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Talking Backwards in Cuna: the Sociological Reality of Phonological Descriptions

JOEL SHERZER

The Cuna Indians of Panama play a word game which sheds light on problems involved in the linguistic description of Cuna phonology. Investigation of the game led to the discovery that not all speakers play it the same way; i.e., there is variation in the forms different speakers use when playing. One of the possible interpretations of this variation is that there is more than one model or grammar in use among Cuna speakers. The possibility of the existence of alternative linguistic models goes against the most current view in theoretical linguistics, which argues that all speakers of a language have the same model for that language. The data from the Cuna game support instead a sociolinguistic perspective which holds that for at least certain areas of language variation or heterogeneity rather than homogeneity is common.

LINGUISTIC GAMES are probably very common in the languages of the world, and although the literature dealing with them is fairly large it is widely scattered. Burling (1970) and Haas (1967) provide brief taxonomies or typologies of the range of linguistic manipulation found in such games. Discussion of linguistic games is sometimes found in the context of descriptions of cultural, folkloristic, or literary phenomena in which the games are treated as interesting sidelights but not a matter of study in and for themselves. For example, Monod (1968) describes the complicated linguistic games played by bands of Paris youths, and Dubois et al. (1970) discuss a number of such games in French as well as in other languages. Two scholars who have focused on linguistic games per se are Conklin (1956, 1959) and Haas (1957, 1969), who deal with such phenomena in non-Western societies. Halle (1962) studies the linguistic detail of English Pig Latin and shows that the difference between General American and Pig Latin can be stated in the form of a single morphophonemic rule. What has not been discussed in the literature on linguistic games is the variation that is found in the playing of the games. Such variation is found, for example, in English Pig Latin in which stop can be either opstay or topsay; open can be either openway oropenhay, etc. In this paper I will deal with a game played by a group of American Indians, focusing precisely on the variation that exists in the

1 Research for this paper was carried out on the island of Mulatupu in San Blas, Panamá. The research was supported by NSF grant GU-1598 to the University of Texas. Reports of this research were presented at the University of Texas Faculty Sociolinguistics Seminar, September 1970, and at the annual meeting of the American Anthropological Association, November, 1970. Richard Bauman, Paul Friedrich, James Howe, William Labov, and Mary Sanches made helpful comments on an earlier draft of this paper.
playing of the game and examining the significance of this variation for the study of linguistic structures and the models that native speakers have for these linguistic structures.

*Sorsik sunmakke*, "talking backwards," is one of at least four linguistic games found among the Cuna Indians of San Blas, Panama. These games form part of an elaborate complex of linguistic play current in San Blas. Skill in playing with language is highly valued. The purpose of *sorsik sunmakke* is apparently not concealment but rather play for play's sake; it is performed mainly by children.

The rule for playing *sorsik sunmakke* is quite simple. It consists of moving the first syllable of a word to the end of the word. Thus the input [obsa] "bathed" gives the output [saob]. The game is of linguistic interest for two related reasons: (1) by moving syllables around within words and placing sounds in contact with one another, it provides rich data for the analysis of Cuna phonology; (2) it provides evidence of native speakers' solutions to phonological problems, thus giving us a glimpse of the models which the Cuna themselves use when they speak Cuna.

In the course of my research I discovered that for the same *sorsik sunmakke* input, speakers sometimes gave differing outputs. One possible interpretation is that there are alternative models or grammars actually in use for the same dialect of Cuna. This interpretation is contrary to one of the hypotheses current in theoretical linguistics today, which claims that of the various "observationally adequate" descriptions of a language, there is a "descriptively adequate" one which best represents the intuitions of native speakers (Chomsky 1964). In this paper I will first present the data from Cuna *sorsik sunmakke* and then discuss some interpretations that might be drawn from it.

In working with Cuna phonology, I encountered a situation familiar to linguists. Often there were problems for which alternative solutions were logically possible. Selection of the best of the alternative solutions depended on such considerations as neatness of analysis and simplicity, with regard to both Cuna grammar in particular and linguistic theory in general. *Sorsik sunmakke* seemed a useful tool in the selection among alternative solutions.

The data will be presented in the form of specific phonological problems which they help to solve. First the problem will be stated, then the examples from *sorsik sunmakke* will be presented, and finally the solution will be formulated. The problems are of two types. First, there are those for which the examples from *sorsik sunmakke* indicate that all speakers agree with respect to their solutions. Second there are those for which the *sorsik sunmakke* examples suggest that speakers have alternative solutions.
PROBLEMS WITH SINGLE SOLUTIONS

1. Cuna syllable structure. Does an intervocalic consonant terminate a syllable or begin a new one? That is, is the syllable structure of \((C)V.CV(C)\) represented by \((C)V-\).CV(C)\) or \((C)V-.C\).V(C)\)? In the following examples from sorsik sunmakke, the input appears on the left side of the colon; the output is presented on the right.\(^2\)

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>[dage] “come”</td>
<td>[geda], not * [edag] (^8)</td>
<td></td>
</tr>
<tr>
<td>[ina] “medicine”</td>
<td>[nai], not * [ain]</td>
<td></td>
</tr>
<tr>
<td>[osi] “pineapple”</td>
<td>[sio], not * [ios]</td>
<td></td>
</tr>
<tr>
<td>[saban] “belly”</td>
<td>[bansa], not * [ansab]</td>
<td></td>
</tr>
</tbody>
</table>

Solution: According to all players of sorsik sunmakke the syllable structure of Cuna words of the shape \((C)V.CV(C)\) is \((C)V-.C\).V(C)\).

2. Cuna syllable structure. Does an intervocalic cluster of two consonants (the maximum permissible) terminate a syllable, begin a new one, or split (one going with each syllable)? I.e., is the syllabic structure of \((C)V.C.CV(C)\) represented by \((C)V.C-.C\).V(C), \((C)V-.C.C\).V(C), or \((C)V-.C-.C\).V(C)\)? Sorsik sunmakke examples are:

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>[ibya] “eye”</td>
<td>[yaib], not * [byai]</td>
<td></td>
</tr>
<tr>
<td>[obsa] “bathed”</td>
<td>[saob], not * [bsao]</td>
<td></td>
</tr>
<tr>
<td>[argan] “hand”</td>
<td>[ganar], not * [rgana]</td>
<td></td>
</tr>
</tbody>
</table>

Solution: For all players the syllabic structure of words of the shape \((C)V.C.CV(C)\) is \((C)V-.C-.C\).V(C)\).

3. Representation of the long nasal stop \([nn]\). Does it pattern as a single consonant (as 1, above) or a consonant cluster (as 2, above)? From sorsik sunmakke:

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>[inna] “chicha”</td>
<td>[nain], not * [nnai]</td>
<td></td>
</tr>
</tbody>
</table>

Solution: For all players the sound \([nn]\) patterns as a consonant cluster, the first \([n]\) terminating one syllable and the second beginning the next.

4. Representation of \([l]\) which alternates with \([r]\): Does it pattern as a single consonant or a consonant cluster? From sorsik sunmakke:

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>[mila] “tarpon”</td>
<td>[lami]</td>
<td></td>
</tr>
<tr>
<td>[mola] “cloth”</td>
<td>[lamo]</td>
<td></td>
</tr>
<tr>
<td>[yala] “mountain”</td>
<td>[laya]</td>
<td></td>
</tr>
</tbody>
</table>

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\(^2\) All examples are written in a phonetic transcription since the point of this paper is to show what light a comparison of pronounced or phonetic sorsik sunmakke inputs and outputs sheds on underlying phonological representations in Cuna.

\(^3\) It seems reasonable to use the asterisk to mark forms which are not possible in sorsik sunmakke, i.e., forms which are ungrammatical with respect to the rules of the game.
Solution: For all players the [l] which alternates with [r] patterns as a single consonant. Data from ordinary usage of Cuna (i.e., other than playing *sorsik sunmakke*), however, suggest that the best representation of [l] which alternates with [r] is as a consonant cluster, namely long or double [r], i.e., [rr]. For example, when this [l] comes into contact with another consonant, thereby causing an unpermissible cluster of three consonants, it is simplified to [r]. Thus, [mila] “tarpon” but [mirsate] “no tarpon”; [mola] “cloth” but [morbake] “buy cloth”; and [yala] “mountain” but [yardake] “see the mountain.” Although this solution seems the best from a linguistic point of view, there is no evidence for it in *sorsik sunmakke*.

5. Are the vowel clusters [ae] and [oe] best represented as containing intervocalic semivowels [y] and [w] (which function as consonants)? (Compare with 5, below, in the section on alternative solutions.) From *sorsik sunmakke*:

[goe] ‘deer, baby’ : [ego], not * [wego]
[mae] ‘suck’ : [ema], not * [yema]

Solution: For all players the vowel clusters [ae] and [oe] do not have the intervocalic semivowels [y] and [w] in their representation.

6. Is the sound [i] which occurs between the consonants [r] and [g] in certain Cuna words epenthetic and not present in the phonological representation of the words? From *sorsik sunmakke*:

[biriga] ‘year’ : [gabir], not * [rigabi]

Solution: For all players, the phonological representation of [biriga] is [birga]; i.e., the [i] is epenthetic. It is interesting to note that the Cuna accent usually falls on the penultimate syllable of the word. [Biriga] seems to be an exception. Once we realize, however, that the [i] is epenthetic, we can state the rules of stress placement before the introduction of the [i]. In this sense the stress in [bíriga] is perfectly regular. *Sorsik sunmakke* provides independent evidence for this solution.

**PROBLEMS WITH ALTERNATIVE SOLUTIONS**

1. *Relationship between long vowels and syllable structure.* The Cuna accent generally falls on the penultimate syllable of the word. Short vowels count as single syllables: thus, [gammái] “sleeping” and [gommáe] “go to drink.” With a single exception, long vowels occur only in the context (C) ——#.4 Do long vowels count as one or two syllables? Players of *sorsik sunmakke* provides independent evidence for this solution.

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4 The single exception is [boogʷa] “quiet,” which contrasts with [bogʷa] “two round ones.” I am indebted to James Howe for this example.
sunmakke provide two solutions. These solutions or different ways of playing the game will be labelled “a” and “b.”

a. [muu] “grandmother” : [umu]  
    [dii] “water” : [idi]

b. [muu]  
    [dii]  

Solution: “a” speakers treat long vowels as if they consisted of two syllables; “b” speakers interpret long vowels as comprising one syllable. In this example there is a slight dialect difference in the two sets of speakers, as evidenced by the following data from the ordinary use of Cuna. The “a” speakers say [gʷallúdii] “kerosene” and [andíi] “my water.” Since the accent falls on the penultimate syllable, “a” speakers must represent long vowels as two syllables. On the other hand, “b” speakers say [gʷallúdii] and [andíi]; i.e., they represent long vowels as single syllables. Thus, evidence from both ordinary Cuna and sorsik sunmakke shows that “a” speakers and “b” speakers have distinct syllabic representations of long vowels. In the remaining examples the distinct sorsik sunmakke outputs of different speakers cannot be explained as the result of dialect differences.

2. Cuna has the following rules of consonantal assimilation (among others):

   [b] + [m] → [mm]; [g] + [C] other than [g] → [yC]

What is the relationship between these rules and underlying phonological or morphophonemic representations? Sorsik sunmakke examples are

a.5 [gámmai] (from [gab-mai]) “sleeping” : [maigab]  
    [bay̪sa] (from [bag-sa]) “bought” : [sabag]

b.  
    [gámmaɪ] : [maigam]  
    [bay̪sa] : [sabay]

Solution: “a” speakers recognize the underlying phonological or morphophonemic representation of the clusters in question; “b” speakers do not. Notice that “a” speakers and “b” speakers do not constitute distinct dialects. Rather, it is a question of the degree of abstractness of phonological struc-

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5 The letters “a” and “b” will be used throughout the examples in this section to label the alternative solutions. It is not, however, always the same individuals who operate with the “a” or “b” solutions; i.e., the “a” speakers represented in problem 1 are not necessarily the “a” speakers in problem 2. What is significant is that for each phonological problem discussed in this section, alternative solutions are in use.
ture which they recognize or bring into play in sorsik sunmakke. Or one might say that “a” speakers apply the sorsik sunmakke rule before the consonantal assimilation rules, while “b” speakers apply the sorsik sunmakke rule after the consonantal assimilation rules.

3. Voiceless intervocalic stops [p], [t], [k]. Do they pattern as consonant clusters, i.e., is the surface distinction of voiced/voiceless stop an underlying distinction of short consonant/long consonant? From sorsik sunmakke:

a. [saban] “belly” : [bansa]
   [sapan] “firewood” : [bansab]
   [dage] “come” : [geda]
   [dake] “see” : [gedag]
   [sate] “no” : [desad]

b. [saban] : [bansa]
   [sapan] : [bansa]⁶
   [dage] : [geda]
   [dake] : [geda]
   [sate] : [desa]

Solution: “a” speakers represent the surface intervocalic voiced/voiceless stop distinction as a short consonant/long consonant distinction; “b” speakers do not. In this example there is evidence from the ordinary use of Cuna that “a” speakers have the more abstract and the more correct or economical phonological solution. First, there are no consonant clusters which consist of a voiceless stop plus another consonant. This fact is best described by representing voiceless stops as long consonants (consonant clusters); the maximum consonant cluster consists of two consonants. Furthermore, voiceless stops are simplified to voiced stops when they come into contact with another consonant, thereby apparently preventing the formation of a nonpermissible three consonant cluster. For example, [gwapaa] “three round ones,” but [warbaa] “three pole-like ones.” Second, when a voiced consonant comes into contact with itself, the resulting long consonant is pronounced voiceless. Thus [neg] “house” + [gine] “inside” → [nekine] “inside the house.” Finally, in initial and final syllable position, voiceless stops, like consonant clusters, cannot occur.⁷

⁶ Voiced and voiceless stops do not contrast in syllable initial position. (See, however, fn. 7, below.) An intervocalic voiceless stop is usually pronounced voiced even by “b” speakers when it is shifted to initial position in the playing of sorsik sunmakke.

⁷ This statement is true only if the grammar is limited to the referential function of language. The devoicing of stops in word initial position serves social and expressive functions such as emphasis, anger, and joking.
4. Is the sound [c] the long form of [s], i.e., the surface pronunciation of the cluster [ss]? From sorsik sunmakke:

a. [waci] “watch, hour” : [ciwas]
   [gaci] “hammock” : [cigas]

b. [waci] : [ciwa]
   [gaci] : [cika]

Solution: “a” speakers represent surface intervocalic [c] as an underlying [s] + [s]; “b” speakers do not. Once again evidence from the ordinary use of Cuna suggests that “a” speakers have the more correct solution. First, [c] does not occur in consonant clusters and is simplified when it comes into contact with another consonant. Thus, [gaci] “hammock” but [gasgobo] “two hammocks.” Second, when two [s] consonants come into contact, the result is pronounced [c]: e.g., [us] “agouti” + [sate] “none” → [ucate] “no agouti.”

5. Are the vowel clusters [ia] and [ua] best represented as containing intervocalic semivowels [y] and [w] (which function as consonants)? (Compare with 5, above, in “Problems with Single Solutions.”) From sorsik sunmakke:

a. [ia] “older brother” : [yai]
   [ua] “fish” : [wau]
   [uaya] “ear” : [wayau]

b. [ia] : [ai]
   [ua] : [au]
   [uaya] : [ayau]

Solution: “a” speakers recognize or posit semivowels within the vowel clusters [ia] and [ua]; “b” speakers do not. In this example, as in 2, 3, and 4 above, “a” speakers operate with a more abstract phonological representation than do “b” speakers. However, this example is distinct from the preceding ones in that there are no alternating forms in ordinary Cuna which would lead us to posit the underlying semivowels. One might argue that the representation used by “a” speakers is excessively or unnecessarily abstract.

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8 The symbol [c] is used to represent a voiceless palatal affricate.
9 I do not know why “a” speakers have [c] rather than [s] in output initial position. Note that [c] is the expressive form of [s]. (See fn. 7.)
10 The change from input [g] to output [k] may be due to the fact that [g] and [k] are not referentially distinct in initial position (see fn. 7). Thus, it is quite reasonable for an initial [g] in the input to become either intervocalic [g] or intervocalic [k] in the output.
6. Does the intervocalic cluster [sw] pattern as a single consonant or a cluster of two? From sorsik sunmakke:

a. [aswe] “avocado” : [weas]
b. [aswe] : [swea]

Solution: “a” speakers treat [sw] as a cluster of two consonants; “b” speakers treat [sw] as a single sound. The best linguistic solution here seems to be that of “a” speakers. In ordinary Cuna, [sw] behaves like a consonant cluster. Like clusters it never occurs initially or finally in syllables. Furthermore, it can never enter into clusters with other consonants.

CONCLUSIONS

There are a number of interpretations that one might draw from the examples of Cuna sorsik sunmakke given here.

I. The differences in the playing of sorsik sunmakke reflect Cuna dialect differences. This interpretation explains only the alternative solutions in problem 1, above. Apart from differences with regard to the syllabic representation of long vowels, there is no evidence of dialect differences between “a” and “b” speakers.

II. Sorsik sunmakke as distinct from ordinary Cuna is a linguistic game which has rules of its own. Speakers who play the game differently have different sets of rules for the game; it is impossible to draw conclusions with regard to phonological representations from sorsik sunmakke examples. This interpretation seems to me to be weak since the game is obviously based on the phonological system of Cuna. In recent years there has been a great desire on the part of linguists to describe the intuitions of native speakers. Yet there is rarely evidence other than the description itself for these intuitions. Investigation of linguistic games may prove one important way of avoiding this circularity.

III. In an interpretation related to II, it could be stated that some speakers draw on more abstract phonological or morphophonemic representations than others when playing sorsik sunmakke. This interpretation applies best to problems 2 and 4 in the section on alternative solutions; it does not apply to 5 and 6, and it is weak at best for 3. With regard to this interpretation, the data from sorsik sunmakke is relevant to some of the questions raised by Kiparsky (1968) regarding the abstractness of phonological descriptions.

IV. Different speakers of Cuna use distinct phonological representations or models in speaking Cuna or at least operate with distinct solutions to particular phonological problems. The problem of the uniqueness of linguis-
tic representations has been discussed often and has been related to the problem of the psychological reality of the representations (Chao 1934; Chomsky 1964, 1965; Malone 1970; Sapir 1949; Schane 1968). The currently most accepted view is probably that of Chomsky, who distinguishes "observational adequacy" from "descriptive adequacy." According to Chomsky (1964:63),

. . . a grammar that aims for observational adequacy is concerned merely to give an account of the primary data (e.g., the corpus) that is the input to the learning device; a grammar that aims for descriptive adequacy is concerned to give a correct account of the linguistic intuition of the native speaker.

This statement implies, of course, that all speakers of the same dialect of a language possess a unique linguistic model or representation, the one which is the most correct description a linguist can make.

The data presented here suggest another possibility, namely, that different speakers in a community may be using distinct linguistic models when speaking to one another, one of which is from a linguistic point of view better or more correct than the others.11 The view that different members of a culture or community may have different models which enable them to operate in that culture or community has been succinctly expressed by Wallace (1961). He contrasts two approaches to the relationship between culture and the individual. (1) The "replication of uniformity":

. . . the society may be regarded as culturally homogeneous and the individuals will be expected to share a uniform nuclear character . . . the interest of processual research lies rather in the mechanisms of socialization by which each generation becomes, culturally and characterologically, a replica of its predecessors (Wallace 1961:26).

(2) The "organization of diversity":

. . . a radical diversity of mazeways that have their orderly relationship guaranteed not by the sharing of uniformity, but by their capacities for mutual prediction (Wallace 1961:28).

With regard to linguistic structures, the view that all native speakers of a particular language share a unique grammar is equivalent to Wallace's "replication of uniformity," while the view that several models are in use in a speech community is his "organization of diversity." Cuna sorsik sunmakke provides evidence for the second view.

11 For some problems certain individuals would on some occasions give one output and on other occasions produce another; i.e., some speakers had both "a" and "b" solutions to particular problems. This suggests that perhaps single speakers possess various models for speaking Cuna.
It seems useful to point out that the problem raised here was encountered in the course of research undertaken with a sociolinguistic perspective to language study. This perspective does not assume "an ideal speaker-listener, in a completely homogeneous speech-community" (Chomsky 1965:3). Rather, it assumes heterogeneity and studies variation and not uniformity in the use of speech. A linguist working with a single, isolated informant would not have discovered the variation in the *sorsik sunmakke* outputs of different Cuna speakers. In fact, one important subject for future research in linguistic theory is the investigation of those areas of language in which there is variation (both on the surface and in underlying models) and those in which there is not. Furthermore, a linguist operating with a sociolinguistic perspective is concerned with many uses of language, including such phenomena as linguistic play and linguistic games. As demonstrated here, these phenomena are of interest not only to the anthropologist studying the place of speaking in a culture but also to the linguist interested in linguistic structures.

Finally, the data presented here are of relevance to students of language acquisition for two reasons. First, there is the possibility that different models of linguistic structure are in use in the same community. If one is studying the process by which individuals acquire linguistic models, it is crucial to know what the actual end products of the process are. Second, linguistic games are part of the socialization or acquisition process—of both language and culture. As such, they are both useful tools in the analysis of the acquisition process and interesting objects of study in themselves.12

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12 In this paper the possibility is presented that not all speakers of Cuna share a unique phonological system. There is evidence from research dealing with other languages that different speakers use distinct linguistic models. For Burmese see Haas (1969), for Jamaican Creole see DeCamp (1970), for Japanese see Sanches (1968), and for Luo see Blount (1970).


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