(Playing vegetable vendor. Mother is customer.)

Mother	Ou, dui.le. Hai yao Oh, yes current relevance Also want yidiar qing lajiao. one little green hot pepper.	"Oh, yes, I also want a few green hot-peppers."
	(mother puts "vegetables" in shopping bag)	
Kang	Lajiao. Qing .la, Hot pepper Green topic women zhei.bian mei you I plural this side not have qing lajiao. green hot pepper	"Hot peppers. Green ones, we don't have any green hot-peppers here."
Mother	Na, hong -.de lajiao Then red modifier hot pepper you mei you? have not have?	"Well then, do (you) have any red hot-peppers?"
Kang	La -.de mei you. Hot mod. not have	"Hot ones, (I) don't have any."

In this sequence Kang is able to set off the topic of peppers by fronting. He then divided it into a sub-class of green hot-peppers to set off the discourse-topic with a sentence internal particle. He followed through

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cohesively in a perfect imitation of a vegetable vendor, complete even to the stubbornly bantering tone of voice. However this sequence is scaffolded by the mother, and does not demonstrate the time and reality reference shifts, reorderings, and checking of hearer sensitivity which he is able to display five months later. In the following later exchange he structures the situation; the mother participates in it. This sequence shows a full range of control of discourse and sentential ordering. It is one of the practice conversations in which the formal structural practice and the desire to maintain a conversation overide the information and truth value. (C.f. Zhong Rong's asking if Daddy had cried, Example 4.21.)

Example 4.44 Kang Tape 19 (3.7)

(Kang has opened a new box of pastels and is choosing which color to draw with first.)

Kang *Yīnggāi shì / nèi.ge, nèi.ge / lǜ-sè .
Should copula that that green color

Zhèi.ge yánsè.de.
This color nom/mod.

Mā, cǎo shìbushì zhèi.ge yánsè .a?
Ma grass copula not cop. this color part?

"It should be / that, that / green.
This color. Ma, is grass this color?"

(selects a green pastel)

Mother Wǒ xiǎng shì .a. "I think (it) is."
I think copula particle.

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Kang	Um, Ni kanguo cao Um you see experience grass mei you? not have?	"Um, have you ever seen grass?"
Mother	Kan-guo. Ni See experience you kan-guo mei you? see experience not have.	"(I) have seen (it.) Have you ever seen (any)?"
Kang	Kanguo. Keshi shi See experience But copula shen.me yanse, gaosu wo. what color tone tell I	"(I) have seen (it.) But what color is it, tell me."
	(looks at mother)	
Mother	Wo xiang jiu shi I think simply copula lü-se. green color	"I think it's just green."
Kang	Ni zai waitou kan.de nei.ge cao You at outside see mod that grass shi lü - se hai shi lan - se? is green color or copula blue color	
	"That grass you saw outside, was it green or blue?"	
Mother	Shi lü - se. Copula green color	"(It) was/is green."
	(Kang colors a little)	
Kang	(laughs) Heeee.	
	(colors sky green)	
	Cao fang-dao tian-shang Grass put to sky on qu.le! go pfv	"The grass got put up in the sky!" "Put the grass up it the sky!"

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At a still more sophisticated level, there is almost six-year-old Xiao Mi's unscaffolded, topicalized, past-action and future consequence warning to Pang Pang. Xiao Mi is accusing Pang of having stepped on and injured numerous of the tiny live crabs which the Grandmother had brought home for the girls to play with.

Example 4.45 Xiao Mi, Pang Tape 20 (5.8)

(Accusing Pang of having stepped on some of the tiny, live, crabs Grandmother had brought home.)

Xiao Mi Pángxie hǎo jǐ-zhī
Crab very many classifier for animals

dōu shòushāng.le.
all receive injury pfv

*Dōu bèi nǐ gǎo shòushang.le.
All by you cause receive injury pfv

Yǐhòu Pó bù gǎn mǎi dòngwù huí-lái.
Later Grandma not dare buy animal back come

"Of those crabs a whole lot of them have got hurt.

*They all were gotted hurt by you.

In the future Grandma won't dare buy animals and bring them back (home.)"

Xiao Mi has done a redundant triple marking of the crabs being the recipients of an injury; she uses the bèi agent marker, the periphrastic causative gǎo "make" "cause," as well as the standard resultative complement form, shòushāng literally "to receive a wound." receive injury

She is able to coordinate the use of a verb with a

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discontinuous directional-complement interrupted by a noun patient, mǎi dōngwu huílái "buy animals and bring them back (home)." All this makes for nice, tight, cohesion across the sentences in a clear and foreful threat.

SECTION 4.7 CONCLUSIONS

Having hiked out on a lengthy surveying expedition of the vast uncharted continent of the role of order in child Mandarin in particular, and in language design in general, I have returned to camp late, in the dark, yet bedazzled, to make a small, schematic map of all I have surveyed. Taking care to be faithful to the overall proportions, to draw the major landmarks to scale, and not to sketch the pebbles long stuck in my boots to the height of glacial peaks, the map for the land of order looks like this: even in a discourse rather than subject-oriented language, several order spheres must be distinguished. 1) Referential order, which is absolute in defining and distinguishing sentential components such as agent, patient, and end location. It is distinguished from the many non-referring, contrastive, scalar possibilities which 2) Discourse-sensitive re-ordering can express. The range over which a given order relation rules varies greatly in possible variability and ease of access.

For Chinese children who are learning Mandarin, there is little variability in their use of morpheme order for

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"chunking" at the word level. Compounds are small enough to be learned as unanalyzed, invariant wholes. Phrase and sentence-length strings of words, however, are of a size ripe for variation, and it is at this level that most child order variation occurs. Referential sentential order is easy and early of access to Chinese children, who show a strong desire to keep their sentential relations distinguished. They soon discover and master the dominant SVO order of the language, then remain with it religiously for many months as more and more complex modifiers and embellishments are acquired for elaborating and decorating the basic template. Sequence of linguistic terms is seldom a problem with Chinese children; most of the order difficulties which do arise come from incomplete mastery of selectional restrictions governing well formed re-orderings.

The results for Chinese accord well with Maratsos and Chalkley's findings for English acquisition: order errors are very rare, the error rate for transitive-intransitives is low, but omission errors are very high and persistent.[46] This accords well with an acquisition universal requiring a first pass semantic sorting which includes degree of transitivity in the semantic core, and then moves on to another sorting into a template base order, with degree of flexibility varying by language. The sorting is efficient enough that actual item-placement errors are rare, though there may often be "empty slots" made by omission of relationally non-core items which are often non-rererential or

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non-propositional. Additional support for this "referential core" hypothesis is Bloom et.al.'s finding that such notions as negation, possession, recurrence or two-part verbs added to the difficulty of young English-speaking children's producing a sentence. This was reflected in a depression in the number of morphemes in an utterance with such relations added. Purely grammatical morphemes such as those indicating number, tense, person, plurality, and definiteness did not increase difficulty nor did they depress the mean number of morphemes. Chinese children have extremely few purely grammatical morphemes to acquire; most added complexity in their speech is referential and so expressive of increased core complexity.

Easy accessibility of order, whether in production, processing, or meta-linguistic awareness, is not the same as easy control of order variations, either in first or second language learning. Given the lack of grammatical redundancy in Chinese, once the children discover order as a linguistic device they take it seriously as "nothing to play around with," and hence do very little order variation in their own speech, and still less order play. Referential marking by order is such a core quality that children will not tolerate confusion of basic sentential relations by re-ordering until they have good control of the selectional restrictions on the possible sets of verbs which permit fronting without ambiguity.

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Despite the core qualities of referential ordering, it is all based on a prior and more fundamental semantic pre-sort of the terms to be identified and then ordered. Child Chinese order is so generally correct that it is easy to forget this semantic primacy unless we see how the whole astoundingly early, regular and correct sentential ordering can disintegrate completely in the absence of semantic clues to referential relations. In Chinese, a re-ordering will not solve referential ambiguities and so Chinese adults and children try for a semantic fit to a given sentential order, perhaps elaborating context and using periphrasis. But in both production and comprehension, if the semantic scan does not fit basic template order, the utterance will be rejected as nonsense. Seriation of contrastive word classes is a very important clue.

There appear to be critical stages for receptivity to accessing base order. During the very early time up to around 2.4 when base order is being established children seem peculiarly sensitive to the dominant orders in the speech around them, with foreign language speech spoken only outside their homes being quite influential at this age. Once established, base order is extraordinarily strong and persistent. The Chinese children, like Kaluli children, found ergative word order easy to acquire.[48] Order variants are highly noticeable to all speakers, and easily described, but correcting or altering a pre-set order routine is extraordinarily difficult.

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In contrast to the steady baseline quality of referential, sentential order, the amount of potential variability and fronting in discourse-topicalization is highly sensitive to prior speech and context. The lexically marked *ba* order variant is an influential model for order in child speech; non-lexically marked order variants have no such clear modelling effect.

Continuous markers are more easily mastered than discontinuous ones in both modelled and spontaneous speech. Markers which are continuous within a single compound are much more easily learned than those which must be coordinated across word and sentence boundaries. The verb matching required between question and answer pairs in Chinese is an important order model, especially since declarative and interrogative orders are fixed and identical. Lexically marked question-and-answer routines are mastered much earlier and more correctly than are questions and statements modified by sentence-final particles. Cross-utterance and cross-speaker order relations are hardest to maintain, with discourse-oriented topicalization the most difficult of all.

In scaling the relative weight borne by referential order and stylistic variant reordering in a given language, the load borne by referential order could hardly be more important. Stylistic re-ordering for topic is much more variable, though rating it against the degree of variability potential in other world languages, it would he hard to

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think of a language still more restrictive than Chinese in this regard. Considering the role of child language in historic change and the ongoing increase of SVO forms in Mandarin, Chinese children are a conservative rather than a progressive force. They show great sensitivity in detecting then exploiting precisely the most dominant and generalizable landmarks of their language shape. They guide themselves by these, rather than by the many finer, varied, diffuse, and unstable areas of the language which tend to be forecasters of language drift, shift, and change.

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NOTES TO CHAPTER FOUR

1. Chao, 1968, p. 260. Cikoski is more acerbic in his critique: "Many if not most of the writers who have claimed that C(lassical) C(hinese) does have a grammar have maintained that the entire mechanics of it depends solely upon word order, no word-classes or "parts of speech" being distinguishable in the homogeneous mass of its vocabulary, and in particular nouns and verbs never being nouns and verbs intrinsically but only taking on their nominal or verbal quality from the structure of the sentences in which they occur, by being in positions (i.e.) slots that are themselves intrinsically nominal or verbal. It is not mere charity but an honest respect for the intelligence of some of these writers that prompts me to believe that some of them may have felt reduced to saying this simply because they did not know what else to say." 1978, p. 36.
2. The sentence-final particle .ma takes on a high-level tone when it comes after a low dipping tone. This makes it homophonous with the word for "mother," mā, in the high-level tone. Chao 1948, p. 109.
3. Chao, 1968, p. 83.
4. Europeans who speak Chinese characteristically err by marking a subject, a time, and an object redundantly in every sentence. This is something like the

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tendency Americans have to add the yo "I" personal pronoun to Spanish verbs already inflected as first person singular, as in yo leo el libro. This is well-formed but emphatic Spanish for "I read the book." The situation of Europeans double-marking within the sentence in Chinese is much more conspicuous, however, since the redundancy comes not only with personal pronouns but with all subject, object, time and location relations. The effect is that fluent, non-native speakers of Chinese seem to speak in fussily detailed clumps of meaning, in sentence-by-sentence spurts. This speech style lacks smoothness and cohesion since it is ordered around the sentence rather than the topic reference chain.

4. See Chafe, 1976, "Giveness, Contrastiveness, Definiteness, Subjects, Topics, and Points of View."
5. For brief, general discussions of Mandarin word order, see Chao, 1948, pp. 34-39; Li and Thompson, 1981, pp. 19-27.
6. See Tai, 1973. There are some exceptions to this regularity, but it holds up overall. For detailed comment, see Li and Thompson 1981, 397-408.
7. Verb features are discussed in much more detail in Chapter Six on predication. See Li and Thompson, 1981, Chapter 15, on "Questions" especially pp. 520-522. Also Chao, 1948, pp. 58-59.

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8. See Li and Thompson, 1981, pp. 579-587, also Chao 1948, p. 57. See Matisoff, 1973, pp. 474-481 for Lahu parallels. For discussion of the European influence see L. Wang V. 2, Chapter Six on "Europeanized Grammar," especially sections 42 and 43.

9. See Chao, 1948, p. 35. See also Chao, 1968, p. 72 for more extensive discussion of the similar sentence,

zhèi.ge	yú	bù	néng	chī.le.
this	fish	not	can	eat CRS

10. See Chao, 1968, p. 703.

11. See Comrie, 1981, pp. 104-110.

12. I have changed the romanization of the reconstructed pronunciations to the modern Pin Yin for the same characters.

13. This discussion comes from Cikoski, 1975, p. 17, and 1978 pp. 128-135.

14. A specific as opposed to a generic reading is dependent on context.

15. Hǎo "good," "very"; and hěn "very" have been almost completely bleached of their intensifying meaning. (See Li and Thompson, 1981, pp. 143-144.) They are included in many simple, non-emphatic descriptions in modern Mandarin, probably to help set off the predicate as stative rather than active or process, since neither actions nor processes can be intensified by hǎo or hěn; *nǐ hěn pǎo (*"you very run," *you very run) *Hé.zi hǎo kāi.le (*"the box" *box very open pfv)

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very opened." These sentences are equally bad in English, and for the same reasons. Actions and processes may only be quantified or described by hǎo, or hěn + a stative verb. This may be marked/ with a modal, as in nǐ hǎo huì pǎo "you really
you very can run
can run (well.)" It may also come as a post-verbal description of an action which has already taken place, as in nǐ pǎo.de hǎo kuài, "you run/ran
you run mod very fast
very fast."

16. Example from Chao, 1968, p. 71. See his discussion on pp. 90-97 on "Double nominals." See also Li and Thompson, 1981, pp. 92-93 on "double subject sentences," as well as Teng, 1974, on "Double nominatives."

17. Example is from Tsao, 1977, p. 87. It is discussed by Li and Thompson 1981, p. 93.

18. The bǎ construction is one of the most extensively discussed issues in Chinese linguistics. See L. Wang, V. I, Chapter 6. Chao, 1968 on the "pretransitive" bǎ, pp. 342-350. See also Li and Thompson, 1981, Chapter 15 on bǎ, pp. 462-491. Cheung, 1973, provides a cogent review of the history of the bǎ construction and the issues involved. For further references, consult his list of references. Bǎ is etymologically a verb meaning "to grasp." It is no longer productive in this meaning in modern Mandarin.

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19. Li and Thompson translate and quote this passage from L. Wang, in Li and Thompson, 1981, p. 468.
20. This list is from Cheung, 1973.
21. See Miao, to appear, for replication of Bronckart and Sinclair, 1973. Miao plans to carry out the test with young Chinese children. The results should be similar.
22. See L. Wang on "Europeanized Grammar," V. 2, Chapter Six. See also Chao, 1968, pp. 702-702; also Li and Thompson, 1981, pp. 492-508. Mandarin bèi has a Thai cognate, Thùùk.
23. See articles in C. Li 1976, (ed.) Subject and Topic, especially Chafe.
24. See Li and Thompson, 1975, 1976.
25. See Greenberg, 1966 for the pioneering article. The articles in C. Li (ed.) 1975 Word Order and Word Order Change are a good selection of the development of this typology, also Lehmann, 1978. See Comrie, 1981, pp. 204-209 for a critique of word order typologies and the "state of the art."
26. See Li and Thompson 1974, 1975; Huang, 1978; and Light, 1979.
27. From Li and Thompson, 1981, p. 24.
28. Tsao, 1975, p. 95; also Tsao, 1978.
29. Tsao, 1975, p. 87. I have altered his romanization to Pin Yin. Tsao punctuates this as a single sentence; many others would divide it into several smaller sentences.

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30. See references in 26 above, as well as Tai, 1973, and Teng 1975a.

31. Thanks to Sue Glover for this observation.

32. Tsao, 1975. Cikoski, 1978, p. 37 makes a similar point with regard to the literary language.

33. Thus "Saudi Arabia" is Shā-wéi-dì Ā-lā-bó and Lǒ-sē-fù
sand land voc pull encompassing Name this rich
"Roosevelt" is often abbreviated to Lǒ.

34. See Kratochvil, 1968, for discussion.

35. See Chafe, 1980, The Pear Stories, for description of the elicitation methods.

36. For discussion of topicalization and sentence-final particles, see Li and Thompson 1981, pp. 85-87; also Tsao, 1975, pp. 90-100.

37. This contrasts with Turkish and Kaluli children's early mastery of topicalizing particles. Slobin, personal communication.

38. Children learning Mandarin or Cantonese as their first language in the United States do a considerable amount of order play. This has been observed by Chao, 1973; Light, 1976; Li, 1978; and Hashimoto 1980, as well as by Ning-Ping Chan, personal communication, 1981. Although these children were all less than two-and-a-half years old, and their parents spoke only Chinese to them, they were nonetheless being raised in an English speaking culture. Not only did they hear English on the street, from radio, and television; but their parents were also all bi-lingual in English

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and Chinese. They spoke English to non-Chinese speaking guests and business associates, both in the home and outside, when accompanied by the child. Apparently this is enough contrastive exposure to English to prompt the Chinese-speaking child to do word order experiments and variations in his first language. In a completely monolingual Chinese environment, he would not hear aberrant adult orders which would conflict with his referential order template. The word order which is dominant in a particular language is one of the first syntactic devices children acquire. There may very well be a neurologically critical age about 2.0-2.6 for the acquisition of a basic, referential word order. Word-order errors are persistant in second-language speakers, even those with excellent syntax, vocabulary, and pronunciation. On the surface it would seem that word order would be an easy, surface device to acquire and to correct, especially since it is present as a model in every single sentence heard or produced. A more careful analysis may show that word order is very accessible to first language learners who are acquiring a basic, referential template; but quite difficult to permute once that template is established.

There is another contrast between first and second-language learners, and between adults and children. Children acquiring their first language

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quickly learn referential word order rules, but have a long struggle with topicalized re-orderings. Adult second-language learners have a good grasp of discourse variables and their hearer's needs; they are able to select appropriate, contrastive, new information to be topicalized, although they may have some difficulty with the particular syntactic markers of topicalization. In contrast to the children, adults have considerable difficulty marking referential sentential order in a second language whose template conflicts with the one which they already have established.

39. Scollon, 1978.
40. See Bates and MacWhinney, 1979, pp. 191-194; also Fava, 1978.
41. See Bates and MacWhinney, 1979; Bowerman, 1975.
42. Thanks to Sue Glover for this example.
43. C.f. Texan English "might could," as in "he might could do it."
44. This is exactly the opposite situation as that for Turkish where relativization is almost the only system which is acquired late and with difficulty, since it is complex, irregular, and very different from standard form. See Slobin, 1977.
45. Syntactically perfect, but stylistically completely "un-Chinese" excessive relativization is characteristic of fluent, European, second-language speakers of Chinese.

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46. Maratsos and Chalkley, in press.

47. Bloom, Miller, and Hood, 1975.

48. Schieffelin, 1978.

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CHAPTER FIVE

NOMINATING CONVENTIONS: THE DEVELOPMENT OF NOMINAL RELATIONS INCLUDING COMMON NOUNS, COINAGES, DEFINITIONS, POLITENESS ROUTINES INVOLVING PROPER NAMES AND TITLES; PERSONAL PRONOUNS, DEMONSTRATIVES AND NUMERAL CLASSIFIERS; AND INTERROGATIVE PRONOUNS

SECTION 5.1 INTRODUCTION

While Emerson once wrote "Children and savages use only nouns or names of things which they convert into verbs,"[1] he was incorrect in making this assumption. Universally, babies and aboriginal peoples use both nouns and relational words or verbs from their earliest speech. Nonetheless, the naming of people and objects around the child is an extremely important part of his early language use.

Chinese culture has placed a particular emphasis on naming. From pre-Confucian times almost to the present Chinese society has been governed by a belief in the "rectification of names" by which the proper labeling of object relative to one another is deemed necessary to preserve the order of the cosmos. This system holds that if things are not correctly named, properly ordered

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physical and social relations cannot be maintained, and chaos will ensue.[2]

Chinese children are encouraged to "name names" from their earliest vocalizations before real speech. Between twenty and ninety percent of early speech of two-to-four year-olds centers around naming objects and people. (Means of 20% overall for Pang and Kang; around 90% for the children taped looking through picture books by Poggi and by Yuan.)

The Chinese word for "noun" míngcí (name word) is derived from the word for "name," míng.zi, just as the English word "noun," and its Indo-European cognates, all derive from proto-Indo-European *nomen- "name." Gentner[3] has proposed concrete nouns as a cognitive and linguistic category more primary than verbs. She discusses the implications of the fact that nominals compose about 60% of earliest word uses in German, English, Turkish, Japanese, Kaluli, and Mandarin (the last from my data.) Others, including Clark,[4] Dore,[5] Bowerman,[6] Nelson[7] have taken less extreme stands, but all acknowledge the striking centrality, if not predominance, of early noun usage. Nelson found that American children at the one-word stage name mostly movers (people, vehicles, animals) and movables (e.g. food, clothing and toys), as well as a few recipients (people.) They hardly ever named places or instruments. This corresponds very well with the situation for the Chinese children at the one-word

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stage, and well on into the two-word-stage. At the two-word-stage Braine[8] found that children acquiring English, Samoan, Finnish, Hebrew, and Swedish all talked about the roles of mover, movable and place. Bowerman found a similar cross-linguistic breakdown.[9] Only some of the children talked about recipients or possessors, and almost none talked about instruments or goals. This corresponds exactly to the Chinese data, although Lao Hu and Pang at the two-word-stage did mark possession and recipient on occasion.

Bloom, Miller and Hood,[10] found children at the two-word-stage fell into two groups: those who combined content words with content words ("read book" "Lois cup"), and those who combined content words with pronouns ("I do," "pull this," "tape here".) This second group used fewer nouns. Within a few months, however, the content-word children acquired many more pronouns, and the pronominal group more nouns, so their speech types merged into a single, very similar, usage style.[11]

It is not clear that Chinese children at the two-word stage fall cleanly into either category. Structural factors in Chinese weighing against a content-word + content word strategy include the unusually great unintelligibility of noun + noun combinations in Chinese. Chinese utterances like the famous English "Mommy sock,"[12] were almost non-existent in my sample. However noun + verb, or verb + noun combinations were very common especially with names of

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people e.g. Jiějiě chī "elder sister eats," chē (car) shànglái.le (on come perfective) "The car has come up (here)." Zero personal pronoun use for both subject and object in Chinese works against the pronoun + content word strategy, although utterances like fàng (put) zhèlǐ (here) "put (it) here)," chī (eat) zhèi.ge (this) "eat this," and wǒ (I) yào (want) "I want (it, to)," are common. While the possibility exists that my sample of two children was too small, not representative, or slightly too advanced to show Bloom et. al.'s dichotomy; the more likely possibility in the absence of a full coding and comparison, is that the Bloom et. al.'s division was revealing for English, but not very illuminating for Chinese. Merging both nouns and verbs under "content words" eradicates the division between objects and actions which is so striking not only epistemologically, but also in the surface syntactic markings of most languages, including Chinese. Counting location under pronouns blurs another distinction. The more common Chinese sentence strategy is to combine a pronoun or a person's name, with a verb of action, often a verb of motion (chī zhèi.ge "eat this," or wǒ chī "I eat (it)."). Less frequently, the name of an object is combined with a stative, existential, or location verb, (yǒu (have) ø gǒugǒu (dog) "have (a) dog," "a dog exists," gǒugǒu (dog) kě'ài (cute) "the dog is cute," gǒugǒu (dog) ø zhèlǐ (here)). Pronoun + noun combinations

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are also very frequent zhèi.ge (this) Ø gǒugǒu[13] (dog) "This dog," "this is a dog."

In sum, it seems far more sensible to separate off a broad class of nominals, distributionally defined as those forms which can follow demonstrative pronouns + classifier. (e.g. Zhèi+tiáo (this thin-thing) yú (fish) "This fish," but not *zhèi.ge (this general classifier) tiàowǔ (dance (verb)) "This dance.") Nouns, pronouns, and classifiers, fall into a class by themselves. This leaves verbs very broadly defined as words which can follow the negatives bù or méi, e.g. bù (not) tiàowǔ (dance) "not to dance," méi (have not) tiàowǔ (dance) "hasn't danced," bù (not) kěyǐ (may) tiàowǔ (dance) "may not dance," bù (not) hǎo-kàn (good look) "not pretty," bú (not) gùi (expensive) "not expensive," are allowed. Not allowed are: *bù (not) tù.zi (rabbit) *"not rabbit," *méi (not) tù.zi (rabbit) *"Haven't rabbit." The last is sometimes allowable in colloquial speech as an abbreviation in an appropriate speech context for méi (not) yǒu (have) tù.zi (rabbit) "don't have a rabbit."

However, the Chinese stricture that only verbs can follow negatives is so powerful that *bù (not) tù.zi (rabbit) is hardly comprehensible. It is not readily re-analysed into a closely related forms comparable to English "not to

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resemble a rabbit," "an un-rabbit," or "it's not a rabbit." Hearing this Chinese sequence starts the mind searching for some rare verb which might be a homophone of tù.zi "rabbit." An ordered template restricts the possible word class inserted. The reason negative + noun constructions are not analyzed as verbs even in the verbal slot, is because modern Chinese, unlike English, does not allow nouns to be used as verbs; as in "to telephone someone." In Chinese one must always make a telephone call, (literally, in fact one "beats" the telephones) i.e.

dǎ	yí.ge	diànhuà	gěi	tā	"make a telephone call"
beat	one	telephone	give		

to him/her," never *"diànhuà gei ta."[14] Such distributional definitions of word classes have been used very successfully, not only for descriptions of Chinese (Chao 1968), but for other Sino-Tibetan languages (e.g. Lahu Matisoff 1971).

Further evidence of a basic form class split between nominals and verbals for Chinese, is the fact that the children never use nouns as verbs or vice versa.[15] I have found only one clear exception. Zhongkong at 2½ said:

*wǒ	yào	gē	zhèi.ge	gē	*"I want to song this
I	want	song	this	song	

song." Here she has misanalysed the verb + object complement compound, chànggē (sing song), as a verb + verbal comp. verb compound, like nálai (take come) "bring," or hàipà (dread fear) "fear."

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She was unaware of these word-formation differences which are etymologically regular, but which are not marked by any surface form. Even in this error she was true to Chinese grammatical regularities in that she derived the noun from the verb rather than vice versa. Children learning European languages such as English, French, and German, which allow nouns to be used as verbs frequently do so.

While Fillmore[16] proposed nouns as core determiners of sentential relations, Chafe[17] has argued convincingly for a verb predicate sentential core; later work has proceeded from this verb-centered model. Certainly for Chinese predication is the decisive sentential relation, as it is for Sino-Tibetan as a whole. (Predication is discussed at length in Chapter Six.) The remainder of this chapter discusses nominal relations. This chapter contains sections on the following topics: common nouns and morphemes deleted from them, coined nouns, definitionals with the -de nominalizing suffix; politeness routines which, for children, center around use of names and titles; personal pronouns, including remarks about both reflexives and possessives; numeral classifiers and demonstrative pronouns; and last of all, interrogative pronouns; and question formation.

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SECTION 5.2 NOUNS

5.2.a COMMON NOUNS

Noun use in speech beyond the one-word stage continues very much in the same vein as earlier use, in that almost the all common nouns produced are names for concrete objects in the child's immediate environment, or well known to him from picture books. This is the same trend as European, Turkish and Japanese.[18] As noted before, Chinese adults stress teaching a large vocabulary to the child. Noun vocabulary for animals, foods, geometric shapes, and household objects, is emphasized. Children are also taught the names for numbers and colors long before they can reliably distinguish them. They enjoy naming colors, numbers and shapes while they talk to themselves, without adult prompting. The numeral words show up in nominal constructions with the general -gè classifier e.g. wǔ.ge (five class) five (things)." Color words, which in Chinese pattern with stative verb constructions, are usually used in predicate nominative constructions:

zhè	shì	hóng.de.	"This is a red one."
This	copula	red nominalizer	

Nominalized uses of colors do not show up in subject position until much later, after the child is about three years old.

Hóng.de	zài	zhè.li.	"the red one is here."
Red nom	be at	here	

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Numbers, shapes, and colors are the most abstract early nouns. Even these almost always occur in reference to an object in the environment. As such, their semantic reference is very clear.

Besides being used in the straight naming and definition which occupy about 20% of Kang and Pang's corpus, common nouns first appear sententially as movers (vehicles and animals), objects moved, objects acted upon (eaten, broken, crushed), and, much more rarely, objects described (fáng.zi hǎo gāo "the building is tall.") Objects
building very tall

created, body parts experiencing sensations, and instruments show up after about age 2½. Locations other than zhèlǐ "here" are not common much before three. This parallels results for European and Japanese.[19]

Not surprisingly abstract nouns derived from verbs, (e.g. dàibiǎo "to represent" "a representative"), and the
carry show

semantically opaque noun + noun compounds which are frequent in adult Chinese, are almost non-existent up to four years old, and most likely beyond. One of the few semantically opaque noun + noun compounds Kang used was discussed at length in Chapter Four. This was Xīgòng
West Offering

Fēngyún "Saigon Fortunes," the name of one of Kang's
wind cloud

favorite TV shows. Kang apparently found the lack of clear referents for these morphemes so unsettling that he made many of his infrequent order errors trying to repeat

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it in correct order when modeled. In short, most nouns used by young Chinese children have clear, physical referents, though their boundaries for their usage may be overly wide, narrow or shifting as is common for children speaking most languages. (Pang called a donkey a "doggie" etc.) An important advantage Chinese children have in learning their analytic language is that very often they know the semantic referent for at least one part of a compounded form. Moreover, invariant syllable structure means that the familiar term will show up in precisely the same shape whatever the usage. (Except for tone sandhi and retro-flex suffix.) There are no "go"-"went," "mouse"-"mice" puzzles in Chinese. However, high homophony means that many syllables may often be interpreted as meaning something other than what was intended.

However, where a new string has neither a known element, nor a concrete referent, there are bound to be some problems. One of the few abstract nominals Kang used was gòngchǎngdǎng (common product party) "Communist party." He used it to refer to concrete individual referents, the Communist villains in his favorite TV show. This usage of "Communist Party" to mean "a Communist" is permissible in casual speech, although gòngchǎngdǎng yuán (Communist party member) is the full form. However, the abstraction and semantic opacity of the phrase "Communist" prompted Kang to abbreviate it improperly, using only the first morpheme gòng "common."

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Example 5.1 Kang Tape 14 (3.5)

(Watching TV show about Communists)

*Nei.ge	xiaojie	ye	shi	gong	Ø .a?
That	young lady	also	copula	common	

*"Is that young lady a common too?"

It is important to note that Chinese traditionally does not welcome abstract nouns sentence-initially where they appear to be defacto agents because of their position. Parallel noun constructions, or noun + stative verb constructions are preferred.[20] Abstract nouns such as "justice" should not precede action type verbs even metaphorically, as in the Biblical sentence such as "Let Justice flow down like waters and righteousness like an everflowing stream." Chinese does not lack abstract vocabulary, but it tends to pattern more toward the stative verb end of the word-class spectrum, rather than to the concrete-noun end. Personification of abstract qualities is particularly un-Chinese in style. Use of verbs which must take human agents with abstract nouns as subjects is so aberrant as to be almost impossible. Sentences like "Liberty welcomed us to our nation's shores," sound peculiarly Western if they are comprehensible at all. Such distributions go beyond the scope of mere "stylistic" variants between languages. They demonstrate instead the very intensely "syntactic," subject and sentence oriented structural core of the Indo-European and Semitic languages. In inflected languages any noun can be the subject of

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almost any verb, metaphorically if not literally.[21] Lexical and syntactic constraints align the possibilities much differently for Chinese. Not surprisingly, the Bible and Marx sound very peculiar, foreign, and "un-Chinese" in translation. Both works have had enormous effect on written and colloquial Chinese grammar in the past century. Permitting abstract nouns in sentence-initial agent-subject position before active verbs is becoming the wave of the future for Chinese. Pang at 1.11 produced one utterance somewhat of this type, with what seems to be a proto-use of a kind of nominalized verb sentence-initially as subject or topic. It was followed by a stative verb which can normally modify only nouns, piàoliàng, "pretty." Baojane had reproved Pang for grabbing things and Pang replied

*Qiǎng Ø hǎo piàoliàng. *"Grab is very pretty."
Grab very pretty

A full form would have required a nominal complement to qiǎng "grab," such as qiǎng dōngxi "grab things" "grabbing things," in order to give the verb qiǎng the proper degree of "nouniness" to stand in subject - topic position. This construction is also a odd extended use of "pretty," piàoliàng.

SECTION 5.2.b OMISSION OF MORPHEMES IN COMPOUND NOUNS.

Omission of one or more morphemes in a compound noun rather common among the children I studied; such omissions did not decrease with age. Learning the rules for

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abbreviation is a prolonged process. Word formation for nouns is quite complex as to the variety of relations between the parts of the compound. (See Chapter I.). Children omitted both initial and final morphemes in compounds; an occasional medial morpheme was omitted as well. For example Lao Hu age 2.0 produced all of the following forms for "tape recorde ," lùyīnjī (record sound machine) : *lùøjī (record machine) "record machine," *øyīnjī (sound machine,) "sound machine," and lùyīn ø . Lùyīn (record sound) (record sound) "record sound," is the intransitive verb used to describe tape recording; lù "record," used alone is its transitive form. His intended meaning was definitely the noun, however, as evidenced by his sentence frame structures. Table 5.1 details the omissions.

Example 5.2 Lao Hu Tape 1 (2.0)

(points to tape recorder)

*Zhè	shì	wǒ .de	lùø.	*"This is my record."	
This	is	I poss	record (vb)		(vb)
*Lùøshàng-de.				*"On the record."	
Record on mod.					

(Homophonous with well-formed "on the road.")

There was no clearcut order or semantic effect motivating the omission of segments for Lao Hu, Zhong Rong, or Pang. Slobin's operating principle "pay attention to the ending of words"[22] would argue for omission of the first morpheme, as would the general Chinese word formation

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TABLE 5.1

POSITION OF OMITTED MORPHEME IN COMPOUND NOUN

CHILD	TOTAL NUMBER	FIRST NOUN OMITTED	MIDDLE NOUN OMITTED	FINAL NOUN OMITTED
LAO HU	16	7	1	8
ZHONG RONG	8	4	0	4
PANG	11	3	2	6
KANG	28	21	0	7

principle wherein the first morpheme is likely to be attributive to a following noun in a compound, e.g. qìchē "car," or ěrhuán "earring." Omitting the first morpheme in such compounds still leaves a noun for the basic referent intended, while omitting the second gives totally different meanings such as "gas" and "ear" rather than "car," and "earring."[24] If the children already knew the meaning of the second noun in a compound, they did tend to retain it as in Øguī for wūguī "turtle," Øjī for fēijī "airplane." In some cases, however, they followed a "most informative," semantic-distinctiveness strategy, and produced the descriptive qualifier but omitted the noun, as in: tiěØ "iron" for tiěshā "iron filings," to describe the magnetic filings in a toy magnetic drawing set; or héØ "river" for hémǎ "hippopatomus." Other cases were more problematic such as Øhuà "talk" for diànhuà "telephone;" guóØ "nation" for guóqí "national flag;" Øbiàn "side" for zhèi.bian "here;" niúØ "cow" for niúnǎi "(cow's) milk" (nǎi alone refers only to mother's milk.)

For Kang Kang, however, the pattern of omissions was much more regular; he was three times as likely to omit the first noun as to omit the second. This suggests that

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final order and primary nominal reference are the strongest predictors of the morpheme to be retained, especially for older children. Kang's errors in omitting one part of nominal compound decreased through time, though the decrease was not statistically significant. For Pang these omission errors increased, though again the rate was not significant.

SECTION 5.3 COINED NOUNS

As Chao noted in regard to his 2½ year old granddaughter, coined words are not very frequent in child Chinese.[25] Still, he recorded several coinages from Canta, including dìshuǐ (ground water) to mean "lake" (the standard word for "lake" is hú.) Coinages overall for the four Taipei children averaged about one coinage out of every 1000 utterances. Chinese coinages are nearly all compounds, which is in keeping with the basic word formation processes for the language. Coined nouns were much more common than coined verbs. The rate of coinage remained roughly constant from the ages of two to four. (See Table 5.2 gives a breakdown of coinages; Table 5.3 is examples.)

The Chinese children's coinages were generally well-formed. They frequently described some object whose relationship is lexicalized in another language but not in Chinese. For example, Kang's *báinǎi (white milk) "white milk," does not exist in Chinese, but is in use among American

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TABLE 5.2

COINAGES

CHILD	COINED AS % TOTAL UTTERANCES	NUMBER COINED	COINED NOUNS	WRONG -ZI NOUNS	COINED VERBS
LAO HU	1.3%	10	7	2	1
ZHONG RONG	.5%	8	4	1	2
PANG	.4%	41	22	12	7
KANG	.3%	42	25	1	16

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TABLE 5.3

COINAGES - NOUNS

CHILD	AGE	REFERENT	COINAGE		STANDARD FORM	ROUGH TRANSLATION
LAO HU	2.0	wristwatch	biao.zi watch nominal	for	shoubiao hand watch	"watch-er"
		blocks	huayouji slippery machine		------	"slippery-machine"
		blocks	huayouqiu slippery ball		------	"slippery-ball"
		blocks	huayoujiche slippery machine car		------	"slippery-machine car"
		Disney Picture of the dog Pluto	yangma sheep horse or foreign horse		------	"sheep-horse" or "foreign-horse"
		glue	tieshui stick water		jiaoshui adhere water	"sticky-water"

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TABLE 5.3 (Continued)

CHILD	AGE	REFERENT	COINAGE	STANDARD FORM	ROUGH TRANSLATION
ZHONG RONG	2.6	rubberband	xiàng.zi elephant nominal	xiàngpí dài elephant-hide belt ="rubber band"	"rubber-er"
		Head of the sun in a picture	tàitóu great head	tàiyáng.de tóu great sun mod. head	"sun-head" "sol-head"
			("sun" must have two syllables both "great" and "head" to convey meaning of the sun)		
		Toys all over messy room	dōu.bian all side	chǔchù place pleace "everywhere"	"everyside"
			(based on analogy with and other locatives in this pattern. Dōu.bian, however, is coined)	Zhèi.bian this side	"Here"

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TABLE 5.3 (Continued)

CHILD	AGE	REFERENT	COINAGE	STANDARD FORM	ROUGH TRANSLATION
PANG	1.10	points to mouth	zhèi.mian this side	zhèi.bian this side "here"	"this side"
	1.11	picture elephant	niúmǎ cow horse	-----	"cow-horse"
		picture fish	yú.zi fish nominal (nominal suffix not allowed here)	yú	"fish-er"
		building blocks	jǐlóu dàxià many story big building	gāolóu dàxià tall story big building "skyscraper"	"lots-of-floors building"
	2.0	picture Thumbalina	Xiǎo xiānnǚer Little fairy daughter	xiǎo xiānnǚ little fairy girl	"little fairy-daughter"
		square	chángxíng long shape	chángfāngxíng long square shape "rectangle"	"long-angle"

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TABLE 5.3 (Continued)

CHILD	AGE	REFERENT	COINAGE	STANDARD FORM	ROUGH TRANSLATION
PANG	2.0	Knight's face mask	gāngshàng bí steel on nose	miànjù face mask	"steel-on-nose"
			gānggangbí steel steel nose		"steel-nose"
	2.2	Dressing up	nǚxié female shoe	nǚhái.zi.de girl child nom. mod xié.zi shoe nom "girl's shoes"	"girl-shoes"
	2.5	Making clay snake	shé tóu.zi snake head nom (nominal suffix not allowed here)	shé.de tóu snake poss head "snake's head"	"snake head-er"
		Picture bucket full of fish	yú bēi.zi fish cup nom.	yì tǒng yú one pail fish or yú zài fish be at tǒng.zi-li pail nom in "a pail of fish" "the fish are in the pail."	"fish-cup"

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TABLE 5.3 (Continued)

CHILD	AGE	REFERENT	COINAGE	STANDARD FORM	ROUGH TRANSLATION
PANG	2.8	candy	tángzi candy nom	táng candy	"candy-er"
		bowl of live crabs	dà pángwǎn big crab bowl	yì dà wǎn.de one big bowl mod	"a big crab-bowl"
				pángxiè crab "a big bowl of crabs"	
				or zhuāng pángxiè.de put crab mod	
				yì.ge dà wǎn "a big bowl to put crabs into"	
	2.11	zoris	zhǐtou xié toe shoe	mù jī wood clog	"toe-shoe"
		toy forklift	wánju chē toy car	kěyǐ dào wánju.de can dump toy mod	"toy-car"
			wánju diào.de chē toy drop mod car	kǎchē. truck	"drop-toy car"

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TABLE 5.3 (Continued)

CHILD	AGE	REFERENT	COINAGE	STANDARD FORM	ROUGH TRANSLATION
PANG	2.11	mosquito repellant coils of incense	diǎn wénchóng.de light mosquito insect mod	wénxiāng mosquito incense	"light mosquito insect-er"
KANG	2.10	hallway	zǒuláng jiān hall room	zǒuláng hall	"hall room"
	3.0	bookbag on back	shū.bian book side	hòu.bian back side "behind"	"book-side"
	3.1	Cylindrical block	yuánfāngxíng round square shape	amalgam of yuántǒng round tube "cylinder" fāngxíng square shape "square"	"circle-square-angle"
		playing trucks	tíng tuōchē zhàn from park push car stand "tractor"	tíng chē zhàn park car stand "parking lot"	"tractor-parking lot"

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TABLE 5.3 (Continued)

CHILD	AGE	REFERENT	COINAGE	STANDARD FORM	ROUGH TRANSLATION
KANG	3.2	Horseplay wants mother to go hide in a "cave" inside the wall	qiángdòng wall cave	qiáng-li.de wall in mod dòng cave "cave in the wall"	"wall-cave"
	3.3	Picture of toy locomotive	huǒchóng fire insect	huǒchē tóu fire car head "locomotive"	"firebug"
	3.4	R's English narration	yīngwénhuà English language speech	yīngwén English language "English" (by analogy with zhōngguó huà China country speech "Chinese")	"English-talk"
	3.5	Naming colors	zǐhuángsè purple yellow color	(no such color) analogy with júhuángsè tangerine yellow color	"purple-yellow"

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TABLE 5.3 (Continued)

CHILD	AGE	REFERENT	COINAGE	STANDARD FORM	ROUGH TRANSLATION
KANG	3.5	talking into microphone	màikēfēnghuā microphone talk	(no such word, analogy as above)	"microphone-talk"
		painting with watercolors	mǒbǐ ink pen	amalgam of mòshuǐ ink water "ink" and mǎobǐ hair brush "writing brush"	"ink-pen"
		watercolor set	sècǎi * color multicolor "hue"	shuǐcǎi water multicolor "watercolors" yánsè hue color "color"	"color-multicolors"
	3.7	photo of nun	hēi nǚ black woman	xiūnǚ devote woman "nun"	"Black woman"

* This compound is used to describe hues of colors, but never cakes of paint themselves.

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TABLE 5.3 (Continued)

CHILD	AGE	REFERENT	COINAGE	STANDARD FORM	ROUGH TRANSLATION
KANG	3.8	re nursery school piano	àqín prefix for + zither human names	gāngqín steel zither "piano"	"sir-ano"
		planting pit of a sort of candied fruit	cáipian shù candied tree fruit	---	"prune tree"
	3.9	slipper	tuōxié.zi slipper shoe nom.	tuōxié slipper shoe "slipper"	"slipper-er"
		middlesized paper bird	zhōngniǎo middle bird	zhōng děng.de middle class mod niǎo bird "middle-sized bird"	"middle-bird"
		paper bird	niǎo ér.zi bird son nom	---	"bird-son"
		wants milk	bái nǎi white milk	---	"white-milk"

TABLE 5.3 (Continued)

CHILD	AGE	REFERENT	COINAGE	STANDARD FORM	ROUGH TRANSLATION
KANG	3.9	pretending to be mother's chauffeur	Lǎoyéfūrén old master madame	has linked terms for both "master" Lǎo Yé, and "mistress" Fūrén into as single word meaning "mistress"	"master-mistress"

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school children who use "white milk" contrastively with "chocolate milk." In Chinese one must say bái.de (white mod) niúnǎi (cow milk) "cow's milk that is white." Zhong Rong's coined *dōubian (all side) "all side(s)," "everywhere," is standard English but does not exist in Chinese.

Many coinages were violations of conventions on what is considered to be an alienable as opposed to an inalienable quality of an object in a given culture. In many languages, including English and Romance, inalienable, inherent qualities are likely to be compounded, e.g. "house-boat." Temporary resemblances, overlaps in location, or use, are described periphrastically with adjective phrases; as in "the midnight boat," "the banana boat," and "the boat that comes at midnight."

Pang violated the "inherent quality" rule, when she described a bowl of crabs as a *dà (big) pángwǎn (crab bowl) "a big crab-bowl;" and a bucket full of fish as a *yú (fish) bēi.zi (cup) "fish-cup." Kang described a vase with a fish painted on it as a *yú huāpíng (fish flower bottle) a "fish vase." Kang looked at a picture of an American Catholic nun wearing a black coif and called her a *hēinǚ (black female) *"black female." This was evidently a combination of hēi-rén (black person) "Black," and xīnǚ (adore female) "(Christian) nun."[26] Apparently

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the black coif caught his attention as a salient feature, one important enough to be worthy of compounding. He expressed both meanings at once in a "portmanteau word."[27] To describe a Black female he would have had to use a periphrastic construction, yí.ge hēi.de nǔ hái.zi (one black mod female child) "a female who is Black." What is common and lexicalized in one society is rare in another; English has the phrase "Black girl," but it makes no sense in China where Black people are few and far between. Kang's mother was surprised at this coinage, since Kang attended a Catholic nursery school with nuns who wore black coifs as teachers.

Some coinages have a standard Chinese equivalent which the child does not know or cannot access; for example Pang called an elephant a *níumǎ (cow horse) "cow-horse," where the standard term is dàxiàng (big elephant) "elephant." Lao Hu called glue *tiēshuǐ (adhere water) "adhere-water" where standard Chinese has jiāoshuǐ (sticky water) "glue." Kang referred to his water-color brush as a *mòbǐ (ink brush) "ink brush," where the standard term for a painting or writing brush is máobǐ (fur brush) "writing brush," and ink is called mòshuǐ. (ink water) These coinages are well-formed, but conventional terms exist. Other coinages are not so easily paraphrased since they refer to invented entities, or to concepts which are

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available perceptually, but which are not conventionally linked. For example referring to a bookbag hanging on one's back as *shū.bian (book side) "book place;" a place to park tractors as a *tíng (park) tuōchē (push car) zhàn (stop) "tractor stop," A few forms seemed to be invented as "fillers" to expand the child's vocabulary list in a certain category by using word formation devices productively, even where the object described was an impossibility. For example: Kang described a cylindrical block as a *yuánfāngxíng (round square shape) "round-square-angle." In naming a long list of his favorite colors Kang coined *zǐhuángse (purple-purple yellow) "purple-yellow." While playing doctor, he named the time when his mother should take the pills he gave her as *fànqiánhòu (food before after) *"before-after meals" *"pre-post meals." This type of antonym compound is very Chinese, cf. dàxiǎo (large small) "size."

I also include wrong affixations of the nominal suffix -zi in the coinage category. The list of nouns which can take -zi is arbitrary and must be learned item by item, e.g. tù.zi (rabbit nom.) "rabbit," but not *mǎ.zi (horse nom) . "horse-er." A large part of the child's earliest vocabulary of concrete nouns consists of simple, un-compounded nouns which either can take the -zi suffix or sound as if they should be able to. There is considerable variation in this usage

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across generations and Chinese dialects; in addition some nouns have -.zi in some constructions but not in others. E.g. tù.zi "rabbit," and xiǎobáitù "bunny," (little white rabbit) but not *xiǎo báitù.zi (little white rabbit nom). Moreover, for some words, the -.zi suffix distinguishes homophones, e.g. hé "river," versus hé.zi "box." Lao Hu produced *biǎo.zi (watch nom) for shǒubiǎo "wristwatch." (hand watch) This particular error has been the subject of many jokes in Chinese, because biǎo.zi, (written with a different character) from "watch," is a word for "prostitute." Because of these complexities I have included the -.zi errors with coinages, rather than disassociating them as mere affixation problems. The -.zi suffixing errors do decrease with age.

The coinages the Chinese children produced strikingly resemble these Bowerman has discussed for American children in terms of the general correctness of word formation devices used, and the semantic relationships likely to be coined.[28] Standard terms are available for some, there are foreign language equivalents for others; while for still others, the coinage expresses a semantic range which does not seem very easy to package into single word. They also parallel English, French and German child coinages discussed by Clark.[29] This correspondence is striking evidence of a fundamental, cognitively-motivated, word formation device

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which transcend the strictures of a particular language and culture.

SECTION 5.4 DEFINITIONALS: NOUNS FORMED WITH VERB PHRASES AND THE -DE NOMINALIZER

In discussing semantic reference and noun use for Chinese children, there is an important form which falls midway between word formation and syntactic devices. Nouns may be derived from verbs by naming an action or a state, then following it with the -de nominalizing affix. The same affix also marks genitives and modification. The descriptive -de derivation is highly productive for Chinese. Many very common everyday objects do not have a pure noun form. After a plumbing crisis in Taipei I once made a frantic search through my dictionary for the word for "plunger," only to find out from the neighbors that the Chinese word for "plunger" is yí.ge dǎ
one beat,
mǎtǒng.de "a do-the-toilet-er." Such formations are
toilet mod/nom
intermediate between relative clauses and nouns. The -.de suffix is also the most productive suffix for describing people who performs certain functions e.g.
mài bīngqílín .de "ice cream seller." In this way
sell icecream mod/nom
-de resembles the English -er suffix; "typewriter" in English originally referred to both the machine and the

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person who used it. I use "-er" to translate Chinese -de definition nouns.[30]

But Chinese -de is much more productive than English "-er."[31] It is important to note here that -de is also the device used in making relative clauses as in mài sell bīngqílín.de ice cream mod lǎo old tàitài lady lái.le come perf. "The old lady who sells ice cream has come." Notice what in the previous example seemed like a clear case of -de as a nominalizing particle, mài bīngqílín.de "The ice cream seller," is expanded to a relative clause in a sentence merely by following the -de complex with a verb.[32]

Because of its greatly varied and frequent usages, Chinese children begin using -de very early. The earliest uses are for naming or "defining" things, I prefer to call these periphrasic, not completely lexicalized uses definitionals. This use of -de for naming objects is a very important bridge to its more complex relativizing function. Chinese is left-branching, so any -de definition followed by a verb automatically becomes a relative clause.

I confine my examples in this section to novel uses of -de as a nominalized definition where either a very commonly used sing[illegible]oun equivalent exists, or where the definition is somewhat novel in semantic scope. Certainly Chinese children also make errors in choice of noun, often corresponding to exact translations of those described by

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Clark and Clark.[33] Mandarin examples include: calling a picture of a fishbone an "insect;" saying "cow" for "horse;" "tea leaves" for leaves from a tree; "crab" for "dragon;" "saliva" for "mucus;" "chopsticks" for "divination sticks;" "pot" for a picture of a circle; "the spring witch" for "the spring goddess;" and "big deer" for a giraffe. In Chinese "giraffe" is changjinglù; (long neck deer) Kang said dà lù (big deer) then immediately corrected himself. Dà lù is a very high frequency sound sequence in Chinese, only for the meaning "the Chinese mainland." It is written with different characters, of course, dà lù. (Big mainland)

The semantic relations expressed by -de definitions are almost identical to those motivating the coinages. All were produced in answer to the question "what's this?" Examples follow in Table 5.4.

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TABLE 5.4

DEFINITIONALS - EXAMPLES

STIMULUS	UTTERANCE	TRANSLATION
(sewing machine)	Zuò yīfu.de make clothes mod.	"what the person makes clothes with."
	rén.de person mod.	"the clothes-maker's thing."
(safety pin)	Tūo yī.fu.de remove clothes mod.	"what you take off the clothes with."
		(tūo "remove" seems extended to mean "mend")
		"what you mend the clothes with."
(thread)	Zuò yīfu.de make clothes mod.	"what you make clothes with."
(Sunday school purse)	Fàng Shèngjīng.de insert Bible mod.	"what you put the Bible in."
(broken piano key)	Tán qín.de play piano mod.	"what you play the piano with."
(ski mask)	Bāo zuǐbā.de wrap mouth mod.	"what you wrap your mouth with."
	Yòng zuǐba.de use mouth mod.	"what you use your mouth with."
(bathing suit)	Yóuyǒng.de swim mod.	"what swims"
		"for swimming"
(diagram of a circle on a flash card)	Niàoniào.de pee pee mod.	"pee-er" "what pees"

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Generally speaking, the -de definitionals were more likely than the coinages to describe the use of some object rather than simply to name it. Such definitions were more common among the youngest children who could not yet use the yòng "use" verb. -.De definitions tended to diminish in frequency as the children learned more standard names for objects and use of the yòng "use" construction.

SECTION 5.5 NAMING NAMES: POLITENESS AND PROPER NAMES

5.5.a GENERAL POLITENESS ROUTINES

Names play a very special role in Chinese culture, language, and politeness routines. Most politeness devices in Chinese are lexical; that is, polite speech, like syntactic marking, is organized around word choice. Special syntactic politeness verb declensions and pronoun systems have never existed for Chinese as they do in Thai, Japanese, Burmese, Vietnamese, Khmer, Japanese, in Romance, and even, vestigially in English.[34] Chinese children under the age of five have a sort of amnesty from most of the polite behavior routines required of older children and adults. Chinese adults feel that it is very important for children to be taught a large vocabulary so that they will be intelligent, do well in school and be successful in life. As far as politeness routines go, adults feel that "children will be children," that they are too young to follow such rules, and should be able to enjoy a time of freedom and

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spontaneity before taking on the burdens of complex ritual behavior for requesting, greeting, thanking, and apologizing. Adults spend relatively little time in coaching children on such routines, although children are sometimes prompted to say "thank you." The exception to the amnesty from polite behavior is the emphasis placed on teaching children to identify people by kinship term, or professional term, surname, and given name. In Chinese society it is absolutely necessary to know who someone is by name and rank in the family and society. A person without a name and rank is truly an "un-person." The Chinese custom of assigning a Chinese surname and given name to all non-Chinese who come to live there is actually a way of accepting foreigners into the society and granting them at least the beginnings of an identity.

The Chinese child's amnesty from most rules for polite behavior contrasts sharply with expectations of polite behavior from American middle class children, and, much more dramatically, with the courtesies expected from Mexican-American children.[35] At two years old, the Mexican-Americans frequently and spontaneously used the Spanish forms for "hello" and "goodbye," as well as both English and Spanish for "please" and "thank you." They also controlled the Spanish equivalents for "excuse me," "pardon me," "I'm sorry," "bless you," and many other polite sayings.

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In the exquisitely cultivated and polite Chinese households where I did my taping, the children were coached to say "thank you" on receiving a gift or a special snack. However, by the age of four they did not regularly produce "thank you" on their own; I have only about a dozen uses of "thank you" in the whole 65 hour corpus for four children. Children are assumed to be the natural recipients of gifts, snacks, and special treatment. This, along with their general amnesty, means that there is not a very strong pressure to elicit thanks from children who are only receiving what is due to them rather than what is considered to be a special favor which requires thanks.[36] At 24 months Pang produced *xièxie Àyí Ø liúdìng, "thanks (thank Aunt orange) Aunt Ø orange," for the full form Xièxie xièxie Àyí gěi wǒ liúdìng (chī). She also produced the unanalyzed concatenation xièxie xièxie Pó bú xiè, which translates as "Thanks Granny you're welcome." "Please," qǐng, is rarely used among intimates in Chinese; its use marks either formal, outsider status, or else heightened politeness associated with begging. Ordinary courtesies such as passing food or opening a door do not require "please" or "thank you." Pang and Kang were occasionally prompted to use "please" in their requests to me, the foreign guest, but I have only half a dozen examples of its use. Once after Kang had been asking for his mother

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to swing him through the air, his mother jokingly said

ni	méi	yǒu	qiúqiú	Māmā
you	not	have	beg beg	Mama

"You haven't begged Mama." He replied with a rhythm indicative of a well-rehearsed routine,

qiúqiú	Māmā,	qiúqiú	Mama
beg beg	Mama	beg beg	Mama

"(I) beg Mama, (I) beg Mama." However, I did not hear this form used on any other occasion.

Chinese has no single words for "hello," "good morning," or "good night." (Equivalents have been translated from English and are used in movies, and on TV commercials in order to sound "modern.") Outside the household people are greeted with

nǐ	hǎo	.ma
you	good	question particle

"how are you?"; only non-family member guests receive this greeting on entering a home.[37] However, anyone entering the home must be called by name. The children were sometimes prompted to say

Àyí	hǎo,
Aunt	good

"hello Auntie" when my assistant and I arrived; but generally they did not. Greeting is considered an adult rather than a child responsibility, as are giving the guest slippers to wear, tea to drink, and snacks to eat. (This is a direct contrast with Mexican customs.)[38] Saying goodbye,

zài	jiàn
again	see

"goodbye," "see you again" (cf. au revoir and hasta la vista) is much more of a shared ritual and happened every visit, although taping had invariably stopped by then, and so the goodbyes are not in the corpus.

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Chinese people have also adopted in English "bye bye," even elderly illiterates use it and coach their grandchildren to say bài bài "bye bye." The fortuitous identity between English and Chinese syllable structure and reduplication for this phrase make it one of the extremely few English words adopted into Chinese.[39] (Notice how even the word for "computer," diànnǎo (electric brain) is translated rather than transliterated.)

In Chinese society bumping into people, reaching or walking in front of them, leaving the table or a room, interrupting someone, yawning, sneezing, belching or other bodily noises, do not require apology. In fact, there is not any phrase which really corresponds to English "excuse me," far less to the distinctions between Spanish perdón, excusa, and other variants. The nearest Chinese equivalent is duì.buqǐ (face not rise), literally "(I) cannot face you," which translates best as "I'm sorry," and is only used for full apologies. From the Chinese viewpoint, Americans, Europeans, and Japanese all sound laughably contrite as they push their way onto crowded buses or share a meal apologizing all the way. I do not have any examples of the children in the study using duì.buqǐ "I'm sorry," even after riding over someone's foot with a tricycle, spilling someone's tea, or other offenses which would certainly call for apology in adult speech. There is an even more contrite apology form, bàoqiàn (report fault) "(I) confess

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that have done wrong," "forgive me." It is used for apologizing for seriously inconveniencing or wronging someone, such as by arriving extremely late, or not fulfilling an agreed-upon responsibility. I only once heard a child in the study or an older sibling use this form. At 2.1 Pang knocked her foot against the wall and said bàoqiàn "forgive (me)" to herself. Bàoqiàn is much too formal and polite a form for an adult to address to a child. In Chinese all apologies must conventionally answered and dismissed with méi yǒu guānxi "it doesn't matter." (not have connection) This is followed by repeated denials of inconvenience or offense, sometimes spoken through gritted teeth, no matter how serious the offense between equals or received from a superior might be. Since children are universally agreed to need to correction and criticism of their faults, a child's producing any of the conventional apology forms would require the adult to deny that any fault or offense existed. Since this is obviously not the case, there is no point to expecting children's apologies for faults which will require criticism and correction, rather than automatic dismissal. I do not have any instances of the children dismissing apologies with méi yǒu guānxi "it doesn't matter." They were not yet in a high enough position to receive and then to dismiss apologies. (Parents will inform the child if they have to let him down on some

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promised favor, and express sorrow at doing so. The child is expected to be stoic.)[40]

Another indicator of the status differential between adults and children is that children in Taiwan and Hong Kong are still taught to do the ritual "kow tow," kētóu, of kneeling and knocking their heads on the knock head floor toward their parents and grandparents at Chinese New Year, marriage, and other ceremonial occasions, and toward religious figures in Buddhist and Taoist temples. (People as young as their 40's from traditional households had to do this daily or more often during their childhoods.) In almost the last taping session when Kang was 3.10, his mother and Aunt Jiang became quite enthralled with teaching him how to do a really "proper" kētóu, in the course of pretend play involving worshiping a figure of a goddess in a temple. The mother pretended to be the goddess. Aunt Jiang demonstrated by prostrating herself and knocking her forehead on the ground. Kang asked to take a turn at pretending to be a religious figure and having the adults bow down to him. This met with a firm, almost horrified, refusal. It was impossible to have adults bow down to a mere child. This was almost the only request I ever heard denied to this only child and only son.[41]

More commonly used politeness routines which adults must adhere to but young children are excused from include: refusing favors offered numerous times before accepting,

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never directly denying a request, using deprecatory terms to refer to oneself and to one's household while using honorific terms to refer to others; and issuing repeated invitations to come eat, drink, visit, and live at one's house to people to whom one is introduced. (The hearer is boorish if he accepts without hearing a particular time and date offered.) Other polite behavior includes being extremely discursive and complimentary about every characteristic of a non-intimate guest or person to whom one is introduced. (I once silently entered a crowded elevator. As we reached the top floor several people remarked that I spoke Mandarin extremely well. I had not said a word.) There is conventionalized vocabulary for all these situations, although a large amount of it is disappearing from usage.

5.5.b NAMES AND KINSHIP TERMS

The politeness markers that Chinese children are expected to learn are people's proper names and positions in society. They should be marked with either a kinship term or a professional title, or both as in "Uncle Bus-driver" and "Auntie Nurse." Before the Chinese child even begins babbling he is encouraged to say Mā "Mama," Bà "Papa," Yí "aunt," Gōng "maternal grandfather," Yé "paternal grandfather," and so on, according to whoever is in the room or comes to visit. ("Brother" and "sister" are somewhat less emphasized.) These are modelled over and

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over with exaggerated pitch contour by everyone present regardless of age or sex or status. Men love to talk to babies. Chinese, like Europeans, think it "natural" that most children's first word is Mā "Mama." This is not, however, an absolutely universal first word, as shown by the finding that Samoan children's first word is invariably the phrase translatable as "eat shit."[42]

Chinese kinship terms are elaborately distinguished by sex, maternal or paternal side of the family, and age older or younger than the self. The highest frequency terms which must be distinguished other than Mā and Bà are: "elder brother" gēgé, and "younger brother" dìdì, "elder sister" jiějie, and "younger sister" mèimèi. Children are almost never called by their full given names, but rather by their nicknames as Pàng "Fatty" (her full name is Gōng surname Méiróng Beautiful mimosa); or Kang Kang (reduplication of the second given name.) They are also called by their sibling titles equally or more often than by nickname in household with more than one child. In large households the sibling names are numbered e.g. sān three jiě elder sister "third elder sister," dà great gē elder brother "oldest of the elder brothers."

The words for "brother" and "sister" are used to refer to children whom one doesn't know. A little boy on the street or in a picture is always called a

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xiǎo dìdi "little younger brother," rather
little younger brother

than yí.ge xiǎo nán-hái "a little male child."
one little male child

(Foreign speakers frequently make this error of not including strange children in the Chinese "family of man.") Pang once called a little boy in a picture a xiǎo rén
little person

"little person." Yuan immediately corrected this to xiǎo dìdi "little brother," and Pang spontaneously imitated this correction.

Uncles, aunts, cousins, and family friends have their surname stated followed by the appropriate kinship term, as in Jiǎng Àyí "Aunt Jiang," or Chén
surname Aunt surname

Biǎo Dì "Younger male maternal
maternal cousin younger brother

cousin Chen" or "Cousin Chen." Such relative names may also be numbered for sibling rank in the relative's family, as Sān Yí "third maternal aunt," "Third
three maternal aunt

aunt," for the third of one's mother's sisters.

Like German, Chinese names professional people by both surname and title e.g. Lǔ Lǎoshī "Teacher Lu."
surname teacher

Zhong Rong once referred to her father this way after some of his students had visited the house and addressed him as Lǔ Lǎoshī. Zhong Rong's parents found this very cute. Surname and first name are often used together where most languages would use first name alone among equals

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(classmates for example) and to inferiors. In Chinese dialects other than Mandarin there is a vocative à- prefix which can be prefixed before either a first name or a last name, when speaking to a person in a familiar way, or in referring to them informally.[43]

Chinese also recognizes many more types of relationships than does European; all of these have two-syllable names, referring for example to: "someone from my home town," "from my home county," "compatriot," "fellow alumnus from the class above me," "student in the same college major as mine," "someone of the same surname," "god-daughter," "sworn brother," "honorary nephew," "colleague," "person in the same trade," and "comrade." While none of these terms occur in early speech, they will become very important later on.

The use of naming terminology is a very important contrastive device for decoding sentences, since it highlights names, titles and relationships in a fixed order and with a fixed compound structure. Thus, kinship and title words contrast with the ordinary, often homophonous, nouns and verbs. A further contrastive factor is that Chinese only has an inventory of about 200 common surnames; nearly half the population shares the ten most common surnames. Recognizing a sequence as "possible surname" is very easy.

Place names are similarly singled out by being followed by a standard place word e.g. Táibei shì
Taipei city

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"Taipei City," Fàguó "France Country," (France country)

"France."[44]

Adding to the importance of names and titles as language decoding and structure-teaching devices is the Chinese preference for using a name and title rather than a pronoun even in direct address.[45] It is considered much more pleasant and polite to use a person's name rather than the pronoun nǐ "you" even in speaking to young children. While this use of names rather than pronouns is diminishing somewhat as pronouns increase in range and frequency of usage, use of name and title is still extremely important in Chinese. Children do practice, learn, and get corrected for not using the proper title. All the children in the study used only the appropriate titles and names in addressing people whom they knew.

I see no clear evidence that most kinship terms are understood relationally as anything other than as the names of individuals until the child is around three years old. Still, the kinship terms which are used are invariably used correctly, if not contrastively: xiǎo jiùjiù (little uncle) "younger maternal uncle," xiǎo ā'yí (little aunt) "younger aunt," and nǎinai (paternal grandmother) "paternal grandmother," contrasted with Pó, "maternal grandmother." Pang used all these when she was just past two years old. Pang was also able to produce the surname and given names of her sister, her

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parents, and her grandparents if prompted; Lao Hu was nearly able to do this. Knowing one's surname is very important in Chinese. Xiao Jing, the child at the one-word stage, knew many kinship terms, and used them correctly.

As he was nearing three, Kang began to understand that his own surname was Jiang and his first name Zhengkang (establish health), or Jiang Zhengkang; while "Kang Kang" was his nickname. (Reduplication of the second given name is standard nickname form.) He used his own name as a structural model to try and name other people. The family housekeeper was called Popo "Granny." Kang jokingly called her Jiang (surname) Zhengpo (establish grandmother), giving her his own surname and given name, and then substituting in Po the title "Granny" as a second given name. This type of substitution of last segment is also the pattern used in naming brothers and sisters; same surname and first given name, different second given name. If Kang had a brother, he might be named Jiang (surname) Zhenghua (establish China).

While most of the children called me Ayi "auntie" or Meiguo (America) Ayi "American Aunt," Kang's mother introduced me to him American-style by calling me Mali (Mary) Ayi (Aunt) "Aunt Mary." (I have a Chinese surname, Ai (Artemesia) and a transliterated first name, the Chinese pronunciation of

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"Mary," Mǎlì .) Chinese-style naming would call me by my surname, Ài Àyí "Aunt Ai." Being called "Aunt Mary" sounds quite odd in Chinese. First names are not important kinship terms, and surnames are. Kang lost no time in doing a reanalysis, segmenting off Mǎ, the first syllable of Mǎlì "Mary," as a surname. Ma "horse" is a common Chinese surname, and he called me Mǎ Àyí "Aunt Ma" or "Auntie Horse," though "Aunt Mare" is perhaps a better translation. He also referred to a strict friend of his mother's as Jǐngchá Àyí (Police Aunt) "Auntie Police-woman." On another occasion when he was almost four years old, he needled his mother, Aunt Jiang and me by repeatedly calling us all by our surnames and given names. (Yáng Jiǔ, Jiǎng Cé, Ài Mǎlì.) This was extremely offensive; we all scolded and corrected him repeatedly, but he persisted for that evening, and was punished for this after the guests had left his house.[46]

Kang continued his segmentation and name-formation experiments through several jokes he made. Below he is trying to form a full surname and given-name combination, and then to produce a nickname variant which involves reduplication of the second given name. The arbitrariness and lack of concrete referents for names led Kang to make one of his rare ordering errors, similar to the order errors for semantically opaque forms discussed in Chapter Four, Section 4.3.

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Example 5.3 Kang Tape 15 (3.5)

Kang	Wǒ shì Bèn Dàn. I copula Dumb Egg. = Dummy	"I'm Dummy." "I'm a dummy."
Mother	Nǐ xìng Bèn jiào You surname Dumb name	"Your last name is Dumb, first name is Egg, huh?"
	Dàn .a? Egg particle	
Kang	Wǒ jiào Bèn Dàn Dàn. I name Dumb Egg Egg	"I'm named Dumb Egg-y." (Correct nickname formation.)
	(mother models surname and first name forms)	
Mother	Nǐ.de míng.zi You poss name	"Your name is Jiang Dumb Egg, huh?"
	Jiāng Kang's real surname	
	Bèn Dàn .a? Dumb egg particle	
Kang	*Wǒ jiào Bèn Jiāng Dàn. I name Dumb surname Egg	*"I'm named Dumb Jiang Egg."
	(misorders surname and given name.)	

This example of misordering names is even more striking because he has been willing to break up the very common set phrase bèndàn "dummy," and insert a surname between the segments.

Kang's surname identification device was so powerful that he was willing to ignore tone differences between surnames which differed by tone, and to insist that the names were identical. Kang's surname is Jiāng, high level tone, while Auntie Jiǎng's is the identical sequence Jiang except for having a low dipping tone. It is homophonous

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with jiang "to speak." Playing TV announcer about to introduce Auntie Jiang as "Miss Jiang" brought the issue of names and homophony to a head,

Example 5.4 Kang Tape 11 (3.3)

(to Auntie Jiang, about to introduce her as "Miss Jiang" while playing TV announcer)

Kang (Laughs) Jiang Xiaojie "Miss Jiang."
(as announcer) Jiang Miss

(laughs, grabs mike away from Auntie Jiang)

(breaks role, says to Mother)

Wo ye shi Jiang, ta ye shi
I also copula Jiang/speak she also cop.

Jiang, wo ye shi/ Jiang,
Jiang/speak I also cop. Jiang/speak

nei.ge / um.
that um

"I'm Jiang too, she's Jiang too, I'm Jiang / too, that, um."

(Homophonous with "I'm speaking, too, she's speaking too, I'm speaking too, that, um.")

Mother á?
huh?

(Kang looks at Aunt Jiang)

Kang Um. Ta ye shi Jiang ZhengKang.
Um She also copula Jiang Zheng Kang
(Kang's own name)

"Um. She's Jiang Zheng Kang too."

(laughs.) Hiiii!

Mother Ta bú shi. Ta shi Jiang Ayi.
She not copula She copula Jiang Aunt

"She's not. She's Auntie Jiang."

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Kang Ei, nà gēn wǒ yíyàng .ou?
Huh, that with me same particle

"Hey, that's the same as me, right?"

Mother (explaining carefully with exaggerated tone contrasts)

Bù. Tā shì "JIǍNG" Ní shì "JIāNG"
Neg. She cop. Jiang you cop. Jiang

Bù yíyàng.
Neg. same.

"No. She is "Jiǎng," you are "Jiāng." It's not the same."

(Kang looks confusedly at Mother.)

Kang Gàn má bù yíyàng?
do what neg same

"How are they not the same?"

(also implies "why")

Kang never made tone confusions of this sort in his spontaneous production. Two extensive experiments on the next two tapes showed that he was reliably able to perceive the difference, and act out instructions involving tonal minimal pairs of nouns, verbs, and names, involving dolls named Xiǎo Xīng and Xiǎo Xìng whom he was asked to feed soup tāng, or candy, táng; to rock for a little bit yáo.yiyáo, or to bite a little bit yǎoyiyǎo; to pick up and carry bāoqilai, or to wrap up in a blanket bāoqilai. Although he was able to do this accurately, he found the task very difficult, and required

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frequent clarifications of instructions and reminders about which dolly was which. He finally tried to opt out of the game by pretending to fall asleep, and then by claiming that he was a big dog, and therefore unable to talk. He was ingenious about coining paraphrases to distinguish these minimal pairs. He insisted on reduplicating one doll's name to Xiǎo Xīng-Xīng "Little Star," to distinguish her from her sister. He also talked in terms of giving the dolls "something to eat" versus "something to drink" in order to avoid naming the minimal pairs. This conforms to Slobin's Operating Principle "avoid homophonous forms."[47] The elicitations with the mother lasted a total of 70 minutes spread over two tapes. A detailed analysis of the strategies, paraphrases, and misunderstandings, in this task should prove very revealing. At 2.6 Pang was too young to cooperate in the experiment, so I did not succeed in eliciting any data of this sort from her.

Tonal minimal pair data reveal the importance of consistent context, order template, and semantic clarity as supports in order to distinguish near-homonyms. It also indicates that tone is less of a central phonemic distinguisher of words than are the vowel and consonant phonemes. The very fact that tone variants are superimposed on syllabic sequences is further evidence of this sort, as is the fact that a number of dialectal variants of Mandarin e.g. Anhui dialect, use the four standard Mandarin tones but distribute them to mark a completely different set of

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words. For example all Mandarin high-rising tones might be high-falling tones, all high-level tones are high-rising and so on. It is still possible to understand someone who speaks with completely permuted tones so long as the segments, and linguistic and social contextualization are clear and redundant enough. Segments in isolation, of course, will be misinterpreted. Clumeck's study of acquisition of tone[48] found that children could reliably distinguish toys representing objects in tonal minimal pairs as long as the objects were "real" and already known. For example, children had no trouble distinguishing "book" shū, "mouse" shǔ, and "tree" shù. But they had trouble remembering what to call a wooden block with a face painted on one side of it which Clumeck had labelled a shú in order to fill in an empty cell in the four-tone paradigm for nouns with the shu segmentals. Evidently proper names are abstract enough entities for the Chinese child to judge that phonemic tone distinctions seem arbitrary, and hence to find minimal pairs for names confusing.

The importance of having a clear signal to the hearer that a given segment is a name for a human, an animal, or a place and so should be parsed as such, is underscored by a joke Kang told. None of his hearers got the joke because of the lack of a form class signal, and because of Kang's inappropriate segmentation and deletion in coining the name.

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Example 5.5 Kang Tape 21 (3.8)

(Discussing inventory of furniture at his nursery school)

Aunt Jiang (suggests)
Chángcháng.de zhūo.zi.a?
Long long mod table particle

Hǎo duō rén yìqǐ zuò, shì
Very many people together sit cop.

.a?
particle

"A long long table, huh? Lots of people sit there together, huh?"

(no answer)

Kang
Xuéxiào hái yǒu Ā - qín .
School also have vocative (2nd syllable of "piano," gāngqín steel zither)

± "The school also has a Mr. Ano."

Auntie Jiang
(Confused, glossing)
Āqín .a? Gāngqín .a?
voc.-ano part steel zither part. "piano"

"Mr. Ano" Piano?"

(Kang laughs)

Mother
Āqín shì shéi? Shì yí.ge rén
vocative cop. who Cop. one person

.ma?
question particle

"Who is Mr. Ano" Is it a person?"

Kang
Shén.me gāngqín? "What piano?"
What piano

(laughter, Kang looks at Mother)

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Mother	Ni zai shuo You progressive say	"What are you saying?"
	shen.me? what	
Kang	Wan .a. Kai Play particle Make	"Just playing. Make a joke."
	wanxiao. play laugh	

Kang has made the not-unreasonable assumption that common nouns are names, and so the names of things and the names of people are not all that different. Not knowing the etymology of "piano" as gāngqín "steel zither," he is not being able to see that the first morpheme is descriptive of the second noun syllable, rather than simply a semantically opaque "name." He feels free to delete it, and jokingly substitute in the vocative human prefix, à. But doing this makes the sequence unintelligible. Chinese convention prefers that even given names for animals be preceded by the animal's species "title," e.g. Shī.zi lion Xīnba "Simba the Lion," Yā Duck Māma Mama "Mama Duck."
Simba

As he neared the age of four, Kang began to control a number of honorific terms. Once, while pretending to be the host at a banquet, he introduced the guests to one another using the honorific classifier wèi "honorable," Zhèiwèi shì Jiāng Xiǎojie. "This honorable person is Miss Jiang." In the play routines in which he was the chauffeur and his mother the aristocratic lady-of-
This honorable copula surname Miss

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the-house, he was able to use the more common form of "madam" tàitài, which is also commonly used to mean "Mrs." However he did once ask his mother tàitài shì shén.me (wife cop. what) dōngxi? (thing) "What kind of thing is a wife?" This concrete interpretation of a very common word in his vocabulary surprised and convulsed his mother.

In that same session he had great trouble using the more elevated word for "madam," fūrén (noble person). He even claimed that fūrén "madam," meant the kind of limosine which a lady is driven around in. He had trouble understanding that fūrén "madam" referred only to female gentry, and that males had to be called Lǎoyé (old master) "Old master" or "sir." He used the two terms compounded together several times as Lǎoyéfūrén "Master-Madam." Probably part of this conflation of "masters," "mistresses," and "limosines" into a single inclusive term stems from his knowing the word for "jalopy," Lǎoyé chē (old master car) "old man car," "an old wreck." Having first known the meaning and referent for as "old man car," deriving "Old Master" or "sir" from the word for "car" was not easy. This was particularly true since the word "old" lǎo, was so familiar to him, while yé "master" was unknown. It was just a small step from there to assume that if there are "Old Master Cars" there must certainly be "Madam cars"

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as well, and that "madam" and "Mrs." also referred to kinds of cars.

The search for concrete and known referents motivates most attempts at interpretation in Chinese. It is not much different in kind from the re-analysis American children do with unfamiliar words, turning the line from "Silent Night," "round yon virgin," into the name of a jolly character, "Round John Virgin." Adult reanalyses flourish in malapropisms and folk etymologies in all languages. However, Mandarin offers greater opportunity for reanalysis.

SECTION 5.6 PERSONAL PRONOUNS

The Chinese pronominal system is extremely simple and easily learned. Cognitive rather than formal linguistic factors are the driving force behind the order and rate of acquisition. Mandarin development is strikingly like that for the very similar English system.[49]

There is no grammatical case in Chinese, so the same pronouns are used for subject, object, and other sentential relations. (Historically Chinese did have different personal pronouns for subject and object, but lost them many centuries ago.) No gender distinctions exist. There is no familiar versus polite distinction, other than a very seldom-used polite form for "you" nín. The plural suffix -men changes pronouns from singular to plural. Therefore the system is as described below.

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PERSONAL PRONOUNS

Wǒ	"I, me"	Wǒ.men	"we, us"[50]
Nǐ	"you"	Nǐ.men	"you" (plural)
Tā	"he, she, it" him, her	Tā.men	"they, them"

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By the time the child is two, and probably from nearly his first words, he reliably uses wǒ "I" and nǐ "you." There are occasional errors like those found for English, American Sign Language, and other languages where the child uses nǐ "you" to refer to himself, since this is the pronoun he usually hears referring to himself. There are very few uses of the plural forms wǒ.men "we" and nǐ.men "you plural," until the child is more than two-and-a-half years old. The Chinese custom of addressing and referring to people by name or title rather than by the rather rude-sounding pronouns gives the child an extended time span in which to refer to people by name, and to learn to shift reference by pronouns until he has the self and non-self distinction well in hand.

Māmā	bāo	wǒ
Mama	carry	me

addressed to the mother as a request is preferred to the pronominal form.

Nonetheless, at 2.0 Lao Hu frequently used nǐ "you" and wǒ, "I," while his mother still addressed him by name. She referred to herself as "Mama" rather than wǒ "I," as is standard in adult Chinese and European speech to children, e.g.

Māmā	yào	bāo	Lǎo Hǔ
Mama	want	carry	Lao Hu

"Mama wants to carry Lao Hu," rather than Wǒ yào bāo nǐ, "I want to carry you." Lao Hu's comprehension and use of the pronouns was more advanced than the speech addressed to him.

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A further advantage Chinese children have in gaining correct pronoun use is that subject pronouns need not be repeated once reference is established. In speech to another person, and imperatives, zero pronoun is the norm. Children very frequently have the option of not using the pronouns, and so their speech is correct by default. For example, the translation of mei you as "I haven't" "It didn't" "They don't have any" is completely dependent on context.

The more interesting cases involve the children's use of the third person pronoun tā. Because of the preference for name or title rather than pronoun use, and the availability of the numeral classifier system, ta has traditionally only referred to human beings, while

zhèi zhī "this-animal" and
this animal classifier

nèi tiáo "that long skinny object"
that long skinny classifier

and other classifiers stood for animals and things. The availability of these finer specifications within the "it" category was very important in disambiguating Chinese sentences. However, the classifier system is in very rapid decline. Tā used to mean "it" is now acceptable in adult speech in sentential object or patient position. In such constructions tā no longer has its animate overtones, e.g. in wǒ bǎ tā guānhǎo.le "I closed
I object marker it close good perf

it," tā may refer to a door.

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While putting inanimate tā in sentence-initial, agent-subject position is not good adult usage, the children do this often. Initial inanimate tā will undoubtedly be the wave of the future as the classifier system decays and pronominal usages gain dominance. The rise of a general pronoun rather than differentiated classifiers will give even fewer clues as to who or what is acting or being acted upon. Chinese has no active/passive distinction; and strictly speaking, the sentence initial-slot is for topic which may be either agent, patient, or thing commented on, rather than for a subject which governs the verb. Wider meaning for tā, along with continued phonemic loss, will reinforce the continuing rise of auxiliaries, modals, and periphrastic forms in Chinese.

The following conversation about the price of oil illustrates the expanding scope for sentence-initial use of inanimate tā:

Example 5.6 Kang Tape 9 (3.2)

(After TV public-service announcement about increases in oil prices and the need to save energy.)

Kang	*Tā S/He	yě zhǎngjià.le. also increase price perfective	*"He/she also got more expensive."
Mother	Shéi? Who?		
Kang	*Tā S/he	zhǎngjià.le. increase price perfective	*"He/she got more expensive."

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Mother Tā shì shéi? "Who is 's/he?'"
S/he cop. who

Kang *Tā Jiǎng Àyí nèi.ge/ nèi.ge/ yóu gēn wǎsī
S/he Jiang Aunt that that oil and gas

dōu zhǎngjià.le
all increase price perfective

*S/he (is) Auntie Jiang('s) that/ that/
oil and gas both got more expensive."

The mother represents the old guard of standard speech in assuming sentence-initial tā is human. Kang sees nothing strange in her assumption, since he uses tā for both human and inanimate. Still, he eventually comes up with a clarification of his original meaning that gas and oil are both more expensive. He does this only after a false start by substituting in a human subject for tā. After this false try, he becomes explicit and puts "oil" and "gas" sentence-initial rather than assuming a pronoun can represent them to his hearer.

Such a broadening of the potential referents for tā and the loosening of positional strictures against non-animate tā in subject position, often leaves reference unclear. Sentences like tā pèng.le tā "He/she/it
bump perf

bumped him/her/it" and tā bù gǎn dòng
he/she it not dare move

tā "He/she/it didn't dare move him/her/it" are
he/she/it

common and very confusing in child Chinese. It is no mean feat to figure out who or what tā refers to, especially

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given small children's lack of contextualization and unmarked switches from real to pretend modes of speaking.

Tā is almost never omitted if it is sentence final in the object/patient/recipient slot. However, in reordered constructions with object fronting, with or without the ba object marker, tā as the "dummy object" is frequently omitted. It is as though the child has analysed bǎ (a grammatical object marker) as a pronoun which includes the object marked as well. Working from a slot-frame analysis, he assumes that there is only room for one object morpheme in the fronted-object slot, and that bǎ takes up all that space. This leads to common, ungrammatical forms such as:

Example 5.7 Kang Tape 22 (3.9)

(bouncing a ball.)

*Wǒ	bǎ	Ø	diūshàngqù,	'bòng	bòng.'
I	object marker		drop on go	'bong'	sound play

*"I'll drop Ø on, 'bong bong'."

The other very common places where tā is omitted also comes sentence-internally in a complex sentence. One case is where tā is the head of a second clause. The child often says *wǒ yào Ø chī which is well-formed in
I want eat

the meaning "I want (to) eat," when what he intends is wǒ yào tā chī "I want for him/her to eat." Tā as
I want s/he eat

an indirect object is often omitted, as in:

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Example 5.8 Pang Tape 9 (2.2)

(writing for sister)

*Wǒ gěi Ø xiě. *"I'm writing for Ø."
I for write

(for wǒ gěi tā xiě. "I'm writing for her.")

Reflexive uses of personal pronouns come in after age two-and-a-half for Pang, after three for Kang. They are generally used correctly except for occasional periphrastic forms with two pronouns rather than the reflexive alone. The child says things like "I give myself a washing" *wǒ gěi wǒ zìjǐ xǐ. instead of wǒ zìjǐ xǐ
I give me self wash I myself wash
"I wash myself." This is a manifestation of double marking to express enhanced transitivity. See Graphs 5.1 and 5.2 for development of use of the reflexive. All early reflexives refer to the child himself.

SECTION 5.7 POSSESSIVES

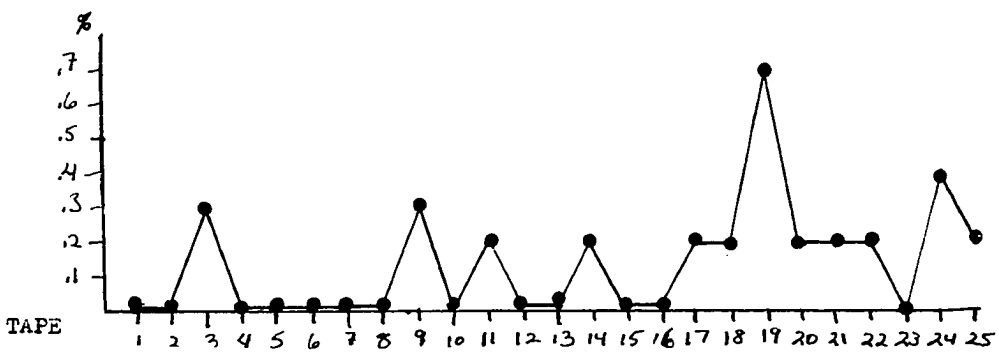
Possessives in Chinese are marked by affixing the -de nominalizer or modifier to the possessor e.g. Jiāng
Jiang
Āyí.de, "Aunt Jiang's," wǒ.de "my," "mine."
Aunt poss/nom I poss/nom
For young children, possession is almost always marked on a personal pronoun, almost invariably on wǒ "I." Possessives on names come next, and possessives marked on common nouns such as animal names are much later, after 2½. There is some evidence that in Chinese possession is marked

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GRAPH 5.1

ZIJI REFLEXIVE PRONOUN - PANG

(increments of .1%)



N = 16

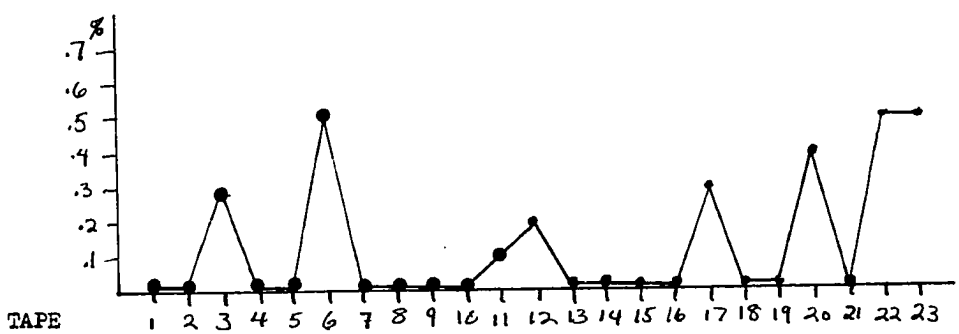
r = .42

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GRAPH 5.2

ZIJI REFLEXIVE PRONOUN - KANG

(in increments of .1%)



N = 20

r = .33

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younger than for American children, since both Lao Hu at 2.0 and Pang Pang at 1.10 used it correctly. Lao Hu used 47 possessives in 7 hours of taping; 45 of these uses were correct, i.e. he had 95% correct usage. However, there is strong evidence that the children are using an order and sentence position strategy, rather than a purely semantic strategy in marking possession, since the vast majority of their uses are sentence-final. These sentence-final uses are identical to -de nominalizations. The prototypical early child possessive is: zhè shì wǒ.de.
this copula I mod. nom & poss
This is translatable as "This is mine." Here the -de marks both possession and nominalization on the personal pronoun; wǒ.de in isolation means something like "my thing." This is nearly identical in form to an extremely high frequency early construction demonstrative + stative verb + -de nominalizer zhè shì lán.de
This copula blue mod - nominalizer
"This is a blue one." For Lao Hu such constructions were more than twice as frequent as the possessive adjective constructions like wǒ.de shū "my book." (See Tables 5.5, 5.6 and 5.7.)

It seems that such constructions are part of a general positional rule which says, "put some kind of neutral tone particle in the sentence final slot; -.de, -.le
perfective, or current relevance
.ma .a will all do
question particle emotional warmth particle
equally well." Nominalized-noun constructions like

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TABLE 5.5

BREAKDOWN OF .DE USE FOR LAO HU AND ZHONG RONG

		LAO HU N=178			ZHONG RONG N=336	
		GOOD	BAD		GOOD	BAD
POSSESSIVES						
% OF ALL .DE USE POSSESSIVE	26%			39%		
% possessive use correct, incorrect		95%	5%		99%	1%
1. Possessive adjective		N=16	---		N=69	N=1
wǒ.de shū I poss book	"my book"					
2. Nominalized possessive		N=15	---		N=32	---
wǒ.de hǎo kàn I poss pretty	"mine is pretty"					
3. Indeterminate possessive adjective/nominal		N=14	N=2		N=30	---
zhè shì wǒ.de This copula I poss/nom	"This is mine"					
TOTAL	N=47			N=132		

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TABLE 5.5 (Continued)

		LAO HU N=178		ZHONG RONG N=336	
		GOOD	BAD	GOOD	BAD
MODIFIER USES					
% OF ALL .DE USE MODIFIER	62%		32%		
% modifier use correct, incorrect		92%	8%	71%	29%
4. Nominalized adjectives		N=74	N=4	N=28	---
lán .de "Blue one"					
5. Adjectival		N=16	N=5	N=26	N=17
gāo .de fáng.zi "Tall building" tall mod. building					
6. Nominalized adverbials		N=2	---	N=11	---
kuài .de "The fast one" fast mod.					
7. Adverbials		N=9	---	N=11	N=14
hǎo hǎo .de huà "draw very well" good good mod. draw					
	TOTAL N=110		N=107		

TABLE 5.5 (Continued)

		LAO HU N=178		ZHONG RONG N=336	
		GOOD	BAD	GOOD	BAD
OTHER					
% OF .DE USES	12%		29%		
% correct and incorrect		19%	81%	16%	84%
8. Nominalized clauses		---	N=11	N=3	N=26
Bàba mǎi.de hǎo kàn Papa buy mod good look	"The one Papa bought is pretty"				
9. Complex verbs		N=4	N=6	N=12	N=48
ná - .de - chū-lái take mod out come	"Can take (it) out"				
10. Obligatory .de deleted		---	---	---	N=8
	TOTAL N=21		N=97		

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TABLE 5.6

BREAKDOWN OF .DE ERRORS

	LAO HU		ZHONG RONG	
	N=28		N=116	
Nominal Double Marking	15	(54%)	25	(22%)

Verb use errors		(21%)		(50%)
Verb double marking	---		16	
Bad complement	3		6	
No complement where required	3		11	
.De for .le	---		14	
Verb medial .de	---		10	
Error in shì ....de pattern	---		2	
Inappropiate but grammatically correct	---		2	

Adjective	7		13	
Adverb	---		9	
---				
non-realization of obligatory .de	---		8	

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TABLE 5.7

USES OF .DE

	LH	ZR
TOTAL INTERPRETABLE UTTERANCES	1,771	3,333
TOTAL INTERPRETABLE UTTERANCES WITH .DE	178	335
PERCENTAGE OF .DE UTTERANCES	10%	10%
PERCENTAGE OF .DE UTTERANCES CORRECT	83%	65%

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zhūo.zi.de "table-er," where an already full noun has
table mod/nom

a -.de nominalizer affixed to it when it comes in sentence-final position, are further strong evidence for this strategy. For example, Lao Hu (2.0) pointed to the Chinese flag hanging above the TV set in the living room, and said *guóqí.de. This is translatable either as
nation flag nom

"the flag's" or as a nominalized noun, the "flag-er." Pang (1.10) was asked to identify a flashcard picture of a cup. She replied, *Ø gè bēi.zi.de .ma.
classifier cup nom emphatic

(She has not attached the obligatory numeral or demonstrative to the classifier.) This is equivalent to either "a cup's" or "a cup-er." Lao Hu called an ashtry *yān
ash

guāng.de , "an ash tray-er."
jar nom

Notice, too how this construction is the same as the one used to form the definitionals with sentence-final -.de. Examples include calling a sewing machine

zùo yīfu.de rén.de "what a person makes clothes
make clothes mod person mod

with," or the "clothes-maker's thing"; and calling the buckle on a pair of leg braces dǎkāi.de "an open-er." (See the discussion of definitionals in Section 5.4 above.) A

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striking demonstration of the power of the positional hypothesis comes from Lao Hu:

Example 5.9 Lao Hu Tape 5 (2.0)

(R. telling him not to disturb his sister's toys)

Researcher	Shì	tā.de	dōngxi	"(Those) are her things."
	copula	her poss	thing	
Lao Hu	(repeats, modeling R's intonation)			
	*Tā	dōngxi.de		*"Her thing's"
	Her	thing mod/poss/nom		*"Her thing-er's"

It is remarkable that Lao Hu has re-ordered the correct possessive + possessed input order, and moved the -de to sentence-final position as part of a spontaneous imitation with matching intonation. As Chapter Three discusses at length, Chinese children almost never re-order segments even in sound play. For a Chinese child to re-order as part of an imitation is extraordinary testimony to a powerful super-rule which can supercede the normally supreme order strategy. Pang produced a very similar re-ordering.

Example 5.10 Pang Tape 3 (1.11)

Baojane	Zhè	shì	shéi.de	wáwā?	"Whose doll is this?"
	This	copula	who mid/poss	doll	
Pang	*Nǎinai	wáwa.de			*"Granny doll's"
	Granny	doll	poss		
(for	Nǎinai.de	wáwa			"Granny's doll.")
	Granny	poss	doll		

The Chinese child has very reasonably identified -de as an all-purpose modifier; the possessive, nominalizing,

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relativizing, and modifying functions of -de are distinguished semantically and positionally in Mandarin. (Other dialects have phonetically distinct forms for some of these different functions.) There is no evidence for a separate child Mandarin lexical entry for each -de usage; say -de$_1$ "possessive"; -de$_2$ "nominalizer" and so on. On the contrary, usage develops from one multi-purpose proto-form of -de which works differently according to its actual role in a given sentence, much as a wide plank on legs raised off the floor may serve as a bench, a bed, a table, or an altar according to the situation. It is senseless to debate about whether such an object is "really" or fundamentally a bench rather than a table. However, once a function is selected for a given situation, there may be many elaborate conventions for use and mis-use. One does not lie down and sleep on the protean proto-furniture while it is laden with food and functioning as a dining table.

From a distributional viewpoint, cases of -.de used unambiguously to mark possession occur only where the possessor is followed by the noun possessed; Pang (2.0) e.g. wǒ.de shǒu "my hand"; Māmā.de xié "Mama's shoe." One third of Lao Hu's usages are of this indisputably possessive type. The same ratio hold true for Pang's first eight tapes (age 1.9 through 2.2).

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For Zhong Rong at 2.6, half of her possessives are the unambiguous possessive + noun form. She is involved in a metalinguistic analysis in which she has distinguished between a nominalizing use of -.de and a possessive one. While she still says things like *zhè shì wǒ / this copula I pídài.de / purse mod/nom/poss *"This is my purse's," for zhè shì / this cop wǒ.de pídài / I poss purse "this is my purse," she also has many correct usages of unambiguous possession e.g. wǒ.de màozi / I poss hat "my hat." However, she also uses two -.de's, one to mark possession, one to mark nominalization. In adult Chinese when both meanings are present, only one -.de is realized. For example, pointing to her crayons, *zhè shì / This copula wǒ.de.de / me poss/nom *"this is mine's." She produced a similar double marking with two -.de's, one for manner, one for nominalization. She said *wǒ huà dà.de.de / I draw bid mod nom. *"I draw a big - ger," to mean something including both manner and result, a combination of: wǒ huà.de hao dà, / I draw mod very big "I draw/drew very large," wǒ huà.le yí.ge / I draw perf. one hao dà.de / very big nom "I drew a big one."

Since -.de marks general adjectival modification as well as possession, Zhong Rong also went through a stage

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of marking both relations with -.de where adult Chinese only requires one -de:

Example 5.11 Zhong Rong Tape 7 (2.6)

(Comparing R's large, shabby, full, bookbag to her tiny, new, empty, bookbag for nursery school)

Zhong Rong *Dōu shì Ø, nǐ dài nème.me
All copula you carry so

duō dōngxī.de dōngxī
many thing mod thing

*"It's all Ø , you carry so many thing's things."

(a few utterances later)

*Wǒ.de bǐjiào Ø shūbāo,
I poss/nom comparatively book bag

nǐ.de Ø dà.de shū bao.
you poss nom big mod book bag

*"Mine is comparatively Ø bookbag, yours Ø big's bookbag."

Here she omits two main verbs, but marks the nominal relations redundantly.

These double markings of possessive and nominalization exactly parallel doubly marked forms Annette Karmiloff-Smith found for French-speaking children.[51] They had already learned the simple possessive mes "my," but they then later did an elaborate reanalysis producing many doubly marked forms such as *les miennes des voitures, translatable as "the mine of cars." The puzzle of a single word containing both possession and

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nominalization is realized in French as mienne and English as "mine." It conflicts with the childs item-by-item analytic search for one segment for each meaning. Archaic English allows forms like "mine heart" which occur also in English child speech. Evidently such reanalysis and double marking serve as important and desirable tags or indices of sentential function. They help the child keep track of important form classes and usages as they "migrate" to other speech settings, word orders, and closely-related syntactic frames. These "tags" provide important enough feedback that the child is motivated to say them out loud for his own bookkeeping and mapping purposes. Certainly they are not present either in speech addressed to the child nor are they helpful to his hearers. (Unless that hearer be a linguist who has an entirely different set of motives from those of a normal family member.) Karmiloff-Smith has defined an underlying trend in cognitive development toward a re-analysis and double marking of forms which were previously used correctly and automatically. This trend emerges not only in double marking of grammatical relations, but also in diverse non-linguistic tasks such as drawing maps and balancing weighted blocks. Double marking in child Mandarin is also discussed under the analysis of enhanced transitivity in Chapter Six, Section 6.5.j.

One final aspect of Chinese possessives deserves mention. This is the situation in which a -.de

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possessive may be omitted. Possessive -.de may be omitted following personal pronouns if the object possessed is very closely associated with its possessor.[52] The closeness of this relationship does not correspond exactly either to inalienable possession, or even to body part words. For example, wǒ Māmā "my mother," and wǒ tuǐ "my leg" are both correct, but *wǒ zhǐjia *"my fingernail," is not. The potential for deletion of possessive -.de does not correspond to a list of potential relationships, but rather is diffusely dependent on the sentential position in which the possessive appears, and on the obviousness of the association between the possessor and the possessed in a specific speech situation. That is, nǐ shǒu hǎo xiǎo is fine as a topic-comment construction which can be translated as "As for your hands, they are very small." But omitting the -.de possessive is not acceptable when nǐ shǒu comes as a grammatical object in the comment portion of the sentence. *Wǒ yào kàn nǐØ shǒu is not well-formed without a -.de. It translates as *"I want to see you hand."

Deletion of possessive -.de is possible only after personal pronouns: -.de may not be omitted after common or proper nouns *MamaØ yīfu piàoliàng, *"Mama clothes pretty" or *gǒugǒuØ wěibā zāng.le *"Doggie tail got

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dirty." There are several reasons for this proscription. First, Chinese does not favor noun + noun phrases because of the difficulty in interpreting the relationship between the two nouns. The contrast in form class in a pronoun + noun string is a great help to disambiguation. The inventory of possible pronouns is very small and fixed, while the number of possible nouns is almost limitless.

Second, noun + noun strings tend to be interpreted as compound nouns rather than as the separate sentential elements such as possessor and possessed. No matter how slowly and carefully the string gǒu ròu "dog" "meat" (dog meat) is pronounced, it will be interpreted as "dog-meat" rather than the meat which the dog will eat. This is true even in a full sentence frame, as in gǒu ròu huài.le. (dog meat spoil pfv) This can be interpreted only as "the dogmeat spoiled," never as "the dog's meat spoiled."

Third, pronouns are likely to be used where reference has already been established as old information. The speaker only has to attend to the new information added when the item possessed is named. With a noun + noun string there is no guarantee that either element is old information. Finally, the probability of a pronoun's being used to mark possession is extremely high; the -.de possessive is often almost redundant. When one hears a noun, one has no particular expectation that it will mark

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possession, so the -.de possessive is likely to signal an unexpected possessive relationship.

Omission of obligatory possessives remains a problem for Mandarin speaking children up through the most advanced tapes in the study. Given the very diffuse and situationally-defined triggers for obligatory marking, it is not surprising that the children have more difficulty with variable rules than they would have with an obligatory rule requiring marked possessives in all cases. Even if the hearer has clear knowledge of real-world probabilities for what sorts of things are likely to be possessed, and a clear understanding in the speech context that the relationship referred to is possessive, -.de still may not be omitted in noun + noun strings. If the possessive is omitted from a single word utterance, the meaning is also entirely different from what was intended. For instance:

Example 5.12 Pang Tape 15 (2.6)

(Pang is wearing a pearl choker)

Baojane Zhè shì shéi.de? "Whose is this?"
this cop who poss/nom

Pang *WǒØ *"Me."
I/me

(for: wǒ.de "mine.")
I poss/nom

Omission of a possessive on a single word becomes much rarer as the child matures, but omitted sentence-internal possessives remain a problem throughout the sample, as in:

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Example 5.13 Kang Tape 16 (3.4)

(doesn't want anyone to drink his up his tea)

*Bú yào bǎ wǒ ø hē.le "Don't drink me!"
Not want object marker I/me drink pfv

"Don't drink me up!"

(for: Bú yào bǎ wǒ.de (chá) hēguāng.le
Not want obj. me poss tea drink finish pfv

"Don't drink my tea.")

SECTION 5.8 DEMONSTRATIVES AND CLASSIFIERS

One of the features of Chinese which is most different from Indo-European is the numeral classifier system. Since, historically, the pronouns only referred to human beings, grammatical placeholders for all other objects in the world can be expressed by one of a set of about one hundred words describing an object's shape or function. These special placeholders for nouns are known as classifiers.[53,54] In Sino-Tibetan languages, including Chinese, classifiers come after demonstratives and numerals. For example:

zhèi zhī means "this animal-thing," and
this animal classifier

sì tiáo means "four long, skinny things." A
four skinny object

classifier may be used instead of a noun to refer to an object, since Chinese pronouns have historically referred only to human beings. For example, when talking about fish, one may say wǒ chī.le sì tiáo
I eat pfv four long-thing classifier

"I ate four of those long, skinny things."

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Placeholder classifiers play an extremely important role disambiguating and differentiating function. For example, consider this sentence which could take almost any concrete object item as a direct object: "I saw a ....."

wǒ	kàn.le	.....	yí liàng
I	see perfective		one vehicle classifier
			yì jiān
			one room classifier
			yì běn
			one book classifier
			yì zhī
			one animal classifier
			yì pǐ
			one horse classifier.

A large number of the most commonly-used classifiers describe shape, for example:

Zhāng	"sheet"	refers to paper, bedsheets and tables, but not to cloth, which must take kuài "square."
Tiáo	"long object"	refers to fish, dragon, cows, rope, roads, and rivers as well as to hearts and trousers.

A second category of classifiers measures quantity, either time or volume.[55] These quantifiers resemble their English counterparts quite closely, although Chinese has a greater variety of differentiated quantifiers for lengths of time. Examples of quantifying classifiers include:

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Kǒu	"mouth" "mouthful"	
Píng	"bottle" "bottleful"	
Dǎ	"dozen"	
Fǎn	"while"	
Xià	"instant" "second"	
Chǎng	"long performance"	used to describe operas, movies and concerts.

Not all relationships between classifiers and the objects they describe are semantically transparent. Chairs, for example, take the bǎ "handle" classifier which is also used for swords and some machines. Máo "fur" or "feather," refers to both feathers and to Chinese dimes; while mén "door" quantifies families, courses in a curriculum, and artillery pieces. In addition, a single object make be referred to by several different appropriate classifiers. For example, a speaker may refer to a water buffalo as yì zhī "one animal," yì tiáo "one skinny thing," or yì tóu[56] "one head" almost interchangably within the same utterance. There is also a "classifier of last resort," the general gè classifier which appears in zhèi.ge "this," "this one."
this general classifier

Classifiers may be used as placeholders just the way pronouns are. Classifiers may also be used with determiners and come before the noun to which they refer. In Mandarin, demonstratives and numbers cannot immediately precede the noun; a classifier must intervene. That is,

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wǔ zhī jī "five animal-thing chicken" "five chickens," but never *wǔ ø jī ; nèi -běn shū "that volume book," but never *nèi ø shū .[57]

The Chinese classifier system is losing differentiation extremely rapidly both on the mainland, and in Taiwan.[58] There has been a great loss in the inventory of classifiers used even within the past twenty years. Even highly educated speakers now refer to chairs as yí.ge rather than yì bǎ. The system is becoming more and more like a general determiner system than a true classifier system; yí.ge "one" is becoming more and more like the English indefinite article "a."[59]

The actual rate of classifier use has not declined; inserting some sort of classifier is as obligatory as ever. Even now most speakers would find use of the general gè classifier to refer to vehicles, animals, books, paper, rope, money, clothing, trees, or flowers unacceptably underdifferentiated. However, specialized classifiers for horses, hats, doors, mountains, machines, and myriad other items are fast disappearing from common use. Quantifiers are as strong as ever because of their non-redundant function.

This rapid leveling makes determining what is truly an unacceptably-generalized classifier use quite difficult. Nowadays nearly everyone uses gè so broadly that their

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speech would sound quite babyish to their great-grandparents. The Chinese agree that underdifferentiating classifiers is a typically childish speech trait. Adults tend to simplify their classifier usage in speech addressed to children.

Classifiers other than the general gè are rare in child speech after 2½. Even then they are not frequent. The only differentiated classifiers for Lao Hu were 11 uses of bāo "packet" in one speech exchange as he unwrapped many bars of soap; and 3 uses of tóu "head" as a quantifier. He imitated the housekeeper who said that he had "a headful of sweat," yì tóu hàn. (one head sweat)

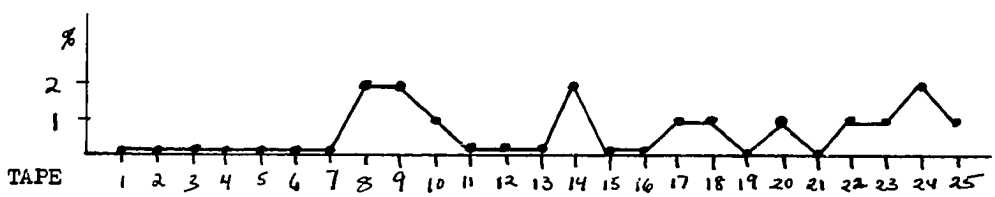
Pang used one zhāng "sheet" to refer to a piece of paper during tape 1. She then used no classifiers at all until her 8th tape at 2.1. After that her classifier use slowly expanded to include the classifiers for: "flower" duǒ, "book " běn; and kǒu "mouthful." There was a burst of usage on tapes eight to eleven, then a fall back to zero use on tapes 11, 12 and 13. This was followed by a very slow rise which was statistically significant ($r = .38$.) Graph 5.3 diagrams this increase. Table 5.8 lists all the classifiers Pang used. She used classifiers other than gè 67 times during the 25 tape corpus. All told, Pang used 16 different classifiers. The number of different classifiers used in a given tape expanded more rapidly than her overall rate of classifier usage. This is diagramed in Graph 5.4.

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GRAPH 5.3

RATE OF CLASSIFIER USE - PANG

(as % total utterances)



N = 68

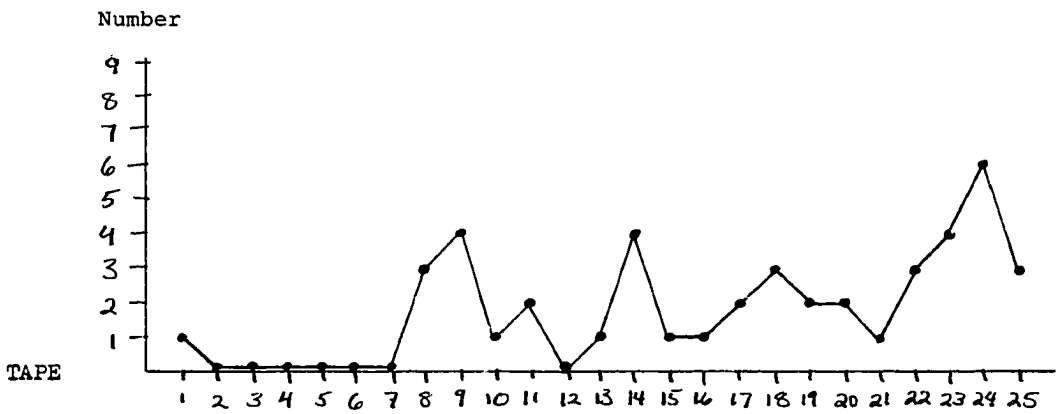
r = .38

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GRAPH 5.4

RANGE OF CLASSIFIERS -

PANG



Total number of different classifiers used

N = 16

r = .63

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TABLE 5.8

CLASSIFIERS - PANG

	TAPE NUMBER											
CLASSIFIER	1	2	3	4	5	6	7	8	9	10	11	12
ZHĀNG (sheet)	1	-	-	-	-	-	-	-	-	-	-	-
DUǑ (flower)	-	-	-	-	-	-	-	1	2	-	2	-
WǍN (bowlful)	-	-	-	-	-	-	-	1	-	-	-	-
KǑU (mouthful)	-	-	-	-	-	-	-	3	-	-	1	-
BĚN (book)	-	-	-	-	-	-	-	-	1	-	-	-
BĀO (bundle)	-	-	-	-	-	-	-	-	1	-	-	-
ZHĪ (animal)	-	-	-	-	-	-	-	-	2	-	-	-
JIÀN (clothes)	-	-	-	-	-	-	-	-	-	4	-	-
KĒ (kernel)	-	-	-	-	-	-	-	-	-	-	-	-
TIÁO (long thin-thing)	-	-	-	-	-	-	-	-	-	-	-	-
GĒN (thread, hair)	-	-	-	-	-	-	-	-	-	-	-	-
PIÀN (slice)	-	-	-	-	-	-	-	-	-	-	-	-
LǏ (grain)	-	-	-	-	-	-	-	-	-	-	-	-
KUÀI (money)	-	-	-	-	-	-	-	-	-	-	-	-
XIĒ (several)	-	-	-	-	-	-	-	-	-	-	-	-
BǍ (handle, chair)	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL NUMBER CLASSIFIERS PER TAPE	1	-	-	-	-	-	-	5	6	4	3	-
CLASSIFIERS AS PERCENTAGE TOTAL UTTERANCES	n.s.	-	-	-	-	-	-	2%	2%	1%	n.s.	-

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TABLE 5.8 (Continued)

CLASSIFIER	TAPE NUMBER 13	14	15	16	17	18	19	20	21	22	23	24	25	TOTAL N USAGES
ZHĀNG (sheet)	-	2	-	-	2	1	-	-	-	-	-	1	1	8
DUǑ (flower)	1	-	-	-	-	-	-	-	-	-	1	2	-	9
WǍN (bowlful)	-	-	-	-	-	-	-	-	-	-	-	-	-	1
KǑU (mouthful)	-	-	-	-	-	-	-	-	-	-	-	1	-	5
BĚN (book)	-	-	-	-	-	-	1	2	-	2	-	3	3	12
BĀO (bundle)	-	-	-	-	-	-	-	-	-	-	-	-	-	1
ZHĪ (animal)	-	3	-	1	-	1	-	3	-	3	-	-	-	13
JIÀN (clothes)	-	-	-	-	-	-	-	-	1	-	-	-	-	5
KĒ (kernel)	-	1	-	-	-	-	-	-	-	-	-	-	-	1
TIÁO (long thing)	-	1	-	-	-	-	-	-	-	-	1	1	-	3
GĒN (thread)	-	-	1	-	-	-	-	-	-	-	-	-	-	1
PIÀN (slice)	-	-	-	-	1	-	-	-	-	?	-	-	-	3
LÌ (grain)	-	-	-	-	-	1	-	-	-	-	-	-	-	1
KUÀI (money)	-	-	-	-	-	-	1	-	-	-	-	-	-	1
XIĒ (several)	-	-	-	-	-	-	-	-	-	-	1	1	-	2
BǍ (handle, chair)	-	-	-	-	-	-	-	-	-	-	1	-	1	2
TOTAL # CLASSIFIERS USED PER TAPE	1	7	1	1	3	3	2	5	1	7	4	9	5	
CLASSIFIERS AS % TOTAL UTTERANCES	-	2%	-	-	1%	1%	-	1%	-	1%	1%	2%	1%	
TOTAL # CLASSIFIERS USED	N = 68													

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(increase in the number of different classifiers used over time, r = .63)

Kang's rate of differentiated classifier use did not increase. This is additional evidence of the weak position of classifiers in modern Mandarin, since his rate of usage of nearly every other linguistic device did increase. It is striking that he never once used the classifier for vehicles, liàng, during the dozen or so hours of recordings made while he played with his tricycle, his toy trucks, cars, forklifts, trains and steamrollers. He pretended to be a cab driver, a bus driver, a chauffeur, or a mechanic during every session. Pang also never once used liàng. This omission is particularly striking since liàng is one of the strongest and most obligatory of the remaining classifiers. It was also the only classifier which Kang's mother or Aunt Jiang criticized him for not using. The extended use of general classifiers to refer to clothing, trees, flowers and tables is also surprising since the classifiers for these items are still strong in adult speech. Specified classifiers are moving into the limbo of an archaic speech register.

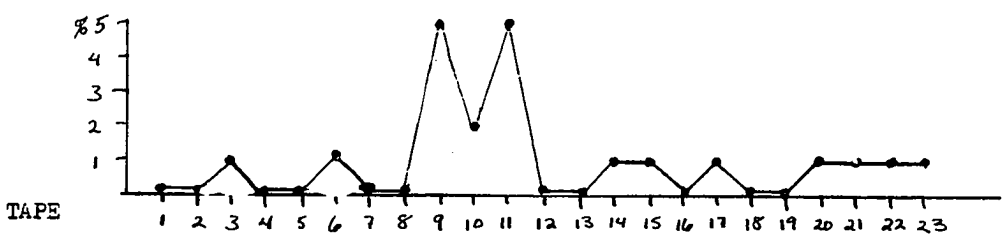
The highest frequency classifiers for Kang were the money quantifiers, kuài "Chinese dollar," with 67 uses; and máo "Chinese dime" with two uses. Kang's peak classifier use came on tapes 9 and 11. He spent a considerable portion of both those tapes pretending to be a grocery salesman in the market selling vegetables, meat,

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GRAPH 5.5

RATE OF CLASSIFIER USE - KANG

(as % total utterances)



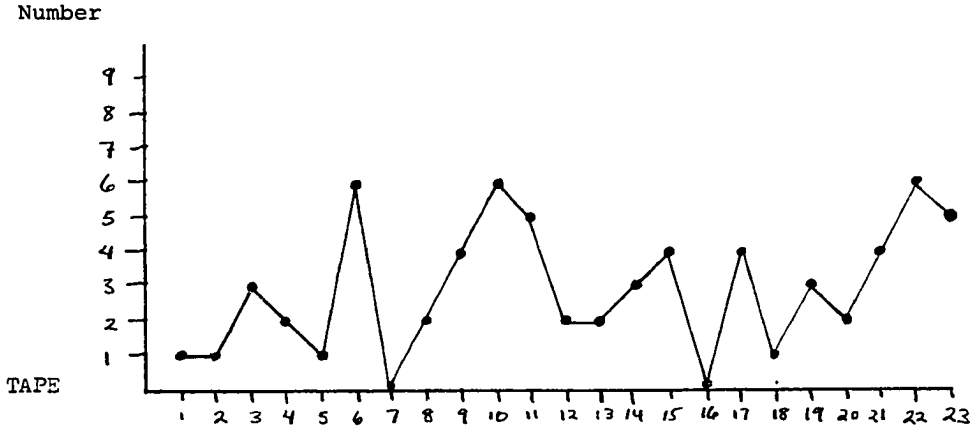
N = 170

r = .20 (not significant)

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GRAPH 5.6

RANGE OF CLASSIFIER USE - KANG



Number of different classifiers used

N = 24

r = .35

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TABLE 5.9

CLASSIFIERS - KANG

CLASSIFIER	TAPE NUMBER 1	2	3	4	5	6	7	8	9	10	11	12	13	14
ZHĀNG (sheet)	-	-	-	-	-	-	-	-	-	-	12	-	-	-
DUǑ (flower)	-	-	-	-	-	-	-	-	-	-	1	-	-	-
WǍN (bowlful)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KǑU (mouthful)	-	-	-	-	-	-	-	-	-	1	-	-	-	-
BĚN (book)	-	-	-	1	-	1	-	-	-	5	-	-	-	-
BĀO (bundle)	-	-	-	-	-	-	-	-	-	-	2	-	-	-
ZHĪ (animal)	1	1	-	-	-	2	-	1	-	-	-	1	-	-
JIÀN (clothing)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KĒ (kernel, piece)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TIÁO (long object)	-	-	-	-	-	1	-	-	-	-	-	1	-	1
GĒN (thread)	-	-	-	-	-	-	-	-	-	-	-	-	1	-
PIÀN (slice)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LǏ (grain)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
KUÀI (money)	-	-	4	-	2	2	-	-	26	4	14	-	-	4
XIĒ (several)	-	-	1	1	-	-	-	-	1	-	-	-	-	-
BǍ (handle)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
FÚ (pair)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BÙ (step)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BĒI (cupful)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
PǏ (horse)	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CÉNG (layer)	-	-	-	-	-	2	-	-	-	-	-	-	-	-
FĒN (share)	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DÌ (floor)	-	-	-	-	-	-	-	1	-	-	-	-	1	-
MÁO (dime)	-	-	-	-	-	1	-	-	-	1	-	-	-	-
JĪN (pound)	-	-	-	-	-	-	-	-	4	-	-	-	-	-
PÍNG (bottleful)	-	-	-	-	-	-	-	-	3	-	4	-	-	-
ZHǑNG (sort)	-	-	-	-	-	-	-	-	-	1	-	-	-	-
XIÀ (fright)	-	-	-	-	-	-	-	-	-	3	-	-	-	-
TOTAL NUMBER CLASSIFIERS	1	1	5	2	2	9	-	2	34	15	33	2	2	6
CLASSIFIERS AS % TOTAL UTTERANCES	-	-	1%	-	-	1%	-	-	4%	2%	5%	-	-	1%

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TABLE 5.9 (Continued)

	TAPE NUMBER									
CLASSIFIER	15	16	17	18	19	20	21	22	23	TOTAL USAGES
ZHĀNG (sheet)	-	-	-	-	-	-	1	-	-	13
DUǑ (flower)	-	-	-	-	-	-	-	-	-	1
WǍN (bowlful)	-	-	-	-	-	-	-	-	-	0
KǑU (mouthful)	-	-	-	-	-	-	-	-	-	1
BĚN (book)	1	-	-	-	-	-	-	-	-	8
BĀO (bundle)	-	-	-	-	-	-	-	1	-	3
ZHĪ (animal)	1	-	-	-	1	-	3	3	-	14
JIÀN (clothing)	-	-	2	-	-	-	2	-	1	5
KĒ (tree, piece)	-	-	-	-	-	-	2	-	-	2
TIÁO (long thing)	4	-	1	-	-	-	-	2	-	10
GĒN (thread)	-	-	-	-	-	-	-	3	1	5
PIÀN (slice)	-	-	-	-	-	-	-	-	-	0
LǏ (grain)	-	-	-	-	-	-	-	-	-	0
KUÀI (money)	2	-	-	-	-	3	-	-	-	61
XIĒ (several)	-	-	-	-	1	-	-	-	-	4
BǍ (handle)	-	-	-	-	-	-	-	-	-	0
FÙ (pair)	-	-	-	-	-	-	-	-	1	1
BÙ (step)	-	-	-	-	-	-	-	1	-	1
BĒI (cupful)	-	-	1	-	-	-	-	-	2	3
PǏ (horse)	-	-	-	-	-	-	-	-	-	1
CÉNG (layer)	-	-	-	-	-	-	-	-	-	2
FÈN (share)	-	-	1	-	-	-	-	-	-	1
DÌ (floor)	-	-	-	-	-	-	-	-	-	2
MÁO (dime)	-	-	-	-	-	-	-	-	-	2
JĪN (pound)	-	-	-	-	-	-	-	-	-	4
PÍNG (bottleful)	-	-	-	-	-	-	-	-	-	7
ZHǑNG (sort)	-	-	-	2	1	7	-	1	1	13
XIÀ (fright)	-	-	-	-	-	-	-	-	-	3
TOTAL CLASSIFIERS	8	-	5	2	3	10	8	11	6	170
CLASSIFIERS AS % TOTAL UTTERANCES	1%	-	1%	-	-	1%	1%	1%	1%	

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soy sauce and sesame oil. These exchanges involved extensive discussions of prices and making change. (He was not completely clear that it is the vendor who gives change to the customer and not the other way around.) In the course of these sales-play situations he used the majority of his classifiers which expressed quantity and volume, e.g. píng "bottle," jīn "Chinese pound," and bāo "bundle," or "packet." These same tapes also contain many play situations in which Kang pretended to collect bus or cab fares, or to be a doctor who collected a fee for his services.

What is important about Kang's reliable use of quantifying classifiers is that these are exactly the classifiers which are uniquely specifying rather than redundant. There is no way to say "a pound of eggplant" yì (one) jīn (pound) qié.zi (eggplant), or "three (Chinese) dollars" sān (three) kuài (dollar) qián (money) without using the words for "pound" and "dollar." Use of the general gè classifier is not possible here. *Sān.ge (three clas.) qián (money) does not mean "three dollars," but something like "three moneys." Use of time quantifiers other than yíxià "a second" was almost nil.

Much as Kang, Pang, Zhong Rong, and Lao Hu all overused the general classifier, none of them made the error omitting a quantifier. There is undoubtedly an input-frequency and training factor involved in this mastery,

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since Chinese children are taught to count as soon as they can talk, and are normally given collections of small change to play store with.[60] They accompany their mothers or housekeepers on daily shopping expeditions to the open air market where the price of each item purchased must be inquired about (no prices are marked) and then bargained over. In addition, money and prices are openly discussed in Chinese culture. Questions like "how much rent do you pay?" "what is your mother's salary?" or "how much did your shoes cost?" are considered to be normal, casual, opening gambits rather than extraordinarily rude intrusions on one's privacy as they are in America and Northern Europe. Table 5.9 lists all of Kang's classifier uses.

While Kang's rate of specified classifier used did not increase over time, the range of different classifiers he used did increase. He eventually used 24 different classifiers as shown in Graph 5.6. (Pang used 16 different classifiers.) Classifiers included a diverse array representative of many of the most important Chinese classifiers. It is not possible to say that shape, volume, quantity, or animacy was dominant, although for Kang the shopping scenario evoked a great burst of money and volume classifier usage. The following are the four most frequently used classifiers for Pang and Kang with frequency in number of uses and as a percentage of the total number of differentiated classifiers. (Table 5.10.)

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TABLE 5.10

THE FOUR MOST FREQUENTLY USED CLASSIFIERS - PANG AND KANG

PANG				KANG			
	Classifier	#	%	Classifier		#	%
1.	Zhī (animal)	13	19%	Kuài	(dollar)	61	36%
2.	Běn (book)	12	18%	Zhī	(animal)	14	8%
3.	Duǒ (flower)	9	13%	Zhāng	(sheet)	13	8%
4.	Zhāng (sheet)	7	10%	Tiáo	(skinny thing)	10	6%
			60%				58%

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The four most frequently-used classifiers accounted for 60% of Pang's differentiated classifier use, and 58% of Kang's. For Pang, zhāng "sheet" was used only to refer to sheets of paper. Kang also used it for paper except for one use to describe a bedsheet. Běn "volume," and duǒ "flower" are specific to books and flowers, and so not amenable to generalization. Zhī is specific to animals; both children used it correctly to describe a wide range of animals including crabs, ducks, goats, dogs, bears, cows and giraffes. They did not, however, use the general classifier gè to refer to books, sheets of paper, or money. Zhāng "sheet" for paper, and běn for "book," were the only differentiated classifiers to be used reliably where they were required.

All specified classifier uses were correct with only three exceptions: Pang at 2.10 referred to *yì (one) bǎ (handle) yú (fish) where tiáo "long thing" or zhī "animal" is the appropriate classifier. She was talking about going fishing. It is possible that the experience of picking up a long skinny fish evoked the tactile sensation of taking a hold of something by its handle, thus producing bǎ "handle," the classifier used for chairs, knives, and many small machines.

Pang's other misuse of a differentiated classifier was probably the result of a misunderstanding in a question-answer exchange. She used kē "kernel" to refer to a

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monkey, rather than using the gè general classifier, or the zhī animal classifier. She was referring to the famous "Monkey" known in Chinese by his name, Sūn Wù Kōng. "Monkey" was the hero of the classic Buddhist picaresque novel Monkey, or The Journey to the West, Xī Yóu Jì. This legend is not only glorified
West Journey Record
in the great novel, but is also re-told in opera, folk tales, children's picture books and, more recently, in animated cartoons. Pang was looking through a picture book version of the story with Baojane. They had just finished discussing the picture of Monkey's fabulous birth from the center of an exploding boulder. A fragment of rock might appropriately take the kē "kernel" classifier. Baojane had moved on in the story book, but Pang was still thinking about Monkey, Sūn Wù Kōng.

Example 5.14 Pang Tape 14 (2.5.19)

(B. points to a picture of a monster who is starting to grow button-shaped horns out of his head.)

Baojane Zhèi.ge tóushàng shēng.le yì kē shén.me?
This one head on birth pfv. one kernel what

"What is this one starting to grow on his head?"

Pang *Yì kē Sūn Wù Kōng!
One kernel Monkey's name

*"One kernel Monkey."

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Pang made a slot-frame analysis which copied Baojane's question form yì kē + X. All she had to do was substitute in the noun meaning "horn," jiǎo. However, she did not know the word for "horn." The slot in the frame, demonstrative + classifier + X will take a proper name just as well as a noun. Not understanding that kē "kernel" refers only to inanimate, button-like things, she inserted the name of the "Monkey," Sūn Wù Kōng whose birth she had just seen pictured. Baojane's use of the word shēng "to give birth to," "to produce," had further confused Pang so she referred back to the birth of "Monkey" rather than to the sprouting of horns.[61]

Further conversation make it clear that Pang did not have a word for "horn," jiǎo, which is a homophone with the word for "foot." (It is written with a different character.) Baojane asked Pang if she had a jiǎo, "horn," and she replied that she did, greatly amusing everyone who heard her. Pang, of course, understood the question to mean, "do you have a foot?"

Kang made only one wrong use of a differentiated classifier; that usage was based on an over-extension from shape. At 3.11 he referred to

*yì	tiáo	jiàn
one	long-thing	sword

"a long-skinny-object sword" rather than yì bǎ jiàn "one handle sword." He had correctly used bǎ with sword in the past, as well as the also permissible general classifier.

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Final evidence that the children viewed differentiated classifiers as optional specifications of nouns rather than as pronoun-like place holders comes from the fact that the classifiers were almost invariably used with the nouns they described rather than standing in place of them. zhèi duǒ huā (this blossom flower) "this blossom flower," "this flower," rather than zhèi duǒ (this blossom) "this blossom-one," "this one." The only classifiers used alone were běn "book," zhāng "sheet," and, occasionally zhī "animal." There was no clear preference for constructions with demonstratives zhèi "this," nèi "that" as opposed to numerals. The lack of special pronoun-like status for classifiers shows up in occasional use of both the general classifier and a differentiated one, as in *zhèi.ge yì. zhāng zhǐ (this general class. one sheet paper)

*"this-one one sheet of paper."

While Chinese has no count mass/noun distinction; amorphous things like flour, rice, wheat, water, and milk must be quantified. This requirement gives a particularly anomalous quality to Kang's under-differentiations for volumes of liquids. At 2.11 he described the "Big Bad Wolf" in the "Three Little Pigs" as falling into a pot of boiling water. He said: *pèngdàoØ yí.ge kāishuǐ (bump to one gen. classifier boil water)

"bump a boiling water," for pèngdào.le yì guō kāishuǐ (bump to pfv one pot boil water)

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"bumped into a pot of boiling water." In the actual story the wolf falls into the water rather than bumping into the pot. Kang's use of pèng "bump" is an overextension. This is clear since he goes on to describe the wolf boiling to death, turning into wolf soup, then boiling down into the kind of meat sauce the Chinese eat on their rice porridge in the mornings. (His entire story is transcribed in the appendix.)

At 3.8 Kang referred to *yí.ge niúnǎi "a cow
one gen. class. cow milk

milk" as a generalized term to refer to both a goat's udder and its milk in his description of seeing a goat being milked.[62]

In sum, the Chinese children's classifier use reflects the general collapse of the differentiated classifier system. Differentiated classifiers are used correctly but much less frequently than standard speech requires. The differentiated classifiers tend to be used in situations where they add specification of quantity and so are not redundant, as in yì píng máyóu "a bottle of
one bottle sesame oil

sesame oil." They are used with the nouns they modify rather than in place of them. Acquisition of the full classifier system probably proceeds very slowly through late childhood with the majority of the more rarely-used classifiers being taught in school as part of a special

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literary speech register. The future for Chinese place-holders belongs to the pronouns.[63]

SECTION 5.9 QUESTIONS AND INTERROGATIVE PRONOUNS

5.9.a INTRODUCTION

Question formation in Chinese is generally very simple and straightforward. No reordering is required. Questions are also extremely high frequency in speech addressed to the child in the typical Chinese "quiz style" of conversation. Not surprisingly, Chinese children answer questions almost from their first utterances. They produce their own questions very soon afterward, possibly somewhat earlier and more elaborately than English speaking children do. Early Chinese questions include both "yes/no" questions and "Wh-" forms. "What" questions are the most frequent. All lexically formed questions come in early and well with almost no poorly formed examples.

In contrast, the smaller set of discourse-sensitive question types formed by use of sentence-final particles do not appear until much later, and are unreliable in their use. The particles have no referential meaning, and must be used relative to the discourse situation. Refinement of these discourse-sensitive question forms almost certainly continues on through late childhood and possibly into adolescence. This is exactly parallel to the overall acquisition of referential word order which comes in very

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early and correctly, while discourse-sensitive reordering for topicalization and backgrounding is late and unreliable. Both referential word order and lexical question forms can be decoded and produced analytically on a one item - one meaning basis. This is compatible both with the overall structure of Chinese and the early cognitive tendency to look for one meaning for each unit.[64]

Discourse-sensitive forms are far less easily analyzable by either the linguist or the child. Both must abandon the search for a single, definitive dictionary "meaning" for each segment or order sequence. Both must construct a framework for the individual forms to fit into. This is rather like deriving a whole chromatic rainbow of hues of truth, expectation, probability, mood. Only a very sophisticated relational analysis of the natural "picture" we see every day permits us to isolate a set of primary colors and then to align them into a clearly ordered spectrum.

Graphs 5.7 and 5.9 show that the number of question as a percentage of total utterances rose sharply over time for both children. While the rate of increase was higher for Pang ($r = .60$) than for Kang ($r = .39$), percentage of questions was much higher for Kang. Kang's 2,023 questions totalled 15% of his output, while Pang's 320 questions only totalled 3% of hers. Some of this discrepancy is probably due to temperment since Kang was an extremely bold, talkative, only son while Pang was a quiet second daughter.

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Still, age was the more important variable since Pang's rate of questioning increased sharply with time. Further evidence for an age-related effect comes from Pang's age-mate, Lao Hu, who used questions in only 2% of his utterances. At the age of 2½, Zhong Rong had 12% questions. She strongly resembled Kang in personality. Like American children, at 3½ Kang went through the "classic" questioning stage. On his 17th tape at age 3.6, 24% of his utterances were questions.

The diversity of question types also increased for both children. There were 19 possible question formations, 13 of which correspond to Wh- questions. As Graphs 5.8 and 5.10 indicate, the rate of increase over time was $r = .73$ for Pang and $r = .61$ for Kang. While Pang showed a greater rate of increase, the maximum number of different types of questions produced on any single tape was higher for Kang (maximum of 17) than for Pang (maximum 13.)

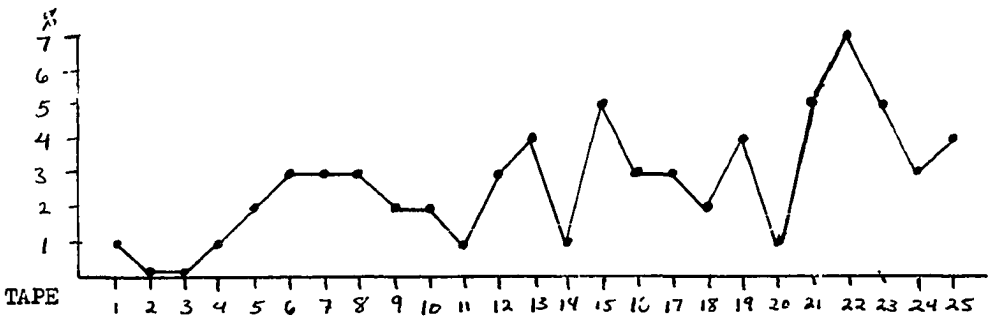
Examining the most frequent question types across all four of the children we find that the distribution of usages is nearly identical. Table 5.11 gives the details. Yes/no questions form about one third of all questions for all four children. The figures for Pang and Kang are means taken over the year's sample; for both of them the number of yes / no questions increased somewhat faster than their overall increase in questions.

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GRAPH 5.7

RATE OF QUESTIONING - PANG

(as % all utterances)



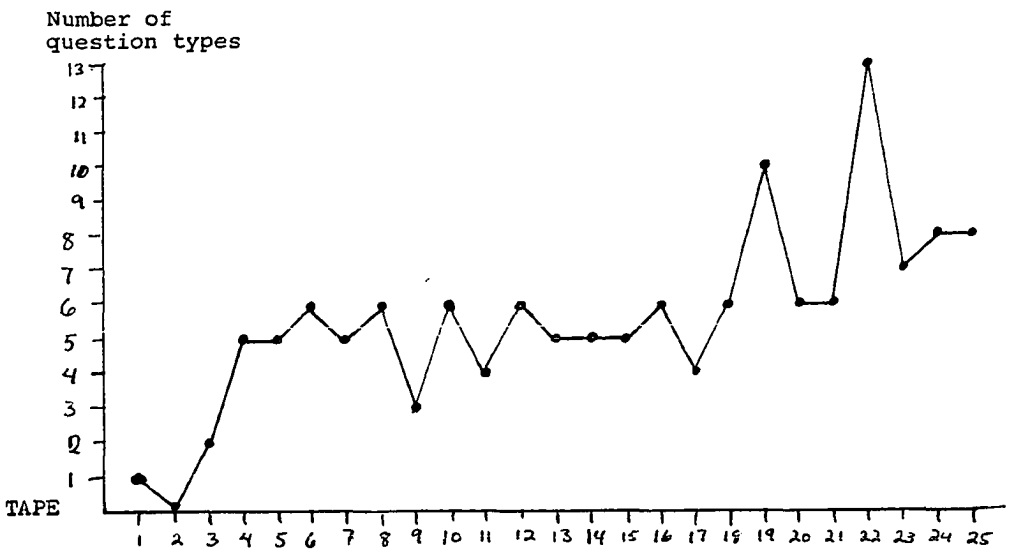
N = 320, mean 3%

r = .60

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GRAPH 5.8

RANGE OF QUESTION TYPES - PANG



Total of 19 possible question types

r = .73

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GRAPH 5.9

RATE OF QUESTIONING - KANG
(as % of all utterances)



Total questions N = 2023

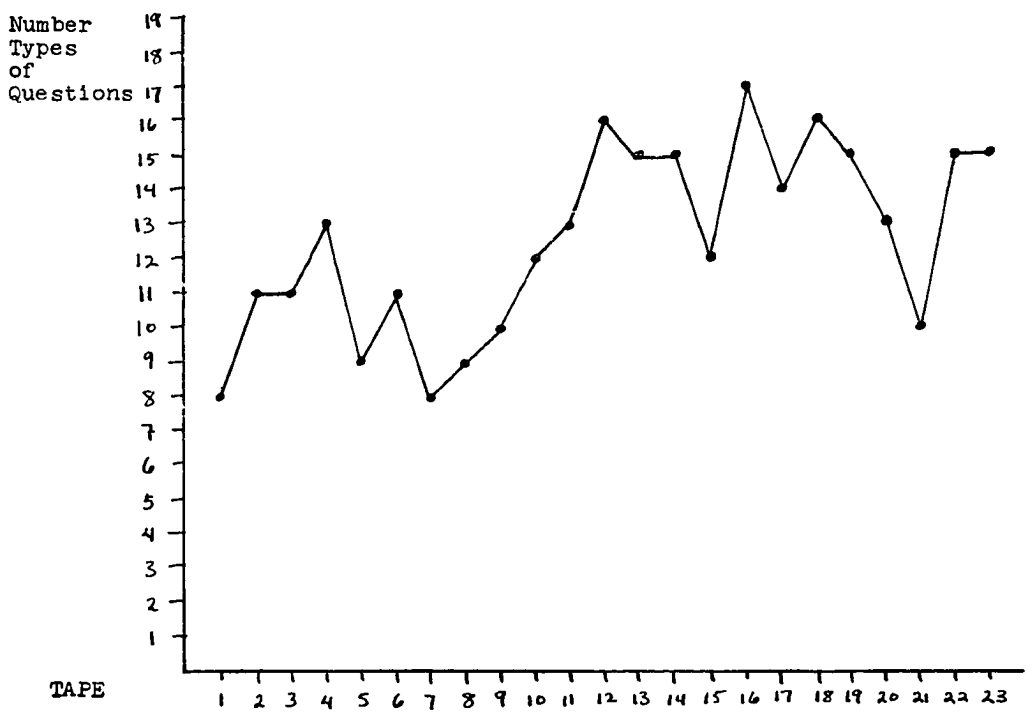
Mean 15%

r = .39

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TABLE 5.10

RANGE OF QUESTION TYPES - KANG



Total of 19 question types available

r = .61

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TABLE 5.11

THE FIVE MOST COMMON QUESTION TYPES - FOUR CHILDREN

	LAO HU (AGE 2.0)		ZHONG RONG (2.6 - 2.8)		PANG (1.10 - 2.10)		KANG (2.10 - 3.10)	
	#	%	#	%	#	%	#	%
QUESTIONS AS % ALL UTTERANCES	-	2%	-	12%	-	3%	-	15%
TOTAL # Q'S	17	-	214	-	345	-	2,289	-
YES / NO QUESTIONS								
TOTAL Y/N Q'S	5	-	83	-	120	-	573	-
Y/N Q'S AS % ALL Q'S	-	29%	-	39%	- (increasing)	35%	- (constant)	25 %
VnotV Q'S	5	29%	72	34%	81	23%	247	11%
INTONATION	-	-	1	.5%	23	9%	274	12%
SENTENCE FINAL PARTICLE	-	-	10	5%	21	6%	167	7%
FREQUENCY RANKING OF TOP FOUR WH- QUESTIONS								
1. SHEN.ME (what)	7	42%	90	42%	92 (constant)	26%	486 (constant)	21%
2. ZEN.ME (how)	5	29%	17	8%	55 (constant)	16%	308 (constant)	13%
3. NA.LI (where)	-	-	20	9%	16 (rising)	5%	74 (constant)	3%
4. SHEI (who)	-	-	4	2%	14 (rising)	4%	90 (constant)	4%

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TABLE 5.12

FREQUENCY RANKING OF MOST FREQUENT CHINESE WH-QUESTIONS

1.	Shén.me	"What"
2.	Zěm.me	"How"
3.	Nǎlǐ	"Where"
4.	Shéi	"Who"
5.	Gàn.má Wèishén.me	"Why"
6.	Něi.ge	"Which"
7.	Shén.me shíhòu	"When"

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SECTION 5.9.b WH- QUESTIONS

The relative frequency among the Wh-questions was identical for all four children. In order of frequency these were: 1) shén.me "what", which was by far the most frequent; 2) zěn.me "how" which, in some usages includes meanings closer to English "what shall we do?" and "what's going on?"; 3) nǎ.li "where", and 4) last of all shéi "who." Intriguingly, these choices are somewhat different from the most frequent question forms for American children.

American children, like Chinese children, start out with a mixture some yes/no questions and a few Wh-questions. For Americans, the most frequent early question words are "where" and "what." However, they can only answer "where" questions accurately at the earliest stage. "What" questions addressed to them are given answers appropriate to "where" questions.[65] For Americans, the next question the child produces is "why." This is also analyzed as a "where" question in replies.[66] "Who," "when," and "how" develop later. The American child goes through a lengthy effort to learn to reorder questions by inverting auxiliaries and interrogative pronouns.[67]

If we were to posit a purely cognitive and universal developmental order the emergence for questions, we would expect that the Chinese and American children would ask about the same things very early, and then wait to ask the "conceptually more difficult" questions later on. There are interrogative pronouns in both languages. Both sets cover very similar ranges of meanings. Why, then, do

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Chinese children show an overwhelming preference for "what" questions? They never answer them as if they were "where" questions. "Where" questions are in the set of the top four most frequent the Chinese children produced, but their earliest and most frequent questions are "what" and "how" zěn.me. An Anglo-centric theory of universals would conclude that "how" and "who" questions were "more complex" since they do not appear until after American children can invert auxiliaries.

The answer to this dilemma comes from parental input. Questions are more revealing of input-frequency stimulus and the mastering of common speech routines, than they are accurate, one-to-one visualizations of "primary" mental concepts.

Eighty percent the Wh- questions addressed to the American children in Brown's study were "where" qhestions. Chinese parents and siblings addressed formed a similarly high percentage of shén.me "what" questions. It seems that children take the most frequently-addressed question type as a "proto-question" in their early analysis of Wh-questions. The phonetic element of a common initial /hw/ seems to be a strong factor in the American children's confusion of "what" and "where" and "when." Chinese children are asked quite a few nǎlǐ "where" questions, but this word is phonetically distinct from "what" shén.me, and there is never any confusion of meaning in the reply.

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Chinese children do not make erroneous use of "when" as "where" (shén.me shíhòu and nǎlǐ), or
what time where in
"why" as "what" (wèi.shén.me "why," shén.me "what.") In fact, interrogatives are one place where Chinese is almost maximally phonetically distinct while English is phonetically close.

After shén.me "what," questions, the second most likely question for Chinese adults to address to children is zěn.me "how." This is often used in a very generalized sense in the tā zěn.me yàng? "What's s/he like?"
s/he how like
or "How's she doing?"

Given the great importance which Chinese culture attaches to identifying people, and calling them by name and relationship, it is not surprising that shéi, "who" is the fourth most frequent Chinese child Wh- question. (The tally of shéi "who" includes all shéi.de uses.)
who who mod/poss

Table 5.12 gives frequency rankings for wh-questions; Table 5.13 is Pang's wh- questions, Table 5.14 is Kang's.

Ranking interrogative pronouns in order of frequency of use in child questions, "why" questions are next most frequent. (They form 6% of Pang's questions, 11% of Kang's.) There are two partially synonymous segments translatable as "why;" Wèi.shén.me, which corresponds exactly to English "why," and gàn má, literally "do what?" equivalent in register to English "how come?" Gàn má cannot be used for all "why" questions, although both Pang and Kang used it incorrectly in this way where only

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TABLE 5.13

WH- QUESTIONS - PANG

(AS NUMBER OF USAGES AND PERCENTAGE OF ALL UTTERANCES CALCULATED TO 1/10 OF A PERCENT)

QUESTION	TAPE NUMBER 1		2		3		4		5		6		7	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Shén.me "what"	-	-	-	-	-	-	1	.2	2	.3	9	1.5	7	1.6
Shén.me shihou "when"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shéi "who"	-	-	-	-	-	-	-	-	1	.2	-	-	1	.2
Nǎli "where"	-	-	-	-	-	-	-	-	-	-	-	-	1	.2
Nǎi.ge "which"	-	-	-	-	-	-	-	-	-	-	-	-	1	.2
Zěn.me "how"	4	1.0	-	-	-	-	1	.2	-	-	2	.3	-	-
Zěn.me gǎo.de "what happened"	-	-	-	-	1	.3	-	-	-	-	-	-	-	-
Zěn.me hui shi "what kind of thing?"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zěn.me bàn "what shall (we) do about it?"	-	-	-	-	1	.3	-	-	-	-	-	-	-	-
Zěn.me.le "what's the matter with"	-	-	-	-	-	-	1	.3	-	-	-	-	-	-
Gàn ma "why"	-	-	-	-	-	-	1	.2	-	-	-	-	1	.2
Wèishén.me "why"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.Ne "what about"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL QUESTIONS INCLUDING YES/NO	4		0		2		7		9		21		13	

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TABLE 5.13 (Continued)

TAPE NUMBER

QUESTION	8		9		10		11		12		13		14	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Shén.me "what"	1	.4	2	.6	1	.2	1	.2	6	1.2	13	3.1	1	.2
Shén.me shíhòu "when"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shéi "who"	-	-	-	-	-	-	-	-	4	.8	-	-	-	-
Nǎli "where"	-	-	-	-	1	.2	1	.2	-	-	-	-	-	-
Nèi.ge "which"	1	.4	-	-	-	-	-	-	1	.2	1	.2	-	-
Zěn.me "how"	3	1.2	-	-	1	.2	-	-	4	.8	-	-	-	-
Zěn.me gǎo.de "what happened"	1	.4	-	-	3	.1	-	-	-	-	-	-	-	-
Zěn.me huí shì "what kind of thing?"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zěn.me bàn "what shall (we) do about it?"	-	-	2	.6	-	-	-	-	1	.2	-	-	-	-
Zěn.me.le "what's the matter with X"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gàn má "why"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Wèishén.me "why"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.Ne "what about"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL NUMBER QUESTIONS INCLUDING YES / NO	7		6		9		3		18		18		4	

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TABLE 5.13 (Continued)

QUESTION	TAPE NUMBER 15 #	15 %	16 #	16 %	17 #	17 %	18 #	18 %	19 #	19 %	20 #	20 %	21 #	21 %
Shén.me "what"	17	3.6	-	-	3	.7	-	-	3	.5	1	.2	1	.3
Shén.me shíhou "when"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shéi "who"	-	-	-	-	-	-	-	-	1	.2	-	-	-	-
Nǎlǐ "where"	4	.8	1	.3	-	-	2	.4	-	-	-	-	-	-
Nǎi.ge "which"	-	-	-	-	-	-	1	.3	1	.2	-	-	-	-
Zěn.me "how"	-	-	1	.3	7	1.7	1	.2	-	-	1	.2	1	.3
Zěn.me gǎo.de "what happened"	-	-	-	-	-	-	-	-	-	-	1	.2	1	.3
Zěn.me hùi shì "what kind of thing?"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zěn.me bàn "what shall (we) do about it?"	-	-	-	-	-	-	-	-	1	.2	1	.2	1	.3
Zěn.me.le "what's the matter with"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gǎn má "why"	-	-	-	-	-	-	-	-	2	.4	-	-	-	-
Wèishén.me "why"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
.Ne "what about"	-	-	-	-	-	-	-	-	-	-	1	.2	1	.3
TOTAL NUMBER QUESTIONS INCLUDING YES/NO	24		6		13		9		21		7		25	

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TABLE 5.13 (Continued)

QUESTION	TAPE NUMBER 22 #	22 %	23 #	23 %	24 #	24 %	25 #	25 %	TOTAL #	RATE INCREASE OVER TIME
Shén.me "what"	7	1.3	8	1.9	3	.5	5	1.1	92	(not significant)
Shén.me shíhou "when"	-	-	-	-	-	-	-	-	-	---
Shéi "who"	1	.2	2	.5	3	.5	1	.2	14	(r = +.33)
Nǎli "where"	2	.4	1	.2	1	.2	1	.2	16	(r = +.36)
Nǎ.ge "which"	-	-	-	-	-	-	-	-	6	---
Zěn.me "how"	4	. .	-	-	-	-	4	.9	34	(n.s.)
Zěn.me gǎo.de "what happened"	1	.2	-	-	1	.2	1	.2	10	(n.s.)
Zěn.me huì shì "what kind of thing?"	-	-	-	-	-	-	-	-	-	---
Zěn.me bàn "what shall (we) do about it?"	1	.2	-	-	2	.4	-	-	10	(n.s.)
Zěn.me.le "what's the matter with"	-	-	-	-	-	-	-	-	-	---
Gàn má "why"	3	.5	1	.2	1	.2	-	-	9	(r = +.43)
Wèishen.me "why"	3	.5	-	-	-	-	-	-	3	(n.s.)
.Ne "what about"	2	.4	-	-	-	-	-	-	4	(r = +.35)
TOTAL NUMBER QUESTIONS INCLUDING YES NO	38		22		17		18		320	(r = .60)

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TABLE 5.14
WH- QUESTIONS - KANG
(NUMBER, AND AS PERCENTAGE OF ALL UTTERANCES)

QUESTION	TAPE NUMBER 1		2		3		4		5		6		7	
	#	%	#	%	#	%	#	%	#	%	#	%	#	%
Shén.me "what"	10	3%	10	1%	16	5%	34	6%	11	2%	3	-	8	1%
Shén.me shíhou "when"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Shéi "who"	1	-	4	1%	4	1%	4	1%	10	2%	3	-	1	-
Nǎli "where"	-	-	3	-	2	-	1	-	4	1%	5	1%	1	-
Nǎi.ge "which"	-	-	2	-	-	-	1	-	-	-	1	-	-	-
Zěn.me "how"	-	-	5	1%	3	1%	9	2%	7	2%	5	1%	11	2%
Zěn.me gǎo.de "what happened"	-	-	2	-	-	-	1	-	-	-	-	-	-	-
Zěn.me hùi shì "what kind of thing"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zěn.me bàn "what shall (we) do about it?"	4	1%	5	1%	3	1%	1	-	-	-	1	-	2	-
Zěn.me.le "what's the matter with"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Gàn má "why" "do what"	-	-	11	1%	7	2%	16	3%	6	2%	6	2%	3	-
Wèishén.me "why"	1	-	-	-	1	-	-	-	-	-	1	-	-	-
.Ne "what about"	-	-	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL NUMBER QUESTIONS INCLUDING YES NO	21		46		47		76		47		42		45	

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TABLE 5.14 (Continued)

QUESTION	TAPE NUMBER 8 #	8 %	9 #	9 %	10 #	10 %	11 #	11 %	12 #	12 %	13 #	13 %	14 #	14 %
Shén.me "what"	4	1%	22	3%	35	6%	11	2%	29	3%	27	3%	18	2%
Shén.me shíhou "when"	-	-	-	-	-	-	-	-	3	-	-	-	2	-
Shéi "who"	2	-	3	-	2	-	5	-	11	1%	6	1%	14	2%
Nǎli "where"	1	-	5	-	6	1%	4	-	2	-	6	1%	14	2%
Nǎi.ge "which"	-	-	-	-	1	-	3	-	2	-	6	1%	-	-
Zěn.me "how"	5	1%	7	1%	24	4%	11	2%	8	1%	7	1%	14	2%
Zěn.me gào.de "what happened"	-	-	-	-	-	-	1	-	-	-	-	-	-	-
Zěn.me huí shì "what kind of thing"	-	-	-	-	-	-	-	-	2	-	1	-	-	-
Zěn.me bàn "what shall (we) do about it?"	2	-	-	-	3	-	-	-	3	-	8	1	5	-
Zěn.me.le "what's the matter with"	-	-	-	-	-	-	-	-	-	-	-	-	5	-
Gàn má "why" "do what"	2	-	2	-	18	3%	8	1%	18	2%	16	2%	51	6%
Wèishén.me "why"	-	-	-	-	1	-	2	-	1	-	1	-	-	-
.Ne "what about"	-	-	-	-	1	-	13	2%	7	1%	13	1%	31	4%
TOTAL NUMBER QUESTIONS INCLUDING YES/NO	28		77		119		96		155		127		185	

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TABLE 5.14 (Continued)

QUESTION	TAPE NUMBER 15 #	%	16 #	%	17 #	%	18 #	%	19 #	%	20 #	%	21 #	%
Shén.me "what"	31	4%	19	3%	32	5%	47	8%	37	6%	41	6%	8	1%
Shén.me shíhou "when"	-	-	1	-	1	-	2	-	-	-	-	-	-	-
Shéi "who"	4	-	8	1%	-	-	-	-	4	1%	-	-	-	-
Nǎli "where"	8	1%	4	-	2	-	1	-	2	-	3	-	4	1%
Nǎi.ge "which"	2	-	2	-	-	-	1	-	2	1%	1	-	-	-
Zěn.me "how"	7	1%	18	3%	18	3%	11	2%	11	2%	12	2%	17	3%
Zěn.me gào.de "what happened"	1	-	-	-	1	-	3	-	1	-	-	-	-	-
Zěn.me huí shì "what kind of thing"	-	-	5	1%	-	-	-	-	-	-	1	-	-	-
Zěn.me bàn "what shall (we) do about it?"	13	2%	3	-	6	1%	4	1%	1	-	1	-	4	1%
Zěn.me.le "what's the matter with"	1	2%	2	-	-	-	2	-	2	-	-	-	-	-
Gàn ma "why" "do what"	25	3%	8	1%	11	2%	12	2%	10	1%	6	1%	2	1%
Wèishén.me "why"	-	-	-	-	1	-	1	-	3	-	-	-	1	-
.Ne "what about"	1	-	5	-	28	5%	15	2%	4	1%	-	-	-	-
TOTAL NUMBER QUESTIONS INCLUDING YES/NO	121		110		134		128		103		94		54	

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TABLE 5.14 (Continued)

QUESTION	TAPE NUMBER 22 #	22 %	23 #	23 %	TOTAL NUMBER USAGES	RATE INCREASE OVER TIME
Shén.me "what"	17	2%	16	2%	486	
Shén.me shíhòu "when"	-	-	-	-	9	(n.s.)
Shéi "who"	1	-	6	1%	93	(n.s.)
Nǎlǐ "where"	-	-	4	1%	22	(n.s.)
Nǎ.ge "which"	8	1%	1	-	33	(n.s.)
Zěn.me "how"	10	1%	3	-	223	(n.s.)
Zěn.me gǎo.de "what happened"	1	-	-	-	11	(n.s.)
Zěn.me huí shì "what kind of thing"	-	-	-	-	9	(n.s.)
Zěn.me bàn "what shall (we) do about it?"	2	-	1	-	73	(n.s.)
Zěn.me.le "what's the matter with"	1	-	1	-	26	(n.s.)
Gàn má "why" "do what"	3	-	6	1%	247	(n.s.)
Wèishén.me "why"	7	1%	4	1%	25	(n.s.)
.Ne "what about"	10	1%	4	1%	132	r = .43
TOTAL NUMBER QUESTIONS INCLUDING YES/NO	98		71		2023	r = .89

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wèi.shén.me would be appropriate. For example,

*gàn má dàoxiàlai.le ? *"Do what it fell down?" This
do what fall down come pfv

was the only question form other than the particles that the children had any trouble with. More than half their uses of gàn má would have been better with the wèi.shén.me. It seems likely that they were, in fact, avoiding use of wèishén.me because it contains the question word "what," shén.me. There is evidence that the children are trying for maximum differentiation, since gàn má so enormously more frequently used than wèishén.me is. (Fourteen uses compared to 5 for Pang; 242 compared to 25 for Kang.)

Next most frequent are the questions with nǎi.ge "which." "When" questions are by far the least frequent. "When" is shén.me shíhòu, literally "what time?" (Hour of the day may be specifically inquired for with jǐdiǎn. "what o'clock?") Although Pang did not
how many point

produce any "when" questions, she was able to answer "when" queries with appropriate time words by the time she was 2½. The answers were not always accurate, but they were well-formed. For example, she said Māmā shì
Mama cop

zuótiān huílái.de when her mother was, in fact,
yesterday back come mod

in Los Angeles.

It is possible that the presence of a tense system provides an added stimulus to ask "when" questions when

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people are more interested in maintaining a conversation than in obtaining specific information about time. It seems likely that American parents would use quite a few ritual "when" questions as part of a routine to elicit child speech of whatever kind. American children do not seem to be any more accurate in their specification of time than Chinese children are. Chinese parents don't ask "when" questions very frequently. They sound a little bit absurd addressed to very young children who can't tell time, since usually the questions sound like "at what time did you do X?" Time is inquired after in Chinese only when it needs be made explicit. It is a mistake, however, to think of Chinese society as somehow indifferent to time. It is and always has been a very time-conscious culture.[68] Even so, it is interesting that Kang only asked 9 time or "when" questions out of a total of 2,023 questions. Even more interesting, use of these "when" questions did not increase with age.

There are several factors responsible for the almost entirely error-free acquisition of Wh- questions by Chinese children. First, the question words are distinctive phonetically with no homophones and invariant form. Second, each corresponds to a separable, clear, semantic meaning. Third, they are easily handled syntactically since the item questioned has the same sentence position as it does in the declarative, as described in Chapter Three.

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For example: Nǐ yào shén.me? "What do you want?"
you want what

Shéi yào lái? "Who wants to come?" Tā kàn shéi
who want come S/he see who

"Whom does s/he see?" Tā shén.me shíhòu qù.le
S/he what time go pfv

Nánjīng? "When did s/he go to Nanjing?" There is absolutely no reordering involved. Finally, the question-answer routine is by far the most frequent type of speech interchange between adults and Chinese children of all ages. The prototypical question is "Zhè shì shén.me? "What's
This cop what

this?"

Some possible question forms did not occur anywhere in the sample. These were questions of quantity, either of things or of time: duōshǎo "how much" for both volumes
many few

and prices; duōjiǔ "how long?" At 3.6 Kang produced
many long

one jǐ how many sùi years old "how old?" Pang produced four

jǐ.ge "how many" questions during one sample; Kang used the form twice. Shéi.de "whose," was very rare as a
who mod

question despite the extremely large number of declaratives marking possession. Perhaps the children were more interested in claiming their own possessions than in determining the owners of objects which did not belong to them.

The most rapid growth in question usage of all sorts comes before the child is three years old. Both Kang and

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Pang showed significant increases in the overall percentage of questions asked, and in their variety. Kang had productive use of all the major question types other than "when" from his very first sample. The only question types which showed a statistically significant rate of increase with time were yes/no questions formed by intonation alone; and questions formed by the .ne sentence final particle. Both of these are forms which are not amenable to the analytic one-syllable one-meaning approach; both are discourse-sensitive. Most of Kang's intonation questions merely checked another speaker's statement.

The .ne particle is also a sort of conversational maintenance device. It functions something like English "what about..." by bringing up items in an already defined series which are in danger of being overlooked. For example if the child and the adult are discussing all the different items to load onto a toy truck, the child might pick up a toy which has not yet been mentioned and say zhèi.ge .ne? "And what about this one?" This
this series question
is a formally simple construction, but its cross-speaker, discourse-sensitive requirements retard its usage. Kang did not use it at all until he was 3.3; Pang's first uses of .ne were delayed until she was 2.8.

Unlike Kang, whose question use was essentially mature at the start of the study, Pang showed statistically significant increases for many question types measured over

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time. These were: "yes/no" V-not-V (r = .50); shéi "who" (r = .33); nǎlǐ "where" (r = .36); gàn má "why," and sentence final particles .ma (r = .48), and .ne (r = .35). Shén.me "what" and zěn.me "how" were well-established early while wèishén.me "why" was too rare to show increase. Shén.me shíhòu "when" did not occur at all.

SECTION 5.9.c YES/NO QUESTIONS

Strictly speaking, it is a misnomer to talk about "yes/no" questions in Chinese, a language which has no single word translatable as either "yes" or "no." For convenience however, affirmative/negative questions will be called yes/no questions because their role in Chinese exactly parallels that of the corresponding English and other European usages. As noted above, their frequency in child speech is comparable to that for English.

There are several ways of forming yes/no questions in Chinese. By far the most important and distinctive form is the verb-not-verb form. In this form a verb is followed by a negative, and then repeated as in, nǐ qù.buqù
you go not go
"are you going?" "will you go?" "do you go?" The answer must copy the verb in the question i.e. (wǒ) qù "I'll go" "I do go" "I'm going." Perfective forms in traditional, standard Mandarin follow the verb with an aspect marker for perfective or absolute past experience, and then add a

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méi perfective negative, and yǒu "have," as in

nǐ	qù.le	méi	yǒu	? "Have you gone?" "Did you go?"
you	go pfv	not	have	

The answer is

wǒ	qù.le,	or	wǒ	méi	yǒu qù "I've
I	go pfv		I	not	have go

gone" or "I haven't gone."

An alternative form of this perfective question construction is becoming overwhelmingly more frequent than the above form. The ascendant form exactly parallels the standard vern-not-verb form, in stating the auxiliary verb then negating it then repeating it before the main verb, i.e.

nǐ	yǒu	méi	yǒu	qù?	"Have you gone (there)?"
you	have	not	have	go	

The answer to this in traditional, educated, Mandarin is

wǒ	qù.le	"I have gone,"	or	wǒ	qùguò "I have
I	go pfv			I	go experience

had the experience of going" "I have been there," depending on the meaning which is appropriate. This yǒu méi yǒu form for perfective questions is the overwhelming favorite for Chinese children, who almost never use the more traditional form. Non-Mandarin dialects permit the answer to this question to be equivalent to

wǒ	yǒu	qù
I	have	go

"I have gone (there.)"[70] This is substandard Mandarin, not produced by any of the parents of the children in the study. It is a form these parents would certainly correct their children for using. Nonetheless perfective yǒu "have" for declaratives is so common in Taiwanese and Cantonese Mandarin that its acceptance into the standard

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language is imminent, particularly outside the Chinese mainland.

Verb-not-verb constructions form tag-questions. The most common are: shì.bushì "isn't that so?" (copula not copula)

duì.budùi "right?" (correct not correct), and hǎo.buhǎo "ok?" (good not good)

In the answer, either the tag or the main verb may be copied. For example:

Q.	Nǐ qùguò Fǎguó shì.bushì? (you go experience France copula not copula)	"You've been to France, isn't that so?"
A.	Shì.de (Copula mod)	"It is so."
OR	Bú shì.	"No, that isn't so."
A.	Qùguò (go experience)	"(I) have."
OR	Méi qùguò (not go experience)	"(I) haven't."
Q.	Nǐ qùguò Fǎguó duì.budùi (You go experience France correct not correct)	"You've been to France, right?"
A.	Duì. Qùguò. (correct)	"Right. I've been (there)."

Hǎo.buhǎo "ok," (good not good) is almost always used as a tag-question when proposing some activity, as in wǒ.men qù Fǎguó, hǎo.buhǎo "Let's go to France, ok?" (I plural go France, good not good) This request form is extremely frequent in speech addressed to Chinese children.

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However, it is also possible to use hǎo.buhǎo sentence-initially or internally before a verb to question the quality or the ease of some state or activity,

e.g. hǎo.buhǎo tīng? "Is it nice to listen to?"
good not good listen

"Is (it) pleasant sounding?" Yīngwén hǎo.buhǎo xiě.
English good not good write

"Is English easy to write?" "Is English easily written?"[71]

Both the speech addressed to children and speech produced by them uses the tag-question form of hǎo.buhǎo far more frequently than the modification form.

Chinese yes/no questions may also be marked by rising sentence intonation. Chinese sentence intonation contours co-exist with lexical tone, just as English suprasegmental sentential stress co-exists with stressed syllables in English words.[72] Therefore, Nǐ qù-guò Fàguó.
You go experience France

"You've been to France." Nǐ qù.le Fàguó? "You've been to France?" The question has somewhat heightened pitch range between individual tones. Sentence intonation rises high on the penultimate syllable then dipping slightly.

Chinese prefers the lexical question forms, so purely intonational yes/no questions are reserved mainly for checking immediately previous assertions. Usage is probably more strongly restricted this way than in English.

Ordinary verb-not-verb questions are neutral as to whether an affirmative or negative response is expected. Hǎo.buhǎo "ok" tag-questions assume an affirmative

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response. The sentence final yes/no question particle .ma may be neutral or non-neutral. It is neutral and equivalent to a verb not verb question form here; if offering wine to a guest one may ask ni you hē drink jiǔ wine .ma? particle "Do you drink wine?" The verb-not-verb form of this question has the same meaning and tone. nǐ you hē.buhē dring not dring jiǔ wine. Both translate, "do you drink wine?"[73] Either an affirmative or a negative response is about equally probable.

However, in situations where there is a strong probability of only one answer, questions with .ma are not neutral. They may be tag-questions. For example if a two-year-old claimed to know how to write, the adult might ask skeptically, nǐ you hùi can xiě write zì character .ma? question particle "You say you can write?" "You can write?" "Can you really write?" The answer seems obvious, bú hùi! "(You) can't!" Rhetorical questions are formed with .ma; wǒ.mén you I plural have àiguó love country jīngshén energy .ma? question particle "Are we patriotic?" "Of course we are patriotic!"[74]

Chinese children follow their most-favored analytic, lexical, strategies in producing and comprehending yes/no questions. From some points of view an intonation strategy might seem easier, given the children's early mastery of lexical and sentential pitch contours.[75] A sentence-final

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particle strategy would be phonologically very easy to produce, and structurally simple as well since it only needs to be added to the end of a declarative in order to form a sentence. A sentence-final strategy would be in harmony with Slobin's operating principle to pay attention to the ends of words, and to pay attention to the ends of sentences.

However the verb-not-verb form has much stronger advantages for the child. First, it has the greatest generality of usage, as well as being the highest frequency yes/no form. It is also semantically transparent in stating a possibility and its negative. Verb-not-verb forms are local markers on the verb itself rather than being placed at a distance. Finally, intonation and particle questions all require a great deal of discourse and real-world knowledge. They are cross-speaker devices, rather than forms which can be produced with reference to only one speaker. A question like

ni	yào.buyào	chī
you	want not want	eat

"Do you want to eat?" can be generated as a completely new topic regardless of prior actions or speech, while

nǐ	yào	chī	.ma	"You want to eat?!"
you	want	eat	question particle	

implies "I'm surprised, do you really want to eat that?" This questions a presupposition.

Lao Hu used only verb-not-verb forms for yes/no questions, mostly yào.buyào "do (you) want?" and yǒu.mei.yǒu "do (you) have (one)?" He did not ever mark questions with

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intonation or particles. Zhong Rong at 2.6 strongly preferred verb-not-verb constructions (72 uses.) She produced only one intonation question to check another speaker; and 10 sentence-final .ma questions, all repeated questions to get a response out of an inattentive hearer.

The longitudinal material from Pang showed a little more complexity. Her earliest yes/no questions were two verb-not-verb questions with yào.buyào "do you want;" and one with .ma. The next two tapes had two more yào.buyào, as well as six hǎo.buhǎo "ok" used alone as a tag; and one more .ma. Then there is a complete lack of the verb-not-verb form for the next five tapes. On four of these, (ages 2.1 through 2.3) Pang used only intonation to mark yes/no questions. These intonational yes/no questions were not checks on other peoples' speech, but were full information-seeking questions, e.g. offering a toy to Baojane and saying yào .a? "Do (you) want it?" Here
want empathy particle
yào.buyào, or yào .ma? would have been more appropriate. On another occasion Baojane pointed to a picture of the goose that had laid the golden eggs and asked,

zhèi.ge hùi shēng jīdàn.de shì shén.me?
This can birth chicken egg mod cop what

"What's this thing that can lay eggs?" Pang looked at the egg in the picture and replied tentatively, dàbiàn.de?,
shit mod
"Shit -er?" Here again a fuller form would have been more appropriate.

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Pang produced her first two non-tag hǎo.buhǎo (good not good) questions at 2.0. These were in direct, spontaneous, imitation of Baojane: Hǎo.buhǎo (good not good) kàn, (look) nǐ (you) shuō, (say) "Is it pretty? you say," "Tell me, is it pretty?"

Pang made no spontaneous use of adverbial hǎo.buhǎo constructions until ten months later when she said sang a little song, then asked, wǒ (I) chàng.de (sing mod) hǎo.buhǎo (good not good) tīng? (listen) "Did/do I sing prettily?" "Does/did my singing sound pretty?"

After the interval of intonational yes/no questions, Pang resumed using verb-not-verb forms at 2.3. They increased in frequency throughout the rest of the sample. Most were main verb rather than tag-questions. For example: xiāng.buxiāng (fragrant not fragrant) "is it fragrant?" yào.buyào (want not want) guānqǐlái (close up come) "do (you) want to close it up?" shì.bushì (copula not copula) zhèi.ge (this) "Is (it) this one?" rather than: nǐ (you) xǐhuān, (like) duì.budùi? (right not right) "You like it, right?" Tag-questions involve presupposition.

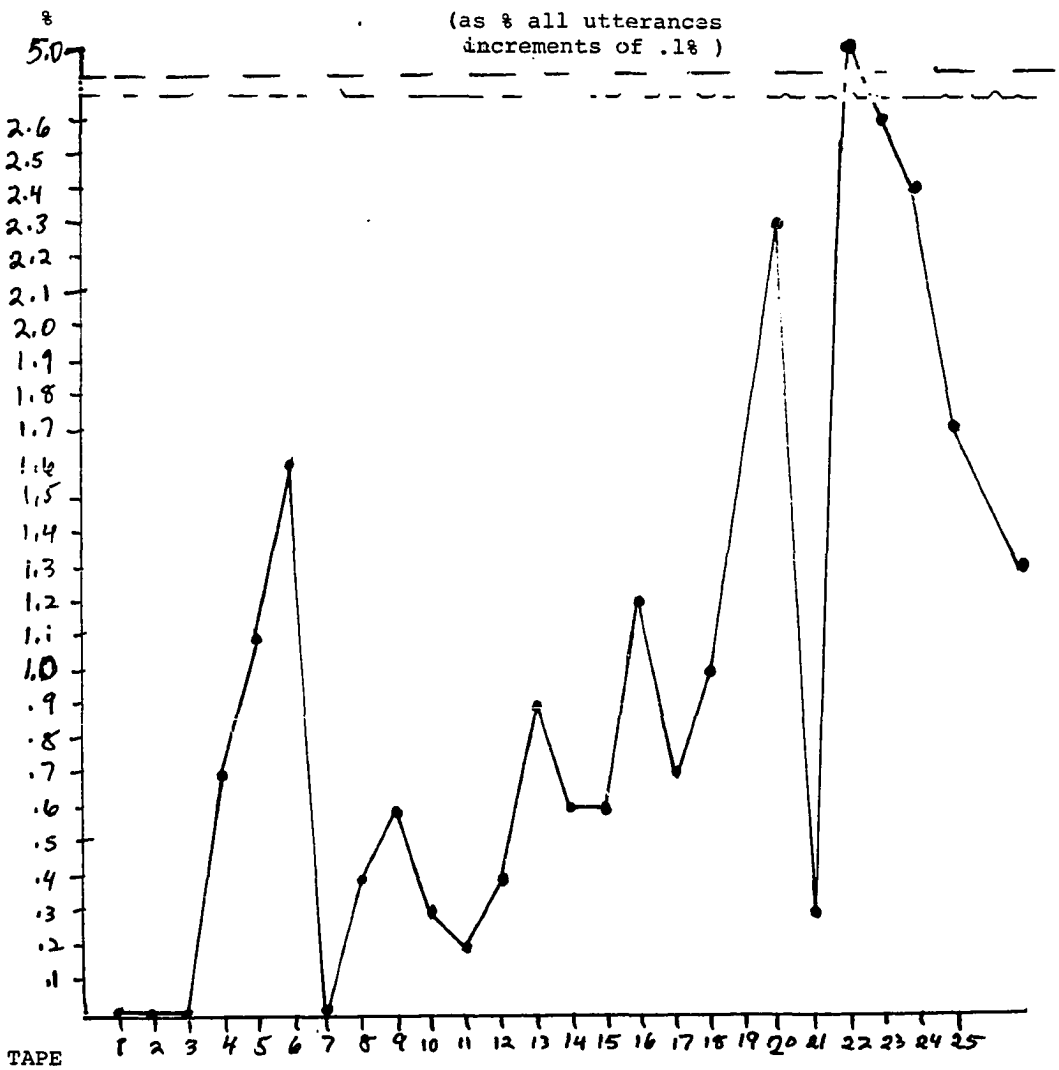
Sentence final .ma only showed up regularly after 2.7. Pang's yes/no questions increased at a statistically significant rate whether calculated as a percentage of all utterances (Graph 5.11) or as a percentage of all questions produced (Graph 5.12.) Table 5.15 lists Pang's yes/no

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GRAPH 5.11

YES/NO QUESTIONS - PANG

(as % all utterances
increments of .1%)



N = 122

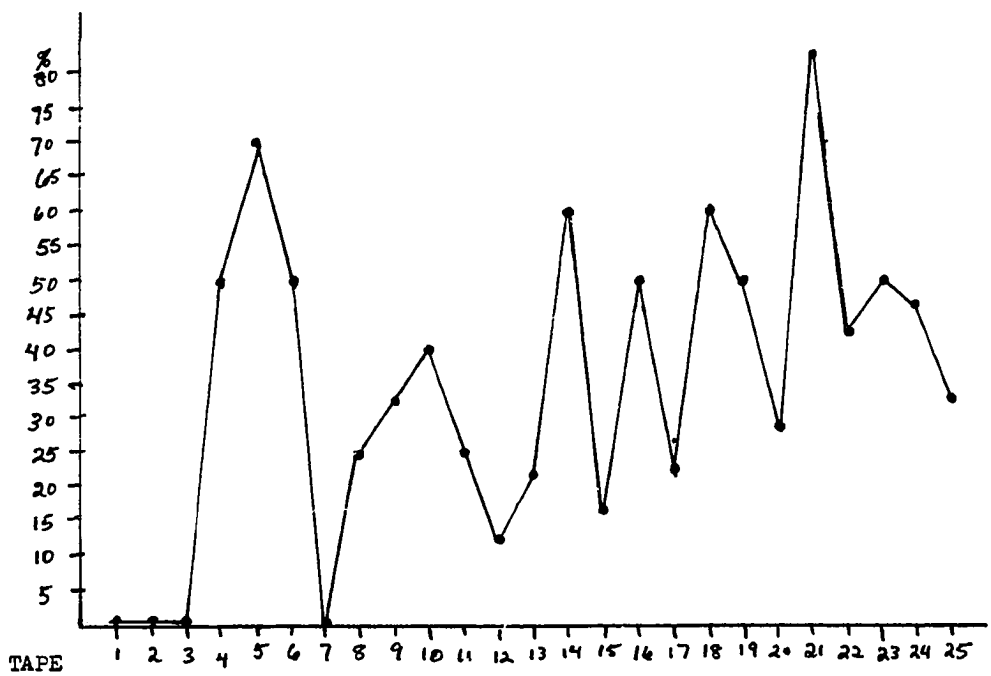
mean = .8%

r = .63

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GRAPH 5.12

PERCENTAGE OF ALL QUESTIONS YES/NO - PANG



N = 122

mean = 40%

r = .41

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TABLE 5.15

YES - NO QUESTIONS - PANG

(Number usages, and as % all utterances
calculated to 1/10's of a percent)
(Total N Y-N Q's = 122, 35% of all Q's)

TAPE	VERB NOT VERB VnotV		HAO.buHAO		INTONATION		PARTICLE .MA		ALL Y - N		TOTAL Y-N as% all ?'s
	#	%	#	%	#	%	#	%	#	%	
1	-	-	-	-	-	-	-	-	-	-	-
2	-	-	-	-	-	-	-	-	-	-	-
3	-	-	-	-	-	-	-	-	-	-	-
4	2	.5	-	-	-	-	1	.2	3	.7	50%
5	1	.2	4	.7	1	.2	-	-	6	1.1	70%
6	2	.3	2	.3	5	.8	1	.2	10	1.6	50%
7	-	-	2	.4	-	-	-	-	2	.4	18%
8	-	-	-	-	1	.4	-	-	1	.4	12%
9	-	-	-	-	2	.6	-	-	2	.6	33%
10	-	-	-	-	2	.3	-	-	2	.3	20%
11	-	-	-	-	1	.2	-	-	1	.2	25%
12	-	-	1	.2	-	-	1	.2	2	.4	12%
13	2	.5	1	.2	1	.2	-	-	4	.9	22%
14	1	.2	1	.2	1	.2	-	-	3	.6	60%
15	2	.4	-	-	1	.2	-	-	3	.6	13%
16	1	.3	1	.3	2	.6	-	-	4	1.2	50%
17	2	.5	-	-	1	.2	-	-	3	.7	23%
18	3	.6	-	-	1	.2	1	.2	5	1.0	60%
19	5	.8	4	.7	2	.4	2	.4	13	2.3	50%
20	2	.3	-	-	-	-	-	-	2	.3	29%
21	20	5.0	-	-	-	-	-	-	20	5.0	77%
22	8	1.4	1	.2	-	-	5	1.0	14	2.6	37%
23	7	1.7	-	-	-	-	3	.7	10	2.4	45%
24	5	.9	-	-	1	.2	-	-	6	1.7	35%
25	3	.7	-	-	1	.2	2	.4	6	1.3	33%
TOTAL	66		17		23		16		122		

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question acquisition in detail. She produced 122 yes/no questions in all; these averaged 35% of all her questions. Yes/no questions averaged .8% of all utterances.

Chinese children have a good grasp of basic yes/no questions by the time they are three years old. Kang's overall production of yes/no questions as a percentage of all questions produced did not increase significantly (Table 5.16); overall, 25% of his questions were yes/no, a smaller percentage than that produced by any of the other children (see Table 5.11). This reflects Kang's greater use of Wh-, particle, and intonational questions. Yes/no questions did increase at a statistically significant rate when measured as a percentage of all utterances ($r = .47$) but this increase was only slightly greater than the rate of increase Kang showed for question types as a whole ($r = .39$). It is merely a reflection of his producing more questions overall. Four percent of all Kang's utterances were Wh- questions. This was five times many as Pang's .8%. (On her twentieth tape she produced 5%.)

Kang's use of intonation-questions (N = 274) almost exactly equalled his combined use of verb-not-verb questions (147), and <u>hǎo.buhǎo</u> "ok" questions (100.) Intonational questions and sentence final <u>.ne</u> were the only question forms on which Kang showed a statistically significant increase. These are both discourse-sensitive forms. Kang's earlier uses of intonation-questions were not usually to question what another speaker had stated so

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much as to check his own assumptions for plausibility. Because of this rhetorical quality, his hearers were less likely to reply to intonational questions than to requests for information or permission. Intonational questions often ended up being repeated over and over as Kang "stated the obvious" but wanted it confirmed, partly to sustain the conversation.

Example 5.15 Kang Tape 9 (3.2)

(re: an ad for a kind of candy)

Nà	jīnmìtáo		jiù	shì	jīn	píngguǒ	.a?
So	gold	honey peach	simply	cop	gold	apple	emotive particle

(repeats this three times with no response)

"So golden honey peaches are just gold apples, right?"

Jīnmìtáo		yě	yǒu	jīn	píngguǒ?
gold	honey peach	also	have	gold	apple

"Golden honey peaches also have gold apples, huh?"

Some uses were real requests for information, as at age 3.3 when he looked at a photograph of a piggy-bank in which the pig had a grotesquely wrinkled skin. He wanted to know if the pig were sick, and said,

*éi	zhè	kěyǐ	/	Ø	bìng	.a?
hey	this	may			sick	particle

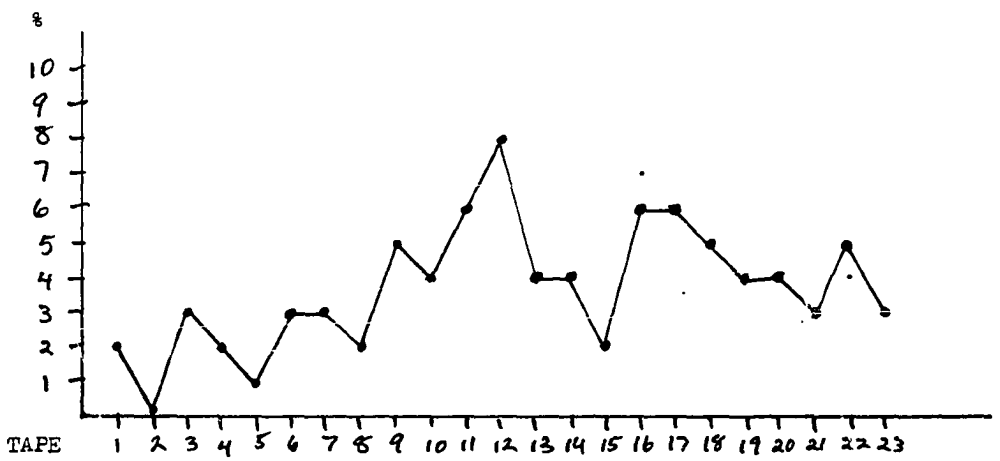
"Hey, this may / Ø sick, huh?" (The utterance lacks a main verb, while kěnéng "might be" would have been more appropriate than kěyǐ "may" "has permission".) Detailed breakdowns of Kang's acquisition of yes/no questions are in Table 5.16.

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GRAPH 5.13

YES/NO QUESTIONS - KANG

(as % all utterances)



N = 573

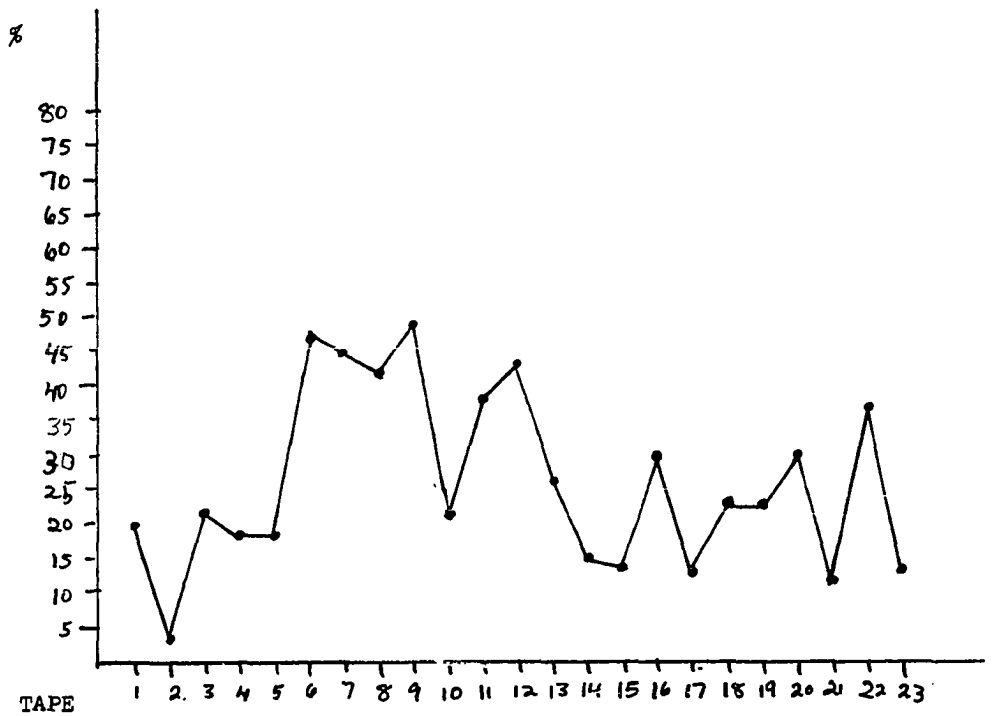
mean = 4%

r = .47

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GRAPH 5.14

PERCENTAGE OF QUESTIONS YES/NO - KANG



N = 573

mean = 25%

r = -.09 (not signficant)

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TABLE 5.16

YES - NO QUESTIONS - KANG

(Number usages, and as % of all utterances.
Total N Y-N questions 573, 25% of all questions)

TAPE	VERB-NOT VERB				INTONATION		PARTICLE		ALL		ALL Y-N
	VnotV		HAO.buHAO				.MA		Y - N		as % ALL
	#	%	#	%	#	%	#	%	#	%	QUESTIONS
1	1	-	-	-	3	1%	1	-	5	2%	20%
2	-	-	-	-	1	-	1	-	2	-	4%
3	5	1%	-	-	5	1%	1	-	11	3%	22%
4	2	-	-	-	4	1%	3	1%	9	2%	19%
5	4	1	-	-	5	1%	-	-	9	1%	19%
6	11	2%	3	-	3	-	-	-	17	3%	46%
7	8	1%	9	1%	-	-	2	-	19	3%	45%
8	3	-	3	-	6	1%	-	-	12	2%	43%
9	13	3%	3	-	21	3%	1	-	38	5%	49%
10	6	1%	6	1%	16	3%	-	-	28	4%	21%
11	10	1%	13	2%	11	2%	4	-	38	6%	37%
12	13	1%	22	2%	30	3%	4	-	69	8%	44%
13	7	1%	7	1%	10	1%	12	1%	36	4%	26%
14	17	2%	2	-	5	1%	7	1%	31	4%	15%
15	10	1%	6	1%	-	-	-	-	16	2%	14%
16	4	1%	4	1%	26	4%	1	-	35	6%	30%
17	4	1%	6	1%	22	4%	2	-	34	6%	13%
18	4	1%	3	-	20	3%	2	-	29	5%	23%
19	5	1%	3	-	13	2%	4	1%	25	4%	23%
20	6	1%	1	-	20	3%	2	-	29	4%	30%
21	3	-	-	-	14	2%	1	-	18	3%	12%
22	6	1%	5	1%	24	3%	3	-	38	5%	38%
23	5	1%	4	1%	15	2%	1	-	25	3%	14%
TOTAL	147		100		274		52		573		

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In summary, the children have few problems forming adult-like yes/no and Wh- questions. Discourse-sensitive questions with particles are more difficult. Their mastery continues after age four, along with acquisition of question forms for time, duration, and quantity.

SECTION 5.9.d REPLIES

The Chinese language makes question formation and comprehension regular and straightforward. But "there are no easy answers" when it comes to replying because of the verb-copying required in forming replies. Even the most advanced tapes showed problems with verb selection for replies. Because of the lack of a single word for "yes" or "no," children typically chose a favorite affirmative-verb construction, and one negative-verb construction, then generalized its use to be equivalent to "yes" or "no." Popular choices for affirmatives included: shì.de (copula mod) "(it) is so" for, Lao Hu and Zhong Rong, duì "correct" was Pang's choice. Table 5.17 details Pang's replies. Graph 5.15 maps her replies over time.

Example 5.16 Zhong Rong (2.7)

Mother	Xiǎo Mǔǒu zěn.me yàng? (Little Puppet how like)	"How's Pinnochio?"
Zhong Rong	*Shì.de (cop)	*"(It) is so."

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TABLE 5.17

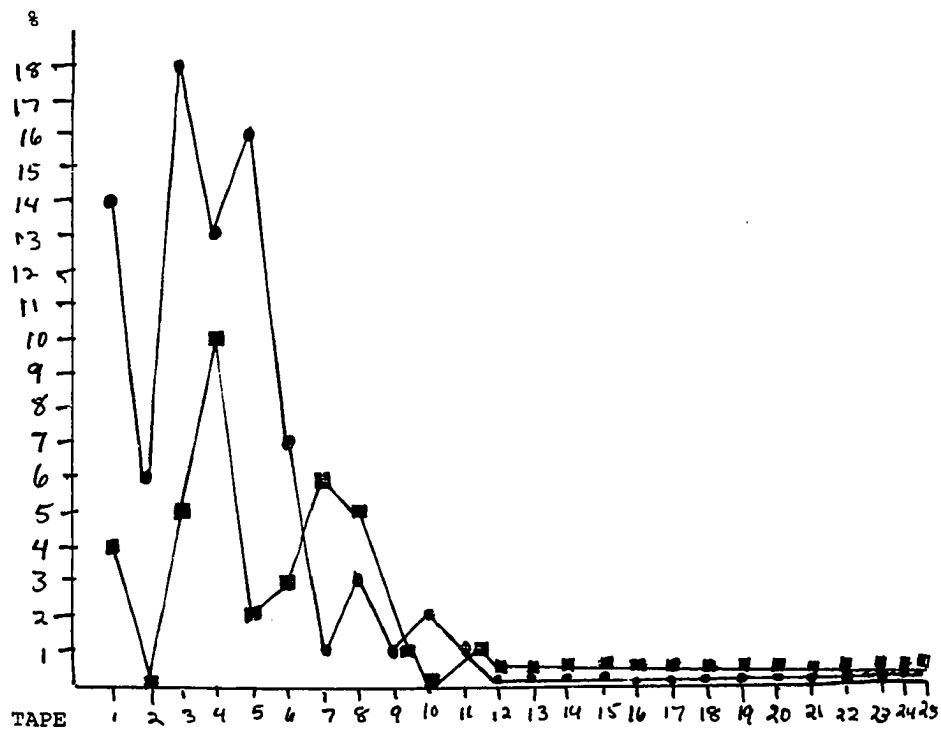
EARLY ANSWERS TO YES/NO QUESTIONS - PANG
(Number, and as % of all utterances)

TAPE	DUI "CORRECT"		BU DUI "INCORRECT"		HAO "OK"		BU HAO "NO"		BU XIAO.DE "(I) DON'T KNOW"	
	#	%	#	%	#	%	#	%	#	%
1	65	14%	-	-	20	4%	4	1%	20	4%
2	15	6%	1	-	44	2%	-	-	2	-
3	67	18%	1	-	12	3%	-	-	18	5%
4	56	13%	-	-	10	2%	-	-	41	10%
5	92	16%	-	-	6	1%	-	-	11	2%
6	45	7%	-	-	9	1%	-	-	19	3%
7	5	1%	-	-	20	5%	1	-	26	6%
8	9	3%	-	-	11	4%	-	-	14	5%
9	4	1%	-	-	5	1%	-	-	5	1%
10	11	2%	-	-	29	6%	-	-	-	-
11	4	1%	-	-	4	1%	-	-	5	1%
TOTAL	373		7		170				161	

GRAPH 5.15

GENERALIZED DUI "CORRECT" AND BU XIAO.DE "(I) DON'T KNOW" - PANG

(% of all utterances)



DUI "CORRECT" N = 373. r = -.54

BU XIAO.DE "(I) DON'T KNOW" N = 161, r = -.59

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Example 5.17 Pang Tape 1 (2.10)

(Baojane points to a picture of an elephant)

Baojane	Tā bí.zi hǎo cháng, ou, S/he nose very long part.	"His nose is really long, what is he?"
	nà shén.me dōngxī .a? that what thing particle	
Pang	Duì	"correct."
	Dàxiàng	"elephant."

It should be emphasized that mis-matches of verb in the reply were rather rare. At 1.10, for example, Pang was able to reply correctly to questions by matching verbs such as: hùi "can," yào "want," shì "(it) is," zhīdào "know," and chī "eat." In addition, the adults around her maintained the conversation by structuring many general statements which needed only token affirmation in reply. Baojane asked, nǐ xǐhuān chī guǒ-guiyuán .a?
you like eat dry-fruit part.
"You like to eat guiyuán, huh?" Pang answered, dùi "correct." At 1.4 Xiao Jing could make replies matching a similar set of verbs.

Most of the very frequent uses of dùi were approvals of the hearer's glosses of what Pang had said. (She had a very soft voice.) She invariably either approved the gloss, or tried to repeat it more clearly. Nonetheless, dùi "correct," formed an amazing total of between 13% and 18% of all of Pang's utterances on four of her first five tapes. This is a far higher percentage than that for any other construction or word, including single-word names of

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things (around 8%). Questions formed only about 1% of all utterances on these tapes. The dùi "correct," strategy was ingenious since it formed a plausible reply to a great range of questions. It served to sustain the conversation without requiring Pang to make a new contribution of her own, still less to form a cohesive link. Pang's cleverness at finding a "universal answer" recalls the strategy of a Dickens character, a nervous young suitor conversing with his future mother-in law:

> "Mr. Sampson, perceiving his frail bark to be labouring among shoals and breakers, thought it safest not to refer back to any particular thing that he had been told, lest he should refer back to the wrong thing. With admirable seamanship he got his bark into deep water by murmuring, "Yes, indeed."[76]

The very broad use of dùi "correct" dropped off abruptly after age 2.0; after age 2.2 dùi uses never even approached one percent of all utterances. Pang's first 11 tapes contained 373 dùi's, but only two bú dùi's "not correct." There is a similar differential between hǎo "good," "ok," with 170 early uses; and only 5 instances for bù hǎo "not good," "no." Pang's use of hǎo "ok" was not over-extended, and showed no significant decrease with time. Proposals which require an "ok" as a consent to a proposed action are all framed in a hǎo.buhǎo "ok?" structure; there is no broad range of alternative

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affirmative replies available as there are for more general questions requiring verb matching.

Many children choose bú yào "not want" as an extended negative. It certainly is high-frequency, and appropriate in a huge number of the refusals the child wants to make. This was Xiao Jing's favored general negative. She did not have the verb yào "want." The negatives bù and méi were seldom used in isolation; and children did not use them as generalized negatives. They preferred instead to follow the general trend of the language and to attach the negative to some verb, even if it were an inappropriate one. While Pang did occasionally say bú yào "don't want to," she was a very agreeable child. Her favored general negative was bù xiǎo.de, not know mod "(I) don't know." This was often an appropriate response to the many "what's this" "who is that" questions she received. Bù xiǎo.de "I don't know" showed a pattern very much like dùi "correct," in that it was a very high-frequency usage through Pang's first 8 tapes (averaging around 5%) of all utterances, and then falling off abruptly to just a couple of instances per tape for the rest of the sample. At one point Baojane became exasperated at receiving a long chain of bù xiǎo.de "I don't know" replies. Baojane said to Pang, nǐ shén.me dōu bù xiǎo.de, shì.bushì? you what all not know mod copula not copula "Everything is 'I don't know'

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for you, isn't that so?" Pang looked up at her calmly and replied dùi "correct."

Pang was no fool; she not only knew enough to disarm an attacker by moving with the direction of the assault rather than resisting it; she also knew enough to select the most broadly-appropriate negative reply, and to use it wherever it might fit, a highly economical decision.

SECTION 5.10 SUMMARY

Chinese culture encourages children to reach an early mastery of names of people and things. Children proceed with a morpheme-by-morpheme analysis in coining new compounds and definitions. Proper names and titles are clearly-structured compounds which provide a framework for substitution drills of a length and degree of abstraction which is highly accessible to pre-school children, as well as being socially reinforced. Name-formation templates are important in the child's decoding of the language as a whole. Names are analyzed as if each syllable had a clear referential meaning rather than being "just a name." In fact, Chinese personal and proper names are nearly all traceable to a specific meaning.[77] While the pronominal system is acquired easily overall, the children overextend use of the third person pronoun tā "s/he" to include inanimates even where this is proscribed in sentence-initial agent position before an active or process verb.

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This is evidence of the primacy of lexical factors over sentential frame function.

The continuing collapse of the differentiated classifiers was reflected in the children's greatly overextended use of the general gè classifier even for objects which are frequently discussed, such as vehicles, clothing, trees, and furniture. This contrasts with the reliable use of quantifying classifiers.

A clear one-to-one correspondence of question-word and meaning makes question acquisition quite straightforward. The children show a strong preference for lexically-formed questions rather than for intonational or sentence-final particle forms. The order of acquisition for Wh- question is different for Chinese than for English, showing a greater-than-expected child sensitivity to input frequency. The few question types which present difficulty are later acquisitions. They are all discourse-sensitive sentence-final particles which require coordinating whole complexes of presuppositions. They have no referential meaning.

The children's preference for finding a clearly referential meaning for each segment is also demonstrated by the peculiarities of their usage of the -.de suffix which marks possession, nominalization, adverbial modification, and relativization. A close examination of the acquisition of -.de for each of these usages shows a strong preference for placing it sentence-finally, where other neutralized tone, semantically non-referential

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particles for aspect and discourse relation are also placed. The children find clearly referential words easiest to manipulate, and so, overall, their acquisition of nominal forms is accurate and smooth. In a language which has extremely few pure functors and fixed word order, the children follow a lexical strategy of relating all semantically clear words within a template, and then pushing a neutral tone residue off to the end as a remainder. The early template model allows only one word in each sentential slot, so modifying segments will often be omitted in compounds, possessives, and place-holder patients. Overall, however, the nominal system is remarkably free from speech errors when compared to the verb-formation system.

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NOTES TO CHAPTER FIVE

1. Ralph W. Emerson in his essay "Nature and Language" quoted in the Oxford English Dictionary entry for "noun."
2. Reischauer and Fairbank, 1960.
3. Gentner 1981.
4. E. Clark, 1979.
5. Dore 1975.
6. Bowerman 1977.
7. Nelson 1974.
8. Braine 1976.
9. Bowerman 1977.
10. Bloom, Miller, and Hood, 1975.
11. Clark and Clark 1977, p. 304.
12. Bloom 1973.
13. Where two low-dipping third tone segments are compounded, normal tone sandhi rules require raising the tone in the first syllable to a high-rising second tone. Young children's second and third tones are rather indistinct, so it is difficult to tell if they make this change. Most early reduplicated forms have the second segment tone raised to a high level pitch.
14. Nouns becoming verbs is a very productive derivation in English, and other European languages; it is also one which European children use extensively, as discussed in Clark and Clark 1979.

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15. Matisoff suggests the couplet:

"In child Chinese there's nothing worser
Than using nouns as verbs, or vice versa."

16. Fillmore 1968.

17. Chafe 1970.

18. Bowerman 1975.

19. Bates and MacWhinney, 1979, Bowerman 1978, Clark 1979.

20. See Teng 1974 on the double nominative construction.

21. Cf. Chomsky 1957 "colorless green ideas sleep furiously."

22. Slobin 1973.

23. See Nelson, 1974.

24. See Greenfield, 1979 for discussion of informativeness at the one word stage.

25. Chao 1973.

26. Buddhist nuns are called nígū, (Buddhist girl) and Taoist nuns are Tàogū. (Tao girl.)

27. "That's a great deal to make one word mean," Alice said in a thoughtful tone.

"When I make a word do a lot of work like that," said Humpty Dumpty, "I always pay it extra."....

"Well 'slithy means 'lithe' and 'slimy.' 'Lithe' is the same as 'active.' You see, it's like a portmanteau - there are two meanings packed up in one word." (Dodgson, 1946, pp. 239-240.)

28. Bowerman 1978.

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29. Clark 1980.

30. C f. a Hebrew verb derivation which derives both objects and the people who perform functions associated with them. Berman, et. al. 1982, PRCLD.

31. Chinese also has many other more specialized word formation devices which I will not discuss here since they are not important in early child speech. But see Li and Thompson, 1981 Chapter 3; and Chao 1968 pp. 194-257.

32. This serial verb + general nominalizer/modifier pattern is characteristic of Sino-Tibetan languages, c f. Lahu -ve. Matisoff 1972. I thank Jim Matisoff for this observation.

33. Clark and Clark 1977, pp. 490-494.

34. Cooke 1968.

35. Eisenberg, 1982.

36. Chinese are invariably shocked to hear that in many American families it is the father rather than the children who gets the tastiest parts of the chicken.

37. Telephone manners are even more abrupt. People usually answer the phone by saying "hello, who do you want?" If the person sought is not there, the answerer usually simply says bú zài "not here" and hangs up.
not be at

38. Eisenberg, 1982b.

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39. Juncture and pitch level distinctions distinguish bài bài "bye bye" from its seeming homophone bàibài "worship," the noun or verb used to worship worship describe Taoist and Buddhist ceremonies. In the "worship" meaning, the two syllables are compounded with reduced stress or neutral tone on the second syllable. For "bye bye," bài bài, there is a very slight pause between two equally stressed syllables. Both receive full high falling tone, but the pitch level begins at a higher frequency, is sustained longer, and falls less far for "bye bye" than for "worship."

40. "The nature of discussions between parents and children does not encourage the child to criticize or question. One friend told me that, although one loved one's child, raising children was somewhat analogous to raising an animal. The child is not a little adult; he knows nothing and must be taught everything. Most Chinese parents feel that it is not necessary to explain to children why they have to do something. Children are supposed to do something because the father or mother (and later on, in school) the teacher said so." (Wilson, p. 61)

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41. Kang's request to have the adults kētóu to him did not seem completely unreasonable to me as an American bystander. However, I suppose an equally impossible, nearly blasphemous, equivalent would be a four-year-old Western child asking to pretend to be Jesus hanging on the cross, and to have the adults around him kneel in worship. Pretending to be the infant Jesus might be acceptable.
42. Ochs, 1982.
43. This vocative prefix goes back to Proto-Sino-Tibetan.
44. It is difficult for native Chinese speakers of English to learn not to say things like "I live in Chicago City."
45. The preference for name or title rather than personal pronoun holds true for Japanese society as well as Chinese.
46. The emotional outrage we felt at being called by an inappropriate version of our names recalls the Black English phrase "don't call me out of my name!" This phrase is said with great anger and feeling in the American Black community when someone calls a person by the wrong name, or badly mis-pronounces it.
47. Slobin, 1973.
48. Clumeck, 1977b.
49. Maratsos, 1979.

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50. There is also a now-obsolete form zá.men for an inclusive "we," meaning "You and I." This used to be contrastive with wǒ.men which had the exclusive meaning of "He and I, but not you." See Chao 1948 for discussion.

51. Karmiloff-Smith, 1979.

52. The Lahu cognate -ve may also be deleted in this context.

53. Allan 1977 describes the range of classifier systems which exist in many unrelated world languages.

54. Chao discusses a very large range of classifiers in his section on "measures," 1968, pp. 584-627.

55. Some theorists prefer to treat quantifiers as a separate system from general classifiers.

56. The bǎ classifier is etymologically a verb meaning "to take hold of." It is the same word as the bǎ object marker.

56. The same as in English, "three head of cattle."

57. Classifiers are the model for Chinese pidgin English constructions like "five-piece money."

58. The same leveling of classifiers is going on in Thai and Lahu. (Matisoff, personal communication.)

59. Indo-European indefinite articles such as "a," un and ein are all derived from the Proto-Indo-European root *oino-, "one."

60. C.f. Xiao Jing's use of the words for "one," "two," "three" and "eight" at 16 months.

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61. Shēng is conventially used to describe the emergence of illnesses, anger, opportunities, ideas and many other things.

62. This was a very rare sight and an unusual topic for discussion as the Chinese are not a dairying people. Generally, only babies drink milk; dry formula is imported from Australia.

63. See Maratsos for discussion of acquisition of English determiners and personal pronouns. (1979)

64. See Slobin, 1973.

65. See Clark and Clark, 1977, p. 352 for discussion of Brown, Cazden and Bellugi's analysis of questions formed by Adam, Eve and Sara.

66. Ervin-Tripp, 1970.

67. For further discussion see Dore, 1979, and Bowerman 1975.

68. Besides having been inventors of some of the world's first clocks and astronomical instruments, the Chinese place a very strong emphasis on punctuality on arriving and leaving all appointments and engagements at a precisely proper time. In modern China everyone who can afford to do so wears a wristwatch and has many clocks at home. Six-year-old children are often given real wristwatches to wear in Taiwan. Children are taught to tell time very young, just as they are taught to count as soon as they can speak.

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69. See Chao 1968, p. 269; Li and Thompson 1981, pp. 535-545.

70. Note the exact parallel with English.

71. Notice that Chinese does not have an active/passive distinction, so that both translations are equally correct. Yīngwén "English" is clearly the topic of the sentence; it comes sentence initial where agentive topics also usually come. The language is neutral, however, on the issue of whether "English" here is active or acted upon; it is the topic of a description, and that is enough.

72. It is, by the way, perfectly possible to sing in Chinese.

73. Li and Thompson 1981, p. 549.

74. Li and Thompson, 1981, pp. 549-553.

75. See Clumeck, 1977a, 1977b; and Li & Thompson 1978 on the acquisition of tone.

76. Dickens, 1964 edition p. 671.

77. "My name is Alice, but --"
"It's a stupid name enough!" Humpty Dumpty interrupted impatiently. "What does it mean?"
"Must a name mean something?" Alice asked doubtfully.
"Of Course it must," Humpty Dumpty said with a short laugh. "My name means the shape I am -- and a good, handsome shape it is, too. With a name like yours, you might be any shape almost." (Dodgson, 1946, p. 232.)

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CHAPTER SIX

WHAT'S HAPPENING?
PREDICATION IN CHILD CHINESE AS MARKED BY:
MAIN VERBS, MODAL AUXILIARIES, ASPECTUALS, ADVERBIALS, CO-VERBS AND SERIAL VERBS

SECTION 6.1 INTRODUCTION

Predication is the heart of a proposition in any language. It is the predicate, organized around a main verb, which tells us what is happening in almost every utterance.[1] Chinese is a discourse and topic-centered language, rather than a subject and inflection-oriented language.[2] Because of this, Chinese predicates dictate arguments which are not describable according to the traditional set of grammatical relations with a division between active or passive sentences, which take subjects or objects according to directional relations marked on the verb.

For Chinese, the primary questions defining predication center around "transitivity relations," defined as "a global property of an entire clause such that an activity is 'carried over' or 'transferred' from an agent to a patient."[3] Notice that semantic criteria of agenthood and patienthood, rather than subject and object are the crucial relations here. In Chinese the lexical properties

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of the predicate determine the transitivity relations to be expressed by arguments in the sentence. [illegible] are arrayed in an order where topic rather than subject comes sentence initially. It is as though parsing every Chinese sentence were like parsing Chomsky's famous pair of sentences "John is easy to please" and "John is eager to please."[4] In this pair of sentences we have no order or inflectional clues as to tell us which "John" is the agent-subject of an active sentence, and which is the subject-patient subject of a passive sentence. The Chinese norm is topic initial sentences like:

Māmā gài.le yí.ge fáng.zi Mama build pfv one building		"Mama built a building."
Fáng.zi gàihǎo.le Building build finish pfv		"The building has been built."

Either agent or patient may be a topic, as may many other sentential relations such as time, location, or goal.

Diagram 6.1 is a schematic representation of the basic Chinese verb types. The most basic categories are action verbs as opposed to stative verbs. Actions may take both a marked agent and patient, with agent coming sentence-initial in topic position. Stative verbs, which in Chinese include words like "tall" gāo, can only take patients, never agents. Patients of stative verbs also come in sentence-initial topic position, i.e. Wáwā hǎo gāo
Baby very tall
"Baby is very tall." There is a complementary distribution

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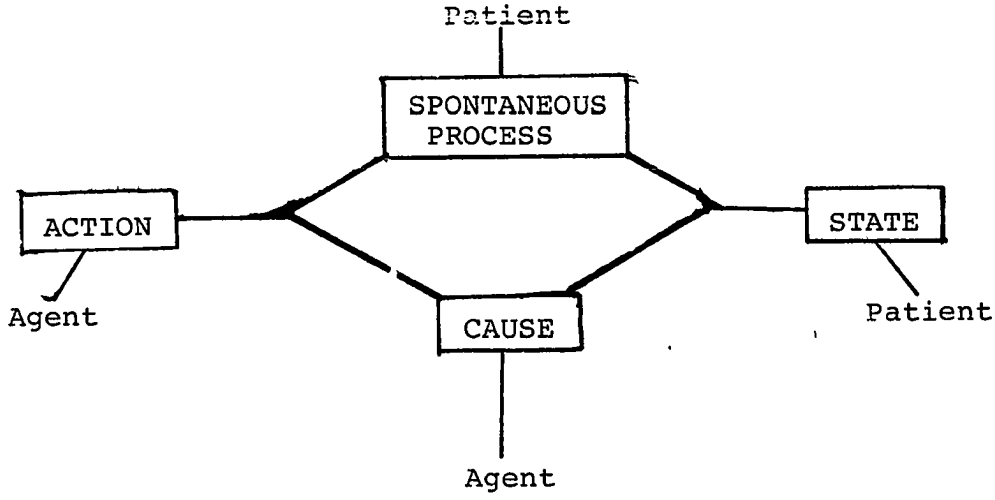
between causatives and spontaneous processes. Spontaneous processes, (non-causative changes of state), may take only patients, which still come sentence-initial, plus a perfective on the verb, e.g. Wáwā gāo.le "Baby has gotten tall." Causatives require an agent, (animate or inanimate), an action verb, and a resultative complement linked onto the verb (this is often a stative verb), as well as a perfective marker. Patient may or may not be marked, as not all causatives are transitive. For example Wáwā gài.de hǎo gāo. "Baby built (it) very tall." There are also lexical causatives such as kāi "open" jiějué "solve."

Baby tall perfective

Baby build mod very tall

DIAGRAM 6.1

SCHEMATIC REPRESENTATION OF THE RELATIONSHIP AMONG THE MAJOR CHINESE VERB TYPES



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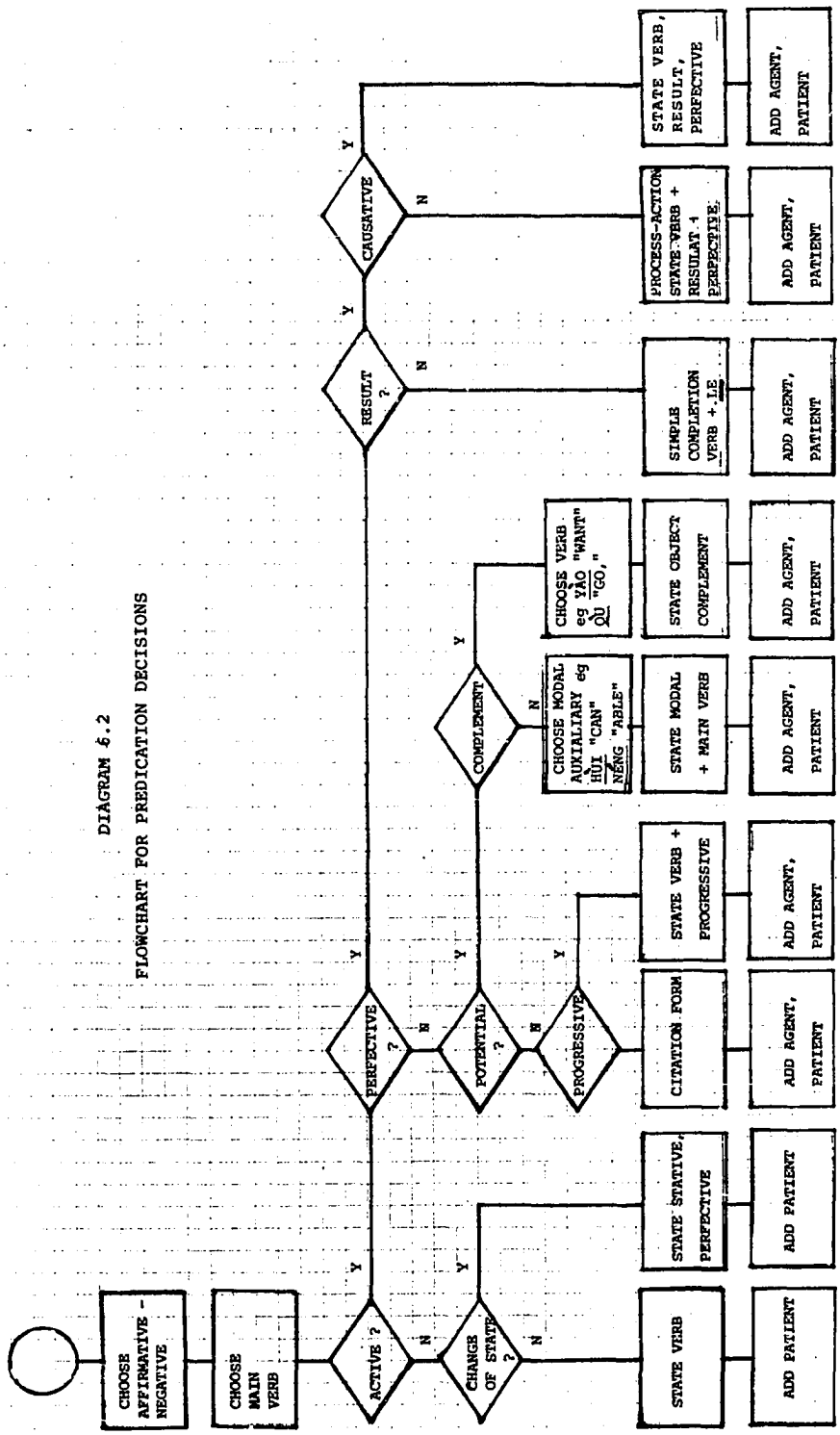
Selecting or parsing a Chinese predicate requires following several crucial sorting steps. (Diagram 6.2 presents them as a flow chart.) 1) The first, and most important, task is to determine whether it is descriptive of an action or of a state. 2) The second task is to determine whether or not the situation described is perfective, either an action which was finished or a change of state. The primary division in temporal and aspectual relations for Chinese is between perfective relations which can be visualized as completed, separable "incidents;" as opposed to an undifferentiated, durative class which includes not only states, but also progressives, iteratives, and habituals. 3) If there is a perfective relation described, the next task is to determine what sort of end-state description is required. Most of these are marked by following the verb with a directional or resultative complement, and then the .le perfective. These linked complements are potential full free-stative verbs in other constructions. Relations to be marked include: direction of movement, completion of an action, end location, result of an action, goal of an action, object created or acted upon.[5]

Chinese does not have a tense system, although past, present, and future time may be marked adverbially. The English tense and aspect systems contrast progressive actions ("running", "jumping"), with completed, non-progressive ones, which usually marked by past tense ("gone", "ran", "jumped").

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DIAGRAM 6.2

FLOWCHART FOR PREDICATION DECISIONS



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The heart of the Chinese system concerns perfectives marked with the -le perfective suffix which indicates that the action can be visualized as being completed, whether or not it has actually yet taken place. (For example, two roommates are standing in the kitchen waiting for the kettle to boil. One turns to leave the room, and instructs her friend: kāi.le guān.le This translates to
boil perfective turn off pfv.
English "When it boils, turn it off." While perfective -.le usually translates as an English past tense, this is not always the case. It is the perfective relation, not time, which is primary in Chinese.)[6]

After the decisions concerning perfective or non-perfective marking on the main verb, there come several crucial questions of verb modifiers which may need to be included. Most come before the verb as separate words.

4) Negatives. If the action is not perfective, that is completed, then it may be negated. Negatives come before the verb.

5) Modal auxiliaries generally appear in complementary distribution with perfectives. While perfectives marks ending or completion, the auxiliaries huì "can", néng "able", kěyǐ "may", gǎn "dare" are added to mark unrealized potential/action, as do the full verbs lái "come", qù "go" and yào "want".[7] Chinese, like English, most commonly uses these verbs to mark intent or future. However, future in Chinese is usually conventionally marked with

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lai "come," corresponding exactly to English "going to" or "gonna."[8] Modals come immediately before the verb.

6) Adverbials. If the aspectual relation marked is neither perfective nor potential, other aspectual relations may apply. These are marked by adverbials for duration, iterativity, habitual. Adverbial markings also indicate event time, event location, and manner of action. These come before the verb.[9]

7) Several categories of co-verbs exist in Chinese. Most of these segments may stand alone as full verbs in certain constructions, while in other constructions they pattern much more like pure functors such as prepositions, conjunctions, and dative markers in Indo-European. Chinese co-verbs fall into three main sets: 1) locatives (eg. zài "be at" "on", shàng "on", "to get on"); 2) non-locative (eg. gěi "give", benefactive, gēn "with" and "together", xiàng "to resemble" "like"); both locative and general non-locative co-verbs are potential free verbs. 3) Purely grammatical co-verbs cannot ever function as free verbs (bǎ object marker, bèi agent marker, bǐ comparative marker.) Coverbs generally come before nominals, nouns, pronouns, locations in adverbial phrases.[10]

6) Serial verbs. Chinese concatenates verbs in a series to express many of the complex relations which Indo-European distinguishes by specialized inflectional or functor syntactic markings.[11] Complements expressing direct object, destination, goal, quotation, and evaluation are

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generally marked by a series of verbs with their relation unspecified grammatically. Chinese does not have relative pronouns.[12] For example:

Wǒ lái tiàowǔ I come dance	"I'm going to dance."
Wǒ yǎng zhū chī. I raise pig eat	"I raise pig(s) to eat."
Tā shūo zhū hǎo chī. S/he say pig good eat	"S/he says that pigs are good to eat."
Tā shuō bú yào. S/he say not want	"S/he says that she doesn't want to."
Yǎng zhū chī hǎo máfán. Raise pig eat very trouble	"Raising pigs to eat is a lot of trouble."

Once all the predicate relations are complete, there is still another set of determinations to be made. 7) Which agents, patients, and instruments must be marked on the surface in the sentence? 8) What word order template will be chosen? 9) Which argument will go into the sentence initial topic slot? 10) How will the other relations be ordered?

While this theoretical discussion has moved from the verb as nucleus on outward to describing its complements, and then its adverbial sentential modifiers, this is not necessarily parallel to the Chinese child's order of development in selecting which sentential relations to mark and which to omit. For the child, the most vital element of the sentence seems to be main verb, affirmative or

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negative, next marking for agent or patient, and then marking for boundedness or perfectivity. These four items are not only the earliest sentential relations marked, but they are also the relations which are marked most reliably included over time, and which are used with the least amount of error. Next to appear are marked results and endings, along with direct object for items or actions desired. Next come dative gěi "give," and end location. Among adverbials, time of event comes in before marking for duration. Quantifying duration or volume, and specifying manner are later and more advanced devices.

The Chinese children, like Western children, move along a developmental scale beginning with describing the most linguistically transitive relations earliest, most frequently, most correctly and most reliably. According to Hopper and Thompson (1980, p. 252) qualities associated with high transitivity are: two or more participants, both agent and object; action, telic aspect, punctual, volitional, affirmative, realis mode; the agent is high in potency, the object is totally affected and highly individuated. These are all qualities associated with spoken language: a main story line and little backgrounding.

The following highly transitive devices associated with topic marking are specific to Chinese: action and causative verbs with agents and patients marked differentially, i.e. causatives as opposed to spontaneous process actions; the bèi agent marker; the bǎ object marker;

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-.le perfective, and linked directional, resultative, and locative complements.

Low transitivity is associated cross-linguistically with devices which function to provide backgrounding to the main story line; as well as for speech registers which describe abstract, plural, non-animate, non-active relations. Low transitivity devices are much more common in written than in spoken language, in formal rather than in informal settings. Children acquire the linguistic devices associated with low transitivity later and more slowly than they acquire high transitivity devices. Moreover, they are likely to use high transitivity devices to express relations which are more conventionally marked with low transitivity markers.[13] Low transitivity devices include: one participant, non-action, atelic aspect, non-punctual, non-volitional, negative, irrealis, an agent low in potency, object not affected, object not individuated. (Hopper and Thompson p. 252). Devices in Chinese which are strongly associated with low transitivity and backgrounding include: verb-initial sentences which signal a non-specific agent or patient (eg lái.le yí.ge kèrén "a guest has come".
come pfv one guest
This implies that it could be any guest. It contrasts with
kèrén lái.le "the guest has come," which is
guest come pfv
definite and specific.) Verb-initial sentences are also used to signal spontaneous emergence of situations or

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abstract phenomena (eg. Dōngfāng chū.le yí.ge
East side emerge pfv one
Máo Zédōng. "From the East there emerged a Mao Zedong.")
Mao Tse-dong

The many sorts of atelic, non-punctual aspect marking which Chinese children seldom use are also very low in transitivity. Specification of mode as irrealis or counterfactual is late for Chinese children; relative clauses specifying agent, patient, time, manner, or location are also late developments. Chinese children, like children world-wide, are highly efficient at stating exactly the most informative parts of the story of what is happening in the here-and-now. To do this they use primarily highly transitive markers, even for less transitive relations.

Chinese children make a set of error types which are strongly reflective of both their preference for syntactic forms associated with highly transitive agent-action relations, and of their assumptions that any non-nominal morpheme can be used as a full verb. They also assume that there is only room in the word order template for one item in the verb "slot." This means that: 1) Patient process verbs are marked as though they were agent-action. 2) Stative verbs used to mark result are used causatively. 3) Auxiliaries, adverbs, and co-verbs are all used without main verbs so that these adjuncts fall into the verb "slot," and sound like anomalous main verbs. These strategies result in sentences like:

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Example 6.1 Kang Tape 3 (2.11)

(runs trike into a wall)

*Wǒ chēhuò.le!		"I've accidented!"
I car disaster pfv/current relevance		
rather than: Chū.le	yí.ge	"An accident has happened!"
emerge pfv	one	
chēhuò.		
accident		

Example 6.2 Zhong Rong (2.6)

(holding new doll by its braids and waving it through the air)

*Wǒ shì huài tóufà!	*"I'm badding her hair!"
I copula bad hair	

Example 6.3 Zhong Rong (2.8)

(wants nailpolish on doll's feet)

Méi yǒu hóng tā.de jiǎo	*"(We) haven't redded her feet."
not have red she poss feet	

Example 6.4 Zhong Rong (2.7)

(wants to continue playing toy piano)

*Wǒ yào hái ø.	*"I want to still."
I want still	
for Wǒ yào jìxù tán.	"I want to go on playing."
I want continue play	
or Wǒ hái yào tán.	"I still want to play."
I still want play	

Example 6.5 Pang Tape 13 (2.5)

(building block house)

Wǒ huì ø yí.ge xiǎo wū.zi.	*"I can ø a little room."
I can one little room	

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for: wǒ huì gài yí.ge "I can build a little
I can build one room."
xiǎo wū.zi.
little room

Example 6.6 Kang Tape 7 (3.2)

(building block garage)

*Wǒ zhèi.ge bú yào Ø zhèr. *"I don't want to Ø this
I this not want here here."

for: wǒ zhèi.ge bú yào "I don't want to put
I this not want this here."
fàng zài zhèr.
put be at here

Example 6.7 Kang Tape 8 (3.2)

(Block garage has no door)

*Nèi.ge bù Ø ménmén *"this doesn't Ø a
That not door door door-ie, what shall
(we)do?"
zěn.me bàn?
how do

for: Nèi.ge bu zhuāng "If this doesn't get a
That not install door built, what shall
(we)do?"
yí.ge mén, zěn.me bàn?
one door how do

or: Nèi.ge méi yǒu yí.ge "This one doesn't have
That not have one a door...."
mén....
door

Children learning English and other European languages do occasionally use an end state word causatively (Bowerman 1974). Small Europeans occasionally use a modal as a main verb, though this seems far more frequent in Chinese. However, the use of negatives, and adverbs as though they were

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main verbs is a peculiarly Chinese error which is a reflection of both the fluid word classes and the strict order and slot template for that language. There are five main stages in the development of predication in Chinese children; each stage is discussed in turn below.

After a general discussion of verb types in Chinese, this chapter discusses each stage of predicate development in detail. General verb class categories, modal auxiliaries, aspectual marking, adverbials for time and manner, co-verbs, serial verb constructions, and sentence final particles are discussed for each stage. The appearance of chéng yǔ, the Chinese proverbs and literary sayings which play such an important role in the language, is discussed in the section on Stage IV. The chapter ends with a summarization of general trends in the development of the child Chinese predication system and its implications for language development and language design.

SECTION 6.2 MAIN VERB CLASSES

6.2.a GENERAL DISCUSSION

When a speaker of Chinese chooses a predicate for an utterance, his choice of main verbs may fall into one of three classes, with very different consequences for verb formation and sentential syntactic relations. The three main classes are: action, state, and process (change of state) verbs. Shou-hsin Teng has done a splendidly lucid

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job of delineating the way these three verb types function in Chinese (Teng 1975).[14] Table 6.1 lists each subdivision of the Teng verb transitivity types, with examples for each.

The most basic formal dicotomy comes between action verbs such as "fly" fēi,"make" zùo, and "put" fàng; as opposed to stative verbs, which include not only experientals like xǐhuān "like" and tòng "hurt," but also, in Chinese, forms which pattern as adjectives in Indo-European.[15] In Chinese words like "red" hóng, "fat" pàng, "tall" gāo, kāi "open", and "expensive" gùi are all full free verbs. This is proven by their ability to be negated by the bù general negative or the méi perfective negative; and to take aspectual modification, as, for example, with the -.le perfective suffix.

Stative verbs may also be modified by adverbs such as hěn "very," yǒu "again," kuài "soon," and kěnéng "possibly;" as well being able to take modal auxiliaries such as huì "can."

For example:

Méiguìhuā hěn guì. rose flower very expensive		"Roses are expensive."
Méiguìhuā hóng.le. rose flower red perfective		"The rose reddened."
		"The rose got red."
Méiguìhuā bù gāo. rose flower not tall		"Roses are not tall."

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TABLE 6.1

TENG VERB CLASSIFICATIONS

		VERB TYPE	ARGUMENTS	EXAMPLES
ACTIONS	1.	ACTION	AGENT	kū "cry," fēi "fly," xiūxí "rest," dǎjià "fight"
	2.	ACTION LOCATIVE	LOCATIVE AGENT	zhàn "stand," liú "stay," qí "ride"
	3.	PROCESS ACTION	PATIENT AGENT	shā "kill," chī "eat," qiē "cut," mài "sell"
	4.	PROCESS ACTION LOCATIVE	LOCATIVE PATIENT AGENT	fàng "put," liú "leave," zhuāng "install," zhòng "plant"
	5.	ACTION RANGE	RANGE AGENT	chī(fàn) "eat(food)," chàng(gē) "sing(song)," xiě(zì) "write(word)," xǐ(zǎo) "wash(bath)"
	6.	ACTION GOAL	GOAL AGENT	mài "buy," zhǎo "look for," dǎ "hit," xué "learn," zū "rent," ná "get"

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TABLE 6.1 (Continued)

		VERB TYPE	ARGUMENTS	EXAMPLES
STATES	7.	STATE	PATIENT	mei "beautiful," gao "tall," pang "fat"
	8.	STATE RANGE	RANGE PATIENT	gao(wu-chi) "tall(5 feet), zhi(qian) "worth (money)," xing "surnamed," hao(war) "good(play), fun"
	9.	STATE GOAL	GOAL PATIENT	zhidao "know," pa "fear," hen "hate," xiang "resemble," xiangxin "believe"
PROCESSES	10.	PROCESS	PATIENT	chen "sink," po "break," wan "finish," diao "fall," kai "open," si "die"
	11.	PROCESS RANGE	RANGE PATIENT	po(dong) "break(hole)," shu "lose(a game)," lie(feng) "crack," fa(cai) "gain(property)," pang(.le shi bang) "fat (10 pounds)"
	12.	PROCESS GOAL	GOAL PATIENT	bian(qingwa) "change into (a frog)," cheng(wei) "become," hua(cheng) "melt(into)," zhang(gao) "grow(tall)"

Méiguìhuā kuài yào kāi. "The rose(s) will(be) bloom(ing)
rose flower soon want open soon."

Action verbs may only take agents as heads or subjects, while stative verbs may only take patients. Location may be marked for either states or actions. The agent of an action verb is the topic of a sentence, and comes before the verb; the patient of a stative verb also comes pre-verbally in the topic slot. (There are variations possible for discourse topicalization; as in, nèi.ge, wǒ shòu.buliao, "That I can't stand;" or which are the result forms omitted because of zero anaphora. But overall the above "topic before verb" rule holds. Refer to Table 4.2 .)

The third basic category in Teng's scheme is processes, or changes of state. Like statives, process verbs can only take patients, never agents as heads. Process verbs include many verbs of movement and transformation, such as "sink" chén, "fall" diào, sǐ "die" and kāi "open," as well as verbs of transformation like biàn "become".

Teng specifies not only the potential agents, patients, and locations for his verb types, but also the possible complement types, range and gcal, which maybe compounded onto Chinese verbs. These complements have profound effects on grammatical patterning in the sentence. Teng does not include directional complements which specify the vector of action in the core apparatus central verb system. For example:

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náxialai "take down," fēishangqu
take down come fly up go

"fly upward," (But see discussion in Chao 1968 p.702 Li & Thompson 1981, pp.58-65). In Teng's scheme some verbs may have zero compound complement potential,

(e.g. kū "cry" or xìng "be surnamed.")

Some verbs may or may not require a separate word noun as an obligatorily marked patient object, and so be transitive verbs in the traditional sense. (Kū "cry" is intransitive in both Chinese and English, while xìng "be surnamed" must have a specified object.) Chinese is considerably more relaxed than European is about requiring that grammatical objects be stated after obligatorily transitive verbs in a clear context. For example xǐhūan "like" is a transitive verb, but either wǒ xǐhūan shuǐjiao "I like Chinese
I like dumplings

dumplings," or wǒ xǐhūan "I like (them,)" is equally well-
I like

formed depending on contextual clarity of reference. Dummy subjects and objects like "it" or "there" are seldom used in Chinese.

The two nominal complement relations which may follow the verb in Teng's system are "range" and "goal." Teng borrowed the term "range" from Halliday who defined range as specifying "the extent of its (i.e. the verbal process') scope or reference."[16] (Range corresponds roughly to the Factitive case in Fillmore 1968 and to Complement in Chafe

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1970.) Range verbs include many of the Chinese "cognate object" compounded verbs such as jiang(hua) "to speak," (speak talk) and chi(fan) "to eat," xizao, "bathe." Range may also (eat rice) (wash bath) specify extent (e.g. gao.le wuchi "got five feet (tall pfv 5 feet) taller") or the result of a process (e.g. lie (feng) (split crack) "to crack".

Teng's second central complement type is "goal." A goal is the focus of an action directed inward toward the agent, such as mai "buy," zhao "search for," zhidao "know," pa "fear," and biancheng "become." Most experiental verbs are state-goal verbs. Goal complements may be further specified as successful by being followed by an achievement marker such as dao "reach," and then the perfect, as in zhaodao.le "found." (search reach pfv)

Teng discusses causatation in terms of derivations among the verb types. Not included in Teng's scheme are the very high frequency verbs, copula shi, and you "have." Modal auxiliaries, such as hui, "can" are excluded because they are not full free verbs. More importantly from the point of view to using Teng's system as a coding device, most of the co-verbs for location and mutual activity which also function as full free verbs are excluded (e.g. shang "be on," zai "be at," gei "give".)

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Teng's system greatly clarifies the issues of inherent lexical transitivity and complementation in Chinese. But the experience of using it as coding system for the entire corpus of child utterances for the four children in this study highlighted some elements which the Teng system covers less well than others.

The exclusion of the categories mentioned above means that Teng verb class categories only apply to an average of 40% of the children's utterances. The percentage included in the Teng categories is lower for the younger children than for the older ones. (Lao Hu 33%, Pang 35%, Zhong Rong 50%, Kang 43%.) A very large percentage of child speech names or defines objects by using the copula; marks existence or possession of a thing with yǒu "have"; answers questions using modal auxiliaries; or specifies static location of objects or end location of motions. The extensive scope of these constructions which fall outside the scope of the Teng system lowers its explanatory power.

The child Chinese predilections for omitting the main verb entirely, or for using a modal, a locative, or an adverb in place of a main verb, also increase the number of utterances not codable in Teng categories.

More importantly, while some verbs are easy to characterize as having an inherent direction toward the agent as a goal, or away from it as a process, many do not. (For example cā "wipe," piàn "cheat" bāng "help," and yáo "rock," as in "rock a baby.") I put such cases in with the

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agent-process-action class. I put dative gěi "give" with agent-action-location-patient, along with verbs like fàng "put." Verbs like jiè "lend" are more problematic, but I include them here as well. I put most verbs of creation such as zùo "make," gài "build," and nòng "do," in with the agent-action-goal class. It was troubling, however, that a separate morphologically-defined class for object-complement or action-range verbs such as xiě(zi) "write," and huà(huà) "draw" included many of the highest-frequency verbs for creation. I included verbs in this action-range class whether or not the object-complement was realized in a given utterance, and whether or not there was a particular patient specified, Wǒ jiǎnghuà (I speak talk) "I speak," "I'm speaking," and wǒ jiǎng yīngwén (I speak English) went into the same category, although this blurred some distinctions about patients, created, and acted upon. The agent-action category seems quite mixed. It marks words like pǎo "run," and zǒu "go," as intransitive actions, rather than putting them in the agent-action-locative category. In fact, almost all child uses of an activity verb marked either a location or a patient affected. "Pure," intransitive uses of wán "play," and pǎo "run," as in "I'm running" and "I'm playing," were very rare in the child corpus, except for Lao Hu, the youngest child. I suspect that simple intransitive usages are even rarer in adult speech, and that this is a generalization which will hold up

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cross-linguistically. The disproportion in frequency of verb types comes because the situations in which one uses an action verb intransitively, without marking time or location, involve labelling or naming one's activity. Labelling one's actions is part of the same propensity for naming which makes naming objects such a central part of children's early conversational contributions. The frequency of pure labelling speech increases in adult conversations in which the speaker is unfamiliar with the social setting, and everything seems new. We label while touring an unfamiliar place ("oh look, a sampan! a monk!") or when we "don't know what else to say," as when uncomfortable guests and hosts enumerate the unusual objects in a room which are literally "conversation pieces." In these settings the adult has to mark the unfamiliar, and so he regresses to the simple strategy of naming.

The designation of a separate category for pure agent-action verbs is revealing of the way in which we tacitly assume that all typologically relevant categories will bear an equal weight in actual usage. In addition, a category which is taxonomically simple, basic, and central to a descriptive system may not be one of the most primary or accessible processing units in terms of the mental organization and usage for an actual speaker.[17] It was also troubling to have such compounded forms as gōngzuò "work" (work do) and dǎjià "to fight" (make fight) put in the agent-action

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category, rather than where they would seem to pattern morphologically and etymologically with agent-action-range.

A further difficulty concerned verbs which showed up in different categories according to their usage in a sentence. Most of these were verbs of motion which could either be agentive or spontaneous process, such as kāi "open," dòng "move," dǎo "fall over," zhuǎn "turn," chūlái "come out," and qǐlái "emerge."[18] These are extremely high-frequency items in early child speech, and in adult speech as well. For the child, these are precisely the terms he first uses to describe non-agentive, patient-process actions, and they form his earliest uses of non-agentive subjects. These are also the first verbs to used with both agentives and non-agentive marking e.g. wǒ kāi.le mén "I opened the door," mén kāi.le "the door opened." This first use of verbs of motion for both agent-action and patient-process shows up cross culturally in Turkish and in English as discussed by Savasir and Gee (1982). They call non-causative patient-process-actions "eventives," and relate them to children's development in understanding the relations between objects and movement in time and space.

The last caveat with regard to using Teng's system is that it seems somewhat unbalanced to include complements marking quantity in the central system, while excluding

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complements for direction of action, and end location. Quantification in terms of number of pounds gained or inches of length seems to be a much more specialized sub-use of language which would be restricted to people who have been taught how to count; as opposed to the much more broad and basic linguistic primes such as completion and location, which are available to every speaker, schooled or unschooled, normal or subnormal.

The Teng system is neutral as to whether or not a patient is actually stated in the utterance produced, since the categories only prescribe which relations may potentially be fully marked on the surface. The degree of obligatoriness of realization depends on speech and situational context. The Teng system is also neutral with regard to the sentential word order in which the relations are actually expressed for purposes of topicalization and stylistic variation. Since the system excludes shì "copula," yǒu "have," and benefactive gěi, it also does not capture much of the most important use of serial verbs relativization and embedding.

Despite these criticisms, it is Teng's analysis which adapted the Chafe (1970) and Fillmore (1968) theoretical constructs in a way which builds a single, coherent, multidimensional network which integrates all predicate types within a single system. Previous analyses by L. Wang Chao, and W. Wang were something closer to well-ordered lists of verb types and usage possibilities.

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I use an adaptation of Teng's system in the remainder of this analysis of the acquisition of predication.

Because of the problems with using Teng's scheme as a coding device, this chapter also draws on two other sorts of coding schema which I designed and used to code the entire Kang and Pang corpus. The more comprehensive, a scheme for categorizing overall sentence type, was developed to be sensitive to word order variations and serial verbs. (See Chapter 4, Table 6 for full description of the system.) The order-sentential system aims at capturing the function of the main verb in the utterance. It does include the shì copula, and yǒu "have," as well as locatives, and gěi "benefactive." Otherwise, it subdivides verbs into actions, as contrasted with two sorts of states; descriptive states and experiences. It codes word order in terms of agents, verbs and patients; and categorizes complex sentences as well. This coding scheme codes only utterances which are orderable, and so excludes one-word utterances, and utterances which are only determiner + noun, or modal + verb. Because of this, it was slightly less comprehensive than the Teng system in terms the number of sentences codable for Pang (31% as opposed to 35% under Teng); it was considerably more effective than Teng for Kang (it coded 61% of his speech as opposed to 43% under the Teng system.)

Separate scans coded all modal auxiliaries used in isolation, and with main verbs; all serial verbs; all

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co-verbs with a special concentration on gěi "give" benefactive; all directional complements; resultative complements; all instrumentals; all time, manner, and extent adverbials; and all aspectual markers. The error coding system described in detail at the end of Chapter Three was sensitive to the regularities among omitted and mis-used predicate types, which often fell outside the scope of the verb coding schema. The discussion which follows in this chapter is a synthesis of the results of all these coding schema.

SECTION 6.2.b EVOLUTION OF PREDICATE TYPES

Chinese children pass through five main stages in their acquisition of predicate types:

STAGE I
- Unitary System.
- Actions only, as opposed to things named.
- Almost no statives.
- (Early one-word stage before age 1.10.)

STAGE II
- Binary System.
- Actions versus States.
- (Late one-word, through two-word stage, ages 1.10 through 2.4)

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STAGE III — Trinary System. Actions, Causes and States. A stage of enhanced transitivity, with end states used causatively. (Fluent multi-word speech, around ages 2.6 through 3.2.)

STAGE IV — Full System in Proto-form. Actions, Causes, States, and Processes. (Ages 3.4 through 4.0.)

STAGE V — Elaboration of full system with much increased use of quantification, serial verbs, and backgrounding. Fuller acquisition of variable speech registers. (After age 4.0.)

SECTION 6.3 STAGE I UNITARY PREDICATE SYSTEM: ACTIONS VERSUS THINGS

At the early one-word stage before approximately age 1.10, Xiao Jing had many names for concrete objects, but spontaneously-produced predicates were almost entirely action-verbs with agentive subjects. Two of the three stative verbs which did occur referred to an experiencer. They were used only with reference to self; bú yào "don't want," and pàpà "fear." Gòu "enough" did appear. At the one-word stage the child reduced two-morpheme verbs and nouns to single syllables, as in

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Øhuān (like) for xǐhuān (joy like) "like," "enjoy." Dynamic relations were quite limited. Potential, with mode marked by modal auxiliaries, occurs only in answer to questions, and referred only to actions which the child himself could perform, e.g. huì "(I) can (dance)." There was no marking of aspect, time, or manner; no co-verbs or serial verbs. Nonetheless, the structured nature of speech routines and the child's ingenuity at word choice meant that a very large range of speech acts could be expressed, including questions, requests, and imperatives as well as expressive social routines. The strategy is entirely lexical rather than grammatical.

SECTION 6.4 STAGE II BINARY SYSTEM: ACTIONS VERSUS STATES

6.4.a ACTIONS

After approximately age 1.10 in the late one-word to advanced two-word stage, sentence types become much more varied. (For overview of English see Garman 1979, pp. 177-208, Clark in Fletcher & Garman pp. 149-160.) For Niu Niu and Lao Hu, the samples come from the month in which they were 2.0. For Pang, longitudinal records for this stage stretch from her first through her tenth tapes, ages 1.9 through 2.2. Omitted morphemes in compounds become much rarer at this stage, though examples still occur.

The binary stage distinguishes actions performed by an agents, generally the self, from states, either desires

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experienced, or descriptions of concrete objects which are named or labelled. Essentially there are agent-actions or ego-desires, versus things named. (Table 6.2 presents a breakdown of Teng predicates for Pang, Table 6.3 delineates her sentence categories.) At this stage the most frequent Teng predicate-type is agent - patient process-actions, which account for about 27% of all her Teng predicates. This class includes verbs like kāi "open," chuān "wear," dài "carry," chī "eat," and xǐ "wash." Other agentive actions occur with less frequency. The following is a ranking of the relative frequency of agent-action verbs for Pang's first ten tapes. They are listed from second to sixth.[2] Agent-actions such as, kū "cry," fēi "fly," xiào "laugh," at 8%. 3) Agent-action-location, such as lái "come," qù "go," and qí "ride," 6%. 4) Agent-action-range, composed of compound verbs such as chàng(gē) "sing (a song)," jiǎng(huà) "speak (talk)," and huà(huà) "draw (a picture)," 5%. 5) Agent-action-goals, which express an inward-directed action, and which often require a suffix for the action's completion, also averaged 5%. Examples include mǎi "buy," dǎ "hit," zuò "make," and ná "take." 6) The least-frequent category of action-verbs involved the agent moving a patient to a different location. These totalled 4%, and included verbs like fàng "put" and zhuāng "install."

It is important not to be overly rigid in the importance attached to the frequency-ranking among the various

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types of active verbs used, since there was a good deal of variation in frequency of Teng-types used among the four children, as evidenced in Graph 6.1. There is much greater uniformity across children for stative and process verbs. Lao Hu's most frequent active Teng verb was agent-action-location, as lái "come," and qù "go." These were 22% of his Teng-types, as opposed to 6% of Pang's. While Agent-patient-process actions such as chī "eat," averaged 27% of Pang's early Teng predicates, they were only 6% of Lao Hu's.

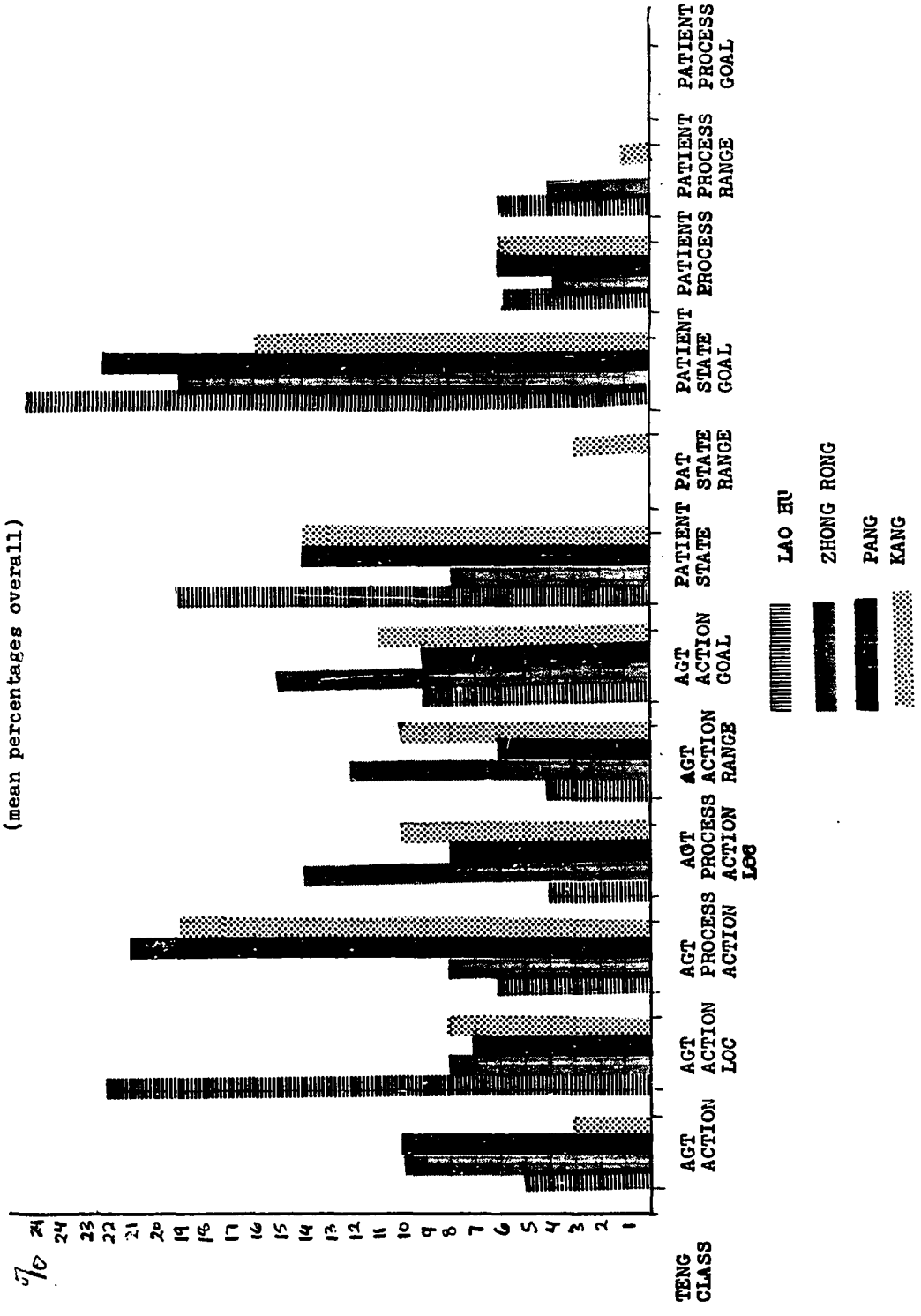
It is difficult to say what caused the variations in relative frequency of verb types among the different children. There is not an exact correlation with age. The home environments were very similar. It is possible that there were personality variables involved, although Pang and Lao Hu were far more similar in personality and speech style than were Pang and Kang. Sex did not seem to be the critical variable; as Pang and Zhong Rong were female, and Lao Hu and Kang were male. It is possible that the topic of conversation on a different session may have influenced the semantic choice of verb types; for example, running play versus playing store. The only clear effect was that the pilot-children and the longitudinal-children's Teng-verb uses resembled the other child in the same sample group more strongly than they resembled their age-mate, pointing to a variable in the speech situation determined by the addressee, and elicitation method. The pilot-children

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GRAPH 6.1

TENG VERB CATEGORIES FOR FOUR CHILDREN

(mean percentages overall)



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TABLE 6.2

TENG PREDICATES - PANG

(as % all Teng verbs. N = number codable)

	TAPE	TOTAL N	AGT-ACTION	AGT-ACTION LOC	AGT-PAT-PROCESS-ACTION	AGT-PAT-PROCESS-ACTION-LOC	AGT-ACTION RANGE	AGT-ACTION-GOAL	PATIENT-STATE	PATIENT-STATE-RANGE	PAT-STATE-GOAL	PATIENT-PROCESS	PATIENT-PROCESS-RANGE	PATIENT-PROCESS-GOAL
PREDICATE STAGE II	1	168	17%	5%	23%	4%	14%	2%	21%	-	13%	-	-	-
	2	71	-	7%	30%	18%	8%	-	8%	-	24%	4%	-	-
	3	134	7%	8%	23%	5%	-	4%	20%	-	32%	-	-	-
	4	135	6%	9%	20%	5%	4%	3%	18%	-	30%	5%	-	-
	5	161	10%	9%	40%	2%	5%	2%	17%	-	9%	7%	-	-
	6	209	17%	2%	28%	3%	3%	7%	15%	-	12%	13%	-	-
	7	163	7%	1%	26%	-	6%	11%	13%	-	26%	4%	-	-
	8	69	6%	-	22%	-	1%	3%	28%	-	37%	3%	-	-
	9	147	4%	3%	27%	1%	3%	10%	17%	-	22%	7%	-	-
	10	93	4%	14%	25%	5%	2%	11%	12%	-	23%	4%	-	-
PREDICATE STAGE III	11	168	7%	5%	27%	11%	2%	3%	17%	-	15%	13%	-	-
	12	108	6%	6%	22%	6%	3%	19%	16%	-	12%	10%	-	-
	13	148	2%	3%	30%	3%	3%	15%	11%	-	25%	6%	-	-
	14	116	1%	7%	22%	5%	6%	9%	7%	-	34%	9%	-	-
	15	108	1%	5%	27%	2%	9%	16%	14%	-	14%	12%	-	-
	16	91	4%	15%	15%	5%	8%	12%	15%	-	19%	7%	-	-
	17	111	1%	14%	13%	11%	12%	12%	5%	-	27%	6%	-	-
	18	190	2%	11%	12%	26%	6%	9%	9%	-	17%	7%	-	-
	19	343	1%	4%	18%	17%	10%	9%	10%	-	28%	2%	-	-
	20	236	5%	11%	6%	20%	9%	15%	11%	-	14%	6%	-	-
	21	141	1%	6%	18%	21%	6%	13%	10%	-	15%	8%	-	-
	22	246	7%	4%	16%	7%	9%	14%	14%	-	16%	11%	-	-
	23	204	7%	8%	26%	6%	7%	4%	14%	-	19%	8%	2%	-
	24	211	2%	6%	23%	13%	7%	8%	8%	-	26%	6%	-	-
	25	377	8%	10%	11%	10%	8%	12%	13%	-	22%	5%	1%	-
	MEAN %		10% (decline r=-.40)	7%	21% (decline r=-.57)	8% (increase r=.44)	6%	9% (increase r=.54)	14% (decline r=-.49)	-	22%	7% (increase r=.31)	-	-

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TABLE 6.3

SENTENCE CATEGORIES - PANG
(as % of all utterances. N = Number Codable)

	TAPE	N	EXPERIENCER STATE	THING STATE	EQUIVALENT	POSSESSOR	EXIST	AGTV	AVP	APV	VP	PV	EXPERIENCER V RANGE	A V RANGE	V RANGE	P V RANGE
PREDICATE STAGE II	1	125	14%	2%	8%	-	-	16%	6%	-	24%	-	2%	-	8%	-
	2	38	8%	-	11%	-	-	-	29%	-	18%	-	7%	-	2%	-
	3	79	11%	-	6%	-	4%	25%	15%	1%	25%	-	-	-	-	-
	4	110	7%	7%	19%	-	3%	14%	16%	-	11%	5%	-	-	11%	-
	5	128	6%	2%	9%	-	7%	14%	20%	1%	32%	4%	5%	-	5%	-
	6	145	14%	4%	17%	-	5%	14%	16%	-	18%	2%	6%	1%	4%	-
	7	110	5%	1%	16%	-	2%	25%	11%	-	20%	3%	2%	-	7%	-
	8	48	4%	-	28%	-	6%	10%	14%	-	10%	6%	8%	-	8%	-
	9	125	10%	-	13%	-	2%	9%	10%	5%	20%	10%	15%	-	2%	-
	10	94	-	1%	20%	1%	8%	12%	6%	-	14%	5%	14%	-	7%	-
PREDICATE STAGE III	11	165	2%	7%	22%	-	4%	10%	3%	-	5%	5%	27%	1%	10%	-
	12	106	5%	7%	18%	2%	4%	3%	7%	-	19%	9%	8%	2%	10%	-
	13	157	1%	4%	19%	1%	1%	8%	6%	-	20%	8%	10%	3%	10%	-
	14	83	2%	6%	24%	-	5%	5%	4%	1%	6%	10%	14%	-	14%	-
	15	105	1%	-	16%	9%	11%	6%	9%	2%	14%	6%	6%	3%	4%	-
	16	137	5%	2%	40%	3%	3%	5%	7%	1%	4%	2%	7%	1%	4%	-
	17	106	8%	1%	6%	2%	2%	13%	10%	1%	12%	3%	9%	2%	13%	-
	18	197	7%	4%	14%	5%	5%	15%	8%	-	6%	3%	8%	10%	2%	-
	19	293	4%	5%	8%	6%	1%	13%	7%	-	10%	1%	8%	12%	14%	-
	20	241	5%	8%	13%	2%	1%	11%	7%	3%	7%	2%	10%	12%	8%	-
	21	126	2%	2%	16%	6%	3%	12%	4%	-	8%	3%	2%	16%	16%	-
	22	206	2%	3%	19%	-	6%	13%	5%	1%	8%	3%	7%	12%	12%	-
	23	163	3%	6%	6%	2%	2%	12%	14%	-	9%	5%	4%	18%	11%	-
	24	192	4%	3%	16%	1%	9%	9%	9%	1%	7%	4%	6%	14%	13%	-
	25	336	3%	7%	12%	-	5%	7%	6%	-	4%	7%	6%	16%	10%	-
	TOT.	3,615														
	MEAN %		5% (decline r=-.60)	3% (increase r=.35)	16%	2% (increase r=.43)	4%	10%	10% (decline r=-.31)	1%	13% (decline r=-.72)	4%	8%	5% (increase r=.89)	8% (increase r=.32)	-

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TABLE 6.4

RELATIVE PROPORTIONS OF ACTION, STATIVE AND PROCESS PREDICATES

FOR THREE STAGES OF PREDICATE DEVELOPMENT

(CALCULATED ACCORDING TO OVERALL MEANS FOR TENG PREDICATE TYPES AS PERCENTAGE OF ALL TENG PREDICATES)

		AGENT ACTION	STATE	PATIENT PROCESS
	Lao Hu	50%	43%	6%
STAGE II				
	Pang	55%	38%	4%
	Pang	61%	32%	7%
STAGE III	Zhong Rong	65%	33%	4%
	Kang	62%	35%	3%
STAGE IV	Kang	65%	31%	4%

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often conversed with me alone. I was not only not a family member; I was also a foreign speaker. I tried to minimize the number of remarks I made so as not to skew the child's response. Therefore, there was relatively little scaffolded, adult-structured speech in the pilot. In the longitudinal studies the child conversed almost entirely with his family and with the Chinese assistant. During taping I stayed out of most speech exchanges, and concentrated on making the contextualization tapes. Therefore the tapes for Pang and Kang are much more typical of highly adult-structured, Chinese child speech, where the child is conversing with a familiar, native-speaker addressee. In both the pilot tapes, and the longitudinal tapes, there was quite a bit of fluctuation among frequencies of usage in the Teng action-verb classes between sessions; even in the among the seven tapes I made in a mere two weeks time for Lao Hu. It may be that Teng-type semantic distinctions among range and goal are not very sensitive indicators of a developmental increase in complexity. The major Teng-distinctions between action, state, and process, however, did show clear developmental changes which were very similar taken across all four children.

Even these reservations, there is no doubt that agentive actions were by far the most frequent predicate type at Stage II (Table 6.4, Graphs 6.2 & 6.3.) Actions accounted for 55% of all Teng-predicates for Pang, 51% for Lao Hu; a very similar overall frequency despite fluctuations within

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the category. The percentage of agentive-action verbs is almost identical if it is calculated according to the sentential criteria detailed in Table 6.3. All agentive-action predicates total 48%; (adding together the means for agent + verb (14%), agent-verb-patient (14%), agent-patient-verb (1%), and verb-patient (19%).) Rigid word order at this stage means that, almost without exception, whatever comes before the action-verb is the agent; and whatever comes after it is the patient which is acted upon. In early speech either the agent or the patient is occasionally omitted in a fully transitive three-term utterance; as in the extremely frequent *wǒ yào Ø "I want" where the object is not specified either contextually or in the utterance. Such errors are much less frequent than in English, however, because of the greater Chinese tolerance for zero anaphora. A predicate of some sort is almost never omitted. Very often the verb is stated alone, without agent or patient; but Chinese noun + noun equivalents of "mommmy sock" are extremely rare. Verb-patient (19%) is somewhat more frequent than agent-verb (14%.) This is because the patient is almost always a more informative bearer of new information in child speech, than is the agent, which is nearly always the child or his hearer. ("Want ball" tells us much more than "I want.") [19]

There is one early construction type peculiar to Chinese which gives additional force to the hypothesis that the child treats all actions as agentive. In Chinese

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the co-verbs for location such as shàng "on," and xià "off," "down," function as full verbs of movement for an animate agent who is changing his own location, as in:

wǒ shàng.le chē "I got on the bus," or:
I on pfv car

Wáwā xiàlái.le "Baby got down off (something.)"
Baby down come perfective

If, however, the sentence describes an agent causing a patient to change location, then a main verb must be selected, and the locatives are onto it or to the end location as post-positions. Such highly transitive verbs of transport very often must take the bǎ object-marker for fronted patient-object.

For example: wǒ bǎ shū fàng "I put the book
I object book put on the table."
zài zhuō.zi-shàng.
be at table on

or wǒ bǎ hé .zi "I pushed the box
I object box up on top."
tuī-shàng-qù-.le
push on go pfv

Very often in such a speech setting, the patient is obvious, or both agent and patient are clear. In that case,

wǒ náxiàlái.le "I took(it) down," or even
I take down come pfv

náxiàlái.le "(I) took (it) down," is a complete sentence.[20]

At the early stages, the children often use the locative co-verbs as full verbs when they describe patients being moved. These utterances sound as though the item is

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agentive and animate, and moving itself rather than being moved.

Example 6.8 Lao Hu Tape 1 (2.0)

(lying in crib, wants crib rail to be pulled down. Imperative, to researcher.)

*Øxià down	.a. particle	*"Down."
*Øxiàlái. down come	.a. particle	*"Get down."
*Øxiàlái down come	.a. particle	*"Get down."
*Øxiàlái. down come		*"Get down."

This sounds as though Lao Hu wants to come down himself, rather than to have the crib rail pulled down. The appropriate verb construction would be náxiàlái "take down," or lāxiàlái "pull down." Zhong Rong produced a similar construction while putting a barrette in my hair. She said *wǒ gěi nǐ Ø shàng. "I'll help you on."
I give you on

This is well-formed, but appropriate only if she had been helping me get onto a bus or a bicycle or some such. To describe a patient movement, she needed a main verb such as dài "wear" (for ornaments), as in wǒ gěi nǐ dài zài tóushàng, "I'll put it on your head to wear."
I give you wear at head on

Clearly, the issue of compounded verbs, omitted morphemes, and word-class relations among full verbs and

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co-verbs, is revealing of the Chinese child's underlying generalizations about sentential relations, as well as his hypotheses concerning agency, animacy, and potency.

Verb selection strategies also support the generalization that children assume all actions are agentive. All four children frequently used the verb lái "come," to mean "bring" when they were moving objects, equivalent to saying "I comed it." Bowerman (1974, 1978) cites this form for an English speaking child; it is impossible to rate how frequent this error is in English, but I would assume it is less frequent than in Chinese, where it is extremely common because of word formation patterns. It is possible to use lái to mean "bring" in Chinese only if one is talking about bringing in some food. Bringing any other object requires a specified verb. Of course, bringing food is an extremely frequent, much commented on, and highly salient event in a child's life. It is a short step from wǒ lái.le tāng, (I come pfv soup) "I've brought in the soup;" to the incorrect *lái qiāng (come gun) *"come a gun," said when asking for a toy gun; or "wǒ zài lái zhūo.zi, (I prog. come table) "I'm coming the table," said as the child dragged the coffee table into the next room. More appropriate verbs are specified, have the lai as a directional complement, or both; as in dàilái, (carry come) or nálái, (take come) or bānjìnlái, (move in come) "bring in," "move in."

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In early speech the strict SVO order strategy means that patients of active verbs always follow the verb, while agents precede it. On a frequency basis this rule works well for the vast majority of the child's speech. A conflict arises, however between order, agency, and the child's assumption that he is always the agent of physical action in which he is named, when he wants to describe another animate agent acting on him as a patient. (Similar conflicts arise for this verb in Kaluli, Schieffelin 1978; and English Bowerman 1979.) The only important early verbs which nearly always pattern in a way opposite to the child's generalization of self as agent are bào "carry in arms" or "hug," and dài "carry" or "take." All four children in the study produced reversed sentences like Zhong Rong's request to be picked up:

Example 6.9 Zhong Rong Tape 8 (2.7)

(wants mother to pick her up)

*Nǐ dài Ø.	*"You carry."
you carry	
*Nǐ dài Ø.	*"You carry."
you carry	
*wǒ dài Ø.	*"I carry."
I carry	

(for Nǐ dài wǒ.)

(The appropriate verb is bào "hold in arms.") The children clearly knew the semantics of who was supposed to carry whom, but the word order and agency linguistic

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patterns were strong enough to produce many instances of their surface form requesting an action opposite in direction to what they wanted. This problem is peculiar to highly-transitive action-verbs where the child is a strongly-affected semantic patient. There is no such problem with putting wǒ "I" in sentence-final position as patient in less semantically transitive situations, such as the object of someone's perception; as in kàn wǒ (see I) "look at me," nor as being the recipiant of a dative or benefactive action. We often get gěi wǒ (give I) "give me," or gěi wǒ cā (give I wipe) "wipe for me." These never appear reversed as *wǒ kàn "I see" to mean "see me," or *wǒ gěi "I give" to mean "give me."

The children clearly prefer to put agent before verb; their few systematic variations of word order come when there is room for debate about whether the object which is acting is the agent or the patient.[21] An example is Lao Hu's variations between: chē.zi zhuāngdào.le (car crash reach pfv) "The car crashed," and zhuāngdào.le chē.zi (crash reach pfv car), "(someone or something) crashed into the car." He alternated back and forth between these many times as he played at dipping a toy car in and out of a cup of water. (The example is quoted in full in Chapter Four.)

The very few early patient-action sentence-orders which

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TABLE 6.5

DEVELOPMENT OF GEI DATIVE AND BENEFACTIVE ~ PANG

(Calculated as percentage of all utterances)

	TAPE	DATIVE		BENEFACTIVE	
		#	%	#	%
STAGE II	1	3	-	1	-
	2	1	-	-	-
	3	5	1%	3	1%
	4	2	-	-	-
	5	2	-	2	-
	6	3	-	1	-
	7	3	2%	2	-
	8	2	-	1	-
	9	8	2%	7	2%
	10	-	-	1	-
STAGE III	11	-	-	-	-
	12	4	1%	7	1%
	13	6	1%	5	1%
	14	4	1%	2	-
	15	1	-	4	1%
	16	2	-	1	-
	17	4	1%	9	2%
	18	6	1%	2	-
	19	35	6%	14	2%
	20	5	1%	19	3%
	21	8	2%	4	1%
	22	6	1%	7	1%
	23	5	1%	8	2%
	24	2	-	10	2%
	25	5	1%	9	2%
TOTAL		122		119	

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occur are early cases of object fronting where a patient is being moved by an agent to another location; as in zhèi.ge fàng zhèi.li, "put this here," "this goes here."
this put here

SECTION 6.4.b STAGE II STATIVES

Stative-verbs are much rarer that active verbs. According to Teng's system, 16% of Pang's Stage II predicates are patient-states such as rè "hot," or gāo "tall;" while 22% are patient-state-goal, or experiencer statives, such as zhīdào "know," or yào "want." By these criteria, 38% of predicates are stative. (For Lao Hu these two categories total 43%.) By the sentential category criteria for statives, which includes copula and yǒu "have," 30% of all utterances are stative. Experiencer-states total 13%, with yào "want" by far the commonest verb. Equivalents are slightly more frequent at 14%; these are nearly all labelling or naming situations such as zhèi.ge shì yí.ge ménmén, "this is a door-ie." Use
this copula one door door

of yǒu "have," to mark possession is almost non-occurring at the early stage. Purely descriptive thing-state sentences like fáng.zi hǎo gāo "The building is very tall,"
building very tall

are much rarer, composing only 2% of Stage II sentential predicates. Favorite early descriptive stative verbs are: hǎo "good," xiǎo "small," piàoliàng "pretty," and kuài "fast," as well as color words. The discrepancy in

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frequency between Teng's category patient-state averaging 16%, and the sentential category, thing-state at a mere 2%, is a result of having a separate coding class for animate-experiencer, while Teng merges the categories. The experiencer is almost invariably the child himself. Yào "want" tòng "hurt," lèi "tired," and guāi "well behaved," are favored experiencer states. This system makes it obvious that almost all of the child's early descriptions apply to himself or to other animate experiencers. Over time, Pang's relative frequency of description for inanimate objects increased at a statistically significant rate ($r = .35$), but almost all of this increase took place after Stage II had ended.

SECTION 6.4.c PROCESS

The Teng system shows very clearly how rare patient-process predicates describing a spontaneous change of state are. Patient-process-range verbs such as shū "lose" or pò(dòng) "break (a hole)"; and patient-process-goal transformations such as biànchéng "become" never occur at Stage II for either Lao Hu or Pang. These verbs remain very rare even throughout even the most advanced Stage IV samples.

Patient-process verbs total 4% of early Pang output, (6% of Lao Hu's.) All of these usages come from the patient-process category which includes verbs like pò "break," kāi "open," diào "fall," and wán "finish."

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All of these are extremely high-frequency items in child usage worldwide. Early patient-processes describe movements or actions which are not only highly perceptible, but which are also almost instantaneous in their time span, and which produce a change of state or location. Because of this, they often occur in past or perfective situations. Early uses include the following for Pang:

(describing a picture of a rainy day)

Xià yǔ.le. "It's rained."
down rain pfv "It's raining."

(picture of boy who fell down)

Diédǎo.le. "Fell down."
fall over pfv

(re broken music box)

Zhè huàidiào.lei. "This broke."
this break off pfv "This is broken."

(re ant)

Tā sǐqiāoqiāo.le. "It's totally dead."
s/he it die pound pound pfv "It's died completely."

(block house falls over)

Fáng.zi dǎo.le. "The house fell down."
house over pfv

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SECTION 6.4.d STAGE II DYNAMIC PROCESSES: MODE, ASPECT, TIME AND MANNER

6.4.d.i MODE

The only mode marked is future potential. This is marked with the modal auxialiary hùi "can," as well as with yào "want," followed by a verb complement, as in wǒ yào tiào "I want to jump." (In Chinese future is conventionally marked with lái "come," which translates into the English future marker "go.") Modal auxiliaries remain rare except in answers to adult questions. For Pang, the only auxiliary productive in her spontaneous Stage II speech is hùi "can." Hùi in isolation, as an answer to an adult question, comes in first; next comes the negative form bú hùi "can't;" also appearing alone in answer to adult questions which require this verb in the answer. Finally hùi and bú hùi appear, more or less simultaneously, with other verbs; as in

zhèi.ge	hùi	diédǎo
this	can	fall over

"this could fall over," in describing a shaky block tower; or

wǒ	hùi	zùo	yí.ge	yóuyǒngchí
I	can	make	one	swimming pool

"I can make a swimming pool."

The pattern of isolated use in answer to a question, appearing before spontaneous use with a complement holds true for the rest of the modals as they emerged for Pang and Kang. This is like the pattern for acquisition of English modals described by Fletcher (1979, 279-283.)

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Question-answer routines seem to be the critical patterning device for modal acquisition. The "quiz style of conversation" for Chinese, with its emphasis on question-answer routines; and the lack of a separate word for "yes" or "no," all facilitate modal acquisition in Chinese. Several other structural factors are important as well: the verb-not-verb question construction highlights modals, while the uniform sentential order for questions and declaratives makes them structurally easy to pattern correctly. (This contrasts with the difficulties English speakers have in reordering them.) Modals are acquired very smoothly in Chinese; there seems to be no problem ordering them, and little difficulty in choosing the modal most appropriate for a given speech situation. Almost all modal problems come from their being used in the main verb slot without a main verb as well. Still, this problem does not show up until more advanced speech in Stage III. Negative-potential is also marked by a negative infix, as in nā.buchūlai (take not out come) "Can't get it out." The affirmative-potential version of this, ná.dechūlái, (take mod. out come) "can get it out" does not appear for almost another year.

SECTION 6.4.d.ii STAGE II ASPECT

While modals are the only markers for unbounded aspect in early speech, the LE particle serves to mark bounded events, both perfective actions and currently relevant states.[22]

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There are two neutral tone particles pronounced /lɤ/ in modern Mandarin; they are written with the same character. Li and Thompson call the phonetic sequence LE, and then proceed to discuss its two functionally separate usages. The verb suffix, transcribed -.le is a perfective marker, as in wǒ chī.le "I have eaten (it,)" "I ate (it.) The
I eat pfv

second use of LE is as a sentence final particle, transcribed le. This particle may follow any part of speech, but its function is to note currenty relevant state, abbreviated CRS. For example, wǒ chī yào.le, "Now I take medicine."
I eat medicine CRS

This implies that in the past I did not take medicine, but now I do. It does not imply that I have just swallowed a dose, merely that I am now in the state of being a "medicine-taker." It is perfectly possible to have both a perfective -.le and a CRS le in the same sentence, as in wǒ chī.le yào le, "Now I've taken my medicine." This might be said in protest if someone offered a second dose. It implies, "I don't need any more now, I've just had a dose." If the sentence is verb-final, only one LE comes at the end. For example, wǒ chī.le "I've taken (some.)" is unclear
I eat pfv/CRS

as to whether only perfective, or both perfective and CRS, are implied. There is a variant of CRS le, the slightly differently-pronounced la. La is generally reserved for situations where warm emotion is being expressed, since it is a combination of le and the general emotional particle a. Wǒ chī.le la! expresses something like "I've taken it, so

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don't go to any more trouble over me."

The children frequently use LE inappropriately in a way which shows a seeming indifference to: past versus future time; imperative versus declarative; realis versus irrealis; affirmative versus negative; and even to the noun versus verb dicotomy. What is it about LE which is powerful enough to overcome these very basic distinctions?

There are several important factors at work. First, there is the homophony, which is even tighter than usual; since Mandarin LE is always neutral tone, rather than being an occasional, de-stressed neutralization of a distinctive citation tone. Secondly, LE always comes after a word, so there is nothing odd about having it come in sentence-final position as well. Most adult LE usages are classifiable as either -le, the verb suffixed perfective; or le, the sentence final particle for currently relevant state.

It is much harder to make this distinction in child speech. More than 99% of the LE's at Predicate Stage II were sentence final. Of the 705 LE's produced by Lao Hu, Zhong Rong, and Pang, on her first ten tapes; 702 were sentence final. In other words, there were hundreds of utterances like tā tiàowǔ.le, "s/he danced." But
s/he dance pfv
there were only three utterances with -.le in the middle of a sentence before a noun. All three of these were repetitions of the same line of a poem Lao Hu recited as his father modeled it line by line: guāpò.le gāng,
blow break pfv jar
"blow the jar to pieces."[23] LE was the only Stage II

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aspect marker for Lao Hu, and almost the only one for Pang.

Notice how the same segment is used in Chinese to mark an inherently stative situation, CRS; as well as the quintessential telic, the completive, perfective aspect. Does this not cause great confusion? The fact is that it does not, because a knowledge of the lexical properties of the verbs used with LE allows the hearer to decide which cases mark a transitive, foregrounded perfective; and which mark a currently relevant state. This purely lexical differentiation is similar to the process which regulates another seemingly paradoxical aspectual marker, the Japanese te-iru verb suffix. Te-iru marks progressive on semantically inherently continuative verbs like "swim" or "dance;" perfect on "instantaneous" verbs like "die," "cut," or "decide;" and stative on the Japanese "Type Four Verbs." These create Japanese stative sentences like "the mountain towers above," or "the road bends."[25]

Given the power of these lexically-based distinctions, and the broad range of usage for Chinese LE, are there any places where LE cannot be used? Perfective -le is used for events which are used as bounded because they are: 1) quantified, 2) specific, 3) the verbs have inherently bounded meanings, or 4) there are other following events. (Li and Thompson, 1981, p.216). Perfective -le may not be used where an unbounded event, an ongoing action, potential with either a modal or a resultative complement linked

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affix, the experiential suffix -guò, negative sentences, or in most imperatives (Li and Thompson 1981, pp. 203-205).

Misuse of the current relevant state particle le is not ungrammatical, but it may be odd in a discourse sense. CRS le marks a speech situation where it is socially expedient to:1) mark a changed state, 2) correct a wrong assumption, 3) report progress so far 4) determine what will happen next 5) reflect the speaker's total contribution to the conversation at that point, and so signal the end of a speech turn (Li and Thompson, p. 244). CRS le is unusual in expository or written language, purely descriptive language, or simple assertion of what happened in the past.

For young Chinese children, -le perfective, and le CRS, are merged as a LE marking a currently relevant bounded incident. The child's ideas of relevance are not always the same as the adult's, and occasionally the desire to mark urgent relevance with le overrides the strictures which require that it only be used for bounded, realis states.

Lao Hu was particularly likely to use LE after a noun in a way which is typically childish, and not good adult Mandarin. He seemed to do this to mark current relevance, usually when he found a lost object, or simply wished to bring it to his hearer's attention. For example:

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Building a block tower:

(imperative, wants researcher to add a block)	Zhèi.ge le. this CRS	"This one!"
(distressed as tower is about to fall)	fáng.zi le. building CRS	"The building!"
(finishes building tower)	Fáng.zi le. building CRS	"The building!"
(showing off blocks)	wǒ dōngxi le. I thing CRS	"My things!"
(pulls stuck Lego blocks apart)	Liǎng.ge le. two CRS	"Two!"
(pretends to be a robot)	*Wǒ ø jīqìrén le. I robot CRS	"I ø robot!"

Because of the addition of a LE, and the lack of a main verb, these sentences sound perfective, something like "It's buildinged," "It's two-ed," and "I've roboted," respectively. And yet, these are better described as marking current relevance, than a true physical change of state. Certainly when the child draws the hearer's attention to the same toys which have been lying on the floor for the whole session, nothing has changed but the focus of the topic of conversation. Each of these aberrant utterances would be well-formed, adult-like, and unambiguous if it contained a verb such as fàng zhèi.ge le "put on this one"; fáng.zi yào dǎo le "the building is about to
put this CRS
building want fall CRS

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fall!" fáng.zi gàihǎo.le "The building is
building build finish pfv

finished;" zhè shì wǒ.de dōngxi.le "these are my
this copula I poss thing CRS

things!" biànchéng.le liǎng.ge.le "it became two pieces"
become pfv two CRS

and wǒ shì.ge jīqìrén.le "I'm a robot!"
I copula robot CRS

The lack of an auxiliary to mark potential means that imperatives marked LE sound perfective, as though they were completed in the past rather than being requests for future action. Thus when the child holds out the jump rope and commands, *tiào.le (jump perfective), the words she has produced unambiguously mean "(you've) jumped." Yet neither she nor her hearer has the slightest doubt that the action has not yet taken place, that the utterance is an imperative rather than a declarative; and that her hearer had better jump quickly according to the intended meaning rather than the surface meaning, and comply.[26]

A similar situation obtains with negatives when the child's linguistic emphasis on the relevance and boundedness of a situation overrides the strictures against marking a negative, unrealized, state with the perfective marker for achievement. Order effects are very important here, since sentence final LE is so common that it is hard for the child to countermand its use and leave it off. For example:

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Example 6.10 Pang Tape 5 (2.6)

(researcher's tape recorder which Pang is playing with)

Baojane	Huài.le méi yǒu?	"Has it broken or not?"
	break pfv not have	
Pang	*Hái méi yǒu.le. ≈	"Not yet."
	still not have pfv/CRS	"Not yet-ed."

The proper answer here is hái méi yǒu, "(it) still hasn't," "Not yet." Hái "still," marking durative aspect, explicitly contradicts a -le perfective. Adding the perfective makes it seem like the event has already happened, while the negative denies this possibility. All four children produced this error type many times. Pang was strongly influenced by the very common phrase méi yǒu.le (not have perfective) meaning "it's disappeared," or "all gone," "there isn't any more." It is appropriate for describing drinking the last of one's milk, using up the last of one's paints, finishing a story etc. All four children also used it in their reply to questions with experiential yǒu "have (done)," as in nǐ tiàowǔ.le (you dance pfv) méi yǒu? (not have) "have you danced or not?" *wǒ méi yǒu.le, which sounds like "I'm all gone" or "I've disappeared."

Another bad -le use also violates the strictures against marking perfective with negative, as well as against perfective with potential:

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Example 6.11 Pang Tape 5 (2.0)

(picture of Thumbalina riding a butterfly)

Wǒ yào zuò húdié.	"I want to ride (a/the)
I want ride butterfly	butterfly."
*Bú huì diēdǎo.le	*"Couldn't falled off."
not can fall over pfv	

(For general discussion of acquisition of negation in Chinese see Li 1981, also examples by Chao 1973, pp. 20- 33.)

These usages of LE point to the overriding importance of lexical and discourse factors, as opposed to syntactic functors in early child Mandarin.

Nevertheless, most perfective marking is well-formed and appropriate. In addition, the child at Stage II is frequently able to mark completion with a -hǎo (good) or -wán (finish) complement on the verb, which is then followed by -le, as in jiǎngwán.le "(I've)" finished speaking," or
speak finish pfv

huàhǎo.le "(I've) finished drawing (it)."
draw good perfective

Directional complements describing a vector of motion, particularly downward motion, appear, as in
diàoxiàlái.le "fell down." Complements forms
fall down come pfv

for end result, and end location, are not productive at this stage.

Interestingly, the children do seem to be able to distinguish the complements which are nominal, jiǎnghuà "speak

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talk," "to speak." The children do not ever follow an incorporated verb complement (verb+range), with a noun patient, as in *wǒ jiānghuà yīngwén "I speak-talk English," or *wǒ chīfàn miànbāo "I eat-rice bread." (I speak talk English; I eat rise bread)

Such errors are extremely common among foreign speakers of Chinese, and are very jarring to native speakers. Even the very youngest Chinese children have a sensitivity to nominal complements as opposed to verbal ones, and they are unfailing in deleting these when using a full noun-patient rather than incorporated object complement. It is mysterious that young children should have such excellent control over which verbs are grammatically transitive, and which intransitive; but this mastery seems to hold true for English-speaking children as well Chinese. Maratsos and Chalkley (forthcoming) note that such errors are extremely rare for English.

As for durative aspect, while Lao Hu did not mark any progressives, Pang did mark a few with the zài "be at," pre-verbal, progressive marker. She produced nine such progressives in her first 10 tapes. They all were well-formed. While most of them were simple phrases like zài shuìjiào (prog sleep) "is sleeping," some were fully formed sentences, the most complex of which was zhè xiǎo wáwa zài dǎ diànhuà (this little baby prog make telephone) "this little baby is making a telephone call," which she produced on her tenth tape at age 2.2. While the hái

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"still," "also," adverb can mark durative aspect, as in wǒ hái yào tiào "I still want to dance;" the same word is used to describe additional objects as in wǒ hái yǒu (I also have) hěn duō xiǎo māo (very many little cat) "I also have a lot of kittens."

Uses of the hái "also," meaning outnumber the durative hai "still," meaning was three by to one (28 to 9) in Pang's first 10 tapes.

The overall trend indicated by this early aspectual marking is a split between potential marked with modals; and a combination of current-relevance and perfective with LE to mark bounded events. Completion is marked quite reliably. Although the most marked, predominant, aspect is perfective; a few duratives do occur. These are all progressives in the transitive, main story-line, zài form; rather than in the alternative, -zhě backgrounded, progressive form.

SECTION 6.4.d.iii TIME

Time is almost unmarked in Stage II. Lao Hu used only one overt time marker in his whole corpus, yǐjīng "already." This was in a spontaneous imitation of my saying yǐjīng (already) gòu.le (enough pfv) "that's already plenty," as he continued to unwrap five or ten bars of soap. Pang produced two xiànzài "now," five děngyíxià "wait a second," one xiān "first," and one míngtiān "tomorrow" which was an imitation; for a total of nine time markers in her first ten tapes. All of these mark the time of an

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event rather than its duration; all sounded appropriate, and were well-formed.

SECTION 6.4.d.iv MANNER

Manner adverbials were similarly limited to sixteen uses of zhèi.yang "like this," and one imitative use of kuài "quickly," "soon," in kuài qù jiǎn tóufa "go to
quick go cut hair
cut (your) hair soon." There were no instances of forward or backward clause-linking elements such as yǐhòu "after," yǐqián "before," kěshì "but," or yīnwèi "because." There were a dozen uses of jiù "just," but they were all used in naming and defining objects rather than to mark series of events.

As for co-verbs, there were some uses of zài "be at" for static location; 30 uses of gěi "give" which were dative, as opposed to 16 benefactive. The dative uses were earlier (see Table 6.5). Gēn, "with," appeared only in imitation, as in gēn pó qù "go with Granny." It is
with Granny go
also equivalent to English "and;" but it occurred only once in this usage, also in imitation, in yā gēn jī
duck and chicken
.ma! "ducks and chickens!"
empatic particle

It is important to note that the Chinese language does not favor sentences with conjoined subjects or predicates; compound sentences are rare. What sound like "basic" European sentences like "the ducks and pigs danced," or the "ducks swam and played," become two or more clauses or series of actions in Chinese. Multiple activities are

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spread out over several clauses or sentences. Phrases like English "ran and played" are differentiated in Chinese as a sequential series of actions like "ran and then played" or are marked explicitly as being simultaneous with one of the actions backgrounded. It is very deceptive to take European complex sentences, and relative clause forms, as being universal syntactic structures, and to look for literally translated Chinese equivalents. The metrics for Chinese complexity show up at other levels of linguistic patterning. It is even more dangerous to posit language-specific syntactic devices as primary mental categories.

The most important Chinese device for complex description is the serial verb construction. For Pang at Stage II, serial verbs were overwhelmingly most likely to be complements of the verb yào "want," as in wǒ yào chī yì kǒu "I want to eat a bite." (74 out of 123 serial verbs.) The next most frequent set of serial verbs were the gěi "give" benefactives, as in gěi tā bāng biàn.zi "tie up her braids for her." (18 uses.) There were six instrumentals with yòng used as in yào yòng yào.shi dǎkāi "want to use a key to open it." There were a handful of other usages such as goal, nǐ huàhuà kàn "just you go ahead and draw and see what it is," and

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location . . Jiejie dai wo qu shang-xue, "Elder
elder sister take me go on school

sister takes me to start school."

As for sentence final particles, both Pang and Lao Hu used a fair number of them (a, ma .ye) almost interchangeably to express emotional warmth and enthusiasm; rather than contrastively to form questions (with .ma), to warn (with .ou or lou), to mark obviousness or emphatic (.ma, or .le .ma). Sentence final le to mark currently relevant state was frequent (84 uses for Pang.) These are conflated with the uses of -le perfective with which it is homophonous, and with which it is distributionally identical in early speech, since it always comes sentence finally, usually after a verb. It is difficult to say that any of the uses of current relevant state le or the other particles truly inappropriate in a discourse sense, since, to the child every utterance is potentially both relevant and charged with emotional warmth.

However, the lack of occurrence for the more grammaticalized particles, .ma questions, and .ne, which places an utterance in a continuing series of remarks, is evidence of undifferentiated use. So is the complete absence of the topicalizing particles .ho, .ou, .a, and .ne, which come after a sentence-initial topic to highlight it and set it off.

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SECTION 6.5 STAGE III TRINARY SYSTEM: ACTIONS, STATES, CAUSES AND ENHANCED TRANSITIVITY

SECTION 6.5.a

OVERVIEW OF STAGE III

As the child approaches the age of two-and-a-half, there is a great increase in the variety and complexity of what he is able to say. By this time the child is able to produce quite fluent multi-word utterances with few striking constraints on the length of the utterance. Vertical constructions (Scollon 1976) in which the components of a single sentence are spread out over several utterances, decrease dramatically in frequency. The child is able to produce many fully transitive sentences which include agent, action and patient. He is no longer hampered by stringent length constraints requiring a choice between stating either agent or patient, but not both in the same utterance. As the major sentential relations become more reliably marked, word order is no longer so strictly constrained to SVO. The child begins to experiment with sentential re-ordering with and without the bǎ fronted object marker. The predicate system is now divided three ways into actions, states and causatives.

All of these developments converge in giving the child a heightened awareness of the directionality of actions and the effects of actions on patients. There is a burgeoning use of causative constructions at this stage. He may mark patient-processes causatively. There is also a strong

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tendency to double mark highly transitive actions with redundant: bǎ object markers, gěi "give" datives and benefactives; directional markers; resultative complements; and perfective -le. This cluster of strategies can be subsumed under the label "enhanced transitivity." This is the most experimental stage of child Chinese speech, the stage at which the error rate rises from a previously low level and remains rather high before gradually declining after age three.

The children whose speech falls into the Stage III category of enhanced transitivity are: Zhong Rong, who was taped from age 2.6 to 2.8; Pang from tapes 11 through 25, age 2.3 through 2.11; and the [illegible]y Kang tapes one through seven, for age 2.10 through 3.2. (Kang's early tapes are somewhat less advanced than Pang's latest ones, and all very similar in type and complexity to Zhong Rong's.)

SECTION 6.5.b ACTIONS

At predicate Stage III, usage of active verbs increases for all the children in terms of: percentage of predicates active, variety of different verbs used, and, most importantly, in the variety of verb complementations used. The semantic range of possible agent types increases greatly. While active verbs comprised 52% of all Teng predicates at Stage II (55% Pang, 50% Lao Hu), at Stage III they average 64% of all predicates (61% Pang, 65% Kang,

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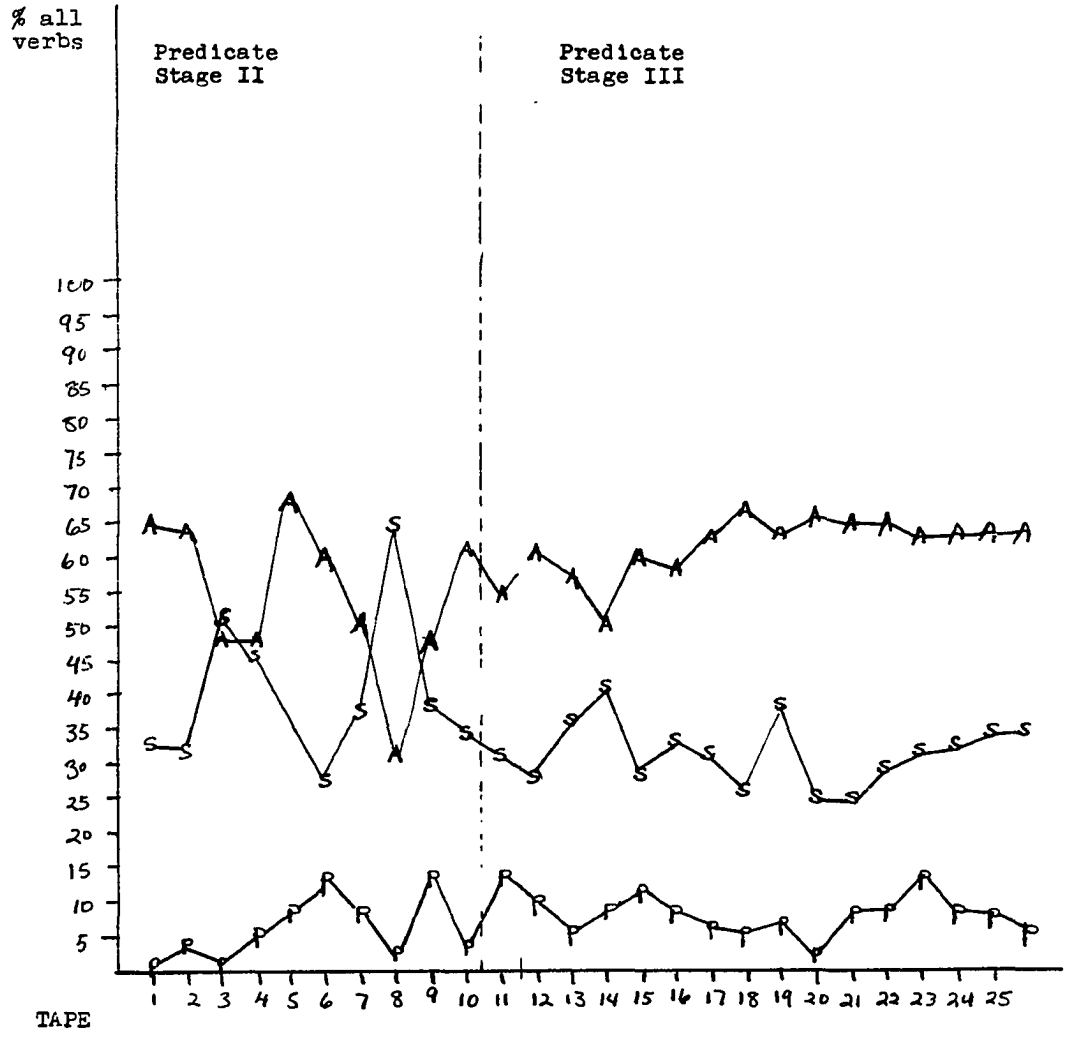
67% Zhong Rong.) (See Graphs 6.2 and 6.3; Tables 6.2, 6.3, and 6.6, 6.7, also Tables 6.8 and 6.9.)

Not all types of active verbs show an increase. Intransitive actions like kū "cry," and pǎo "run," where no location or direction is marked, show a statistically significant decline for Pang, a drop from 8% at Stage II to 4% at Stage III. The number of such predicates levels off around this level, since Kang's rate for this group is constant at 3% through his whole corpus. Agent-action-location verbs such as zhàn "stand," or qù "go" show a slight decline, while there is a major increase for agent-patient-process actions such as zhūang "install," fàng "put," and pái "line up." Previously these actions were frequently not marked with verbs, but with the locative zheli "here," used alone. Agent-action-range, that is verbs with incorporated object complement like jiǎnghùa "speak," show a slight but not significant increase. This indicates that by Stage III compounded verbs are accessible enough to the child that compound form alone is not enough additional complexity to deter usage, as compared to the other predominantly non-compounded verb forms. There is a decline in relative frequency of agent-action-patient-process, such as qīe "cut," tūo "remove," and mài "sell," which express movement away from the agent (r = -.57). This decline is compensated for by a significant increase in agent-action-goal verbs (r = .54), such as mǎi "buy," zhǎo "look for," ná "get," and

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GRAPH 6.2

ACTION, STATE AND PROCESS VERBS - PANG
(according to Teng classes)



A A A = Action verbs (Teng clases 1-6) r = .20 (not sig.)

S S S = Stative verbs (Teng classes 7-9) r = -.35

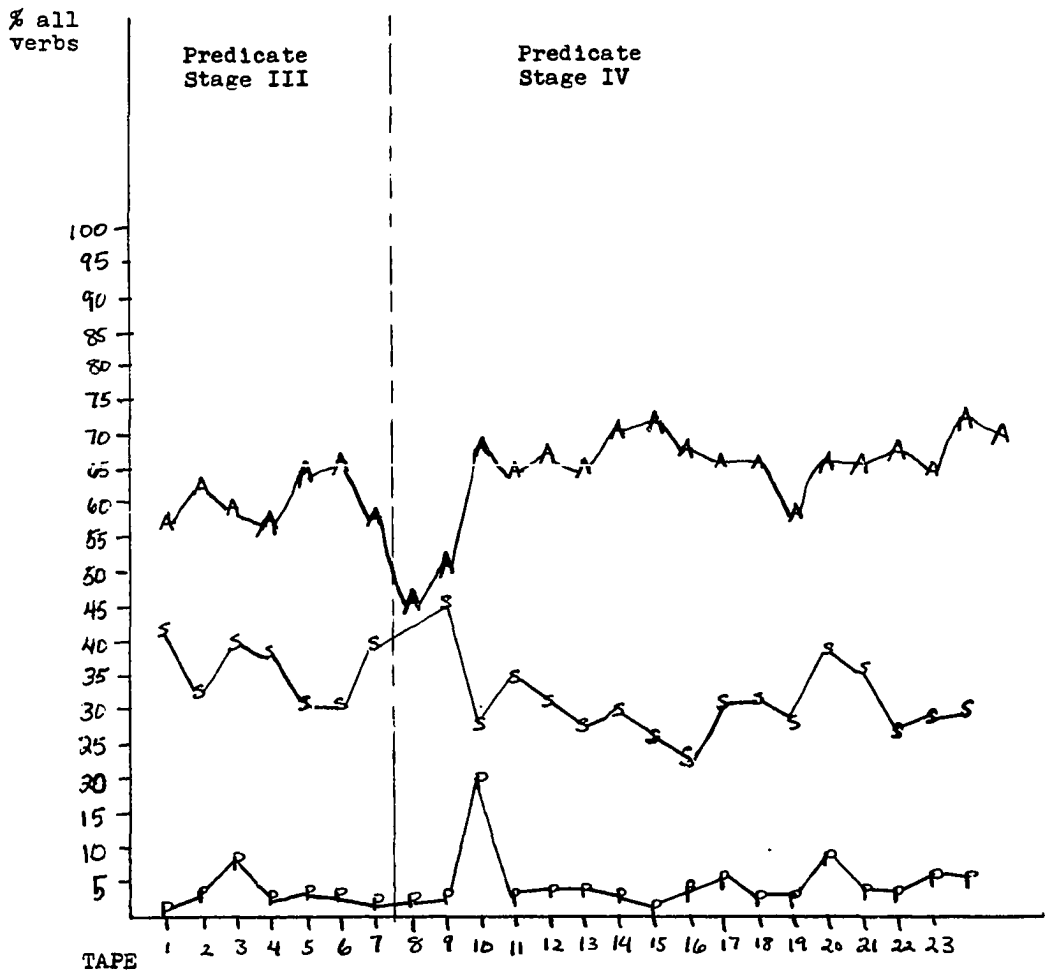
P P P = Process verbs (Teng classes 10-12) r = .27 (not sig)

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GRAPH 6.3

ACTION, STATE, AND PROCESS VERBS - KANG

(according to Teng Classes)



A A A = Action verbs (Teng classes 1-6), r = .45

S S S = Stative verbs (Teng classes 7-9) r = -.54

P P P = Process verbs (Teng classes 10 - 12) r = .006

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TABLE 6.6

TENG PREDICATES - KANG

	TAPE	TOTAL N	AGENT-ACTION	AGT-ACTION-LOC	AGT-PAT PROCESS-ACTION	AGT PAT PROCESS-ACTION LOC	AGT-ACTION-RANGE	AGT-ACTION-GOAL	PATIENT-STATE	PATIENT-STATE-RANGE	PAT-STATE-GOAL	PAT-PROCESS	PAT-PROCESS-RANGE	PAT-PROCESS-GOAL
PREDICATE STAGE III	1	133	5%	11%	11%	5%	11%	14%	28%	-	15%	-	-	-
	2	425	5%	8%	25%	10%	6%	9%	13%	1%	20%	3%	-	-
	3	193	2%	10%	24%	11%	4%	10%	12%	-	19%	8%	-	-
	4	234	3%	6%	24%	7%	9%	8%	20%	1%	18%	4%	4%	-
	5	302	3%	11%	15%	20%	4%	12%	12%	1%	18%	4%	-	-
	6	237	3%	7%	22%	12%	9%	14%	14%	3%	14%	3%	-	-
	7	344	1%	9%	15%	18%	4%	15%	16%	5%	19%	2%	-	-
PREDICATE STAGE IV	8	311	1%	4%	17%	8%	-	11%	14%	-	39%	2%	-	-
	9	172	4%	10%	22%	9%	4%	4%	19%	-	19%	9%	10%	1%
	10	270	1%	7%	30%	9%	3%	8%	9%	2%	24%	2%	-	-
	11	371	2%	7%	22%	9%	8%	16%	12%	3%	17%	3%	-	-
	12	352	5%	7%	29%	8%	9%	16%	22%	3%	3%	5%	-	-
	13	364	8%	7%	24%	4%	11%	7%	13%	3%	14%	4%	-	-
	14	354	3%	6%	11%	18%	11%	12%	10%	2%	14%	4%	-	1%
	15	334	3%	3%	18%	8%	11%	21%	16%	7%	1%	3%	-	1%
	16	228	3%	10%	13%	17%	24%	17%	9%	4%	18%	1%	-	-
	17	267	3%	6%	18%	10%	11%	14%	11%	1%	20%	2%	-	-
	18	271	2%	6%	24%	11%	12%	18%	10%	4%	15%	4%	-	1%
	19	393	3%	5%	19%	11%	15%	8%	13%	3%	22%	2%	-	-
	20	310	5%	11%	21%	6%	7%	13%	14%	2%	15%	3%	-	1%
	21	313	2%	8%	22%	10%	15%	7%	11%	3%	13%	8%	-	-
	22	405	6%	7%	17%	11%	10%	13%	17%	2%	12%	3%	-	-
	23	385	8%	11%	24%	10%	7%	20%	16%	2%	11%	4%	-	-
	MEAN	%6968	3%	8%	19%	10%	10% (increase r = .33)	12%	14% (fall r=-.30)	3% (increase r = .40)	15%	7%	1%	-

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TABLE 6.7

SENTENCE CATEGORIES - KANG
(as % all utterances)

	TAPE	N	EXPERIENCER STATE	THING STATE	EQUIVA-LENT	POSSESS	EXIST	AGT VERB	AV PAT	APV	VP	PV	EXPERIENCER V P	A V RANGE	V RANGE	P V RANGE
PREDICATE STAGE III	1	102	2%	4%	20%	1%	5%	7%	6%	1%	16%	5%	7%	8%	14%	-
	2	290	4%	3%	8%	-	3%	11%	8%	-	12%	2%	14%	10%	14%	-
	3	167	9%	-	17%	1%	2%	9%	11%	-	5%	7%	13%	12%	12%	-
	4	207	2%	5%	19%	-	5%	6%	4%	-	7%	4%	10%	12%	15%	-
	5	243	5%	4%	13%	2%	6%	13%	3%	-	5%	5%	12%	11%	12%	-
	6	205	2%	7%	12%	1%	5%	13%	3%	-	12%	3%	7%	18%	8%	-
	7	293	3%	8%	5%	2%	10%	6%	5%	2%	7%	5%	10%	13%	17%	-
PREDICATE STAGE IV	8	217	17%	2%	11%	1%	3%	3%	4%	5%	3%	4%	17%	12%	11%	-
	9	279	3%	8%	9%	4%	6%	8%	9%	2%	7%	6%	8%	22%	11%	-
	10	284	6%	2%	40%	1%	6%	8%	4%	1%	8%	3%	8%	14%	16%	3%
	11	382	4%	5%	16%	2%	5%	6%	3%	1%	2%	3%	12%	19%	18%	-
	12	432	4%	3%	22%	2%	7%	7%	3%	1%	6%	2%	9%	21%	12%	-
	13	358	3%	3%	12%	-	3%	4%	3%	1%	6%	6%	12%	10%	21%	1%
	14	358	1%	5%	16%	-	4%	4%	5%	-	9%	8%	7%	18%	16%	-
	15	361	2%	3%	13%	-	2%	4%	3%	2%	10%	8%	14%	18%	13%	-
	16	272	3%	4%	9%	1%	4%	4%	3%	1%	7%	2%	17%	16%	24%	1%
	17	247	3%	4%	17%	-	11%	2%	4%	-	12%	4%	12%	14%	14%	-
	18	264	2%	6%	18%	2%	7%	6%	4%	-	11%	5%	9%	13%	12%	1%
	19	326	3%	11%	10%	-	7%	5%	3%	1%	9%	13%	10%	12%	10%	-
	20	236	-	5%	24%	2%	6%	5%	2%	2%	9%	5%	9%	17%	19%	1%
	21	256	1%	4%	4%	-	4%	9%	4%	2%	9%	10%	5%	13%	24%	-
	22	307	2%	5%	11%	-	6%	8%	6%	3%	4%	5%	7%	22%	12%	-
	23	290	4%	3%	11%	1%	4%	6%	4%	1%	7%	7%	8%	20%	16%	-
	TOT.6,376															
	MEAN %		4%	4%	15%	1%	5%	7%	5%	1%	8%	5%	10%	15%	16%	.3%
			(decline r=-.33)					(decline r=-.42)	(decline r=-.42)		(increase r=.44)			(increase r=.55)	(increase r=.31)	

TABLE 6.8

SENTENTIAL CATEGORY FREQUENCY FOR PANG AND KANG

		PANG	KANG
1.	EXPERIENCER-STATE	5% (falling)	4% (falling)
2.	THING-STATE	3% (rising)	4%
3.	EQUIVALENT	16%	15%
4.	POSSESSOR	2% (rising)	1%
5.	EXISTENCE	4%	5%
6.	AGENT-VERB	15%	7% (falling)
7.	AGENT-VERB-PATIENT	10% (falling)	5% (falling)
8.	AGENT-PATIENT-VERB	1%	1%
9.	VERB-PATIENT	13% (falling)	8%
10.	PATIENT-VERB	4%	5% (rising)
11.	EXPERIENCER-VERB + X	8%	10%
12.	AGENT-VERB-RANGE	5% (rising)	15% (rising)
13.	VERB-RANGE	8% (rising)	16% (rising)
14.	PATIENT-RANGE	-	.5%

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TABLE 6.9

SENTENTIAL CATEGORIES RANKED BY FREQUENCY

	PANG			KANG	
1.	EQUIVALENT	16%	1.	VERB-RANGE	16%
2.	AGENT-VERB	15%	2.	EQUIVALENT	15%
3.	VERB-PATIENT	13%	3.	AGENT-VERB-RANGE	15%
4.	AGENT-VERB-PATIENT	10%	4.	EXPERIENCER-VERB-RANGE	10%
5.	EXPERIENCER-VERB-RANGE	8%	5.	VERB-PATIENT	8%
6.	VERB-RANGE	8%	6.	AGENT-VERB	7%
7.	EXPERIENCER-STATE	5%	7.	EXISTENCE	5%
8.	AGENT-VERB-RANGE	5%	8.	AGENT-VERB-PATIENT	5%
9.	EXISTENCE	4%	9.	PATIENT-VERB	5%
10.	PATIENT-VERB	4%	10.	THING-STATE	4%
11.	THING-STATE	3%	11.	EXPERIENCER-STATE	4%
12.	POSSESSOR	2%	12.	AGENT-PATIENT-VERB	1%
13.	AGENT-PATIENT-VERB	1%	13.	POSSESSOR	1%
			14.	PATIENT-RANGE	.5%

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dǎ "hit." In this category of verbs, action is directed inward toward the agent. Most lexical causatives and verbs of creation such as zuò "make," nòng "do," "cause;" and gài "build" come in this class. Because of this, the increase in this category denotes the rising importance of causatives as a category in child speech.

Use of spontaneous patient-process-actions such as

zhèi.ge diàoxiàlái.le
this fall down come pfv "this fell down," expands to

include spontaneous processes which are not changes of posture or location. Very prominent among these verbs is liú "flow" which seems to be the trendsetter for marking spontaneous process-actions for all three older children. For example: tā liú yǎn lèi "She is flowing tears"
s/he flow eye tear

"she is crying;" or liúxiě.le "(it) flowed blood"
flow blood pfv

"it bled." Pang jokingly referred to a pair of scissors with red nail polish stains on it as liúxiě.de
flow blood mod

jiǎndāo "blood-flowing scissors," "bleeding scissors."
scissors

In Chinese liú "flow" is also the verb used for describing drooling mouths and running noses, both objects of much discussion in the young child's life. Around age 2½ all the children could refer to to this patient-process as in: nǐ liú bítì "you flow mucus" "you have a runny
you flow mucus

nose," "your nose is running," and tā liú.le kǒushuǐ
s/he flow pfv mouth water

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"he flowed mouth water," "he drooled," "his mouth watered." Notice how in English these are all lexicalized as actions, although use of the gerund or "have" form indicates that we consider them less than high in transitivity. In Chinese, the patient-process construction indicates this quality of involuntary action without passive or active verb voice. The verb liú "flow," is frequently over-extended by Chinese children. One three-year-old described a tube with salve coming out of it by saying, liúxiě.le
flow blood pfv
"(it) flowed blood," "(it) bled." Kang used the same construction to refer to a leaky ball point pen in answering his mother, when she asked him why he had ink all over his hands. However, as none of the other process-action verbs was yet productive at this stage, liú seems to be the proto-form.

At Stage II the agent of an action was likely to be either a personal pronoun or to be left unmentioned. At Stage III agent is named quite reliably, and includes, besides pronouns, many names of people, animals, vehicles, and natural objects such as wind, water and clouds.

Verb complements are much elaborated (see Chao 1968, pp. 440-447 for discussion). Direction of action is much more likely to be specified with a directional complement other than -xiàlái down than it was at Stage II. Frequently used directional complements include:

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1) -qǐlái as in zhànqǐlái "stand up;"
rise come stand rise come

niánqǐlái.le "stuck on," and guānqǐlái
stick rise come pfv close rise come

"close up."

2) -chūlái as in dàochūlái "pour out,"
out come pour out come

tiàochūlái "jump out," and liúchūlái
jump out come flow out come

"flow out."

Qǐlái and chūlái can be used alone as full verbs to mean "to arise" and "to emerge," but at this age they only occur as directional complements. Qǐlái "arise," and chūlái "emerge," are often used to express emergence of abstract or natural states, just as they are in English. As full verbs they are associated with impersonal and patient-process constructions. These are beyond the competence of the young child.

Negative directional complement forms are common as in dàobùchūlái "can't pour it out," "I'm pouring but I can't pour it out." Other directional complements are rare until after the age of three. These later forms tend to specify direction of action away from the speaker or toward him, as in mǎihuílái "buy and bring back,"
buy back come

zhuāngjìnlái "put in" (toward the speaker, as toward
put enter come

him in a cave), zhuāngjìnqu "put in" away from the
put enter go

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speaker, as in a trunk or a mailbox. End location, as in dàishàng qù "carry it on" (away from the speaker), is not
carry on go

commonly specified at Stage III.

While Stage II actions did have ending marked with -wán "finish," or -hǎo "good," at Stage III complements for completed action, successfully perceived action, arrival, and result, all start to develop. The -diào "off" "away" complement expresses action away from the source-location or state; it frequently is associated with irrevocable change or completion as in huàidiào.le
bad off pfv

"spoiled" "broken;" lándiào.le "rotten out;"
rot off pfv

duàndiào.le "broken off," bádiào.le "peeled off."
break off pfv peel off pfv

It is frequently used. This construction is strongly associated with Teng-class agent-patient-process-action.

In Chinese the distinction between an attempted action and its completion may be marked by the arrival complement-suffix dào "reach" "arrive" for general situations; and jiàn for verbs of perception. For example zhǎo alone means "search for," while zhǎodào means "to find," and
search arrive

zhǎodào.le means "has found." Kàn alone means
search arrive pfv

"to look," while kànjiàn means "to see." At Stage
look perceive

III the children become very active and accurate in marking successful actions for both completion and result. Where

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they previously relied on the -le perfective alone, they now use resultative complements as well. As with directional complements, they are able to mark unsuccessful attempts like tīngbujiàn "listening but can't hear," before they can explicitly mark positive but unrealized ability, as in tīngdejiàn "listening and able to hear." The perception complement-type is strongly associated with Teng-predicate type agent-action-goal.

tīng	de	jiàn
listen	mod	perceive

Early verb choices were quite limited in variety of verbs used, and simple in form; but the actual verbs selected were almost always appropriate. Along with the blossoming of verb vocabulary and complement forms used, comes a very sharp increase in errors of verb choice.

Stage III, with its intensive analysis of verb formation and complementation, and very rapid acquisition of new verb vocabulary, is the golden age for coined verbs. Most of these are actions with unorthodox range or directional complements. Discussion of causatives and resultative complements is considered in section 6.5.d below on causatives. Table 6.10 give examples of coined verbs.

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TABLE 6.10

COINED VERBS

Zhong Rong (2.8) (pages of book stuck together)

*Fān.buhùi shū. *"turn not can book."
turn not can book

for: bú hùi fān shū
not can turn book

Pang (2.3) (bumps head on table)

*pèngtóu.le *"(I've) bump-headed."
bump head pfv

Kang (2.10) (trying to burst balloon)

*wǒ bú hui pengfang. *"I can't bump-put(it)"
I not can bump put

(pushing at balloon)

*Àndiao. *"press off."
press off

for: ànpò "press and break it."
press break

Kang (3.2) (re toy train)

*Hai keyi zhuanzou. *"It can still turn-go."
still can turn go

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SECTION 6.5.c STATIVES

Experiencer-states (Teng patient-states-goals) such as zhīdào "know," yào "want," and pà "fear," show a decline in both their percentage as Teng categories and as sentence types. The decline begins in Stage III, and continues beyond through Stage IV as well. There is no decline in absolute frequency; but the great growth spurt for differentiated action verbs, and the beginning use of spontaneous patient-processes means that the share for experientials is relatively smaller. During Stage III these predicates are much more likely to be part of complex sentences than to be used alone as answers to adult questions. For example, at age 2.7 Pang said: wǒ yào tiē zhèi.ge "I want to stick this on," and then: wǒ yào tiēqǐlái, búrán xiě huì liúchūlái. "I want to stick (it) on, otherwise (the) blood can flow out." She was sticking a little decorative sticker of a flower on the back of her hand, and pretending it was a bandaid. At Stage II she would only have said, tiē zhèi.ge "stick this on," or yào tiē "want to stick (on)." The inventory for the experiencer class expands to include: wàngjì "forget," xiāngxìn "believe," dǒng "understand," and xiǎng "think" "plan."

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Teng patient-states at Stage III include both experiential statives, like lèi "tired" and tòng "ache," as well as general descriptive statives which take non-human subjects such as wéixiǎn "dangerous," mǎn "full," ruǎn "soft," chòu "stinking" and píng "flat." The relative decline in frequency for experiencer-states is strong enough to bring about a decline in relative percentage of Teng patient-states overall. Looking only at stative verbs which are purely descriptive rather than experiential as tallied in the sentential category "thing-state," we find an opposite trend, a statistically significant increase. This is an indicator of the child's moving beyond descriptions of his own inner experience and desires, to include descriptions of objects and things beyond himself. These descriptive statements often seem to be satisfying to the child to repeat as very extended spontaneous substitution drills. At age 2.5 Pang looked through an animal picture book rhythmically changing the sentence frame, hǎo duō X, "lots of X." Repeating the frame, she
very many

substituted in the nouns for: window, ice cream, candy, hats, cats, noses, doors, horses, fish, birds, kittens, and ducks. She then came to the end of the book, and said with satisfaction wán.le "(It's) finished."
finish pfv (I've)

In most sentences patient-states need to be put into a specifically stative construction in the form:

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shì stative + -de
copula modifier/nominalizer

As in: zhè shì hóng.de
this is red mod/noun

"This is a red one." If this construction form is not followed, the hearer does not know the form class of whatever comes after the copula, and the statement will not be understood. Nominals usually follow copula, so stative verbs must be nominalized with the -de suffix.[28] Chinese children have great difficulty remembering to include both parts of a grammatical pattern if the two parts are separated by an intervening element. This supports the Slobin (1973, p. 200) operating principle "avoid discontinuities." All of these factors worked together to produce this misunderstanding:

Example 6.12 Pang Tape 15 (2.6)

(Pang is playing with orange clay mixed with blue)

Pang	*Zhè dōu shì hóngØ This all cop. red .ei. particle	*"This all is red."
Baojane	Há?	"Huh?"
Pang	*Shì hóngØ .ei. cop. red particle	*"(It) is red."
Baojane	Hóng .a? red particle	"Red?"
Pang	HóngØ .ei. red particle	*"Red."
Baojane	Há?	"Huh?"

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Pang	Shì hóngØ .ei. cop. red particle	*"Is red."
Baojane	Nà shì shén.me? That cop what	"What is that?"
Pang	HóngØ. red	*"Red."
Baojane	Hóng .a. red particle	"Red. huh."
Pang	(not satisfied) HóngØ .ei. red particle	*"Red."
Baojane	Nǐ shuō shén.me? Wǒ You say what I tīng.budǒng, hear not understand ei. particle	"What are you saying? I don't understand."
Pang	*Shì hóngØ.	*"Is red."
Baojane	(glosses correctly at last) Nǐ shuō nà shì You say that cop. hóng.de .a? red nom particle	"You say that 'that's a red one'?"
Pang	(satisfied, changes subject using modelled grammatical form) Um. Wǒ bǎ hóng.de Uh-huh I obj red nom. bádiào. peel off	"Uh-huh. I'll peel off the red one."

Omitted -de is the second most frequent error type for both Pang and Kang; most of the omissions are in shì.... -de descriptive-stative constructions. The lack of

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contiguity of the two parts of the pattern; its association with a stative, backgrounded, construction; and the deceptive model of two very similar patterns which do not require -.de nominalization (Zhèi.ge hǎo hóng "this one
This one very red
is very red," and Zhè shì (yí.ge) làbǐ "this is a
this cop. one crayon
crayon"); all work against the child's mastery of the shi ... .de construction. This error is very frequent and resistant to correction in adult foreign speakers of Chinese as well.

Fairness to Pang Pang requires mention of the numerous correct shi .... de constructions she produced at Stage III. Most prominent among these were possessive and benefactive constructions, like zhè shì wǒ.de "this is mine;" or relativized zhè shì wǒ Bàba mǎi gěi wǒ.de.
this cop I Papa buy give I poss/nom
"This is what my Papa bought for me." Sentences marking possession are virtually non-existent at Stage II, but show a statistically significant rise during Stage III. They peak during Stage III, then show a slight decline as the child becomes able to make a greater variety of conversational contributions other than naming his toys and household objects. At the earliest stages of speech, simple naming is prominent; at a slightly more advanced stage the objects are not only named but also labelled as to possessor. (Personal communication from Xiao-Chun Miao and Zheng-Yuan Xu indicate that marking possession is just as

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popular with children in Communist mainland China as it is in capitalist Taiwan, and in the West.)

Pang was also able to form some more complex descriptive predicate nominatives in the shi ... de form such as

zhè shi shéi zuò.de? "This one is made by whom?"
this cop who make mod/nom

"Who made this one?"

The simple possessive, and descriptive, shì .....de construction is the proto-form from which the more elaborate complex sentences describing a backgrounded state arise. At Stage III the children frequently attempt to mark any sort of descriptive, backgrounded, non-active, or negative situation with the shì .....de construction. This leads to some odd, redundant, uses of the construction; the motivation behind this is apparently to contrast these stative situations to perfective, transitive, bounded, activities in the main story line.

Example 6.13 Pang Tape 22 (2.10)

(sits in toy bathtub pretending to bathe)

*Zhè shi xizaoØ, jiù shì tuō yifuØ, tuō
This cop wash, simply cop. remove clothes remove
kù.zi, xizao, xi pigu.de
pants wash, wash bottom nom.

*"This is wash, (it's) simply take off clothes, take off pants, wash, washing (one's) bottom."

Just as the English "this is ..." construction requires a gerund, Chinese shì to describe a situation needs a

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nominalized state complement. An adult description of washing would likely have been active and progressive, wǒ zài xǐzǎo "I am washing..." Pang wanted to describe the situation in a stative way, with more emphasis on the potential uses of a bathtub. She frequently called a bathtub a xǐzǎo.de "what (one) washes in" rather than a yùgāng "bathtub." (Cf. discussion of definition with verb -de in Chapter Five, Section 5.3.)

Other similar proto-stative descriptions include:

Example 6.14 Zhong Rong Tape 7 (2.7)

(can't get plug out of piggy bank)

*Ná.buchūlái.de take not out come mod	*"Can't get it out-ed."
*Shì ná.bukāilái.de cop take not open come mod/nom	*"It is can't get it out-ed."
(coined verb with kai)	
Zhèi.ge dōngxi. This thing	"This thing."
*Pòkāi.de. Break one mod	"(is) broken open."
(coined verb, event has not yet happened.)	

Example 6.15 Zhong Rong Tape 7 (2.7)

(describing researcher's full book bag)

*Dōu shì Ø, nǐ dài nème.me All copula you carry so	*"It's all, you carry so many things of things."
duō dōngxi.de dōngxi. many thing mod/nom thing	

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Example 6.16 Zhong Rong Tape 3 (2.6)

(re her father's babysitting for her on the previous Friday)

*Tā	shì	bù	xiǎo.de	jiǎng	gùshi.	*"He is not knowing how to tell stories."
He	cop	not	know mod	tell	story	
*Tā	lǐbàiwǔ	Ø	jiǎng	gùshi.		*"On Friday he tell story."
He	Friday		tell	story		

(needs auxiliary such as yào "want")

*Bú	huì	jiǎng	gùshi.	"(He) couldn't tell a story."
not	can	tell	story	

Here Zhong Rong tries to contextualize a past experience. Unskilled at backgrounding, she adapts the stative construction she knows best, shì .... .de nominalization. Omitting the auxiliary in the second sentence makes it sound as though the father suceeded in telling the story rather than merely having had the desire or the potential to do so. Verbs without either -le perfective or an auxiliary are de facto parsed as habituals or generics in Chinese. The sentence is well-formed with the meaning "He tells stories on Fridays." The following utterance, however, makes it clear that the father did not succeed, the situation was not perfective and that no story telling took place. Zhong Rong is sophisticated enough not to mark an unsuccessful try with .le "current relevance" or with perfective -le, either of which would have signalled a successful event. But backgrounding with a shì .....de overstates the static habitual quality by nominalizing the whole negative event, rather than specifying it as an attempt that failed.

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Kang also made a number of similar errors in using the copula alone to contextualize a basically active event

Example 6.17 Kang Tape 4 (3.0)

(playing doctor, examines "thermometer")

*Shì fāshāo.le cop emit fever perfective/current relevance	*"It's fevered!"
(warned that if children drink ice water, they will get stomach aches; only adults can drink ice water.)	
*Nà wǒ dù.zi yě shì Well my stomach also cop. hē.le liángshuǐ. drink pfv cool water	*"Well, my stomach is also drinked ice water."
(for wǒ yě hē.le I also drink pfv liángshuǐ.) cool water	"I've also drunk cool water."
*ØShì dà rén jiù cop big person simply dāngrán bùØ tòng. naturally not hurt	*"It's an adult just naturally doesn't hurt."
(for Rúguǒ shì dàrén, dāngrán If cop. adult naturally bù huì tòng.) not can hurt	"If(one) is an adult, naturally it cannot hurt.")

At Stage III changes of qualitative state such as dà.le "got bigger" and pàng.le "has fattened" "got fat," begin to be marked. (Hǎo.le, which means "ok," "it's finished," and "it improved," is the only major instance of this category at Stages I and II.) Generally

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qualitative changes are marked as stative verb perfective, with no process verb specified. In standard Mandarin this construction can only mean that the process was spontaneous rather than causative. A more elaborate, early, example is:

Example 6.18 Pang Tape 22 (2.10)

(describes when she can go to the beach again)

*Bù lěng.le Ø, xiàtiānØ kěyǐ gěi wǒ yóuyǒng.
Not cold pfv summer may give me swim

*"It isn't cold, summer, may give me swimming."

(for: Bù lěng.de shíhou, xiàtiān.de shíhou,
not cold mod time summer mod time

wǒ kěyǐ qù yóuyǒng
I may go swim

"When it's not cold, when it's summer, I can go swimming.") 29

SECTION 6.5.d CAUSATIVES

Nearly all Chinese causatives require an active main verb, with an affixed process or stative verb to express the result. Dà.le alone means "got bigger," "grew on its own." To express a causative making something bigger, a process-action must be specified, as in fàngdà
place large
"enlarge" (as a chart or drawing), chuī dà "blow big,"
blow big
"inflate," guǎngdà "expand" (scope or area).
expand big

Very general causative verbs include: nòng "make," gǎo "do" and dǎ "hit," "move." Even the famous prototypical causative "kill," shā, is not fully causative used

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alone in modern Chinese. Alone, it means something closer to "attempted to kill," successful killing requires specifying verb with the patient-process verb sǐ "die" as a resultative complement: Tā sǐ.le "S/he died."
S/he die pfv

Wǒ shāsǐ.le tā. "I killed her." (In Chinese one
I kill die pfv him/her

can say zìshā.le, kěshì méi yǒu sǐ "(S/he) killed
self kill pfv but not have die

herself but (s/he) didn't die." "S/he attempted suicide.")

With admirable efficiency the Chinese children choose to mark the result of an action, in preference to marking the process, in their early causatives at Stage III. Where verb formation and complementation is still difficult and problematic, they only have the skill to state one part of an action + result compound. The fact that the statives and processes which mark result are all potential free-verbs in Chinese, makes the child's strategy all the more plausible, and harmonious with the balance of the language as a whole. They parallel historic usage here; in Classical Chinese, before massive phonemic loss triggered compounding and periphrasis, statives and even some noun were used causatively (see Cikowski 1978, pp. 37-45).

Causatives become very common after age 2½; and the form simple stative + perfective for agentives, is extremely common. All four children frequently used the stative verb huài "bad" causatively in many situations. This usage is so common that it is not only typically childish, adults

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even use it as baby talk to children. *Bú yào huài
not want bad
zhèi.ge "don't bad this," "don't break this." Less
this
acceptable are variants without an auxiliary:

Example 6.19 Zhong Rong Tape 8 (2.8)

(re tape recorder)

(imperative)

*Bú ø ø huài. not bad	*"Don't bad."
(for bú yào nònghuài. not want make bad	"Don't break(it)"
*Bú ø huài nǐ.de. not bad you poss/nom	"Don't bad yours."
*Māmā ø ø huài tā. Mama bad it	"Mama bads it."
*Māmā øhuài.le. Mama bad pfv	"Mama got bad" "Mama broke."
(for Māmā nònghuài.le	"Mama broke (it.))

There is no active-passive voice to signal directionality. Sometime the errors are comic, as when Pang said *wǒ huì pòdiào "I can break," "I can be broken."
I can break off
What she meant, of course, was wǒ huì dǎpò zhèi.ge
I can hit break this
"I can break this," or wǒ huì bǎ zhèi.ge nòngpò,
I can object this make break
"I can cause this to be broken." Native Chinese students of English are accustomed to analytic devices, and have great difficulty with inflectional markings for directionality.

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They frequently produce English sentences like "I am interesting" to mean "I am interested," or "I am exciting" to mean "I am excited."

The Chinese children use markers of end state or result causatively to mark causative intransitive statives, and transitives for resultant direction, end state, and end location:

Example 6.20 Zhong Rong Tape 8 (2.8)

(moving tape recorder)

*Wǒ xià.yi.xià. *"I'll down it a little."
I down one down

(for wǒ bǎ tā fàng xiàmian. "I'll put it down.")
I obj it put down.

(spills hand lotion)

*Wǒ chūlai.le. "I came out."
I out come pfv

(for wǒ dàochūlai.le "I spilled it out.")
I spill out come pfv

Example 6.21 Zhong Rong Tape 9 (2.8)

(wants nailpolish on doll's feet)

*Méi yǒu hóng tā.de jiǎo. *"(we) haven't red-ed
not have red she poss foot her feet."

(for méi yǒu cā zhǐjiāyóu zài tā jiǎoshàng.)
not have apply nail polish on she foot on

(wants lace wrapped around hand)

*Lái Ø shàng. *"Come on."
come on

(for lái bǎng zài shàng.mian. "come wrap it on top.")
come wrap at top side

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Example 6.22 Kang Tape 2 (2.10)

(building block tower, wants it taller)

*Wǒ yào gāo zhèi.ge. "I want to tall this."
I want tall this

(lights lamp over mother's head)

*wǒ liàng nǐ. *"I bright you."
I bright you

(wants researcher to put her knees down flat)

*Bǎ tuǐ pínggǐlái *"Flat (your) legs."
obj leg flat rise come

Example 6.23 Pang Tape 13 (2.5)

(cutting clay "bun" in half)

*Miànbāo zěn.me bàn.de? *"How (does one) half bread?"
bread how half mod.

As frequently happens in hild Chinese, a morpheme whose form-class, and function are under-differentiated in the sentence frame, bewilders the hearers with the large number of possible interpretations, particularly when the sentence frame leads the hearer to a parsing other than what the child intended. Stative verbs used causatively without an action are no exception to this rule:

Example 6.24 Pang Tape 23 (2.10)

(beating at a piece of modelling clay with a table knife)

Pang *Wǒ xǐhuān Øsuì. *"I like to fragmentary."
I like fragmentary

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(means wǒ xǐhuān nòngsuì. "I like to make (things) fragmentary."
I like make fragmentary

This is uninterpretible without a main verb.)

Baojane Xǐhuān shén.me? "(You) like what?"
like what

Pang (laughs)

*Xǐhuān Øsuì. *"(I) like to fragmentary."
like fragmentary

(Baojane still looks baffled. Pang hits the table, looks at Baojane, frustrated with her lack of comprehension. Baojane attempts the phonetically and form-class, closest, and most plausible gloss)

Baojane Shuìjiào .a? "To sleep?"
sleep rest particle

Pang *Xǐhuān Ø suì. *"(I) like to fragmentary."

Baojane Shén.me "suì"? "What 'suì' (do you mean?)"
what sui

Pang Jiù shì niántǔ *"(It's) just clay fragmentary."
simply copula clay

Øsuì .la
fragment CRS/affective particle

Baojane (understands, offers gloss.)

Ou. Bǎ tā "Oh. Make it fragmentary, isn't that right?"
Oh object marker it

nòngsuì, shì.bushì?
make fragmentary cop. not cop.

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Pang Um. "Uh - huh."
Uh-huh

(imitates Baojane's model)

Nong / sui. "Make / (it)
make fragmentary fragmentary."

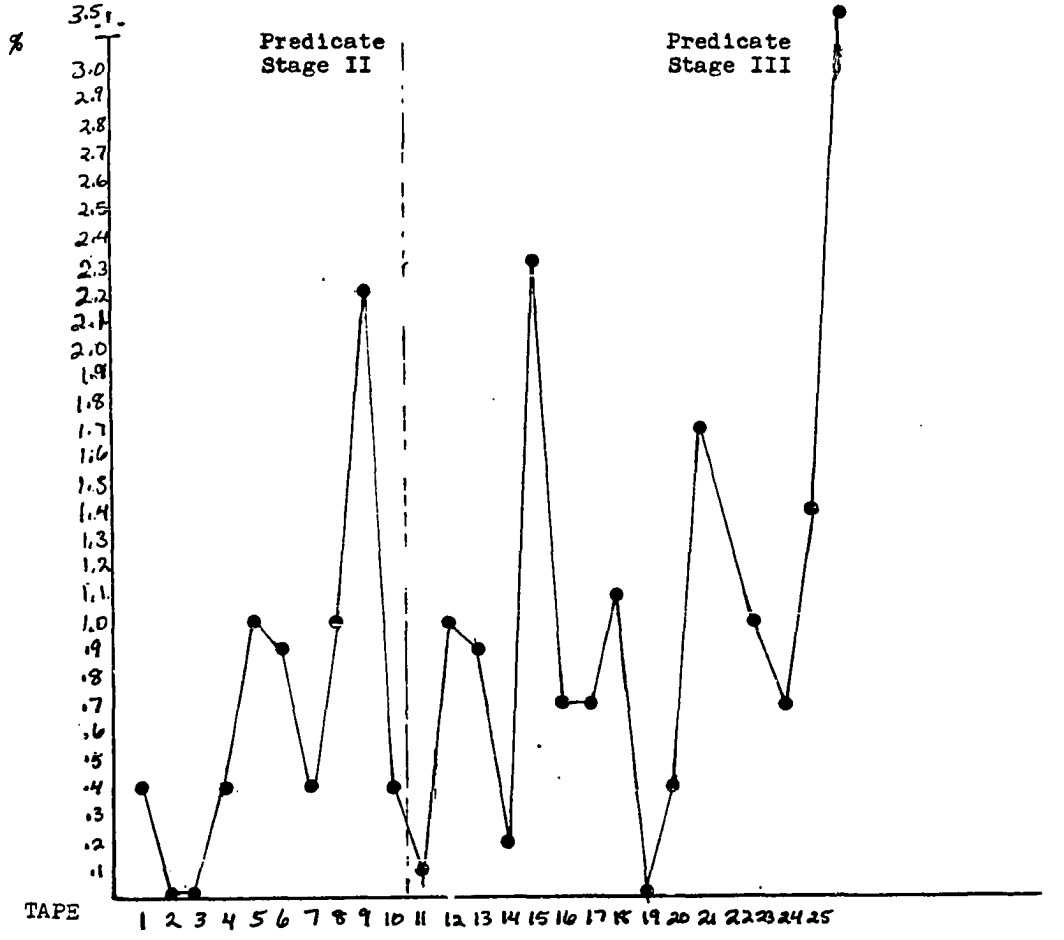
Simultaneous with the causative use of statives, the children also experiment with both standard and idiosyncratic resultative complement constructions. While resultative complement forms were relatively rare at Stage II, at Stage III, they become quite frequent. . There is no increase during Stage IV, though correct use improves. The following are all productive and well formed: yābiǎn "press flat," bùokāi "push open," niánzhù "stick on tight," cǎipò "step on and break," cā gānjìng "wipe clean," xiàosǐ "laugh to death," xiàsǐ "scare to death," chuāncuò "wear wrong," "put on incorrectly;" gàicuò "build wrong," xiěcuò "write wrong," qiēkāilái "slice away," dǎkāi "make open," dǎpò "make break," "break;" sīpò "tear break," "tear," tīguāng tóu "shave bare-headed" "shave the head," chīguāng "eat bare" "eat completely;" niǔhuài "twist bad," "twist and break;" zhuǎnkāi "twist open," and dǎfān "turn over." The children also experiment with some idiosyncratic resultative complements, like Pang's describing how well she had washed her feet by saying *wǒ xǐ.de hǎo xiāng.
I wash mod very fragrant
"I washed (them) fragrant." (See Graphs 6.4, 6.5).

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GRAPH 6.4

CAUSATIVES WITH RESULTATIVE COMPLEMENTS- PANG

(AS % OF ALL UTTERANCES CALCULATED TO 1/10's OF A PERCENT)



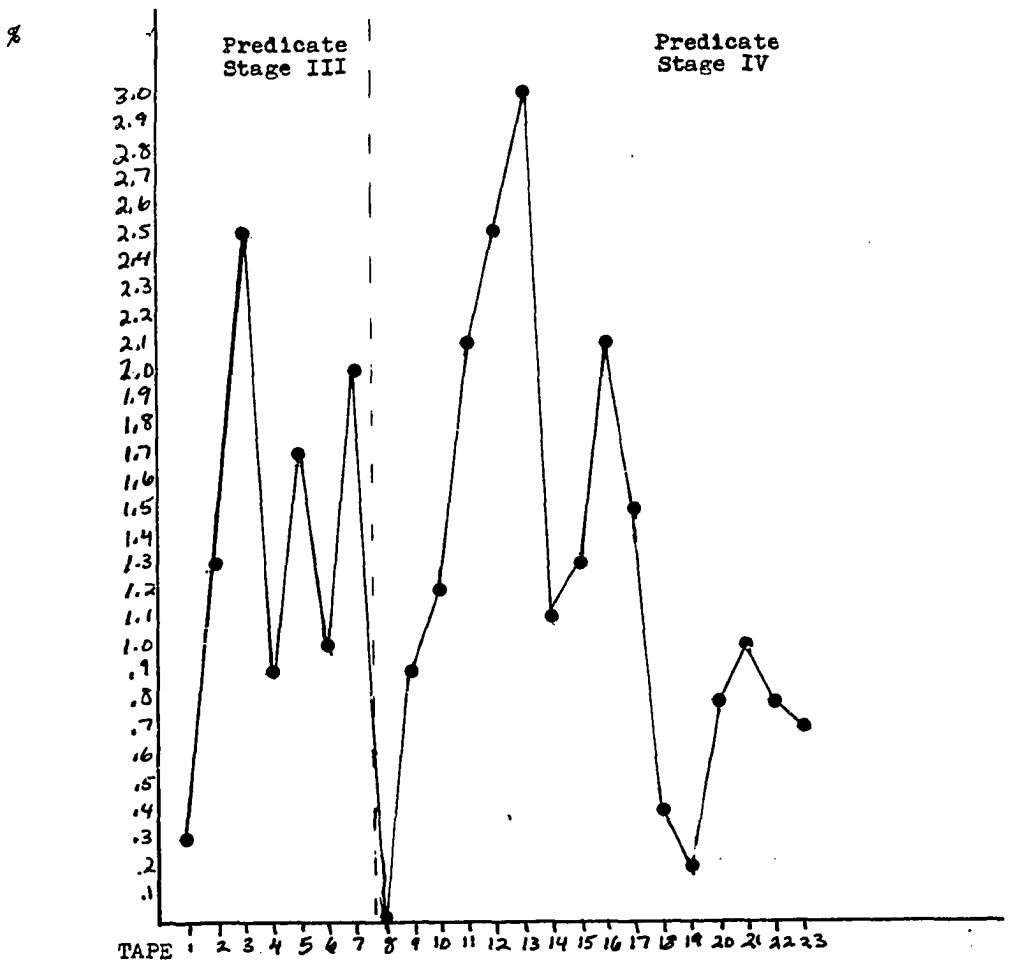
TOTAL N = 108, r = .43

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GRAPH 6.5

CAUSATIVES WITH RESULTATIVE COMPLEMENTS - KANG

(AS % OF ALL UTTERANCES CALCULATED TO 1/10 OF A PERCENT)



N = 215, no significant increase

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The Taipei children's causative use of a stative result corresponds exactly to many of the idiosyncratic causatives Bowerman (1974 and 1978) discusses for English speaking children. They include anomalous causative use of: intransitive statives, as in "I want it be off"; reversed directionality of transitives, as in "drink me" for "help me drink"; adjective or descriptive states like "how would you flat it?"; and locatives like "down her little knee" for "push her knee down." The Chinese children's causative uses of resultives are also in accord with Antinucci and Miller's (1976) conclusion that both Italian and English speaking children focus on results and end states, rather than on absolute past or present time reference; since their earliest uses of past tense are all for verbs which express semantically clear changes of state, such as "broke" or "drank." These results suggest that an early concentration on result or end-state is a general, cognitively-driven phenomenon which is universal to children at a certain stage of development, roughly between the ages of two-and-a-half and three years old. To phrase the argument in terms of a priority of aspect over tense (as proposed by Bronkart and Sinclair for French, 1973, and Bloom et.al. 1980.) obscures the more fundamental operating principle, which is a lexically-based analysis oriented toward a surface marking of result. The syntactic structure of a specific language has no obvious effect on the power of this principle since Turkish causatives are marked with a

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causative suffix; Chinese prefers a verb complement and has few lexical causatives; while English has a system which is organized around lexical causatives and prepositions. Chinese, of course, has no tense system; most Western European languages have the aspectual system inseparably mixed with the tense system, while Slavic has separate systems for both aspect and tense. . . . The focus on the result of a change-of-state . . . is developmentally prior to a marking of either event-time (as in tense), and various non-perfective aspectual relations. Current research indicates that aspectual and tense markers develop simultaneously in Polish (Smoczynska, to appear), English (Renner 1981), and Spanish (Eisenberg 1982).

SECTION 6.5.e STAGE III MODALS

During Stage III most of the full range of available modal auxiliaries appear in spontaneous declarative speech. These include not only hùi "can," "might," which was the only common Stage II modal, but also: néng "able" "physically able to," kěyi "may," "allow;" "might;" as well as gǎn "dare" and yīnggai "must." (Table 6.11 gives a frequency ranking of the most common modals and serial verbs.) These are the primary markers of potential action as contrasted with realized action. Where they are used, the appropriate modal is generally selected, as in Pó hùi mà wǒ "Granny might scold me," or wǒ bù gǎn mō tā "I don't dare touch it." The problem of omitted

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TABLE 6.11

FREQUENCY RANKING OF MOST COMMON MODALS

AND SERIAL VERBS

(calculated as percentage of all utterances)

	PANG			KANG		
1.	YAO	"want"	5.0%	YAO	"want"	.5%
2.	HUI	"can", "might"	1.2%	LAI	"come", "gonna"	.5%
3.	QU	"go"	.5%	HUI	"can", "might"	.4%
4.	KEYI	"may"	.4%	QU	"go"	.3%
5.	LAI	"come", "gonna"	.2%			

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modals is still very frequent, which leads to uncertainty as to whether the event has occurred, or is merely potential or desired, realis or irrealis. E.g. *wǒ shēngrì ø
I birthday
mǎi dàngāo "Buy cake on my birthday." Because of the
buy cake
prior spoken and context social, we know that Pang's birthday is coming up and that she is talking of future potential.

Verbs such as yào, lái and qù are frequently omitted before verb complements as well. This equivocation between potential and realized states also shows up in the difficulties the child sometimes has between chosing whether to mark an unrealized potential with a modal auxiliary, or with an infixed potential or negative, plus resultative complement. Since the infixed negative forms like ná.budào "can't reach" are mastered so much
take not arrive
earlier than the modals, the infixed forms often win out over the auxiliary periphrastic forms where there is a conflict. For example, Pang at 1.10 had been insisting that she wanted to be a powerful big brother rather than a submissive little sister. Baojane suggested that she might compromise and be a big sister, rather than a big brother. Pang rejected this emphatically saying
*wǒ dāng.bujiějiě. *"I will be-not elder
take role not elder sister
sister." Standard Chinese is wǒ bú yào dāng
I not want take role of

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jiejie, "I don't want to be an elder sister."
elder sister

On another occasion Zhong Rong's mother asked her what she was going to draw. She replied, *wo bu
I not

jue.dedao, *"I don't decide to a decision."
decide potential arrive

Standard Chinese is: wo bu hui jueding "I can't
I not can decide firm

decide," or wo hai mei jueding, "I still haven't
I still not decide firm

decided." She was probably also led astray by the model of the very frequent wo bu zhidao "I don't know."
I not know way

While an auxiliary may be sentence-final without being followed by a main verb if it is used in answer to a question, it is not permissible to do this for simple declaratives. Such sentences are incomplete. For example, wo hai hui "I still can," is well-formed as a reply to
I still can

a question like "can you still jump that high?" It is not complete as Zhong Rong had used it in spontaneously volunteering the information that she could still catch all the balls we threw her. The children's assumption that every verbal segment is a potential full free-form prompts them to produce a very large number of such constructions.

The children assume that if auxiliaries function well as stand-ins for full verb phrases in replies, they will serve as equally re-constructable stand-ins in following complex relative clauses. For example, at 2.10 Kang

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described how the blocks he was piling up had to be piled tall before they would be satisfactory. He said,

*wǒ pái nèmme gāo cái kěyi Ø .
I arrange so tall only then can

*"I pile (them) this tall, only then can (they)Ø."

It seems doubtful that errors of this type would be common in European languages where modals have much less capacity for standing independently than they do in Chinese. The Chinese speaker's working assumption that only one verb, modal or main, belongs in a verb slot, carries over into adult, native Chinese speakers' second-language use of English. A Chinese friend of mine wrote the English sentence, "I'm gonna United States" in a letter to an American friend. She sensed that there might be something wrong with the sentence, but was amazed to be told how many "go" forms could go into the verb slot; "I'm going to go to the United States," or even "I'm going to be going to the United States."

SECTION 6.5.f STAGE III ASPECT

At Stage III perfective aspect is much more reliably marked both by use of the -le suffix, and by the many linked complements for direction, end location, achievement, and result. The use of LE after a noun in isolation drops off sharply. Progressive marking with zài increases in frequency and correctness, (total of fifty-three uses during Stage III.) It also begins occurring in much more

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complex sentences with agent, location, and patient, all potentially marked for inanimate as well as animate actors. For example Pang at age 2.10, described the housekeeper who was in the kitchen cutting up tripe with scissors by saying, Ayí zài jiǎn dù.zi, "Auntie is cutting up (some) stomach." (The preferred noun for tripe would have been niúdù "cow stomach.") Asked where her father was, Pang replied, Bàbà zài lóushàng shuì lǎnjiào. "Daddy is upstairs taking a lazy nap." This example is the more impressive because she has correctly marked both location and progressive with a single use of the zài "be at" co-verb. She also correctly divided shuìjiào with lǎn.

Aunt prog cut with scissors stomach

Papa be at/prog story up sleep lazy rest

The stative progressive marker, the -zhe suffix, is used to mark backgrounded, ongoing, events which form the context for foregrounded events. It starts to appear late in Stage III. There are no instances of it for Zhong Rong. Pang had first used it correctly at age 2.3 as she laid down on the floor and pretended to swim on her back saying, wǒ tǎng-zhe yóu "I swim reclining," "I swim lying down." This statement was probably part of a learned routine because there is not another use of the -zhe progressive until 5 months later at 2.8. It came as part of a fully developed narrative.

I recline prog swim

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Example 6.25 Pang Tape 23 (2.10)

(describing a past experience where she had cut herself with a knife.)

*Wǒ yǒu yíci.de shíhòu.....
I have one time mod. time

(double marking of time, sentence trails off uncompleted. Pang tries again.)

*Wǒ zìjǐ wán-zhě dāo Ø, jiéguǒ,
I myself play prog knife result

yǒu nòngpò.de, yǒu liú nèm.me duō xuě.
both make break mod both flow so much blood

"*I had once one time....

*I was playing with a knife by myself, the result was
I both made it broken and flowed so much blood."

(Standard form: wǒ zìjǐ wán-zhě dāo.de shíhòu
I myself play prog knife mod time

yǒu gēpò.le shǒu, yǒu liú.le hǎo duō xuě.
both cut break pfv hand both flow pfv very much blood

"While I was playing with a knife by myself, I not only cut my hand, (I also had) a lot of blood flow out.")

Gāo Jiějie jiù qù ná yàogāo.
surname elder sister simply to take salve

"Elder-Sister Gao went right away to get some salve."

There were a total of 17 uses of the -zhě backgrounding progressive during Stage III.

Aspectual marking at Stage III is still centered around perfectives. Duration of an event, iterative habitu] and generic are all unmarked, although the children do say things like wǒ bù chī yú "I don't eat fish," (I neg eat fish) which is ambiguous as to current present or habitual aspect.[31]

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Pang also did say on one occasion, wǒ hǎo jiǔ, hǎo jiǔ
I very long very long
méi yǒu chī tángsū yú, "I haven't eaten sweet-sour
not have eat sweet sour fish
fish for a long, long time."

Past experience can be marked with the -guò suffix which expresses the meaning, "have ever had the experience of X-ing." -Guò started to appear in Stage III although it was rare, and was almost invariably used with the verb chī "eat," as in wǒ chīguò kǒuxiāng táng "I have eaten chewing gum."[32] There were only 4 exceptions out of 16 total uses. One use was with fēiguò shān
fly experience mountain
"flew over the mountain" which Pang used while reciting a poem about a duck which here grandmother was modelling for her line by line.[33] There were 3 uses with kàn "see," one of which was in reply to a question.

SECTION 6.5.g STAGE III ADVERBIALS

Adverbial modification at Stage III continues to index event time, rather than to quantify its quality or duration. The major innovation at Stage III is the development of adverbial markers which typically define series of events rather than single actions. These include: měicì "each time," shàngcì "last time," xià-cì "next time," gǎncuì "right away," bù jiǔ yǐqián "not long ago," and zhèng "while in the act of." Forward clause marking constructions such as: X.de shíhòu "at X time," yǐhòu "after"
mod time

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and yǐqián "before," begin to be used. Like young European children, usage is generally correct in terms of order and syntactic structure, although it is sometimes wrong in terms of the real event time. The most frequently used, new, forward, aspectual marker is jiù "just," "right away," or "directly." Jiù use is very often extended and idiosyncratic for Pang, who uses it to define many sorts of states and objects, as well as to express almost any kind of creation or transformation. Most of these would be better described with one of the patient-process verbs which are not yet in her vocabulary, (e.g. biànchéng "become," zuòchéng "make into," etc.) For example she described how to make a clay snake by saying, *qiē jiù shì shé, *"Cut (and) it's a snake." There are
cut simply cop snake
a total of 178 Stage III uses of jiù.

Distant past, up to about six months previous to the present; future, irrealis, and hypothetical modes are almost never explicitly marked; although utterances in which the child is certainly describing such situations increase in frequency and elaboration of detail. There is no apparent difference between the time relations which Chinese and European children refer to; the same set of times are explicitly marked in tense languages, and implicitly referred to in Chinese.

Location is much more elaborately marked during Stage III. End location, and distant location which is unknown to the hearer, are rather frequently expressed. Very often such locations are marked by the name of the location alone, without the obligatory zài "be at" locative co-verb. If this

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omission occurs sentence initially, it sounds to the hearer as though the location is the agent or topic of the sentence as in *Øhǎi.bian wán.la, which sounds like, seaside play particle

*"The seaside played." What was intended was: qù hǎi.bian wán .la, go sea side play particle "Go to the seaside to play."

Stage III is the real beginning of productive marking of manner. The preferred way to do this in Chinese is after the verb, as in wǒ pǎo.de hǎo kuài, i run mod very fast "I run fast." Kuài "fast," màn "slow," hǎo "well," tòng "painful," and piàoliang "pretty," are virtually the only manner adverbials used at this stage other than the ubiquitious zhèi.yang.zi "like this." Extent is essentially unmarked at this stage, although Pang did once say about a little puppy, *zěn.me niào hǎo duō.le? how pee very much CRS *"how (did it) pee a lot?" (Standard: zěn.me niào.de how pee mod nèm.me duō? so much "How did it pee so much?")

SECTION 6.5.h STAGE III CO-VERBS

Coverbs, with the exception of the zài locative and gěi "give," remain rare throughout Stage III. Benefactive gěi becomes increasingly common as in gěi tā cā give s/he wipe yǎnlèi eye tear "wipe her tears for her," (Pang 2.6), and

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wǒ qù ná yí.ge táng gěi tā chī (Pang 2.7,) "I('ll) go
I go get one candy give her eat

get a candy for her to eat." (Refer to Tables 6.5 and 6.11) In compex sentence constructions, the co-verb form of the gěi benefactive is sometimes erroneously used without a main verb. The indirect object should separate the gěi co-verb from the main verb; this discontinuous pattern poses the same type of memory and planning difficulties as the shi ....,de construction. For example, when asked the function of a stoplight Pang (2.5) replied: *Hónglǜ
Red green

dēng shì gěi huǒchē Ø a, *"The stoplight is to give
light cop. give train

the train Ø ." The use of gěi also is overextended to be a general emphatic marker of enhanced transitivity, as when Pang was making a clay snake and said *wǒ yào gěi
I want give

zuò yuán.yidian, *"I want to give-make it a little
make round one little

rounder." (Further discussion of enhanced transitivity follows below in 6.5.j)

The three other co-verbs which appear at this period are: gēn "with;" xiàng "resemble;" "be like"; and cóng "from." These also are frequently used in place of a main verb or omitted when the proper main verb is stated. All three of these are used in discontinuous constructions. Examples include: *Ø Pó yìqǐ
Granny together

zhàoxiàng *"Ø Granny together have a photograph taken."
flash image

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At age 2.10 Pang said this to describe having a photograph taken of herself and her grandmother standing together. She should have said "Gēn Pó yìqǐ zhàoxiàng," with Granny together flash image "With Granny together have a photograph taken," "Have a photograph taken together with Granny."

Kang had analyzed gēn "with" as a full verb, as evidenced by his suffixing the -zhě progressive to it.

Example 6.26 Kang Tape 4 (3.0)

(Mother inquires about whom he played with during a visit with his cousins.)

Mother	Tā.men lái zuò shén.me?		"What were they going to do?"
	S/he plural come do what		
Kang	Wán.		"Play."
	Play		
Mother	Gēn shéi wán?		"Play with whom?"
	with who play		
Kang	*Gen.Ø		*"WithØ."
	With		

(five second pause)

	Méi yǒu gēn.zhě Ø wán.		*"Hadn't played with Ø."
	not have with prog play		

(needs a noun direct object)

On another occasion he said *wǒ yào gēn Ø, *"I want I want with to with Ø," to mean: "I want to play with you," Wǒ yào gēn nǐ wán.[34] This parallels Zhong Rong and the other children's very frequent use of the hái "still," "also" adverb as a main verb, as in *wǒ yào hái, *"I want to still," used to
I want still

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mean "I want to keep on playing," *Wǒ hái.zhě.
I still progressive

*"I'm stilling" was used to mean "I'm still sweeping the floor," wǒ hái zài sǎodì. *Wǒ hái ø zhei.ge,
I still prog sweep floor I also this

*"I also ø this" is used by all the children to mean "I also have this." Adults consider these usages "typically childish."

Simultaneous with the development of causatives and other affective markers, comes productive use of the highly transitive bǎ object marker, and the bèi agent marker. Both are strongly associated with the marking of causatives, since they can only be used with transitive verbs which have either succeeded in affecting a patient, or are in imminent danger of doing so. Usually the effect is a change of state. (Bǎ and bèi are discussed at length in Chapter Four : on order.) What is important to note here is that these special co-verbs are also used on occasion in place of full verbs, as in *zài bǎ zhèi.ge ø,
again object this

*"again ø this." Here the child was playing with clay which she wanted to knead again. Standard form would be:

zài bǎ zhèi.ge niē.yiniē. "Knead this again."
again obj this knead one knead

Kang said *nǐ bú yào bǎ wǒ.de qián ø, *"Don't you ø
you not want obj I poss. money

my money." This was used to mean "Don't spend up all my money."

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SECTION 6.5.i SERIAL VERBS

The acquisition of sentences with more than one verb happens mainly in Stage III. There is a tremendous increase in such sentences toward the end of Stage III. (See Graphs 6.6 and 6.7. Modals and co-verbs are excluded from this tally.) By Stage IV this increase has stopped, although usage variants continues to develop. (For the situation in English, see Clark & Clark, pp. 336-368; Bowerman 1979, pp. 285-386.) Where earlier multiple verb utterances were almost entirely direct objects of the verb yào "want;" Stage III shows a great increase in full, free verb complements of: lái "come," qù "go," and shuō "say." Where these complements were previously single-verb direct objects, as in wǒ yào tiào "I want to jump;" now whole clauses with subjects other than the subject of the main clause begin to appear. For example:

nǐ kàn wǒ xiě gōngkè "You watch me do my homework,"
you see I write homework

(Pang 2.8). Compound sentences, which are rather uncommon in Chinese overall, start to appear, as in

nǐ shì nǚshēng, wǒ shì nánshēng, wǒ yào dāng gē gē
you cop female I cop male I want take role elder brother

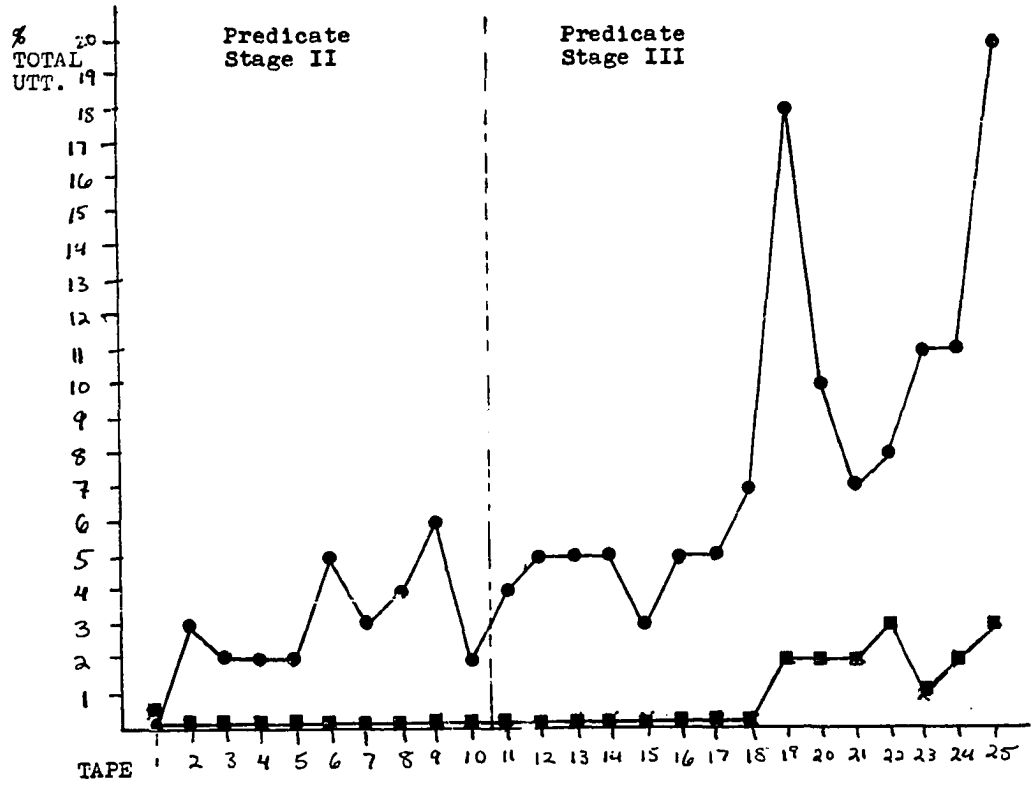
"You're a girl, I'm a boy, I want to be a big brother." (Pang, 2.8)

Relative clauses to describe time or place of an activity, or to provide specific background for the actor or patient, begin to appear. Most of these describe past

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GRAPH 6.6

MULTIPLE VERB SENTENCES - PANG



●—● = all multiple verb sentences, r = .78, mean 6%

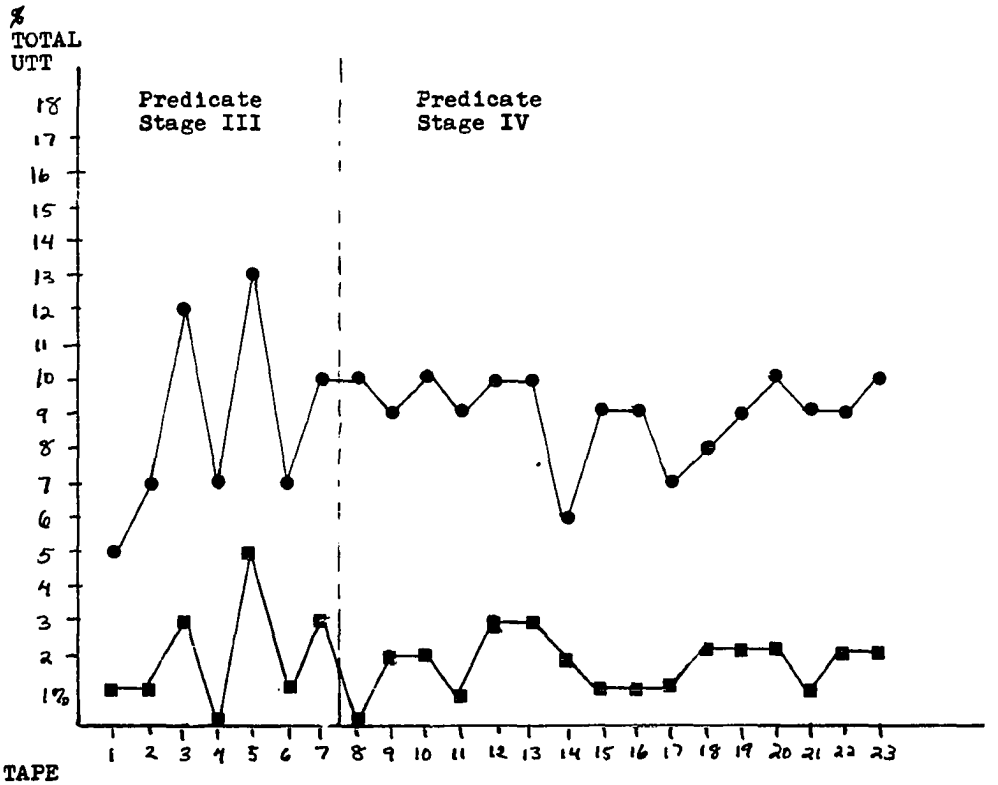
■—■ = utterances with three or more verbs, r = .73, mean .6%

Total number multiple verb sentences N = 751

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GRAPH 6.7

MULTIPLE VERB SENTENCES - KANG



●—● = all multiple verb sentences, constant rate, mean 9%

■—■ = all sentences with 3 or more verbs, constant rate, mean 2%

Total number n = 2,984

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activities; but occasionally future activities are outlined, or goals of an activity are marked. A very few pose a hypothetical situation and the results contingent upon it. There is still almost no marking of counterfactual, hypothetical, cause or effect. The relations must be inferred.

Zhong Rong's most elaborate utterance at 2.8 is a relative clause description of an imaginary subject agent, a dog, *Bàba Ø lái.de xiǎo gǒu huì yào wǒ.
Papa come mod. little dog can bite me
(Lái needs an active head verb with lái as a directional complement, as in dàilái "bring.")
carry come

*"The puppy Papa comed could bite me." This meant, "The puppy Papa brought could bite me."

Pang's productions have become much more advanced and varied than this by the time she reaches age 2.11. She is able to mark time, location, goal, and manner of action all in a single utterance; and to topicalize the first clause as well. She can discuss future plans, or state a current opinion, and give the reason for it. In this example she is describing a trip she had made a few weeks previously to visit relatives in a city called Taizhong, (Tai Chung), about 100 miles south Taipei.

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Example 6.27 Pang Tape 25 (2.11)

Wǒ	zuótiān	hò,	/	zùo	huǒchē	qù	Táizhōng.
I	yesterday	topic		ride	train	go	Taizhong

"Well, yesterday,/I took the train to Tai Chung."

Wǒ	xiànzài	dōu	bú	yào	qù	Táizhōng.le.
I	now	all	not	want	go	Taizhong CRS

"(But) now I don't want to go to Tai Chung any more."

Jiù	shì	wǒ	bù	xǐhuān	qù	Táizhōng.
Simply	cop	I	not	like	go	Taizhong.

"It's simply that I don't like to go to Tai Chung."

* Ø	Táizhōng	Ø	yèli	hùi	niàoniào.
	Taizhong		night in	can,	pee pee

*"Tai Chung might pee-pee in the night."

(intends:	zài	Táizhōng	wǒ	yèli	hùi	niàoniào.
	be at	Taizhong	I	night in	might	pee pee

"In Taizhong I might pee in the middle of the night.")

*Ø	Hùi	yào	huílái.
	might	want	back come

*"Ø might want to come back."

This is a clear and complex narrative, but semantic probability factors alone are not sufficient to allow Pang to leave the agent of niàoniào "pee pee" unmarked, and to have the role fall to the city of Tai Chung by default. Reference back to her previous use of wǒ "I" is not strong enough to prevail over a sentence initial place name.

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By her most advanced tape Pang was also able to mark quoted speech. She was less successful at marking the potential, hypothetical state. In the following example she describes how she might go about telling her nursery school teacher to fix tastier snacks for the children.

Example 6.28 Pang Tape 25 (2.11)

*Wǒ míngtiān qù shuō,
I tomorrow go say

"Lǎoshi, nǐ bú Ø zuò nem.me bù hǎochi.de
Teacher you not (yao) make such not good eat nom.
want

Ø ."
(dongxi)
thing

*"Tomorrow I'll go say, "Teacher, don't you Ø
make such bad tasting Ø."

*Lǎoshi shuō, "Nǐ xiaci yào X
Teacher say you next time want (unintelligible)

hǎochi.de Ø."
good eat mod.

*"Teacher says 'Next time you want to X good-to-eat Ø.'"

Lǎoshi shuō "hǎo."

"Teacher says 'ok.'"

*Wǒ míngtiān gēn lǎoshi Ø ,
I tomorrow with teacher (jiang
talk)

*"Tomorrow I'll Ø with teacher."

Tā jiù zhīdao.le.
She simply know pfv/CRS

"Then she'll know."

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L. Wang (1947) refers to conjunction for possibility, and counterfactual as "European constructions." (Chaper 14, pp. 291-305.) Their use has increased greatly over the past 60 years.

Conjunctions marking cause, effect, and irrealis, such as: yào.shi "if," rúguǒ "if," -.de huà "in that case," kěshì "but," and yīnwèi "because," are almost never used at Stage III.[36] (They are rare and undifferentiated at this stage in English, Turkish and Italian. See Clancy, Jacobson & Silva, 1976.) The hearer must construct his own story world of cause and effect when listening to most narratives. Jiù "simply," "as a result," "directly;" and nà "so," "then," are by far the most popular linkers of clausal relations. Time in stories more-or-less follows the sequence of events, with results stated in preference to their processes. Inception is seldom marked. By the age of three the children have learned a few standardized formulas for story-telling to mark beginning, result, and end. Children sometimes use these formulaic skeletons with almost no content of events to flesh out the story. This happens if they are pressed too hard by the frequent coaxings to "tell a story." Kang responded to repeated requests to tell "The Three Bears" with this very bare-bones narrative:

Example 6.29 Kang Tape 2 (2.10)

"Lǜlǜ	gēn	Sān Zhī	Xióng"	.a.
Goldilocks	and	Three animal classifier	bear	particle

"Well, as for 'Goldilocks and the Three Bears.'"

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*Yinwei ta yizi ø, jieguo .ba?
Because she chair result question particle

*"Because her chair, ø the result?"

*Ta yi.zi zuohuai.le.
She chair sit break pfv
bad

*"She sit-breaked her chair."

Mei you.le. "That's all." "The end."
Not have pfv.

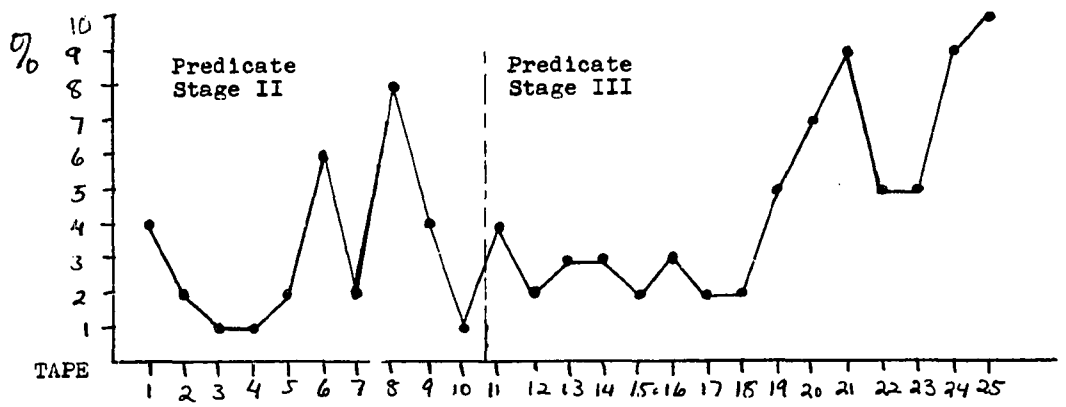
Here Kang uses a conventional announcement of the story title. He skips the action in the story until he comes to the climax. He leads in to this with a "because of," and "as a result," but omits the actions which they describe. Jieguo.ba is the question adults use to ask "what happened then?" He has incorporated both the conventionalized narrator and hearer script roles by merging a result and a question about it in a single utterance. It is neither clearly declarative nor interrogative. He uses an idisyncratic causative zuo-huai "sit-break" in a construction in which it sounds as if the chair rather than Goldilocks were the agent. This illustrates his tendency to mark agents which cause results, rather than patients and processes. He then closes the story with a conventional "that's all," "The end." (For discussion of English child narratives see Keenan et.al., 1975.) (See appendix for a full transcript of a much longer story, a telling of "The Three Little Pigs" also taken from this tape.)

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GRAPH 6.8

SENTENCE-FINAL PARTICLES - PANG

(as % of all utterances)



N = 497

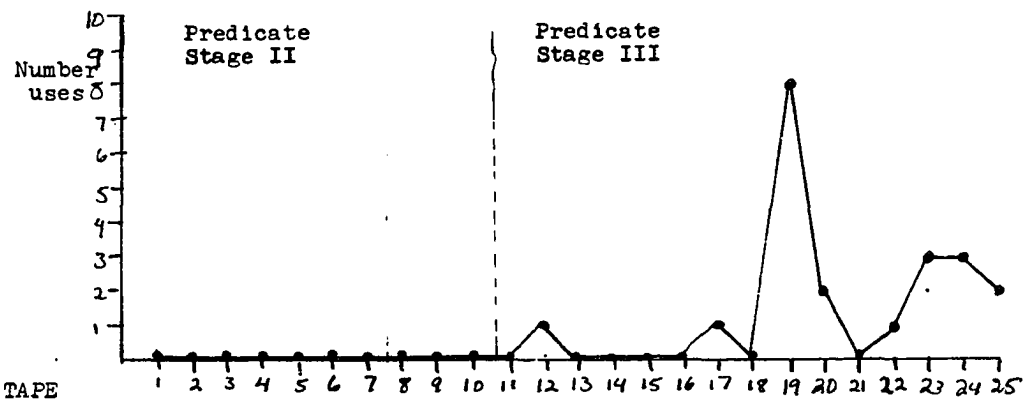
r = .42

(No increase for Kang, N = 805)

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GRAPH 6.9

SENTENCE-INITIAL NÀ "SO -PANG



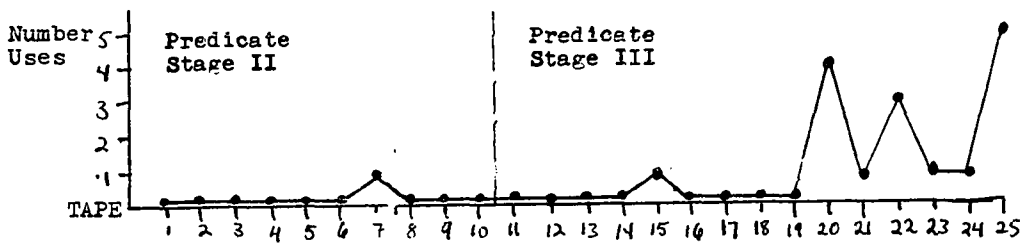
N = 21

r = .48

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GRAPH 6.10

SENTENCE - INTERNAL TOPICALIZING PARTICLES - PANG



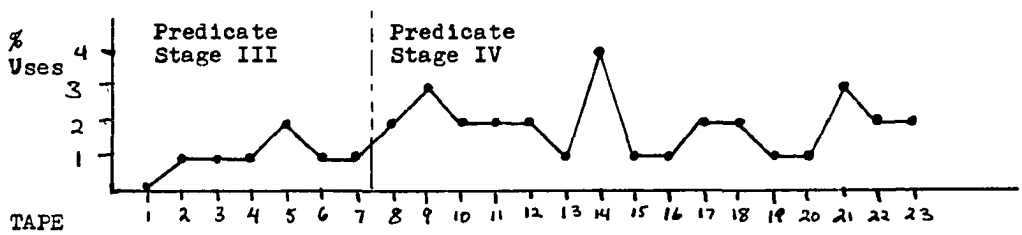
N = 17

r = .57

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GRAPH 6.11

6.11 SENTENCE-INTERNAL NÀ "SO" - KANG



N = 273

r = .35

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As these narratives show, the child at Stage III has a fairly good grasp of the basic elements of orderly connected discourse, and is able to use some cohesive devices. At this time the child starts a differented use of sentence final particles such as .ma emphatic, .ou warning, and .ne, item in a series. Pang shows a significant increase in all particle use; Kang's rate of use is constant. The children also start productive use of sentence final particles to form questions. Very late in Stage III sentence-internal particles to set off the topic of a sentence begin appearing. (See Graphs 6.8 - 6.11.)

SECTION 6.5.j ENHANCED TRANSITIVITY

Enhanced transitivity is the single functional device which unifies a whole range of formally diverse Stage III phenomena. Its manifestations include: 1) the appearance of sentences with both agent and patient marked; 2) the development of linked post-verbal verb complements marking direction, location, success, and result of an action or process; 3) the greatly expanded use of causatives, with result being marked in preference to process; 4) the causative use of stative verbs; 5) the greatly expanded use of directionally oriented co-verbs, particularly gěi benefactive; 6) the appearance of the bèi agent marker for unfortunate resultative actions; 7) appearance of the bǎ object marker for patients which are topicalized as having undergone a change of state; 8) productive and varied use

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of auxiliaries to mark potential in contrast to completion; 9) differentiated use of -le as perfective. All of these phenomena point together to the urgency the child feels to mark actions for result, and to his preference for treating changes of state as if they were all highly potent, highly transitive, and agentive.

Once the child has acquired the "hardware" described above he tends to use it redundantly to mark agent, result, and patient affected many times over where an adult speaker would simply use one or two markers. Many of these double-marked actions do occur in emphatic, contrastive remarks, and so are evocative of adult variant and dialectal forms like Southern American "he done do-ed it" used for Standard English "he did it," or "he did do it." Other double markings, however, seem to come from nothing more than a desire that both the speaker and the hearer have absolutely no doubt in their minds about who did what to whom.

It is significant that the child chooses an analytic, lexical strategy for double marking transitivity at this particular stage of linguistic development. The devices enumerated above are all local markers; all are sentence internal, many are particular to word formation and compounding devices. None is intra-sentential. The child is mature enough to be able to name all the principle players and actions, but not yet sophisticated enough to array them in long discourse sequences of backgrounded causal or precipitating situations, and differentiated resultant

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states. Instigative causes remain unnamed (there are no "he made me cry" complaints as yet.)[37] The active events are foregrounded with little stative support. Fully mature speech is variably ordered to highlight cause and effect in a way which reflects the speaker's judgement of the order of events. Mature speech may be tailored to the hearer's degree of understanding, familiarity, and probable evaluation.

Here are some typical instances of double marking for transitivity. In one, the child's father had almost broken a pitcher full of water. The child said *Bàbà dǎ.budào dǎpò, (Papa make not reach make break *"Papa tried but didn't quite reach making it break." (Standard form: Bàbà chà.budūo dǎpò.le Papa almost hit break pfv "Papa almost broke it.") In this example the child uses two full, complemented, main verbs. One describes an unsuccessful attempt; it is followed by a second verb which describes a successful action. A simple adverb+perfective verb would have done better.

In another case the child uses two auxiliaries and a perfective to describe a potential breakage as she warns the researcher not to touch the big electric fan: *Zhè jiù hùi yǒu nònghuài.le. (This just can have make bad perfective *"This one can just have make broken." (Standard zhèi.ge hùi nònghuai This can make bad "This can be broken.")

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TABLE 6.12

DEVELOPMENT OF GEI DATIVE AND BENEFACTIVE: KANG

(Calculated as percentage of all utterances)

	TAPE	DATIVE		BENEFACTIVE	
		#	%	#	%
STAGE III	1	3	1%	2	-
	2	11	1%	6	1%
	3	4	1%	2	-
	4	4	1%	4	-
	5	7	1%	10	2%
	6	6	1%	8	1%
	7	5	1%	10	2%
STAGE IV	8	1	-	4	1%
	9	34	4%	5	1%
	10	7	1%	19	3%
	11	17	2%	20	3%
	12	2	-	23	3%
	13	9	1%	28	3%
	14	4	-	9	1%
	15	3	-	25	3%
	16	23	4%	7	1%
	17	7	1%	5	1%
	18	10	2%	7	1%
	19	2	-	5	1%
	20	2	-	18	3%
	21	6	1%	12	2%
	22	-	-	10	1%
	23	4	1%	8	1%
TOTAL		171		247	

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Another enhanced transitivity device is to use multiple directional, and resultative complements; as Pang did as she stuck her hand into the empty slot in a chest of drawars where a drawer had been removed: *Zhèi.ge / This

pò-diào-xià-qu-lái-.le .ye! "This / broke-off-
break off down go come pfv particle

down-came!" Baojane supplied a standard gloss which Pang agreed to, Chōuti diàoxiàqu.le? "The drawer fell down?"
drawer fall down go pfv

Still another double marking is so common as to be considered "typically childish." This is marking a sentence-final perfective action with the -le perfective verb suffix, followed immediately by the le sentence final particle for currently relevant state. For example:

*wǒ yào xǐng.le le *"I want to waked up," said as
I want wake pfv CRS

the child was still groggy from her nap or:

Hà! Tā shuìjiào.le .le *"Ha! He's gone to sleeped!,"
Ha He sleep pfv CRS

said on seeing that her puppy had just gone to sleep. This habit persists through the early grade school years, and is impervious to correction.

In another cases an act of allowing or permitting something to happen is marked causatively, as when Pang (2.7) held out her hand for the puppy to lick, and said:

*Nòng gěi tā tiántián shǒu, "Make-for him lick (my)
Make give him lick lick hand

hand." Here ràng "allow" or jiào "call," "let" would have been more appropriate than nòng "make," "cause;"

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while the gěi "give," is superfluous. (Standard form is: ràng tā tiántián shǒu, "let him lick (my) hand.")

The strongly transitive quality of the bǎ object marker prompts the child to use it in a requested action, where the verb itself is transitive and no bǎ is needed. In asking Baojane to blow up a ball for her, Pang said *nǐ lái bǎ tā chuī, where nǐ lái chuī tā "you blow it" would have been adequate.
you come obj it blow

Sometimes several enhanced transitivity devices are added redundantly in a single utterance. Pang (2.11) had been asked what she would do with her toy spear. She waved it in the air menacingly and said: *Gěi nèm.me duō
give so many

huài rén dǎsidiào.le! *"Make so many bad people
bad people beat die off pfv

beat to death died!"

Finally, the virtual absence of patient-process-range, and patient-process-goal verbs at Stage III, means that events which appear via impersonal forces are expressed in agent-cause constructions. Very understandably, one of the most common events to be expressed in this way is car accidents. Cars are often agent-actors for motion; vehicles are subjects of many early verbs. However, cars do not have volition and are not visualized as being the cause of their own accidents. In Chinese, as in English, accidents "happen" or chū "emerge." One says chū.le yí.ge
happen pfv one

chēhuò "An accident happened." The fact that the
car disaster.

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Chinese noun for "car crash" or "accident" is chēhuò contributes to the child's noun + verb decoding strategy. Chē "car" was one of the most frequently used words in Kang's vocabulary; it was natural for him to parse huò "disaster" as a verb. This example is also illustrative of the fuzzy boundary between word compounding and full sentential element syntactic devices in Chinese. Kang saw chēhuò as a agent and an action, rather than as a patient-noun compound which is the result of a process-action. Persistent corrections from his mother on his analysis were ineffective for several months.

Example 6.30 Kang Tape 2 (2.10)

(riding tricycle, crashes into a cupboard.)

*Chēhuò.le! Chēhuò.le.a!	*"It's accidented! It's accidented!"
accident pfv accident pfv	
(for chū.le yí.ge chēhuò, or, yǒu chēhuò.le)	
happen pfv one accident have accident CRS	
*Rénjiā shì chēhuò.le, zhèr /Ø wǒ.de chē.	
People copula accident pfv here I poss car	
*"People are accidented, here Ø my car."	
*Wǒ lái "bòng", Ø chēhuò.le.	"I went 'bong' (and it) accidented."
I come sound play accident pfv	
(crashes again)	
*Yòu chēhuò.le	*"(It) accidented again!"
again accident pfv	

Given the vividly active nature of a car crash, it is difficult for Kang to verbalize it as an abstract state of being, the result of an process for which no cause is named.

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SECTION 6.6 STAGE IV FULL PREDICATE SYSTEM: ACTION, STATE, CAUSE AND PROCESS

SECTION 6.6.a ACTIONS

By Stage IV, (Kang age 3.2 and beyond), most verbal relations and predicate types have appeared in some basic form, although they may not be used in all obligatory contexts or fully correctly. Nonetheless, actions marked for direction, end location, success, and result, are used fluently. The auxiliary system is essentially complete, and perfective aspect is reliably marked. Stative verbs, both experiences and descriptives are well developed, as is use of the copula, and the yǒu "have," form. Statives are no longer used only for labelling objects and possessions, but also are used to describe the background setting for main story-line actions. Causatives, while sometimes idiosyncratic, are well-formed, varied, and accurate, in expressing intransitive states, transitive results, and locations. Spontaneous processes, however, have been limited to describing physical actions, generally movements of concrete object patients.

Looking at Teng predicate categories, previous to Stage IV there had been a very dynamic shift in proportional frequency among the different predicate types. After Stage IV begins there is very little change in frequency. Purely descriptive patient states (dà, "large," lěng "cold,") decrease in frequency, while action-state-range (jiǎnghuà "speak," xiězì "write (words)," increases The only major change is the emergence of several previously

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almost non-occurring, patient-state and patient-process predicate types. Of these, patient-state-range verbs (qūe "lack," zhǐ "be worth," jiào "be called,") show a statistically significant increase; while patient-process-range (e.g. shū "lose") and patient-process-goal (e.g. biànchéng "become") increase; but not at a statistically significant rate. The importance of this phenomenon is that it is indicative of the child's greatly increased ability to mark non-agentive, non-active events; to talk about impersonal phenomena; and background his speech in a discourse sensitive way. Other Stage IV trends are part of the same tendency toward discourse sensitive elaboration and variation. These include: sentential reordering for topicalization; marked counter-factuals, contingent relations, and irrealis mode; much increased marking of event time and location; the beginnings of marking extent, manner, and duration. Complex sentences with more than one full verb do not increase in overall frequency during Stage IV, but they become more varied and complex. However, there is also a shift among the relative frequencies of the subcategories. (See Table 6.7, Graph 6.7) Sentences with experiential statives such as yào "want," or xǐhuān "like," followed by a verb complement or a full clause remain constant in frequency. Sentences with agent + action + clause; and verb-initial sentences marking time, manner, or location, followed by clause, both increase.

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In addition, a previously non-occurring category, patient + verb + clause, emerge for the first time to describe: topicalized patients in actions; patients of spontaneous processes; and more abstract states of being and results.

During Stage IV the overall error rate begins to drop, although it is still higher than for Stage II children, (8% as opposed to 6%.) Prior to Stage IV the error rate climbed steadily for both children. The most common error continues to be omitted main verb or auxiliary; omitted co-verb errors increase, though not at a significant rate. Coinages remain constant. The only Stage IV error type which increases significantly, is using an extra determiner, as in *zhèi.ge yì zhāng zhǐ (this one one sheet paper) *"This-one sheet of paper." Even this is a sort of discourse sensitive error, in that it provides more specification than the hearer needs. Previously the problem had been too little specification. All other error types are constant, or show a statistically significant decline. The major syntactic activity after age 3½ is elaboration rather than innovation. Correctness and specification improve, but once patient-process verbs develop, the major syntactic systems are complete. The child also reaches toward a greatly-improved flexibility in anticipating his hearer's understanding, interests, and expectations. Because the focus of this chapter is on predicate types, the next section concentrates

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on a discussion of the one predicate type which had not previously been developed, patient-processes.

SECTION 6.6.b PATIENT-PROCESS

While earlier samples included considerable use of simple patient-process predicates for physical actions o concrete objects such as: dǎo "turn over," kāi "open" and pòdiào "break;" Kang's more advanced tapes begin to show a much greater range of relations. One innovation is that he starts using process verbs which take an animate patient, such as shòushāng (receive wound) "be wounded," hūndǎo (faint over) "faint," shuāijiāo "get hurt," shēngchūlái (birth out come) "be born" "give birth to;" as well as various manners of dying: diànsǐ (electric) "electrocute," mènsǐ (smother die) "suffocate," yānsǐ, (drown) "drown," and dúsǐ (poison die) "be poisoned." These verbs, at least, fall into the familiar topic-comment order pattern. He is able to expand his use of these predicates to describe a patient other than himself, or someone in the same room with him playing doctor or rescue squad. He can also to abstract out the patient-process-action as an abstract topic which the rest of the sentence comments upon:

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Example 6.31 Kang Tape 12 (3.4)

(Discussion of a Chinese opera being performed very noisily and tantalizingly in the street just outside his home. Often these operas are part of a Taoist funeral service, with the performance offered in worship to the gods.)

Kang Bài shén gàn má? "What (does one) worship
worship god do what the gods for?"

Mother Yīnwei / bài shén, shén cái hùi
Because worship god god only then

bǎohù wǒ.men .ne
can protect I pl part

"Because / (one must) worship the god(s), since only then will the god(s) protect us."

Kang Rén sǐ.le yě yào bài shén.
person die pfv also want worship god

"(When a) person dies, (one) also worships the god(s.)"

Duì.buduì? Duì.buduì?
correct not correct correct not correct

"Right? Right?"

Sǐ / rén sǐ.le, yě yào bài shén.
die person die pfv also want worship god

"(When a) die / person dies, (one should) also worship the god(s.)"

Mother Hǎo rén sǐ.le jiù hùi biànchéng shén
good person die pfv just may become god

.a, wǒ.men jiù kěyǐ bài tā.
part. I plural just may worship him/her.

"(When a) good person dies, (s/he) simply becomes a god, (so) we can worship him/her."

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Kang *Gàn má hǎo rén sǐ.le jiù nèng
do what good person die pfv just can

biànchéng shén. .a?
become god particle

*Do what (a) good person dies, (s/he) can just become a god?"

(Bad use of gàn má "do what" rather than wèishén.me "why")

Mother Dōu shì zhèi.yang.de. "(It's) all this way."
All cop this way mod

Hǎo rén sǐ, jiù biànchéng shén.
good person die simply become god

"(When a) good person dies, (s/he) simply becomes a god."

Huài rén sǐ.le, jiù / méi yǒu .le.
bad person die pfv simply not have pfv
exist

"(When a) bad person dies (s/he) simply / doesn't exist any more."

Kang *Gàn má hui rén shì.le, jiù méi
Do what can person cop.pfv simply not

yǒu.le?
exist pfv

*"What does it do (that a) person has be-ed (and then) simply doesn't exist any more?"

(Bad gàn má; highly unusual perfective suffix on copula, as a way of expressing something like "come into being".)

Mother Yīnwei tā huài .a. "Because s/he is
Because s/he bad particle bad."

Huài.le yǐhòu jiù méi yǒu .le.
Bad pfv after simply not exist pfv

"(If s/he was) bad, afterwards (s/he) simply doesn't exist."

(Kang waves arms in air and yells in outrage.)

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This dialogue illustrates a number of important features of Stage IV speech development. First of all, Kang is able to talk about abstract situations, and generic, indefinite, topics. Secondly, he can express a patient-process verbs such as sǐdiào "die." He can also use the patient-process-goal verb, biànchéng "change into," which requires being able to mark two patients within one sentence. He is able to mark the hypothetical quality of the situation by use of huì "can," and yào "want," "must." He is also able to form complex sentences in which the first clause, a relative clause, describes a situation, and the second is a contingent action. The subject of the relative clause is also different from the subject of the main clause here. However, the explicit nature of the relationships between the clauses, between realis and hypothetical modes, and between current and generic time, is all unmarked. Leaving these relations unmarked is appropriate and syntactically well-formed in this context, but Kang still has difficulty making these relationships explicit when they are required in Chinese. His childish use of gàn má "do what," "how come," rather than the more appropriate wèishén.me "why" is an example of the only real problem he has ever had in question formation. His unique, and completely ungrammatical, use of the copula shì with a suffixed -.le perfective seems to mean something like "come into being" "have existed." He uses it to mark a change of state in the most abstract state of being which

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exists, the very emergence of human life.. Such a change is so far from the normal, visible, everyday, changes in motion and quality which he is able to describe, that he is inspired to invent a sort of "ultimate change of state" verb to express it.

During Stage IV Kang gradually came to use more abstract process-which expressed emergence of a state, rather than simple causative occurrence of a visible action. For example: chūdiàn "emit electricity;" guò "experience," in guò shēngrè "have a birthday."
experience birthday

Most of these were patient-process-goal type verbs which described human patients. Prominent among these were:

shēngchūlái "be born;" shēngbìng "get sick;"
born out come born sickness

shēngqì "get angry;" fā piqi "have a tantrum;"
born temper emit disposition temper

shòushāng "be wounded;" and zhǎngdà "grow up."
receive wound grow large

It is significant that Kang uses these patient-process goals to describe human patients only. This is another mark of his predilection for human subjects. It springs from the same source as the overextension of verbs which can only have animate subjects to use with inanimate things; as in: làbǐ pǎodiào.le, "the crayon ran away,"
crayon run off pfv

used to describe a crayon rolling under the couch. The head-verbs in these patient-process compounds can all be used in constructions which dictate inanimate or abstract

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patients, as in: shēngli "to pay interest,"
born interest

fāshēng "occur," "happen;" fā méi "get moldy;"
put forth born put forth mold

fāzhǎn "develop;" zhǎngjìn "make progress."
put forth expand grow enter

Most likely a preference for discussing human subjects is dominant in adult speech as well; but Kang is not yet able or motivated to make use of the possibility of using process verbs to describe non-human or abstract patients. In fact, even Kang's use of the construction chūdiàn
emit electricity
is misanalyzed to resemble a transitive form with a human patient in agent position, rather than functioning an abstract, intransitive, spontaneous, patient-process, as it must in conventional usage:

Example 6.32 Kang Tape 15 (3.5)

(Father is on the roof repairing the TV antenna.
Kang threatens to turn on the TV set.)

*Wǒ yì kāi Bàbà Ø hùi chūdiàn.
I one turn on Papa can emit electricity

(lacks a jiù "directly" "immediately")

*"The second I turn it on, Papa will give off electricity."

Bàbà hùi diànsǐ.
Papa can electricity die

"Papa can be electrocuted."

Of course it is the TV set, not the father which has the potential to give off electricity. The verb here, chū

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"emit," "emerge," "happen," is the same one which caused problems in chū.le yí.ge chēhuò, "an accident has happened."

Kang makes only very rare use of patient-process-range. Other than one use of shū.le "lost (a game)," all of his 18 uses of this predicate type came with zhǎngjià "increase in price," "get expensive." All came on his ninth tape at age 3.2, and all were in reference to the same TV public-service announcement about the need for conservation in the face of increased fuel prices. There is strong evidence that he analysed this verb as having a human patient as well, since his uses were in the form, tā zhǎngjià.le "s/he got more expensive." (The example is discussed in full in Chapter Five, section 5.6 on tā.) This is another case of the child practicing use of a linguistic device which he has not yet completely analysed in terms of its featural components. It did not matter very much to Kang that he did not have a full understanding of the topic under discussion by the adults. It was enough for him to be able to make a seemingly-relevant contribution to the conversation by using the appropriate terminology in a plausible syntactic frame. Of course children are not the only ones who bluff their way through conversations. One is reminded of the old joke, "Do you like Kipling?" "I don't know, I've never kippled."

There is a common quality to two of the least-used child predicate-types; patient-state-range, and patient-process-range. Both generally require that the state or

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process described be quantified. Patient-state-range includes forms equivalent to: "five feet tall," "worth five dollars," and "weighing one pound." Patient-process-range verbs include: pàng.le shí bàng "get 10 pounds fatter," (fat pfv / ten pounds)

and zěngjià.le sān rén "increase by three people." (increase pfv / three people)

Not only is the young child unable to quantify volume, there are few speech setting in which it would be necessary for him to do so. Such quantification is probably relatively rare in adult general conversation as well, since it refers to quite a specialized mode of activity. Nontheless, the young child's avoidance or non-use of verb types associated with quantification is connected with his avoidance of adverbial quantification of time duration. When quantification of time and volume come in, they tend to be conflated. Using spatial terms to describe time is a general human language feature. (See Traugott 1975 for an extensive discussion.) What is interesting is not so much that the Chinese child uses space words for time, but that he also occasionally transforms time adverbials into sorts of numeral classifiers for volume. That is, we are not too surprised by Kang's anomolous use of distance to mark time at age 2.11. When asked how long he planned to keep on crying nǐ yào kū duō jiǔ? "How long do you (you / want / cry / how / long)

want to cry?" he replied, *yào kūdào diànshìjī.de (want / cry reach / TV / set)

hòumiàn. *(I) want to cry to behind the tv set." He was (back side)

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unable clarify this statement despite repeated questions from his mother. He showed no signs of going to hide behind the TV set. This is a simple conflation of space terminology which he did control, with the duration-time terminology which he did not. More unusual was another three-year-old child's extended use of jiǔ "long time," to quantify both time and volume. In answer to a question about how long he had played he said *wǒ wán.le / I play pfv yì jiǔ, / one long time *"I played for one long time." In describing how many mouthfuls he had eaten, he said *wǒ chī.le / I eat pfv wǔ jiǔ. / five long time *"I ate five long times."[38] Appropriate versions of these sentences require choice of a numeral classifier particular to time or volume, such as yì fān "one length of time," and wǔ kǒu "five mouthfuls," "five bites."

Kang's Stage IV descriptions of abstract states of being still tend to be introduced by a copula, then followed by an active or process action verb, rather than to be formed into relative clauses marking a non-current time, place, or mode of possibility. An example of this strategy with a process-patient verb comes from his final tape:

Example 6.33 Kang Tape 23 (3.9)
(discussion of how he is the tallest child in his nursery school class. Aunt Jiang is sympathetic, since she also was always the tallest in her class.)

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Aunt Jiang

Yuè gāo yuè hǎo, duì.budùi?
more tall more good correct not correct

"The taller the better, right?"

(Kang nods "yes")

Kang

Yuè / yuè / běnlái shì hěn
more more originally cop very

ǎi.de.
short mod

"The more / the more / originally (I) was very short."

(squats and points way down to the ground with the flat of his hand)

Yuè zhǎng yuè gāo, yuè zhǎng
more grow more tall more grow

yuè gāo,
more tall

(gestures growing taller)

yuè zhǎng yuè gāo, yuè zhǎng
more grow more tall more grow

yuè gāo
more tall

(stands up, raises hands in air as he "grows" taller, points to his father)

yuè zhǎng yuè gāo, gāo xiàng Bàbà
more grow more tall tall resemble Papa

yíyàng gāo, jiù kěyi shàngbān.le.
one kind tall directly may on work CRS

Duì.budùi?
correct not correct

"The more (I) grow, the taller (I'll) get,
the more (I) grow, the taller (I'll) get;
the more I grow, the taller I'll get;
the more I grow, the taller I'll get;
the more I grow the taller I'll get,
(when I get) as tall as Papa, (then)
I can go to work. Right?"

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Here he expresses a complex future relation by repeating the verbs many times in order to mark long duration, and by concatenating related events rather than by making the time and causal relation between them explicit with temporal adverbs.[39] Still, this is an eloquent and fully expressive speech. At the beginning he is unable to copy Aunt Jiang's discontinuous modelled pattern yuè .... yuè "the more .... the more." He then opts for the more familiar, long-mastered syntactic pattern, the shì ... de, copula .... nominative construction. With this simpler construction, he is able to afford the extra planning effort required to make the time of the event explicit with the adverbial běnlái, "originally." Warming to his subject, he grasps control of the yuè .... yuè pattern and uses it repeatedly. He is able to control another discontinuous syntactic pattern with the even more difficult structure:

xiàng THING COMPARED yíyàng QUALITY COMPARED;
resemble one kind

xiàng Bàbà yíyàng gāo "as tall as Papa." This
resemble Papa one kind tall

construction involves marking two independent variables, a thing compared and a quality compared, between two discontinuous functions. Kang is successful in doing this. All the previous eleven clauses are one giant relative clause to mark a future situation; having set up the situation Kang then proceeds with his main verb phrase by using the jiù "simply" "directly" adverb to mark the immediate consequences of a state or an event; the modal auxiliary

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kěyi "may" "allow," and then finally the main verb, an action-range shàngbān (on job) "go to work." He correctly signals the end of his declaration by adding a le. This use of the currently relevant state particle helps give his hearer a sense of unified boundaries to the event he has just described. It also signals the end of his speech turn.

While relationships among serial verbs other than event time are generally unmarked, Kang does make eight uses of rúguǒ "if," five uses of kěshì "but," and six uses of jiéguǒ, during Stage IV. The use of the jiù "simply," "just," conjunction to mark connection between clauses is enormously more popular, with 283 Stage IV uses. Many of these, like the use above, are correct. Others are oddly extended to express almost any possible relationship between two objects or events. (Pang's uses also have this quality.) Kang's favorite conjunction is the highly general and useful nà translatable as "then" or "so." It is often difficult to score its usage as correct or incorrect, since it is a situationally determined marker of contingency. However, as Kang struggles to produce coherent, contingently marked, chains of events, his use of nà becomes so frequent as to be clearly excessive. He tries a strategy of marking almost any statement as relevant and part of the main chain of events. His usage of nà "so" peaks on his fourteenth tape at age 3.5 with 32 uses in one hour. (See Graph 6.11) This burst of

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usage is associated with a very large increase in the number of questions. Tape 14 is particularly productive of both nà "so," and questions, because he was watching an adult TV show which both baffled and fascinated him, the saga of the Vietnamese boat people entitled Xīgòng Fēngyún, "Saigon Fortunes." No sooner would his mother offer an explanation of why the little girls on the show were being locked in jail, than another baffling scene would come on the screen, with child Viet Cong guerillas creeping through the jungle in disguise. This prompted more questions like:

Nà	tā	shì	jūnrén	hái	shì	shéi	"So s/he is a soldier or what?"
So	s/he	cop.	soldier	or	cop	who	
.a?							
particle							
Nà	tā	zěn.me	huíjiā				"So how will s/he get home?"
So	s/he	how	return	home			
.ne?							
question particle							
Nà	nèi.ge	bùshàng	shì	shén.me?			"So what is that on the cloth?"
So	that	cloth on	cop	what			

At about the same time as the surge in marking contingency with nà, Kang discovers a way to describe an irrealis mode, and uses it very extensively. He used the verb jiǎzhuāng "pretend," as an imperative to his
false appearance
mother and others while instructing us in how to act out his very elaborate pretend-play scenarios. Non-imperative use of jiǎzhuāng was much rarer, but did occur.

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Jiǎzhūang "pretend," first appeared on Kang's tenth tape at age 3.3. (Pang made one use of it at age 2.8) Thereafter, Kang generally used it more than a dozen times during an hour. For example, he said, jiǎzhūang wǒ shì / pretend I cop qí mǎ.de rén, "pretend I'm (a) person who / ride horse mod person rides (a) horse," in order to initiate a request to ride on his mother's back.

During Stage IV sentence final particles become more likely to be used differentially, although though there is no increase in overall frequency. The question-forming particles, .ma and .me, start being used reliably and correctly. General phatic, .a, usage becomes distinct from the warning particle, .ou; and from "it's evident" .le .ma. These become distinct from the emphatic particles, .ma .ba and .ye. Erroneous uses do continue to occur: double-marked perfective and current relevance -.le .le will persist for years. Sentence-internal topicalizing particles become much more frequently used; first the general particle .a, and then the .ne "as for," which marks a topic in danger of being omitted from a series of topics or events being discussed. (See Graph 6.12) All of these uses point to ever-increasing sensitivity to non-lexical, and non-syntactic, discourse cohesion devices.

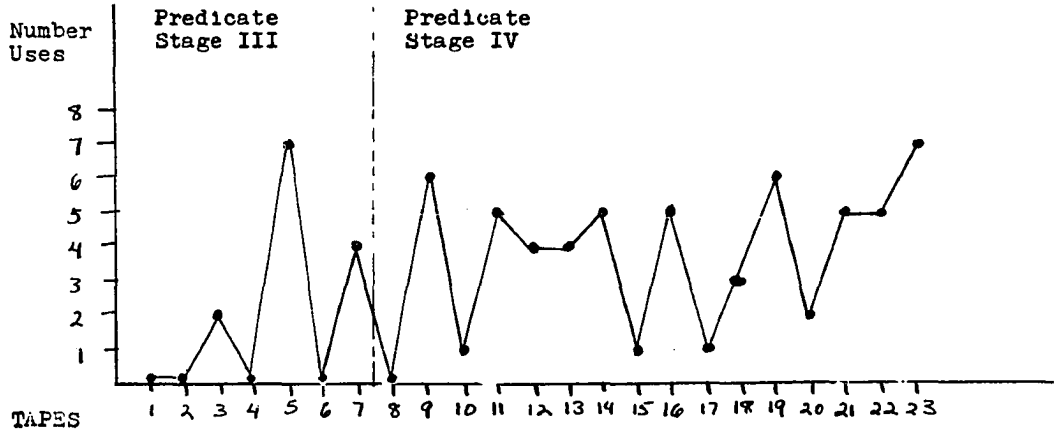
SECTION 6.6.c THE CHENG YU: PROVERBS AND LITERARY SAYINGS

One final language element peculiar to Chinese deserves mention here. This is the use of Chéng yǔ, the four-

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GRAPH 6.12

SENTENCE-INTERNAL TOPICALIZING PARTICLES - KANG



N = 73

r = .52

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syllable Chinese proverbs or sayings which play a major role in both refined literary style and highly expressive, every day speech. Toward the literary end of the spectrum, they play a role equivalent to much of the Latin and Greek-derived, formal vocabulary in European languages. In every day expressive speech the chéng yǔ are equivalent to many European proverbs, and homely, everyday expressions, like "the pot calling the kettle black" or "cut off your nose to spite your face." What both the highly literary and the highly colloquial chéng yǔ have in common is that they are all four-morpheme strings in Classical Chinese vocabulary and grammar. They are pronounced with equal stress on each segment, and are not semantically transparent to modern speakers. Many are quotations from the classics. Some chéng yǔ can be grammaticalized as adverbs of manner, others can only be cited in frozen form. All must be learned by rote.

For example:

tiān	gāo	dì	yuǎn
heave	high	emperor	far

means something like "the emperor is as distant from the people as the heavens are high above the earth." The dì used here is only the second morpheme of the modern compound noun for "emperor" huángdì.

huáng	dì
emperor	ruler

It is also homophonous with the word for "earth," dì. The naive speaker might gloss this "the heavens are far from the earth." Since the chéng yǔ are not semantically

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transparent, they are often misanalysed by illiterate or unsophisticated speakers. There is a rich comic tradition of dramas and stories around exactly this sort of misunderstanding. The actual usage meaning of this chéng yǔ is something like, "while the cat's away, the mice will play;" since it is quoted when describing the joys of being beyond the reach of the authorities.[40]

The significance of chéng yǔ for child Chinese is not only that the children will eventually have to learn them in order to become mature speakers of the language, but that the chéng yǔ are a type of linguistic unit guaranteed to confound the child's operating principle of a morpheme-by-morpheme semantic analysis. Since the child will be unable to decode the actual meaning of the segments, his otherwise highly-efficient word order rules will be inoperative. He will re-order and re-gloss the compound in order to make it meaningful. This is the same situation as for the previously discussed 4 morpheme names like Xīgòng Fēngyún, "Saigon Fortunes," in Chapter Four.

Use of chéng yǔ is greatly admired in Chinese speakers; orators and writers are often critiqued and praised specifically on their appropriate usage. A child's use of a chéng yǔ is the occasion for much praise, and a proud quotation of the child's remark to family and friends. This stands in considerable contrast to the normally critical and modest attitude parents have toward

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their children's speech, which they deprecate as being luàn "chaotic," and in need of correction.

None of the children used any chéng yǔ at all, until Kang occasionally described a mess or botched activity as being luàn qī bā zāo "a real mess." (This is a distant relative of the English term "at sixes and sevens.") Then, at age 3.3, he volunteered some chéng yǔ. Chéng yǔ are often used as titles of plays, books, essays, and even comic strips.

Example 6.34 Kang Tape 10 (3.3)

(mother reads title of comic strip)

Mother	'Gè Dé Suǒ Hào'	"'Each Gets What S/he Desires'"
Kang	'Gè Dé /ji/ Lè'	"Each Gets his/her Pleasure'"
	each receive what desire pleasure	
	(means qí, relative pronoun in literary Chinese)	
	(This is a very similar chéng yǔ. Mispronunciation of qí misleads the mother, who hears this as an imitation error and does not understand.)	
Mother	Bú shì. 'Gè Dé Suǒ Hào.'	"No. It's 'Each Gets What S/he Desires.'"
	not cop Each receive what desire	

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Kang Nà, '/ jí/ lè ' .ne?
Then rel. pro- pleasure series particle
noun

"Then, what about the '/jí/ lè' part?"

Mother Shén.me 'jí lè' ? "What 'jí lè' ?"
what

Aunt Jiang (understands, glosses)
Qí lè. "'His/her pleasure'."
his/her pleasure

Mother (delighted, impressed says to Kang)
Ōu, nǐ zhēn hǎo yǒu xuéwèn!
Oh you really good have study question

"Oh, you really are scholarly!"

(mother remarks proudly to Aunt Jiang, and researcher:)

Tā hái hùi 'Xiǎo Tí Dà Zùo' .ne.
He also can Little issue Big do series particle

"He can also (use), 'make something out of nothing'."

Kang (imitates, volunteers a usage, but produces a re-analysis, and reordering)

*'Dì Xiǎo Dà Zùo '
?earth small Big Do

Mother Bú shì. "(It) isn't (that.)"
not copula

Here again, the child is eager to participate in the conversation by discussing the topic at hand. Imitation and repetition are among his primary means for producing a contribution; the actual meaning expressed may be secondary.[41] (See Poggi on role of imitation in Chinese.)

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Yet once a semantic analysis mis-fires, syntactic structure goes awry as well.

There is no obvious way to translate Kang's mother's delighted exclamation, "oh, you really are scholarly," that does not sound faintly ironic or sarcastic to American ears. This is a sad commentary on contrast between the reverence for learning which pervades all levels of Chinese society, and the embarassed American feeling that any display of learning is pretentious.

SECTION 6.7 STAGE V

What remains to be learned after Stage IV is generally an elaboration and specification of the predicate types already in use. Many more non-human, inanimate topics will be discussed as both agents and patients of actions and processes. There will be enormously more specified and correct usage of complements marking event time, and static location, with particular growth in descriptions of inception of event, and source location, as opposed to ending, result, and goal. The duration of an event and the quantity of objects described will start to appear. There will be much more effective and extensive use of stative descriptions to background activities described. Fewer of these will be shi .... .de predicate nominative statives, and many more will be produced by left branched relative clauses. Relations between series of events, particularly irrealis or hypothetical events will be much more explicitly

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marked. The child will become far more reliable in distinguishing events which are merely potential from those which have already occurred. He will also become more specific in differentiating among degrees of probability and potentiality, both with modal auxiliaries and with adverbs, as well as making a more finely-tuned use of post-verbal linked complements to mark potential. Previously omitted obligatory markers of time, mode, and location will be used reliably. Double marking of topic and result will disappear.

Speech will be more extended and cohesive as the relationships between the speaker's remarks and his hearer's previous comments is marked directly by conjunctions and qualifying clauses. Mastery of a variety of speech registers will continue into adulthood.[42]

SECTION 6.8 CONCLUSION

SECTION 6.8.a SUMMARY

Chinese predication is lexically organized. Semantic valence features of individual verbs determine the type of complementation required, whether linked to the verb, or as separate words; they also determine the agent, patient, and location arguments which the verb must take. These same verb features command referential word order by determining whether the agent or the patient will come before the verb in the sentence-initial topic position. The

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Chinese language has a well-defined set of referential word order templates, but it is the lexical features of the individual predicates which determine which of them will be activated and used in a given utterance.

There are few morphological clues to which words are verbs in Chinese. A very large range of non-nominal word classes, including locatives and benefactives, may be used as full, free, verbs in certain constructions. These same morphemes must appear only as linked, post-verbal compounds, or as periphrastic co-verbs in other constructions. These distinctions are almost entirely governed by verb valence.

Chinese children do not seem to have any difficulty in separating out a nominal class which cannot be used verbally. They follow the basic structural pattern of the language in deriving nouns from verbs, but not verbs from nouns. They are also able to distinguish nominal object-complements, whether they are compounded onto the verb as an incorporated object or range, as in jiǎnghuà "speak talk" "to speak"; or appear as a separate noun following the verb, as in wǒ jiǎng yīngwén "I speak English." (wǒ = I; jiǎng = speak; yīngwén = English) They are able to delete the incorporated object-complement if the sentence has a free noun or a clause as an object.

Defining a class of possible verbs is easy for the Chinese children, but mastering the covert features of verb

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formation and usage is hard. Agentive actions are the ancestors of later-developed verb types. Early statives are divided between animate experiencers, and patients which are being described. Covert systems are difficult to master in any language; American children up through the age of twelve have difficulty with correct, contrastive use of: "ask," "tell" and "promise," "borrow" and "lend," "easy to see" and "sees easily."

SECTION 6.8.b CONFLICTS

The Chinese speaker does have a good sense of which sentence order templates are most frequently used. Even the very young child has a strong, probabilistic sense of the dominant word orders. It is a safe assumption that a noun-verb-noun sequence in Chinese is an agent-action-patient sentence. This is the child's basic working assumption for word order; his basic assumption for verb formation is that any verbal morpheme can be used as a full free form with an agentive, active meaning.

This is an efficient analysis as well as being true to the governing genius of Chinese syntactic structure. Problems arise when these assumptions conflict with use of verbs valences other than agent, and action. Two of the most frequent sites for conflict are: free versus compounded marking for state and location, and placement of the patient before or after the verb. The critical variable for the free versus linked verb use is whether or not

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the action describes movement of the agent alone. In that case, the verb will be free. If the action affects a patient, then the locative or stative verb must be part of a linked construction, either as a co-verb or as a linked complement. These feature-governed exceptions to the child's general operating principle are the source of a large number of typically childish errors such as those listed in the table below:

TABLE 6.13

FREE VERSUS LINKED COMPLEMENTS

	FREE VERB	LINKED COMPLEMENT
LOCATIVE	AGENT ALONE	AFFECTED PATIENT
e.g. shàng on	wǒ shàng.le huǒchē I on pfv train "I got on the train."	*wǒ shàng.le shū. I on pfv book *"I on-ed the book." (for: wǒ bǎ shū fàng zài yǐzi-shàng. I obj book put at chair on "I put the book on the chair.")
MOVEMENT	AGENT	
	Māmā lái.le Zhōngguó. Mama come pfv China "Mama arrived in China."	*wǒ lái.le shū. I come pfv book *"I comed the book." (for: wǒ dàilai.le shū. I carry come pfv book "I brought the book.")

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TABLE 6.12 (Continued)

	FREE VERB	LINKED COMPLEMENT
RESULT	SPONTAENOUS PROCESS	AGENT CAUSE
	Yīfu zāng.le clothing dirth pfv	*wǒ zāng.le yīfu. I dirty pfv clothing
	"The clothes got dirty."	*"I dirtied the clothes."
		(for: wǒ bǎ yī.fu I obj clothing nòngzāng.le. make dirty pfv "I made the clothes dirty.")

The child's SVO strategy works well as long as the sentence describes an agent of an action or the patient of a stative verb. Either of these fits in sentence-initial topic position. Conflicts arise in cases involving re-ordering with topicalization of a patient before the verb. Learning that the patient-result of a spontaneous process must follow the verb, while the patient undergoing spontaneous process precedes it, is also difficult.

The development of predication in Chinese children follows in orderly stages which can be mapped onto a variety of correlated scales. (See Diagram 6.3.) These scales show a general movement from early, word-based strategies to mature discourse chain planning. There is also a move from high semantic transitivity with its associated high degrees of agency, activity, and

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DIAGRAM 6.3

DEVELOPMENTAL SCALES FOR VERBAL RELATIONS

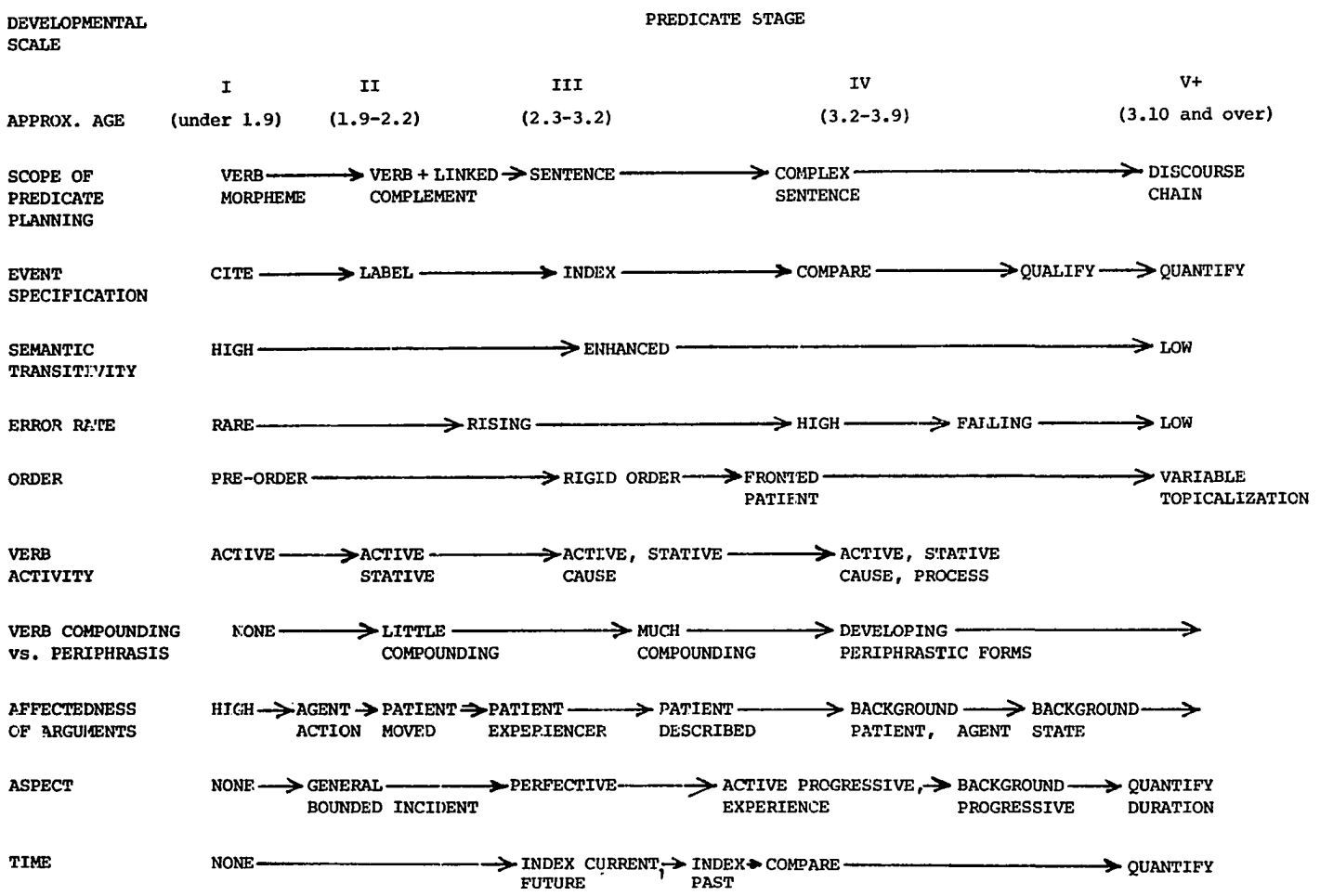
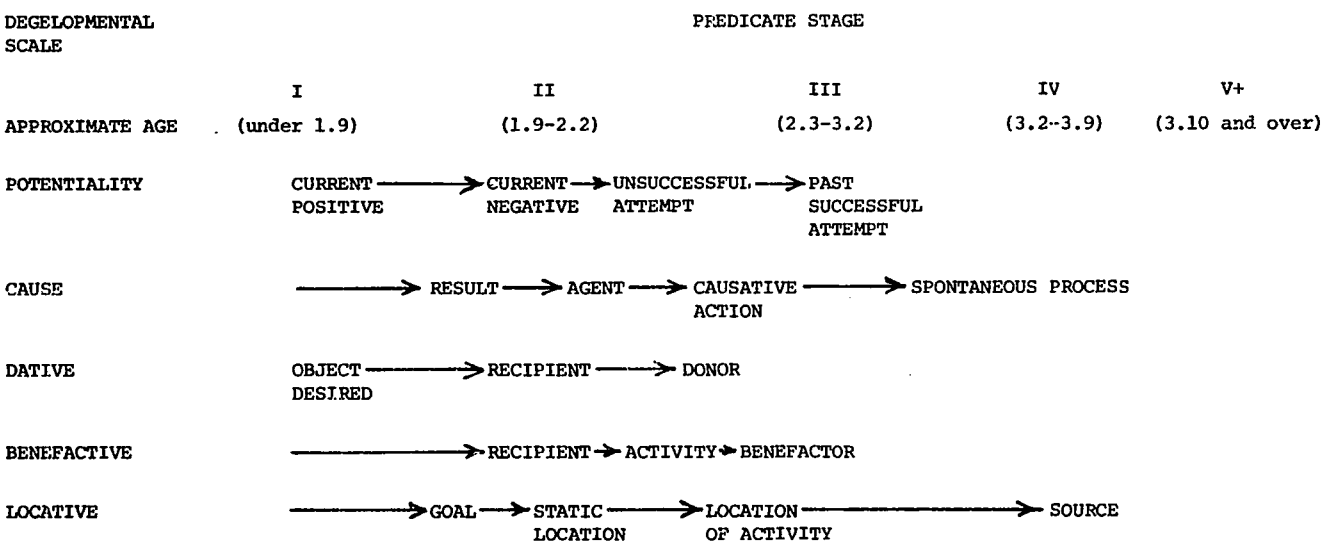


DIAGRAM 6.3 (Continued)



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boundedness, toward much less transitive, backgrounded, stative descriptions. Event specification moves from citing an event to comparing it with other events or states, and then to quantifying it. The child's error rate is correlated with the other scales. Errors at the one-word stage are rare; the error rate rises with speech complexity until predicate Stage IV when all the basic sentential relations are marked. Thereafter errors decline. Other scales chart: scope of predicate planning; word order; verb activity; verb compounding as opposed to periphrasis; affectedness of verb arguments; aspect, time, potentiality, cause, dative, benefactive and locative. Diagram 6.3 shows all these developmental scales charted by predicate stage. Graph 6.13 shows error rate by predicate stage, while Table 6.14 is a summarization of the main features of predicate development. It summarizes development of specific Mandarin constructions for: word order; predicate types; modals; aspect; time, manner, and modality adverbs; co-verbs; serial verbs; and particles. The discussion which follows synthesizes the information described in this chapter and diagramed in the three charts.

SECTION 6.8.c SCOPE OF PREDICATION

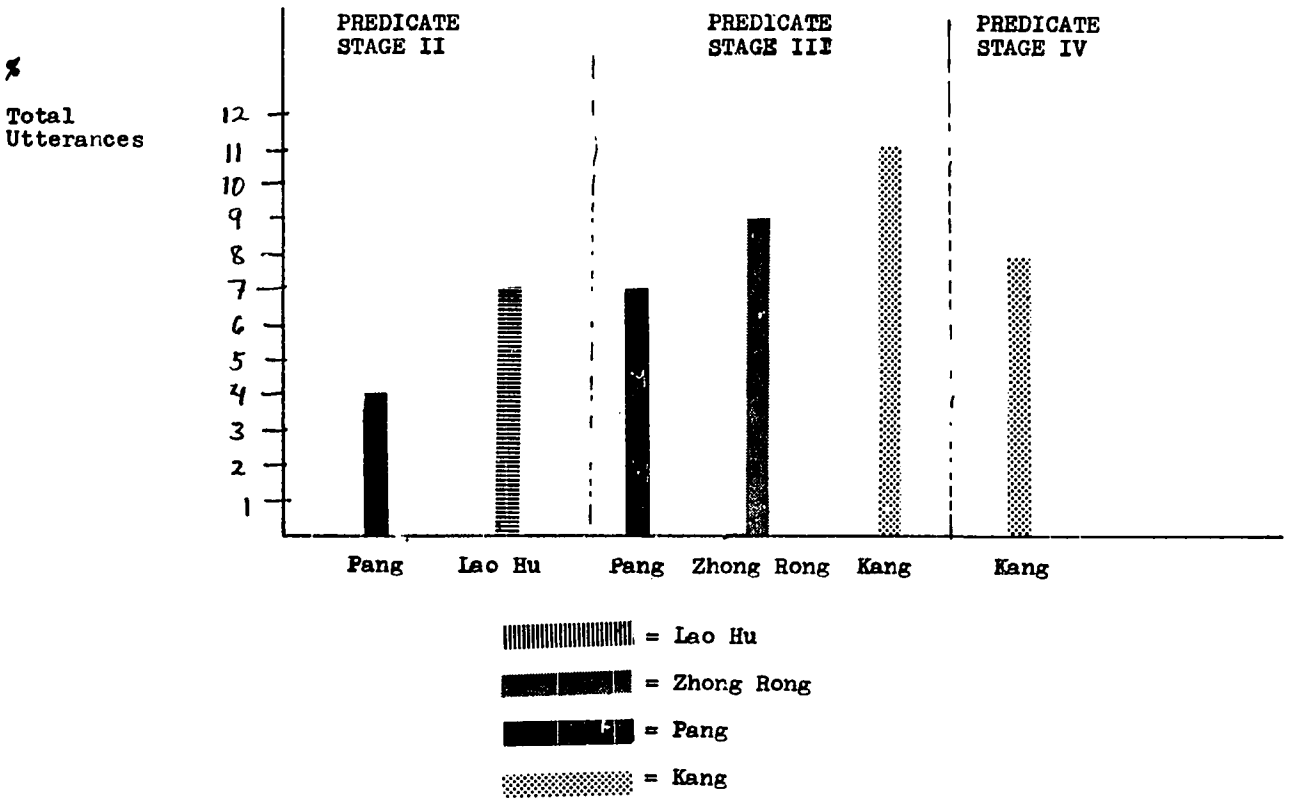
For the Mandarin-speaking child, the scope of predication moves from a single-verb morpheme stage, on to verb linked complement forms at the two-word stage. After this

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GRAPH 6.13

ERROR RATES BY PREDICATE STAGES



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TABLE 6.14

STAGES OF PREDICATE DEVELOPMENT

	CHILD	ORDER	PREDICATE TYPES	MODALS	ASPECT	TIME
STAGE I SINGLE ACTIONS (vs. THINGS) one word	Xiao Jing (1.4)	does not apply	virtually actions only, few states; only one morpheme of compound verbs	rare; only as answers to questions	rare, zài "again" "more"	none
STAGE II BINARY: ACTIONS vs. STATES late 1-word to late 3 word	Lao Hu (2.0) Niu Niu (1.10) Pang (tapes 1-10, age 1.9-2.2)	pre-order to rigid AV, VP	Simple Agentive actions, some completion markers; copula, experiments w/ experiential & descriptive states, few causatives, spontaneous processes	as answers; spontaneous negatives, hùi "can" for future potential	"Incident" aspect w/ LE for any relevant event or noun, or for perfective regardless of past - future, negative, irrealis, or imperative	very rare děngyíxià "wait a second"
STATE III ENHANCED TRANSITIVITY ACTIONS, STATES, CAUSES multi-word	Pang (tapes 11-25, age 2.3 - 2.11) Zhong Rong (2.6 - 2.8) Kang (tapes 1-7, age 2.10 - 3.2)	rigid order AVP to first fronting	burgeoning actions + comp. direction, result agentive, some patient process for motions Statives increase esp. descriptive Statives used causatively	spontaneous affirmative & negative, some irrealis néng "able" gǎn "dare" contrastive w/ perfective	Completion & result w/ verb complement, -.le perfectives, some zài progressive hái "still," unsuccessful attempted action	rarely, time of event xiànzài "now" míngtiān "tomorrow" almost no duration
STAGE IV FULL PREDICATE SYSTEM: ACTIONS, STATES, CAUSES & SPONTANEOUS PROCESSES	Kang (tapes 8 - 23 age 3.2-3.9)	re-order experiments APV	Both agent & patient actions Patient-Process actions, Statives for backgrounding instrumentals	most of full system available though often omitted w/ main verb; modals used as evaluative main verbs	Past experience -guò, successful attempt, backgrounding prog. -zhe, contingent events	many event times, ordered & contingent events some duration
STAGE V FULL DISCOURSE	(beyond scope of study)	flexible order PAV	more process range, goal more contextualization	differentiated use in all obligatory settings	habit, iterative	full contingency & duration

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TABLE 6.14 (Continued)

	MANNER & MODALITY	CO-VERBS	SERIAL VERBS	PARTICLES
STAGE I ACTIONS	none	none	none	none
STAGE II ACTIONS & STATES	very rare except zhei.yang "like this"	zài "be at"	only after yào "want"	sentence final, interchangably, to express generalized emotional warmth .a, .ou, .la
STAGE III ACTIONS, STATES, CAUSATIVES	some description of actions kuài "fast" hǎo "well"	benefactive gěi, begin use bǎ object m arker, bèi agent marker locative post-positions shàng "on" xià "off"	lái "come" "gonna," qù "go," bāng "help" end location	same as above, with a few question forming .ma, occasional sentence topicalizing hò, .a
STAGE IV ACTIONS STATES CAUSES SPONTANEOUS PROCESSES	description of events & states, some marked irrealis	bǎ, bèi productive, improved loc, direction, comitative	many serial verbs for static location, goal, result, time; relationship between clauses often unmarked	differentiated use of question .ma, .ne, .ou warning .ma emphatic topicalizing particles increase numerous undifferentiated usages
STAGE V FULL DISCOURSE FLEXIBILITY	full system of counterfactuals, hypotheticals, irrealis	source and direction of action, comitative actions	marked complex relationships for hypothetical, counterfactual, irrealis, contingency	clear topicalization, differentiated discourse sensitive particle use

comes development of a sentential reference, complex sentence construction, and finally, control of a discourse chain. Event specification within the sentence moves from simply citing an event at the one-word stage, to being able to index it to a time or location, and next to being able to compare to events. After this, during the Stage IV development of complex sentences, the child begins to be able to qualify events in terms of degree of probability. Later he is able to quantify the number of incidents, and duration.

SECTION 6.8.d SEMANTIC TRANSITIVITY

Semantic transitivity moves from an early use of almost entirely high-transitivity relations to a stage of enhanced transitivity. This is a double marking of transitive relations by: perfectives; linked verb complements for completion, destination, direction, or result; use of the gěi "give" dative or benefactive marker; modals; sentence-final particles; conjunctions; the bǎ object marker, and the bèi agent marker. As the child becomes more sure of his ability to mark reference and transitivity, the double-marking diminishes. Backgrounded states appear.

The error rate rises steadily, reaching a peak at the stage of enhanced transitivity at predicate Stage III. After Stage IV it declines gradually in all categories except for doubled determiner marking. The predicate stages are coordinated with the word order stages in that

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they both move from a word-oriented stage to a stage of establishing sentence-internal reference for both agent and patient. Variable order shows up first with sentence-internal alternations, just as complex predicate relations are first realized only within the scope of a single sentence, or sentence pair. Variable, discourse-oriented, non-referential applications of both order and predicate type strategies appear at around the same time, roughly when the child turns three years old.

SECTION 6.8.e PREDICATE STAGES

The predicate stages themselves are defined according to degree of activeness of the verb. At predicate Stage I at the one-word stage, virtually all verbs are action verbs. The child seems to comprehend the referential, isolating structure of the language, because he produces only one morpheme of compound verbs, rather than an unanalysed and prosodically unified compound. (There are occasional exceptions.) The morpheme which he chooses is almost invariably the most informative and the most central to verb meaning. That is, he says xiØ "wash" rather than either xizao "to wash"; or *Øzao "bath."
washbath

Zao is the compounded range of action for the head verb, xi. The reduplication and diminuitive verb constructions which are prominent in baby-talk double the head verb. The verb-not-verb question pattern also requires selecting

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the head verb in the reply. Both reinforce the strategy of choosing the head verb. The child at the one-word stage divides his linguistic universe into actions, and names of objects. At Stage II the child has a binary verbal system with a split between actions and states. Most actions are simple agentives, with some linked complements for completion. Copula appears in naming objects. The majority of statives are experientials like yào "want," or bù xiao.de "don't know." There are a few descriptive states such as gòu "enough." Causatives are marked by result alone. Spontaneous processes appear for physical movement "eventives."

Fluent multi-word speech and a three-way system of actions, states and causes develop; at Stage III, the child marks enhanced transitivity. The range of action verbs produced grows rapidly, with much increased use of linked complements for result, and direction. Descriptive statives increase greatly, but agent-actions predominate. Process-actions other than a movement of an inanimate patient are rare, as are animate patients of process actions. Causatives become much more frequent. The causative process is described in addition to the result.

At Stage IV the child has the basic forms for the entire predicate system including actions, states, causes, and spontaneous processes. The child can re-order sentence elements, and mark both agent-actions and patient-actions. Instrumentals become productive. Process-actions on

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animate patients start appearing, although quantified processes and processes of transformation are rare. Statives begin being used for backgrounding.

Stage V is a cover term for the advanced linguistic development which occurs beyond the scope of this study. The greatest development among predicate types will occur with process-verbs with range and goal starting to be used to mark the emergence of abstract states and situations.

SECTION 6.8.f POTENTIAL VERSUS COMPLETION

There is only one way to mark most sentential relations; systems in which there are two or more ways to mark a single relation are rare. However, these precipitate much error and confusion where they do occur. One choice which the Mandarin-speaking child must make is between compounded and periphrastic forms for marking potential and completion. The child's early preference is for the compounded forms; the periphrastic forms develop later. His preference for local marking rather than distant marking is universal in child language. His preference for compounding over periphrasis, however, is more in harmony with recent historical trends in Mandarin than it is for either child language Sino-Tibetan as a whole.

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SECTION 6.8.g POTENTIAL VERSUS ASPECT

There is an early complementary distribution between the function of the modals, which is to mark unbounded potential, and that of the aspectual markers, which is to express a general boundedness of incident which subsumes both current relevance and perfective. At Stage I modals are rare except as affirmative answers to questions about currently potential actions. At Stage II they appear as negative answers as well. Hùi "can," "might," or "could," appears spontaneously to denote current and future potential. Spontaneous negative modals are used in isolation. At Stage III the child uses both negative and affirmative modals spontaneously, with and without a following main verb. Néng "able," and gǎn "dare," are fairly frequent. They occasionally mark irrealis. Modals start to become contrastive with perfective. They are often incorrectly used in place of a main verb, or as full, evaluative, verbs describing a whole clause. For example:

*wǒ	dāng	qiūqiān	kěyǐ	ø,	*"I ride the see-saw can ø."
I	ride	see-saw	can		

This is used to mean something like "My riding the see-saw can be fun." The potential state itself is not specified. The child knows that he can omit the main verb after a modal in answering a question, and so assumes that the same ellipsis is permissible in declaratives. He knows his own meaning, and so he assumes that his hearers understand it also. Omission of the main verb after a modal is an

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extremely common Stage IV error which persists for months, perhaps years, into Stage V.

SECTION 6.8.h ASPECT

Aspect is unmarked at Stage I other than an occasional use of zài "again," "more." Soon afterwards there is a broad use of LE to mark general bounded incidents. All early LE uses are sentence-final. LE follows both verbs and single nouns. It is used correctly to mark perfective and completion. However, its current relevance function inspires the child to use it inappropriately with to negatives, irrealis, and imperatives, regardless of past or future time. That is, ni tiào.le (you jump pfv/CRS), standard meaning, "you've jumped," is used as an imperative to mean "jump!" By Stage III the child is much more able to use periphrastic forms for potential, and linked verb complements for completion and result. Perfective use of -.le is better defined. Progressive zài for foregrounded actions emerges to mark description of an ongoing activity. Hái "also" "still" appears, usually with the meaning of "also" or "more." It nearly, always occurs in the constructions, wǒ hái yǒu X, "I also have X," or wǒ hái yào X "I also want to X." Hái is used as a full verb to express continued activity. Unsuccessful attempts expressed by an infixed negative are frequent, as in ná-bu-chū-lái (take not out come) "can't get it out."

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Backgrounded aspectuals become important at Stage IV. Zài progressive is used to index an event time to an activity, as in wǒ zài kàn diànyǐng.de shíhòu
I prog watch movie mod time
kànguò, "I saw (one) while I was watching the/a
see experience
movie."

The backgrounded -zhe progressive starts to develop as well, as in wǒ tǎng.zhe yóu "I swim lying on
I recline prog swim
my back." Past experience marked by -guo appears first with the verbs "eat" and "see," then spreads to other verbs. A successful attempt can now be marked with infixed -de- with verbs of motion where an agent acts on a patient; as in wǒ zhuā.dezhù "I can each and grasp it firmly,"
I reach mod firm
"I can grasp it firmly." Some contingent events are marked by jiù "simply," "directly"; as in, nǐ zǒu.le, wǒ
you go pfv I
jiù qù shuìjiào, "When you've left, I'll just go to
just go sleep
sleep." A few iteratives and habituals appear for agent-actions.

SECTION 6.8.i TIME

Explicit time marking develops concurrently with aspect. No times are marked during Stage I; time marking is almost non-existent during Stage II except for an occasional use of děngyíxià "wait a second," "in just a second." Early time uses in Stage III index present or

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future time, largely with the use of xiànzài "now," and míngtiān "tomorrow." During Stage IV past event times are indexed; past and current events are compared, and contingent events are marked. Some quantifying of duration begins. Full contingency relations and quantification of time develop after Stage IV. Marked if-then relations and counterfactuals may not develop until the child is around seven years old.[43]

SECTION 6.8.j MANNER

There are no manner or modality adverbs at Stage I; they remain very rare throughout Stage II, other than an occasional use of zhèi.yang "like this." A few descriptions of actions such as kuài "fast," and hǎo "well," appear during Stage III. Real development begins during Stage IV with description of actions in a narrative, and evaluation of potential. Irrealis starts being marked explicitly with jiǎzhuāng "pretend." Conjunctions are rare, and those which do occur are extended.[44] The full system for marking counterfactuals, irrealis and hypothetical does not develop until Stage V.

SECTION 6.8.k CO-VERBS

There are no co-verbs during Stage I; at Stage II zài "be at" appears. Stage III has the greatest development with: gěi benefactive, locative post-positions for end location; the first uses of the bǎ object marker; and

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the bèi agent marker. Bǎ and bèi usage continue to improve during Stage IV, along with emerging systems for marking location of an event, location of an activity, direction of action, and comitative actions. During Stage V the source of an action starts to be noted, while direction of action and comitative action are better and more broadly described.

SECTION 6.8.1 SERIAL VERBS

Serial verbs do not, of course, exist at Stage I. At Stage II they appear only as single-word object complements to yào "want," as in wǒ yào chī "I want (to) eat." They remain restricted throughout Stage III: with lái "come," "gonna"; qù "go," and bāng "help," used almost exclusively to describe the child's own activities. Serial verbs marking non-human agents and affected patients become common during Stage IV. Static location, goal, result, and time, start appearing more frequently, although the relationship between clauses is almost never made explicit. The shì .... de (copula ... modifier/nominalizer) nominalizing construction is used extensively for backgrounded states of all kinds. Explicit marking of complex relationships between clauses does not develop until Stage V.

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SECTION 6.8.m TOPIC

Appropriate use of most sentence-final and sentence-internal particles is discourse-related, rather than being tied to word meaning or sentential reference. There is an early, frequent, interchangable, use of sentence-final particles to express general emotional warmth and relevance. Differentiated use of .ou for warning, .ma and .le.ma for obviousness starts during Stage III. During Stage IV the question forming particles .ma and .ba come in, along with .ne to mark an item in a series. Sentence-internal topicalization particles start to be used at the very end of Stage III, at the same time that the child is gaining a sense of sentence internal re-ordering for topicalization. The topic-marking particles are over-used late in Stage V. Redundant topic marking continues through middle childhood. Cohesive use of the sentence-final particles improves steadily throughout middle childhood. Use of the formulaic sayings or chéng yǔ begins after the child is 3.6, and continues developing as long as he is in school.

SECTION 6.8.n FINAL REMARKS ON THE VERBAL UNDERWORLD

The Mandarin predicate system is composed of several interlocking sliding scales of verbal relationships whose surface members might seem to be interchangeable. In fact, the modals, co-verbs, adverbs, and action, stative, and process verbs are like the members of several secret

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societies. Their memberships are overlapping and intricately related, sometimes competitive but generally congenial. Many individuals belong to several, a few are pledged to only one; some shift their loyalties over time, or in certain unusual balances of power. Some members refuse to be in the same room with others, while others are gregarious. Some societies freely admit new members without a prior group consensus, while others are restricted to a fixed number of hereditary fellows. Some of the most exclusive societies have only a few members, but these are so powerful that they appear in almost every agreement. However anonymous and blandly uniform the individuals may seem to the naive outsider, the members themselves live their whole lives structured according to these intricate and secret rites. The native speaker somehow "just naturally understands" them, while the foreigner ignores them at his peril, and accepts them to his infinite gain. He must always remember to move from the central meaning outward to grammar, to give due respect to the weightedness of preferred forms, to acknowledge that his choice is easier if he only has a single option, more difficult if there is a meaningful choice of alternatives, and hardest of all if he must select among subtly graded forms. He knows the futility of judging by appearances, and the naiveté of expecting the Chinese verbs to wear badges proclaiming their membership in a single society, while eschewing all other connections, when everyone knows that

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the real balance of power works behind closed doors in a whole thriving underworld which flourishes outside either the pedant's denials of their existence, or his occasional illusions of prescriptive control.[45]

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NOTES TO CHAPTER SIX

1. Chafe makes this point quite clearly. "It is the verb which is the control center of a sentence determining by its own specification what the rest of the sentence will contain - not completely, of course, but to a significant degree." (1970, p. 165.) He develops this argument in the discussion in Chapter Nine, "States, Processes, and Actions," (pp. 96-104.)
2. See Li and Thompson, 1976, 1981, pp. 15-16. See also Tsao, 1977, 1978, also the discussion in Chapter Four, Section 4.1 of this dissertation.
3. Hopper and Thompson, 1980, p. 251.
4. See Teng, 1975, pp. 14-28 for discussion of selectional restrictions, occurrence restrictions, and deep identity of verbs for Chinese. He discusses the relative fit of transformational theory, case grammar and generative semantics in describing Chinese.
5. See Chao 1968, pp. 350-357; Li and Thompson, 1981, pp. 58-65, also Lu 1978.
6. See Li and Thompson, pp. 185-217; also Rohsenow, 1976.
7. See Chao, 1968, pp. 731-735; Li and Thompson, 1981, pp. 172-183. See Matisoff, 1973, pp. 211-220 for discussion of the cognate Lahu system.
8. Huang, 1978, discusses the semantics of time and space for the verbs lái "come." and qù "go."

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9. See Chao 1968, pp. 767-790; Li and Thompson, 1981, pp. 181-182, 319-355.

10. See Li and Thompson, 1981, pp. 356-369, also 1974a, "Co-verbs in Mandarin Chinese: Verbs or Prepositions?" Bǎ and bèi are discussed in detail in Chapter Four of this dissertation. Consult the references listed for that chapter.

11. See Chao, 1968, pp. 325-350 on "verbal expressions in series." Also Li and Thompson, 1981, on serial verbs, pp. 594-622. Matisoff, 1973, discusses the cognate Lahu system in his section on verb concatenation pp. 199-220.

12. See Chao, 1948, p. 57; and 1968, pp. 124-129 on "pivotal constructions," and pp. 350-359 on "verb-complement constructions." See also Li and Thompson, 1981, pp. 579-585, and 607-610. See also Matisoff, 1973, pp. 461-472.

13. This is in accordance with Slobin's 1973, operating principle of using old forms for new functions.

14. Teng's division of verb types into action, state, and process verbs is based on Chafe, 1970, particularly on his chapter on "States, Processes, and Actions," pp. 95-104. Teng has also drawn on Fillmore's 1968, 1970 Case Grammar; as well as on Halliday's 1967, 1968, 1969, Systemic Grammar, in order to produce a coherent system of verb transitivity relations for

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Chinese. While Teng's examples are all in Mandarin, the system works well for all dialects of Chinese.

15. See L. Wang, 1947, pp. 96-11; W. S-Y Wang 1964; Chao, 1948, pp. 47-49; Chao, 1968, pp. 663-748; Li and Thompson, 1981, pp. 141-159; Teng, pp. 47-52; Matisoff, 1973, discusses the cognate Lahu division as "action verbs" as opposed to "adjectival verbs" on pp. 193-197. A division between active and stative verbs is characteristic of Sino-Tibetan.
16. Teng, 1975, p. 95, quotes Halliday, 1967, p. 58.
17. See Rosch, 1973, also Mulford 1979.
18. See Chao, 1968, on "the middle voice in Chinese," pp. 703-704.
19. See Nelson, 1974, also Chafe, 1976.
20. See Chao, 1968, on "major and minor sentences," pp. 57-67; also Roberts, 1968, on zero anaphora in Chinese.
21. Saksena, 1980, argues that an affected/non-affected distinction is more fundamental than agent/patient in language design.
22. See Li and Thompson, 1981, pp. 296-300 for discussion of LE for both perfective and currently relevant state.
22. They have different pronunciations in all other Chinese dialects.

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23. The entire nursery rhyme went:

Xiao	qi	gui,	"The/a Little Air Devil
Little	air	devil	
He	liang	shui,	Drank cool water,
Dring	cool	water	
Guapo.le		gang,	(He) blew the jar to
Blow break pfv		jar	pieces,
Guapo.le		zui.	(And) blew apart his
Blow break pfv		mouth.	mouth."

Many complex forms which do not appear in spontaneous speech can be recited correctly. This is true of child language generally.

24. See Fletcher, 1979 for discussion of acquisition of aspect in English. Erbaugh, 1978, is a general discussion of acquisition of aspect in Mandarin.

25. See Jacobsen, 1982.

26. "Do as I do, not as I say."

27. For a general discussion of acquisition of negation in Mandarin, see T. Li, 1981.

28. For discussion of the shi ... .de nominalization, see Chao, 1968, pp. 296-297; also Li and Thompson, 1981, pp. 499-500, 587-593. For discussion of the Lahu cognate -ve constructions, see Matisoff, 1972.

29. This sentence is a good example of enhanced transitivity. The gei "give" is being used as a sort of redundant marker of affectedness.

30. C.f. Misunderstanding in example 3.8.

31. It is ambiguous in exactly same the way as the English "I don't eat fish."

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32. In Chinese one "eats" both chewing gum and medicine.

33. This use may well have a spatial rather than an experiental meaning.

34. It is also possible to use English "with" in isolation as the answer to a question. One day as I was thinking about Kang's use of gēn, I went to buy some chocolate chip cookies. The clerk asked me, "Do you want them with nuts or without?" "With." I replied.

35. See Chapter Four, Section 4. for fuller discussion of bǎ and bèi.

36. Kuo, 1937, indicates that they do not appear until the child is six or seven years old.

37. The issue of instigative causation deserves much fuller investigation for Chinese. There is no single colloquial way to mark instigative cause which is comparable to English "make." The causative verb shǐ is literary. It is hard to get good Chinese translations for utterances like "I made the child eat," or "I made him go to sleep." Often such situations are described with the verbs yào "want," or jiào "ask," "request." The situation is stated, and then the result, but the causative relation is inferred rather than grammatically expressed. See Li and Thompson, 1981, pp. 602. It is dangerous to assume an exact parallel form for all causatives cross-linguistically.

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38. Thanks to Hong Hsiu-Fang for these and other observations about her three-year-old nephew. The child was a Taiwanese speaker, but the form quoted here is an exact cognate with Mandarin in etymology and usage.

39. Chinese has no form comparable to imperfective for durative activity.

40. See Chao, 1968, pp. 489-492, on "literary cliches."

41. Kang, 3.6, looked at some tiny, green, unripe peaches in the market, and said they were, chǎng (long) shòu (longevity) bù (not) lǎo (old), "long life without getting old," "eternally young." Peaches are a symbol of longevity; this chéng yǔ is the appropriate saying at birthday parties honoring the elderly. Kang had extended its use to fruit, but his mother was thrilled at his more-or-less appropriate use of a literary saying.

42. For a general discussion of language acquisition after the age of five, see Karmiloff-Smith, 1979; Clark, and Clark, 1977, pp. 364-368; also C. Chomsky, 1969.

43. See Kuo, 1937.

44. This accords well with the generalized use of conjunctions Clancy, Jacobsen and Silva, 1976, found for English, Italian, Turkish and German.

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45. "When I use a word," Humpty Dumpty said in rather a scornful tone, "It means just what I choose it to mean -- neither more nor less."

"The question is," said Alice, "whether you can make words mean so many different things."

"The question is," said Humpty Dumpty, "which is to be master -- that's all."

Alice was too much puzzled to say anything, so after a minute, Humpty Dumpty began again. "They've a temper, some of them -- particularly verbs, they're the proudest: adjectives you can do anything with, but not verbs. However, I can manage the whole lot of them!" (Dodgson, 1946, p. 238.)

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CHAPTER SEVEN

CONCLUSION: IMAGINATION BODIES FORTH THE FORMS OF THINGS UNKNOWN[1]

SECTION 7.1 SUMMARY

These are the most general trends shown in the first-language acquisition of Mandarin syntax by four Chinese children aged 1.9 to 3.10:

1) Learning Mandarin is comparable in difficulty to learning the other languages whose acquisition has been studied thus far, including English, French, Polish, Japanese and Hebrew. It may be more difficult than Turkish.[2] The lack of inflectional morphology is neither an advantage nor a disadvantage overall.

2) The basic shape of Mandarin and Sino-Tibetan is apparent from the children's first word choices.

3) The children are opportunists who make over-extensions in accordance with already-established currents of language change. A good deal of their usage is more conservative than the ongoing historical current of language change.

4) Syntactic structure proceeds from the inside out. The child relies on his primary understanding of the meaning

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and transitivity relations of individual morphemes in order to organize his surface order and other syntactic markers.

5) A variety of non-inflectional linguistic models are effective in patterning the child's speech.

6) The semantic range of the children's speech is fully comparable to that of children from other language families; there is no evidence of a Whorf effect on mental imagery for Mandarin-speaking children.

Let us discuss each of these trends in turn before considering the theoretical implications for linguistics, language acquisition, and information processing, as well as some implications from language teaching, and suggestions for future research.

SECTION 7.2 MANDARIN ACQUISITION PATTERNS

SECTION 7.2.a EASE OF ACQUISITION

The Chinese children had few opportunities to make errors at the one-word stage, since almost any single morpheme could be construed as an acceptable, grammatical sentence or phrase. Errors rose in direct correlation with the age of the child and the complexity of his speech, reaching a peak of about 8% erroroneous utterances when the child was around three years old. After that, errors slowly declined to a level of around 6% when the child was 3.9. For children of all ages in the study, omissions of

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obligatory segments formed about 64% of all errors; usage errors were about 30%, and order errors only about 6%. Observation of older children indicates that usage errors persist through the teen-age years. On the other hand, the number of unintelligible or ungiossable utterances was extremely small for all the children studied, roughly one or two out of every five hundred utterances. The children did not re-order their speech during self-corrections and repairs, although they frequently varied word choice and prosody.

Syntactic systems which were easily acquired included:

1) Word formation by compounding, and by affixation of the -.de suffix for nominalization, modification, or possession. The -.de derivations were perfect so long as they were sentence-final. Coinages were well formed.

2) The pronominal system, although children tended to over-extend the use of the third person pronoun tā to mark inanimate patients in the agent-actor sentence slot.

3) Canonical forms for generating proper names, family relationships, and occupational titles were mastered early and well. They were the subject of much comment, instruction, and experimentation.

4) Demonstratives were nearly error-free, although zhèi.ge "this," was far earlier and more common than nèi.ge, "that,"

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5) Complex verbs in which a verb head was followed by morphemes indicating the direction of an action, its completion, or its result were early and nearly error-free. Infixed potential marking was harder. The negative potential infix was acquired easily, but the affirmative form was delayed almost a year.

6) The general negative bù used appropriately was contrastively in opposition to the méi perfective negative from the very first words. This indicates a sensitivity to the perfective, which is the most basic aspectual distinction in the language. There was occasional problems with ordering the negative to indicate the scope of negation.

7) Order of morphemes in a compound, and reference-establishing sentential word order was almost perfect. Order in relative clauses was also excellent. These order systems are extremely consistent in adult Mandarin.

8) There were almost no errors in lexically-formed questions, with the exception of over-extension of the colloquial gàn má "do what?" "how come" where the more formal wèishén.me "why" would be more appropriate.

All of these systems are extremely regular, high-frequency, and central to the organizing core for Mandarin. With the exception of the order patterns, all of the easily-mastered systems tended to have limited lists of easily-

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segmented, semantically-full, referential morphemes which could be parsed quite well on a principle of a one-to-one mapping between function and meaning. None of the easily-mastered systems required coordination of discontinuous pairs of sentence elements, or manipulation of semantically empty functors other than the multi-use -.de.

The ease and correctness with which the children mastered these regular devices contrasted sharply with the realms which gave them difficulty. Most of these were cryptic distinctions in classes whose members were infinite rather than listable. Other problems arose from segmentation errors. Exceptions to canonical order almost invariably caused problems, especially if the variations offered a graded array of possible meanings rather than a single contrastive alternative. Virtually the entire language-processing system depended on a prior understanding of morpheme-meaning and transitivity relations. While order was extremely consistent and correct in spontaneous speech, the child was virtually unable to imitate modelled speech in correct order if he lacked clues to meaning and internal relationships in compounds. Homophony caused considerable difficulty. The child avoided semantically empty devices, especially the ones which were discourse-sensitive rather than important to establishing reference.

Common and persistent speech errors included:

1) Omitted morpheme in a compound.

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2) Omitted main verb. If there was a modal or an adverb in the sentence, the child frequently omitted the main verb. Such errors sounded as though the child were using a modal or an adverb as a main verb, equivalent to an American child's saying *"I wanna now," or *"Let's with," to mean, "I want to play now" or "Let's play with our cousins."

3) Omitted auxiliary or omitted co-verb for time or location. Unmarked irrealis or consequences.

4) Omitted second member in a grammatical pattern marked by two discontinuous members, for example the shì ..... .de nominalization.

5) SVO order for the topicalized variant SOV. The children also erroneously placed stative verbs sentence-medial before complements in order to conform to the dominant SVO order. Location of an event was often mis-ordered to the post-verbal position reserved for end locations. This did help lower the number of relations to be marked in the pre-verbal slot.

6) Errors in the features governing the bǎ object marker for fronted patients, and the bèi agent marker for unfortunate events.

7) Overextended use of the LE affix. The child uses it to mark perfectives, and currently relevant states, as

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is standard in adult Mandarin. He also incorrectly affixes it to nouns, negatives, and imperatives to mark and any sort of bounded event on which he wishes to focus attention. This leads to utterances like tiào.le (jump pfv) "I've jumped" used as an imperative meaning "jump!"

8) Undifferentiated use of the sentence-final particles. These neutral-tone syllables do not have any clear semantic reference; they are used to express pragmatic variations.

9) Undifferentiated use of classifiers; the child uses the general gè classifier rather than the specified classifiers for clothing, vehicles, doors, furniture, flat objects, and so on. Use of quantifying classifiers comparable to English "a bottle-ful," "a minute" is error-free.

10) Active, causative use of stative verbs. This focuses on result rather than process.

11) Double marking of highly transitive relations.

12) Doubled use of a grammatical marker when it expresses two functions, for example, -.de marks both possession and nominalization. The child will say *zhè (this) shì (cop) wǒ.de.de (I poss nom) *"this is mine's" rather than zhè shì wǒ.de, "this is mine."

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13) Double-marked topic and aspect are common among older children.

The child tries for maximum consistency in his speech. Once he learns that word order marks sentential relations, he is loath to re-order for any reason. He assumes that the basic sentence pattern is SVO, and alters variant possibilities as if they were agentive. He treats many patient-processes as if they were agentive. The Mandarin-speaking children in Taiwan did not play with word order, although they did a great deal of experimenting with tonal contrasts and word formation. The child finds homophony troubling; at around the age of three he begins asking how one word can possibly be the same as another. He strives for maximum contrastiveness.

SECTION 7.2.b FIDELITY TO OVERALL LANGUAGE SHAPE

The Mandarin-speaking children are strikily economical in their decision to cover the whole territory of their language in a rudimentary way, rather than to expend their energy on mapping one tiny subsystem in exquisite detail. The boundaries that they do draw are exactly the ones which are most broadly defining for their native tongue. They are also the distinctions which are most characteristic of Sino-Tibetan languages as a whole. There are many sub-systems and exceptions within Mandarin which are high-frequency, perceptually salient, and available for marking,

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but the child has the wisdom to choose the significant over the trivial, to bet on the future by regularizing vestigial forms.

The child's word choice and errors show that he has made the following assumptions: 1) All morphemes are semantically full and can be used as free words. 2) Any morpheme which is not a concrete noun may be used as a verb. 3) Only one verb is allowed per clause. If the verb phrase includes a modal, an adverb, and a main verb, only one may be spoken. One must choose either a modal, an adverb, or a main verb to occupy the sentential verb slot, but there is only room for one of these. 4) Stative verbs may be used causatively. 5) Possession, location, and time may be marked lexically without grammatically relational co-verbs. 6) Sentential order should not deviate from SVO. 7) Form classes are fluid, especially among verb types. 8) The children never use noun-to-verb derivations. They only use verb-to-noun, the only direction the modern language allows.

As it happens, these choices parallel much of the standard usage for classical Chinese, which had much less compounding, periphrasis, and grammatically relational functors than modern Mandarin. The Taipei children sometimes sounded "as if they knew" classical Chinese. This is not to say that "ontogeny recapitulates phylogeny" in any exact sort of way. After all, modern Mandarin-speaking children do not add extra phonemes to approximate

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the many phonetic distinctions which existed in the classical language, but which are lost or merged in modern Mandarin. They did not choose archaic words in preference to modern ones. But the overall balance of structures in Chinese is stable and powerful enough that the primary structures for the classical language are unmistakably the same weight-bearing pillars as in the modern edifice.

SECTION 7.2.c CHILDREN AND HISTORICAL CHANGE

The Mandarin-speaking children's errors were usually generalizations from dominant patterns rather than idiosyncratic innovations. If a historical change is already well underway, then the childish error might persist and be tolerated in adult speech. This seemed to be the case with the children's extended use of the tā third person pronoun, and the decay of the classifier system. These childish errors are like radioactive isotopes which are more like accurate diagnostic locators of imminent language-change "blowouts," than they are the cause of a change itself.

The children's fidelity to the most central language patterns sometimes made them conservatives on the issues of language variation and change. While object-fronted SOV order is becoming ever more common in modern Mandarin, children avoid it. Not only does SOV permute their hard-won sentential reference order, it is also a much less broadly-usable pattern than SVO. Correct fronting requires

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mastery of a number of context-sensitive features. It isn't the Chinese children who are spearheading the change in Mandarin word order; they are the ones who are dragging their heels as the adults pull them along this direction. The children do seem to be in harmony with the overall trend to increased compounding and periphrasis, since they do a great deal of their own experimenting and innovating along these lines. Their preference for lexically full forms is also in harmony with the overall shape of the language. When adults used a greater amount of object-fronting marked with the bǎ object-marker, the children also used more bǎ fronting on those same tapes. They were more sensitive to the lexically-marked order variant; increased adult object-fronting without the bǎ marker has the same semantic meaning, but unmarked fronting in adult input did not inspire more child fronting. Evidently varying order alone was not perceptible enough a change to serve as a model. There was a similar differential between the child's rate of response to questions formed with sentence-final particles, as opposed to those constructed with lexically full question words.

SECTION 7.2.d GROWTH FROM THE INSIDE OUT: FROM MEANING TO FORM

All children search for meaning in the patterns they see and hear.[4] In Mandarin, nearly every syllable has a clearly-defined meaning, although its form class and

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reactance are covert. The Mandarin-speaking children assigned a meaning and a form class to each syllable before ordering it in its appropriate template, and adding on the relevant functors. It is easy to take the priority of the semantic and form-class pre-sort for granted, to assume that they are effortless and automatic simply because they are so phenomenally successful. The very success of this operation makes it possible for linguists to suppose that a syntactic template is primary, in sentence design, and that the choice of meaning and words begins only after syntactic structure is set.

This illusion is shattered when we see where the Chinese children's normally-perfect ordering collapsed. They were un-characteristically unable to repeat a sequence in correct order if they did not have prosodic semantic and morphological clues to its meaning and internal constituants. Although the Taipei children almost never re-ordered their own speech or that of others, they did re-order sentences which they did not understand in order to make them conform to their semantic parsing.

This is not to say that Chinese children are unable to repeat strings of nonesense syllables; they are, in fact, extremely good at memorization. But rhythmic and other prosodic patterns are crucial in superimposing a segmentable structure on nonsense, if meaning and form class clues are lacking. Hence the popularity of alphabet

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songs and rhythmic, marked mnemonic poems for lists of dates, streets, state capitols, presidents, and dynasties.

Quite astonishingly, Chinese children have a natural sensitivity even to covert word-class and transitivity. This discrimination is especially strong for the primary split between concrete nouns and the general verbal class. They are able to select contrastive word classes for words in a series. They also have a sensitivity to the contrastive value between closed-set word classes and infinite sets. They are able to arrange these in alternation as well; this greatly increases informativeness and predicability. "Mommy sock" is an American child utterance; Mandarin-speaking children eschew noun + noun constructions. They are also able to determine which compound-verbs have a bound noun object-complement as their second syllable. These complements are often semantically opaque forms which are not known to the child in free form, for example the zao in xizao "to wash
wash bath
oneself," "to bathe." These have no surface markers to distinguish them from verb + verb compounds, e.g. zhuangzao "to create." Yet the child is able to know
create make
that the bound-complement must be included when the verb is used intransitively, and omitted when it is used transitively, and so followed by a noun complement which is a free word. That is, one says:

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Tā zài xizǎo.		"S/he is washing up."
s/he prog wash bath		"S/he is bathing."
		"S/he is taking a bath."
and: Tā zài xǐ liǎn.		"S/he is washing his/her face."
s/he prog wash face		
but never: *Tā zài xizǎo liǎn.		*"She is taking a bath his/her face."[5]
s/he prog wash bath face		

The children make a distinction between bound noun morphemes, as opposed to bound morphemes from other word classes. They often omit the bound nominal complement, but they never retain it incorrectly. That is, they frequently say things like *wǒ xieØ, rather than
I write

wǒ xiězi "I write," "I'm writing"; but they
I write character(s)

do not double-mark complements. This shows a remarkable understanding of covert form-class and reactance. It parallels Maratsos and Chalkely's finding that English-speaking children make very few errors in verb transitivity, despite the fact that both the English and the Chinese verb transitivity systems are covert rather than overt.

The Taipei children's preference for semantically-full morphemes leads to an odd practice of exiling many of the semantically-empty, neutral-tone functors and particles off to a kind of no man's land at the end of the sentence. Perfective and current-relevance LE, the -.de nominalizing, possessive, and modifying suffix, and the discourse particles are first used correctly in

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utterance-final position. They appear utterance-medially only later; at this stage these functors are occasionally removed and re-ordered to the sentence-final slot.

The children start out by using LE, -.de and gei "give" dative and benefactive, as extended proto-forms to express boundedness, relatedness, and donation respectively. They only gradually acquire the distinguished set of relations these functors convey. Usage features are particularly difficult to master. Once the children use these functors regularly in their extended meaning, they are likely to double-mark them to express semantic transitivity and affectedness of the patient. The ancestral forms require several generations of differentiation before they resemble their individual and evolved mature forms.

SECTION 7.2.e ANALYTIC MODELS

Mandarin presents the child with numerous powerful and regular models of syntactic sub-systems despite the fact that none of these are packaged as paradigmatic inflectional arrays. The lack of inflectional morphology is neither an advantage nor a handicap to overall acquisition. The input style is well-adapted to highlight the most important analytic forms.

The adult quiz style of conversation emphasizes strictly structured question-and-answer routines in speech addressed to young children. Adults very seldom ask open-ended questions such as "what would you like to do now?"

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The preferred style is more like a cathecism in which each question has a conventional response. Divergent replies are punished or ignored. Questioning is exhaustive; the adult will keep asking "and what else?" or "what then?" after all the conventional replies have been made in order to make sure that the child has produced every possible bit of information, so as not to "let him off early" with an answer which is less than comprehensive. It is up to the child to admit that he has nothing more to add. The child is encouraged to be comprehensive rather than creative. He would have been asked to correct himself if any event were omitted from the main story-line, if an event were mentioned outside the canonical time sequence, or if an incident were added which was not part of the standard plot. This style does not reward summarization, embellishment, variation, or speculation; all of these are ignored, if not criticized.

The American counterpart of this speech style is associated with rigid, ambitious, upwardly-mobile parents, whose attitude is often cold and punitive. This makes it hard for us to understand that the Chinese quiz-style is "the same but different." In China it is the style used by parents from all social backgrounds and levels of society, and the emotional tone is usually loving, warm, and exuberant in both the child and the adult. The Chinese feel that a child needs help in talking properly, and that the adult is simply giving him means with which to express

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himself. They cannot imagine any other way of talking with children. The children enjoy these exchanges; even two-year-olds can use the style in their speech to younger children, animals, and toys. The child is usually delighted to have an opportunity to enter into the conversation by being given a whole set of questions which he can answer in a way which is sure to receive unanimous approval. Adults are careful to ask the child only questions which he is likely to be able to answer; they will give him hints until he is successful. The purpose is not to humiliate the child, but to let him show off what he knows, and then to encourage him to display just a little bit more.

This speech style seems to be highly adaptive to Chinese. The adult scaffolding helps the child overcome his short-term memory constraints in planning sentences whose reference must cohere across several utterances despite zero-anaphora, no agreement markers, and few overt cohesive devices. A discourse-oriented language is not easy to learn.

The quiz style also emphasizes several natural segmentation features of Mandarin by arranging the conversation into naturally structured substitution-drills in grammatically parallel form. Segmentation clues include:

1) Canonical syllable structure. There is a fixed inventory of possible syllable morphemes. Syllables are almost invariably CV. CVCV is always two syllable

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morphemes. Lexical tone on each syllable is another important clue. Neutralized tone is a clue to functors; contrastive stress is important.

2) Semantically full morphemes.

3) Naming and word-formation templates.

4) Extremely regular word order, with the same order used for declaratives, questions, imperatives, and elements in relative clauses.

5) Contrastive series of word classes.

6) The verb-not-verb question form.

It is interesting to consider how important adult the quiz style input is to successful acquisition of Mandarin. There is so much cultural uniformity in the use of pattern that it might be difficult to find children who had not received such input who were not also severely neglected or abused. The natural resiliance and redundancy of the normal child's mental capacity also makes it difficult to find control groups of children who might have learned the Chinese language without also receiving the sociolinguistic training which is central to Chinese culture.

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SECTION 7.2.f SCOPE OF LANGUAGE USE

The Mandarin-speaking children show no apparent difference from European children in their concepts of and reference to: number, semantic gender, time, aspect, duration, location, hypothecation and irrealis, despite the fact that Chinese does not mark these inflectionally. Children begin by marking agentive actions and patient-states; causatives focus on result rather than process. Spontaneous patient processes are restricted in early speech. In terms of aspect, the children first mark a general boundedness, then perfective, then progressive. Event time is indexed well before quantified duration. End location of an event is marked before the static location of an action. The children move from marking relations which are high in semantic transitivity to marking backgrounded, low-transitivity events and states.

SECTION 7.3 IMPLICATIONS

The study of child acquisition of Mandarin has implications for linguistic theory, language acquisition research, language teaching, and information theory.

In terms of linguistic theory, this study demonstrates the impossibility of positing autonomous systems for phonology, syntax, or semantics; as well as the importance of considering both historical and synchronic trends. It also demonstrates the importance of input and sociolinguistic variables. Each organ and organ system must be

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considered in relation to body function as a whole. This does not mean that it is not worthwhile to direct one's attention to a single organ system, or that some organs are not more closely related than others. We recognize this in our compoundings for a "cardio-vascular system," but not a "hepatic-skeletal system," in talking about morpho-phonemics, but not "socio-morphology."

The more important generalization is that language design works from the inside out, from meaning and transitivity relations outward to formal marking. Inflectional distinctions are relatively superficial compared to the convert structural networks which govern all languages. Our definitions of base structures based on morphological primes are inaccurate models for describing language universals. We must make greater efforts to see and to trace the workings of covert categories, rather than to assume that they are easy, automatic, beneath notice, or non-existent. The probity of Fillmore's case grammar and Chafe's verb system as they are applied to Mandarin in Teng's schema are amply demonstrated by their usefulness in coding, and the scope of their explanatory power. The core relations are action, stative, and process verbs; and the arguments which each verb calls up and inserts into a template for sentential reference. Both sentence and topic are important devices; but their scope needs to be kept distinguishable. Order templates are especially important in Chinese, while morphological ones are marginal.

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The balance among the specific devices is varied among different languages, but it is this balance which gives each language its characteristic proportion and shape. The direction of derivation patterns and their productivity need to be specified, since even children adhere to these covert patterns.

It is critically important to distinguish between base-forms and their possible variants. Sentential reference is a base-form which Mandarin marks by strict word order. Discourse topicalization is a variant which uses the same device, order, at a different functional level. It is also vital to establish which baseline patterns are automatic to mature speakers, as opposed to which vary with speech setting and addressee. Mandarin constants include overall utterance length, and speech complexity, as measured by the percentage of elements which might potentially appear in a variant order. The amount of unmarked object-fronting is much higher in adult-to-adult speech than in adult-to-child speech. The amount of marked object-fronting with bǎ is more dependent on the nature of the actions being described than on the age of the hearer. It is difficult to draw any firm conclusions about developmental trends as opposed to situational variations without a baseline of adult norms and variants.

Phonological factors are critically important in determining informativeness and probable sentential function in Mandarin. The mutability of tone, and the child's

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willingness to consider tonal minimal pairs as identical indicates that tone a less central phonological device than the segmentals are. The existence of Tibetan dialects which have acquired and lost tone, the history of tonal shifts, and the intellibility of redundant speech with permuted tone are further evidence for this view. The problem of tone sandhi variations of lexical tone must be considered. The problem of determining a single, clear meaning for homophones, and for tone sandhi variations of citation form deserves much greater consideration. Speakers are unlikely to compensate for ambiguity or phonetic loss by adding phonemic distinctions; compounded, periphrastic, and prosodic devices are far more accessible and popular.

The implications for historical linguistics reinforce the conclusion that a discussion of overall trends is meaningful only if specific languages and subsystems are considered in detail. Children are opportunists in taking advantage of already-existing currents of language change. They are conservative where the changes seem to contradict their most broadly general and efficient language strategies. This study emphasizes the integrity of the overall language shape across time, speakers, and individual variations. It suggests that this shape governs second-language use. Borrowings and innovations must be compatible with this overall shape if a language change is to survive and be adopted, rather than being rejected as an

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incompatible foreign body. Borrowed innovations and variants typically involve featural variants rather than wholesale reorderings.[6]

All of these factors have significance for Chinese linguistics and for the study of Sino-Tibetan. They emphasize the basic harmonies between the overall Sino-Tibetan system and the Mandarin dialect. This reinforces the notion that the syntactic differences among Chinese dialects are relatively superficial. Still, much greater work needs to be done, especially for dialects in which there is differentiated pronunciation for the different functions of LE and -.de and in dialect groups such as the Wu dialect where verb-object compounds must be prosodically distinguished from verb complements which are separate words. The balance of strictness between referential order and topicalized order may be quite different, and favored tactics for disambiguation and coinage may vary as well in other dialects.

This study gives no support to the hypothesis that Chinese is shifting its basic order type from SVO to SOV. It upholds the model of Chinese as a discourse and topic-centered language, rather than a sententially organized one. It demonstrates the expansion of personal pronouns at the expense of the numeral classifiers; it supports differentiating a separate class of quantifying classifiers, since these show no signs of decay. Much more attention needs to be paid to prosodic clues to form class, the

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differing form class possibilities in compounded forms, the question of natural distinctions between covert form classes, and the exact patterning of the alternation of contrastive form classes. All of these factors need to be much more explicitly understood for second-language teaching of Chinese. The same generalizations can be used to help Chinese students of English, especially in their tendency to segment English words in accordance with Chinese syllable and morpheme structure, and in their loose definition of the sentence as a self-contained unit.

The implications for language acquisition support Slobin's operating principles which stress consistent, contiguous grammatical marking which is maximally contastive, and corresponds as closely as possible to a one-to-one correspondence between form and meaning. Preference for word and sentence-final forms can be overridden by the need to adhere to a consistent order template, or for semantic clarity. The Mandarin results support the trend of assessing a complex interaction among input, developmental stage, and language design, but they direct special emphasis to the importance of segmentation and the difficulties of homophony. It is not yet possible to rate the children's relative understanding of word meaning in compounds as it develops in individual children at different stages,[7] but performance was very poor on semantically and prosodically opaque forms. There seems to be a general, cognitively - determined sensitivity to form-class and

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transitivity, and allowable derivations, as well as a critical age for the acquisition of referential word order. Preference for highly-transitive agent-actions, and causative focus on result and completion also seem to be cognitively motivated and likely to be generalizable cross-linguistically. Mandarin adult input is a much more effective model for lexical variations than for other non-lexical devices. Input variables meant that the most frequent wh-questions Chinese children produced were different in relative frequency from those produced by Americans. It is likely that world-wide begin by making word-choices among the most differentiated and important form classes, and utterance types. The importance of inherent word classes and meaning as opposed to surface marking are underscored.[8]

The Mandarin-speaking children double-mark the functors they do acquire, especially those which convey highly transitive relations. They also mark topic redundantly once they start to note it. This is contrary to the general trend of the language to reduce and abbreviate complex forms when context is clear. This double-marking is cognitively based rather than structured by the language or the environment. It resembles Karmiloff-Smith's findings for French and English. The Chinese children's ability to index event time before they could quantify it seems likely to be true of children acquiring other languages. The Chinese ratio of 60% omission errors as

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opposed to 30% misuse errors may well be a proportion which is true of other languages.

Pragmatic factors are important in Mandarin, but the need to establish reference seems to block discourse re-ordering. Sentence-final particles are difficult to learn. This casts doubt on previous assumptions that the child has easier access to pragmatic devices than to syntactic ones. Children generally seem to have a much easier time with limited, binary, referential choices, than with marking scalar phenomena.

The implications for information theory are that the scope of the language planning unit must reach beyond the sentence for Chinese, and that ways must be found to assess the informativeness of covert systems for order contrasts, transitivity, and valance. It is important to assess the relative information values of specific listable sets as opposed to open ones, particularly as these alternate in contrastive form class strings.

A study of the relative informativeness of different Mandarin syllables might be revealing; some of the highest-frequency syllables such as gěi "give" occur with only one of the four possible tonal variants. The relative proportion among concrete nouns and other word classes for syllables with many homonyms mught be assessed. It may be that highly homophonous syllables contain a preponderance of concrete nouns. If this were so, they might tend be used in situations with more contextual support than an

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array of verbs might be. The loss of informativeness with neutralized tone and sandhi variations could be calcualted. The size and the degree of predictability of the processing units are important; the name-formation and question-formation patterns are just the size to be accessible to Chinese children. It is not particularly surprising that high homophony and limited morphological markings should cause some difficulties in processing. The difficulties these covert distinctions cause in production is more startling. Mandarin-speaking children have a strong desire for regular, redundant surface-marking of sentential relations. They will provide this even where it is not required. While any analysis of informativeness must begin by considering meaning, the speaker must do more than produce a list of the relations to be expressed. The richness of a language system is measured by the complexity and interrelatedness of the relationships which it can reliably distinguish, rather than by a count of its separate components. The first generation of computers had many more parts than modern machines, but the hundreds of vacuum tubes had far less processing power than a mere handful of modern microchips.

SECTION 7.4 RESEARCH SUGGESTIONS

A comparison of the balance between range of devices, economy and expressive power in creole languages, child Mandarin, and adult Mandarin would be revealing. Standard

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Mandarin is particularly rich in covert systems for expressing indefinites eventives, and backgrounded states which creoles must express by lengthy periphrastically, if at all, while young children do not produce them. The apparent slippage of word class when an adjacent form is omitted is probably similar in languages other than Mandarin. The question of the amount of space which is available in a single template slot is another general question. The Mandarin pre-verbal slot is particularly heavily loaded; the Taipei children's triage solution of only allowing one item in the slot is probably similar to that used by children speaking other languages. It would be interesting to compare their priorities in choosing which to retain. I predict that negatives would be retained more than modals, and modals more than adverbs of time or place.

Other fertile areas for investigation include: the choice between infixed and periphrastic negative and potential forms as a test of accessibility of devices within and outside the word; the scope of negation as determined by the placement of the negative in the utterance, and the differentiation of bǎ from bèi when the agent of an action also receives the effects of it, such as a car crashing, or a hand getting stuck in the door. Another interesting question is "who is tā" if it can mean "he" "she," or "it," as well as "him," or "her." A look at anaphora in child narratives would be revealing; the child

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could also be quizzed about stories in which anaphora was selectively varied and marked in varying degrees of redundancy. It would be interesting to weight the relative importance children give to sentence-initial position in assessing a noun as an agent, and to test very young children's interpretations of sentences in which a non-agent topic occupies the initial slot.

The hypothesis of there being a critical receptive stage for order could be tested by controlled exposure to sentences which varied standard and topicalized order; event time as opposed to duration; and static location as opposed to end location. Imitation, production, and comprehension tasks would likely reveal different levels of analysis. Performing the Bronckart and Sinclair permuted order experiment with Mandarin-speaking children will be interesting. They will likely perform like adults and find orders other than SVO difficult or impossible because of the confusions produced by N+N strings. It would also be interesting to know if the Mandarin-speaking children's natural selection of broadly-representative form classes is shared by children learning other languages, and if this tendency to broad coverage is common to primates who are learning human languages, as well as to animal communications systems in general.

Whatever the result, we now know that Mandarin-speaking children are able to rely on largely covert lexical factors to perceive, select, and produce a recognizable

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ancestor of the ordered and mature speech which they will later evolve. In language acquisition the child is the father to the man, and the infant girl gives birth to her own speech.

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NOTES TO CHAPTER SEVEN

1. Shakespeare, A Midsummer Night's Dream Act V, Scene 1, verse 14.

2. See the articles in Slobin ed., forthcoming.

3. See Hermann, 1979, and Sweetser 1977 for discussion of language design principles of ambiguity avoidance.

4. "I'm sure I didn't mean ---" Alice was beginning, but the Red Queen interrupted her impatiently.

   "That's just what I complain of ! You should have meant! What do you suppose is the use of a child without any meaning? Even a joke should have some meaning --- and a child's more important than a joke, I hope. You couldn't deny that, even if you tried with both hands." (Dodgson, 1946, p. 283.)

5. This error type is extremely common among foreign speakers of Chinese. I had great difficulty remembering to say:

	wǒ	xiǎng	qù	lùyīn,		"I want to go tape."
	I	want	go	record sound		
and:	wǒ	xiǎng	qù	lù	tā	"I want to go tape him/her."
	I	want	go	record	him/ her	
but not:	*wǒ	xiǎng	qù	lùyīn	tā.	*"I want to go tape-recording him/her."
	I	want	go	record sound	him/ her	

6. See Maratsos and Chalkley, forthcoming.

7. See Poggi, 1982.

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8. See Hawkins, 1979, and Talmy, 1982. See also Slobin, 1975 and 1977.
9. See Chao, 1968, p. 154.
10. Slobin, 1973.
11. See Darwing and Baker, 1979.
12. See Bloom, Miller and Hood, 1975; and Bloom, Lifter and Hafitz, 1980.
13. See Karmiloff-Smith, 1979a and 1979b.

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APPENDIX

KANG KANG TELLS "THE THREE LITTLE PIGS" IN MANDARIN

(Tape 2, Age 2.10)

(Kang Kang is at home with his mother; also present are the researcher, her assistant, and Kang's father. The mother has just promised to swing Kang through the air several more times if he will be good and tell us a story.)

1)	M	Nǐ xiān jiǎng gè gùshi you first tell class. story gěi wǒ tīng, wǒ jiù wán. for me listen I just play. (=will then)	"First you tell me a story, (then) I'll play."
2)	K	Jiǎng shén.me? tell what	"Tell what?"
3)	M	Jiǎng nèi.ge ... 'Xiǎo tell that 'Little Tiānshi.de gùshi Starchild' mod. story.	"Tell that ... 'Little Starchild' story."
4)	K	Xiǎo Tiānshi Little Starchild .ou. part. ± "as for"	"As for Little Starchild."
5)	M	À. yeah	"Yeah."
6)	K	(excited) Zài nèi.ge be at that wàimiàn yǒu yí.ge dà outside have one big yěláng lái, lái zhuā tā. wolf come come grab him/her	± "In that outside there was a wolf who came /came and grabbed her."

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7)	M	Ou. oh	"Oh."
8)	K	Nà, tā. so, she.	"So she."
		Kū.le. cry pfv.	"Cried."
9)	M	Shéi kū.le? who cry pfv?	"Who cried?"
10)	K	Xiǎo Tiānshi Little Starchild	"Little Starchild."
11)	M	Nà, zěn.me bàn so what do	"Well, what could (she) do about it?"
		.ne? particle referring to series of actions	
12)	K	Nà, tā māmā jiù so her Mama just	"So her mother just came."
		lái.le. come pfv. part.	
		Lái.lou! come excited particle	"(She) came!"
13)	M	Lái a. come interest particle.	"Come on."
14)	K	Hǎo.le. good pfv.	"That's all."
15)	M	Hái méi .ma. still not emphatic particle	"(It) still isn't (finished)! After her mother came..."
		Tā māmā lái.le His/her Mama come pfv	
		yǐhòu .ne... after series particle	

(~~ is overlapping speech)

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16) K Hǎo. Nǐ jiǎng .a. Hǎo.
ok you tell part/imp. ok

Lái.le yǐhòu tā dàihuíjiā, suǒshàng
come pfv after s/he carry back home lock up

mén.le, bú ràng dà yěláng. Lái.le.
door pfv not let big wolf. come pfv.

Ránhòu tā jiù chuī fáng.zi. Nà tā jiù pǎodiào Ø,
later he just blow house so he just run off

chuī.budǎo, jiù pǎodiào.le. Hǎo.le.
blow not down just run off pfv. good pfv.

± "Ok. You tell (it.) Ok. After (he) came s/he carried it back home, locked the door, not let Big Wolf Came. Later he just blew the house. So, he just run off, couldn't blow it down, just ran off. That's all." ..

(runs off across the room)

17) M Oò. Shéi pǎodiào.le? "Oh. Who ran off?"
oh who run off pfv.

18) K Dà yěláng .a. "The Big Wolf!"
big wolf particle

19) M Hái méi yǒu wán. Hòulái dà yěláng hái
still not have finish later big wolf still

xiǎng pá. Nǐ hái méi jiǎng.
want climb you still not tell

"You still haven't finished. Later the Big Wolf still wanted to climb. You still haven't told (it.)"

20) K Pá yānchōng. "Climb chimney."
climb chimney

21) M À. Na, jiéguǒ "So, what happened then?"
oh. so, result

.ne?
series particle

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22) K Mm, pèngdào ø "Hm, he bump ø into a
hmm, bump against boiling water."

yí.ge kāishuǐ.
one class. boil water

23) M À. Ránhòu .ne? "Oh. And later?"
oh. later series part.

24) K Tàngsǐ.le, nà, dà, "Scalded to death, so big,
scald die pfv so big so Big Wolf soup."

nà, dà, dà yěláng tāng.
so big big wolf soup

(general laughter)

Dà yěláng tāng. "Big Wolf soup."
big wolf soup.

25) M Yěláng tāng .a? "Wolf soup, huh?"
wolf soup question
particle

26) K À. "Yeah."
yeah.

27) M Lái, yěláng tāng. "Come on, wolf soup.
come on, wolf soup What then?"

Hòulái .ne?
later question series
part.

28) K Hēdiào.le, bǎ, "Drank it up, as for that
drink off pfv object wolf (they) also ate
marker (him) up."

bǎ nèi.ge yěláng
obj. that wolf

yě chīguāng.le.
also eat clean pfv.

29) M Gǔtóu .ne? "(What about) the
bone series particle bone(s)?"

30) K Gǔtóu tùtù. ± "The bones spitty-spit."
bone spit spit

31) M Á? "Huh?"
huh?

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32) K ØGutou tudiao. "The bone(s) spit out."
bone spit out

33) M Tu zai nali? "Spit (them) where?"
spit be at where?

34) K Ku.de, (corrects) "Spit, spit (them) on the table."
spit?

tu de (=zai)
spit be at

zhuo.zi shang.
table on

35) M Ou. "Oh."
oh

36) K Hao.le "That's all."
good pfv.

37) M Na, ni, zhei.ge bu shi Xiao Tianshi.de
well you this not cop. Little Starchild poss.

gushi! Zhe shi "San Zhi
story This cop. Three classified for animals

Xiao Zhu" .de gu.shi .ma!
Little Pig mod. story emphatic

"Well, what you (just told) isn't the 'Little Starchild' story! This is the story of 'The Three Little Pigs!'"

38) K Wo jiang "San Zhi "I tell 'The Three Little Pigs.'"
I tell Three class.

Xiao Zhu."
Little Pig

39) M Na, ni hai you, ni hai yao jiang nei.ge
so you still have you still want tell that

"San Zhi Xiong".de gushi, nei.ge "Lulu".de
Three class. Bear mod. story that "Goldilocks" mod.

gushi gei wo ting. Ji.buji.de?
story for me hear. remember not remember mod.

"So you have still, you still should tell that 'Three Bears' story, that 'Goldilocks' story for me to hear. Remember?'"

(omit about 30 seconds worth of transcript)

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40) K Ayou. Xiao Tian.shi "Oh dear. As for Little
oh dear Little Starchild Starchild."

.a.
topicalizing particle

41) M A. "Yeah."
yeah.

42) K Nei.ge, tā māmā houlái ± "That, her mother later
that her Mama later came."

lái.
come pfv.

43) M A. "Yeah."
yeah.

44) K Ranhou tā, nà dà "Afterwards s/he, that
afterward s/he that big Big Wolf just came back.
Afterwards s/he, s/he
yélang jiù huílái.le. open(ed) the door."
wolf just return come pfv.

Ranhou tā, tā kāi mén .ou.
Afterward s/he s/he open door particle.

45) M Ayou. Jieguo .ne? "Oh dear. So what hap-
oh dear result series pened?"
particle

46) K Jingang jiù zhei.yang "(A/the) robot(s) just
robot just this way smashed (it) like this."
hit

dapo.le.
break pfv.

47) M (laughs) You bù shi "That's not the 'Un-
again not cop vanquished Robots.'
(so) how could...."
"Wu Di Tie Jingang"
without enemy iron robot

(Name of popular cartoon show)

zen.me hui....
how can

48) K (laughing loudly) Ha ha ha.

49) M Houlai .ne? "And then?"
afterward series particle

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50) K Nà, tā yòu "So s/he ran off again."
so s/he again

pǎodiào.le.
run off pfv.

51) M Shéi pǎodiào.le? "Who ran off?"
who run off pfv

52) K Nà dà yěláng "That Big Wolf!"
that big wolf

.ou.
particle for enthusiasm, obviousness

53) M Hòulái .ne? "And then?"
afterward series particle

54) K Pá yānchōng. "Climbs (the) chimney."
climb chimney

55) M Nà, pá yānchōng
so climb chimney

.a. Jiéguǒ? "So, (he) climbs the chimney. The result'
part. result.

56) K Tàngsǐ.le. ± "(He) scalded to death."
scald die pfv.

57) M Tàngsǐ.le. Biànchéng "(He) scalded to death. What (did he) turn into?"
scald die pfv. change become

shén.me .le?
what current relevance particle

58) K Ròujiang. "Meat sauce."
meat sauce

(general laughter)

59) M Biànchéng ròujiang "(He) turned into meat sauce, huh?"
become meat sauce

.a?
part.

60) K À.
yeah.

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61)	M	Nà, hái you shén.me so still have what	"So, what else is there?"
		.ne? series part.	
62)	K	Hái you..., still have	"(There) is still ..., (That's) all."
		méi yǒu.le. not have pfv.	
63)	M	Méi yǒu.le. Um. not have pfv. ok.	"(That) is all. Ok."

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ABBREVIATIONS USED IN REFERENCES

BLS = Proceedings of the Berkeley Linguistics Society. Berkeley: Berkeley Linguistics Society.

CLS = Proceedings of the Nth Meeting of the Chicago Linguistic Society. Chicago: University of Chicago, Department of Linguistics.

DP = Ochs, Elinor, and Bambi B. Schieffelin, eds. 1979. Developmental Pragmatics. NY: Academic Press.

JCL = Journal of Chinese Linguistics.

J Child L = Journal of Child Language.

LA = Fletcher, Paul, and Michael Garman, eds. 1979. Language Acquisition: Studies in First Language Development. Cambridge: Cambridge University Press.

Lg = Language.

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PRCLD = Papers and Reports on Child Language Development. Stanford: Stanford University, Department of Linguistics.

SCL = Cheng, Robert L., Ying-che Li, and Ting-chi Tang, eds. 1978. Proceedings of Symposium on Chinese Linguistics, 1977 Linguistic Institute of the Linguistics Society of America. Monographs on Modern Linguistics, Number 2. Taipei, Taiwan: The Student Bookstore.

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