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Linguistic subsystems of a Chicano child

Cobin, Peter Martin, Ph.D.
Rice University, 1989

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RICE UNIVERSITY

LINGUISTIC SUBSYSTEMS OF A CHICANO CHILD

by

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A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE DOCTOR OF PHILOSOPHY

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ABSTRACT
This study investigates the speech of a four year old girl who is growing up in a Chicano neighborhood in Houston. Her parents, and many of her neighbors, mix English and Spanish. The girl's linguistic system is described and modeled from a cognitive perspective.

The girl was observed interacting with family and friends at her home. Her styles of speech in different social situations were analyzed.

Different linguistic subsystems are apparent at different levels. Her phonology is one composite system. She has separate English-like and Spanish-like morphological constructions for verbs and pronouns, but subsystems of morphological constructions for nouns are fuzzier. Syntactically, English-like and Spanish-like subsystems are clearly revealed for verb phrases, fuzzily revealed for clauses, whereas noun phrases are not organized into subsystems. Four subsystems of lexical classes can be discerned based on their use in different interpersonal roles. She has different ways of speaking to babies, younger playmates, parents, and older friends.

The girl's speech is generally appropriate for each situation. However, the variation is not due to a consistent distinction between English and Spanish. Code-switching models do not reflect the organization of her linguistic system. Rather, she organizes her
linguistic knowledge as a collection of signs, and various relations between signs account for her appropriate linguistic behavior in a given situation.
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1. Introduction: Perspectives on language and language mixing.

This dissertation is a report of a study of the language system of one person, Nina, a four year old girl growing up in a Mexican-American neighborhood in Houston, Texas.

The following is a sample of her speech. While Nina and her friend Erica were helping Nina's father, Pedro, make a cake, the following conversation took place (5/3,11:45)\(^1\). (Some utterances are omitted to maintain the thread of the conversation. N stands for Nina, P for Pedro, and Er for Erica; N-P means Nina is speaking to Pedro. Brackets enclose utterances spoken by others.)

N-P: Cómo se hace esa cake? ('How do you make this cake?')
You put it in here, or what?
I'm gonna make it.

[P-N: Todavía no' nesesitan los huevos - los eggs. ('We still need the eggs.') Nina - wait.]

N-P: Oh, the milk an' the huevo. ('egg')

N-Er: Erica, lock the door pa' que no se metan. ('so that they don't get in')

N-P: Let me put the eggs in it.

N-Er: Erica, dame la milky. ('give me the milky')

\(^1\)Throughout the dissertation, examples taken from the data reproduced in the appendix are cross-referenced. The date and time of the example is cited.
N-P: No hay milk? ('There's no milk?')
   You need some more huevo in this.
   Un poquito más. ('A little more.')

[P-N: No lleva más. Nesesita los eggs. ('It doesn't take more. It
   needs the eggs.')]  

N-Er: You mean you don't got no eggs for the - for the cake?

N-P: I'm gonna go check on Annie's apartment - if she gots huevos.

N-Neighbor: I - I wanted some eggs.

N-Er: You make the cake. Do it.
   Mix it con el finger. ('with the finger')
   We don't got no eggs, Erica.

N-Fly: You better not get in my damn cake.

    Such speech is common for Nina, and for a large number of
Chicanos, but it does not correspond to traditional notions of
language. It appears to be neither English nor Spanish, but rather a
combination of the two. Nina's linguistic system might be described
in a number of ways. It might be represented as a single,
undifferentiated system; as two separate subsystems that may be
mixed to yield an overall system; as three subsystems that share
certain components; etc.

    The way to arrive at the most appropriate characterization is
to collect an abundance of data from Nina, and to analyze the data in
sufficient detail to reveal Nina's major linguistic subsystems. By
doing so, one contributes not only to an understanding of how Nina
uses language, but also to an understanding of what language is.
Perhaps a close analysis of these ragged margins of linguistic behavior will yield significant information concerning the nature of language itself. (Haugen 1950b:287.)

Nina is a test case for notions of language. If current notions of language are compatible with findings about Nina, then these notions may be extended to cover Nina and other similar individuals. On the other hand, if current notions of language are incompatible with the findings, then some rethinking is in order. Is it enough to acknowledge 'marginal' cases where notions of linguistic system break down, or can conceptions of language be revised to correspond more accurately to the variety of linguistic behavior that is observed?

1.1. Abstract, social, and individual perspectives on language systems.

Language is often thought of as a kind of system. We may contrast three approaches to the notion of language as a system: abstract, social, and individual. This trichotomy is not a strict one, but it is helpful for understanding the different notions of language that are prevalent.

In addition, the term 'language' is sometimes defined extensionally to be a set of expressions.
The totality of utterances that can be made in a speech-community is the *language* of that speech community. (Bloomfield 1926:155.)

From now on I will consider a *language* to be a set (finite or infinite) of sentences, each finite in length and constructed out of a finite set of elements. (Chomsky 1957:13.)

In this case, there may be assumed to be a system of relations (or rules) that characterize the set of expressions. The term 'language' can alternatively signify this system of relations (or rules), and this is the meaning intended when I speak of a linguistic system.

The abstract approach treats a language as a set of symbols, sequences of symbols, and operations on symbols. The capacities for language use are not seen as embodied in people, neither as a society nor as individuals. Hence, a language has form, but not function. In computational theory, for example, a language is a set of strings of symbols, and a grammar is the set of rules that generates or accepts these strings (Lewis and Papadimitriou 1981:225). Different sets of strings are distinct languages and require distinct grammars. The strings may be unlike any human utterance. They may have no communicative intent. The grammar functions only to determine whether or not a string is well-formed.

Of course, linguists are primarily interested in systems that resemble human language. An abstract system may be like natural language if the strings correspond to phonemic (or graphemic) values
on the one hand, and to semantic values on the other. One way to show these correspondences is by augmenting the grammar with phonological (or graphemic) and semantic interpreters. Such a system could be capable of relating expression and content, allowing it to simulate language production and comprehension. However, using an abstract grammar with various interpreters is a very indirect and cognitively unrealistic way to relate expression and content.

An abstract representation of language can be useful for many purposes. However, one is never sure just what it is a representation of. Does any community use this language? No. Does any individual know this language? No. From an abstract point of view these questions are irrelevant. According to Chomsky (1965:3):

Linguistic theory is concerned primarily with an ideal speaker-listener, in a completely homogeneous speech-community, who knows its language perfectly and is unaffected by such grammatically irrelevant conditions as memory limitations, distractions, shifts of attention and interest, and errors (random or characteristic) in applying his knowledge of the language in actual performance.

If a grammar follows such guidelines, it neglects the actual use of language by societies and individuals. Thus it is dangerous to interpret an abstract system in social or individual terms. If a language is seen in abstract terms, then it might not relate very well to people's communicative behavior.
Dictionaries and grammars can give the impression of language disembodied from people who use the language, whether or not their compilers intend their works to be descriptions of an abstract system. There is a tendency for people to think of 'the grammar of English', rather than 'a particular grammar of English', or 'the grammar of a particular variety of English'. Standards are sometimes set without knowledge of who exhibits or accepts these standards.

A linguistics concerned with human communication views language from the perspective of groups and individuals (Yngve 1986:47). From the viewpoint of the group (or community or society), different systems of linguistic behavior can be discerned, e.g. people in Mexico speak differently from people in the United States. It is common to define linguistic systems in terms of their groups. Bloomfield (1926:155) uses an extensional definition of language, presupposing the existence of speech communities. One could alternatively define a language as the relations or rules underlying the utterances of a speech community, as does Hockett (1958:137).

Discerning speech communities can be difficult because the boundaries between communities are fuzzy (see Bloomfield 1933:444-95, Hockett 1958:321-38), and there are ramifications on the notion of language as seen from the social perspective. On the one hand, differing language behavior is observed within the speech community. There are no totally homogeneous societies. Different kinds of speech within a community are usually referred to as
'varieties' of the language of the community, but there is no clear-cut way to differentiate 'a language' from 'a variety of a language' on the basis of speech communities (Hudson 1980:71). On the other hand, similar language behavior is observed in different communities. Languages can share items as a result of common genetic inheritance or as a result of borrowing. Some communities appear to mix languages, although defining a language in terms of the community would imply that each community uses one language.

Although one speaks of, for example, English and Spanish languages, the communities that use English and Spanish are not entirely distinct, nor is the speech within each community uniform. Social representations of language can characterize general aspects of language behavior within a community, but it is dangerous to interpret those characterizations as valid for any given individual.

The individual approach to language does not have to deal with the fuzziness inherent in defining communities. Individuals are distinct from one another, and variation among individuals is, by definition, eliminated. This approach is concerned with the linguistic system used by a single person. The individual's linguistic system is sometimes called an idiolect.

Still, one may claim that two or more systems are present in the case of a bilingual individual.

Generally speaking, the totality of speech habits of a single person at a given time constitutes an idiolect. There are certain exceptions. For example, someone born of English-
speaking parents in Germany, who learns the one language from his family and the other from his playmates, possesses two idiolects rather than one. It is even convenient to say that an educated Swiss-German, who can converse both in his local dialect and in so-called "Standard" German, possesses two idiolects. In some cases it is impossible to decide whether a speaker has two rather similar idiolects or just one relatively flexible idiolect; fortunately, such marginal cases are not numerous enough to impair the practical utility of the approach. (Hockett 1958:321.)

Why are the 'marginal cases' problematic? Why do notions of language fail to account for the language behavior of certain individuals? Such cases should not be dismissed; they should be investigated seriously.

One reason for discerning different systems for bilinguals is that each system corresponds more closely to available abstract or social descriptions of languages. If an abstract or social description of 'German' is at hand, then it is convenient to identify a 'German' system within the speech of the bilinguals in Hockett's examples. However, one must verify that such systems are indeed valid from the perspective of the individual. In some cases, a priori abstract or social descriptions of linguistic systems are not appropriate for describing the speech of an individual.
Nina may well be such a case. Considering her linguistic environment, it remains to be seen if her knowledge includes an English system and a Spanish system.

For an analysis to have individual validity, it must account for a range of the individual's linguistic behavior, some of which is idiosyncratic. The idiosyncratic behavior cannot be dismissed without jeopardizing individual validity. Techniques for doing an individual analysis are described in chapter 2.

The abstract, social, and individual approaches should complement each other. The notions of linguistic system used by alternative approaches should be compatible, differing in focus rather than in substance. If the description of the linguistic systems of some individuals is problematic, then the notion of linguistic system needs clarification.

Halliday takes a social approach that is compatible with abstract and individual approaches, and Lamb takes an individual approach that is compatible with abstract and social approaches. There is common ground. The findings of one approach can be of benefit to the other approaches.

1.2. Codes and code-switching models.

If one were not concerned with cognitive validity, one might find it convenient to begin with an a priori language system as the basis for describing Nina's linguistic behavior. Immediately, the concepts of English and Spanish would seem applicable. These are pre-described language systems, and they would enable the linguist
to describe Nina's speech without having to re-describe familiar phenomena. Using a notion of English and Spanish as a springboard to analysis, it would be natural to call Nina's language behavior 'language mixing' or 'code-switching'. Other studies have treated language behavior similar to Nina's as 'code-switching', and have tried to describe or account for such behavior.

Joshi (1985) presents a model of code-switching behavior from a largely abstract perspective.

Let $L_m$ be the matrix language and $L_e$ be the embedded language. Further, let $G_m$ and $G_e$ be the corresponding grammars; that is, $G_m$ is the matrix grammar and $G_e$ is the embedded grammar. A mixed sentence is one containing lexical items from both $L_m$ and $L_e$. Let $L_x$ be the set of all mixed sentences that are judged to be acceptable. Note that a mixed sentence is not a sentence of either $L_m$ or $L_e$. However, it is judged to be "coming from" $L_m$. The task is to formulate a system characterizing $L_x$. (Joshi 1985:192.)

Joshi's model is capable of distinguishing acceptable and unacceptable (at least to Joshi) sentences. Acceptability judgements also are used by Gingras (1974) for characterizing English-Spanish code-switching. However, to give Nina a list of sentences and ask her to distinguish the acceptable ones from the unacceptable ones would be a difficult practice, and the responses, if any, would not be reliable. Strange sentences are merely
unfamiliar, not unacceptable, and in the right circumstances Nina can acquire the new linguistic information and use it.

Moreover, Joshi’s model has no way to account for which sentences are used in which social situations. It recognizes exactly three modes of speaking, Lm, Le, and Lx, so the diversity of an individual’s language behavior is not accounted for by this model.

Joshi claims that one advantage of his model is that it characterizes code-switching behavior without requiring a third grammar for mixed sentences. He criticizes the model of Sankoff and Poplack (1980): ’They also fail to show how to build the third grammar [code-switching] in a systematic way from the two monolingual grammars’ (Joshi 1985:199). For characterizing the cognitive development of Nina’s linguistic system, though, it does not make sense to try to build the set of ‘mixed sentences’ from previously-acquired grammars of English and Spanish. Fantini (1985:43-4) reports that his son initially mixed English and Spanish, then separated them at age 2:8. In this case, it seems that the two monolingual grammars are built from the ‘mixed’ language.

It is possible that Joshi developed his code-switching ability on the basis of two monolingual grammars, but certainly not all people do. In fact, Gingras (1974) finds that people who grew up in a bilingual environment have quite different acceptability judgements from people who became bilingual as adults. The question of how people build up their linguistic systems must be answered by using empirical data, not by appealing to the convenience of a formalism.
Many aspects of Joshi's model have no valid interpretation in social or in individual terms. Joshi has failed to look at the aspects of language behavior that would give insight into social or individual linguistic systems.

There is no dividing line between abstract and social perspectives, but the motivations and assumptions for analysis range from predominantly abstract to predominantly social. A common terminology may hide the differences in motivation and assumptions; or, conversely, differences in motivation and assumptions may lead to ambiguity in the use of certain terms. In particular, the term 'code' is used inconsistently.

Gumperz (1962:31) explains his use of 'code'.

There are as yet no generally agreed-upon procedures for isolating individual roles, although correlations between language use or style and like behavior have been noted in a number of recent studies... For our purposes it will be sufficient to isolate only those roles or role clusters which correlate with significant speech differences. We assume then that each role has as its linguistic diacritic a particular code or subcode which serves as the norm for role behavior.

Thus a code (or subcode) is a hypothetical construct that corresponds to identifiable communicative roles. For example, different roles may be used in religious, commercial, political, and home contexts (Gumperz 1962:32-6). Although Gumperz speaks of
these roles in terms of a society, there is no difficulty in using the same approach on an individual basis.

The difference between codes and subcodes is as follows. For some societies (or individuals) the styles all belong to the same language; these are subcodes. For others, the styles include 'genetically distinct languages, in which case we will use the term codes' (Gumperz 1962:31). An example of the latter case is found in medieval Europe, where Latin was used as an administrative and sacred code, whereas the vernacular (e.g. German) was used for other roles (Gumperz 1962:36). He points out that there is not necessarily any difference in function between codes and subcodes; the distinction is largely based on linguistic classification.²

²Notice that the basis for the classification is the presence of 'genetically distinct languages,' which presumably would apply in the case of Spanish and English. However, the relevance of this distinction to Nina's behavior is not as great as it may at first seem. For purposes of genetic classification, Spanish and English can be distinguished on the basis of different core vocabularies, different typical syntactic constructions, different phonologies, etc. On the other hand, there is much in common in the vocabulary, syntax, phonology, etc., particularly in Texas. Being distinct genetically does not imply that every linguistic item is unambiguously English or Spanish. Furthermore, genetic distinction does not imply ontogenetic distinction. The criterion of genetic distinction corresponds to the general impression of whether one or two
Subcodes are not subsets of codes. They are codes of a less distinctive nature. There is no assumption of a necessary qualitative difference between, say, using English and Spanish for separate roles, or using formal and informal registers for separate roles. Also, the number of codes (or subcodes) can equal the number of roles, since the role is the basis for assuming the presence of a code. Just as one can learn or create new roles, so too can one learn or create, sometimes on the spot, a new code. Not all roles will necessarily 'correlate with significant speech differences', but the number of isolatable codes cannot be assumed a priori to an empirical investigation.

A code can be seen as the linguistic knowledge that is applied when taking on a given role. This view enables one to use standard techniques of linguistic description for describing codes. The end result is a grammar of a code. I will use this definition of 'code' in the description of Nina's linguistic system.

There is nothing to suggest that codes are mutually exclusive; indeed, it is difficult to imagine a situation where the linguistic knowledge used for each role is totally distinct from the linguistic knowledge used for any other role.

Although Gumperz's notion of code is reasonable and helpful, many other linguists use the term differently. The term 'code' is associated less with a role and more with a given grammatical

languages are involved, but does not necessarily correspond to the function, development, or organization of the codes.
structure. Gumperz's notion of code facilitated the description of
language use in a wide variety of complex and heterogeneous
societies (Gumperz 1962:31-6). In a number of societies, two
standard languages may function as separate codes. However, in
some instances 'code' has become synonymous with 'language'.

Code-switching is the alternation of two languages within a
single discourse, sentence or constituent. (Poplack
1980:583.)

Gumperz himself is not consistent.

It would be futile to predict the occurrence of either
English or Spanish in the above utterances by attempting to
isolate social variables which correlate with linguistic
form. Topic, speaker, setting are common in each case. Yet
the code changes sometimes in the middle of the sentence.
(Gumperz and Hernandez-Chavez 1975:155.)

It is from this perspective, where a code is regarded as an a
priori abstract system (e.g. a standard grammar and dictionary), that
one can talk about Nina's speech as code-switching.

Different notions of 'code' can result in confusion.

The code-switching that we are interested in here occurs in
areas where we find mass bilingualism, as in the
Southwest, where code-switching is the common
communicative code among bilingual Chicanos... (Sanchez 1983:139.)

Here Sanchez seems to use 'code-switching' as an identifying label for a kind of discourse, and states that this kind of discourse constitutes a code that functions for a particular role.

Since code-switching functions as a "code," although it necessarily implies the use of two codes within the same discourse, this phenomenon must be analyzed as part of the total social, cultural and linguistic systems of Chicanos. (Sanchez 1983:139.)

Here Sanchez continues with the idea that this kind of discourse constitutes a code, but the literal interpretation of 'code-switching' impinges on the discussion.

Let us first define the term: code-switching involves shifting from one grammatical system to another. (Sanchez 1983:140.)

Thus, Sanchez seems finally to decide to use 'code' as a grammatical system.

The indeterminate use of 'code' to refer sometimes to speech associated with a role and sometimes to a particular grammatical system is not detrimental if there is a close correspondence between the two. However, when the term 'code-switching' is
understood to imply the use of two grammatical systems within the same role, then the correspondence between the two is lacking.

A number of linguists (e.g. Gingras 1974, Lance 1975, Timm 1975, Poplack 1980, Woolford 1983), while recognizing that this kind of discourse does have a social function, have focussed on describing it in terms of abstract English and Spanish grammatical systems. Social aspects of language behavior are overlooked as the relation between code and role is weakened.

Different types of data are dumped together into one 'code-switching' category. One consequence is the direct comparison of utterances used in different interpersonal roles. Barker (1975) describes the social functions of various mixtures of Spanish and English, including educated and non-educated varieties of Spanish and English, and Pachuco, a Mexican-American slang. All of these kinds of language behavior are reminiscent of Spanish and English, and could be termed 'code-switching'. However, putting these kinds of behavior into one category obliterates their differences and oversimplifies the diversity of language behavior observed by Barker. It recognizes only three kinds of language behavior: English, Spanish, and 'code-switching'.

Another result of combining different data is the direct comparison of utterances taken from different communities. Woolford (1983:521) exemplifies code-switching by citing several sentences taken from different publications, including Pfaff (1979), whose informants were from Fresno, Selma, and Porterville in California, and Austin, San Antonio, and El Paso, Texas; and Sankoff
and Poplack (1980), who used data obtained by Pedraza from the Puerto Rican community of New York City. There may indeed be similarities between these communities, but there is a danger of constructing an artificial 'code-switching community' that is not a community in any social sense. Again, this practice obliterates the diversity of the data. Timm (1975) finds that subject pronouns and verbs are from the same system (similar in this respect to Nina). Woolford (1983:529) dismisses that finding, pointing out that others, e.g. Sankoff and Poplack (1980), have data showing that switching can occur between subject pronouns and verbs. Apparently, there is no single way to 'code-switch'; there is no need to argue about whose data is more valid.

1.3. The need for the individual perspective.

Using an abstract notion of code can impede the description of language in social or individual terms because some aspects of abstract codes are not valid when interpreted socially or individually. Some socially motivated analyses (Barker 1975, Peñalosa 1980, Sanchez 1983) are able to avoid these pitfalls better than others, and they should be comparable with individual analyses because the social and individual sides of speech are closely interrelated.

Nonetheless, some aspects of the linguistic behavior of a community are not reflected in the individual. From the social viewpoint, Nina can be associated with a group and her language described in terms of the language of the group. However, there are
several different groups that Nina can be associated with. On a large scale, she can be associated with Texans, Mexicans, Americans, Mexican-Americans, etc. On a small scale, she can be associated with her neighborhood, her family, her siblings, etc. Although she functions within each of these groups, her language behavior is not typical for any group. An understanding of the linguistic characteristics of a group as a whole still leaves much to learn about Nina's linguistic system.

In-depth studies of Spanish-English bilinguals are virtually non-existent. Fantini (1985) studies the sociolinguistic development of his bilingual son. However, Fantini's son was raised under very different circumstances from Nina. The parents were very careful not to mix languages, so the child associated English and Spanish with mutually-exclusive environments. Though the study is interesting, it does not represent a typical environment in which many Chicano children are raised, nor does it present a challenging test case for the notions of English and Spanish.

Previous studies have not characterized the linguistic system of a speaker like Nina. They have not taken an individual perspective nor have they investigated an individual in sufficient depth to reveal the linguistic subsystems. This study is the first of which I am aware that has such aims.

How is Nina's language system organized? To answer that, one must describe her speech without imposing a priori systems, without taking shortcuts. One must describe her speech in enough
breadth and depth to find the principal systems involved. The description of Nina's speech forms the body of this dissertation.
2. Preliminaries to a cognitive grammar.

This chapter explains the intentions, techniques, and notation of this grammar of Nina's linguistic system.

2.1. What a cognitive grammar attempts to represent.

Lamb (1971:101) proposes the term 'cognitive' linguistics for a subdiscipline whose aim is 'representing the speaker's internal information system which makes it possible for him to speak his language and to understand utterances received from others.' Cognitive studies in linguistics are very recent and still are rare, though the term 'cognitive' is becoming popular.

Winograd (1983:1) poses two related questions that characterize a cognitive approach to language.

What knowledge must a person have to speak and understand language?
How is the mind organized to make use of this knowledge in communicating?

The focus of a cognitive approach is on the individual. The individual is assumed to be the basis for the organization of this knowledge.

The cognitive goal goes beyond describing structures in texts or devising rules to generate output. Of the various ways to account for linguistic data, some correspond more closely than others to the
linguistic processing actually performed by individuals. A cognitive grammar must find evidence to determine aspects of the individual's language processing.

Researchers from several disciplines are working on cognition. The issues touch on linguistics, psychology, neurology, and artificial intelligence. I cannot span all of these approaches, but rather I attempt to present a linguistic description in terms that could be elaborated and reworked to fit other cognitive frameworks. I do not attempt to discuss, for example, specifics of neurological or computational implementation.

Because the data consists of utterances Nina produced, and no assessment of Nina's comprehension was attempted, this grammar will focus on the production process. A reasonable goal is to describe the kind of linguistic information that makes up a part of the knowledge Nina must have in order to say what she does, and to present a model of how the linguistic information is organized so that Nina can actually produce the kind of speech observed.

The following kinds of information are considered to be of primary importance. They need to be recorded and the grammar should account for them.

1. Forms of expression. Accurate versions of Nina's statements are important. For that reason, all the data was transcribed using broad phonetic notation, rather than standardized spelling. Spelling is used only for purposes of presentation. Utterances were transcribed in unedited form so as to include hesitations, repetitions (except when carried to extremes), and
incomplete sentences; in short, everything that was audible was transcribed. The cassette recordings serve as the ultimate source for accuracy.

Thus it is not necessary to assume that Nina uses some standard phonology. Her phonological system can be described on its own, and then compared with other standards, if desired.

2. Meanings of the forms. A knowledge of Nina's household and neighborhood are helpful, as well as an understanding of English and Spanish. During the observation periods, I spent over 100 hours observing in her home, and at least another 30 hours in non-observational situations with her family. Since the time the observation was concluded, my relationship with the family has continued. Not all of what Nina says is clear to me (or to anyone), but many references are obvious as soon as one is familiar with her world.

3. Use of the forms according to social situations. Different ways of speaking are commonly used in different social situations. The grammar should reflect Nina's speech varieties and account for factors that influence their use. Thus the social situation, primarily the addressee, was recorded for all of Nina's speech.

4. Development of linguistic knowledge over time. Linguistic knowledge is not static. An essential aspect of its organization is the ability to change. Nina was observed over two periods, and the grammar should reflect the development of Nina's system, and the model should be amenable to change.
It is assumed that Nina has one overall organization, one system, of linguistic knowledge. Within the general system, smaller subsystems (often called 'systems' for convenience) can be found. The kinds of subsystems that are of interest in this study are the ones that simultaneously involve information about expression, meaning, and social situation. Different systems are capable of producing quite similar behavior. The analysis will not point to a unique organization of knowledge, but it will provide a way to identify reasonable or probable organizations.

2.2. Techniques for constructing the grammar.

In some respects, Nina's linguistic system is different from anyone else's. At the outset, it is impossible to know just how different it might be, whether it is unique only in very specific details such as voice frequencies or number of vocabulary items, or whether its general organization is distinctive. Therefore, one must guard against letting data from other sources contaminate the analysis. In particular, Nina's speech is potentially different not only from standard English and Spanish, but also from 'mixed language' observed in the Puerto Rican community of New York or the Mexican-American community of Tucson, and even from the speech of other people in Nina's neighborhood or her family.

The study uses techniques of field linguistics in the tradition of Sapir, Bloomfield, Haas, Pike, and their students. Spoken texts are recorded in natural conditions and with a variety of addresseees. The phonology is analyzed according to the principle of meaningful
contrasts. Recurrent structures are identified, and they are classed according to the tactic patterns in which they participate. Corresponding semantic values are established.

However, some special considerations affect the analysis.

As opposed to an analysis of supposedly homogeneous speech, the criteria for determining phonemic contrasts must be modified slightly so as to reflect different kinds of phonological variation. Phonological variation occurs in ordinary speech, possibly due to slips of the tongue, carelessness, free variation, coexistent phonemic systems, or other reasons. Fries and Pike (1949) show that factors other than strict phonological environment may be useful for understanding phonological systematicity. Weinreich (1963:8) proposes that an utterance may be characterized by a feature identifying the phonological system, e.g. 'Englishness', to allow contrast of systems rather than of individual phonemes. My analysis tries to find a cognitive motivation for the different kinds of variation.

The determination of morphological and syntactic classes must be based only on evidence from Nina's speech, not on evidence from other speakers nor on historical evidence. Items that cognitively consist of one unit for Nina might appear to be analyzable as a sequence of smaller units. Productive constructions provide the best evidence that the classes are indeed a part of Nina's linguistic information. Brown (1973:54) lists the criteria used for segmenting morphemes in his child language acquisition studies, and productivity is the justification for his criteria. Nina is older than
Brown's subjects, and not all of his criteria are applicable to Nina. However, assessing the productivity of Nina's constructions remains important for a cognitive analysis.

Finally, it is necessary to record and analyze the social situation, especially the addressee, for all of Nina's speech, not just for a few unusual words or expressions. Both the use and the apparent lack of use of linguistic items in a given social situation is of interest.

2.3. The notation.

Within a cognitive framework, there are a number of ways to express the findings. The notation system is important for several reasons: it is a way of conveying the findings to the reader; it provides a framework for understanding certain aspects of the findings, thereby suggesting possible applications to other fields, or possibilities for future research. A single notation is bound to have its strengths and weaknesses.

I use a relational network notation adapted from Lamb (1966, 1973), also described in Lockwood (1972). Modifications are made according to Lamb (1980). Two kinds of relations are represented. The relations between content and expression, also called realizational relations, are shown by vertical connections between nodes, as in Part A of Figure 2.1. The sequential orderings of combinable items, also called tactic constructions, are shown by horizontal connections between nodes, as in Part B of Figure 2.1.
Figure 2.1

Relations in network form

A. Form of a typical realization.

```
concepts

use in constructions

expressions
```

B. Form of a typical construction.

```
connections to content

Construction type(0)

connections to expression

(END)
```
When put together, the vertical and horizontal connections form a relational network.

The relations indicated by the network can be put into operation by the activation of lines and nodes. Activation proceeds from a given node to other related nodes along paths indicated by the connections.

The networks used here have three types of nodes, exemplified in Figure 2.2. An 'or' node, symbolized by a bracket, represents a choice in the network. In Part A, 'Egg' may be realized as /wɛbɔ/ or as /ɛɡ/. If 'Egg' is activated, the activation will proceed along all branches, but some unshown factor may determine which activation eventually succeeds in being realized. In Part B, activation from either 'Know' or Neg will result in the activation of /no/.

An 'and' node, symbolized by a triangle, represents compound and portmanteau realizations, depending on the direction in which the triangle faces. In Part C, Prog is realized by two elements, Be and -ing. If Prog is activated, the activation will spread along all branches, and all must succeed in order for any to succeed. In Part D, activations from both 'Go' and Past are required to activate /wɛnt/.

An 'intersection' node, symbolized by a square, represents the sequential ordering of activated realizations. If an intersection node is activated from above, then the entire sequence of the construction, from beginning (0), to end (END), is activated. The sequence succeeds only if there is activation from above for each intersection node, in which case activation continues downward
Figure 2.2
Three types of nodes

I. 'Or' nodes
A. 'Egg'
   /webbo/ /egg/
B. 'Know'
   /no/

II. 'And' nodes
C. Prog
   Be -ing
D. 'Go'
   /went/

III. 'Intersection' nodes
E. 'Candy'
   N(0) P1 N(END)
   /kændi/ /z/
from each node. In this manner, the construction gives a sequential ordering to the particular items that participate in it.

The 'intersection' node is a kind of 'and' node, but it enables constructions to be shown as transitions (as in Bates 1978, but the transitions are not augmented). This step follows a suggestion in Lamb (1980).

The major steps of the analysis are: (1) to determine productive tactic constructions at various levels, (2) to determine the realization relations, and (3) to put the two together into a model representing Nina's linguistic system.

At the outset, there is good reason for supposing that this notation might be useful. The notation allows one first to analyze relations, and then to determine the subsystems exhibited by the relations. Thus an a priori assumption as to the number and kinds of subsystems can be avoided.

Networks show relations in a flexible but precise manner. They have been used to account for the use of English verbs of motion (Ikegami 1970), English prepositions (Bennett 1975), English modal auxiliaries (Johannesson 1976), historical change (Christie 1977), slips of the tongue (Dell and Reich 1980), sociolinguistic variation (Herrick 1984), and unintended puns (Reich 1986b).

Other notations exist for representing relational networks (e.g. that used in Lamb's dynamic grammar, 1989). I do not contrast the notation used here with other possible notations; rather I intend to test how well this notation works for presenting a cognitive model of Nina's linguistic system.
2.4. A note about systems.

Systems operate within other systems, so it is impossible to assign a definitive number to the subsystems within the total framework. This study focuses on systems that correlate with Nina's social use of language.

For example, in English, one can identify systems of strong and weak verbs, or in Spanish, verbs with infinitives in -ar, -er, and -ir. And within each system one can identify smaller subsystems. However, none of these systems correlate with a different social use of English or Spanish. One does not avoid strong verbs in formal situations, or use -ir verbs to express intimacy. This study will describe more fully the systems that Nina does differentiate socially, although other kinds of systems are likely to appear, too.

Strict boundaries between systems are not to be expected. Exceptions are a part of linguistic knowledge. However, some boundaries are fuzzier than others. If the boundaries between systems are particularly fuzzy, then there is little evidence for two systems rather than one. The determination of one system or two is subjective (Labov 1971:447), and I do not expect everyone to agree with my assessments. Thus it is important to indicate how strong the evidence for a given system is.

In this study, I am looking for systems that have strong evidence of being distinct. Specifically, one possibility to be investigated is that Nina's linguistic knowledge is divided into two
distinct components, English and Spanish. This possibility must be tested against other possible cognitive organizations.
3. Description of the study.

The goals of this study are twofold: (1) to describe the speech of a person who is interesting from the viewpoint of linguistic subsystems, and (2) to present a model of linguistic knowledge that simulates the use of these subsystems in the production process.

The steps that were taken to accomplish these goals may be categorized as follows. (1) An informant was selected; (2) the observation was carried out; (3) the data was analyzed; and (4) a portion of the analysis was modeled. Steps (3) and (4) are the main body of this dissertation. Steps (1) and (2) need to be described briefly.

3.1. Selecting the informant.

I wanted to study an individual whose language use is not easily categorized; neither a typical speaker in a homogeneous speech community, nor a so-called 'pure' bilingual equally functional in two or more separate languages. The speech of such a person would likely challenge simplistic assumptions about languages, and could provide insight into how linguistic systems can be organized. Yet at the same time, I wanted to study a person with a relatively simple overall linguistic knowledge, so that I would have a better chance of describing, albeit in a fairly broad manner, the total linguistic system of this person, not just the interface between
sociolinguistic subsystems. For without a good understanding of the system as a whole, it is impossible to describe subsystems.

I decided that a child whose parents mixed languages would be a good candidate. The child should be old enough so that she has some sensitivity to different sociolinguistic usages. Reich (1986a:208) reports that researchers place the age of language differentiation in bilingual children somewhere between age 3 and 5, there being no agreement as to what precisely indicates language differentiation. Fantini (1985:54) reports that his son differentiated English and Spanish by 3:0.

As children get older, their linguistic knowledge increases. Their social interactions become more numerous and more complex. Thus I wanted a child who was 3 or 4 years old. Of course, individual variation makes it impossible to make age an absolute criterion.

Unlike many previous studies, including Fantini (1985), I did not want the child's linguistic environment to be carefully planned by the parents. Fantini and his wife were very careful about what language they used in different social situations, and they wanted their son to avoid mixing languages or using the wrong one in any situation. My study is not an evaluation of parenting style, and I do not seek to judge my informant's linguistic system, but rather to understand it.

From within the Mexican-American community of Houston, I was hoping to find a family that frequently mixes English and Spanish and that would cooperate with my study.
3.2. The home environment.

A friend of mine introduced me to Nina's parents. Laura, the mother, grew up in Illinois and Texas. Her first language was English; she learned Spanish later from her grandmother. She is fluent in both, and in some circumstances she mixes them. Pedro, the father, grew up in the state of Tamaulipas, Mexico. His first language was Spanish. He has been living in Houston for over ten years and speaks English quite well. At home he mixes English and Spanish frequently.

Nina is the oldest child. She was nearly four when I met her. She has a sister Jessica, who was beginning to speak one-word utterances. Another sister, Elizabeth, was a baby.

They live in an apartment in a predominantly Mexican-American neighborhood in Houston. Nina has many playmates of various ages, most of whom know both English and Spanish. Adult visitors are common. A few adults know only limited English, some know no Spanish, but most are bilingual.

The television is on for most of the day. Usually the family watches English-language programs, but occasionally the Spanish-language programs are on. Nina's favorite programs, cartoons and pro wrestling, are in English.

Both the mother and the father are involved in taking care of the children. The father was recovering from an injury at work and was generally at home with the children all day. For a brief span, the mother was working during the day; otherwise, she was with the
children most of the day. During my observation, Nina interacted more with her father than with any other person.

There were no efforts by the parents to encourage Nina to differentiate English and Spanish. Only once during my observations did they identify a word as being English or Spanish, and Nina's reaction suggests that she did not understand the explanation. Never did they warn Nina not to mix languages. They rarely corrected her speech, and most corrections were for unrecognizably pronounced words.

In short, the linguistic environment seems to be ordinary for the community in which Nina lives.

3.3. My role as observer.

The variation that I wanted to capture is usually related to the social situation in which communication takes place. I wanted to observe Nina speaking in a range of social situations.

I decided against elicitation to get the data. It would be hard to control the elicitation situations so as to evoke different language usage. Furthermore, elicited data is less preferred than natural data.

My problem was how to be present to record the data without affecting the social situation. This cannot be done absolutely. I took two measures to minimize the effect of my presence.

1. I was present for a long period of time. Nina was able to get used to the novelty of having a stranger in the apartment. The
family often has visitors, so even at the beginning my presence was not remarkable.

2. My role was that of a friend of the family. I participated in activities as appropriate: talking, eating, playing, watching television, etc. Since I could not become invisible, I tried to be normal and minimize disruption. A significant amount of time involved Nina talking to me, but I did my best not to interfere with Nina's interactions with other people. Almost always, Nina sought me out to play with, not vice versa. When Nina did not wish to interact with anybody, I did not try to engage her in speaking.

My interaction with the entire family was based on being friendly and sincere. I did not subtly try to lead Nina to say something I had specifically targeted.

I feel that I was indeed accepted by all as a friend of the family. Nina's mother reported on several occasions that Nina's speech was unaffected by my presence. I was an additional person for Nina to interact with, but apparently I had a minimal effect on Nina's interactions with others.

Whenever asked, I explained that the purpose of my study was to find out how Nina learns Spanish and English. I doubt that Nina understood this explanation. The speech of the visitors was more likely to be affected than Nina's speech, but I explained that I was not interested in studying the speech of anyone else. Some adults reacted when they said something bad about someone or used a bad word, remembering that it was being recorded. Otherwise, people soon forgot about the cassette recorder.
Whenever Nina asked what I was doing, I said that I was writing or recording. I never told her that it was her speech that I was recording. It was impossible for me to hide the fact that I was recording both on cassette and in my notebook. Therefore, I decided the best strategy was to be open and honest about what I was doing.

The cassette recorder was about the size of a large notebook. It had an external omnidirectional microphone. I put these in the corner of the room next to my chair. Fortunately, the microphone was able to pick up Nina's voice from most places in the apartment with sufficient clarity to enable transcription. I was not able to hide the recorder, and naturally it became an object of considerable interest to Nina. On one occasion I played a small part of a tape for her. But her attention was always temporary, and most of the time the equipment was of no concern.

The father, Pedro, seemed more comfortable talking with me in Spanish, so I did likewise. The other adults preferred using English with me. With Nina I conscientiously spoke English, first because it is more natural for me, second because she used English with me, and third to heighten the linguistic contrast between me and Nina's family members and visitors. When Nina occasionally used Spanish with me, I did not play dumb, but I continued to respond in English.

3.4. The observations.

The observations were done over two time periods. In late April-early May 1988, I observed and recorded for 53-1/2 hours over a period of 2-1/2 weeks. At this time, Nina was 4 years; 0 months.
Typically I would observe from 9 a.m. until 1 p.m. I was on hand for Nina's breakfast, her playtime and/or television viewing, and her lunch. Both parents were generally at home, as were Nina's two sisters. Nina played alone, with her family members, with me, or with friends from the apartment complex. She usually played inside the apartment, sometimes just outside the apartment. Most of the time she was within hearing distance. Writing in a notebook, I kept track as best I could of what Nina said and who she said it to. I also made sure the cassette recorder was in working order.

In August 1988, when Nina was 4 years; 3 months, the procedure was carried out again in the same way. This time 52 hours of data was recorded. Nina's mother, Laura, was away for approximately half of this portion because of her job. Otherwise, the household was the same as before.

All of Nina's audible utterances were transcribed using broad phonetic transcription, yielding more than 5,000 utterances for each observational period. My analysis is based on a substantial portion of this data. Depending on the frequency of the items analyzed, a substantial portion may range from a thousand utterances to the entire corpus. Some of the data is reproduced in the Appendix.

3.5. Nina's addressees.

The following is a brief description of the principal people that Nina interacted with. Included are the name, approximate age, relationship to Nina, a general categorization of language use with Nina, and other comments.


Elizabeth. 1/2 year. Nina's baby sister.


Krystal. 3 years. Cousin and neighbor, Erica's sister. Uses Spanish and English mixed.

Chuy. 2 years. Cousin and neighbor, Erica's brother.

Julian. 1 year. Cousin and neighbor, Erica's brother.


Sandra. Junior high school age. Neighbor, Bibi's cousin. Uses Spanish, understands English. Having recently arrived from Mexico,
she is Nina's only major addressee who has a hard time using English. However, she does not regularly interact with Nina. I persuaded her to spend an hour with Nina at the end of the 4;0 observation. She had returned to Mexico by the time of the 4;3 observation.


3.6. Outline of the findings.

The following chapters provide a detailed description of the findings. However, it is best to describe a system by first viewing it as a whole. This section presents an overview of Nina's linguistic system.

Nina communicates effectively. She uses language for a variety of purposes, and with a variety of people. Her speech reflects a sensitivity to what is appropriate for different situations. Studying the variation of linguistic items in relation to these different situations leads to a view of the systematicity of Nina's linguistic organization.

Systematicity can be seen at various linguistic levels, but it is different at different levels. At some levels one, two, three, or more subsystems emerge. Although some subsystems are reminiscent of typical English or Spanish, there are aspects of Nina's usage that do not coincide with typical English or Spanish. Furthermore, the subsystems that emerge at different levels do not fit together to form distinct overall systems. It is not the case that Nina's linguistic system is composed of two distinct English and
Spanish subsystems. Rather, the overall system is variously homogeneous, capable of producing appropriate ways of speaking without requiring a complete, distinct system for each situation.

The imprecise terms 'typical English' and 'typical Spanish' are useful for describing Nina's speech to the extent that it allows a broad comparison with how others speak. I will use the terms 'English' and 'Spanish' for short, with the understanding that they represent typical characteristics, like those found in a grammar book or a dictionary, and are not necessarily relevant to Nina's linguistic knowledge. Thus one would say that shoe is an English word; however, such a statement makes no claim about Nina's system.

To talk specifically about Nina's linguistic organization, I may use the terms 'E' or 'S' when Nina's systems are reminiscent of English or Spanish. This is purely for mnemonic purposes; clearly her E or S systems are not identical to corresponding English or Spanish systems, and facts about the latter are not evidence for the former.
4. Evidence for subsystems at the phonemic level.

Two questions about Nina's phonology are the central concern of this chapter. (1) What is Nina's phonemic inventory? (2) Is there evidence that Nina uses two or more phonological systems?

4.1. Phonemic inventory.

The transcription employed here evolved during the course of the study. I began with a broad phonetic transcription and strove to reach an accurate phonemic transcription. To refine the transcription, I checked phonetic contrasts to determine if they have phonemic value; that is, if the contrast serves to distinguish one item from another. I used my knowledge of English and Spanish phonology, and English-Spanish contrastive phonology (Stockwell and Bowen, 1965), to direct my attention towards certain phonetic features. For example, aspiration of voiceless stops is typical in certain positions in English but not in Spanish (though it is not a phonemic distinction in either language). On the other hand, nasalization of vowels is not a phonemic distinction in either language, nor is there a marked contrast between the two languages. This information led me to probe whether or not aspiration is a distinctive feature in Nina's speech, whereas nasalization was not looked into carefully.

Although this knowledge of general English and Spanish phonology led me to test certain features, the determination of
whether or not a given feature is distinctive can only be done on the basis of Nina's data. And although there might be some interest in comparing Nina's pronunciation with that of her parents, still the parents' speech is not evidence of how Nina organizes her linguistic knowledge. One must analyze her speech from the perspective of a field linguist encountering a new language.

4.1.1. Phonological variations.

Production is a variable process. No two productions are exactly alike. Variation is particularly evident in Nina's data.

There are two sources of variation. The first is phonetic environment. The phonetic variation of aspirated and unaspirated /t/, exemplified by [θu̯w] and [t̪u̯], is by all appearances a result of the phonetic environment, with aspirated [tʰ] occurring word-initially, unreleased [t̪u̯] occurring word-finally. Linguists have had techniques for analyzing this kind of variation for decades. The second source of variation is due to imprecise control of the articulators. Muscular control of the various organs of speech is necessarily imprecise under any circumstances. The natural conditions under which the data was gathered--including speaking very rapidly, speaking while crying, speaking while eating, speaking while very excited, etc.--only increase the variation of output. I treat this kind of variation in terms of targets. A target is a (small) range of articulatory features associated with the production of a phoneme (Hockett 1958:440-3).
The following problem arises: Given two articulations, how does one know if, for Nina, these are two different targets, or two approximations of the same target? The answer lies in the general pattern of articulatory variation. For my purposes, I recognize three different patterns of phonetic variation.

A. **Sporadic variation.** If an overwhelming majority of articulations fall within an expected range, but an occasional articulation falls outside the range, then it is quite certain that a single target is involved. If the articulation is way off target, it is recognized as a slip. For example, *roach* is consistently realized using a typical [r] except for one occurrence of [ɾočːz]. Furthermore, Nina sometimes corrects these slips, as she did in that instance by repeating the utterance, this time with the pronunciation [ɾočːz]:

/ðɛr wɛz ɾočːz ɪn mɛmiz tɛɣpɾeɪtɭ. ³ɛr wɛz ɾočːz ɪn mɛmiz tɛɣpɾeɪtɭ./

There is no need to pursue the hypothesis that [?] and [ɾ] are allophones.

Other examples of slips include:

[ɾu̯ču] ~ [ɾi̯ču] *fit you*

[læzipɭ] ~ [lælipɭ] *lollipop*.

Other sporadic variations are not so far off target, but they fall within the normal articulatory range of a nearby phoneme. For example, the first vowel in *mosquito* is usually realized as [ə], except for one pronunciation [mɛskɪto]. This involves slightly fronting the vowel. Nonetheless, the contrast between [ə] and [ɛ] is
phonemic, as in but and bet, despite an occasional careless pronunciation. Other examples of sporadic near-misses are:

\[ \text{[garb\text{t}c]} \sim \text{[garb\text{t}]} \]
\[ \text{[\text{l\text{a}ki\text{s}\text{c}ermz}]} \sim \text{[\text{l\text{a}ki\text{c}ermz}]} \]

To label a variation as sporadic is to claim that the variation is negligible for determining phonemic contrasts.

B. Statistically discernible variation. If there is a fair amount of variation, i.e. less than an overwhelming majority fall within an expected range, it is still possible to determine if there is a statistical difference between two distributions, and hence in all probability two different targets. For example, qué 'what' is realized with an unaspired \([k^-]\) eight times, with an aspirated \([k^h]\) four times, and three cases seemed borderline (4:0 data). One can compare this distribution with that for candy: unaspirated \([k^-]\) two times, aspirated \([k^h]\) fifteen times, and three borderline cases. These figures are represented graphically in Figure 3.1. This suggests that there are two different distributions, hence different targets, \([k^-]\) and \([k^h]\). Such a conclusion would be strengthened if other words fell in line with one or the other of these distributions; it would be weakened if each word had its own distinct distribution. The evidence will be presented in section 4.1.3.

Where statistically discernible variation is found, there must be two targets, although a small number of articulations is not sufficient to show which target is intended. These distinct targets are indicative of distinct phonemes involved in the production process; however, a listener cannot rely on the phonetic nature of
Figure 3.1
Distributions of [kʰ] and [k̞] for candy, qué 'what' (4;0 data).

\begin{itemize}
  \item \textit{candy}
    \begin{itemize}
      \item aspirated
        \begin{itemize}
          \item 15
        \end{itemize}
      \item unaspirated
        \begin{itemize}
          \item 2
        \end{itemize}
      \item borderline - 3
    \end{itemize}
  \item \textit{qué 'what'}
    \begin{itemize}
      \item aspirated
        \begin{itemize}
          \item 4
        \end{itemize}
      \item unaspirated
        \begin{itemize}
          \item 8
        \end{itemize}
      \item borderline - 3
    \end{itemize}
\end{itemize}
the utterance to determine which of the phonemes is being used. There can be no minimal pairs that consistently distinguish these phonemes.

3. Tentatively discernible variation. If the sample is small, or if the distribution patterns are only somewhat different, it is hard to contend that different targets are involved. Nonetheless, one’s expectations about which distinctions are likely to be involved may be borne out by the distributions, inconclusive though they may be. It would not be accurate to identify these as distinct targets with a high degree of certainty, but neither would it be accurate to dismiss the possibility of distinct targets. I refer to these cases as tentatively discernible targets; examples are [g] and [ŋ]. The evidence will be presented in section 4.1.4.

Phonetic variations are the evidence one uses in deducing a plausible phonemic inventory. It should be noted that these three kinds of variations differ only in degree, both in the amount of variation, and in the certainty with which phonemic contrasts can be posited. Targets with only sporadic variation are most readily distinguished by the listener as well as by the speaker; I will refer to their corresponding phonemes as fully-functional phonemes. Targets with statistically discernible variation are not readily distinguished by the hearer, though they must be distinguished by the speaker; I will refer to their phonemes as partially-functional phonemes. Phonemes that correspond to tentatively discernible targets will be referred to as tentative phonemes.
4.1.2. Fully-functional phonemes.

Figure 3.2 gives a sketch of Nina's fully-functional phonemes. Table 3.3 gives a more complete description of the fully-functional phonemes: their usual phonetic realizations, examples, and common allophones (4:0 data). Sporadic variation can result in other phonetic realizations.

The inventory of fully-functional phonemes is largely a composite of English and Spanish phonemic systems. Contrasts that are phonemic in one language or the other are, with two exceptions, phonemic within Nina's phonological system. The first exception is probably accidental. The phoneme /ž/, which is rare in English, does not occur in any of the words Nina uses. If she learned such a word, in all probability she would use /ž/ phonemically, because she already commands the necessary articulatory contrasts. The second exception is the Spanish trill /ř/.

Nina does not appear to be able to produce this sound. She substitutes other phonemes.

---

Stockwell and Bowen (1965:49-50f.n.) prefer to analyze the trill as a double flap /RR/. This view does not seem appropriate for Nina's system. (1) Articulatorily, a trill is rather different from a flap in that it requires a certain degree of laxness. A trill is not an unreleased flap followed by a released flap, as is the case for [tʰt] or [kʰk]. Nina has no problems articulating a flap, but she has never demonstrated that she can produce a trill. (2) The fact that the different substitutions Nina uses for a trill are nonetheless consistent on a word-by-word basis suggests that Nina is variously
interpreting the sound within her phonemic system, rather than that her phonotactics allow for various treatments of /rr/ combinations. That is, raspa is phonemically /jaspə/, which is consistently realized as [jaspə]. If raspa were realized as /rraspə/, then because /RR/ could be realized as [R], [tR], or [J], one would expect variously [rəspə], [trəspə], or [jəspə].
Figure 3.2

Nina's inventory of fully functional phonemes

<table>
<thead>
<tr>
<th>m</th>
<th>n</th>
<th>ng</th>
<th>i</th>
<th>u</th>
</tr>
</thead>
<tbody>
<tr>
<td>l</td>
<td>v</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>p</td>
<td>t</td>
<td>k</td>
<td>?</td>
<td>ey</td>
</tr>
<tr>
<td>b</td>
<td>d</td>
<td>g</td>
<td>e</td>
<td>o</td>
</tr>
<tr>
<td>ee</td>
<td>aw</td>
<td>ø</td>
<td>y</td>
<td>a</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>f</th>
<th>θ</th>
<th>s</th>
<th>š</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
<td>n</td>
<td>l</td>
<td>r</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>v</th>
<th>ŋ</th>
<th>z</th>
</tr>
</thead>
<tbody>
<tr>
<td>č</td>
<td></td>
<td></td>
</tr>
<tr>
<td>j</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>R</th>
</tr>
</thead>
</table>

| y | l | r | w | h |
Table 3.3

Nina's Inventory of Fully-Functional Phonemes

I. Consonants

A. Voiceless stops

/p/ voiceless bilabial stop, as in pop, puedo 'can (1sg)'. Aspirated or unaspirated; often unreleased in word-final position or before another stop.

/t/ voiceless alveolar stop, as in two, tengo 'have (1sg)', not. Aspirated or unaspirated; alveolar or dental; usually alveolar flap intervocalically before unstressed vowel; often unreleased in word final position or before another stop.

/k/ voiceless velar stop, as in kick, come, qué 'what'. Aspirated or unaspirated; often unreleased in word-final position or before another stop.

/ʔ/ glottal stop, as in uh-oh.

B. Voiced stops

/b/ voiced bilabial stop, as in boat, ven 'come'. Fortis or lenis.

/d/ voiced alveolar stop, as in did, dónde 'where'. Fortis or lenis; alveolar or dental.

/g/ voiced velar stop, as in got, caigo 'fall (1sg)'. Fortis or lenis.

C. Nasals

/m/ bilabial nasal, as in money, dame 'give me'.

/n/ alveolar nasal, as in no, tiene 'have (3sg)'. Alveolar or dental.

/ŋ/ velar nasal, as in thing, tengo 'have (1sg)'. Does not occur word-initially.
Table 3.3 (cont.)
Nina's Inventory of Fully-Functional Phonemes

D. Voiceless Fricatives

[/l/] voiceless labio-dental fricative, as in five, falda 'dress', if.
[/θ/] voiceless interdental fricative, as in three, with.
[/s/] voiceless apico-alveolar fricative, as in say, sí 'yes', yes, chiles.
[/ʃ/] voiceless lamino-palatal fricative, as in shirt, trash.

E. Voiced Fricatives

[/v/] voiced labiodental fricative, as in have.
[/ð/] voiced interdental fricative, as in those.
[/z/] voiced apico-alveolar fricative, as in toys, those.

No occurrences of /ʒ/ appeared in Nina's speech.

F. Affricates

[/tʃ/] voiceless alveolar affricate, as in church, mucho.
[/dʒ/] voiced alveolar affricate, as in just, garbage.

G. Flaps

[/r/] post-alveolar flap, as in pero 'but', mujer 'woman'. Never a trill.

H. Approximants

[/y/] front unrounded approximant, as in yes, quiero [kyero] 'want'.
[/l/] lateral approximant, as in like, school, falda 'dress'. After a vowel, it is usually rounded, and sometimes very little contact is made by the tongue. There is, however, more constriction than for a /w/ off-glide of a diphthong.
Table 3.3 (cont.)

Nina’s Inventory of Fully-Functional Phonemes

/r/  retroflex approximant, as in red, more.
/w/  back rounded approximant, as in wait, pudo [pwdjo] 'can (1sg)'.
/h/  aspirated approximant, as in hot, mujer 'woman'.

II. Vowels

/i/  high front close vowel, as in see, sí 'yes'. Sometimes
diphthongized [iy].
/u/  high front open vowel, as in bit, in.
/e/  mid front close vowel, as in eight, okey. Usually
diphthongized.
/e/  mid front open vowel, as in bed, puedo 'can (1sg)'.
/a/  low front vowel, as in bad, am.
/o/  low central to high back diphthong, as in out, found.
/oy/ low back to high front diphthong, as in my, caigo.
/a/  low back vowel, as in stop, habla 'talk (3sg)'.
/oy/ mid back to high front diphthong, as in boy, estoy 'be (1sg)'.
/o/  mid back vowel, as in no, tengo 'have (1sg). Sometimes
diphthongized [ow].
/u/  high back open rounded vowel, as in look, pull.
/u/  high back close vowel, as in you, tú 'you'. Sometimes
diphthongized [uw].
Table 3.3 (cont.)

Nina’s Inventory of Fully-Functional Phonemes

<table>
<thead>
<tr>
<th>Phoneme</th>
<th>Description</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>/a/</td>
<td>Mid central vowel, as in bus, other. In unstressed position often realized as [ɯ]; unstressed before /n/ sometimes realized as [ŋ].</td>
<td></td>
</tr>
<tr>
<td>/ɾ/</td>
<td>Vocalic r, as in bird, her.</td>
<td></td>
</tr>
<tr>
<td>/ɻ/</td>
<td>Vocalic l, as in pencil, little.</td>
<td></td>
</tr>
<tr>
<td>/m/</td>
<td>Vocalic m, as in um-hum [mhm].</td>
<td></td>
</tr>
<tr>
<td>/n/</td>
<td>Vocalic n, as in and [ŋ].</td>
<td></td>
</tr>
</tbody>
</table>
Examples:  
rumparas  /rumparas/  
rompó     /trompo/    
raspa     /jaspa/      
marrana   /merana/, /malana/  
rosado    /yosado/, /doso/  

The realization of each word, however, is consistent, so that it is clear that Nína is not just making various stabs at pronouncing a trill. The trill is not a part of her phonemic inventory.

Contrasts that distinguish typical English pronunciations from typical Spanish pronunciations are not fully-functional phonemic contrasts. For example, English voiceless stops are typically aspirated whereas Spanish voiceless stops are typically unaspirated. English /o/ is typically diphthongized, whereas Spanish /o/ is monophthongal. Nina shows variation on either side of the contrasts. The next section, however, will explain that some of these contrasts are statistically discernible.

4.1.3. Partially-functional phonemes.

Partially-functional phonemes were defined in section 4.1.1. as phonemes that correspond to targets with statistically discernible variation. The fact that the targets are discernible gives evidence that the speaker perceives distinct phonemes. The fact that they are discernible on a statistical basis means that the hearer cannot confidently interpret a single articulation. Thus minimal pairs are impossible.
I specifically investigated some of the features that typify the difference between English and Spanish pronunciation to see if they occurred systematically in Nina's speech. In the 4;0 data, only one contrast did appear with statistical systematicity: aspiration of voiceless stops.

In comparing articulatory distributions, it is imperative to control for phonetic environment. I listened to voiceless stops in word-initial position before a stressed vowel (sometimes with intervening glide). I judged the quality of the sound to be aspirated, unaspirated, or borderline.

The perception of aspiration depends on the length of time between the consonant's release and the onset of voicing (voice onset time). Generally, when the voice onset time is less than 20 msec, the consonant is perceived as unaspirated, a voice onset time greater than 50 msec is perceived as aspirated, and between 20 and 50 msec the consonant is perceived variably as one or the other (Abramson and Lisker 1985:28). Other acoustical factors also affect perception to some degree.

Instances where the recording was not clear were disregarded. My acoustic impression was the sole criterion for judging the quality of the sound. No tests were conducted to determine the reliability of my judgements.

The results are summarized in Table 3.4. These figures represent all instances of selected words in the 4;0 data.

As Table 3.4 shows, the words that are generally recognized as English are usually aspirated, the words that are generally
recognized as Spanish are usually unaspirated. This tendency is so
great that it seems unreasonable to dismiss as coincidental.2
Apparently, there are two different targets for each voiceless stop:
and aspirated version, /pʰ/, /tʰ/, /kʰ/, and an unaspirated /p̪/, /t̪/, /k̪/.

The data at age 4;3 shows the same tendency, as shown in
Table 3.5.

Three words change categories: pull, co´mo 'how', and Quick
(the drink) all were predominantly aspirated at 4;0 and unaspirated
at 4;3. The overall pattern, however, remains the same. It is

2One might be tempted to conduct a statistical test of
significance to determine the probability that this distribution
could be due to chance. Such statistical tests require that the
events be independent. Independence would imply, for instance, that
the outcome of one event does not affect the expected outcome of
another event. In practice, independence seems an unreasonable
assumption. If Nina uses a word twice in one sentence, or in two
consecutive sentences, or within a short time span, the
pronunciation of the second word is likely influenced, though not
strictly determined, by the pronunciation of the first word. I do not
know to what extent this impacts the data. I am claiming, based on
inspection of the data, that there is evidence that /kʰ/ and /k̪−/ are
different targets. However, I do not believe that a test of
significance, corrupted to an unknown degree, would be helpful in
accepting or rejecting that claim.
Table 3.4
Aspiration in Voiceless Stops for Selected Words (4;0 data)

A. Words with p- predominantly aspirated.

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>put</td>
<td>9</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>pull</td>
<td>5</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>pop</td>
<td>6</td>
<td>0</td>
<td>4</td>
</tr>
<tr>
<td>pipi</td>
<td>8</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>28 (57%)</td>
<td>9 (18%)</td>
<td>12 (24%)</td>
</tr>
</tbody>
</table>

B. Words with p- predominantly unaspirated.

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>pued- 'can'</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>papi 'father'</td>
<td>1</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2 (29%)</td>
<td>5 (71%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

C. Words with t- predominantly aspirated.

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>tell</td>
<td>10</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>take</td>
<td>17</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>toy</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>31 (67%)</td>
<td>5 (11%)</td>
<td>10 (22%)</td>
</tr>
</tbody>
</table>

D. Words with t- predominantly unaspirated.

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>ten- 'have'</td>
<td>2</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>tom- 'drink'</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>tía 'aunt'</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2 (22%)</td>
<td>7 (78%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>
### Table 3.4 (cont.)

Aspiration in Voiceless Stops for Selected Words (4;0 data)

#### E. Words with k- predominantly aspirated.

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>cut</td>
<td>0</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>come</td>
<td>10</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>candy</td>
<td>15</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Quick (drink)</td>
<td>2</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>car</td>
<td>6</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>cómo 'how'</td>
<td>3</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

**Total**  
46 (73%) 7 (11%) 10 (16%)

#### F. Words with k- predominantly unaspirated.

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>quier- 'want'</td>
<td>6</td>
<td>10</td>
<td>4</td>
</tr>
<tr>
<td>caca</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>cola 'butt'</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>qué 'what'</td>
<td>4</td>
<td>8</td>
<td>3</td>
</tr>
<tr>
<td>quién 'who'</td>
<td>0</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>cuál 'which'</td>
<td>0</td>
<td>9</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total**  
10 (18%) 35 (63%) 11 (20%)
Table 3.5  
Aspiration in Voiceless Stops for Selected Words (4:3 data)

<table>
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<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>put</td>
<td>24</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>pop</td>
<td>4</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>pipi</td>
<td>4</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>35 (76%)</td>
<td>4 (9%)</td>
<td>7 (15%)</td>
</tr>
</tbody>
</table>

B. Words with p- predominantly unaspirated

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>pull</td>
<td>2</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>papi 'father'</td>
<td>1</td>
<td>14</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>3 (13%)</td>
<td>18 (78%)</td>
<td>2 (9%)</td>
</tr>
</tbody>
</table>

C. Words with t- predominantly aspirated

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>tell</td>
<td>18</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>take</td>
<td>15</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>toy</td>
<td>3</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>ten (10)</td>
<td>10</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Total</td>
<td>46 (73%)</td>
<td>4 (11%)</td>
<td>10 (16%)</td>
</tr>
</tbody>
</table>

D. Words with t- predominantly unaspirated

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>ten- 'have'</td>
<td>0</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>tíá 'aunt'</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>0 (0%)</td>
<td>11 (79%)</td>
<td>3 (21%)</td>
</tr>
</tbody>
</table>
Table 3.5 (cont.)

Aspiration in voiceless stops for selected words (4;3 data)

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>cut</td>
<td>11</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>come</td>
<td>10</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>candy</td>
<td>13</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>car</td>
<td>7</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>Total</td>
<td>41 (62%)</td>
<td>13 (20%)</td>
<td>12 (18%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Word</th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>quer- 'want'</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>caca</td>
<td>1</td>
<td>15</td>
<td>1</td>
</tr>
<tr>
<td>coca (cola)</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>culo 'butt'</td>
<td>2</td>
<td>13</td>
<td>2</td>
</tr>
<tr>
<td>cola 'butt'</td>
<td>2</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>Quick (drink)</td>
<td>2</td>
<td>7</td>
<td>5</td>
</tr>
<tr>
<td>qué 'what'</td>
<td>2</td>
<td>4</td>
<td>3</td>
</tr>
<tr>
<td>cómo 'how'</td>
<td>0</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>cuál 'which'</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>11 (11%)</td>
<td>70 (72%)</td>
<td>16 (16%)</td>
</tr>
</tbody>
</table>
possible to classify the above words into two groups: those with initial aspirated stops, and those with initial unaspirated stops. There seems to be a basis for distinguishing phonologically 'English' and phonologically 'Spanish' words. Putting pull with the aspirated words and co’mo with the unaspirated words, and ignoring Quick, a proper noun, one can compare how consistently Nina differentiates the two groups. Table 3.6 summarizes the tendencies for aspiration.

The ability to consistently produce an aspirated or unaspirated stop appears to be beyond Nina, although some improvement in unaspiration might have taken place over those three months. With finer control, this contrast could be functional for the hearer.

4.1.4. Tentative phonemes.

I investigated three other contrasts that are found in comparing typical English and Spanish pronunciation: diphthongal/monophthongal o, open/close e, and complete/fricative closure of voiced stops in intervocalic position. These will be taken up in turn.

A. Spanish e is typically more close than its English counterpart, usually transcribed ε. I judged the quality of the vowel for all occurrences of ten (10) and ten 'take (imperative)' in the 4;3 data. The results are shown in Table 3.7. These results give virtually no cause to suspect that Nina differentiates between the two vowels. To recognize a phonemic distinction, even on a tentative basis, is unwarranted from the data.
<table>
<thead>
<tr>
<th></th>
<th>Aspirated</th>
<th>Unaspirated</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Phonologically 'English' words</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4;0 data</td>
<td>100 (67%)</td>
<td>19 (13%)</td>
<td>30 (20%)</td>
</tr>
<tr>
<td>4;3 data</td>
<td>124 (68%)</td>
<td>28 (15%)</td>
<td>30 (16%)</td>
</tr>
<tr>
<td><strong>Phonologically 'Spanish' words</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4;0 data</td>
<td>17 (22%)</td>
<td>48 (62%)</td>
<td>12 (16%)</td>
</tr>
<tr>
<td>4;3 data</td>
<td>10 (9%)</td>
<td>88 (78%)</td>
<td>15 (13%)</td>
</tr>
<tr>
<td>Open/close e in selected words (4:3 data)</td>
<td>Open (%)</td>
<td>Close (%)</td>
<td>Borderline (%)</td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>----------</td>
<td>-----------</td>
<td>----------------</td>
</tr>
<tr>
<td>ten (10)</td>
<td>77 (85%)</td>
<td>1 (8%)</td>
<td>1 (8%)</td>
</tr>
<tr>
<td>ten 'take (impv.)'</td>
<td>7 (78%)</td>
<td>2 (22%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>
B. Spanish o is typically monophthongal, whereas English o is typically diphthongal [əʊ]. I judged the quality of the vowel in utterance final position for selected words. In rapid speech it is difficult to judge the degree of diphthongization; utterance final position was chosen to make the vowel more salient. Except for no, no one word was used in utterance final position with great frequency, so words were put into classes. English has two common verbs that end in -o (go and know). Inflections of Spanish verbs often end in -o (e.g. quiero 'want (1sg)'), and several pronouns end in -o (e.g. yo 'I', esto 'this'). Nouns and adjectives were excluded. The results are shown in Table 3.8. The difference for the 4;0 data is very slight. At this point there is no reason to propose a tentative phonemic contrast.

The same investigation with the 4;3 data show different results. In the sample, culo 'butt' was included to try to get more Spanish examples. I have misgivings about doing so, because culo is not syntactically or lexically Spanish in Nina's linguistic system (as

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3 As will be shown in subsequent chapters, nouns and adjectives are not consistently differentiated into English and Spanish in Nina's linguistic system, so an a priori grouping of English and Spanish nouns and adjectives may be quite misleading. For example, in section 4.1.4., pipi was shown to be phonologically 'English' and caca was shown to be phonologically 'Spanish'. An a priori grouping that put these words in the same class would have obscured the findings.
Table 3.8
Monophthongal/diphthongal o

<table>
<thead>
<tr>
<th></th>
<th>Monophthong</th>
<th>Diphthong</th>
<th>Borderline</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. 4;0 data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English verbs</td>
<td>5</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>no (English context)</td>
<td>5</td>
<td>9</td>
<td>3</td>
</tr>
<tr>
<td>Total English</td>
<td>10 (36%)</td>
<td>14 (50%)</td>
<td>4 (14%)</td>
</tr>
<tr>
<td>Spanish verbs</td>
<td>7</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Spanish pronouns</td>
<td>5</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>no (Spanish context)</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Total Spanish</td>
<td>13 (41%)</td>
<td>15 (47%)</td>
<td>4 (13%)</td>
</tr>
<tr>
<td>B. 4;3 data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>English verbs</td>
<td>2</td>
<td>15</td>
<td>3</td>
</tr>
<tr>
<td>no (English context)</td>
<td>2</td>
<td>12</td>
<td>5</td>
</tr>
<tr>
<td>Total English</td>
<td>4 (11%)</td>
<td>27 (75%)</td>
<td>5 (14%)</td>
</tr>
<tr>
<td>Spanish verbs</td>
<td>2</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>Spanish pronouns</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>culo 'butt'</td>
<td>5</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>Total Spanish</td>
<td>9 (60%)</td>
<td>2 (13%)</td>
<td>4 (27%)</td>
</tr>
</tbody>
</table>
shown in the following chapters). Nonetheless, it does give evidence that there could be two different targets involved.

The sample size is small, especially for the Spanish, so the conclusion that two distinct targets exist is tentative. Thus /o/ and /o[w]/ are tentative phonemes for Nina at age 4;3.

C. Spanish voiced stops typically have fricative, rather than complete, closure in intervocalic positions. In other positions, Spanish voiced stops tend to be more lenis than their English counterparts. I judged the quality of these consonants in several words using the 4;3 data. The results are given in Table 3.9.

The types of closures can be ranked from strong to weak. Some examples had a slightly affricated release of a fortis stop. Others were judged to be normally-released fortis, borderline fortis/lenis, lenis, and fricative closures.

The most obvious pattern is that initial voiced stops tend to get stronger closure than intervocalic voiced stops. This pattern is equally true for the 'English' words as for the 'Spanish' words. This finding raises suspicions about the categorization of nobody and gonna. Although the number of examples is too small to reach a conclusion, nobody for Nina might be two phonological words, no + body, which puts the b in phonetically word-initial position. Conversely, gonna, being always unstressed for Nina, might combine phonologically with the preceding word, which puts it in intervocalic or at least voiced position.
<table>
<thead>
<tr>
<th></th>
<th>Slightly</th>
<th>Fortis</th>
<th>Border-</th>
<th>Lenis</th>
<th>Fricative</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affricated</td>
<td>A. Intervocalic position</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. -b-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>avanar (=levantar)(0)</td>
<td>0</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>'get up'</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>caballito 'horsey' &amp;(0)</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>-d-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>pudo 'could (1sg)' &amp;(0)</td>
<td>3</td>
<td>1</td>
<td>2</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>-g-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No examples</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Spanish</td>
<td>0 (0%)</td>
<td>3 (20%)</td>
<td>2 (13%)</td>
<td>6 (40%)</td>
<td>4 (27%)</td>
</tr>
<tr>
<td>2. -b-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>nobody</td>
<td>0</td>
<td>3</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>-d-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>daddy</td>
<td>0</td>
<td>4</td>
<td>7</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>somebody</td>
<td>0</td>
<td>2</td>
<td>6</td>
<td>7</td>
<td>0</td>
</tr>
<tr>
<td>-g-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No examples</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total English</td>
<td>0 (0%)</td>
<td>9 (26%)</td>
<td>14 (40%)</td>
<td>12 (34%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>
Table 3.9 (cont.)
Closure of voiced stops

<table>
<thead>
<tr>
<th></th>
<th>Slightly</th>
<th>Fortis</th>
<th>Border-</th>
<th>Lenis</th>
<th>Fricative</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Affricated</td>
<td></td>
<td>line</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Word-initial position</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. b-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ven 'come'</td>
<td>0</td>
<td>6</td>
<td>4</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>d-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>dame 'give me'</td>
<td>0</td>
<td>6</td>
<td>2</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>g-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gancho 'hook'</td>
<td>0</td>
<td>4</td>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>Total Spanish</td>
<td>0 (0%)</td>
<td>16 (67%)</td>
<td>6 (25%)</td>
<td>2 (8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>2. b-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>been</td>
<td>0</td>
<td>5</td>
<td>3</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>d-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>daddy</td>
<td>1</td>
<td>13</td>
<td>2</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>dog</td>
<td>4</td>
<td>6</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>dance</td>
<td>0</td>
<td>6</td>
<td>1</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>g-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>gonna</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Total English</td>
<td>5 (10%)</td>
<td>30 (63%)</td>
<td>7 (15%)</td>
<td>6 (13%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>
This pattern suggests allophonic variation based on phonetic environment.

A more tentative pattern is that there is a difference between the English and Spanish in identical phonetic positions. This pattern does not appear in the fortis and lenis categories; indeed these are virtually the same. Rather the pattern is revealed by a small percentage that may occur at one extreme or the other. In intervocalic position, a few Spanish words have stops with fricative closure, but none of the English words do. In word-initial position, a few English words have stops with a slightly affricated release, but none of the Spanish words do.

This is barely sufficient evidence for me to tentatively identify different targets and their corresponding tentative phonemes: more fortis /b/, /d/, /g/, and more lenis /b/, /d/, /g/.  

4.2. The phonemic subsystems.

In trying to establish Nina's phonemic inventory, I have been working under a hypothesis that should be made explicit here.

**Phonemic Hypothesis 1.** All of the phonemes are related in one phonemic system.

This hypothesis enables me to approach Nina's data from the viewpoint of a field linguist. It enables me to conclude that contrasts in similar phonetic environments are phonemic contrasts.

This should be tested against another plausible hypothesis.

**Phonemic Hypothesis 2.** Nina's phonemes are related in such a way as to reveal two or more phonemic systems.
Possible evidence that would support Phonemic Hypothesis 2 would be: (a) lexical or morphological items for which Nina can choose a phonemic realization in one system or another based on linguistic context or addressee; or (b) special phonotactic patterns that apply to one system but not another.

4.2.1. Possible choice of phonemic system based on linguistic context.

Consider a hypothetical situation where a given person will pronounce *candy* as [kʰændi] when speaking one language, and will pronounce it [kændi] when speaking another language. Then it would be reasonable to say that this person has two phonemic systems and, for some lexical items, can choose which phonemic system to use for production. Is this kind of evidence found in Nina's speech?

I begin by reexamining the aspiration of voiceless stops. As was shown in section 4.1.3., Nina does have different targets for the aspirated and unaspirated stops, but this distinction is not produced consistently. I have suggested that the variation may be due to imprecise articulatory control; but it is possible that the variation is due to different linguistic contexts, one variant being used in one linguistic context, the other variant being used in the other linguistic context (c.f. Weinreich's argument for coexistent phonemic systems (1963:8-9)).

That possibility does not materialize in Nina's data. First, most words (especially verbs and pronouns) only occur in one linguistic context, so linguistic context cannot be a factor causing
this variation. Second, a few 'Spanish' words occur in an 'English' context: cacá, cola 'butt', papi 'father', and tíe 'aunt'. But of these occurrences, 0 are aspirated, 6 are unaspirated, and 1 is borderline. Here, too, linguistic context is not a factor.

The names Jessica and Erica occur frequently in Nina's speech. In Jessica, the middle vowel may be realized as [i] or [ɪ], and the final vowel as [a] or [e]. Any of the four outcomes is possible, and there is no apparent relation with the linguistic context.

There are no words for which Nina makes a choice between a 'Spanish' phonology in 'Spanish' contexts and an 'English' phonology in 'English' contexts.

Typically English words are more likely to be used in an 'English' context, and typically Spanish words are more likely to be used in a 'Spanish' context. Because some phonemes are much more common in English or in Spanish words, there is a correlation between the frequency of these phonemes and the linguistic environment. However, there is no evidence to suggest that Nina has separate phonological systems that she chooses depending on linguistic context.

4.2.2. Possible choice of phonemic system based on addressee.

It is possible that Nina has a choice of phonemic systems based on the addressee. So, for a hypothetical example, candy will be realized as [kʰændɪ] when speaking to one person, regardless of the linguistic context, and it will be realized as [kændi] when
speaking to another person. Is this kind of evidence found in Nina's speech?

Again, I begin with the aspiration of voiceless stops. Nina's speech as a whole shows the greatest differentiation when she addresses her father Pedro and when she addresses me, the Observer. Of all the people that Nina spoke to frequently, she used the most Spanish-like speech with Pedro, and the least Spanish-like speech with Observer.

The count of aspirated/unaspirated stops addressed to each is given in Table 3.10. The percentage of aspiration when talking to Pedro is virtually identical to the percentage of aspiration when talking to Observer. There is no evidence from these words that Nina changes from one phonological system to another when she changes addressees.

There are no other words that Nina apparently pronounces differently depending on addressee.

As is the case above, there is certainly a correlation between addressee and aspiration of voiceless stops, but that is because the words that are more likely to be unaspirated are also more likely to be used with certain addressees. However, when she says a given word, she does not have two different targets depending on the addressee.

4.2.3. Possible phonotactic differentiation of phonological systems.

The phonotactics of typical English is quite different from that of typical Spanish. For example, Spanish does not have word
Table 3.10
Aspiration of voiceless stops according to addressee

<table>
<thead>
<tr>
<th>Addressee:</th>
<th>Observer</th>
<th>Pedro</th>
</tr>
</thead>
<tbody>
<tr>
<td>4;0 data</td>
<td></td>
<td></td>
</tr>
<tr>
<td>English words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>tell</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>take</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>cut</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>come</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>candy</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>22 (81%)</td>
<td>2 (7%)</td>
</tr>
<tr>
<td>Spanish words</td>
<td></td>
<td></td>
</tr>
<tr>
<td>qué</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>cuéll</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td>4 (18%)</td>
<td>13 (59%)</td>
</tr>
<tr>
<td></td>
<td>4;3 data</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>----------</td>
<td>------------</td>
</tr>
<tr>
<td></td>
<td>English</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>words</td>
<td>put</td>
</tr>
<tr>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>38</td>
<td>(70%)</td>
</tr>
</tbody>
</table>

|                  | Spanish  |            |            |            |            |            |
|                  | words    | papi       | caca       | culo       | cola       |            |            |            |            |            |            |            |
|                  |          | 0          | 0          | 0          | 1          | 11         | 0          |            |            |            |            |
|                  |          | 0          | 9          | 1          | 0          | 1          | 0          |            |            |            |            |
|                  |          | 0          | 2          | 0          | 2          | 11         | 2          |            |            |            |            |
|                  |          | 1          | 5          | 1          | 0          | 2          | 0          |            |            |            |            |
|                  | Total 1  | (5%)       | 16         | (84%)      | 2          | (11)       |            |            |            |            |            |
|                  | 3 (10%)  | 25 (83%)   | 2 (7%)     |            |            |            |            |            |            |            |            |
initial consonant clusters beginning with s-, nor does it have words ending in -z. Perhaps it is possible to identify two different phonological systems on the basis of different phonotactics.

One problem is that words that are typically Spanish can, in Nina's speech, exhibit atypical phonotactics. The words /sperete/ (=esperate) 'wait' and /deymes/ 'dimes' defy Spanish phonotactics.

A greater problem is how to put forth a convincing argument that the phonotactic differences are not merely accidents of the phonological forms of various lexemes. Phonotactics describes possible combinations; many of those combinations do not correspond to any lexemes. There is indeed a class of words that do not end in -g, but it would be hard to convincingly show that Nina's phonology includes two different phonotactic systems, one that allows words to end in -g and one that does not.

Haugen (1950a:216-7) points out that phonotactics is very susceptible to change as a community becomes bilingual, more so than the phonemic inventory. Though I have not systematically argued against different phonotactics, I cannot envision a strong argument supporting different phonotactics for Nina's speech.

4.3. Other aspects of Nina's phonology

This dissertation is not an in-depth study of Nina's phonology, and many interesting issues received little attention. Here I mention some observations about aspects that could be investigated further.
4.3.1. Intonation.

Nina's intonation patterns seem rather complex. They include, to be sure, a falling tone pattern that is used for declarative sentences, imperatives, and question-word questions; a rising tone pattern that is used for yes-no questions; and a level tone pattern that is used for continuations. I did not observe any differences in the intonations of 'English' and 'Spanish' sentences. Additional patterns are also used; these tend to merge with what is called 'voice dynamics' (Abercrombie 1967:95-110). The voice dynamics features of pitch fluctuations, as well as loudness and register seem to play an important part in Nina's speech, but I have not tried to describe these features. Among the ideas she can express by these means are insistence, defiance, embarrassment, bewilderment, joy, etc.

4.3.2. Phonotactics.

Nina's phonotactics in general is a composite of typical English and Spanish phonotactics. One special entry needs to be mentioned. In the 4:0 data, syllable-initial consonants followed by /l/ or /ɾ/ are sometimes articulated, but usually only the initial consonant is produced.

/pleý/ ~ /pêy/, play
/blo/ ~ /bol/, blow
/gleːs/ ~ /gæs/, glass
/çaŋka/ ~ /caŋka/, chancla 'sandal'
/asip/, asleep
/bidʒ/, bleeding
/foʊ/, floor
/kɛwə/, clown
/mɑdrə/ ~ /mædə/, madre 'mother'
/ɛskɪbɛ/, escribe 'write'

By age 4;3, the /l/ and /r/ were almost always articulated.

Library was realized alternatively as /lɜɪbrəri/ or /lɛɪbrəri/.

No other consonant + /r/ clusters are regularly reduced. Most likely this instance is due to the close proximity of the two /l/’s. Other difficult clusters are occasionally reduced: /ɛkskjuːz mi/ ~ /ɛskjuːz mi/.

4.3.3. Baby-talk phonology.

When imitating a baby, Nina possibly uses a different phonological system. Two occurrences of the baby-talk variant [ɛwɪkə] contrast with the normal [ɛrɪkə]. The [w] ~ [r] variation is not a slip, nor is it due to imprecise articulatory control; rather it seems to depend on the role that Nina assumes as a speaker. This is the kind of evidence that suggests different phonological systems, one where /r/ is realized as [w], and one where /r/ is realized as [r]. However, baby-talk is rare in my data. It is possible that there is a baby-talk phonology, but there is not enough evidence to confirm it nor to describe it.
4.4 Summary of phonological systems

The data suggests that Nina has a single phonological system with the inventory of segmental phonemes shown in Table 3.11. This is based on the 4;3 data.

In succeeding chapters, the transcriptions will show only the fully-functional phonemes unless a special need arises for more phonetic detail. Also, diphthongs will be shown as digraphs, e.g. /ey/ rather than /eɪ/. 
Table 3.11

<table>
<thead>
<tr>
<th>Nine's phonemic inventory (4;3) data</th>
</tr>
</thead>
<tbody>
<tr>
<td>m</td>
</tr>
<tr>
<td>pʰ</td>
</tr>
<tr>
<td>p</td>
</tr>
<tr>
<td>b</td>
</tr>
<tr>
<td>ɾ</td>
</tr>
<tr>
<td>v</td>
</tr>
<tr>
<td>č</td>
</tr>
<tr>
<td>j</td>
</tr>
</tbody>
</table>

Solid circles enclose partially-functional contrasts.
Dotted circles enclose tentative contrasts.
5. Evidence for systems of word formation.

This chapter looks into Nina's productive morphological constructions for nouns, pronouns, adjectives, and verbs.

Constructions are used to indicate sequences of items. To show sequences in a general way, the construction stipulates classes of items. Thus the construction NP : Det N matches a great number of specific sequences. The function of the construction is indicated on the left side, and is separated from the sequence by a colon. The sequential ordering of classes is underlined. Colons are also used to designate subclasses; e.g. V:trans designates the subclass of verbs that are transitive.

The notion of productivity is different from a cognitive perspective than from an abstract or social perspective. Brown's criteria for determining morphemes in children's speech (1973:54) emphasize the fact that constructions that are productive for a community as a whole may yet be unproductive for children. In addition to isolating recurrent forms, the investigator must seek evidence that the speaker actually uses a given construction.

Productivity is best established when the subject produces new items according to old constructions. Nina's use of Pete's is evidence for a construction NP-Poss : N:Name Poss. Also good evidence is the presence of numerous forms exhibiting the same construction. Nina has many English verb stems that combine with -ing to form the present participle. Although I do not know that any
of the uses I observed were novel, still the number of occurrences supports the construction V : Vstem:E -ing . With fewer occurrences, the evidence is less convincing. Of course, evidence from other people's speech is of minimal value.

Even if the productivity of a construction is certain, this construction is not necessarily involved in the production of every form that might fit it. To illustrate, Nina uses broken as an adjective. The verbs break and broke are in her vocabulary, but otherwise there is no evidence of a construction Adj : Vstem PastPartSuffix, so I analyze broken as one morpheme, like mad. Someday, presumably, she will add vocabulary items like stolen, written, taken, etc. Then it is possible to analyze broken according to this construction. But she already has the means to produce the adjective broken without employing this construction. There is no reason to assume that the acquisition of the new construction must supersede previous constructions.

In describing Nina's morphology, three basic constructions emerge. (1) Simple successive activation. (2) Successive activation with conditional alternation. (3) Portmanteau activation. Figure 5.1 shows examples of each kind of construction in network form.

A simple successive activation puts invariant forms together. Successive activation with conditioned alternation involves putting forms together, but the allomorphs chosen are conditioned by some item. In Part B, the choice of verb stems is conditioned by the person and number of the subject and the tense of the verb. Thus the
A. Simple successive activation.

B. Successive activation with conditioned alternation.
Figure 5.1 (cont.)

Three kinds of morphological constructions

C. Portmanteau activation.

V(0) ——— V(END)

/brok/
stem /tɛŋg-/ can occur before the inflectional suffix /-əl/, and the stem /tъɛn-/ can occur before the suffix /-ɛs/. A portmanteau construction is the simultaneous realization of two or more higher items by a single lower item. In Part C, the concepts 'Break' and Past are realized as the morpheme /broʊk/. This analysis corresponds to Brown's method of determining morphemes for calculating mean length of utterance (1973:54).

More complex morphological constructions are made up of these basic constructions.

Nina's morphological constructions involve inflectional morphology, with the one exception of diminutive derivational suffixes. Prefixes and other derivational suffixes are rare and give no indication of being productive. For example, undress occurs once when Nina is imitating a song on the radio; for communicative purposes she uses take off or sometimes put off. Teacher occurs, but not the verb teach; drive occurs but not driver (except for screwdriver); no construction of N: Vstem AgentiveSuffix can be found.

In the next sections I describe morphological constructions that seem to be productive for Nina.

5.1. Nouns.

Usually, a noun is composed of a simple Nstem. Some nouns Compound nouns, e.g. macaroni and cheese (4/25,9:45), and screen door function as nouns and are analyzed as single lexemes.
Additionally, nouns may be formed according to Plural, Possessive, or Diminutive constructions. These will be described in turn.

5.1.1. Plural nouns.

Things that are conceptually plural are realized as plural nouns. Mass nouns, like milk, water, are not pluralized. Some things can rarely be conceived as plural, such as individual people. In an appropriate context, however, these things may be conceived as plural. On the television show *Peewee's Playhouse*, when trick photography showed two images of Peewee Herman on the screen, Nina responded: *two Peewee*.

Three morphological constructions exist for pluralization.

1. Some nouns are pluralized by adding the plural suffix -z. As in typical English, Pl-z is realized as /-lz/ after sibilants /č, j, š, s/, or z/, as /-s/ after voiceless consonants /p, t, k, f, or θ/, and as /-z/ elsewhere.

2. Other nouns form plurals with the plural suffix -s. As in typical Spanish, Pl-s is realized as /-es/ after consonants (though the number of examples is extremely small and very few noun stems ending in consonants are actually observed in this construction), and as /-s/ after vowels.

3. A few nouns can form a portmanteau plural, e.g. *feet* (4/27,9:30). Some nouns can form plurals in more than one way.

The interesting question is: Which nouns are used in which constructions? Table 5.2 gives a list of plurals according to morphological type.
Table 5.2

Plural constructions for selected noun stems.

Noun stems that participate in more than one construction are marked +.

1. **Noun stems with Pl-s.**
   
   **A. Multiple occurrences**
   
   - **Chancla** 'sandal'+
   - **Monito** 'doll'+
   - **Banana** +
   - **Moco** 'mucus'
   - **Raspa** /jaspa/ 'snow cone'
   
   - **Maquina** 'machine'
   - **Monitito** 'doll (dim.)'
   - **Mana** 'hand'
   - **Huevo** 'egg'

   **B. Single occurrences**
   
   - **Sockie** 'sock (dim.)'+
   - **Candy** +
   - **Ojo** 'eye'
   - **Baby**
   - **Paloma** 'dove'
   - **Medicina** 'medicine'
   - **Soda** /soda/
   - **Pelito** 'hair (dim.)'
   - **Tostito** (snack)
   - **Taco**
   - **Piko** 'germ'
   - **Disca** 'record'

   - **Pata** 'leg'
   - **Huevo** 'egg'
   - **Chile**
   - **Diente** 'tooth'
   - **Carta** /karta/ 'card'
   - **Escalera** 'stairs'
   - **Papa** 'potato'
   - **Papito** 'potato (dim.)'
   - **Fritito** 'Frito (dim.)'
   - **Bebé** 'baby'
   - **Caballito** 'horse (dim.)'
   - **TV** /tivi/
Table 5.2 (cont.)

Plural constructions for selected noun stems.

II. Nouns with /-z/ plural

A. Multiple occurrences.

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>chancla</td>
<td>'sandal'</td>
</tr>
<tr>
<td>candy</td>
<td>'sock (dim.)'</td>
</tr>
<tr>
<td>egg</td>
<td></td>
</tr>
<tr>
<td>Cheetoh</td>
<td>'dime'</td>
</tr>
<tr>
<td>shoe</td>
<td>medicine</td>
</tr>
</tbody>
</table>

B. Single occurrence.

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>banana</td>
<td>'doll'</td>
</tr>
<tr>
<td>zapatito</td>
<td>'shoe (dim.)'</td>
</tr>
<tr>
<td>dime</td>
<td>Frito (snack)</td>
</tr>
<tr>
<td>card</td>
<td>cinto 'belt'</td>
</tr>
</tbody>
</table>

III. Portmanteau Plurals.

A. Multiple occurrences.

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>feet</td>
<td></td>
</tr>
</tbody>
</table>

B. Single occurrences.

<table>
<thead>
<tr>
<th>Singular</th>
<th>Plural</th>
</tr>
</thead>
<tbody>
<tr>
<td>children</td>
<td>(no occurrence of sg child)</td>
</tr>
<tr>
<td>people</td>
<td>(no occurrence of sg person)</td>
</tr>
</tbody>
</table>
One should keep in mind that phonetically the difference between [s] and [z] is small. A certain number of occurrences in Table 5.2 may be the result of articulatory slips. Examples with multiple occurrences should be more reliable than those with single occurrences.

Multiple occurrences of /čəŋkləs/ ~ /čəŋkləz/ and /fɪt/ ~ /fʊtəs/ show that a noun may indeed participate in more than one construction. Other words that occur at least once in different constructions are: /mənɪtəs/ ~ /mənɪtəz/, /bænənes/ ~ /bænənəz/, /sæks/ ~ /sæksəz/, /kændɪs/ ~ /kændɪz/ and /pejɪs/ ~ /pejɪz/.

Generally, a noun participates in one construction or the other. The -z suffix occurs with more words, but the -s suffix is productive, too. The phonological properties of the word do not determine which plural construction is appropriate. Semantics does not play a role in conditioning these morphological constructions. Instead, there appear to be different morphological classes of nouns, each class participating in one construction. A few nouns belong to more than one class.

Taken as a whole, the -s plural class is reminiscent of typical Spanish. Many of the words are Spanish words, and the plural suffix is the same as in Spanish. But the exceptions are numerous. Several typically English words appear in the -s class, and several typically Spanish words appear in another class. In a vague sense, one could talk about an English-like plural, or E plural, and a Spanish-like plural, or S plural. I find that E and S are often convenient labels, provided that one remembers (1) that there may be significant
differences between E forms and typically English forms, and S forms and typically Spanish forms, respectively; and (2) that E and S do not necessarily exhaust the classes of forms that occur.

5.1.2. Possessive nouns.

The concept of possession (more specifically, ownership, inalienable possession of body parts, social relations) is realized as a noun (typically a name) plus a possessive suffix -z, realized as /æz/ after /č, ĵ, š, s, or z/, as /s/ after /p, t, k, f, or θ/, and as /z/ elsewhere. Examples include: Mama's, Pete's, Erica's. If the person is realized using a noun phrase, then the -z suffix is attached to the noun, as in my mama's.

5.1.3. Diminutive nouns.

The only derivational constructions involve diminutive affixes. The meaning associated with diminutive affixes, if any, is not obvious from Nina's usage.

A list of diminutive words is given in Table 5.3. Candy and monito 'doll' do not suggest diminutive nouns, because Nina never uses a corresponding noun without the diminutive. Perhaps /buti/ is a diminutive of butt with phonemic alternation in the noun stem, but since no other instances exist with /æ/ ~ /u/ alternation, I prefer to view /buti/ as one morpheme.

The list of noun stems with diminutives is quite short. Most of the forms were probably learned as units. It is possible that Nina
Table 5.3

Noun stems with diminutives.

A. Noun stems with -i.
   - milk
   - food
   - sock
   - horse
   - glass

B. Noun stems with -ito, -ita.
   - papa 'potato' /papito/
   - monito 'doll' /monitito/
   - zapato 'shoe' /sapatito/
   - Frito (snack) /fritito/
   - cola 'butt' /kolita/
also employs diminutive constructions. One likely set of constructions is:

\[ \text{Nstem : Nstem:Dim-i Dim-i} \quad \text{e.g. milk-i,} \]
\[ \text{Nstem : Nstem:Dim-ito Dim-ito} \quad \text{e.g. monit-ito,} \]
\[ \text{Nstem : Nstem:Dim-ita Dim-ita} \quad \text{e.g. col-ita.} \]

Also possible are:

\[ \text{Nstem : Nstem:Ending-a Dim-ito} \quad \text{e.g. pap-ito,} \]
\[ \text{Nstem : Nstem:Ending-o Dim-it Ending-o} \quad \text{e.g. monit-it-o,} \]
\[ \text{Nstem : Nstem:Ending-a Dim-it Ending-a} \quad \text{e.g. col-it-a.} \]

The last two constructions show the diminutive as an infix, as in typical Spanish.

More than one construction can be used to produce the same word. No construction, however, is highly productive. The evidence is not sufficient to confirm that Nina uses any of these constructions.

The diminutive constructions, if assumed to be productive, are readily divided into English-like and Spanish-like constructions. However, the class of Nstems that take E (or S) diminutives is not equivalent to the class of Nstems that take E (or S) plurals. Monito 'doll' takes the S diminutive suffix but can take either the E or S plural suffix. Frito takes the S diminutive suffix but the E plural suffix. Furthermore, when a noun has both diminutive and plural suffixes, the suffixes need not be of the same type. Zapato 'shoe' takes the S diminutive suffix; zapatito in turn takes the E plural. Sock takes the E diminutive suffix, but sockie in turn takes either
the E or S plural. Thus the systems for adding diminutive suffixes are somewhat independent from the systems for pluralization.

5.1.4. Summary of nominal morphological constructions.

There are three constructions for pluralization, as shown in part A of Figure 5.4. Some words participate in more than one construction. Possible constructions for diminutive are shown in part B, but no construction is very productive. The one possessive is given in part C. Some words are both diminutive and plural. In this case, the diminutive construction does not determine the plural construction. The nouns that occur in the possessive construction do not occur with plurals nor diminutives.

Although the suffixes have the same phonological form as in English or Spanish, dividing the class of Nina's nouns into two distinct subclasses, E nouns and S nouns, would be cognitively unrealistic. Several nouns belong to both classes, and many nouns do not show evidence of belonging to either class. Although the overall impression is that 'English' suffixes generally go on 'English' nouns and 'Spanish' suffixes go on 'Spanish' nouns, this impression is based on a relative small number of Nina's nouns, and the distinction cannot be extended to the entire class of Nina's nouns.

5.2. Pronouns.

Pronominal morphology reflects the different uses of pronouns as subjects, direct objects, indirect objects, possessives,
A. Plural nouns

N(0)  \(\text{Nstem:Pl-s} \rightarrow \text{Pl-s} \rightarrow \text{N(NEW)}\)

\(\text{Nstem:NoPl}\)

- e.g. egg + -z
- e.g. hueso + -s
- e.g. feet

B. Diminutive nouns

Nstem(0)  \(\text{Nstem:Dim-ito} \rightarrow \text{Dim-ito} \rightarrow \text{Nstem(NEW)}\)

\(\text{Nstem:NoDim}\)

- e.g. sock -i
- e.g. monit -ito
- e.g. col + -ita
- e.g. coi + -a

C. Possessive nouns

N-Poss(0)  \(\text{Nstem} \rightarrow \text{Poss-z} \rightarrow \text{N-Poss(NEW)}\)

e.g. mama + -z
possessive predicates, and reflexives. Table 5.5 gives the various forms of the pronouns.

Most pronominal forms are portmanteaus. A few forms are segmentable, e.g. /may/ + /self/. Some of the Spanish pronouns can be pluralized with the /-s/ suffix.

Although several holes exist, Nina's repertoire is comparable to typical English and typical Spanish pronominal systems. Furthermore, no interrelation of pronominal systems is observed. That is, there are no 'mixed' forms like *tuself*, nor are there large holes in one system where pronouns from the other system must be substituted. Instead, two independent pronominal systems emerge. One can determine unambiguously whether a given form is an E pronoun or an S pronoun.

5.3. Adjectives.

Almost all adjectives are typically English and their forms are invariant. Common adjectives include: big, little, wet, hot, cold, ugly, good, broken, red, blue, pink, stupid. In *My shorts are secados*, the adjective *secados* 'dry (pl)', shows a plural form, which is identical to the **Nstem:Pl-s Pl-s** construction described in section 5.1.1. The interrogative pronoun *cuál* 'which' and its plural *cuáles* can appear in attributive position. Otherwise, no productive morphological constructions emerge for adjectives.

With only two examples of an adjective that can be pluralized, it is premature to speak of different adjetival systems.
### Table 5.5

**Pronominal forms.**

<table>
<thead>
<tr>
<th>Subject</th>
<th>Direct</th>
<th>Indirect</th>
<th>Possessive</th>
<th>Possessive Predicate</th>
<th>Reflexive</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Object</td>
<td>Object</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A. E Personal Pronouns

<table>
<thead>
<tr>
<th>ay, a</th>
<th>mi</th>
<th>mey, ma</th>
<th>mayn</th>
<th>myself</th>
</tr>
</thead>
<tbody>
<tr>
<td>yu</td>
<td>yu</td>
<td>yṛ</td>
<td>yṛz</td>
<td>yṛself</td>
</tr>
<tr>
<td>hi</td>
<td>ḥz</td>
<td>ḥz</td>
<td>ḥself</td>
<td></td>
</tr>
<tr>
<td>ši</td>
<td>ḥ</td>
<td>ḥ</td>
<td>ḥself</td>
<td></td>
</tr>
<tr>
<td>lt</td>
<td>lt</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>wi</td>
<td>es</td>
<td>ar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>yəəl</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ðey</td>
<td>ðem, am</td>
<td></td>
<td></td>
<td>ðerselvz</td>
</tr>
</tbody>
</table>

B. S Personal Pronouns

<table>
<thead>
<tr>
<th>yo</th>
<th>ŋi</th>
<th>me, mi</th>
<th>mi</th>
<th>mio</th>
<th>me</th>
</tr>
</thead>
<tbody>
<tr>
<td>tu</td>
<td></td>
<td></td>
<td></td>
<td>te</td>
<td></td>
</tr>
<tr>
<td>ɛya</td>
<td>1ə, 1ɛ</td>
<td></td>
<td></td>
<td>sɛ</td>
<td></td>
</tr>
<tr>
<td>nosotros</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5.5 (cont.)

Pronominal forms.

<table>
<thead>
<tr>
<th>C. Other Pronouns</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>ɣis, ɣiz</td>
<td>esto, estos</td>
</tr>
<tr>
<td>ɣoet, ɣoz</td>
<td>esa, eso</td>
</tr>
<tr>
<td>hwat</td>
<td>ke</td>
</tr>
</tbody>
</table>
5.4. Verbs.

Table 5.6 shows some verbal inflections that appear in Nina's data. Two systems emerge distinctly: an E verbal morphology and an S verbal morphology.

Both systems have forms that indicate tense, aspect, and person/number concord with the subject. The S verbs also have separate infinitive forms. None of the S verbs appear in all forms, and only the present forms have numerous examples. The present forms show a fair consistency of inflection except for the rarely used 1pl forms. Most involve combining the inflectional suffix with the appropriate variant of the stem, as shown in Figure 5.7. Similar constructions would produce verbs with other inflectional suffixes. A few verbs, e.g. poder 'can', may be inflected in more than one way. Some forms are portmanteau, e.g. es 'be (3sg)', son 'be (3pl)', ir 'go (inf)'.

Likewise the E verbs consist mostly of combinations of stem and inflectional suffix, with some portmanteau forms. The past tense is the least consistent form. Sometimes the suffix /-d/ (realized as /td/ after /t/ or /d/, as /t/ after other voiceless consonants, as /d/ elsewhere) is added; sometimes the suffix /-td/ is added; sometimes a portmanteau form is used; and sometimes the

---

1 One may also regard /tyenes/ or /tyen/ as a combination of verb root /tyen/, thematic vowel /-es/-, and personal ending /-s/ or /-n/. Such a construction complements the one shown in Figure 5.7, and Nina could use either construction during production.
form is identical to the present (not the 3sg form). A few of the verbs fit in two classes. The classes of E past tense verbs are not sharply distinguished.

Spanish has a preterit tense and a past imperfect tense, and their forms are identical to some of the forms Nina uses, e.g. cayó is preterit and estaba is past imperfect. For Nina, however, the contrast of tense is not clear. No verb occurs with both preterit and past imperfect forms. If Nina distinguishes a difference in meaning between preterit and past imperfect, the difference may easily be associated with the semantic properties of the verb rather than the different types of past suffixes. Nina's two types of past suffixes are easily regarded as morphologically, rather than semantically, motivated.

The evidence points out two distinct sets of morphological constructions in Nina's data. Only two items are problematic. First, there was one occurrence each of planchando 'iron (PresPart)' and planching . Because of its low frequency, rather than asserting

---

2Poplack (1980:586) states that code-switching cannot occur between bound morphemes; i.e. forms such as *eat-iendo 'have not been attested in [Poplack 1980] or any other study of code-switching to my knowledge, unless one of the morphemes has been integrated phonologically into the language of the other.' Nina's planching has the appearance of such a code-switch; however, I think it is more reasonable to avoid the perspective of code-
switching altogether, and simply conclude that Nina is unsure which morphological construction applies to the morpheme planch-.
### Table 5.6
Selected verb forms

<table>
<thead>
<tr>
<th></th>
<th>1sg</th>
<th>2sg</th>
<th>3sg</th>
<th>1pl</th>
<th>3pl</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>I. S verbs</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A. Present forms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'want'</td>
<td>kyeờo</td>
<td>kyeờe</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'have'</td>
<td>tēggo</td>
<td>tyēnēs</td>
<td></td>
<td></td>
<td>tyēnēn</td>
</tr>
<tr>
<td>'come'</td>
<td>byēnē</td>
<td></td>
<td></td>
<td>byēnēn</td>
<td></td>
</tr>
<tr>
<td>'can'</td>
<td>pwēdēs</td>
<td>pwēde, pwēde</td>
<td></td>
<td></td>
<td>pwēden</td>
</tr>
<tr>
<td>'be'</td>
<td>ēstoy</td>
<td>ēsta</td>
<td></td>
<td>ēstan</td>
<td></td>
</tr>
<tr>
<td>'be'</td>
<td>ēs</td>
<td></td>
<td></td>
<td>son</td>
<td></td>
</tr>
<tr>
<td>'be called'</td>
<td>yama</td>
<td></td>
<td></td>
<td>yaman</td>
<td></td>
</tr>
<tr>
<td>'spill'</td>
<td>ēča</td>
<td></td>
<td></td>
<td>ēčan</td>
<td></td>
</tr>
<tr>
<td>'go'</td>
<td>boy</td>
<td></td>
<td>ba</td>
<td>bamos</td>
<td></td>
</tr>
<tr>
<td><strong>B. Past forms</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'fall'</td>
<td>kaiyī</td>
<td>kaiyó</td>
<td></td>
<td>kaiyōn</td>
<td></td>
</tr>
<tr>
<td>'come'</td>
<td>binō</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'do'</td>
<td>siste</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'hit'</td>
<td>pēgastēs</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>'be'</td>
<td>ēstaba</td>
<td></td>
<td></td>
<td>ēstaban</td>
<td></td>
</tr>
<tr>
<td>'want'</td>
<td>kērīo</td>
<td></td>
<td></td>
<td></td>
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</table>
### Table 5.6 (cont.)

**Selected verb forms**

<table>
<thead>
<tr>
<th>C. Progressive forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>'fear'</td>
</tr>
<tr>
<td>'hurt'</td>
</tr>
<tr>
<td>'draw'</td>
</tr>
<tr>
<td>'spill'</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>D. Infinitive forms</th>
</tr>
</thead>
<tbody>
<tr>
<td>'go'</td>
</tr>
<tr>
<td>'give'</td>
</tr>
<tr>
<td>'put on'</td>
</tr>
</tbody>
</table>

### II. E verbs

#### A. Present forms

<table>
<thead>
<tr>
<th></th>
<th>æm</th>
<th>ar</th>
<th>Îz</th>
<th>ar</th>
<th>ar</th>
</tr>
</thead>
<tbody>
<tr>
<td>'be'</td>
<td>'do'</td>
<td>'got'</td>
<td>'go'</td>
<td>'have'</td>
<td>'write'</td>
</tr>
<tr>
<td></td>
<td>du</td>
<td>gat</td>
<td>go</td>
<td>hæk</td>
<td>skrib</td>
</tr>
<tr>
<td></td>
<td>dæz, duz</td>
<td>gats</td>
<td>goz</td>
<td>hæz</td>
<td>skrivz</td>
</tr>
</tbody>
</table>
Table 5.6 (cont.)

Selected verb forms

<table>
<thead>
<tr>
<th>B. Past forms</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>'throw'</td>
<td>θro, θrod</td>
</tr>
<tr>
<td>'pull'</td>
<td>pul</td>
</tr>
<tr>
<td>'slam'</td>
<td>slæm</td>
</tr>
<tr>
<td>'buy'</td>
<td>bæt, bæyd</td>
</tr>
<tr>
<td>'break'</td>
<td>brok, brokt</td>
</tr>
<tr>
<td>'give'</td>
<td>geyv</td>
</tr>
<tr>
<td>'do'</td>
<td>did, dud</td>
</tr>
<tr>
<td>'go'</td>
<td>went</td>
</tr>
<tr>
<td>'blow'</td>
<td>blod</td>
</tr>
<tr>
<td>'drop'</td>
<td>drapt, draptıd</td>
</tr>
<tr>
<td>'snatch'</td>
<td>snæčt</td>
</tr>
<tr>
<td>'catch'</td>
<td>kæčtıd</td>
</tr>
<tr>
<td>'like'</td>
<td>layktıd</td>
</tr>
<tr>
<td>'want'</td>
<td>wantıd</td>
</tr>
<tr>
<td>'bust'</td>
<td>bastıd</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>C. Present participle forms</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>'go'</td>
<td>goyŋ</td>
</tr>
<tr>
<td>'come'</td>
<td>kamıŋ</td>
</tr>
<tr>
<td>'write'</td>
<td>skrivıŋ</td>
</tr>
</tbody>
</table>
Figure 5.7
Inflection of tener

'Have' 1sgPres 2sgPres 3plPres

V-S(0) /teŋ/- /tyɛn/- /-o/ /-ɛs/ /-ɛn/

V-S(END)
that this item participates in both systems, one could assume that Nina is not sure whether \textit{planch-} is an S verb or an E verb. The morpheme's connections to meaning and to expression are well-established in Nina's system, but its morphotactic properties remain uncertain. Second, the one-time use of /pikas/ in the sentence /eso pikas/ (8/1,10:45) 'that has germs' is unusual. \textit{Pica} is ordinarily used as an S verb, but in this utterance its conjugation is unexpected, being neither E nor S. Aside from these two exceptions, every verb can be uniquely identified as being morphologically E or S.

5.5. Summary of morphological systems.

Nina has two systems of morphological constructions for verbs. Within each system, different constructions apply to different items, and sometimes more than one construction can apply. However, the items that participate in one system are clearly distinct from those that take part in the other system. Thus \textit{quiere} 'want(3sg)' can be labeled an S verb, and \textit{wants} can be labeled an E verb, as shown in Part A of Figure 5.8. Pronouns are like verbs in that they are distributed in two distinct systems.

Nouns, on the other hand, reflect different systems imperfectly (see Figure 5.8, Part B.). E and S systems can be discerned on the basis of plural morphology, but some plurals are portmanteau, some nouns can be pluralized in more than one way, and many nouns are not observed in the plural. Nina does not show evidence that E (or S) plural suffixes and E (or S) diminutive
Figure 5.8
Nina's morphological systems for verbs and nouns

A.

V-E(0) —— E-Vstems —— E-inflections —— V-E(END)

V-S(0) —— S-Vstems —— S-inflections —— V-S(END)

'Want'

3sg

(e.g. want )

(e.g. quier- )

/want/ /kyer-/ /-s/ /-e/

B.

Portmanteau-Pl

E-Nstems —— E-Pl

E + S Nstems

N(0)

S-Nstems —— S-Pl —— N(END)

Nstems (no Pl)

e.g. /fit/

e.g. /futs/, /śuz/

e.g. /čaŋklas/, /čaŋklaz/

e.g. /wēbos/
suffixes function within the same system, since one kind of plural suffix may cooccur with another kind of diminutive suffix. Certain subsets of nouns may clearly be classified as E or S, but it is not clear that this classification extends to Nina's entire collection of nouns.
6. Evidence for subsystems of phrase, clause, and sentence formation.

Technically, syntax—the way of putting together—operates at every level. Phonotactics deals with putting phonemes together, morphotactics deals with putting morphemes together, so lexotactics—commonly called syntax—deals with putting lexemes together to make phrases, clauses, and sentences.

I distinguish between general and special syntactic constructions, though sometimes the distinction is arbitrary. General constructions are highly productive. Special constructions are rare or occur with a limited range of lexemes. They may be newly-learned constructions that have not been generalized yet, they may be old constructions that are rarely used because they have been supplanted by newer ones, they may be slips or preliminary attempts at using a new construction, or they may be constructions that are peculiar to one or two lexemes.

For noun phrases, prepositional phrases, verb phrases, clauses, and sentences, the general syntactic constructions and a few interesting special syntactic constructions are described.


Noun phrases consist of pronouns or nouns with optional pre-modifiers and post-modifiers.

NP : PR : Head.
Examples: this
    you
    esto 'this'
    yo '!'.

Pronouns are either E or S, as given in section 5.2. The choice
of E or S pronouns is determined by the preposition (when the
pronoun is used in a prepositional phrase) or by the verb (when used
in a Subject or Object NP).

NP : Quant of PR:Head.

Examples: some of that
    three of 'em.

Quantifiers include numbers and other expressions: a lot, a
little bit, no, more, no more, all, some. Before pronouns, they
appear with following of. Quantifiers by themselves may be used as
NP's when the head noun is understood.

Nouns may be used without any modifiers.

Examples: orange
    candies.

N N:Head combinations are assumed to be compound lexemes.

Examples: screen door
    nail polish (8/3,11:00).

The modifiers, when used, are in a regular order. The most
common pre-modifiers are quantifiers, determiners, and adjectives.

NP : [Quant [of] ] [Det] [Adj] N:Head

Examples: cold water (5/9,10:00)
the radio
a red mark
that little glass (8/1,8:00).
more scoops
no clean clothes
all the puzzle (8/3,12:00)
two of these clocks.

Determiners are subclassed as E or S. The Det:E class includes:
the, this, that, these, those, a . They generally agree in number with
the head noun. The Det:S class includes: el, la, los, las, esto, esta,
eso, esa, un, una . They agree in number and usually in gender with
the head noun. The masculine/feminine agreement is rather
consistent when the head noun has a natural gender, e.g. los boys ,
but is not very consistent when there is no natural gender for the
head noun, e.g. el chicken, la chicken . Note that 'English' nouns have
gender, too.

The choice of E or S determiners is unrelated to the head noun,
as the following examples indicate.

Examples: el bus 'the bus' (4/26,10:15)
los ears 'the ears'
una carne 'a meat'
el knife 'the knife' (4/26,10:30)
esa ice cream 'that ice cream'
los foots 'the foots'
el daime 'the dime'.
las little girls 'the little girls' (4/26,10:15).
la little small baby (4/27,1:00).

Their use is determined by the preposition (when used in prepositional phrases) or by the verb (when used in a Subject or Object NP). This determination is the same as for pronouns.

Closely related to determiners are possessives. Possessive pronouns occur in determiner position. The S possessive pronouns agree in number with the head noun.

Examples: my hair

their back
mi pelo 'my hair'
mis shorts 'my shorts'
my little fish (4/28,10:00)
a lot of my puzzles (8/3,11:00).

Predicate possessive pronouns are used when the head noun is understood.

Example: yours

nothing of hers.

An NP is possessive when the possessive suffix is added to the head noun. The resulting NP-Poss occurs in determiner position in the NP. The head noun may be omitted when understood.

Examples: that little girl's arm

the other Papa Bear's chair

my mom's

my sister's (8/4,8:45).

Q-Adj's which and cuál (plural cuéles) precede the head noun.
Examples: which candy
            which TV
            cuál tape 'which tape'.

Other pre-modifiers are used occasionally.
Little is the only adjective that precedes another adjective.
Examples: that little blue stuff
            the little dry things (4/28,11:30).
Other occurs after the determiner position.
Examples: other candies (4/27,10:45)
            that other little baby girl
            Jessica's other paddle.

Numbers occur after the determiner position. Nina uses
cardinal numbers (which may be used in the Quant position, as well)
and ordinal numbers. She does not use any 'Spanish' numbers other
than una, uno. She seems not to understand the exact quantity
signified by numbers greater than three. Ordinals include: first,
second, third, last.
Examples: three shots (5/21,12:30)
            the third balloon (8/1,8:00)
            that last time (8/1,8:00)
            those two little things (8/1,1:00)
            your two hands
            all her two fingers (8/1,8:00).

Post-modifiers include prepositional phrases, relative
clauses, and appositives.
NP: NP:Head PP.
Examples: *that little thing in the box*

*that top of the other pen* (8/4, 9:00)

*Quick con leche* 'Quick with milk' (4/26, 10:45).

**NP:** NP:Head *that* CL.

Examples: *that candy that I told you to give Rieko* (8/4, 8:30)

*the third thing that you're gonna break* (8/1, 8:00).

**NP:** NP:Head que CL.

Examples: *that little girl que vive alla* 'that little girl that

lives there' (4/27, 12:15).

**NP:** NP:Head NP:Appositive.

Example: *Pee-wee la cochina* 'Pee-wee the pig'.

The NP's give evidence for the constructions displayed in Figure 6.1. Not all possibilities shown are actually produced, but the tactics are motivated by the constructions given above.

Limited in number, the Spanish examples do not show the diversity of the English ones, but they fit within the same NP constructions. Only one case is exceptional. The one-time occurrence of *el pan caliente* 'the hot bread (=toast)' seems to use a typically Spanish construction with the adjective following the noun. However, there is no indication that this construction is productive. More likely, *pan caliente* is a compound lexeme for Nina.

One system of productive syntactic constructions for noun phrases emerges.
Figure 6.1

Productive NP tactics

NP(0) [Quant or]

Det

PR Poss

NP Poss

Ord

NP(Head)

PP

that

CL

Que

NP (appositive)
6.2. Prepositional phrases.

Prepositional phrases are used to modify verbs or nouns. The tactic construction of a PP is: **Prep NP**. For some prepositions, only S determiners or pronouns may be used in the NP that is the object of the preposition; these will be called S prepositions. For other prepositions, only E determiners or pronouns may be used; these are E prepositions. However, the choice of preposition type is not determined by the verb or the noun that the PP modifies. Table 6.2 gives several examples.

There seems to be agreement of system within the prepositional phrase, but not between the prepositional phrase and what it modifies.

6.3. Verb phrases.

Several syntactic constructions involve verbs that are in the E morphological class. I will present the major productive constructions of verb phrases. Examples will show the connections to higher and lower levels, and reveal the stratification involved.
Table 6.2

Selected prepositional phrases

I. S prepositions

*Quick con leche*  'Quick with milk'
*that other one de ese, de jelly*  'that other one of this, of jelly'
*the room de mi mama*  'the room of my mother'
*mix it con el finger*  'mix it with your finger'
*a bowl, de ese*  'a bowl, of this'
*they got those en latas*  'they got those in cans'.

II. E prepositions

*in your eyes, estos son mocos*  'in your eyes, those are mucus'
6.3.1. Constructions with E verbs.

VP : C \(\text{V-E}\).

Examples:

```
\[
\begin{array}{c}
  \text{3sg Pres 'Go'} \\
  \text{C:3sgPres – go} \\
  \text{I go} \quad \text{I go}
\end{array}
\]
```

**was**

**do**

**did.**

C stands for the simultaneous realization of Pres or Past and person/number concord with the subject of the clause; e.g. C:1sgPres. The C element is often realized as an inflectional suffix, sometimes empty. This element will be termed 'concord', keeping in mind that it also indicates tense.

V-E stands for a morphologically E verb. The concord element is placed before the verb at the syntactic level, though it is usually realized after the verb on the morphological level, a phenomenon known as affix-hopping. Occasionally Nina uses the 'wrong' concord, e.g. *you gots*. Sometimes the concord appears on two verbs in the verb phrases, e.g. *didn't brought*. Thus the connection between the concord and its morphological realization is somewhat weak, but generally the connection is made as expected.

The pro-verb **do** may be used when the context makes the verb understood.
The main verb may be a phrasal verb with one or more particles. Lexically, a phrasal verb is one unit. Syntactically, some particles are 'separable', i.e. they may occur after the objects in the clause (see section 6.4.).

Examples:

```
   C:Past  turn
      /trn/  /dl/  /an/
```

You turned it on. (4/28,10:45)

take off.

VP : Impv [Neg do ] [go ] V-E.

Example:

```
   Impv  'Go'  'Play'
   Impv  go  play
        /go/  /play/
```

Go play with the puzzle. (8/3,11:15)

The brackets around the auxiliary go indicate that it is optional in this construction. The Impv has zero phonemic realization, and the following verb appears in its base form, without inflectional suffixes. The Negative (with prohibitive meaning) is realized as don't in this construction.
VP: C [Neg] do V-E.

Examples: 3pl Pres Neg 'Stick'

\[ C:3pl \text{Pres} \rightarrow \text{Neg} \rightarrow \text{do} \rightarrow \text{stick} \]

/dont/ /stick/

They don't stick. (4/27, 11:45)
didn't give
did cut.

The Neg is also subject to 'affix hopping'. Contracted forms are usual. The C do V-E construction without the negative is used to deny a negative assertion: It did cut my feet (4/27, 9:30).

VP: C [Neg do] Modal-to to [go] [V-E].

Examples: 2sg Pres Neg 'Want' 'Hold'

\[ C:2sg \text{Pres} \rightarrow \text{Neg} \rightarrow \text{do} \rightarrow \text{want} \rightarrow \text{to} \rightarrow \text{hold} \]

/dont/ /want/ /tu/ /hold/

No, you don't want to hold your bottle no more. (8/4, 10:30).
don't want to play
need to take (8/2, 11:00)
need to go pee (8/1, 8:00)
don't like to wear
wanted to go (8/2, 10:45)
don't have to.
These examples are analyzed as having a modal that requires to before the main verb. In Nina's speech, the subject of the main verb is generally also the subject of the Modal-to, except for a few sentences with want, e.g. You want me to cut your beard? (4/27,9:15). Nina's inconsistent use of these exceptions, plus the fact that they are limited to want, are evidence that the construction above is more productive.

The main verb may be omitted if it is understood from the context. Go may function as an auxiliary before the main verb, or it may function as the main verb.

\[
\text{VP : C [Neg] Aux [go] [V-E].}
\]

Examples: 1sg Pres 'Can' 'Pop'

\[
\begin{array}{c}
\text{C:1sgPres—can—pop} \\
/kæn/ /pæp/
\end{array}
\]

I can pop it. (4/25,9:25)
shouldn't put

can go buy (8/4,9:00)

can

can't (4/27,9:30).

Again, the main verb may be omitted if it is understood from the context.
VP : C be copula [Neg].

Examples: 3sg Pres 'Be' Neg

C:3sgPres—be—Neg

/z/ /net/

It's not candy. (4/25,12:00)
am
was.

The negative follows the copula be. The contracted form of the negative is sometimes used. Be also participates as a V-E in other constructions.

VP : C [Neg] [be] -ing V-E.

Examples: 1sg Past Prog 'Give'

C:1sgPastbe—-ing—giv

/eaz/ /giv/ /ŋ/ /ŋ/ /ŋ/

I was giving her some of, some of mine.

(4/26,11:30)
bothering (8/2,11:00)
talking
's coming (4/27,11:30)
was telling
'm not going. (4/25,11:45)
The progressive is usually realized by be in addition to -ing, but only the suffix -ing is necessary. The suffix -ing appears in morphological constructions after the main verb.

\[ \text{VP} : \text{C} \quad [\text{Neg}] \quad [\text{be}] \quad \text{gonna} \quad [\text{go}] \quad \text{V-E}. \]

Examples: 1sg Fut 'Go' 'Tell'

\[ \text{C:1sgPres-be-gonna-go-tell} \]

\[ /\text{m} \quad /\text{ganna} \quad /\text{go} \quad /\text{tɛl} / \]

'I'm gonna go tell mommy. (4/25,9:30)

'm not gonna do

's gonna go.

The future is primarily realized by be and gonna. The realization of be is the present tense form, showing concord with the subject. In the 4;3 data, the construction will V-E is used occasionally. Example: I will spank you. (8/1,8:45).

6.3.2. Constructions with S verbs.

\[ \text{VP} : [\text{Neg}] \quad \text{C} \quad \text{V-S}. \]

Examples: 1sg Pres 'Want'

\[ \text{C:1sgPres queren} \]

\[ /\text{kyɛr}/ \quad /\text{o}/ \]

cayó 'fell (3sgPast)'

no hay 'there aren't any'.
The negative comes before the concord in the S verb phrase constructions.

**VP:** C. estar -ando V-S.

Examples: 3sg Pres Prog 'Hit'

- C:3sgPres -estar -ando -pegar
  - /e-star/ /-ando-/ /-pegar/

*Está pegando* 'She's hitting' (5/5,10:30)

*estaba asustando* 'was afraid' (4/26,10:30).

Note that Nina uses the present participle, rather than the past participle *asustado*.

The progressive is realized as *estar* and the present participle suffix, usually *-ando*, which is attached to the main verb. With two verbs, the present participle suffix is *-iendo*: *está doliendo* 'is hurting' (5/5,10:15), and *staba comiendo* (5/21,12:45).

**VP:** [Neg] C Modal-inf Inf V-S.

Examples: 1sg Pres 'Want' 'Go'

- C:1sgPres -querer -Inf -ir
  - /k-yehr/- /-o/- /iR/

*Yo quiero ir con ti* 'I want to go with you.' (5/21,12:45)

*pweda abrir* (4/26,11:30).

Two modals participate in this construction: *querer* 'want', and *poder* 'can'. The infinitive forms of verbs are relatively rare.
VP: \([\text{Neg} \ C \ ir \ a \ Inf \ V-S]\).

Examples:

\[
\begin{array}{c}
\text{Neg} \quad \text{1sg} \quad \text{Fut} \quad \text{'Cut'} \\
\text{Neg} \quad \text{C:1sgPres} \quad \text{ir} \quad \text{a} \quad \text{Inf} \quad \text{cortar} \\
/\text{no}/ \quad /\text{boy/} \quad /\text{a/} \quad /\text{kort/-} \quad /\text{-ar/} \\
\end{array}
\]

\text{No te voy a cortar} 'I am not gonna cut' (5/5,11:00)

\text{no voy a dehar} 'I will not leave'.

The use of \text{ir} as an auxiliary to express future is rare.

6.3.3. Summary of VP systems.

Two non-overlapping systems of constructions emerge from the examples above. These systems are summarized in Figure 6.3.

The syntactic constructions of VP-E allow for greater expression because the verbs, modals, and auxiliaries are more numerous and diverse. A wide range of concepts apparently cannot be expressed with VP-S syntax because Nina does not know the corresponding lexemes. This accounts for the fact that there are no long stretches of pure 'Spanish' discourse. In the 4;3 data, the frequency and the diversity of VP-S constructions decline. Evidence that the VP-S constructions are productive becomes rarer; most of the 'Spanish' VP's occur in set expressions, especially imperatives: \text{damela} 'give me it', \text{ten} 'take it', \text{ven} 'come'.

A number of relatively minor VP-E constructions show as much productivity as the VP-S constructions, including:
Figure 6.3

VP constructions

**VP-E**

0 — C — [Neg] — [be] — -ing — V-E

[do] — Modal-to-to — [go] — do — END

Modal

**VP-S**

0 — [Neg] — C — [Modal-inf — Inf — V-S — END

[estar-ando — [Ir-a]
better [Neg] V-E  
Ex.: better not move
let's [go] V-E  
Ex.: let's go pee
stop -ing V-E  
Ex.: better stop pulling

(4/27,1:15).

Thus the VP-E system appears to be expanding, and the VP-S system is being used less and less. The two systems remain entirely distinct.

6.4. Clauses.

Clauses occur in a wide variety of constructions. The classification of verbs as intransitive, transitive, or ditransitive, depending of the number of NP's required by the verb, is helpful. An NP may function syntactically as subject (Subj), direct object (DObj), or indirect object (IObj), which correspond to agent, patient, and recipient, respectively. In addition, a few S verbs are classified as reflexive.

I will present the major clause constructions.

6.4.1. Declarative clauses with E verb phrases.

CL: NP:Subj VP-E:Intrans.

Examples: You lying. (4/25,12:00)

He smokes.
It's bleeding.
The police came.

In all the clause constructions, the determiners and pronouns within the NP tend to show agreement of system with the verb.
(See section 6.4.4. for exceptions.)


Examples: You lost them. (4/26,9:45)
Daddy spank (=spanked) me.
Somebody changed it.
He got your shoes.

No passive constructions are productive. Expressions such as She was lost (4/26,10:45) are better analyzed as copulative. Negation is realized in the verb phrase, and also can be realized by using a negative form of a Quant modifier or pronoun.

Examples: Erica didn't got none. (4/27,12:00)
I don't see no stickers.
I'm not doing nothing to you. (4/26,11:15)


Examples: The mother was giving him some, some titi.
My daddy's gonna buy me some new ones.
(4/26,9:45)
She didn't get me no shorts.

Two closely-related ditransitive constructions are used.


Examples: They didn't give it to me.
I'm not doing nothing to you. (4/26,11:15)


Example: You were gonna buy Kool-Kups for Erica. (4/25,9:30)
The choice of to or for seems to be conditioned by the verb.
Any of these clauses can occur with adverbs at the beginning or at the end. Clause-initial adverbs are always adverbs of time. Clause-final adverbs can be adverbs of time, location, manner, instrument, concomitant, etc. Examples with more than one adverb after the verb phrase, e.g. you gonna go with us at the park?, are rare, and the relative order of adverbs is undetermined.

Examples:  I can pop it with my, my teeth. (4/25,10:00)  
I left them there. (4/26,9:45)  
You scrape it like that.  
And you bring it back tomorrow. (4/26,11:00)  
Last night you said...

Adverbs seem to be undifferentiated with regard to cooccurrence with E and S verb phrases. There are no E adverbs or S adverbs.

Examples: El viene tomorrow. 'He's coming tomorrow.'  
(4/17,10:45)  
You're bleeding poquito. 'You're bleeding a little bit.' (4/28,8:30)  
Now ven. 'Now come.'  
Dame las chanclas first. 'Give me the sandals first.'

A number of verbs have separable particles, such as take +...off, turn +...on, give +...back. The verb and the particle are a single unit lexically. The particle generally occurs after the last required object.
Examples: She take (=took) all the stickers off. (4/27, 11:45)
You turned it on. (4/28, 10:45)
Give it to her back.

Some particles need not be separated from the verb.
Example: I can take off the hearts. (4/27, 11:45)
Other instances could be analyzed alternatively as verb +
particle + object, or as verb + adverbial prepositional phrase.
Examples: You smell like chiles.
Get in the car.
I'm not going at school. (4/25, 11:45)

The terminology is not important, the productive constructions are.
*Smell_like_NP* is a construction Nina uses; *smell Prep NP* only
occurs with the preposition *like*. Many prepositions are determined
by the verb. A few prepositions (*of, de, with, con*) are used in noun
phrases. The evidence is not sufficient to make a meaningful
distinction between prepositions and particles. The categories are
fuzzy, and Nina does not need to distinguish the two categories in
order to use constructions that produce normal expressions.

CL : **NP-Subj VP-E:Copulative Pred.**

Examples: My name is not Chicken Boy.
Her shirt is wet. (4/25, 9:00)
I'm not getting dizzy.
I'm over here.

The predicate (Pred) consists of a noun phrase, adjective, or
locative expression. Many adjectives occur in both attributive and
predicative position; there is no evidence to differentiate two word
classes. Locatives include prepositional phrases (e.g. *on top of me*, *at school*), deictics (e.g. *over here*), and a few special expressions (e.g. *outside*). The copula is usually *be*, but other verbs are also used in similar constructions with predicate adjectives, e.g. *get, look*.

Understood NP's are occasionally omitted, regardless of position.

Examples: [I'm] *gonna tell...* (8/1,8:00)

*You tell* (=told) [Erica] *that...*

Figure 6.4 summarizes these basic declarative clause constructions.

6.4.2. Imperative clauses with E verb phrases.

Imperative clauses have the same construction as declarative clauses except for the subject position. For second person, *you* is the subject, though it is usually omitted. For first person plural, *let's* is in the clause-initial position.

Examples: *Don't play with it.*

*You make the cake.* (5/3,12:00)

*Let's go at the radio today.* (4/27,10:45)

Some verbs are mostly used imperatively: *shut up, look, stop.*

6.4.3. Interrogative clauses with E verb phrases.

Nina has several ways to ask questions. For yes/no questions, the most common way is by intonation. This involves a rising
Figure 6.4
Major declarative clause constructions with E verb phrases

intonation at the end of the clause, with the same syntactic constructions as for declarative clauses.

Examples:  You gonna go with us at the park?

    It's Coke?

Yes/no questions also are formed by means of a tag (right, or what, okey).

Examples:  She was a clown, right? (4/27, 10:45)

    You put it in here, or what? (5/3, 11:45)

Yes/no questions sometimes have a different word order from declarative clauses. The subject can occur after Modal, be, or do, depending on the construction of the verb phrase. This is a relatively uncommon means of asking a question.

Examples:  Is that going?

    Did you finish cracker?

    Did I say yes, or what? (4/25, 12:45)

Question-word questions usually have the question word at the beginning. Otherwise the word order is unchanged.

Examples:  Why she's your girlfriend?

    How you take this clock off?

    What you said to Erica?

    Who bought this pencil?

    Where you are?

Occasionally the subject is positioned after Modal, be, or do.

Examples:  What are you gonna do?
6.4.4. Clauses with S verb phrases.

The constructions of clauses with S verb phrases are rather similar to constructions of clauses with E verb phrases. Because the clauses with S verb phrases are less numerous and less diverse, there are a number of holes in the system.

As mentioned in section 6.3.1., determiners and pronouns in NP's usually are from the same system as the verb. There are a few exceptions to this statement.

*Dejame the key.* 'Leave me the key.' (4/28,8:00)

*Dame a bowl.* 'Give me a bowl.'

*Here's tu balote.* 'Here's your rolling pin.'

*Dame this polish.* 'Give me this polish.' (8/3,11:00)

*Pica the cola.* 'Poke(?) the butt.'

*We're gonna secalo, and then it's gonna be dry.*

'Were gonna dry it, and then it's gonna be dry.'

These six exceptions are the only ones found in the entirety of the data. The syntactic distinction of E pronouns and determiners from S pronouns and determiners is not absolute, but it is sufficient to be recognized.

The subject in S clauses is more likely to be omitted than in E clauses.

Examples: *Quiere coca.* 'She wants Coke.'

*Hiciste little girls pa mi.* 'You made little girls for me.'

The subject is not necessarily omitted, even when understood.
Example: *El viene tomorrow? 'He's coming tomorrow?*

(4/27,10:45)

For transitive, ditransitive, or reflexive verbs used in declarative, interrogative, or negative imperative clauses, pronominal objects are placed before the verb phrase. Negative imperative clauses have the same form as declarative clauses, with the same clause and verb phrase constructions. Positive imperative clauses have the pronominal objects after the verb phrase.

Examples: *Yo me baño. 'I'm taking a bath (reflexive).'*

(4/26,11:15)

*No me pegas. 'Don't hit me.' (5/5,10:30)*

*Bajala. 'Lower it.' (4/28,8:45)*

*Damela. 'Give me it.' (4/28,10:15)*

The S clause structure is similar to, but not identical to, the E clause structure. Thus two sets of clause constructions are apparent, with many constructions and constituents in common.

6.5. Sentences.

Sentences are recognized by their intonation pattern: a falling or rising pitch contour at the end. Often a sentence has just one clause. Common also are non-clausal expressions with sentence intonation, or non-clausal expressions adhering to clauses, often within the same sentential intonational construction. Less frequent, though productive, are multi-clausal sentences.
6.5.1. Non-clausal sentences.

A wide range of expressions can be used as sentences.

Examples:  
Bye.
Okay.
More.
No.

These examples do not have any internal structure. There are other expressions that can be analyzed as having syntactic structure, but probably were learned as units and may well be produced as a single unit.

Examples:  
Shut up! (5/9,9:30)
Come here. (Often /kamîr/. ) (5/9,9:45)
Sperate. (=esperate ) 'Wait.' (8/2,10:45)
Like that. (4/27,10:45)

Interrogative words may be used alone as sentences.
Isolated NP's are common as sentences. There are two primary functions of NP sentences. First, they can serve the function of naming or identifying.

Examples:  
Scooby Doo.
Caca. (8/1,8:15)
One for me. (4/25,9:30)

Second, vocatives can serve to draw the listener's attention.

Examples:  
Mommy. (4/25,12:45)
Boy.
Other expressions, both non-clausal and clausal, also serve this purpose. Again, some expressions with clausal structure also function as single units for Nina.

Examples:  *Watch.* (4/26,11:00)

  *Hey Sandra.* (5/21,1:00)

  *You know what?* (4/25,9:30)

Sometimes the attention-drawing expression is combined with a following or preceding clause in one pitch contour.

Another type of non-clausal sentence occurs when Nina answers questions. In addition to *yes, yeah, sí,* and *no,* any part of a clause that expresses the necessary information can be used.

Examples:  *[That feels fine, right?]* *Hurts.*

  *[Vamos a ir a...We're gonna go to...]* *A qué? Church?*

  *'To what? Church?'* (4/25,9:30)

Only the relevant part of the clause is used. The linguistic context makes the rest of the clause understood.

An answer need not use the same syntactic construction as the linguistic context. Thus it seems to be the content, rather than the syntactic structure, that provides the relevant context.

Examples:  *[Qué estás haciendo, Nine? 'What are you doing, Nine?']*

  *Stomping.* (4/25,12:15)

  *[I can't.]* *Si, si puedes.* 'Yes, yes you can.' (4/28,8:45)

Even when the linguistic context is not sufficient, a part of the clause may be produced, followed by a complete clause.

Providing only a part of the clause serves to make the information
thematic. It may be produced with its own sentence pitch contour, or it may be integrated with the following clause.

Examples: *In Amy's house. My grandma's there.* (4/25,12:45)

That little baby, she was bigo. (4/26,10:30)

When E pronouns occur in non-clausal sentences, they appear in the form of the Object pronoun, regardless of the semantic role. S pronouns, however, occur as they would in a corresponding clause.

Examples: *Me. I went at the library to go find some candies.* (4/27,12:00)

Yo. *Es de mio.* (5/21,12:45)

6.4.2. Multi-clausal sentences.

The most productive multi-clausal sentence constructions involve conjunctions. The conjunctions do not show separate systems in regard to their use with preceding or following clauses.

S: [CL] Conj CL.

Examples: *But ella rompó eso. 'But she broke this.'* (4/26,11:00)

*Dame una chancla so I can walk on the kitchen.*

'Give me a sandal so I can walk on the kitchen.' (5/5,10:30)

*Porque we don't got nothing. 'Because we don't got nothing.'* (5/21,1:00)

*Me está doliendo porque they're doing me like this.*

'I'm hurting because they're doing me like this.' (5/5,10:15)
It's a machine pero you, you do it in, in, you uh, put it and then, salgues. 'It's a machine but you ... put it and then, you come out (= it comes out)' (4/27,12:45)

Conjunctions usually join two clauses, and the joined clauses are sometimes pronounced as one sentence, but more commonly two sentence intonations are used, with the conjunction introducing the second sentence. The conjunction may function to link a clause with some previous sentence in the discourse.

A number of verbs take clauses or expressions as complements.

Examples: *She said that you were gonna buy Kool Kups for Erica.* (4/25,9:30)

*You think this is candy.* (4/25,12:00)

*You told her that I was, my name is Bida?*

*She said no.* (4/26,11:15)

The relative conjunction *that* appears to be optional.

6.6. Summary of syntactic systems.

Systems of syntactic constructions are variously differentiable. On the one hand, verb phrases show clearly distinct E and S subsystems, so that virtually any verb phrase can be classified as being E or S. Clauses show somewhat less differentiation, with certain constructions being distinct, but with many overlapping constructions. Noun phrases and prepositional phrases reveal E and S subsystems only to the extent that determiners and pronouns
generally are of the same system as the verb phrase and preposition, respectively. This conditioning has been discussed in section 6.1. The other constituents of NP and PP constructions show just one system. Finally, adverbs and conjunctions show no evidence of differentiation into subsystems.
7. Evidence for subsystems related to ideational or interpersonal concepts.

One function of language is to represent concepts of real world or possible world phenomena. This can be accomplished by viewing the phenomena as things (which can be expressed as noun phrases), as processes (which can be expressed as verb phrases), relations, positions, times, etc. (which can be expressed in various ways). Different lexemes can be used to express different concepts for the phenomena. This is the ideational side of language.

Language also has an interpersonal function.¹ The speaker signals and reinforces relationships with other people and through speech is able to act on other people. This study has examined how Nina varies her linguistic expression according to the relationship, so that certain expressions are indicative of the kind of relationship involved.

This chapter describes how lexical classes are used in relation with ideational and interpersonal concepts. It explores how many and what kind of subsystems are revealed by the lexical realization of concepts. It does not examine her conceptual system in a thorough way.

¹The terms 'ideational' and 'interpersonal' are from Halliday (1985:xiii).
7.1. Lexemes and ideational concepts.

Nina has a number of lexemes that could be called 'translations': querer and want, mana (=mano) and hand, mañana and tomorrow. Such terms could be synonyms, alternate realizations of the same ideational concept. Or they could be indicative of different ideational systems. Suppose the 'translations' were similar but recognizably distinct. On the one hand, they could be indicative of delicate distinctions. Haugen (1950b:276) illustrates a delicate distinction in American Portuguese, where gelo signifies natural ice, and ice signifies artificial ice. Should the distinctions reveal a common pattern, for example, should 'English' lexemes signify events that take place outside of the home and 'Spanish' lexemes signify events done inside the home, then it is possible to propose separate ideational systems. Does such evidence exist in Nina's speech?

Most of Nina's speech concerns physical events and concrete objects that can be identified by an observer. Coreferential terms are treated as synonyms. There are two degrees of certainty in assessing coreference. The less certain assessment involves the following steps.

(1) In one context, Nina is observed to use Lexeme 1 for Referent 1 (e.g. chicken refers to Food 1).

(2) In another context, Nina is observed to use Lexeme 2 for Referent 2 (e.g. pollo refers to Food 2).

(3) The observer ascertains that Referent 1 and Referent 2 are the same (e.g. Food 1 = Food 2).
Then the two lexemes are apparently synonymous.

If Lexeme 1 (e.g. egg ) and Lexeme 2 (e.g. huevo ) have the same referent in the same context, then by all appearances the two lexemes are coreferential. Cases where the two lexemes are used in the same context are more certainly synonymous than cases where the observer equates two lexemes from different contexts.

More-certain coreference is observed in the following examples.

1. While making a cake, Nina alternately used the words egg and huevo . This mirrored the same practice by her father.

2. When her mother was leaving for the washateria, Nina cried repeatedly: I want to go . Failing to get a response, she tried Yo quiero ir several times before resuming I want to go .

3. To call Erica, Nina first used Come here /kǝmidi/, then a minute later Ven .

4. While cutting her fingernails with Erica, Nina said: Te voy a cortar 'I'm gonna cut you'. To reassure Erica that she would be all right, Nina added: Not cut yourself. I'm gonna cut 'em .

5. While begging for Observer to carry her on his back like a horse, Nina said caballito 'horsey'. When Observer was slow to respond, she said Now horsey .

6. To keep Jessica from falling, Nina ordered Gimme your hands , followed by Dame tus manos .

Further examples show that dime and daime , and butt , culo , and cola are synonymous.
Less-certain synonymy is observed in the following pairs: milk and leche, water and agua, spank and pampam, doll and monito, sandal and chancla, dress and falda, take a bath and bañarse, stop it and dejala, shit and caca, belt and cinto, write and scrreeve (from escribir).

Synonyms may be quite different structurally, e.g. me baño and I take a bath. I analyze these as compound lexemes. As with phrasal verbs, the ordering of the components is in accordance with the appropriate clause construction.

Coreferential terms are the simplest and clearest cases of synonymy. Synonymy involves two or more expressions for the same concept. Concepts cannot be directly observed, but are arrived at through linguistic analysis. Other kinds of evidence, such as the apparent interchangeability of prepositions with and con, or conjunctions but and pero, also indicate likely synonymy.

No examples were found where the 'translation' had a distinct meaning. Evidence to suggest separate ideational systems is entirely absent.

7.2. Lexemes and interpersonal concepts.

It is easily apparent that Nina generally speaks in a manner that is appropriate for a given situation. It is hard to define the social situation. One expected factor is the addressee. At times the addressee is not easy to determine, as when a remark is ostensibly addressed to one person but seems to be intended to provoke a
response from another hearer. Nonetheless, the addressee is the easiest factor to observe.

A portion of the data, in the neighborhood of 300-400 lines (a line usually has one utterance, sometimes more) per addressee or the entirety of the 4:0 data, was analyzed with the concordance program KWIC-MAGIC, developed by Kenneth W. Whistler. The frequency of occurrence of various words is given in Table 7.1. The words are arranged into synonymous pairs to reveal the frequency of use according to addressee. For example, when speaking to Observer, Nina used want 17 times and a form of querer only once, as shown in item 1. The last several items are not paired. The number of lines analyzed for each addressee is given at the bottom.

Observer appears distinct from the others in regard to the use of the verbs, interrogative pronouns, conjunctions, and prepositions in items 1-10 of Table 7.1. The 'English' words may be used with anyone, but the 'Spanish' ones are almost never used with Observer. This tendency gives the impression that English-only is spoken with Observer.

Younger playmates, Erica and Jessica, appear distinct from the others in regard to the use of items 11-15. Certain items are reserved for use with younger playmates. These include derogatory terms stupid ass, cochina 'pig', and pata 'leg' (literally 'paw'). Mana (=mano) 'hand', which in typical Spanish is not derogatory, appears to have the same distribution as pata, suggesting that it may be derogatory for Nina. Ven 'come' is also reserved as a command for younger playmates. The derogatory
Table 7.1

Frequency of occurrence of selected words according to addressee

<table>
<thead>
<tr>
<th>1. want: querer</th>
<th>17:1</th>
<th>25:10</th>
<th>14:12</th>
<th>1:1</th>
<th>5:0</th>
<th>2:0</th>
<th>3:0</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. give: dar</td>
<td>12:0</td>
<td>1:1</td>
<td>9:12</td>
<td>1:2</td>
<td>13:24</td>
<td>4:18</td>
<td>2:0</td>
</tr>
<tr>
<td>3. who: quién</td>
<td>7:0</td>
<td>7:0</td>
<td>2:4</td>
<td>7:5</td>
<td>0:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. which: cuél</td>
<td>1:1</td>
<td>4:7</td>
<td>0:1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. what: qué</td>
<td>28:0</td>
<td>37:6</td>
<td>33:15</td>
<td>0:1</td>
<td>13:3</td>
<td>1:0</td>
<td>1:3</td>
</tr>
<tr>
<td>6. where: donde</td>
<td>21:0</td>
<td>14:1</td>
<td>6:5</td>
<td>0:1</td>
<td>14:0</td>
<td>0:2</td>
<td>0:1</td>
</tr>
<tr>
<td>7. why: porqué</td>
<td>33:0</td>
<td>8:0</td>
<td>19:6</td>
<td>0:3</td>
<td>11:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. when: cuándo</td>
<td>7:0</td>
<td>2:0</td>
<td>2:1</td>
<td>5:1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. but: pero</td>
<td>6:0</td>
<td>6:2</td>
<td>3:2</td>
<td>1:0</td>
<td>0:1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. with: con</td>
<td>10:0</td>
<td>10:4</td>
<td>5:6</td>
<td>3:3</td>
<td>9:3</td>
<td>1:1</td>
<td>1:0</td>
</tr>
</tbody>
</table>

1-10 totals 141:1 111:23 97:70 5:11 78:38 8:23 7:4

| 11. come: ven   | 3:0  | 5:0   | 2:0   | 12:4 | 6:5  | 1:0  |      |
| 12. hand: mana  | 3:0  | 7:0   | 2:0   | 1:3  | 1:3  |      |      |
| 13. leg: pata   | 1:0  | 1:0   | 1:0   | 1:3  |      |      |      |
| 14. - stupid ass|      |      |      | 0:5  | 0:2  |      |      |
| 15. - cochina   |      |      |      |      | 0:1  | 0:1  |      |

11-15 totals 4:0 8:0 10:0 3:0 14:16 7:11 1:0

| 16. shut up     |      | 5     | 6     | 1    | 1    |      |      |
| 17. you better  | 2    | 3     | 16    | 3    | 2    |      |      |

16-17 totals 2 0 8 0 22 4 3

| 18. cositos     |      | 3     |      |      |      |      |      |

Lines analyzed 366 375 398 46 401 118 67
force often is not present; indeed sometimes these terms seem to be used affectionately. Nonetheless, they are inappropriate for certain people.

The mother, Laura, appears distinct from Pedro, the father, in regard to the use of items 16 and 17. *You better* is used in constructions such as *You better not break it*. Commands such as these are not appropriate with Laura, but are all right with others.

The baby, Elizabeth, is the only addressee of item 18, *cositos*. This use imitates the way Laura speaks to Elizabeth.

A hodge-podge of word frequencies is likely to reveal any number of distinctions. However, a cohesive pattern of language use according to social situation emerges from the above data.

First, there is an E class of words that may be used with anyone. This class includes: *want, give, who, which, what, where, why, when, but, with, come, hand, leg*, etc. For some people, including Observer and a number of visitors, the E lexical class is the only class that is appropriate.

Second, there is an S class of words that are not used with people like Observer but are used with family and certain neighbors. This class includes: *querer, dar, quién, cuál, qué, dónde, porqué, cuándo, pero, con*, etc. Nina was never observed using the S class exclusively; it was always used together with the E lexical class.

Third, there is a Bossy class of words that may be used only with younger playmates. The Bossy lexical class is used together with the E and S lexical classes.
There is an additional class of words that cannot be used with the mother. Use of these words with an adult is generally done under playful circumstances or to provoke a reaction. Because of the bossy nature of these words, and the special circumstances for their use with an adult, I prefer to group these words with the Bossy class. Whereas Nina can be bossy with younger playmates whenever she chooses, being bossy with adults constitutes a separate role. Nina is aware of the consequences that result when taking on that role at an inappropriate time; in particular she is reluctant to take on a bossy role with her mother.

Hence the Bossy lexical class includes: *ven, mana, pata, stupid ass, cochina*, etc.

Finally, there is a Maternal class of words that is used only with babies. *Cositos*, usually in the expression *qué cositos*, is in this class.

Sometimes Nina uses a word in an unexpected situation. For example, when trying to describe Woody Woodpecker to Observer, Nina said *the pajaro* 'bird'. Three reasons may account for such unexpected behavior. (1) It could be due to carelessness. Nina might momentarily forget whom she is speaking to. (2) It could be due to an inability to find an equivalent term in the appropriate lexical class. The inability may result from a temporary state of not being able to think of the right word at the time, or it may result from a lack of an equivalent item in her linguistic knowledge. Usually Nina resorts to paraphrasing in the same lexical class when it appears that she is stuck for the right term. Sometimes she
abandons the utterance altogether. However, switching to another lexical class is a possible strategy. (3) It could be indicative of Nina's taking on an unexpected role with a person. In this case, instead of being a mistake or a stopgap measure, it is a case of utilizing the linguistic means for expressing interpersonal roles.

Of the four classes, the E lexical class is by far the largest. It offers a rich means of expression, the main lack being for certain emotions that can be expressed by words from the Bossy lexical class. When the Bossy class is inappropriate, the only alternative is to express these emotions in a non-linguistic manner.

The E lexical class consists mostly of words that would be found in an English dictionary, but there are a few exceptions. Chancla 'sandal', monito 'doll', cola 'butt', culo 'butt', caballito 'horsey', etc. are used with everyone, as are a number of terms for food (e.g. taco, chile ). Proper names are all in this lexical class.

The S lexical class is also capable of diversity of expression, but not the the extent of the E lexical class. I can find no ideational concept expressible by by S vocabulary that is not expressible by E vocabulary.

The Bossy lexical class is quite small, and the Maternal lexical class consists of only a few identifiable words and expressions. The range of ideational concepts is correspondingly small.

The 4:3 observation revealed a vastly diminished use of S class vocabulary. Table 7.2 compares the frequency of words used with Pedro, the father.
Table 7.2

Frequency of occurrence of selected words with Pedro

<table>
<thead>
<tr>
<th></th>
<th>4;0 data</th>
<th>4;3 data</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. want:querer</td>
<td>14:12</td>
<td>20:5</td>
</tr>
<tr>
<td>2. give:dar</td>
<td>9:12</td>
<td>14:2</td>
</tr>
<tr>
<td>3. who:quién</td>
<td>2:4</td>
<td>1:0</td>
</tr>
<tr>
<td>4. which:cuál</td>
<td>4:7</td>
<td>2:1</td>
</tr>
<tr>
<td>5. what:qué</td>
<td>33:15</td>
<td>13:0</td>
</tr>
<tr>
<td>6. where:dónde</td>
<td>6:5</td>
<td>12:0</td>
</tr>
<tr>
<td>7. why:porqué</td>
<td>19:6</td>
<td>3:1</td>
</tr>
<tr>
<td>8. when:cuándo</td>
<td>2:1</td>
<td>4:0</td>
</tr>
<tr>
<td>9. but:pero</td>
<td>3:2</td>
<td>2:0</td>
</tr>
<tr>
<td>10. with:con</td>
<td>5:6</td>
<td>2:1</td>
</tr>
<tr>
<td>1-10 totals</td>
<td>97:70</td>
<td>73:10</td>
</tr>
<tr>
<td>11. come:ven</td>
<td>2:0</td>
<td>2:0</td>
</tr>
<tr>
<td>12. hand:mana</td>
<td>7:0</td>
<td>2:0</td>
</tr>
<tr>
<td>13. leg:pata</td>
<td>1:0</td>
<td>1:0</td>
</tr>
<tr>
<td>14. -:stupid ass</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. -:cochina</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11-15 totals</td>
<td>10:0</td>
<td>5:0</td>
</tr>
<tr>
<td>16. shut up</td>
<td>5</td>
<td>0</td>
</tr>
<tr>
<td>17. you better</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>18. cositos</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Lines analyzed</td>
<td>398</td>
<td>328</td>
</tr>
</tbody>
</table>
The reduction of S vocabulary occurred with all addressees, except Observer, to whom Nina used more S vocabulary than previously. The older playmates, Priscilla and Esmeralda, are almost always addressed in E vocabulary. The E, S, Bossy, and Maternal lexical classes remain, but they are used with different relative frequencies than before. Additional roles--teacher, nurse, medical clinic receptionist--are observed briefly. They are distinguished not so much by individual vocabulary items, but rather by the special collocations in which vocabulary items occur. The changes in interpersonal roles are described more fully in section 8.5.3.

The interpersonal roles play a significant part in Nina's linguistic system. By choosing between ideationally synonymous expressions, Nina can convey these interpersonal roles in her linguistic behavior.

7.3. Analogical influences between lexical items.

Analogy is an important process in the structuring of linguistic information. One item may be used in a given construction because it is perceived as being similar to another item which is used in the construction. Certain instances have been found where the use of a word from one class might be modeled after the use of a similar word from another class.

As mentioned in section 6.1., 'English' nouns have grammatical gender, e.g. la milkie. It is possible that Nina learns the gender of a word by hearing others use it. For example, when Pedro says el
knife, Nina learns that knife is masculine. It is also likely that Nina is influenced by the fact the leche 'milk' is feminine.

Figure 7.3 illustrates some possibilities. In Part A, there is a choice between two lexemes. Both lexemes have grammatical gender, though they need not be the same. Nina does not model one after the other. Part B shows leche as feminine, and a connection from milk to feminine gender is made on the basis of analogy. In Part C, the 'and' node (2) that connects to gender is above the choice of lexemes (1). Node (1) is the same as in Part B. Node (2) in Part C is a new node, added by virtue of the fact that activation from 'Milk' always leads to the activation of feminine gender.

Further data, perhaps gathered by elicitation, would be necessary to determine which networks represent Nina's use.

When referring to body parts, Nina uses E possessive pronouns as in English (e.g. my arm), S definite determiners as in Spanish (e.g. los ears), and also S possessive pronouns (e.g. tus manos 'your hands') and E definite pronouns (e.g. the hand). The last two constructions are not typical of English or Spanish, and Nina might not have learned them from other people.

It appears that Nina has alternate ways of talking about body parts; one way involves the definite determiner, the other way involves possession. Although the two ways can be traced to Spanish and English, Nina can use either E or S definite determiners for the Spanish-like conceptualization, and E or S possessive pronouns for the English-like conceptualization.
Figure 7.3
Possible networks showing the gender of leche and milkie.

A.

B.

C.
The analogical influences stand out when they lead to unexpected utterances. Presumably most analogy results in 'normal' output. This area could be explored further to determine how Nina makes analogies, and how she discovers 'false' analogies.
8. Putting the levels together: a cognitive linguistic model.

Language use requires the activation of all levels working in tandem. Examining how the various parts work together gives the clearest view of how Nina's linguistic knowledge is organized into systems. Working with the goals and assumptions stated in chapter 2, I have modelled a small portion of Nina's system. This chapter presents the model, and compares the model with the observed data.

The model is presented in relational network form. Networks are an informative way to represent relations precisely. A disadvantage is that it is hard to represent much information without making the network unreadable. The networks in this chapter are intended to clarify how Nina's linguistic information is organized and how she can use this information to produce speech appropriate for the given social context. The networks depict only a small fragment of her knowledge, but the examples are typical of Nina's speech.

8.1. The realization of concepts.

The relation between content and expression is of primary importance in linguistic analysis. As shown in chapter 7, the content is composed of ideational concepts and interpersonal concepts. Both kinds of concepts are involved in producing expressions.
Figure 8.1 shows how the interpersonal roles condition lexical choices. The interpersonal role is dependent on the addressee. Four major roles are shown. The roles can be used to discern lexical classes. The first role is used with Elizabeth and other babies. The triangular 'and' node under the label 'Addr:El' connects to the four lexical classes that may be used when assuming this role. Words in the Maternal class (e.g. cositos), the Bossy class (e.g. mana), the S class (e.g. jugar), and the E class (e.g. play, hand) may be used to express ideational concepts. Thus, when talking to babies, there is no apparent restriction as to what words Nina can use.

The second role is used with Jessica, Erica, and other younger playmates. The 'and' node under the label 'Addr:J' indicates that three lexical classes may be used: Bossy, S, and E. The third role is used with her parents Pedro and Laura. The 'and' node under the label 'Addr:P' indicates that the S and E lexical classes may be used. Finally, the fourth role is used with Observer and other older friends. Only one lexical class, E, is used when assuming this role.

The ideational concept 'Play' has alternate realizations /hug-/ and /pley/. When the S lexical class is activated, /hug-/ can be realized. When the E lexical class is activated, /pley/ can be realized. If the addressee is, for example, Pedro, then both the E and S lexical classes are activated, so either /hug-/ or /pley/ can be produced, and they are synonymous. On the other hand, if the addressee is Observer, then only the E lexical class is activated, so only /pley/ is produced.
Figure 8.1

Interpersonal roles and the realization of 'Play'

Addr:EI

Addr:J

Addr:Er

Addr:P

Addr:L

Addr:O

'bPlay'

babies

younger

playmates

parents

older

friends

Maternal

Bossy

S

E

use in CL, VP, V constructions

/hug-/ 

/pley/
Play and jugar share only the connection to the ideational concept 'Play'. They participate in different clause, verb phrase, and verb constructions.

Figure 8.2 shows the realization of 'Hand'. Again, there are two alternatives, /mana/ and /hænd/. The E lexical class activates /hænd/, but /mana/ is activated by the Bossy class, as shown in section 7.2. Thus, when speaking to Pedro, only the S and E classes are activated, and /hænd/ is the only possible realization. When Nina speaks to Erica, the Bossy, S, and E classes are all activated, so either /mana/ or /hænd/ may be produced synonymously.

Mana and hand are used in different plural constructions, mana taking the plural suffix -s and hand taking the plural suffix -z (see section 5.1.1.). They share the same use in clause and noun phrase constructions.

Figure 8.3 gives a third example of how roles condition lexical alternations. The form /bát/ is activated by the E lexical class, and /péro/ is activated by the S lexical class. But and pero share the same use in all constructions.

The two members of each of the pairs described above are ideationally synonymous. They all differ in their interpersonal use. Moreover, some members are used in different constructions at various levels.

Nina has many ideational concepts that do not have alternate realizations. An example is given in Figure 8.4. 'Mix' is realized only as /miks/, which is activated by the E lexical class. Because the E class is activated in all interpersonal roles, there are no roles in
which Nina cannot produce /mɪks/. There is never a conflict between realizing the ideational concept 'Mix' and maintaining a given interpersonal role.

Several words are morphologically S but lexically E. Included in this list are /takos/, /tɪles/, and /jæpses/. An example is shown in Figure 8.5. Nina does not have alternate forms for any of these words. However, since they are all activated by the E lexical class, there are no occasions where Nina cannot use these words.

Nina's 'bad words' are all activated by the Bossy class, and there are no E or S equivalents. Thus Nina can use stupid ass with her younger playmates, but not with her parents. If she is mad at her parents, she can use non-linguistic means to express her anger, she can use other words to express her anger in a slightly different way, or she can assume a different role with her parents (and suffer the consequences).

Not all alternations involve different lexical classes. 'Butt' can be realized as /kulo/, /kola/, or /bət/, and all are activated by the E lexical class, as shown in Figure 8.6. There is no apparent difference in their meaning.

Some alternations are conditioned by other elements in the clause or the phrase. In particular, pronouns and determiners are conditioned by the verb or by the preposition, showing agreement for E or S systems (see section 6.1.). Figure 8.7 illustrates how alternate realizations are conditioned.

E-verbs or S-verbs are verbs that condition E or S pronouns and determiners, respectively. Usually they are lexically E or S, as well,
Figure 8.5
Example of a word that is lexically E and morphologically S.
Figure 8.6
Alternations within the same lexical class

E

'Butt'

/kola/ /kulo/ /bat/
Figure 8.7
Conditioning within the clause or phrase

A. Alternate pronouns conditioned by verb in clause.

B. Alternate determiners conditioned by preposition in prepositional phrase.
but *ven* 'come' is an exception. *Ven* activates S pronouns, as in *ven-te* 'come-reflex'. However, *ven* is in the Bossy lexical class (see section 7.2). There are no Bossy pronouns and determiners, so *ven* is syntactically S but lexically Bossy.

The nodes labeled 'Maternal', 'Bossy', 'S', and 'E' are of great importance for Nina's system. They indicate which words are used with which roles. They enable Nina to use different codes (as defined by Gumperz 1962) in different roles. It would be a mistake, however, to call these classes codes.

Nina uses different roles when talking to babies, younger playmates, her parents, and older friends. There are noticeable differences in how Nina speaks in these roles, but there is much in common, too. If a code is to signify the linguistic information associated with a role, then it is obvious that Nina's codes share much information. The E lexical class includes words that are shared by all codes. The S lexical class is shared by three codes, the Bossy lexical class by two codes, and only the Maternal lexical class is unique to a particular code. Thus the code that Nina uses with her parents utilizes the E and S lexical classes. When Nina says to Pedro *El viene tomorrow* 'he's coming tomorrow' (4/27,10:45), she is not switching codes. The fact that the sentence contains E and S lexical items serves to identify the code that Nina is using. On the other hand, the code that Nina uses with older friends utilizes only the E lexical class. When Nina says to Observer *Cómo es esto* 'how is this' (8/3,12:00), she is assuming a role that she has never used before with Observer, and the role is reflected in the use of a different
code. In this case, the use of different lexical classes serves to express the change in Nina's role.

The commonly used term 'intrasentential code-switching' (Gingras 1974) is inappropriate for characterizing Nina's speech, nor, in all likelihood, the speech of any Chicano. The roles, and the codes that are indicative of the roles, do not change in mid-sentence.

8.2. The production of sentences.

To simulate production, the network can be viewed as indicating paths of spreading activation. An activated node sends activation along each path branching from it. The activation in turn activates nodes it encounters along the path, until the sentence is articulated. The present model focuses on the activations from interpersonal concepts and low-level ideational concepts downward to the phonemic level.

When Nina speaks, she simultaneously assumes an interpersonal role and comes up with ideas. To activate the model, one must begin by assigning an interpersonal role and the sememes corresponding to ideational concepts. The example *Mix it con el finger* begins with the following items activated. The addressee is Erica. The action is 'Mix', the Agent is the addressee, the Patient is third person, singular, and inanimate. There is an Instrumental, namely a definite 'Finger'. The mood is Imperative. The model assumes that these nodes are activated by Nina's conceptual
processes, but does not account for how such conceptual processing occurs.

Figure 8.8 gives the highlights of the production process. A commentary describes how the activation proceeds.

The addressee is Erica, a younger playmate. From the node under the label 'Erica', the activation spreads to include lexical classes Bossy, S, and E. From all of these lexical classes, activation continues downward on all routes. Only the activation from E is shown.

One activation from lexical class E joins the activation from 'Mix'. This activation intersects with the E clause construction at the point where the verb phrase belongs. The first item in the clause is the subject. The 2sg agent may or may not be expressed because the mood is imperative. The VP-E goes in the next position of the CL-E construction. Because mix is transitive, the next position in the clause is for the Object. Continuing downward, the activation intersects with the E verb phrase construction. Mix functions as the main verb of the verb phrase. The first element of the VP-E is the person/number concord, which in this case is C:2sg. The next element is Impv. Together, C:2sg and Impv have zero realization. (C:1sg and Impv would be realized as let's .) The last element of the VP-E is the verb mix . The activation continues downward, intersecting with the V-E construction. There are no suffixes from the VP-E construction to be put with the verb stem, so mix is the V-E. The activation finally reaches the phonemic string /mɪks/. 
The 3-sg-Inanimate patient is realized as a pronoun, and the choice between an E or S pronoun is determined by the verb in the clause. *Mix* takes E pronouns and determiners, so *it* is chosen, though this choice is not shown in the network. *It* is placed after the verb phrase in the CL-E construction. The activation intersects the NP construction. A pronoun may function by itself as an NP, so there are no additional elements in this construction. The activation finally reaches the phonemic string /t/. The Instrumental sends activation that intersects the CL-E construction after the object. In this position goes the prepositional phrase. The first element of the PP is *con*, followed by the NP. Activation continues downward to the phonemic realization /kon/. The preposition *con* takes S pronouns and determiners in the PP. *El* can be used with *con*; *the* cannot. This conditioning is not shown in the network. The determiner *el* goes in the first position in this NP. It is realized phonemically as /ɛl/. Activation also reaches the preposition *with*, not shown in the network. The model does not account for how *con* is chosen over *with*; they are used synonymously. In this example, *con* is chosen, and the activation of *with* ultimately dies. Activation from 'Finger', enabled by activation from lexical class E, intersects with the NP construction in the position after *el*. *Finger* is in the last position of the NP, which is in the last position of the PP, which is in the last position of the CL. It is realized as /fɪŋə/. 
All of the activated concepts have now been realized, and all of the initialized constructions have been completed. The sentence produced is /miks it kon el fɪŋgr/ (5/3,12:00).

You is optional in imperative clauses, as in You make the cake (5/3,12:00). Nina never used another word for 'Mix'. Mix lo is not expected, because E determiners and pronouns are used with E verbs. An alternate realization of Instrumental is /wɪθ/, which would condition the realization of Definite as /ɜə/. Nina never used another word for 'Finger'. Thus the only alternative realizations of these concepts are: /yu miks it kon el fɪŋgr/, /miks it wɪθ ɜə fɪŋgr/, and /yu miks it wɪθ ɜə fɪŋgr/.

One point to notice is that production is possible before all of Nina's conceptual information is formulated. When the production process awaits additional semantic formulation, Nina may hesitate, repeat herself, or leave the sentence hanging.

8.3. Expanding the model.

The model as described so far represents a miniscule portion of Nina's linguistic knowledge. More signs can be added to the system, enabling either a more complete description of Nina's linguistic knowledge or a description of the development of Nina's

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1Nina uses either possessive pronouns or definite determiners with body parts, c.f. open the hand, and dame tus manas 'give me your hands' (5/9, 10:30). Possessive pronouns are more common. (See section 7.3.)
linguistic system. Nina's linguistic knowledge is a very large system, but in theory there is no reason why this model cannot be expanded to cover every relationship that has been described in the previous chapters.

The model can also be expanded to include more information at the phonological level. At 4;0 Nina usually pronounced *play* as *[pey]*. Because consonant clusters with *l* were often 'simplified' (see section 4.3.2.), the alternation *[pey]* ~ *[pley]* should be accounted for by phonotactic constructions. Figure 8.9 represents one way to give the phonotactic information.

In addition to having more signs, an improved model should deal with the fact that activations are not merely on or off, but have variable strength. In practice, activations of varying strength are hard to incorporate into a network model because it is difficult to assign strengths that are not arbitrary. Nonetheless, one must recognize that unexpected activations will be made. A few examples illustrate this point.

In the example of *[pey]* ~ *[pley]* in Figure 8.9, the connection to *l* in the phonotactic construction is weaker than average. When activation proceeds along this path, it may not be strong enough to activate the articulatory process involved in pronouncing *l*. Thus at age 4;0, the pronunciation *[pey]* predominates. By 4;3, the connection to *l* is stronger, and the pronunciation is always *[pley]*.

Verbal concord is common in Nina's speech, but is not always consistent. The alternation *estabo* ~ *estaba* 'be (1sgPast)' is evidence of competing activations, as shown in Figure 8.10. Two
Figure 8.9

Expanding the model to include phonotactic information.

/pley/

Syllable(0) [▃▃▃] [▃▃] [▃▃▃] [▃▃▃] Syllable(END)

[p] [l] [ey]

Dotted line represents a weak connection.
inflectional suffixes, -o and -a are activated. The -o suffix is common for 1sg concord for present tense verbs, e.g. quiero 'want (1sgPres)'. Nina uses it for 1sg concord on past verb stems as well. In addition, she hears the -a suffix used for 1sg concord for some past tense verbs. Either form may be used (5/21,12:45), but estabo seems to have a slight preference. Different paths are activated, and they are almost equal in strength.

When Nina seems unable to find the word she is looking for, she has three strategies: paraphrase the concept within the appropriate lexical class, give up and talk about something else, or activate an equivalent word from a different lexical class. For example, when talking to Observer, she once used pajaro instead of bird. When necessary, a word from another lexical class can be used. Distinguishing lexical classes is useful, but they always have some fuzziness.

8.4. Dynamic aspects of the model.

Being four years old, Nina was changing her linguistic knowledge and her speech habits fast enough so that a few areas were noticeably different after three months. The phonological development of the contrast between monophthongal [o] and diphthongal [oʰə] is described in section 4.1.5. In this section I describe other noticeable changes and how they may be modelled.
Figure 8.10

Competing activations of inflectional suffixes

Dotted lines represent weaker connections.
8.4.1. Past tense morphology.

The V-E suffix /-t\text{\textl}d/, also analyzable as double marking by two past suffixes, was completely absent from the 4;0 data, but was used with some frequency in the 4;3 data, e.g. /drapt\text{\textl}d/. The vertical part of the sign, connecting 'Past' to /-t\text{\textl}d/, is simple enough to add. The morphotactic constructions, specifying which verb stems take which suffixes, are more likely to be inconsistent, and this is indeed the case. Whereas at 4;0 there were three morphotactic constructions (base form only, portmanteau realization, and stem + /-d/); at 4;3 there are four constructions, with many verbs participating in more than one construction. The new signs have not completely superseded the old ones. Furthermore, new verbs are being added to the system at a fast rate, and Nina must organize them in relation to which suffixes they take. Some of the connections to morphotactic constructions are not very strong. Presumably in the future, some will strengthen and others will weaken to the point of non-use.

Figure 8.11 shows the addition of a new past tense form for *drop*. From the situation at 4;3, several developments are possible. (1) The relative strength can grow for one connection at the expense of the other, e.g. /drapt/ might predominate over /drapt\text{\textl}d/. (2) New connections can develop to ideational concepts so that the two conjugations are no longer synonymous, parallel to a more easily conceivable development of *tenía* 'have (1sg Past)' $\rightarrow$ *tenía* 'have (1sg Past Imperfect)', *tuve* 'have (1sg Past)' $\rightarrow$ *tuve* 'have (1sg
Figure 8.11

Addition of a new past tense form.

Dotted lines represent new connections.
Preterit). (3) New connections can develop to interpersonal concepts so that the two forms are used in different circumstances, parallel to a conceivable development ain't → informal, isn't → formal. (4) New connections can develop from the verb stem drop to different ideations concepts, so as the create two homophones. This parallels a conceivable development for hung 'placed vertically' and hanged 'executed'. (5) The construction might remain unchanged indefinitely.

The model can represent any of these changes, but it cannot predict which will occur.

8.4.2. Routines.

At 4;3 Nina had acquired a number of verbal routines. They were usually repeated over and over again, seldom with variation. The longer ones required a fair amount of rehearsal. I analyze them as long, special tactic constructions.

Example: Firecracker boom, boom, boom. Firecracker boom, boom, boom. The teacher got the brains, the boys have the muscles, the girls have the sexy legs, and we win the game.

Such routines are worthless for conveying new information, but they can express interpersonal concepts as well as provide recreation.
8.4.3. Interpersonal roles.

To a casual observer, the most apparent change was that Nina spoke much less Spanish at 4;3 than at 4;0. How is this reflected in Nina’s linguistic knowledge?

One kind of change occurred as a result of her vocabulary growth. Most of the new vocabulary that she used was in lexical class E. There was no obvious reason for that. Her parents did not diminish their use of lexically S words. One would expect that her passive vocabulary included a great many of these words. But input from television, playmates, and from outside the home were primarily from the E lexical class. As Nina added more concepts to her knowledge, she had more things to express. Because the vocabulary to express the new concepts was predominantly from the E lexical class, the relative frequency of words from the S lexical class would be expected to diminish.

Yet another factor, probably much more important, is involved. The comparison of word frequencies between 4;0 and 4;3 (see section 7.2) shows that even words that Nina knew well were not being used as often as before in the same situation.

Roles can be distinguished on the basis of whether the two (or more) participants tend to speak alike or differently. I refer to the former as linguistically symmetric roles, and to the latter as linguistically asymmetric.

At 4;0, most of Nina's roles were symmetric. Talking to her younger sisters was asymmetric, of course, because they could barely speak. Bossy talk was, too, although frequently both
participants were bossy to each other. Generally, Nina spoke to each individual the same way that they spoke to her.

At 4;3, Nina had more asymmetric roles. Many of the conversations with her father would involve Pedro using mostly S-class words and Nina responding with synonymous E-class words. The S-class items did not disappear from her speech, but they were chosen with markedly less frequency.

To Observer, however, the use of S-class words increased slightly, though it remained less than with members of her family. Perhaps by this time, Nina was more apt to treat Observer like a member of the family.

To older playmates Priscilla and Esmeralda, E-class items were used almost exclusively. These roles are linguistically symmetric.

Also apparent was a more deliberate role-playing strategy on the part of Nina. She could play teacher, nurse, and medical clinic receptionist quite well.

These changes in how Nina talks to others are indicative of two changes within her linguistic system. First, the interpersonal roles are changing. New roles (e.g. nurse-patient) have been added, and they are more independent of the addressee. Second, her preferences in making vocabulary choices have changed. The vocabulary associated with her older playmates is increasing in preference, while the vocabulary associated with her family is decreasing in preference.
The effect of these changes is to make more subtle the differences between roles. A Nurse lexical class is not apparent from the following sentences. Nonetheless, the role being played is unmistakable.

*We're gonna check your eyes.*

*Open your mouth.*

*I'm gonna come back for you, okay?*

*We gave you the shot, okay?*

*You can sign your name right here.*

*We're gonna have to put this on your arm.*

Some vocabulary is distinctive to this role (*sign* and *we* as 1sg are words not used by Nina in other roles); but the collocations of words (e.g. *come back for you, we're gonna have to*) are particularly representative of the Nurse role. These can be considered compound lexemes.

Two aspects of the linguistic system reinforce the use of particular collocations. Conceptually, certain roles are associated with certain ideas: *check your eyes* is normally said by a nurse or doctor, whereas *check your diaper* is normally said by a mother. That is, the roles are connected not only to lexico-grammatical nections, but also to other concepts. Thus, when Nina is playing Nurse, she will generally activate ideas that she associates with a doctor's office, and hence will speak in much the same way as a nurse. Tactically, a word is associated with the constructions it participates in. In the Nurse role, the verb *check* commonly takes *eyes* as its patient.
The development of such roles as Nurse has nothing to do with bilingualism. Monolingual children develop the same roles. Cognitively, it appears that the linguistic codes Nina uses in these roles are not qualitatively different from her 'bilingual' codes.

8.5. Interpretation of the model: a variously subsystematized system.

Many small subsystems have been identified in Nina's linguistic knowledge. Two large subsystems emerge from the model of the system used in production. E or S verb morphology, E or S verb phrase structure, E or S clause structure, the use of E or S determiners and pronouns in subject and object positions--all these choices are made in concert. Only rarely does a clause contain both E and S elements of these categories. This part of the system can be seen to consist of two subsystems, E and S, both of which are capable of a wide range of expression and show little overlap. The E subsystem is more prevalent because the E verbal subsystem is more comprehensive.

Two smaller subsystems are identified. The choices of lexically E or S prepositions and E or S determiners and pronouns in the object of the preposition also work in tandem. Here, too, the E system is more prevalent because there are more prepositions that are lexically E. The choices within the prepositional phrase are separate from the use of E or S verb choices. Thus an E clause can have an S prepositional phrase in it.
These identifiable subsystems, however, are only a small part of the overall system.

Lexically, four major classes have been identified: E, S, Bossy, and Maternal. Some verbs that are syntactically E are lexically Bossy, e.g. *shut up*, which can have the subject *you* but is rarely used with parents or adults. Similarly, *ven 'come'* is syntactically S (it can have reflexive *te*), but lexically it, too, is Bossy. The Maternal lexical class, on the other hand, does not seem to have any verbs, pronouns, or determiners. Therefore, lexical class and verbal system do not work in tandem.

Adverbs (section 6.4.1.) and conjunctions (section 6.4.2.) can be categorized according to lexical class, but the lexical categorization does not coincide with their use with E or S verbs. A noun’s lexical class (section 7.2.), plural morphological construction (section 5.1.1.), diminutive morphological construction (section 5.1.3.), and cooccurrence with verbs and prepositions (section 6.1.) can all be independent. Adjectives and quantifiers (section 6.1.) do not show any differentiation according to system.

Only one general phonological system has been identified, and the only apparent alternative system is for Baby-Talk.

If one wanted to identify distinct 'English' and 'Spanish' subsystems within Nina’s overall linguistic system, one would have to resort to arbitrary divisions or one would have to draw upon evidence that is not relevant to how Nina uses and has developed her linguistic knowledge. A metaphorical view of bilingualism as an oil and vinegar salad dressing, capable of being mixed but not
integrated, does not describe Nina's organization. A better metaphor would be a stew, with chunks of different sizes, yielding individual servings with different consistencies, yet all produced in the same pot.

The model presented here has no difficulty conforming to this view. The notation for the sign can independently indicate lexical, syntactic, and morphological properties. When systems do work in concert, conditioning connections can ensure agreement. Thus the model reasonably represents the signs (except for the varying strengths of connections and activation levels). The principle of organization is the sign, and different ways of speaking (which some people might interpret as different languages) arise from using different interpersonal roles together with ideational concepts to activate the network of signs. It is not the case that the principle of organization is the language and that it determines the organization of the signs within its domain.
9. Conclusions and ideas for further research.

What has been presented so far is a description and analysis of Nina's individual linguistic system. Weinreich (1954:389) questions the usefulness of going to such lengths to understand just one person's idiolect.

'Idiolect' is the homogeneous object of description reduced to its logical extreme, and, in a sense, absurdity. If we agree with Saussure that the task of general linguistics is to describe all the linguistic systems of the world, and if description could proceed only one idiolect at a time, then the task of structural linguistics would not only be inexhaustible (which might be sad but true), but its results would be trivial and hardly worth the effort.

This study has done more than just describe yet another speaker. It has described a kind of speaker that previously had not been described in such detail. Because the study is specific to Nina's system, generalizing the findings is as yet unwarranted, but Nina's environment is not uncommon in Texas and elsewhere. Furthermore, several findings about language and language description are supported.
9.1. Findings about Nina.

This study covers only three months of Nina's development; Fantini (1985) is a more thorough study of language acquisition by a child. Fantini's son was brought up in an environment where English and Spanish were not mixed. Fantini (1985:192) reaches the conclusion:

The separateness of environments in which each language was required and the consistency of language use within each of these environments were probably significant factors which facilitated early and successful language distinction.

Nina's environment is quite different. Is there a sense in which Nina's acquisition is 'unsuccessful'?

Slobin (1985:1162) cautions that in assessing children's speech

we unnecessarily limit ourselves to an adult, normative sense of language by characterizing child speech as "in error." In addition, we would do well to bear in mind that language acquisition takes place, by and large, remarkably free of error.

Nina's speech has not been analyzed in terms of how it is unlike adult speech, but rather in terms of how it functions for Nina.
The changes to Nina's linguistic knowledge fit within the framework of language acquisition presented by Slobin (1985). One of Slobin's operating principles states:

Pay attention to sound sequences that have a readily identifiable meaning and store them in a Dictionary, along with a representation of the context in terms of available semantic and pragmatic Notions in Semantic Space. (Slobin 1985:1168.)

The findings about Nina show that interpersonal concepts are identifiable meanings that are stored. The relational network indicates more precisely than Slobin's operating principles exactly what units of information are stored and how they are related. Adding new signs to the linguistic system is a way of simulating language development that maintains the coherence of Nina's cognitive structure and avoids treating Nina as an error-prone apprentice trying to master adult speech.

Nina's linguistic system appears to be particularly well-suited for her environment. Other linguistic systems, though they may be regarded as 'successful' in other environments, would not be as appropriate for Nina.

9.2. Findings about language and language description.

This study has several ramifications concerning notions of language and techniques of language description.
1. A relational network model can account for how Nina uses her linguistic knowledge to produce her varieties of speech by specifying Nina's interpersonal roles and how they are related to other linguistic items. Relational networks also show how Nina's linguistic knowledge develops by adding connections for new items and relations, thus enabling her to expand her varieties of speech. All of Nina's linguistic information, including interpersonal and ideational concepts as well as syntactic constructions and phonological realizations, are modelled by the network. Nina is not a 'marginal' case that defies explanation.

2. Inflexible notions of 'language' impede the analysis of Nina's system. Language is not an object, and treating it as an object makes it impossible to provide a cognitive account of linguistic phenomena.

Hudson (1980:71) concludes that it is better "to avoid the notion "variety" as an analytical or theoretical concept, and to focus instead on the individual linguistic item." Hudson is right in suggesting that analysis should focus on individual linguistic items, but the individual linguistic items reveal the nature of Nina's varieties. There is no difficulty in finding varieties; the difficulty lies in associating varieties with inflexible notions of languages, dialects, registers, etc.

A variety is rightly associated with an interpersonal role, which is Gumperz's notion of code (1962). If one accepts this definition of code, then Nina's speech is not an example of code-
switching. If one persists in defining a code as an abstract system, then such a code is not cognitively valid.

With this perspective on codes, one can see that Nina's development parallels the development of Fantini's son (1985). Both children have developed codes appropriate for the social situations they encounter in their environment by age 4, and continue to refine their codes thereafter. The differences in their environments account for the differences in their codes.

3. There is no boundary between monolingualism and bilingualism. Nina is neither a 'pure' bilingual nor a 'pure' monolingual. The organization of linguistic knowledge may give the impression of being more or less bilingual, depending on the distinctiveness of the subsystems. Nina appears to be in-between the two extremes.

The effect that interpersonal roles have on the choice of linguistic codes is the same for monolinguals and bilinguals. This finding is not new.

Though the data with which I shall be dealing are drawn from a multilingual community, it is clear that the kind of linguistic behavior involved (e.g. shifting, or switching, among the various codes available) is not specific or limited to multilinguals, that is, it does not differ qualitatively from the behavior of monolinguals (shifting of style or level). (Sankoff 1972:33.)
However, this study supports the finding with cognitive evidence that is more detailed than previously available.

Furthermore, this study demonstrates that the use of relational networks enables one to describe 'bilingual' and 'monolingual' systems, and systems in-between, in the same manner.

4. A linguistic system is a system of relations. Each system consists of a large number of interconnected linguistic signs. Relational networks can be used to represent linguistic systems. The information in the system is shown in the connectivity of the network.

Each speaker has one collection of signs. The linguistic system develops as a result of the speaker adding new signs and new connections. It is the pattern of connections between signs that reveals the number and kinds of subsystems that are relevant to the speaker. The systems that emerge because of the connections to interpersonal roles enable the speaker to use appropriate speech in a range of social situations.

Relational networks are able to connect the interpersonal roles with other linguistic information. Variation of speech according to interpersonal roles is a result of the structure of linguistic knowledge.

5. Further research in related studies should use relational networks or compatible methods of description. No artificial distinctions between monolingualism and bilingualism, or between languages, dialects, registers, and styles, have been used to explore Nina's linguistic knowledge. Descriptions that cannot represent
linguistic relations in a flexible way will continue to distort the
cognitive perspective of language.

9.3. Directions for further research.
    Several aspects of the description and model of Nina's speech
can be improved. The model can be expanded and further tested
against the corpus of utterances. To expand and test it in a thorough
way would require computerizing the model, which in itself would
be an interesting project.

    Further work is necessary to understand Nina's conceptual
structure. The traditional procedure for linguistic analysis,
progressing from phonology and working upward, often leaves the
conceptual level underdescribed. However, insights into Nina's
conceptual system would enhance this study and give a more
complete view of Nina as a speaker.

    Comprehension has been ignored in this study, though it
certainly is an important part of language behavior. To some extent,
comprehension can be modeled by tracing activations in the network
from expression to content. It is assumed that Nina can understand
what she is able to produce. However, she can also understand
utterances that she cannot produce. To investigate Nina's
comprehension more thoroughly, additional data would be needed,
and different techniques for obtaining the data would be helpful.
The four year old Nina does not exist any more, so such a study
would have to be done on a comparable person.
This study has attempted to describe Nina's cognitive organization of linguistic knowledge. The presentation has been from a linguistic orientation, but it should be applicable to other fields involved in cognitive research. In particular, there should be ways to represent the systematicity of Nina's knowledge in psychological terms or in computational terms. Further research would explore the ramifications of systems like Nina's on psychological or computational models.

A particularly important application of models of cognition is to education. Presumably there are many people like Nina in our schools. During the course of the study, I encountered several teachers who expressed fear that language mixing confuses children and hinders development. To a large extent, this fear is based on mistaken beliefs. Nina's linguistic knowledge is not confused; it reflects quite appropriately her linguistic environment. Examples of her speech may be interpreted as indicating confusion by those who take abstract notions of English and Spanish to be cognitively realistic. The differences between Nina's linguistic environment and the linguistic environment at school may or may not cause problems; however, an understanding of her linguistic organization is important for properly assessing her language ability and for planning her language development. Further research in this area could be very useful.

A description of language use in Nina's community would complement this study. To what extent is Nina similar to other members of her family, other residents in her neighborhood, or other
Houstonians? What roles can be distinguished for the community, and to what extent is Nina's language behavior typical in these roles? How do social norms influence Nina? How is Nina perceived within these communities? This study has been too narrow to answer these questions, but it could be combined with additional research to better understand linguistic processes from a social perspective.

It is natural to want to regard Nina as typical of a certain kind of speaker, so that the ways she organizes her linguistic knowledge may be taken as a rough guide to how others organize their linguistic knowledge. However, this study does not in itself address what people might be the same kind of speaker as Nina. In fact, I have argued that superficial similarities between Nina's speech and that of other people who 'mix' English and Spanish is not indicative of cognitive organization. One cannot say whether or not Nina is a typical Chicano child. Further investigation is needed to determine just how typical or how unique Nina is.

One possible focus is to determine how Nina compares with other bilinguals.

The classifying terms 'compound', 'coordinate', and 'subordinate' (Weinreich 1963:9-10) may be appropriate for categorizing signs, but they are less successful when applied to entire systems. 'The linguistic system of a bilingual individual may of course contain within each stratal system, in various proportions, all three types, and probably generally does.' (Paradis 1978:173.)
Further research is necessary to characterize systems of people who live in linguistic environments similar to that of Nina.

Nina's age may be a factor in her linguistic organization. The older subjects in McClure's study showed different language behavior from the younger children (1977:97). It is possible that adult linguistic systems are qualitatively different from those of children. Adults and children differ according to metalinguistic knowledge, number of signs, rate of acquisition of new signs at various linguistic levels, and complexity of social interactions. On the other hand, children use language for the same communicative goals as do adults. Comparing the cognitive organization of children and adults promises to be interesting.

Research on bilinguals may be motivated by two contrasting assumptions. One may believe that bilinguals possess special skills that monolinguals do not, and that bilingualism is a special case of language use. This study supports the belief that there is no qualitative difference between monolingualism and bilingualism, and that findings about one are valid for the other. Further research can apply the techniques of this study to other situations where variation is of interest, regardless of whether the situations are traditionally viewed as bilingual or monolingual.

The research with which I have related my study represents a substantial beginning to the investigation of the broad spectrum of language behavior. Much has been learned in a relatively short time. This study adds to the diversity of language behavior investigated, and proposes modifications in linguistic techniques for description
and modeling. It is hoped that future research will continue to refine techniques that expand our understanding of how Language works.
Appendix. Sample data of Nina's speech.

This appendix gives excerpts from the transcriptions of Nina's speech. The excerpts were chosen to be representative of how Nina speaks in different interpersonal roles.

Dialogues are rarely demarcated clearly. Often different topics are intertwined in the discussion. Hence in many cases it is difficult to provide a coherent reproduction of the speech events. Generally, the more coherent discussions have been chosen.

For the most part, my original transcriptions are reproduced. Exceptions include: some phonetic detail that is not fully functional is not represented here; sounds that were only partially audible are reproduced without any special notation; some intonations are not reproduced. Incomplete utterances are sometimes indicated by a following hyphen. The transcriptions of other people's speech usually are made according to Nina's phonemic inventory.

The notation X-Y indicates that person X is speaking to person Y. Thus N-P indicates Nina talking to Pedro. Utterances spoken by people other than Nina are enclosed in brackets. Within brackets, if no speaker is indicated, the speaker is the person with whom Nina is conversing. For example,

N-P    [nina] hwát

is short for

Pedro (to Nina):  nina

Nina (to Pedro):  hwát.
Comments are enclosed in parentheses.

The following abbreviations are used to designate people.

L Laura, mother
P Pedro, father
J Jessica, sister
El Elizabeth, baby sister
Er Erica, cousin, younger playmate
K Krystal, cousin, younger playmate
Ch Chuy, cousin, younger playmate
Pri Priscilla, neighbor, older playmate
M Esmeralda (Meralda), neighbor, older playmate
S1f Nina talking to herself
O Observer

Section 3.5 gives further information about these people.

Other addressees in the excerpts are adult visitors.

1. First observation period.

Monday, 4/25

9:00 N-El u hr šrt iz wet
N-Er luv hwæča bet
giv it tu mi
N-? go tu bæθrum

9:15 N-S1f aw owaw kaka (by El's cradle)

9:30 N-P ši wants a kuw kæp ay sed no
si kæn du papi estoy aki kedando a ...

hwat

N-Er yu dont get nan

N-P papi yu no hwat ... yu no hwat si did

si tuk af iri soni (?)

ya hir əət dəədi

[wri gænə go tu- a- bamos a ir a ...] a ke1 a crɛ3

N-Er erika luki

N-P am gænə go tel mami

N-? ay tel may mami (told)

N-Er ay sed yes yu sed yes erika

N-? wan for mi

N-L erika sed- si sed əət yu wri gænə bay kuw kaps for erika ãen ãen ãen a

okey mama

9:45 N-P giv mi ãə bigo wan

pero yo kyɛrə

opin it ay want sam

ay du it

hu did dəət

no tɛŋgo pokito

yo kyɛrə fud ło ke kyɛrə ... mækærəni an čiz

N-L mamá čuwiz awtsayd

N-O ay kæn pap it

N-Ch yu betɛ stapiť čuwii
N-L  má á čuwi wants ta go eytsayd
  [nina hwat r yu duwiy] dríŋkíŋ kwík kon- lečé
  dríŋkíŋ kwík
  dríŋkíŋ miki kon- kon- kon ečé
N-Ch ka-man a sed ka-man get in

10:00  N-O  nat gowiy (about tape recorder)
  its nat gowiy
N-L  lwk hwat dædi mey? má má
N-S1f naw its mayn
N-J  jesika am gana pap wən (balloon)
  ay papt it
N-O  lwk ay papt it ey ken pap it wíə may- may tiə
  it hət
N-P  ay basted wən dædi ay basted a balun lwk
  [hway] ay wantid tu
  da yu no hew te bo wən no³ (blow)
  [yu³] neʔə
N-L ŋkey má má (obeying)
N-S1f aw brən may fəŋə
N-Ch bentə paraké
N-L  má mi did yu finiš kəæk³³
  hu did əət
  ay mámi le kito(?) a čuwi (quemó)
N-Ch hat its hat čuwi hat
10:15 N-L mami wan brok
   hwat
   wan brok luk

N-Slf ay finišt ... finito finitū

N-Ch aym gana bayt yu
  lēgo may her lēgo may her ĕdana lēgo yor her
  lēgo may her lēgo may her frst
  pul may her pul may her ay se?
  yu pipi yu pid
  kočino madrano

N-L hi hi get his himself amay her
  a se- hi ge his himself in may noz an ẽen ay sey- u- kočino
  madrano

10:30 N-? sambadi smelz leyk a ĕerz wan- ĕlkahal
  sambadi smelz leyk ĕlkahal (rubbing alcohol)
  bući ĕlkahal iz bući

N-P o dēdi yu šuda brijk sem a bēndeydz
  ay want ẽat wan
  ke es esto

N-L do? it it ?a (don't eat it all)
   čuwinjesika- un ēe kar

N-P no sēma treysikl (se llama)
   pweṣeyama baiy

N-O may mami

N-P el dattṣ (doctor)
11:45 N-O  aym gana teyk a bæð tamero ænd ðæn æy...
     in ðæ bættæb
     aym gana put a let a babiz in ðæ in ðæ bættæb in ðæ
     bættæb
     toyz [leyk hwat] key leyk toyz  bættoyuz

N-Ch  čuwi  kemir boy

N-L  itsu an  its gud
     ðæ sup-  its gud³ [ðæ sup³] ye

N-P  ye papá-  si papá-  its amos its amos finiš

N-Er  am nat gowig æt skul [no mi]  ñ?ñ

12:00 N-L  ma dæd sed ðæt babi wæz gana brig a dekkir in ðæ hæws
     in hiz hæws  (doctor)

N-Er  [hwat iz it]  its æ bot
     (drawing)

     its nat kændi  its æ bot
     yu ðiŋk its æ kændi
     yu ðiŋk ðis æ kændi¹ its nat kændi¹ tsæ bot¹
     yu no hwat iz it [æ bot] nat kændi¹ bot¹
     yu sed stivun  hwerz stiven
     awtsayd³  no hi eynt yu layr² [luk stivenz kemig] hiz
     net gowig awtsayd yu layr  yu layr
     yr, layr erika

12:15 N-P  [ke estasyendo nine³] stamppig³
     ay want tu go pley awtsayd
     don tač mi  no me točas ya (P examines N's hurt arm)
     no me točas  ya no me točas

N-L  mami 1uk æy kæn muv may arm
12:45  N-O  yu skrib agi  
  \(skrib = 'write'; \text{ugly}\)  
  N-L  mami³  teyk  dés  tu  græma³  
  N-O  ey  pit  in  eymiz  haws¹  may  græmaz  ñer  an  si  gats...  
  N-P  es  pokito  wet  
  N-ER  yr  nat  gowig  æt  skul-  key-  yr  ña  beybi¹  
  \[\text{nina ben} \]  did  ay  sey  yes  or  hwat  ay  didñ̃  sey  yes

Tuesday, 4/26

9:00  N-P  ñey  sed  ñey  a  ñey  kænt  du  it  
  si  dwi¿  ñt  bay  h¿self  
  weyt  ay  didñ̃  get  it  papi  
  ñy  tr¿n  hr  arownd  

9:45  N-P  ke  ña  ist¿  bæskit  
  N-O  mami  last  it  ñi  ñro  it  in  ña  garbaè  
  yu  kæn  li¿k  wiø  ña  gæsiz  
  \(\text{glasses}\)  
  ay  ñæs  teyk  yr  gæsiz  \(\text{just}\)  
  N-P  [hwerz  yor  gæsaz  nina]  yu  last  ñam  
  N-O  o  ay  put  may  gæsiz  in  æ-  in  ñe-  in  ña  træs  
  ay  left  ñem  ñer  æn  ñen  ñey  w¿  nat  ñer  no  mor  
  may  dædzì  gana  bay  mi  sam  nu  wanz  

10:00  N-L  mami  dædi  spæŋk  mi  \(\text{spanked}\)  
  N-P  ñæts  ña  wan  
  ña  lìl[ey]  estî  esto  
  \[\text{able mami kon una muher ña lìl plu?- hwats hr ñeym}\]
N-O  ye tag iz red
pîng    it pîng ænd red
hwet iz ðæet yr bon³  æ ðîŋk bonz

10:15   N-O  ay ðero ìt ìn ðæ bæg giv ìt ìt tu mi
N-P  ðæets may shu  ñi fåwnd ìt³
[donde estea el tuy o ke te kompró mami] mami ðero ìt ìn
dçe garbej [no ... mentiras] ñi did
[kæ es eso] kæ¹  (P draws a picture)
donde estea el bas¹
[kæ mas ay dondesta los a boyz] boyz
son los boyz³ son ðri boyz³ or grîz¹
dame- gumi tu ña?- grîz¹ tu grîz¹
[luk ya] ya siste littl grîz pa mi³ [aora tu bas uno hir]
dondesta ñas littl grîz¹ kwaleson ña? ña littl grîz
ðæets æ- hwet iz ðæet [ðri littl grîz]

10:30  (P says N will have to go to the doctor if she
eats the ink)
bat for hwet ñiz gana teyk mi¹ for ñis or hwet¹
[for ñir stamak] hway
[wæn littl grî lεcεaron un fîngrî] kon el æ- kon el nøyf³
a ðæet littl beybi- ñi waz bîgo¹ ðæet littl beybi ...
ñi waz littl dædi  ñi waz littl
aen yu no hwet  ñey geyv ña leydi ña æ- for ña layt³ ña
aëîg  wæn waz getîŋ hard¹ ...
estaba asustando³ ñi waz kreyŋ dædi [ðæ littl grî] no
ñæ littl beybi [lts a grî or boy] a grî  ñi waz littl
ma? ay iz brokin may ay iz brokin deedi (repeat) ay brok it

N-O ay brok may ayz

N-P no pwedan mi algo³ papi¹

N-O hwun dey wë gene put may keët ef mi- ...

N-P [jesike te tiro tus suz] donde [in ëe trëes iuk]
yg layg deedi

N-J yu betç guv mi may suz

10:45 N-O its a maykrofon or hwet [its a maykrofon]
tu tek³ or hwet¹
hway it dez ëaat in ëis¹

N-P if yu? - if tu sweltes³ its nat gene wrk no mor
dû dû dû wrk layk ëaat³

N-O its nat goej its goej a 1it1 bit be its nat goej a lat
ëet ëe key mart- wi went ëet ëe key mart- ëen ëen ay
waz ëa

N-J [baba] ke² kë² kyen le yama baba no no no
a ëa kesa³

N-P [kyen puso esa pićɾ ayi nina] yo mi mami
[hwai] dame kuki yo kyero ë kwëk koon leće

11:00 N-O hway it dont wrks [hwet] it dont go layk ëaat
(tape recorder)

N-P ši ter ëaat buk
luk¹ kamir³ waç¹ ëls wan¹

N-J ë keri yu
tome tome
N-P ya
    am gana tel may mami
    bat eye trompo eso' ira (rompo, mire)
    trompo eso papé papi trompo eso mire

N-O pit [hwat] yu kiny haev it aen yu bringit beek tumaro (a photo)
    yu kiny teyk it tumaro yu bring it ...
    [hwats yor deed duen] duen sameth yel
    hiz nat duen naeth tu yu
    hway yu kil may mami [ay diet yu dij] yu kil may mami (pretending)
    yu kil may mami wiθ a gen [m?m] yes yu did
    [yu kil hr wiθ yor maw θ] yu kil hr wiθ yθ mawθ aen yθ gän

N-P hway [καζ yu diθt lisin] ay did (P scolding N)
    yu gana get in may rum- aen yθ gana bi krayg

11:15 ay want tu go awtsayd
    [yu dont haev yθ šuz no te as peynado] nat iθ jesiθa (J hasn't either)

N-J yu gana teyk a bæθ³

N-P ši sed no
    [bihevy] okey
    [te ba a bañer kon kold watr] no papi yo me banyo key hwat am nat duen naeth tu yu
    ay layk it layk ðæt (N let the air out of a balloon)
    aym gana go bo it awtsayd (blow)
N-O yu no haw tu du ña belyn (blow it up)

11:30 N-L ay wa ay waz guñg hr sam a sam a mayn
ñey teyst gud
[nina] ke [get in hir] stoy ...ando
[me oiste³] pero si no se pweda abir (abrir)
[hwat iz it] sop ; (N has soap on her face)
N-Sf ay da was it again (N goes to wash her face again)
N-L mami ya³ ya³ [ya] (Is it off?)
[liv r alon nina] ñiz trayñ tu go awtsayed (J)
N-J yr' goñg tu go awtsayed wíe may ñuz an

Wednesday, 4/27

9:15 N-P luk hwat ñey did tu ar windo dædi
(repairman works on window)
ña mænz flksyn it hi teyk it af hi teyk ña windo af
[hway] ay dono
N-L [trn it arawnd nina] ñy trn it
N-O yu want mi tu kat yr' bimb³ [ye]
N-P dædi hi wants tu kat it [mhm] yes
N-O yu want mi tu kat it³ [mhm]
yu want tu kat ñis øn ñis³ [mhm] hway¹
yu want mi tu go ñ- get ña sizr³ [mhm]
okey¹ ay kat it él af yu [ay dont want it al af] hway
yu druñk³ yu druñk sam bir³ (beard)

9:30 N-P it kat may fit [no] it did kat may fit
it did dædi it did luk
[de kyen es esta tuy o de erika] no mia
šer goviŋ dədi heri (hurry)
N-S1f skubi du hwer yu ar
N-P ya me kaygo papi
ya me kayi
[ponte alkool] no ay
[ayi ay] dameła dame alkahoł gimi ña alkahoł
don get it no its for mi
ke ya³
a a a [hwat] it hıts (repeat)
yə byenëį³ ya byenëŋ pape³
N-O yu kænt hit mi kaz yu kænt
N-J get in ña haws ya dami
9:45 N-L [nine] hwat
hi sed hi wanted tu kat hiz bir máma (O's beard)
hi sed it mama
N-O yu betʃ stop layŋ
N-L aym getiŋ sam watʃ
N-P se eča watʃ ... (P says N can't)
porke
[eso esta mugroso nina tyene jrmz] ke
[liwego³] aym gane wet it awtsayd
[hway] kæz ay want tu
ay didŋ du naŋiŋ [ar yu šr̂] naʔa (repeat)
ay jas θro ña watʃ awt [hway] kæz ay wanted tu
N-phone hu iz it græma (answering phone)
mamá       (N hangs up after L does not respond)
        mami ye nat en ña telefon ñen græme hængæp
        si hængæp græme hængæp
        [hway dïdŋ yu kal mi] ay dïd kal yu bat yu dïdŋ kam æt
        ña rum
        [ay dïdŋ hir yu] ay sey mæma græmæz an ña telefon
        ay dïdŋ sey ñoët³
10:15 N-O
tæmænjeriz nat en³ (repeat)
        [yu layk ñæmænjeri³] ay layk fandrkæts- tæmænjeri-
        m layk ñoët ña pahæro layk ñoët ka ke ka ke
        [L-N: wudi wudpekr] wudi ?wad wudi wadpekr layk
        ñoët³
N-P
    no kyësto ñi pan kalyentc (repeat)
    mami dont giv mi ña bred dædi
N-EI
    ñoëts mey her ñoëts her miha
N-P
    [eëlkahol ninu ponlo patkas] ay dët gata
N-O
    mey dædi gats wan ñen mey mæmi tu     (a watch)
    mey mæmi gats wan ñen mey dædi eynt
N-P
    [dïnt pley kon ñi relo] ñts mey mæmez
N-L
    rayt mæme³
N-EI
    ke tyæses (repeat)                (imitating P)
N-L
    mæmæ go æhed ñen get ñps æpsærz ...
N-O
    tsan bækækwædz
    ñts mey pen
10:30 N-L
    okey maŋær               (angrily obeying)
    ñi wants hri batł
10:45  emot eet ñg reydiyo tudey [Øe reydiyo]
eet ñg reydiyo dawntawn [porke] tsogo
[teyk a beø øen faynd yø śuz yø kloøz øn todo] øen ñg
dres³ [sorts] øey don let yu wer sorts øn un...
lts kamy³ sænte klaz³
[no sænte klaz byene øn ø kurismas] hway
[el byene øn disembr] el byene tumaro³ kwando byene...
øri yir³
[æet³ eyt eyt manøs] eyt- mëyt manøs³
[eyt] eyt manøs³ hway [porke si]
lts nat- liti gr³ hit kaløp ñø liti gr³³
[meø³z dey i lwego baabenir ø halowin] halowin³ ke es
eso [...wičiz] huz ñø hw- wičiz¹
[awtsayd ponyendo trirkirtit] hwats ñæt
[yu don rimmembr] o ye o ye pæt³ waz pæt³ o ye
N-O pit yu no hwet³ allzabe...
N-P komsyama
N-O pæt  ñi hæd ø (laughs)  ñi put søm meykæp øen ñen ñi
waz layk ø kawn
(clovn)
[ruli] yes
N-P rayt dædi³ ñi waz layk ø kawn
N-O [hwet wø yu layk] aø waz nat ø kawn kændiz čakits
wø- wi wø getiø søm kændiz- øend øn ñø grøøs- øer
waz nan¹ øer waz jas peyp³
N-P rayt dædi  yu ðiŋk li waz kændi øen li waz peyp³
mami dıñ Øro nan awtsayd for mi tu get søm
N-L pæt waz en- pæt waz en ðæ wætæ rayt mama rayt mami

pæt ši waz a kawn mama³
mami rayt pæt pæt ši waz a kawn rayt³ [ye]
æn wi wʁ ... ši wæz ægi layk ðæt (ugly)

N-O ši wæz ægi

pæt teyk ʁt æf ši teyk ʁt æf hɔ kawn šuz (took)

N-P kyæn¹ kwælæs¹ ðoz sirialz³

N-L [L-P: ši don layk ðoz sirialz... ši don it am] æʔæ

N-P ay it ðoz srkąς wanz ay it am ál

N-L [ðer nat srkąς wanz ðer ... laki čarmz] laki šarmz

N-P ay it laki šarmz laki čarmz

N-L [dønt put yør fit æn mey pænts mæn] hway mami

æym nat dʁt̩i [no yr klin] yès

æym reði teyk æ bæθ (I already took a bath)

pæt wæz æ kawn

ðør nat gana ðør nat gana du ðæt tu mi

N-P [hwæt] peynt maysɛlf

ðæ ɐɪtʃ boy- hi keym æn hi sey- gimi al æ ðæ ...
gimi al ðæ kændiz [si³] yɛ

yr æð ɐɪtʃ boy keym gimi al ðæ kændiz gimi æð kændiz

pæt pæt no bínó³ æn renẽ³ se pintó³
[fɾɛdɪ æyeɾ se pɛɾʤo] donde [æwtsæyd] tudey³
[yɛstɾdey]

N-L [hwɛɾz may æðr šu nine] ay don gat ʁt
11:00 N-J  go tu bærrum  
            go øt ðø bærrum ;

11:30 N-P  may mamiz kæmïj  
            ay lakid ðø dor  hri æp

11:45 N-O  hwerz pen³ [hwæt kæl]  a bu  
            ðø ægr wan³  it gets a tap¹  z ðø tap  øis wan¹  
            luv øt ðø stikrз  
            ðø stikrз  ðey don rayt øn ðø stikrз  
            yu kænt teyk af ðø beybi stikrз  
            kæn yu teyk af ðø beybi stikrз³  
            tæmænferiz æn³
šér nat an (repeat)
ay no šey wîr nat gana teyk af
(N having difficulty pulling the stickers off)

N-J step it jesika
N-O ši teyk al Ďa sticker af
N-P yu rayt wîr Ďis hænd
mami esse las japs (drops, medicine for J)
N-J ši already gave you Ďaet wan
N-P ši already gave hr Ďaet wan
[esos son di em draps] o draps
[ke tanto se le da nine] a wan tu or wan
N-O hwây Ďis Ďiny Ďey kënt teyk af (stickers)
ey kën teyk af Ďa harts
šey don stik (repeat)
šey don stik evritaym hwën ay put Ďem an
Ďaets hwät ay nid tu bay Ďuk Ďuk [hwät] Ďis
ay hëftu bay Ďis Ďuk
Ďaet hwät ay hëfta bay
evritaym hwën alizabeć ... ši gets a rëez³ši gets a
rëez ga Ďi skrim (imitates El’s scream)
ši skrimz amin skrim œen skrim œen skrim
kœn yu hold Ďis a mënt

12:00 N-Sîf sambadi gets méy mamaz mani- ayl teyk it away
fram Ďem
N-P [hwät yu duŋ nina] duŋ sameŋ
N-O  aym gana bay mi the littl beybiz
oyal beybiz oyal littl beybiz
(baby oil)
pawdr¹ net pawdr² its net pawdr¹ bat its a littl bit
pawdr¹
œn ñen hwet ñey last it aym gana bay ...
if ay bay tu³ ñer gana speenk mi
o ye mi³ ey went aet ña laybreri tu go faynd sam
kœndiz
[sam kœndiz aet ña laybreri³] yu no hwet aet aet ña
laybreri
aet ña laybreri yu no hwet ay sa³ ... kœndi œn ay
did¹ get ñaf

N-P  [haw meni kœndiz ...] ay did¹ get layk ñet
erika did¹ get nan kristal did¹ get nan
rayt³ mamiz sapoz tu bi aet ña laybreri
mamiz sapoz tu go aet ña laybreri ...

12:15  N-friends outside: hay hay hay
N-P  [kyn en œra] ñet littl gr'l ke bibë aya
N-El  helö  haw yu ar aki layk ñet³
uyuyu kositos

12:45  N-P  [bay nine] no dœdi  (P leaving)
ye betr nat go enihwer
ay kan go³
am gana bay a kok
its a mašin pero yu yu du it in in yu a pët it œn ñen-
salgæs
N-EI  hwéču want (repeat)
yu bal hédid

1:00  N-P  lets go alredi
N-EI  go teyk yə' batl
    okey š š š
    mire ma beybi
    ma beybi grï
N-L  komo se yama la lltï smal beybi mama
N-P  lets go  ay want tu drink sam milk first

1:15  dædi elizabet puld may her
N-EI  betç stap pulq her 1izabït (repeat)

Thursday, 4/28
8:00  N-P  dehame ða ki æn ðen ðey opin with ...
8:30  N-L  mami yor bidig pokito (bleeding)
mama  ëjes? elizabet tek af hr. saki
    ñerz no- no  ke los moni- ke los monitos biben en ël
    su...
orro  ða ðe lltï monita ke... laki cërmz  son laki
    cërmz³
    okey  giv mi a laki çarm
    [enìëiy ëls mëdamwæzel] yes  ay want a lakiśçarm
    mami
    ay layk ðoz çu (too)
bænænæz  (Apple Jacks)
N-P  [warde esa pa jesika] ke
[kke es eso skubidu] si ða aðr wæn fænʃ
ɣr nat wæçiŋ it
N-E1  heyt grʃ
N-S1f no  nine mari  no
N-E1  naʔa  no don du ðæt
N-P  ke  se yeman wrmz  son kændis
N-O  hwerz reʔeko  hwer ʃiz æt

8:45  N-E1  lizabet kâmír  lizabet  lizabif  wikos (repeat)
N-P  [dondæ wardæste los kændiz de jesika] kwalæs
ay geyvam tu yu [hwæn] yestɾdey
hwerz ða lɪt], buk  ðæ kælændr
[ɛstæ en ɬa rum] hwɪc wæn [ðæ kælændr] hwɪc wæn iz
ay no ðæt hwɪc rum iz maʃ kælændr in [ɪn jɔr mæmz
rum]
dæmæla [æt kænt] si  si pwedes
behalæ  behalæ  its nat mayn
N-E1  ɣa betʃ stæpit
N-P  ʃætap
ay don łæv yu no mor [hwey] kæz ay don łæv yu

9:00  tu  damæ  lasukar  damæ  lasukar
[kwæl kyɛɾes tu] a ðæ æðɾ  ɛsto
damæ una kuʃarə
damæ suʃar  suʃar
tʃenʃen roɫʃ [no] si tʃenʃen
(in the sugar)
9:15  komo se yama eso [se yama la jini]  
no eso no  el es toyz  (Toys R Us)  
hweč ré gana bay mi aet de stor  
hwat iz it  kafi  te1 mi its hat or hwat  
okay aym gana bi layk ñañt  
(holds up five fingers—five years old)  
...z gana bi layk ñañt  erúka [erúka yo los tyene] ke  
[los tayv] ke [tu tyenes for] yo təŋgo asina  yes ay du  
kwando  (cuánto)  

N-O  yu gat kændi1  yu gat kændi3  
N-P  aki esta kændi  opin it  ay no hwat iz it  

9:30  N-K  kəmír krisšál  
N-L  ñís dres si gat ñ- its an bëkward  
[nina]  okay  
kænd kristál it sírial mama  

9:45  N-P  komo se yama la nektis  (necklace)  
teyk it ap an put it ap  
put it in  
N-J  përo no lo rumperës  
N-P  [nektis yu si] nek las  

10:00  N-L  mami lokt jësikà  ñis gana spañk kristál  
N-J  bëfr nat spañkññ  
koći marana  
N-P  jësikaz may lítli fiš [si³] si  
N-K  ñoro it ñ de gerba... (laughs)  
naw yu get it  tú  get it  get it  ñoro it tu mi
N-P    dædi jæsikæ don let mi pey wələ ələ lələ monito (play)

10:15  N-J    daməla

N-P    ʃi əŋks ʃis həʐ bæt ʃis net [ʃi noz kə əs tuya] ʃi don

10:30  N-K    mvə krəstəl (repeat)
          hey mvə mvə mvə mvə

10:45  N-P    dəhəla

          (the radio)
          liv lt əlon

          N-P    liv lt əlon stəpit hwət
          hwəy yu tɛl mi tu bahalo (the volume)
          [əym gəna trən lt af] yu kənt tu no pədəs
          [ər yu ʃr] liv lt əə reydiyo əlon
          trən əət dæm tivi af [yu trən lt af] yu yu trənd lt an
          liv may reydiyo əlon

          N-K    yu bɛtʃ ʃətəp krəstəl

11:15  N-J    aym gəna ɡo tɛl məmə

N-P    əət jæsikæz ʃrət lt fitə mi
          si spərətə
          [kə ɓas ə əsər nina] du əis

N-O    skrib an əə peyprə
          (write)
          ay wəna pen

N-P    [donə dəhəste] yo no sə

N-O    ay want əə reə wən

N-K    hwər yu əŋks yr əə goyŋ æt

11:30  N-J    kitos

          (quita los)

N-P    ay want əə lələ drəy əŋz
11:45  N-K  hway yu teyk ëoz litl sapetitoz layk ëøet
        N-P  [ke kyëres  awa ...] ëhm
              de kwal es esë³  [kwal] esë  [es a kóld watç] okey
tame
        N-K  aym gana tel may mami kristal
              am gana go tel ma mami
        N-L  luk hwat kristal did tu ëa kælændʒ mæma  kristal did
              it
        N-K  ay tel tiya
               (K's mother)
yu gat jus apsterz rayt³
12:00  N-J  donde te pegastess
        N-P  se kayo komo ... æn ñi wez krayøj (imitates scream)
nosotros ëçan bënañez [si³] si
        N-K  ben  dame tu mana
              ben  ben  ay gat yu
        N-P  [de kyøn es] de eya
              ñi don gat no ñaentiz an
               (Krystal)
        N-L  [L-K: hweørz yr kælænæs] ñi gats ñam an¹
12:15  N-K  put yr  ñuz an
        N-P  ñi duz
              ñi gats hæz an
don mûv yr  ñarm  liv ut layk ëøet

Tuesday, 5/3
11:45  N-P  [ba æser en la blëndʒ] no se æse eso en el blëndʒ
        [si  lo pones en el blëndʒ  lo pones lo pones oyl i ke}
mas]
...θoro θem avey [esa lo nesesitaba yu nidi] yu θoro it avey

N-Er go awtsayd
N-P komo se esa esa keyk yu put it in hir\(^3\) or hwat\(^1\)
yu no haw tu du it daed\(^3\)
hwey [en esa se pegae] ...in hir\(^3\) (cake pan)
no se pegae aki\(^3\)
[todabia no]

12:00
mas\(^3\) le eco mas\(^3\) [todo] (cake mix)

N-Er erika yr' drapig it stap it
N-P am gana meyk it [todabia no nesesitan los webos los
  egz nina weyt]
o ða milk æn ða webo\(^3\)

N-Er go teïr tu ta stap duig ðæt (Krystal)
yu betz spængkr erika
erika laq ðæ dor pe ke no se metan
N-P temi put ðæ egz in it
  temi put ðis in hir
N-Er erika dame la milki
N-P no ay milk\(^3\) [muv esperate key\(^3\) weyt\(^1\) todabia no
  nina]
  [no mas leça una kep] damela
N-Er kem ovz hir an ðæ æfr sayd
  yæ betz nat fayt
  its mayn its nat ... its nat yr' keyk yu no it
na?e am yuziŋ it¹ rayt³
tel mami ʾeet ay nii it for ʾa keyk (eggs)
erika lak ʾa dor [ay alredi lak ʾa dor] did si opin it³
N-P yu nii sam mor webo in ḍis [esperate]
[no nesesita mas oyl no nesessita nina] esperate un
pokito mas [no mas yebe una tispun] un pokito
mas [no yebe mas nesesita los egz]
N-Er yu min yu don gat no egz for ʾa for ʾa keyk³
N-Annie ʾæni
N-P am gana go ček en ʾæniz apermint uf si gats webos
N-Amy a a wantid sam egz... [ay don gat no egz...]
N-Er no erika a meyk ʾa keyk
 yu meyk ʾa keyk du it
miks it kon el fiiŋp
N-P dædi new put it in ʾeet ṣiŋ [hm³] (repeat)
 [...]esta susia] okey waš it
[pero no esta redi] esto se leča kon æwa [mïk]
 am gana tel may mam ʾeet bay sam egz new fr ḍis
keyk
N-Er [Er-P: pedro yu gat egz³] wi don gat no egz erika
N-Fly yu betr get in mayn- yu betr nat get in may dæm keyk
N-Slf ay betr nat drop it (P finally got eggs)
hirz wæn hirz wæn

12:15 N-Er ya erika³ lemi du it
 erika wača čiŋgeo esa pata du- put ñis in ʾer
N-P al rayt ay did it dædi
N-Er əæts nat a milk  ıts a keyk
N-P no bas a dekar əste keyk aki³
gumi əæt
 ıts nat ðru dædi³  amin ıts nat dan³  nof³
N-Er ... wan mor [hweṭ] wan mor webo
N-P [no mor] hway
N-Er yu pept it³  (cracked the egg)
  wan mor  go
N-P hweçz may keyk [ɔə avan]

Thursday, 5/5
9:00  N-Er okey go teyk əæt tu yr' mam
     ərika  əste monito-
     hweçz əə llt] tap ərika  damc læ
     hweçz əə teyp
     haw yu put ðis ðin bæk³ okey ay gat it
     hu geyv yu əə mani [he] hu geyv yu  ɬuwi³
     asiə no se əcə  ərika
     asi əc- əcə la monita
     ərika go get teyp
     go get əə teyp bay yr'self
     gumi əə batʃ
N-J dædi gat it  yu bestr nat breyk it
N-Er yu gat bad an yr' noz³  (blood)
N-P ʃiz layŋ
N-Er ay don si eniēg
ay don si naēg yu lay

9:15 ērikē ben
N-P peētsiz karz hir peētsiz karz hir dēdi
N-Er lemi go get may suē kamir
ērikē ben

9:30 hir it iz hirz ūa līlī batī
N-L yu no hwat³ papi tuk tu ē ooz medisines
layk ẽv't wan ē ūa watī wan ē ūa a Dwight wanz
N-J dame
N-Er komo se yama
N-Sif hirz ūa monito

9:45 N-Er kaman ērikē
N-J kaman jēsikē yu don get no suē an
N-Er ērikē bente

10:00 no porke no pwēdo
N-P dēdi ay don no hway ēey put may- may šats an may tīē

10:15 N-Er stapit
N-P mesta dolyendo porke ēr duēg mi layk ẽeēt
[yē gana go tu bed] no
N-Er ērikē hwer may çaŋkē³
lemi si if ēey futču lemi si if ēey fīču
o ye ēey fīču
N-P ēey fītī dēdi
N-Er yu gats an ūa raŋ fut³
ērikē yu want tu hāē vōz³ [hwat] vōz çaŋkas³ [ye]
yu betrnat givam tu nobediz
aym gana bay wan for yr fend kristal (freind)
batr yu betr nat teyk am awtseyd
yu no hway kaz am gana hwip yr bat
if yu last ëam
ŋ ay don want yu- okey okey ay don want tu ëri okey
[ okey mem]
mami left
hey gimi ëa dältë (dollar)
éy drink ëa hugo
gimi ët
θæŋk yu

daməla dame la čangkas first
N-P may mam sed tu go œn get al ëa kaps rayt 3 ëet šiz
gana get mæd
N-Er šatap ərıkə
[œy get moko] koçina marana
čingaða mædəc
10:30 yu tupid œs (stupid)
ərıkə don skræc mi no mor [hwat ke æber]
betr nat skræc mi no mor
N-P ši did it first iukæt hr dædi
N-Er dame la čangka ay told yu .. teyk am
œn yu betr nat last ëam ër am nat am nečr mem okey 3
am nat givin' yu dts dæm čaklat no mor
[a k... it yr' ku kæp] hway stupid æs
N-P lukt dædi dædi ši eyt may kul kæp
N-Er am takin' si damela
am ďe mama  (playing mother)
kyen es damelo  (Er playing with phone)
nestaym ... am gænæ spæŋk yr' bat [okey mem] damelo
am ďe mama erika yr' ďe lîtli grįl æn am ďe mama
no me pegas
esta peçando damela esta peçando
get yr' čąŋkas æn go ët yr' haws
am gænæ go tel jëri yes ay æm
dame una čąŋka so ay ken wak an ďe kičın erika lemi
si damela
N-Jerry jëri [hwat] erika sey a bæd wrd
11:00 N-Er no te boy a kortar nat kat yr'self
(N cutting fingernails)
am gænæ kætæm 1uk ... løyk ďis erika
am nat gænæ kætæm am nat gænæ kætæm af (repeat)
N-P am nat gænæ kætæm løyk ðæt
N-Er okey dame la otrã
yu bëtr' nat kray am gænæ kætæm
N-P am gænæ kætæm pokito
N-Er spekate ya ya
ěærz only ďa big ūya yá
N-P ši nids tu kæts hr' feys
Monday, 5/9

9:15  N-J  stap puliŋ may her (repeat, very fast)
       oraṇey  oraṇiy  oraṇe
       nom peqeś  don pul ma her
N-L  daedi ūči  šeet ma ni iz hiz
N-P  its ma memez

9:30  N-J  ay hit yu bēk  šatap
       ay hícu bēk  wiē  ša stul  aym gana hícu
N-P  ay hícu¹ bēk¹  uf yu hit mi bēk
       lemi get sam sirial frst
       tupiḍ  (challenging)
       [hwat]  tupiḍ  (softer)
N-J  don muvam  (J playing with food)
       putam agen  don muv it  muv it  don muv it

9:45  N-P  [nina ... aorita] no stabasyendo nade
N-J  ay told yu
       go ūt  ša bēerum
       yu diš kaka³  kamir  ben  ben
       [kaka]  no kaka³
N-P  ši diš  did no kaka (repeat)
       ši wants tu wiwi³  leyk šis³  luk

10:00  liv mi aion  [no te banyes entonseś]
       o mēn  yo no
       ay don leyk kold watr [its net kold  its worm]  liv mi
elon its kold stapit
ay don layk kold watr
papi don put mi sop papa
mëðåfakç
N-J luk jesika³ kloz yr ay layk ñaat
ay don layk tu go päti wëti¹
10:15 N-P eya kyere čiken papa
[øʔø no] hwæy [bikæz nina] porke [se la kome]
onde aki³ (dánde)
øø kæps telr ñaat ñi kænt it no gæm³
10:30 N-J ay stupïd ëes
N-O getr æfr mi piz (off of, please)
N-L jesika meyk pits ol døtì (Pete aíl)
N-J jesika mami te aba (habla)
okey am gæna tel
si sed no si śi sed go get śiz gæna get yu go
no³ okey am gæna tel
N-L śi sed no
øør śi kæmz mama
øør śi kæmz øør śi iz ma øør śi iz
N-El aylav yu ay lav yu a lat
haw døtì yu get (imitating L)
N-J kaman jesika...
gimi yr hændz so yu kænt fæl
dame tus mamas
N-P [el ñeybi ñe kayo] käwæ
N-J  dame tus manas
tomalá  dame tu mana
lemi si jési  kola (repeat)

(pointing at hole in J's underwear)

N-P  mira kola

Saturday, 5/21

12:30  N-O  ay went tu go get may šets frst  Öri šets

N-S  yo me kadé uno aki [... kc] una šat aki i aki
[un inyeksyon³ si [porke] porke ... la skwela
[kwando] orita aorita [aorita no bas a ir]
si pwerke mi mama me ... [aber preguntale]

N-L  mama  rayt³ yr' gana teyk mi øet skul³ ha mama³
[hwet] yr' gana teyk mi øet ša skul³ [yes]

N-S  mira³  esto³ [kc te paso ayi] mi tumbé aki
[porke] krístel me pučote a la slayd

12:45  [kc paso ayi kwando fniste a šobiz pitsa] yo staba
    komýendo pitsa i yo stabo yo yo yo yo
    yo stabo komýendo keyk
[hugeste con las pelotas³ yu pley bal³] ye
[kc mas] karz [kc mas] yo huge kon las las hardbalz
[S-L: mira este dinero laura] yo es de mio es de mio

N-L  mama rayt  Øiz dalrz ar may dalrz

N-S  ye kez ši o mi řa mani [nä] si [a po ko]
ye ši o mi řa mani [no iz yrz  put it an ŕa teybi]
lts mayn [no] ye  yes yo tenga una
N-L  mama  ši sed ñæt ñer h àz
N-S  yo ñëgo čënkles
    yo kyèro ñr kon ti [kontigo]  (S corrects N)
    ... kàèn go wiò yu

1:00  N-L  ay want tu go pley awtsèyd wiò miki
N-S  [... hugar efwèra kon kyèn] kon mìki
    hey sænda
    ay wantu go wiò yu òt ñà stor [hway ...]
    po rke wi don gat naèlj
    mira  čàŋge  (chancië)
    aym goùj wiò yu

N-El  hir  ten  (giving El her bottle)
2. Second observation period.
Monday, 8/1

8:00 N-J dame kwik jesika [no] gana tel dædi yu don giv no kwik

N-P ši sed no
a nid tu go pi a waz gana go rayt new
papi mama dïd应急预案 mi tu gimi kok læst neyt
œn ay gat a kok læst neyt

N-EI ñæts ña ñrd balun yr gana pap yës
ñæts ña ñrd ñig yr gana breyk
ñæts ña- ñæts ña læst taym yr gana kat yr fîngyrz

N-O ši kat ál hr tu fîngyrz
[rūlì haw] in ñæt lil' glæs si³
in a bigo glæs

N-EI ñis iz ña læst taym yr gana pap... œn kat yr fîngyrz
ay don kam wîth mi kaz a...

8:15 N-J get ñæt awey främ mi ñæts næsti (dirty straw)
let mi rest fr' a lil' hwayl (repeat)
ši dl kaka kaka (N and J laughing)
l a kaka (repeat) la marana
la marana se kayó en el sakatâl un panço kon un ganço
na la pudo elantay (a routine)
yu kænt get æt mi

N-P [P-J: no te řaskes] ši waz blidig yesterdsey

N-J no¹ pampam¹ ... gana giv yu a pampam (spanking)
hwerz jesika³ kamir
N-L [sh don nid it] šiz blidiŋ' an hr` leg' (rubbing alcohol)
N-J hir sidawn
N-P yu no hwat ŋa aŋ' litti kap layk- hwlec wan' ńaat yu hɛd in ŋa frizŋ' boy it layk hitters layk its meyk layk a ku kap [it waz frozin] it waz frozin
8:30 N-L ěerz a- ěedi put wate' in ŋa big kap aen ŋen it gat ku kap (Kool Kup--frozen Koolaid in a cup)
N-P ěedi kan ay it ńaat [es puro ays] let mi it sam am gana it it am nat pikŋ' ńaat mes ap tel hr` am tayrd
N-O yu no ay gat mokos [ruli] si mokos
N-P [son iagañes] na?e mokos
N-L mama rayt³ in yr' ayz estos son mokos he³
N-P ši fel dawn an hr` bati kulo (repeat) (El)
eym teliŋ hr` bati kulo bati kulo bati
N-El kola kola kola (repeat)
wiwi
N-O lük mokos frem ŋa ayz
bigo moko lükat big moko lük pit ši wants yu tu du hr` layk šis (play table)
féykrækŋ' bum bum bum (repeat) ŋa boys hæv a- ŋa tiči- ŋa tičŋ' gat ŋa breyn ŋa boys hæv ŋa maslž ŋa grlz hæv ŋa seksí ľegz æen wi win ŋa geym (routine)
papa bér sey mama sambadiz bin itiŋ may fud ŋa litti
papa bér sey sambadi bin itiŋ may fudi may fud
æn am ña littl papa ber sed papa ber sey hi sey sambadiz bin sitig an may cer ña aðr papa ber sey sambadi bin sitig an ma cer æn ña mma³ ñi sey sambadi bin sitig an ma cer æn ñer boø sey ñis cerz tu hard fr mi ... (story)

8:45  N-P a want a big køendi am gana bag ya fr a big køendi
       N-El step elizabet ay wîl spæŋk yu    (El bothering O)
           1et him rayt
       N-O ñiz gana stîl baðr yu ñits goîŋ³    (tape recorder)
       N-L mama lük hwat elizabit ši gat ...
       N-El gimi kikos (repeat)    (kiss, imitating L)
           deme kikos ilizabet
       N-L ilizabit gats hr fîngrz- am palîš
       N-P ñødí ilizabit gats hr fîngrz palîš
       N-L [ilizabbit don hæv hr fîngrz palîst] ay si am
           [hwer] an ña aðr wan hi? an hir
       N-El may lîla mey lîla grî (repeat)    (imitating L)
           hey lîla grî
           step stêpïŋ an ma hcer ilizabit hwat ar yu duŋ

9:00  N-J ay gaçu gaçu
       N-P&L ay want sœmœn tu drîŋk sœmœn gud fr mi
       N-J yu gata bi kwayît
       N-O 1et ña beybi get an tap av mi¹ an yu du apandawn
           apandawn    (O lifts N with his legs)
       N-El yu kam hir elizabit
N-O  okey go apandawn
fäesazyu kěn du fäesazyu kěn  (fast as you can)
ay get a klak n am nat gana so yu it
its ərti a klak
mey mama bat mi əts klak
am nat takin tu yu no mor kəž yu don du mi apandawn

N-P  [ey porke deskonktastec esec reelə] its fram may rum
[no metas eso peke] am gana put itŋ ma rum æn put am
awey
9:15
[te dihe kə no nine1 oiste3] dədəi am gana stap put
it bey may hart
ən el bi γr frynd [γwarde eso okey3] papi pli...
lempi du saməŋ dədəi keen ay [hwæt] keen ay du
saməŋ

N-M  lempi si əset klak ət it ətts mi
yu get γr her wiə saməŋ in it
[its sop ay waʃt may her wiə prt] prt ələs3
ay dənt leyk prt ələs

N-L  mama may sup iz hat hi meyks it tu hat

N-P  yu meyk it tu hat dədəi

N-Pri  don bayt əset θəŋ  don bayt it

N-J  it γr fud

N-P  kyəro takos

10:00 N-L  mami ay want- səmbədəi may mami- may mama-
šəmpu
(calling for shampoo from bathroom)

bracht mi a tawl (repeat)

N-Pri smel may her pristla ßey smel gud
[gi mi it] yu get it gii

10:45 ey ey don gat naðug en may hënd yu kënt si

(N is wearing O's watch)

N-L [... ßa beybiz batl giv it tu mi] hwer iz it mam

N-Pri yr' mamz gana kam bëck in ûfthin minits (repeat)

N-J no jësika eso pikas eso pika (J pleying with a bar)

11:00 N-L [nak nak] nak nak [huz ßer] huz ßer ...

11:15 N-O ëits go ßa horsi ëits du horsi let ës du horsi
mey rum³ ëits go in may rum¹ (playing horsey)

N-All am layk a horsi

N-O go ëtt bit mor okey³ ëtt bit mor¹
its ërti fayv a klak pit du mor

11:30 N-Pri ûuwi skerdvit ay skerd av it

(screaming, N is scared of dog at the door)

no (repeat) [Pri-P: pedra ßis iz lulu]

N-Dog stupid dag

git awt (repeat) (screaming)
gena spæànk yu (repeat)
am gena spæànk yu (repeat) ay don layk yu

12:00 N-O gad blez yu ëtt beybi boy (O sneezed)

N-P dëdi ërtka tol mi stupid kola
ya no lo styo mančando
ësta ßi sed hat ëm ay may klak
ay go no
dædi erta tol mi ʕts klak waz ḥrẓ

12:15
saməŋz meykəŋ mi læt ʕa
N-L keən ay put sam in hir
[hwet iz ʕæt] saməŋ [hwæ y dya təy k it awt] dædi
 təy k it awt
N-Pri hwer [ɮər in ʕə hɪtʃ] (Pri sees a cockroach)
ay dont si it [ɬts ɮər ræt ɮər ɬts kralŋ] hwer
 hwer
stuːpɪd roːč
... get an ɣɾ ćaŋklə
naw ay get ʕə tu ćaŋkləz
ay geć ɬu ćaŋkləs
yu kænt həv tu ćaŋkləz
ðiz ər məy ćaŋkləs

1:00
N-L [get ovr ɬhɪɾ] ay hæsttu go in mey rum
N-Pri may dæ? mey dædiz gənə bəy ə trək
hiz nət gənə let nobədi get ən ʕə trək
nət ivən yu
ən gənə get ən ɣɾ dædiz trək
ʒəts gənə bi əndər ɣɾ məməz neəm
ʒərz səm ɬiŋz en ʕə ɬiŋ
ʒoz tu ɬiŋz³
ʒoz tu lətə ɬiŋz rəməmbr³
kloz ɣɾ əyz³
don opən ðəm yət (repeat)
yu kænt opin ðem
put ðæt awt av yr mawə

Tuesday, 8/2
9:15   N-L  æn si wæz sitiŋ in ðæ rum perfik  (El)
        N-J  no no  liv ut ðær :
                           kaman miha don bayt it  it gæts pikos  it gæts jærmz
9:30   N-L  yr gana go mam³  goʒ tu skul³
        N-P  ... máy kwik
        N-J  no ðæ æðʒ wænz yrz
                           ðæt wænz yrz  ðis wænz yrz  lʊk
        N-P  gimì sam  dædi
        N-El  yu bætr kwitat
        N-L  mam  ay funišt may kwik
10:00  N-O  kæn yu teyk ðæt may- may sistrʒ bayk for mi awt¹
                           [hwæt]  kin  kæn yu teyk may sistrʒ bayk for mi awt
                           [hway]  brokın  pit du it  kaman  [am bizi]  hway yu
                           gana du ðæt peyʒ  hæ³
                           [yu yuʒwæli gæt ðə bayk bay yrself]  bæt ay kænt get it
                           its ovr ðær bay ðæ s- hwer ðæ shuz ar  kæmir ɨmːi ʃo yu
        N-J  puç it  (push)
        N-P  [donde ban ustedes]  am gana rayd may bayk
        N-J  teyk it
10:30  N-El  bæmbi  hey bambi  hey bæl hɛdəd bambi  hey bambi
        N-J  ay want tu rayd bayks jəsika
10:45 N-El yu want tu kam awt switi (repeat)
    kaman switi
    ček yr' kola 1st mi ley yu dawn
    1st mi go get a pæmpr' for yu
N-Bibi liv may bêybî ... 3âts may bêybî (El)
N-El ley dawn (repeat)
    kamir' am gana čeynj yu
    1st mi čeynj yu
    now yr' unsayd
N-O ši duz kaka an ûa pæntiz3 ænd an ûa pæmpr'zı'
N-J yr' gana wayp yr' feys af
    no get af get af
N-P gimí ûa bêybî [nine] ay get hr' pæmpr'
    [te' la pake] no papi am gana čeynj hr' ov' hir
    1st mi čeynj hr' ov' hir dædi
N-El hey ay told yu
    hey spærâtê
    ley dawn (repeat)
N-P dædi ši ëro al ûa pæmpr' an ûa grawnd
N-J ... pik am ap
N-El kaman
    yu wàntid tu go tu ûa ...
11:00 N-P ûn ûen yu giv mi ûa spun dædi
    (N wants to taste J's medicine)
    naw yu gimí ûat wên
    [ ... étâ bwe]a ye its gud
u ye teyst sam ay hir uts gud
[no tomes tu eso ... es para eya] jes a litl bit
ay get kaf

N-O (coughs) new- no mor kaf
ay didŋ teyk wan skup
əf ay hæv mór kaf ay nid tu teyk mór skups

N-E1 late skups skups skups yes

N-P jesika baŋjuŋ mi

11:15
yo kyero
ya se kito el reyn

N-E1 yu kæn wak
stændøp

Wednesday, 8/3

8:15 N-P hwat mama sey³ [teyk a bæɵ]
mi tu teyk a bæɵ³

8:45 N-L ma kæn ay wer may šuz ma aŋŋ šuz
[hwat aŋŋ šuz] løyk jesikez šuz hwayt šuz

N-J go gečŋ on šuz an

N-L [L-O: ar yu hat³] am nat hat
al teyk ŋa bæð hat kold (bath ?)
mamí dæði fikstid þis luŋ
æn a fawnd ma čer lēg a wàntid tu put teyp an ma čer lēg

N-O kæn yu pul þis sak an mi
[øy dont øndrøtænd] kæn yu du ŋa sak an ŋa to ...
10:15 N-Pri [ay want tu rayt] wəl ɣə holdin ñe beybi (N is drawing)

if yu don want tu

æn if yu don get a !at a peyrɔ

(screaming)

N-M nobadiz getig peyrɔ nev iyan am peblz

(Pri's nickname)

[M-Pri: step it ...) ay du ñæet tu hrɔ

N-Pri nobadiz gëtig peyrɔ ey didŋ sey

N-M hir

N-Pri hwɔn ay sey- ñts mɾɔldaz- ñts mɾɔldaz¹

N-M ñæets net a pen (=don't use that pen)

if yu want a pen yu æsk him

ðer gana tel ɣə sistɾ

N-Pri [O-Pri: ay dont hæv anæŋ pen] yu si yu ltitl demi

11:00 N-J no (J starts crying, N doing puzzle at table)

okay am gana get yu a çer lək ñis wan

hir

kwɔytɔ (screaming)

hirz ɣə çer hir

new am muvin it maen

no aya sta

N-P telŋ guiymi ñe neyŋ paliŋ

dæm ñis paliŋ (repeat)

dædi tel hrɔ...

(J)

dædi we tel hrɔ tu mув

N-J syente aki naw put it rayt ñer rayt hir ... key³
N-O pit kamir am gana šo yu sam pežlž
šer nat in méy rum šer in ñis in ñis rum
yu kæn sit an ñis ñis wan
šiz ar may pežlž
am gana get a let a ma pežlž

11:15 N-J no yu kænt pley kéz yr’ litl

N-O ŋkey lëts pley yu pley
no yu get ñis wan
hit ña blu yu giv mi a blu ay sed (blue marker)
put ña ñig ov’ ñer naw get blu
get mayn mayn

N-J no yu kænt pley
pley wët ñet pežl
go pley wët ña pežl
no dami
lëmi go geč’ toy kaman
pley wët yr’ toy (J crying)
jëstka (repeat)

N-P aȳ lëts pley wët hr’ buks

11:30 N-C lët mi put wan mor
(playing nurse, N pretends to give O a shot)
wi hæftu giv yu a šat
kip yr’ ñuñ layk ñet in (pretending sticker is bandage)
puč’ pen dawn ñen ñen-
wr’ gana kam rayt bæk
kæn wi git kæn wi git a pën (pen)
(uses pen to give 0 a shot)

don giv mi anađc šat] ye
[no yu already geyv mi wen] lts ərī šats
key wɛ gena go bɛek
holjɛ əŋj
no yɛ-
new yu kən liv [θəŋk yu] 2m³h₃m³
iz əls yɛz³ [no lts yɛz] okey əŋk yu  (end of nurse)
hwačɛ nɛyɛm
[ken yu rayt a pi] no hwat iz a pi iz
ən hwačəɛl əŋk

(you all)

(N holds picture up to wall, tests 0)

əls iz a wumen raydɪŋ a bəyk
hwat iz əɛt
okey pəti hɔrsi
hwat iz əɛt  hwat iz əɛt [æy danno]
kəmo es esto [iz əɛt a- əɛrz a hɔrs³]
i kəmo lo- lo əsan [ʃɛr- ʃɛyn] əə hɔrsaz ar əstɛdɪŋ
ap  yu si³] si i i los əɛbɛs kəmo los kəmo
los thaw əŋy sænd am ap
[æy don no  æy nevə sin a hɔrs əstɛnd ap]
no kəmo haw yu pik ḡə beybiz ap¹ æn əst am wak
hævam du evrɨɛŋ ᵉɛ [əhə]
du hɛ ləyk əɛt æn ləyk əɛt æn ləyk əɛt
[ɔ æy si  yu hold əɛm ap] ye okey əɛts part av it
kəmo los- las kəwz ɲ pig- æm hɛviwɔmz əɛt
hɛvi- leydiz ap [ʃiz sɪtʊŋ æn ə ʃɛr]
æn hwats- [æn ðæ ðær iz æn ðæ flæt³] ðæ key
[sitsti æn æ big ðær]
tu lɛnsəyo

(end of quiz)

N-Bibi [dɒnt dʊ ðæt ȵinæ nɪna ðæt hʁts] yu du ðæt tu may
hær
lu k hi ʤi d æl ðæ pæz³

N-P hwerz ðæ ɡɹɪz pænsa ɡet ðæ ɬeɪdɪz pænsa

(in the jigsaw puzzle)

N-Bibi lɛt mi hɪr ðæt ðɪŋ
[nɪna] lɛt mi ɡet æp tu ... 
lɛmi hɪr ɬɪ

N-? bʊli

N-P [kyɛɾes ke te pe kɔn ɛl sɪnto] ʃɪ kɪk ɔf may ʂu

N-Bibi [æy dɪdŋ kɪkt ɔf ʂr ʂu] yu sɬæm ɖæ dor ɬɛn yu lɛt may

ʃu tu stəʊ ʃər
yu bətʃ reŋ apʃɛrɛnz

12:15
ay want tu go wɪə yu (repeat)
[tʊməɾo] no
[tʊməɾo ɐʃl kɑm fɔr yu] no
go bəy mi səm aʃs kɾɪm
[ɡo sɪtˈdɔːn] keɪ
[...ay kən bəy yu səm ...] ɣɛ
[æy ɹɛnt ɡoɬɨ tu bəy yu no aʃs kɾɪm] bəbɪnə (repeat)

(Bibi’s nickname)

[æy dɒnt bəy yu no aʃs kɾɪm] ay gət səm
[ʃɪtˈdɔːn] no (repeat)
aym mæd æt yu
aym nat gane bay yu ays krim
yaæ don gat nan
[am nat gane bay yu no ays krim] am nat gane bay yu no
ëys krim

(screaming)

Thursday, 8/4

8:30 N-O papéyz nat én
dédi trn ët bæk
   (TV channel)
net ëæt wan
hwerz ëæt kændi ëæt ay told yu tu giv- rëeko
N-P [te bas a lastimañ los labyos] ay didh hir yu aym
   gana bëst may lëps³
N-O [yu ket yrself³ haw] ëæ ëcr³ ay waz gøng layk ëis lük
   im ëcr œn ën æy bëstid may lëp
N-P mamaz gana bay mi ëæt monita
   aym gana bay mi ëæt dalî

8:45 lizëtt paptid jësikaz balun
tëventi ëayv dalâz for hwët
   (P has ad for party at McDonald’s)
wën for mi œn wën for jësikà wën for yu ...
wi don gat a lat a çïldren ëer stupid
wi šuv go bæk œn tel ëem wi don gat a lat a çïldren
œn ëer nat gana gët nan
waç t
   (El playing with balloon)
lük hu gat ëæ ñig wën
a wish a kud hæv ðæt bɪɡo wæn so æy kæn bæstɪd it

a læst tæym ærɪkæ hæd mæy mæy dædɪ ærɪkæ hæd-
læst tæym ... (P not paying attention)

ʃʊbɪz bælʊnz dædɪ

ærɪkæ hæd θro æp ðə er æn æy dɪdɪŋ gɪt it bæk

(in the air)

N-EI lɪzæbit stɛp duɪŋ ðæt

æm ɡænæ hwɪŋ yu æn θro ɡɪs wɛtʃ an yu

N-O æy kæŋt sɪ ðə mənɪtʊs

yu go tu mædənuðz tu ɹɛrz nə mənɪtʊs æt wɛndɪz³ [nəʊ] hwɛy

ɹɛrz kæbæɪtʊz æt æm æm

æl ræyt æy θɪŋk ðæt æy dɪdənt hæv ɡɪs

stɪld it frəm məy sɪstrɪz

9:00 N-P mæn ... ʃed pæpɛyz wɛz ɡænæ bi æn

hwɑt iz ɹɪps iz ɹ(ɹ)ɪp(z) ɹ(ɹ)ɪp(z) (CHiPs on TV)

N-O [pælɪsmən æn mɒtəsɛɪklɪz] ɹɛy go hɑrd æn ɹɛy ...

N-P stʊpɪd kɑr (crash on TV)

N-J ɡɪmɪ səm

N-P hi dən nəʊ hɔw tu du ɹætɪŋ

... æn no ɹætɪŋ

N-All jæmp æn ðə θɪŋz æn æl ðæt

æy wɪʃ ɹɛy kud fɔl dɔwɔn ɡoz tu mətʃ- mɒtəsɛɪklɪz

æn bɛn ʃɜrsəlvz

N-J ɡɪmɪ ɪt æy wɑn ɪt

N-P ːʊk hwɑt ɹɛy dʊd æn hɹ θɪŋ
N-J  [P-J: lëmi si] 1et hùm si
N-O  ø a y don no hwêrz ñet tep øv ø a øêt pen
[øa têps on øa têybl] øa øêt pen [hwêt øêt pen] yê øêt pen
no  øa liitl smal wên
[øa red wên³] ye
N-P  hirz mani un hir (L's pants)
ay këen go bay ku këp
ši tod mi- ši tod mi hwin ši lef- ši liv
ay get mani an ay øen ay go bay ku këps
N-Patsy [pedroz hir³] ye
[yu want tu go wël mi] ay don wantu go wël yu
[Patsy-J: ayl pik yu ap tumaro] (J is sick)
no šiz gana bi sit tumaro tu
[šetap] no yu šetap
N-P  [dondësta este balun se yêbaron³] ëts ëndr øa kowç
æn ëey did it liitl
ëts nat- ëts nat-
rayt hir bay may pi? rayt hir bay øa pîtsa³
9:15  N-J  aym nat yç frend jesïka
aym nat yç frend
N-El  don tač mi (repeat) (laughing)
N-Phone  hu iz it græma
græma  alzæbit ši gatap ...
ši gat ap øen ëen ši ši drapit...
N-J jesika mamah? gremah wants yu jesika gremah wants yu
N-L deedi deedi sed donde se kayo esta leche
N-P aya want tu go (repeat)
yu keri mi

10:15 [bente paka te bas a moher ayi] aya alredi get mayself wet
du yu hae3 (candy)
hwer e3a hwer e3a an tap ay e3a e1iy3
luk litl lalipaps
dedi e3erz sam an mamaz dres7 [ya no aiy]
ye e3erz e lat an mamaz dres7
... bet a lat aen si put am an h3 dres7
N-El no let mi teyk may bayk awtsayd
N-P [no lo sakas aorita este yobeyndo] jesikaz jesikaz
bayk iz awtsayd
aym kipuj aym kipuj it rayt e3er bay ar porc
N-Ch go get wet1 cuwi
go get e3et bayk go get it hci go get it
get it for mi cuwi okey

10:30 N-El hekl aen jekl (repeat) heko aen jeko (repeat)
o kaka yu kaka
N-P [te dihe no te bayas paya ...] jesika went ovr e3er
N-S1f jeko aen jeko (repeat)
N-P [bën] ay don want may kok in ëa glëes
ay want my kok in ë- ay don want may kok in ...
ay want a lat im mayn

N-El lëmi sët ëer 1izëbit³ (on trike)
so ay käen giy yu sam soda
dëdi put may flawë dawn
bi kwayët (repeat)

N-J giëmi ëa jësika giëmi ëa beybiz batë

N-El hwaçu want¹ ëa kok³ ëa soda wat'r³
okeý yu want sam ...
leës giy yu sam
am gëna emti ëa soda wat'r

N-O ay diëd druëk may soda wat'r¹ for ëri mënës

N-El yu don layk ut³

N-O ay diën druëk no soda wat'r fr³- ëri³ or for¹ yir¹
[ëri or for yirz³] aën si kips an bègin me

N-J no jësika

N-El no yu pleë wët it grël no
batl³
yu get it
yu bètë nat drap ëët batl agin
no yu don wantu hold yr batl no mor
gëëz batl (repeat) bënd ovr (repeat) batl
no yr nat get in ma soda wat'r
ëët waz ma soda wat'r
11:00

ye kositos (repeat) ben miha
les go pik yu ap let's pik yu ap (repeat)

N-O
[hey nina yu want tu bay a kul kæp³] ñey kæst kortraz

N-P
ay gat mani luk ñædi
pit let mi go bay kul kæp luk

N-J
no yu stey hir (N leaves to get Kool Kup)

N-O
ñey didŋ opin ñæ dor

N-P
ñædi ay wæz nakuŋ layk ñis æn layk ñis luk [mhm]
ñis an layk ñis (repeat)
ñey didŋ ...

N-O
pit haw taym it iz it³ [its eleven ðæti]
ñer nat ñaweyk ...

kiz ñey go slip abæwt hwæt ṭen
æn ñen ñey weyk ñap abæwt for

hwæts in ñer³
[if yu luz it its tu bæd ...] ay last it [o tu bæd]
ay last ña tu wanzz (quarters)

11:30

iemi go si ssta
kaman lets go si mi tu æn yu

N-P
[... lebane sus pæpæles ya] am gæna go bay ku kæp
(leaves)

a nakt æn ñæ dor ñædi bat ñey didŋ opin it ægin

N-O
pit lets go æn nak æn ñæ dor æen ayl du ñæ ku kæps
bat ñey don opin ñæ dor æel mi ñey opin ñæ dor æel æel
big pip]
[ñer nat ñer] yes ñey ar
yu yu nak en ña dor ñen ñy get a ku kap
12:00 N-P dædi ļz ña ku kap pleys opin
12:15 N-F1 lizæbït ben
no sisìr (repeat)
don muv sisìr hir sisìr kaman sisìr
N-P yu ček hr kolita ñen hr buti
Bibliography


