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ELICITED IMITATION AS A RESEARCH TOOL IN DEVELOPMENTAL PSYCHOLINGUISTICS.

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THE AUTHORS HAVE CONCERNED THEMSELVES IN THIS STUDY WITH IMITATION AS A DEVICE BY WHICH THE INVESTIGATOR CAN LEARN ABOUT CHILD LANGUAGE. THE DATA EXAMINED ARE PART OF A LONGITUDINAL THREE-MONTH STUDY OF LINGUISTIC DEVELOPMENT IN A TWO-YEAR-OLD CHILD. THE REPORT IS BASED ON 1,000 ELICITED IMITATIONS. CERTAIN PHENOMONA WERE OBSERVED GENERALLY WHEN THE MODEL SENTENCES WERE SOMEWHAT BEYOND THE CHILD'S NORMAL SENTENCE PROCESSING SPAN AND WERE NOT ANOMALOUS. THESE SEEMED TO DEMONSTRATE THAT SENTENCE RECOGNITION AND IMITATION ARE FILTERED THROUGH THE INDIVIDUAL'S PRODUCTIVE LINGUISTIC SYSTEM. WHILE THE CHILD COULD UTTER SENTENCES SPONTANEOUSLY WHICH SHE COULD NOT IMITATE, SHE COULD ALSO GIVE "RECODED" IMITATIONS OF MODEL SENTENCES WHICH EXCEEDED HER PRODUCTIVE CAPACITIES. SOME INTERESTING SIDE-PHENOMONA WERE OBSERVED--(1) OMITTED ITEMS, SUCH AS ARTICLES, COPULA, EMBEDDED CLAUSES, MAY SIMPLY NOT HAVE BEEN HEARD, (2) HESITATION PAUSES WERE IMPORTANT CUES, (3) PRESERVATION OF STRESS SEEMED TO BE GENERAL THOUGH ITS POSITION WAS NOT ALWAYS PREDICTABLE, AND (4) THE PRESERVATION OF RHYTHMIC AND INTONATIONAL ASPECTS IN IMITATION MAY BE BASIC. AN IMPORTANT EXCEPTION TO THE LAST OBSERVATION WAS THAT THE CHILD IGNORED REPEATED WORDS UNLESS THE REPEATED WORD COULD BE INTERPRETED AS AN APPROPRIATE LEXICAL ITEM IN THE SENTENCE. THIS PRELIMINARY ANALYSIS INCLUDES A REFERENCE LIST OF STUDIES IN CHILD LANGUAGE. (AM)

ELICITED IMITATION AS A RESEARCH TOOL IN DEVELOPMENTAL PSYCHOLINGUISTICS

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Imitation probably is not an important device in language acquisition, because the aspects of language which the child must acquire are not available to be imitated: he is exposed only to the surface structure of sentences, but must himself acquire the deep structure and the transformational rules which relate deep and surface structures. This argument has already been well developed by linguists and psycholinguists (e.g., papers in Smith and Miller, 1966), and we are not concerned in this paper with the role played by imitation in the natural situation of language acquisition. (This problem is discussed in Slobin, 1967.) Our present task is to determine what can be learned through the use of *controlled, elicited imitation* as a probe to discover [illegible] underlying linguistic competence. That is to say, we are concerned here with imitation as a device by which the investigator can learn about the child's language, and not as a device by which the child can learn about the adults' language.

Many of the ideas suggested in this paper grew out of discussion with Mr. Barry A. Gordon, and many of the data were gathered and transcribed with the assistance of Miss Susan Ca[illegible]. To both we extend our thanks.

The data examined here are part of a longitudinal study of linguistic development in one child. In keeping with the tradition of pseudonyms established by Brown and Bellugi's "Adam," "Eve," and "Sarah" (1964) and McNeill's "Izanami" (1966), we will refer to our subject as "Echo." She is a precocious, first child of graduate student parents, and has no siblings. This report is based on 1000 elicited imitations, collected between the ages of 2;3;2 and 2;5;3. (Ages are given in years, months, and weeks.) By elicited imitations we refer to the child's repetition of a model sentence presented in a context calling for imitation, as opposed to the child's spontaneous imitation of adult utterances.* The time segment examined here is part of a continuing study of Echo's linguistic and cognitive development, going back to infancy, and projected into the indefinite future.

Psycholinguistic literature presents the following general picture of sentence imitation by two-year-olds (e.g. Brown and Fraser, 1963): The child repeats stressed content words in proper order, with length and complexity of utterance not exceeding that of his spontaneous speech. That is, imitations have the same "telegraphic" character as the child's own utterances, in which many function words and inflections are missing. Our intensive study of elicited imitations shows that all of these general statements are in need of modification. In addition, the "classical" picture gives no explanation of why imitation should be of this nature. One is simply left with the notion that the child scans a sentence and picks up some of the stressed, familiar words, working from left to right. We do not yet have a clear understanding

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* In the early stages of the investigation it was necessary to give the child explicit instructions to imitate (e.g. "Can you say..." or "Say..."). Such instruction soon became superfluous, as Echo apparently learned the subtle cues signalling a model sentence to be repeated. We are aware, however, of the problems posed by the fact that we have no way of assessing Echo's definition of the task (or even if she always interprets the task in the same way.)

of why he picks out the words he does, and the extent to which his knowledge of the language determines the way in which he recognizes, stores, and reproduces sentences in immediate repetition. We are beginning to understand aspects of this process a bit more clearly, and are in the process of building a model for sentence imitation--a model which will, we hope, also eventually reveal something about the way in which sentence recognition and comprehension takes place normally, in both children and adults.

The general picture presented in the literature seems to hold true only if the model sentence is somewhat beyond the child's normal sentence processing span and is not anomalous. The following example corresponds well with this picture. (The model sentence, uttered by an adult, is given in capital letters; the child's imitation is given immediately below, in lower-case letters, followed by age in years, months, and weeks.)

(1) THE PENCIL IS GREEN
pencil green (2;3;2)

Note that the child drops the article and copula, as expected (though the article sometimes occurs in Echo's speech and imitations at this age).

However, Echo also has much longer sentences in her free speech, and at this same age can easily imitate another four-word sentence such as:

(2) TIGERS CAN DRINK MILK
tiger can drink milk (2;3;3)

And she can even successfully imitate much longer sentences (although often omitting article and copula), such as:

(3) THE LITTLE BOY IS EATING SOME PINK ICE CREAM
little boy eating some pink ice cream (2;3;2)

Number of words, or number of morphemes, is clearly not a relevant measure of how much of a sentence a child can imitate. At this age, in her free speech, she has sentences as complex as, "It'll get burned in there"; and sentences as long as, "This's Echo room, but then Daddy won't come in Echo room."

On the other hand, when she is somewhat older, and her grammar quite a bit more complex, she may drop out an entire embedded clause from a sentence which is not especially long in terms of morpheme-count:

(4) MOZART WHO CRIED CAME TO MY PARTY
Mozart came to my party (2;4;3)

(Mozart is a teddy-bear.)

On the way towards discovering some of the determinants of Echo's imitations we came across several interesting side-phenomena which deserve passing mention.

If items are omitted from imitation, it may be that they are simply not heard. It has been frequently noted that the words omitted by the child are those most difficult for a transcriber to pick up from tape recordings of adult speech. Perhaps, then, one can simply get a child to imitate a normally omitted item by saying it especially loudly and clearly. And, in fact, one can sometimes get Echo to imitate an omitted element simply by stressing it, as in (5). (Underlining indicates stress; '...' indicates pause.)

(5) THE PENCIL IS GREEN
pencil...is green (2;3;2)

(Note that hesitation pauses are important cues to sentence processing.)

Stress in the model sentence can also lead to alteration, as well as insertion of new material:

(6) WE WERE HIDING
we was hiding (2;3;2)

WE WERE HIDING
we was hiding

WE WERE HIDING
we were hiding

It is interesting that properly positioned stress is maintained in the imitations presented in (5) and (6). However, one cannot simply state as a rule that any stressed item will be imitated, and that position of stress will

be maintained, because of examples such as:

(7) THE BOY IS EATING AND CRYING
boy eating nuh crying (2;3;3)

Note, however, that stress is preserved in (7), although shifted to another position. This preservation of stress seems to be general, though its position is not always predictable. Even if all words are preserved, stress may still be shifted:

(8) THERE ARE THE RED BEADS
there are the red beads (2;3;3)

The preservation of rhythmic and intonational aspects in imitation may be basic--and perhaps universal. (For example, Fitzgerald [1966], in a study of spontaneous imitations by two-year-old speakers of Gã--a tone language--found errors in segmental phonology to occur far more frequently than distortion of the tonal and rhythmic structures of the sentences imitated. In fact, 28% of segmental phonemes were incorrectly imitated, while only 2% of tonal phonemes were incorrectly imitated.)

We discovered, however, an important and intriguing exception to the generalization that rhythmic and intonational aspects of sentences tend to be retained in imitation. Echo consistently ignores repeated words in model sentences (9-11), unless the repeated word can be interpreted as an appropriate lexical item in the sentence (12).

(9) MARK FELL FELL OFF THE HORSE
Mark fell off a horse (2;3;2)

(10) I CAN CAN CAN EAT
I can eat (2;3;2)

(11) I NEED NEED THE BALL
I need the ball (2;3;2)

(12) I NEED THE BALL BALL
I need the ball ball (2;3;2)

This was true at 2;3;2, and also when repeated a month later, at 2;4;3. Echo ignored doubling or tripling of words, even if they were nonsense words:

(13) KITTY WAS PERKING PERKING PERKING THE ICE CREAM
kitty was perking the ice cream (2;4;3)

A moment's consideration convinces one of the adaptive necessity of such a strategy in sentence recognition. A child could simply not arrive at a reasonable grammar of a language if he tried to account for stutterings and false starts in the speech of his parents. To ignore successively repeated words in a sentence may be a basic instruction in the child's language acquisition device.

Examples (10) and (11) show that even if repeated words are all stressed, they are not picked up as repeated. Word repetition can, however, be recoded as stress in repetition:

(14) WHERE WHERE IS KITTY?
<u>where</u> kitty? (2;3;2)

(15) MOZART FELL OFF OFF THE TABLE
Mozart fell <u>off</u> the table (2;3;2)

It may be significant that the only function of word reiteration in English--namely adverbial emphasis (e.g. "very, very good")--can also be realized by stress (e.g. "<u>very</u> good"). These two devices seem to bear a certain equivalence both in the adult system and in Echo's imitations.

Before proceeding to more central findings, allow us to briefly note one more suggestive phenomenon which we have turned up in our investigations. Often Echo will spontaneously produce a fairly long and complex utterance, and, if this utterance is offered as a model immediately after its production, it will be (more or less) successfully imitated. However, if the very same utterance is presented to the child ten minutes later--i.e., the child's <u>own</u> utterance--she will often fail to imitate it fully or correctly. For example:

(16) IF YOU FINISH YOUR EGGS ALL UP, DADDY, YOU CAN HAVE YOUR COFFEE
after you finish your eggs all up then you can have your coffee, daddy
(2;5;1)

ten minutes later:

you can have coffee, daddy, after

half-hour later:

YOU CAN HAVE COFFEE, DADDY. AFTER YOU EAT YOUR EGGS ALL UP
after you eat your eggs all up...eat your eggs all up

(The model sentences were offered by Echo's father. The sentence was still true on second presentation.) It would seem that the child has an "intention to-say-so-and-so"--to use William James' phrase--and has encoded that intention into linguistic form. If that linguistic form is presented for imitation while the intention is still operative, it can be fairly successfully imitated. Once the intention is gone, however, the utterance must be processed in linguistic terms alone--without its original intentional and contextual support. In the absence of such support, the task can strain the child's abilities, and reveal a more limited competence than may actually be present in spontaneous speech. Thus whatever we discover in systematic probes of imitation must be taken as a conservative estimate of the child's linguistic competence.

These phenomena begin to point to a process which has occassionally been suggested in the literature--namely, that, in repeating a sentence, one must filter it through one's own productive system. To use Piaget's terminology, a sentence, when recognized, is assimilated to an internal schema, and, when reproduced, is constructed in terms of that schema. The question of interest, of course, is the extent to which such schemata correspond to the structures and principles of linguistic theory. We believe that our findings can begin to cast some light on that question.

Perhaps the most obvious examples of this sort of "assimilatory deformation," or "recoding in short-term memory," are cases in which one word is substituted for another, preserving meaning. This was the case in (6). Additional examples are:

(17) TOMORROW THERE WILL NOT BE A LONG LINE
won't be a long line (2;4;3)

(18) THIS ONE IS THE GIANT, BUT THIS ONE IS LITTLE
dis one little, annat one big (2;4;3)

This sort of rephrasing seems to be clear evidence that the child has retrieved the underlying meaning of the sentence, and is encoding that meaning in a new form in imitation. This is a very basic point, and one that re-appears again and again in various forms.

Example (18) shows another very interesting finding, in addition to the recodings of "giant" to "big," and "but" to "and." Note that the two propositions are inverted (with a change in conjunction). This is a very frequent finding in our data--and one that contradicts the generalization that order of elements is always preserved in imitation. If a sentence is a conjunction of two underlying propositions, and the child understands both propositions, she will very frequently give the second proposition first in her imitation. We find many examples of this sort of inversion of sentences--conjoined by "and"--a month earlier (19, 20), and more recently as well (21).

(19) THE RED BEADS ARE HERE AND THE BROWN BEADS ARE HERE
brown beads are over here; red beads over there (2;3;3)

(20) THE RED BEADS AND BROWN BEADS ARE HERE
brown beads here an' a red beads here (2;3;3)

(21) MOMMY ATE THE CANDY AND MOMMY ATE THE ICE CREAM
mommy eat the ice cream and mommy eat a candy (2;5;3)

Note that Echo does not always give a literal repetition in these imitations, but that she has clearly retained the two propositions. In (19) she even gives them as separate sentences, not conjoined by "and."

The inversion of conjoined sentences clearly indicates that Echo comprehends the use of "and" as a sentence conjunction. In fact, she will sometimes introduce it herself:

(22) THE CANDY IS MARPLE. THE SHOE IS MARPLE.
...shoe marple an' a candy marple (2;3;3)

Not only does she comprehend the conjunction, but she must comprehend the structures of the two conjoined sentences as well. This is indicated in (22) (and elsewhere) by inverted imitation of conjoined sentences with nonsense words occupying certain slots. Even though she has omitted the copula in her imitation, she must have correctly analyzed its function in order to have repeated the model sentences as she did. (A nonsense word in copular position will be imitated.)

Inversion of conjoined sentences also reveals something of Echo's strategy in sentence imitation. The data suggest that she has retained the general syntactic form of the model sentence--in this case, two sentences conjoined by "and"--and what she is concerned with in output is to produce something of this general syntactic form. The exact content words and details of structure, however, are often lost, frequently resulting in the imposition of parallel constructions, as in the imposition of "here" in the second part of (20).

This attempt to reproduce two parallel constructions can often take precedence over semantic content, as in:

(23) THE BLUE SHOES AND BLUE PENCILS ARE HERE
blue pencil are here and a blue pencil are here (2;3;3)

It looks as if Echo has filled up so much of her short-term memory with information about the syntactic structure of the model sentences that she has no more room for all of the lexical items. She clearly knows, however, what sorts of items are needed. And so, when she comes to the second nounphrase, she fills it appropriately with a noun from the model sentence--"pencil"--but

in so doing uses the same noun twice. This matter of finding words to fit an abstract syntactic frame--or lexical instantiation of the structure--is a very common occurrence, even when parallel constructions are given in the model sentence. For example:

(24) SUE ATE THE CANDY AND MOMMY ATE THE ICE CREAM
mommy ate the ice cream and mommy eat the ice cream (2;5;3)

(Another example of this phenomenon appears in the second imitation of example (30), where "bread and jam" is imitated as "jam and jam.")

At the end of the paper we present preliminary data from sentence imitation by adults which suggests a similar model in adult sentence recognition: retrieval of a syntactic structure, lexical items appropriately marked as to syntactic and semantic function, and an attempt to fill in the syntactic structure with whatever of the lexical items from the model sentence are available in short-term memory.

For now, however, let us return to this matter of imposition of parallel constructions on conjoined sentences. Note that this can occur with or without inversion. The imitations in (20) and (21) are examples of the two phenomena combined: Echo repeats the second sentence, and then imposes some aspect of its structure and/or content on the first. If the two sentences are quite simple, however--as in the "X is here" type--she can sometimes impose parallel constructions without inverting:

(25) THE PENCIL AND SOME PAPER ARE HERE
some pencil here and some paper here (2;3;3)

As a matter of fact, in the case of this simple sentence type, she can also perform the inverse operation of deleting and conjoining:

(26) HERE IS A BROWN BRUSH AND HERE IS A COMB
here's a brown brush an' a comb (2;3;3)

She can even do this occasionally with conjoined subject-verb-object sentences--in the following example even pronominalizing the subject nounphrase and deleting all redundant elements from the second sentence, retaining only the object:

(27) DADDY IS GOING TO GET SOME COOKIES AND DADDY IS GOING TO GET SOME JUICE
he gonna get some cookie and juice (2;3;3)

However, if the two conjoined sentences differ in structure, Echo has great difficulty in retaining both structures, indicating clearly that each syntactic structure takes up a certain amount of space in short-term memory. This is especially clearly revealed in hesitations, false starts, and imposition of parallel constructions, as in:

(28) MOZART GOT BURNED AND THE BIG SHOE IS HERE
Mozart got burned an-duh...big shoe got burned (2;3;3)

(Echo used the form "got burned" productively in spontaneous speech at this time.) Sometimes this difficulty leads to repetition of the same sentence twice:

(29) THE BATMAN GOT BURNED AND THE BIG SHOE IS HERE
big shoe is here and a big shoe is here (2;3;3)

Note that it is not predictable which of the two sentences Echo will start off with, but that she retains the notion that there must be two sentences, even if she repeats the same sentence twice. (This should not be taken as an absolute statement, however. Occasionally--when distracted, or tired, or for other, unknown reasons--Echo will repeat only one of two conjoined sentences. It is interesting that, in such cases, it is always the second of the two sentences which is repeated--reflecting the phenomenon noted above of frequent inversion in repetition of conjoined sentences.)

The imposition of parallel constructions suggests not only that syntactic structures are stored as abstract entities in short-term memory, but that

the child may establish a set for a given syntactic structure, thus "blinding" her to other structures. This suggests an experiment such as that performed by Mehler and Carey (in press) in which subjects, after hearing ten sentences of the type "They are recurring mistakes" found it more difficult to hear an eleventh of the type "They are describing events." Although we have not yet performed such an experiment with Echo, we have one bit of suggestive evidence for a similar establishment of a set for a given syntactic structure:

(30) THE BIRD ATE THE BREAD AND JAM
bird ate a jam (2;5;1)

THE BIRD ATE THE BREAD AND JAM
bird ate the jam and jam

THE BIRD ATE THE BREAD AND FLEW AWAY
bird ate...ate ate ate

THE BIRD ATE THE JAM AND FLEW AWAY
bird ate the jam and flew away

The above examples give some hint of the rich data provided by imitations of conjoined sentences. About a month after we collected imitations of sentences such as those shown in (18-29), we noticed a very interesting phenomenon in Echo's imitations of conjoined sentences in which both sentences had the same nounphrase: she would pronominalize the second nounphrase, as in:

(31) THE PUSSY EATS BREAD AND THE PUSSY RUNS FAST
pussy eat bread and he run fast (2;4;3)

This suggests very strongly that she had mastered the transformation calling for pronominalization of repeated nounphrases in such structures, and that she was using this transformation in producing an utterance based on the underlying structure she had retrieved from the model sentence. She would even introduce a pronoun for a second nounphrase if it was deleted in the model sentence:

(32) THE OWL EATS CANDY AND RUNS FAST
owl eat candy...owl eat the candy and...he run fast (2;4;3)

Her hesitations and false starts indicate she was working hard to produce an imitation matching her image of the model. The introduction of a pronoun for the second nounphrase suggests that her rules do not yet allow for the total deletion of a repeated nounphrase in this sort of structure (although note that she was able to do so a month earlier in the simpler structure represented in example (27)).

At this age—2;4;3—she imitated sentences with embedded who-constructions in similar fashion, suggesting a comprehension which exceeded her productive competence; e.g.:

(33) MOZART WHO CRIED CAME TO MY PARTY
Mozart cried and he came to my party (2;4;3)

The parallel interpretation of conjoined sentences and of sentences with embedded who-constructions is especially clear in the following two examples, in which Echo's imitations of two different structures are virtually identical:

(34) THE OWL EATS CANDY AND THE OWL RUNS FAST
owl eat candy and he run fast (2;4;3)

(35) THE OWL WHO EATS CANDY RUNS FAST
owl eat a candy and he run fast (2;4;3)

These examples suggest that who is ignored. It could be that Echo scans her memory of the model sentence looking for subject-verb-object (SVO) constructions; and, if a subject occurs twice, or if a second subject is lacking, she will use he in that position. In addition, her rules require that she join the two SVO constructionswith and.

Further support for such an imitation device comes from numerous imitations such as the following:

(36) THE MAN WHO I SAW YESTERDAY GOT WET
I saw the man and he got wet (2;4;3)

Note that word order in the first part of the sentence is not maintained. In her free speech, Echo uses I only in subject position, and so appropriately

uses I as subject of sentences such as these. Thus it is not clear from such examples whether who-constructions of this sort are understood in adult fashion, or whether a more simple rule of seeking SVO sequences is being applied. In sentences such as (33) and (35), who could simply have been ignored, and SVO still have been appropriately retrieved. Unfortunately, our data are scanty in this regard, but we have some suggestive evidence that this who-construction is beginning to be understood, and that it enters as a more compact way of pushing together in surface structure information which must be represented by two propositions--two "S's"--in deep structure. The clearest example is the following intriguing substitution in successive imitations of the same model sentence:

(37) THE MAN WHO I SAW YESTERDAY RUNS FAST
I saw the man who run fast
I saw the man and he run fast (2;4;3)

The notion that Echo may have been looking for SVO relations in the model sentences intrigued us, and so we constructed sentences in which it would be very difficult to retrieve the underlying structure if the necessary transformation rules were lacking. These were sentences in which the rate of information transmission in surface structure was very compact, due to various deletions, and in which embedded sentences were not introduced by cue words such as who or that. For example, two sentences can be simply conjoined by and: "The book hit the boy and the boy was crying." The first sentence can be embedded in the second in various ways; e.g.: "The boy who the book hit was crying." In addition, who can be deleted, giving: "The boy the book hit was crying." When Echo was 2;5;1 and 2;5;2 we administered systematically varied sets of sentences of these types. These structures were clearly beyond her competence, and were generally treated as word lists; e.g.:

(38) THE BOY THE BOOK HIT WAS CRYING
boy the book was crying (2;5;1)

Order was not necessarily preserved in these imitations; e.g.:

(39) THE HOUSE THE BOY HIT WAS BIG
boyhouse was big (2;5;2)

Occasionally reorderings looked as if Echo were searching for words with which to instantiate an SVO relation; e.g.:

(40) THE BOY THE CHAIR HIT WAS DIRTY
boy hit the chair was dirty (2;5;2)

Such extractions of SVO relations seemed to occur only when they were semantically plausible in Echo's speech. She would never say "boy hit house" or "boy hit marble"—perhaps because hit, for her, means "to strike with the palm of the hand." She would, however, extract "boy hit chair" and "boy hit man" from such sentences. It would seem that Echo's words bear both syntactic and semantic markers, and that she will form SVO constructions when she can identify not only two nouns and a verb, but a constellation of nouns and verb which can form a semantically acceptable relationship.

Echo frequently extracted SVO relations, in similar fashion, from scrambled sentences; e.g.:

(41) THE MAN THE BOY THE BOOK HIT TORE WHO
boytheman tore the book who (2;5;2)

There is, however, an important relation between sentence development and memory span which should not be overlooked here. Echo will perfectly imitate ungrammatical or anomalous sentences if they are short enough for her to hold an auditory image in short-term memory. For example, as young as 2;3;2 she repeated all possible orders of the three words "John loves company." The same, of course, is true of adult repetitions of deviant sentences. One must only call on mechanisms of assimilatory deformation when

the material--because of its length or complexity, or both--exceeds short-term memory capacity.

When sentences are short and simple enough, Echo makes amusing attempts to assimilate new words into her existing grammatical schemata, thus showing a fine sense of the role of context in providing clues for the lexical categorization of unknown items. One of the most amusing examples is her imitation of the following sentence, offered after one of the authors had read what he considered a singularly poor paper on transformational grammar and child language:

(42) CHOMSKY AND VERITAS ARE CRYING
Cynthia and Tasha...cry (2;5;3)

Cynthia and Tasha are friends of Echo. Clearly she has realized that the sentence calls for two proper nouns, and she has substituted two more familiar names which bear some phonological resemblance to those of the model sentence. This suggests that some phonological information is available in short-term memory. This is especially evident in apparent search for unfamiliar words, as in:

(43) EX POST FACTO I SEE THE QUARTER
eptah...quarter I see ekso...ekso, ekso, ekso, ekso (2;5;3)

Examples (42) and (43) do not agree with the finding of Smith, Shipley, and Gleitman that children "tend not to listen to adult speech beginning with unfamiliar words" (Smith, 1966, p. 3). Not only did Echo attend to unfamiliar words appearing in sentence-initial position, but she frequently repeated them without difficulty, as in:

(44) CUI BONO IS THE QUARTER
cui bona a quarter (2;5;3)

* * *

This is a very sketchy summary of what one can discover from carefully examining about 1000 elicited imitations in one child over a period of less than three months. We hope to have demonstrated that the method is a fruitful one. It must be used, we believe, together with running collections and analysis of spontaneous speech. This very preliminary analysis has convinced us that sentence recognition and imitation are filtered through the individual's productive linguistic system. More specifically, we believe that we can tentatively offer the following generalizations:

Echo can spontaneously utter sentences which she cannot imitate. On the other hand, she can give recoded imitations of model sentences which exceed her productive capacities.

Emphasis can lead her to repeat words she would normally omit from imitation, but she generally ignores repeated words in imitating model sentences.

If she comprehends a sentence, she need not repeat it in the order given. Reordering can also take place as a result of imposing SVO constructions upon model sentences.

The process of sentence recognition includes retrieval of both form and content. Syntactic structures take up space in memory, and frequently content will be sacrificed to the retention of form in immediate, rote imitation. On the other hand, if content has been retrieved and stored, it may be encoded in the child's own syntax in imitation.

A fine-grained analysis of repeated imitations of systematically varied model sentences can reveal aspects of the child's theory of syntax, including transformational rules and the syntactic and semantic markers borne by lexical items.

In short, a few months of work with one child have encouraged us to continue research of this sort. We believe that elicited imitation is a useful probe for revealing linguistic competence. In fact, we have just discovered that similar gain might come from studying imitation of model sentences by adults. In order to make the situation comparable to that of the child, the

the sentences must be long and complex, perhaps anomalous. We have an excellent set of such sentences available to us; they form the stimulus materials for a doctoral investigation currently being conducted at Berkeley by Robin Chapman. When adults--especially drowsy adults--are presented with Chapman's sentences for immediate imitation they frequently make the same sort of assimilatory deformations as Echo. They repeat words to make parallel constructions, they impose regular structures where they were absent, they drop out phrases, they hesitate, they substitute words, and so on. The following are a few intriguing examples of adult imitations of long, anomalous sentences:

(45) THE FLOCK OF BROAD-WINGED GEESE POURED THE ELECTRIC ANTELOPE INTO THE WATER
the flock of broad-winged geese poured the flock of antelope into the water

(46) THE ULTIMATE HEAT SNIFFED THE PATCH OF PACKED SNOW ON THE WINDOW-SILL
the ultimate heat packed the snow on the window-sill

(47) THE AZTECS OF TOTAL FREEDOM LINGERED TYRANNICAL SUPPRESSION TWO TIMES

Subject 1:
the...tyrannical Aztecs?...lingered two times..

Subject 2:
the Aztecs of tyrannical freedom lingered suppression two times

Subject 3:
the Aztecs of total freedom lingered total suppression two times

Adults even make changes on the basis of the sounds of words--a phenomenon frequently noted in children and in subjects under the influence of cortical depressants. For example, two subjects gave the following imitation of (48), in which "scattered a furry" became "scurried a furried":

(48) THE DUCK-BILLED COMMITTEE OF STUDENTS SCATTERED A FURRY ADVISOR ONCE A YEAR
the duck-billed committee of students scurried a furried advisor once a year

Adults often do not realize that they have changed a sentence in repetition--and sometimes they do. We imagine the same is true of Echo. We intend to pursue these suggestive parallels in more detail.

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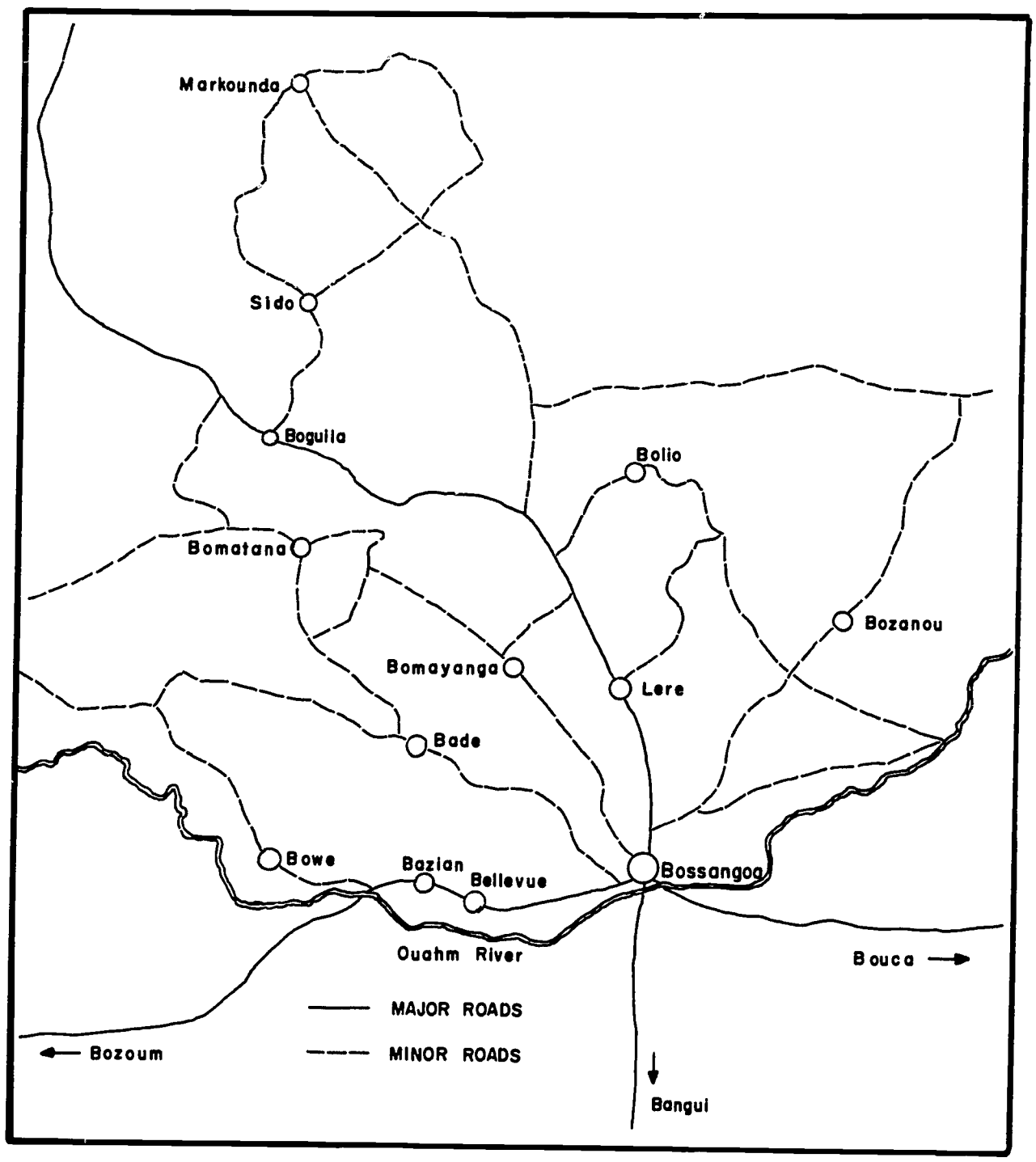


THE DISTRICT OF BOSSANGOA

GRAMMAR

CHAPTER ONE

PHONOLOGY

In this section are treated the phonemes, both primary (110) and secondary (120), morphophonemics (130), the extra-phonemic characteristics of the language (140), and assimilation of loan-words (150).

For the sake of reference the phonemes are here summarized:[1]

Consonant phonemes: /p t k kp ʔ b d g gb mb nd ŋg ŋmgb ʔb ʔd ʔm ʔn m n ŋ ŋm w y v̌ r l f s h v z/.

Vowel phonemes: /i e ɛ a u o ɔ/.

Tones: high (/ˊ/) and low (unmarked).

Nasalization: /◌̃/.

Juncture: word division.

Pause: /, /.

Terminal contours: /. /, /?/, /!/, and /!!/.

110. The primary phonemes of Gbɛya are consonantal (111), vocalic (112), and tonal (113). The sections on consonants and vowels each have a section treating their distribution as well as one treating their production.

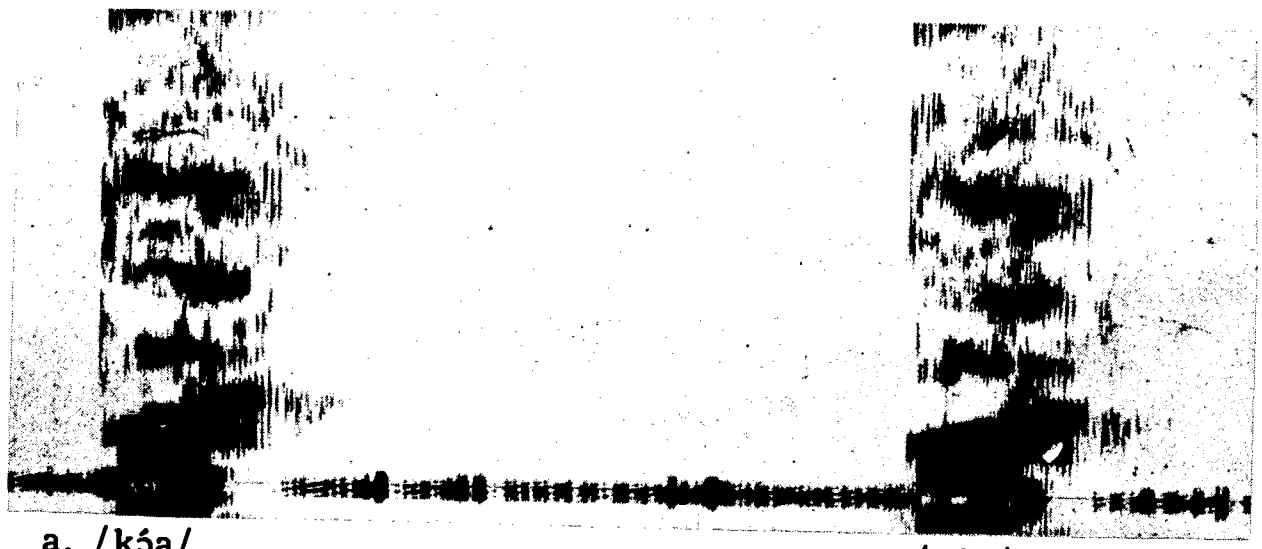
111. Consonant phonemes.

Chart of Consonants[2]

STOPS	Egressive	p b	t d	k g	kp gb	ʔ
	Prenasalized	mb	nd	ŋg	ŋmgb	
	Ingressive	ʔb	ʔd	"glottalized"		
NASALS	Preglottalized	ʔm	ʔn			
	Plain	m	n	ŋ	ŋm	
FLAPS	Semivowels	w	y			
	Flaps	v̌	r			
	Continuant		l			
SPIRANTS		f v	s z			h

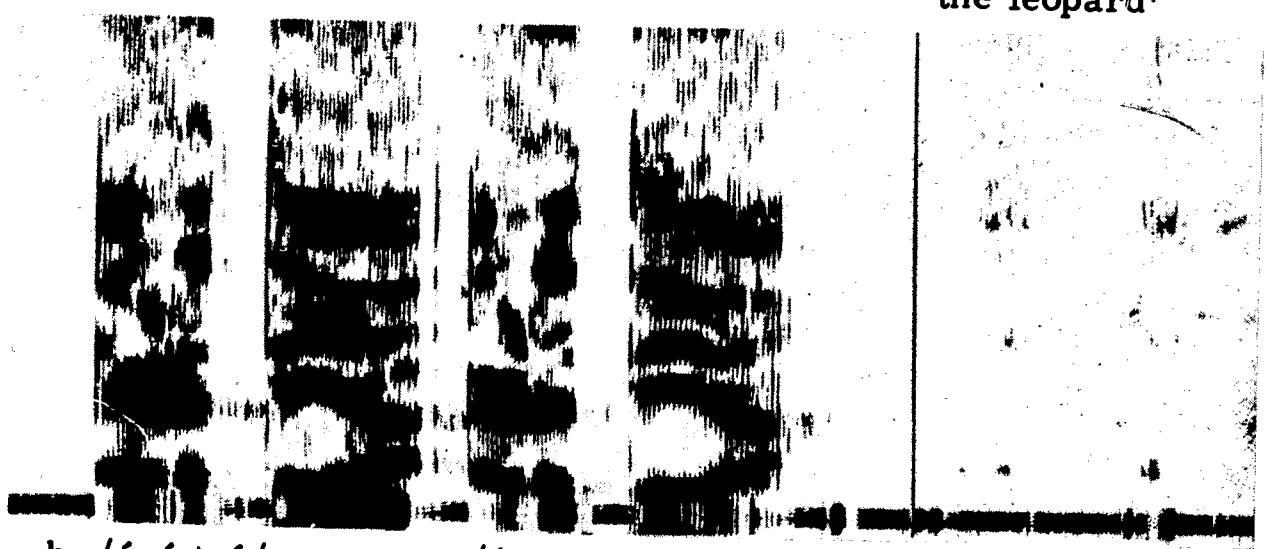
111.1. Description of consonants. The consonant system is characterized by the following points of articulation: bilabial, labiodental, postdental, alveolar, palatal, velar, and glottal. There are in addition the following types of contrast: voicing vs. unvoicing, oral rarification vs. absence of rarification (in injective vs. egressive), single vs. doubled stops, stops vs. spirants vs.

[1]For notes to Chapter One, see p. 41.



a. /kʂ́a/
'the hole'

/gʂ́a/
'the leopard'



b. /ɛ́rɛ́ tɛá/
'we came'

/ɛ́rɛ́ dɛá/
'we did'

c. /ám dɛá/
'I did'

/ám tɛá/
'I came'

Fig. 1. Broad band sonograms of three paired utterances

nasals, and continuant vs. flap. In the following paragraphs, the order of presentation is different from that in the chart. For example, glottal stop is discussed after the prenasalized stops.

The egressive stops are of two series, voiceless and voiced, and are either single or doubled. The single stops occur at bilabial, apico-postdental, and dorsovelar positions: /p t k b d g/. The double stops consist of an articulation at both the lips and the velum simultaneously, producing /kp gb/. The voiceless stops are usually slightly aspirated, more so than the double stops. The voiced stops, on the other hand, were often heard (outside of citation forms) as voiceless stops, but never aspirated (see accompanying figure).[3] The contrast between the voiced and voiceless series of plain stops is attested by the following examples:[4]

gan 'to surpass'	kan 'to swear'
gɲ 'to hang (something)'	kɲ 'to agree'
day 'to raise (animals)'	tay 'to wash (parts of body)'
dɛ 'to make, do'	tɛ 'to come'
dɔ 'to roast'	tɔ 'to be sharp'
dam 'to be sufficient'	tam 'to feel by touching'
gba 'to split'	kpa 'to find'
gbo 'to arrive'	kpo 'to tie on'
gba 'to appear'	kpay 'to cross (sticks)'
gay 'to scare'	kay 'to take (pl.)'

The voiced injective (implosive) stops /ʔb/ and /ʔd/ are articulated at the same points as their egressive counterparts. Their production (by the rarification of the oral cavity) is similar enough to injectives of other African languages so that no further description is needed here.[5] The contrast between egressive and injective voiced stops is attested by the following examples:

ba 'to take'	ʔba 'to disavow'
bɛr- 'to pound'	ʔbɽr- 'to prevent'
bi 'to extinguish'	ʔbi 'to pick (fruit)'
dik 'to thunder'	ʔdik 'to sift'
dɔk 'to be much'	ʔdɔk 'to be weak'
du 'to make (fire)'	ʔdu 'to draw (water)'
gede 'certain tree'	geʔde 'buttock'

The prenasalized stops /mb nd ŋg ŋmgb/ are phonetically complex segments consisting of voiced stops of the same point of articulation as the plain egressives preceded by very briefly articulated homorganic nasals. They contrast with plain nasals and with stops in the following words:

ba 'to take'	mba 'to greet'
dak 'to extract'	ndak 'to chase'
guri 'to smoke (meat)'	ŋguti 'to become burnt'
mar- 'to tie on waist'	mbar- 'to be tight'
nɔ 'to drink'	ndɔ 'to have sexual intercourse'
ŋmɽay 'to split'	ŋmgban 'to uproot'

A word concerning the phonemicization of the prenasalized stops (as well as the preglottalized nasals) is appropriate here. The principal reason

for considering them unit phonemes is one of "pattern pressure": since the language is generally characterized by unit phonemes in initial position, it is justifiable to consider these such. We are, of course, not forced into this position, for we must expect and can allow for asymmetry. We could therefore say that no consonant clusters except these occur in initial position. Adopting this alternative, we would have six less phonemes than we now have, but we would have introduced the necessity of making other statements. For example, /m n ŋ/ would not only occur in initial and final positions defined in footnote 16, but they would also precede /b d g/. Moreover, the description of the canonical forms would be made somewhat more complex by having to state that, in addition to the forms CV and CVCV, there can be CCV and CCVCV or CCVCCV but only when a nasal is followed by a homorganic stop or preceded by a glottal stop. And, in the description of the distribution of glottal stop, we would have to say that it occurs intervocalically and before /m/ and /n/, but only when these are not followed by a stop. All of these statements are, of course, possible. Perhaps it is only a matter of esthetics whether we choose to have six additional phonemes and fewer statements or fewer phonemes and more statements. I feel that my analysis is certainly more convenient, and the least that can be said of it is that it does no injustice to the data.

The orthographic representation of these prenasalized stops is obviously conventional. They could have been represented as ɓ or ^{n}b or in some similar fashion. A more significant feature of these stops is their distribution with respect to nasalized vowels: These stops never precede or follow vocalic nasalization. An attempt was made to incorporate vocalic nasalization and preconsonantal nasalization in an analysis that might eliminate the prenasalized stop series, but it was given up for the one adopted here. For those who might want to compare Gbɛya phonology with that of other languages, it should be said here that nowhere are there syllabic nasals in Gbɛya except in the speech of the people north of Sido which is clearly influenced by Kaba, where syllabic nasals are frequent. There is therefore no contrast between [^{m}ba] and [m-ba].

The glottal stop has allophones [ʔ] and [zero] which alternate freely between vowels in close juncture and before vowels following pause or open juncture. In this latter, called initial, position [ʔ] occurs when something is being emphasized, but since there are so few words with initial [ʔV], this is not common. In medial position [ʔ] occurs in only the following words: yaʔa 'grandmother,' naʔa 'mother,' and bɔʔɔ used to intensify possession.[6] Except for a few interjections in which [ʔ] always seems to occur (náʔá 'surprise,' ɟʔí 'no'), the orthographic convention is adopted that /ʔ/ shall not be written.

The spirants consist of labiodental voiceless and voiced /f/ and /v/, apicoalveolar /s/ and /z/, and voiceless /h/. Of these, only /s/ and /z/ have acoustically detectable allophones. Both of them have laminoalveolar grooved allophones [š] and [ž] as well as nongrooved ones. These grooved allophones are very much like the English phones in articulation. The grooved and nongrooved allophones freely vary in all positions where the phonemes can occur,

but the occurrence of the grooved allophones is dialectally determined.[7] This is to say that more grooved allophones occur in the speech of people in the area between Bossangoa and Lere (ʔdéreɛ) than in other areas. They are, however, not absent in some other areas although I never recorded any for the speech of my informant. The spirants are illustrated by the following words:

soy 'to sit down'	zoy 'to bathe'
sɔk 'to become mature'	zɔk 'to see'
sɔn 'to be finished'	zɔn 'to admire'
fara 'place'	vará 'iron money'
fey 'death'	fɔrɔ 'elephant'
fére 'crocodile'	vúla 'pimple'
vúmɔ́ 'hair'	vuy 'to mix'
ha 'to give'	hɛ 'to buy'

The sonorants consist of nasals and liquids.

The nasals consist of simple, double, and preglottalized phonemes. The simple nasal phonemes are /m n ŋ/ and are articulated at bilabial, post-dental, and velar positions respectively. The double—or coarticulated—nasal /ŋm/ parallels the double stops in that it consists of [ŋ] and [m] produced simultaneously. The preglottalized nasals /ʔm ʔn/ differ from /m n/ only by the glottal closure which immediately precedes the articulation of the nasal continuant. There is no perceptible transition following the opening of the glottis.[8]

The simple and double nasal phonemes contrast in the following words:

kam 'food'	kan 'torch'
dam 'to be adequate'	daŋ 'to climb'
mạ 'to appear (out of ground or water)'	ŋma 'to press down'

Preglottalized nasals contrast with plain nasals in the following examples:

mạ 'to plant (cuttings)'	ʔma 'to open (fist)'
mar- 'to tie on waist'	ʔmar- 'to squeeze, wring'
mam 'to laugh'	ʔmam 'to get hold of'
naŋ 'to be inadequate'	ʔnaŋ 'to ruin'
nɔm 'to soak'	ʔnɔŋ 'to push'
nun 'to smell'	ʔnum 'to enter (water)'

Other examples of the preglottalized nasals: ʔmạa 'rainy season,' ʔmɛ 'to render judgment,' ʔmɛn 'to clean out, shell (peas, beans),' ʔmɛ̰r- 'to prevent,' ʔmɔn 'to remain,' ʔmụk 'to become rotten (of tree),' ʔmụr- 'to clench (fist),' ʔnɛŋ 'to chop off (branches).'[9]

The liquids consist of continuants /w l y/ and flaps /v̆ r/.

The voiced lateral apico-postdental continuant /l/ alternates in some words with /r/, for which see below, but it is phonemically distinct:[10]

délé 'chaff'	bere 'breast'
ala 'grief'	baraka 'matchete'
ʔbɛla 'trouble'	bɛ́ra 'gourd'
bolo 'certain tree'	boro 'iron'
dolo 'rat snare'	dóro 'certain fish'

dila 'lion' biro 'strife'

The semivowels /y w/ differ from their vocalic counterparts /i u/ by being nonsyllabic, less tensely articulated, and of briefer duration. Both semivowels have oral and nasalized allophones, the former occurring contiguous to oral vowels and the latter to nasalized vowels. The allophone [ỹ] moreover sometimes sounds very much like a lamino-alveolar nasal [ñ] except that [ỹ] is not produced by any noticeable contact at the palate.

The phonemicization of the phonetic segments [i], [y], [u], and [w] posed the greatest problem in the analysis of this part of the language. Because the discussion sheds much information about the phonological structure of Gbɛya, the following somewhat lengthy sections are justified. The phones [u] and [w] are included because of their near-identical distribution with [i] and [y].

The analysis of these phonemes involved two problems: (a) identification of the phonetic segments, and (b) identification of the phonemes. These are discussed in the following paragraphs:

(a) Identification of the segments. The segments [y] and [w] occur initially and medially, and only [y] occurs finally. In initial position there is no problem in perceiving the nonsyllabicity of either one of them. In final position, I sometimes had difficulty in distinguishing between [i] and [y]. In intervocalic position, the problem was even greater; it is dealt with below. In initial position [y] occurs before any vowel, and [w] before any but [i ɛ ɥ]. For example:

[yíí́] 'certain reed'	[wí] '2P pron.'
[yélé] 'certain basket'	[we] 'to measure out'
[yɛk] 'to shake'	[wɛl-] 'to lean (something)'
[yu] 'to flee'	[wuki] 'certain wild vine'
[yo] 'skin, hide'	[wolo] 'hole'
[yɔ] 'to get lost'	[wɔ] 'hunger'
[ya] 'to be (pl.)'	[wa] '3P pron.'
[ỹi̧i̧i̧i̧] 'thin'	---
[ỹɛl-] 'to be far'	---
[ỹɥtɥtɥ] 'many (such as, chicks)'	---
[ỹɔỹ] 'to stretch out'	[w̃ɔɔ] 'many (people)'
[ỹa̧] 'sibling'	[w̃a̧] 'leaf'

In final position [y], never [w], occurs after most of the vowels, but never after [i]. The following examples show the contrast between [i] and [y] in this position:

[lífíí́] 'your (pl.) face'	---
[léféí] 'your tongue'	[wey] 'fire'
[gɛ́lɛ́í] 'your neck'	---
[kúí] 'your leg'	[nduy] 'certain mouse'
[golói] 'your knee'	[kóy] 'squirrel'
[kɔ́í] 'of you'	[mbɔy] 'money'
[tai] 'the stone'	[tay] 'to wash'

In medial position, that is, intervocalically, however, the occurrence of [y] or [w] is somewhat correlated with certain combinations of either front

or back vowels or both. For example, only [y] occurs between front or between back vowels[11] such as, [ǐye] 'where?' [wɛyɛ] 'certain necklace,' [buyuu] 'descriptive of many people talking at once,' [vúyó] 'deception,' [foyo] 'shame,' [zɔ́kɔyɔ́] 'certain soft stone.'

Other combinations can not be stated so simply. Mixed clusters of back and front vowels occur with both [y] and [w]. For example, there are [ɔyɛ] and [ɔwɛ] as well as [ɛyɔ] and [ɛwɔ]. This means that the occurrence of these nonsyllabic segments is not predictable: between the vocoids in [ɔ...ɛ] and [ɛ...ɔ] occur both [u]-like and [i]-like glides. These phonetic considerations are raised, for one must decide whether or not there are indeed segments requiring identification with the semivowel phonemes.

The problem would be somewhat simplified if we could clearly distinguish, say, between intervocalic glides with the same articulation (of tenseness and roundness) of initial [y] and [w], intervocalic glides of less tenseness and roundness, and an absence of any glide.

My field notes do not indicate such neat distinctions, yet we can proceed with certain assumptions to test their value in the phonemic analysis. Let us suppose that in many cases what I wrote as a glide was not a phonetic segment roughly equivalent in length with [i] or [u], or [l] or [k] for that matter, but a transition from one vocoid to another. We could say then that [fiyo] 'fetish' and [tuwa] 'house' were really [fio] and [tua]. The limitation of this maneuver is that we can make only one relatively insignificant general statement as to when [y] and [w] should be eliminated: A predictable nonphonemic glide occurs between unlike front vowels. But, as a matter of fact, only [ǐye] 'where?' and possibly [ǐyɛ] 'there' are involved. All other combinations of unlike front as well as back vocoids (where [w] is involved) either do not occur or else are not possible in terms of the structural patterns (for which see 112.2). The remaining combinations consist of front, back, and central vowels. For these, no possible noncontradictable statement is possible. In other words, any statement would be entirely arbitrary. Since, for example, both [y] and [w] occur between combinations of front and back as well as back and front vocoids (cited above), we could only arbitrarily decide to eliminate one of them. Such a measure might be practically desirable but not scientifically justifiable.[12]

I am thus tempted to go back to correct the transcriptions. Two other facts prevent my doing so. In the first place, there is the contrast between [hɛyɔɔ] '(of working) without enthusiasm' and [hɛwɔɔ] '(of bird gliding down for landing) slowly.' Although one might assume, on the basis of the nature of the vocoids involved and of the other patterned correlations, that both a [y] and [w] glide were possible here, there is a meaning difference that must be correlated with either [y] or [w] since the forms are otherwise identical. (This difference is substantiated by the fact that my informant reported that the form [hɛlɔɔ] was the "same" in meaning as [hɛwɔɔ], but no such identification was made with [hɛyɔɔ].)

In the second place, there are words containing a disputed [y] which are matched by free morpheme alternates containing undisputed [y]. Rather than arbitrarily eliminating the glide in one, it seems preferable to maintain the

similarity between both words. It can be argued that if [y] occurs in one word, it probably (but not necessarily) would occur in the other. For example,

[gbɛ́yá] ~ [gbáyá]

Here follow examples of sequences of vowels which occur in monomorphemic words only with intervening [y], only with [w], or with either [y] or [w].

Vowel-clusters with intervening [y]:

[i...e] [ǐye] 'where?' [tiyé] 'entirety'
[i...ɛ] [gɛ̆̌iyɛŋ] 'wide'
[i...o] [fiyo] 'fetish'
[i...ɔ] [giyɔɔ] 'leaning because of drowsiness'
[i...a] [ʔbiya] 'comrade'
[ɛ...a] [gbɛ́yá] 'Gbɛya'

Vowel-clusters with intervening [w]:

[e...o] [féwóó] 'quiet'
[u...e] [zuwé] 'certain aquatic reptile'
[o...e] [kowé] 'whooping cough'
[a...ɔ] [káwɔ] 'cow bird (egret)'

Vowel-clusters with intervening [y] or [w]:

[i...u] [hiyuu] '(floating) swiftly'
[hǐyúú] ~ [híwúú] 'quiet'
[ɛ...ɔ] [hɛyɔɔ] 'without enthusiasm,'
[kɛwɔ kɛwɔ] (same as [kɛr kɛr]) 'quickly'
[u...ɛ] [kuyɛɛ] 'white (of hair),'
[ndúwɛ́ɛ́] 'just visible (sprouts)'
[u...a] [guya] 'certain ant,' [duwa] 'goat'
[ɔ...ɛ] [lɔ́yɛ́ɛ́] 'short (pejorative)'
[tɔwɛ] 'kidding remark'
[ɔ...a] [ɔya] 'certain fish,' [kɔwa] 'baby-carrying sling'
[ŋgɔyá] 'bush pig,' [ŋgowa] 'adze'
[a...u] [kạyụm] 'descriptive of noise made by something being put in hot oil,'
[vawuu] ~ [viyuu] 'many (pieces of paper)'
[a...o] [kayó] 'certain tree,' [lawo] 'wart-hog tusk,' [pawo] 'knife'
[a...a] [kaya] 'roan antelope,' [zawa] 'peanut'
[a...i] [ŋgawǐya] 'certain bird' (so named because of the cry it makes)
[a...ɛ] [aáyɛ] 'this one' (unless [-yɛ] is analyzed as a morpheme)

The following are examples of sequences of vowels where there is an intervening [y] followed by [i]:

[e...i] [weyi] 'the fire'
[u...i] [nduyi] 'the mouse'
[o...i] [kóyi] 'the squirrel'
[ɔ...i] [mbɔyi] 'the wealth'
[a...i] [tạyi] 'the washing'

(b) Identification of the phonemes. The preceding data are now summarized and the choice of the phonemicization explained.

The segments [i] and [u] are in complementary distribution with [y] and [w] in initial position and intervocalically, but in final position they contrast. The distributions are stated formulaically with # representing pause or juncture. For example:

[i] and [u] occur in #...C, C...C, and V...#. For example:

[íni] 'urine,' [húfúǔú] 'steam'

[biǐi] 'baboon,' [pím] 'tsetse fly,' [buǐo] 'certain small antelope,' [dụm] 'to spear'

[kói] 'the woman,' [kúǐ] 'your (pl.) legs'

[y] and [w] occur in #...V, V...V (in which, however, [iyi] and [uwu] do not occur), and V...# (in which [y] never follows [i] and [w] does not occur at all). For example:

[yɔ] 'to get lost'	[wɔ] 'hunger'
[kaya] 'roan antelope'	[zawa] 'peanut'
[kóy] 'squirrel'	[toy] 'burden'

Certain linguistic canons require the interpretation of these distributional features that unite [u] and [w] because they are in complementary distribution and separate [i] and [y] phonemically because they contrast in at least one position. For the latter, a minimal pair can be cited: [nɛ́m ba koy] 'I'm going to get a ([koy]) handle' [nɛ́m ba koi] 'I'm going to get ([ko] + [i]) the palm-nut.'

As a criticism of this analysis it can be said that it concerns itself with the distribution of only some of the phonetic segments of the language; and, in addition, only certain points of distribution are made operational. In the first place, tone is ignored: The concern is with linear segments, but it is doubtful that the distribution of tone can be adequately described without a clear distinction between vowels and consonants. The contrast between /i/ and /y/ on the basis of distributional criteria is reinforced by phonetic features where tone is concerned: /i/ can occur with the tonemes but /y/ never can. The same can be said of [u] and [w], which I analyze as /u/ and /w/. One has only bypassed the problem by writing [zàwà] and [wùù] as */zàuà/ and */uùù/, for if */u/ is a vowel, it must occur with tone, and not writing a tone on it is simply another way of indicating its non-syllabicity.

In the second place, it should be observed that a concern with canonical forms in a language is a concern with certain distributional features in the language. Whereas /CVV/ would be typical of the language, */VVV/ would be aberrant in initial position.

In this grammar I shall write /u/ and /w/ as well as /i/ and /y/. Sufficient data have been presented so that alternate phonemicizations can be worked out.[13]

The phoneme /r/ has been called a flap continuant to distinguish it from the other continuants, but in fact it has allophones [ɾ̌ ɽ̆ r̆ r̃]. The apico-alveolar flap and trill ([r̆] and [r̃]) occur only before juncture or pause and although usually voiced do sometimes occur voiceless. The variation between these allophones is free although there is some evidence that [r̃] is used, sometimes quite prolonged, for certain stylistic reasons. There are not too many examples of these allophones because Gbɛya seems to be going

through a stage where the sequence /V¹rV¹/ (where /r/ is [ɾ̌]) is being reduced to /V¹V¹/. This is clearly seen in the following three dialect forms (in the first two of which 'r' represents [ř]): wárá (Gbanu), wár (Gbaya south of Bossentele), wáá (Gbɛya, under certain morphological conditions wár-) 'way.' For further discussion of this matter see 132.1 and 133.3. Only a few nouns, no verbs, and a handful of descriptive adverbs have final /r/, that is [ř]. For example: ǵ ɟŋɔ́ bɔr 'he knows a little bit'; ǵ aá te$_1$ nu$_2$ gbɔr gére 'he placed the wood$_1$ on the ground$_2$ untied'; ám mbirɔ̀$_1$ kɔ̨́-tuwa$_2$, go ɔ́ háar 'I swept$_1$ the inside of the house$_2$, so it's clean'; zɔra yú hɔr 'the mouse runs fast'; zór ~ zóó 'chisel.'

The allophones [ɾ̌] and [ɾ̃̌] are voiced lateral flaps, oral and nasalized respectively, the second of which occurs contiguous with nasalized vowels and the first of which occurs contiguous with oral vowels.[14] Because of phonetic similarity, the nasalized allophone is included as an allophone of /r/, all of whose allophones have in common the feature of flapping. However, since the lateral continuant [l] occurs only contiguous with oral vowels and the flap [ɾ̃̌] only with nasalized vowels, it would be possible on distributional grounds to consider them allophones of a single phoneme. My analysis results in four allophones with a common phonetic feature and leaves /l/ with a distribution limited with respect to nasalized vowels. The phonemic status of /r/ has already been demonstrated; it remains here to cite examples in which the allophones [ɾ̌] and [ɾ̃̌] occur. They are quite common:

ri 'to eat something liquid'	rɟ 'to be dark'
rɔk 'to be smooth'	rɔ̨k 'to be good'
ráká 'rasp'	rɟk 'to hit'
ré 'village'	zɟr- 'to descend'
rɛm 'be able'	yɛ̨r- 'to be long'
ri 'water'	rɛ̨ti 'to plug up (holes)'
rǐp 'eye, face'	rɛ̨k 'to be narrow'
rɔfɛ 'trash, flotsam'	rɔ̨fi 'to gain in weight'

The voiced labiodental flap /v̌/ is produced by drawing the lower lip behind the upper teeth and then rapidly flapping it outward.[15] In my data it occurred only in the following words: guv̌úuŋ 'a very deep place in a river,' hɔv̌ɔk 'descriptive of passing on or falling out of sight,' hɔv̌ɔv̌ɔ 'exclamation of victory (at winning at a throw of dice),' v̌oŋ 'descriptive of hitting something' as in ám roá$_1$ te nɔ́ɔi$_2$ v̌oŋ 'I hit$_1$ this tree$_2$ so it rang.' In addition, the word gáv̌a is used at Bowe for the more common Gbɛya word rɛfa 'fish-trapping ramp.'

111.2. Distribution of consonants.

All consonants occur initially,[16] for example: ba 'to grab,' dik 'to thunder,' gan 'to surpass,' gba 'to break,' pɟ 'to throw (single object),' tɛ 'to come,' kin 'to roll,' kpa 'to find,' ʔba 'to disavow,' ʔdik 'to sift,' ʔmar- 'to wring out,' ʔnaŋ 'to ruin,' ma 'to plant (shoots),' naŋ 'to be inadequate,' ŋma 'to press down on,' mba 'to greet,' ndak 'to chase,' ŋgay 'to be strong,' ŋmgban 'to uproot,' lar- 'to lick,' ra 'to congeal,' v̌oŋ 'of hitting something,' fan 'to weave,' sa 'to call,' ha 'to give,' vuy 'to stir,' zam 'to rescue,' ya 'to sit (of plural subject),' wa 'to hoe.' The phoneme /ŋ/ occurs initially in only three

words, all descriptive adverbs: ŋɛnɛ ŋɛnɛ 'descriptive of the motion of peddling a bicycle,' ŋi̱rɔŋ 'covered (with water),' ŋuyuŋ 'descriptive of certain linear design.'

All consonants except /h/ occur medially, for example: huubá 'a certain caterpillar,' gida 'enemy,' gaga 'a certain small fish,' kógba 'crow,' bipi 'wasp,' rĭíto 'two,' ndɔkɛ 'wager,' sukpa 'manioc leaves,' sa?ba 'blacksmith's tongs,' sa?de 'animal,' na?a 'mother,' zɔ?mi 'to nibble,' dɔ?niŋ 'cool,' gima 'song,' saná 'sifter,' daŋí 'eleventh lunar month,' kɛrɛŋmɛŋ 'halfheartedly,' saambɛrɛ 'certain chicken-hawk,' ŋgĭndó 'stump,' báŋgá 'rubber,' ?dáŋmgbá 'testicle,' ala 'grief,' sɛ́rɛ 'spear,' hɔv̆ɔk 'passing out of sight,' ndɔfá 'certain small wild duck,' bisa 'adolescent boy,' kavata kavata '(walking) back and forth,' gaza 'circumcision,' kaya 'roan antelope,' zawa 'peanut.'

Only the following consonants occur finally: /p t k m n ŋ l r y/ and /g/ only under certain sandhi conditions. For example: sá̱p 'saliva,' lát 'completely,' dak 'gourd for drinking,' dam 'granary,' wan 'owner,' góŋ 'ladle,' dal 'certain upright drum,' zór 'chisel,' toy 'baggage, burden.' The voiced stop /g/ occasionally replaces /k/ before voiced nonnasal consonants in rapid speech where two adjacent words are closely linked in the same syntactic construction. For further discussion see 131.1. Since the most frequent examples of this assimilation are of verbs followed by nouns, and since verbs do not have final /p/ and /t/, examples of final /b/ and /d/ do not occur. Thus: [dág wa] dák wa 'chase them away.'

112. Vowel phonemes.

112.1. Description of vowels. The vowels of Gbɛya are seven in number. The front unrounded vowels are higher high /i/, higher mid /e/, and lower mid /ɛ/.[17] The central vowel /a/ is lower low. The back rounded vowels /u o ɔ/ are articulated at the same heights as the front vowels. Only the phonemes /e/ and /o/ have allophones which need to be noted. Although the usual articulation is at higher mid, vocoids slightly higher, approaching lower high, seem to vary freely with the higher mid varieties. The phoneme /ɛ/, on the other hand, when nasalized, tends to approach higher low. The phonemes /ɛ/ and /ɔ/ seem to be more lax than their nearest equivalents in English or French.

Contrasts between oral vowels are shown in the following pairs of words:

gi?da 'husks'	ge?da 'manioc'
te 'tree'	tɛ 'body'
ze 'month'	zɛ 'night'
re 'to enter'	rɛ 'to poke'
o 'to break'	ɔ 'to be'
dok 'to rub'	dɔk 'to be big'
?bo 'to mould'	?bɔ 'to bud'
dụm 'to spear'	dɔm 'to blow (horn)'
du 'to make (fire with grass'	do 'to flower'
ru '[illegible]o stir'	ro 'to stone'
kpa 'to find'	kpo 'to tie on'

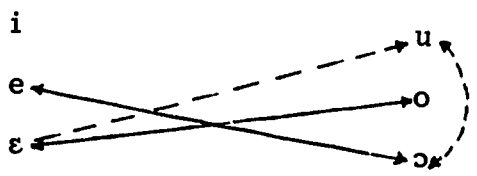
ŋmgba 'to interfere' ŋmgbɔ 'to touch'
gbur- 'to drag' gu̱r- 'to swallow'

Long vowels are equal in length to a cluster of two vowels and are phonemicized as such. No contrast exists between [V·] and [VV], either in their length or in the types of tones with which they occur. Thus, the tonal sequence low-high occurs in forms whose shape is CVCV, CV^1V^1, or CV^1V^2. For example, toró 'dog,' dọ́ 'beer,' feá 'died.' And the form sii 'the returning' < si 'to return' + -i is as long as bii (~ bir-) 'to twist' or tu̱i (~ tu̱r-) 'tail.' The contrast between long and short vowels is attested by the following examples:[18]

bi 'to fight' bii 'to twist'
gi 'to cook' gii 'to follow'
ʔba 'to disavow' ʔbaa 'to shed'
ʔbo 'to mould' ʔboo 'to butcher'
dɔ 'to flower' doo 'to prevent'
dạ 'to curse' dạa 'to limp'
fu̱ 'to explode' fu̱u 'to sew'
gbẹ 'to be ripe' gbẹɛ 'to scrape'

112.2. Distribution of vowels. Two significant limitations characterize the distribution of vowels: the limitation on the kinds of vowels which occur within any minimal form and the limitation on the occurrence of oral and nasalized vowels within a certain defined stretch, for which see 121. This stretch is bounded by juncture and for the sake of convenience can be called a phonologic word.

The first limitation is best stated negatively: Any combination of vowels except those listed below can occur in a word. This then is a type of vowel harmony. The nonpermitted patterns can be stated as follows: No combination of mid vowels (front or back) nor combination of higher mid front with lower mid back or lower mid front with high mid back is permitted. The nonpermitted combinations of oral vowels are reviewed in the following chart. The arrows indicate both the combinations and the order of vowels. Broken lines indicate problems, which are discussed below.



The broken-lined arrow going in one direction between /ɛ/ and /u/ indicates that whereas the combination /u...ɛ/ occurs, /ɛ...u/ does not occur in the data. Likewise, since /i...ɛ/ and /ɛ...i/ occur, it is possible that /u...ɔ/ and /ɔ...u/ occur.

This chart does not mean to suggest that vowel combinations come in pairs, but that only certain vowels can occur in any given word. Thus: kóro 'rain,' bɛ́ra 'gourd,' fiyo 'fetish,' mbɔra 'law,' gọrɔ 'bee,' zu̱nɔ 'dig stick, reverse end of spear.'

This harmony obtains with the nasalized vowels as well, except that there are no nasalized front or back higher mid vowels, /e/ and /o/. Moveover,

in the data no instances of /ɛ̨...u̯/, /ɔ̨...u̯/ or /a̯...u̯/ occur, but because of the symmetry which is often revealed in phonologic systems, I should expect to find these combinations. For example, I should expect to find /a̯...u̯/ because of the already existing /a...u/. Perhaps /ɛ̨...u̯/ and /ɔ̨...u̯/ are less likely because of the absence of /ɛ...u/ and /ɔ...u/.

113. Tonal phonemes. The tonal phonemes are two contrasting levels of pitch, one high (indicated by /´/ and the other low (indicated by the absence of any mark). Only the low tone has significant allophones. In addition to the level-low allophone there is a rapidly falling one that varies with it on the first vowel of an utterance following voiceless phones. This glide does not begin as high as a high tone, and it falls much more rapidly than the glide in a sequence of high-low. Since, however, its use seems to be accompanied by the meaning of emphasis, I suspect that it can occur in any minimal free form within an utterance. The contrast between low and high tones is attested by the following words:[19]

nú 'mouth'	nu 'ground, earth'
fúk 'meadow'	fuk 'flour'
máná 'bell'	mana 'certain fetish'
wár- 'way, path'	war- 'bean'
kóo 'woman'	koo 'grandfather'
kóy 'squirrel'	koy 'handle'
góro 'snail'	goro (zu-goro 'knee')
gárá 'bundle'	gara 'yard, space in front of house'
zɛ́rɛ́ 'sickness'	zɛrɛ '(fall) in mourning'
kím 'oar'	kiím 'my mother' (Boguila)
gúrú 'in one place'	gurú 'certain large turtle'
bóró 'lower spine'	bóro 'hole in tree'
kútu 'hut'	boro 'iron'
kutú 'fog'	kútú 'certain tree'

120. The secondary phonemes of Gbɛya consist of nasalization (121), open juncture (122), pause (123), and terminal contours (124).

121. Nasalization. The phoneme of nasalization is considered a suprasegmental which occurs simultaneously with vowels. It is represented thus: /̨/. Two features characterize its distribution: (1) There is complete nasalization of vowels in any stretch of speech between junctures; oral and nasalized vowels never occur together in this environment. (2) Nasalized vowels follow any consonant but /ʔb ʔd v̌ l/ and the prenasalized stops, and they never precede these nor /h/ and the simple plosives /b d g gb/. The mutual exclusiveness of oral and nasalized vowels is attested by two pairs of words: [baŋa̯ǰá̯] ~ [baŋgará] 'certain fish,' [du̯ǰá̯] ~ [dulé] (the first variant of this second example being used at Boguila) 'tadpole.' It is also significant that whereas under certain circumstances final [m] is replaced by [mb] before a vowel, this never occurs when [m] is preceded by a nasalized vowel. (See 131.1.) The convention is adopted that only the first vowel in any word is marked for nasalization: [dɔ̨ɔ̨] is written /dɔ̨ɔ́/ 'beer.'

An alternative analysis would set up two sets of vowel phonemes, one oral and one nasalized, and then describe the mutual exclusiveness of these two sets in terms of a kind of vowel harmony. Since these two analyses are mutually convertible without any difficulty whatsoever, no case is made for my own.

Oral and nasalized vowels contrast in the following words:

kɔ 'to apply, smear'	kɔ̨ 'to agree'
ir- 'to push'	i̧r- 'to roll up'
kpay 'to cross,' trans.	kpa̧y 'to be sour'
bɛrɛ 'dry season'	bɛ̨́rɛ 'certain ant'
biri 'baboon'	bi̧rí 'certain fruit'
fuli 'to whisper'	fʊri 'to spit'
gbur- 'to drag'	gʊr- 'to swallow'

122. Juncture is posited to account for the distribution of three different phonological phenomena: i.e., the allophones of /r/, vowel nasalization (see 121), and vowel harmony (see 112.2). The phonological word bounded by juncture, and represented by word division, is therefore the domain in which these distributions pertain. Juncture is marked not only where the distributional restrictions occur but where they can occur: between só and kɛ́ in the stretch só kɛ́ rɛ́ 'so we ...' as well as between só and kó in só kó ró 'so we (explicit) ...'

123. Pause /,/ is characterized by the following features:[20] (1) it is marked by a momentary break in the flow of speech; (2) it coincides with hesitation or interruption in the utterance (which are often accompanied by either the lengthening of the preceding vowel or consonant and a slight glottal constriction or both; (3) it coincides with the terminal contours (see section 124); and (4) it coincides with tone changes on final low tones (especially when these are immediately preceded by a high tone), the nature of which is that there is either a slight rising glide from this low tone or else that this low tone is replaced by a tone which is higher than low but not as high as high. The features characterizing all but (3), where morphemic contrasts are operative, are facultative: every occurrence of /,/ is not necessarily accompanied by one of these features, but the minimal realization of /,/ is a pause. The marking of pause is hence not consistent. Although it very often occurs following clauses with the auxiliaries, before verbal predicates after long subjectival constructions, preceding conjunctions, etc., I mark it only where it actually occurs and not where one might expect it to occur. The following paragraphs illustrate the occurrence of the features of /,/. The symbols enclosed in square brackets indicate the phonetic features: [,] simple pause, [:] length, ['] glottal catch, [↑] rising glide, and [˅] raised pitch.

123.1. Following hesitation:

ó nam_1 $kó_2$ ['], yám kó $kóoi_3$, $bó_4$ zee_5 gʊ̨́y 'the members of the $family_1$ of a (no, that $is)_2$ $when_4$ the father of the $girl_3$ $hears_5$ thus'

gan $ą_1$ ['] $ɔ́_2$ nɛ dɛ́ʔdɛ́$_3$ $kóo_4$ $ná_5$ 'she_1 is_2 not_5 a $good_3$ $woman_4$'

dʊ́ŋ wa [:], ɛɛ, gɔrɔŋ dʊ́ŋ záʔdí yui 'running they, er, Gɔrɔŋ was running'

nzapà nɛá [ˈ], rɛmà$_1$ ín rɛ́$_2$ 'God went, (no that is) is sufficient$_1$ for us$_2$'

123.2 At syntactic boundaries:

mɔ́-mạri$_1$ kó wa$_2$ [↑] ɔá$_3$ nɛ [:] ɟyó-te$_4$ 'their$_2$ clothing$_1$ was$_3$ tree-bark$_4$'

wa$_1$ ndɛ wa [,] ŋmgbán ŋmgbáni$_2$ [↑], a wa yə́ŋ kó wa mɔ$_3$ rɔy rɔy$_4$ 'they$_1$ who have stripped (their clothes off)$_2$ eat things$_3$ as they please$_4$'

bó yə́ŋ saʔde$_1$ rɔy rɔy$_2$ [↑], nɛ ŋmgbérɛ́$_3$ né dɛ$_4$ ạ$_5$ 'if (he) should eat meat$_1$ indiscriminately$_2$, leprosy$_3$ will afflict$_4$ him$_5$'

gạ ạ káy$_1$ dal$_2$ rɟíto$_3$ [˘], nạ ạ mə́y ó nam$_4$ ká ạ$_5$ 'and he takes$_1$ two$_3$ dal drums$_2$, and he gathers the members$_4$ of his$_5$ family$_4$'

124. The terminal contours are those pitch features which occur with sentences and which are manifested by their effect on the tones of the sentence either in its entirety or—more commonly—at the end.[21] They serve to mark some attitude of the speaker to the sentence or to the situation. For lack of better names, they are designated by the punctuation marks, namely, period contour /. /, question contour / ?/, exclamation contour /!/ and double exclamation contour /!!/. They contrast in the following sentences:

ɛrɛ né. 'Let's go.' (= 'we go')
ɛrɛ né ? 'Shall we go ?'
ɛrɛ né! 'Let's go!'
ɛrɛ nɛ́!! 'I said, let's go!'

124.1. Period contour /. / indicates the absence of real emotional involvement. Its occurrence excludes the meanings characteristic of the other three kinds of contours. It is characterized by a drifting down of tones toward the end of the sentence so that a final low or high tone is lower than the low and high of the following sentence. The effects on high tones are especially noticeable, and the down drift may occur on even two or three high tones before the end, for example:

ạ bá$_1$ nạ ạ yə́ŋ$_2$. 'He takes$_1$ and eats (it)$_2$.'

gan$_6$ ạ$_1$ kpá$_2$ ri$_3$ mạ́$_4$ ạ́ nɔ́á$_5$ ná$_6$. 'He$_1$ doesn't$_6$ find$_2$ water$_3$ to$_4$ drink$_5$.'

124.2. Question contour /?/ indicates a question for confirmation or clarification. In a sentence having an interrogative particle ndé or wéndé, it indicates that the question is being repeated; otherwise, it marks a request for more information. It is characterized by a slightly rising glide on the final vowel, either from phonemic low or high, to a level slightly higher than is normal, which may be cut off by a light glottal constriction.

mɔ mí? 'Do you mean me?' (= 'thing I')
mɛ́ ye ge? 'What is that you're saying?'
mɛ́ nɛà wéndé? 'Did you go? I repeat.'

124.3. Exclamation contour /!/ indicates emphasis, emotional involvement, or a state of excitement. It is characterized either by the absence of the features of period contour or by an actual raising of the pitch level, especially of the highs, above the normal level.

ám$_1$ ndɔrà$_2$ kpém$_3$! 'I$_1$ killed$_2$ (just) one$_3$!'
dila$_1$ tɛ́$_2$ mą́$_3$ ą́ gbɛ rɛ́$_4$! 'The lion$_1$ was coming$_2$ to$_3$ kill us$_4$!'
ɛrɛ$_1$ kúú$_2$ zu-ture$_3$ dǐyɛ nɔ́ɔ$_4$ ʔnéŋ$_5$! 'We$_1$ departed$_2$ from here$_4$ very early$_5$ in the morning$_3$!'
wa$_1$ dɛ́$_2$ mɔ$_3$ zą̀a$_4$! 'They$_1$ do$_2$ things$_3$ without profit$_4$!'

124.4. Double-exclamation contour /!!/ indicates insistence or impatience and most often occurs with directives. It is characterized by a final falling pitch, from high to low and from low to lower. (The texts, being anecdotal or narrative in nature, reveal only a few examples.)

ɛrɛ nɛ́!! 'Let's go!'
wa sí ʔdoŋ sɛ́!! '(He said), "go on back!"'
gɛ rɛ péé!! 'So we returned!'

130. Morphophonemics. In this section are discussed three types of alternations which distinguish the phonemic shapes of morphemes: automatic, morphological, and irregular. Certain of these, because they occur only facultatively in rapid speech or under certain very limited conditions, will be written morphophonemically; unless otherwise stated, the transcription is that of the morpheme in its free form.

131. Automatic alternations. The three kinds of primary phonemes involved are consonants, vowels, and tones.

131.1. Consonants.

(a) A word-final voiceless stop phoneme preceded by an oral vowel often becomes voiced before another voiced consonant except the nasals (and presumably the injectives). Most examples are of /k/ > /g/. There are no examples of /t/ > /d/, for example: zɔg rǫ́k ʔdɛ́ (< zɔk rǫ́k) '(if they should) see very well,' tég záan (< ték záan) 'fall outside,' búg yú (< búk yú) 'wind blows,' dag za (< dak za) 'certain edible frog,' sog lolo (< sok lolo) '(sit) squatting,' ríb wa (< ríp wa) 'their face.'

(b) A word-final voiceless stop phoneme often becomes a nasal of the same point of articulation before another nasal.[22] Most examples are of /k/ > /ŋ/. There are none of /t/ > /n/, for example: bóm zɔŋ, nɛ mise dɥŋ tɛ́ (< . . . zɔk, nɛ . . .) 'when I looked, Monsieur was coming,' ndaʔdaŋ ndaʔdak (< ndaʔdak ndaʔdak) 'sticky (as raw egg),' tóŋ núa (< tók núa) 'pierce the edge of it.' That this very common process does not always occur is attested by examples, such as: ʔbúk ndee 'shoulder a bow,' kóoi bó zɔk, ndɛ wa dɛá bisa 'if the girl should see that they got dressed up.'

(c) A word-final voiceless stop phoneme preceded by a nasalized vowel becomes a nasal of the same point of articulation before a voiced consonant. There are examples only of /p/ > /m/ since such sequences of phonemes are rare: zǫ̨p-ɛ́ [zǫ̨p ɛ́] 'his own nose,' zǫ̨m-wa [zǫ̨́m wa] (< zǫ̨p) 'their noses,' zǫ̨m-rɛ́ [zǫ̨m rɛ́] 'our noses.' (The hyphen here represents the relational morpheme discussed in 212.2.)

(d) Plain nasal consonants of many words often alternate with prenasalized stops before close, and open, juncture under various circumstances. Some words have two freely alternating forms,[23] one with a plain nasal and

221. Function. The function of the postclitic is that of reference or anaphora. As such it might be translated as 'that to which reference has already been made or the existence (or nature, etc.) of which is implied by what has been said,' but its most convenient translation is a simple 'the.' It is, however, to be distinguished from the determinant which is also translated 'the' (for which see 213.2). The contrast may be stated as one between the singling out of an item from the real world (which is the function of the determinant) and the singling out of an item (or even concept) from the linguistic environment. The contrast is reinforced by differences in morphological environment (about which more is said below). Whereas the postclitic is very common in the texts, the determinant is less so. The following utterance might serve to illustrate the difference between these two morphemes:

wa$_1$ yɔ́y$_2$ zaŋ-duwai$_3$ ĩn$_4$ sɛráa$_5$ 'they$_1$ pull out$_2$ the intestines of the goat$_3$ (which has been mentioned) as well as$_4$ the liver$_5$.'

222. Allomorphs. The postclitic is phonologically bound to any morpheme which precedes it.[15] Its allomorphs are -ĩ, which occurs following low tone, and -i, which occurs following high tone. (These environments are described for isolable words and are stated for pre-pausal position, that is, where tonal sandhi does not function, for which see immediately below.) Thus: mémi 'the dew,' fúki 'the plain,' sɔ́rái 'the star,' gɔlĩ 'the war-club,' fukĩ 'the flour,' séɾɛĩ 'the spear,' boroĩ 'the iron.' Very often, however, -i instead of -ĩ occurs when the word following it has initial high tone or when the word to which it is bound is immediately followed by /. /. In these environments, both the data and the assurances of the informant prove that the variation is "free," although it is certainly to be suspected that style is involved in many cases. Thus: sɔ́lĩ tei (~ teĩ) péé na 'push the board toward me' (= 'push stick return here'), tɛm yʊ́m tɛ-wesé nɛ mɛ nɛà tɛ-galá mɛi (or mɛĩ) 'I was sick on the day you went to the city there' (= 'body-my hurts on day and you went to market there').

223. Distribution. The occurrence of the postclitic is describable, not in terms of classes of morphemes, but of kinds of constructions, although in fact there is some correlation between the two, since the structure of the language imposes certain limitations on the distribution of morphemes (for example, a preposition is generally in construction with a substantival or verbal complement). It occurs with substantive and verb expressions.

223.1. Postclitic with substantive expressions. The postclitic occurs with substantive expressions in every normal construction. (This means that the postclitic does not generally occur in an isolated construction. Only one such construction occurs in the data: wen kó gbulɛɛĩ, which was the informant's response to a question and which in the context meant 'do you mean the word "gbulɛɛ" which was just used?') Therefore no good purpose is served by classifying these expressions here, for this is done in 411 and 412. Of some interest nonetheless is the fact that a few words which frequently occur in introductory constructions are followed by the postclitic: