

CROSS-LINGUISTIC PARALLELS IN LANGUAGE LOSS¹

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What are the similarities and differences in the loss of grammatical systems across individual languages? To answer this question, I examine structural consequences of language attrition and the correspondences between language-particular and cross-linguistic phenomena under circumstances of severe attrition. However, the very formulation of this approach, involving 'severe attrition', already warrants some clarification. It leads to the formulation of two collateral questions. First, how can the level of language attrition be quantified? Second, which structural features are diagnostic of the decline of grammar? I present data on structural change in six attrited languages as compared to non-attrited control languages and demonstrate that there is significant parallelism in structural change across languages. Next, I show a correlation between levels of grammatical and lexical loss and introduce a simple test allowing us to measure the level of attrition.

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¹The following abbreviations are used in this paper: ABS = absolutive; ACC = accusative; AOR = aorist; CND = conditional; DAT = dative; DEC = declarative; DEF = definite form; DIR = directional affix; ERG = ergative; FIN = (sentence-)final verb form; GEN = genitive; IND = indicative; INF = infinitive; INT = intransitive; LOC = locative; MED = (sentence-)medial verb form; NOM = nominative; NON = non-personal agreement; OBJ = object agreement marker; OBL = oblique; PAS = passive; PER = personal agreement; PRF = perfective; PRS = present; PRT = participle; REF = reflexive; REL = relative; RP = resumptive pronoun; SBJ = subjunctive; SUB = subject agreement marker, TRN = transitive.

In language examples, code-switched segments are italicized.

1. INTRODUCTION

1.1. BASIC TERMS. A brief definition of relevant notions is in order here. The notion of LANGUAGE ATTRITION refers to two related phenomena: (i) first language loss as a result of the forgetting of the language system by a non-aphasic speaker (most commonly due to the influence of another dominant language, as in emigration); (ii) the process whereby a given grammar system undergoes a significant reduction when it is passed from one generation to the next, i.e. incomplete learning of a language system. Both phenomena concern the nature of grammatical competence that is due to insufficient access to a given input language. However, they can be represented by different populations of speakers and may have different language-internal manifestations.

A distinction is typically made between the two types of speakers: FORGETTERS and INCOMPLETE LEARNERS (see also Sharwood Smith 1989; Sharwood Smith & Van Buren 1991; Van Buren & Sharwood Smith 1985; Sasse 1992a:62-64). In the literature on language loss, it is common to refer to the latter but not the former as semi-speakers. This paper will refer to both forgetters and incomplete learners as TERMINAL SPEAKERS. Though this may be a grim description, the application of this term to the subjects involved in this study is adequate; the focus of this study is severe attrition rather than milder cases usually studied with respect to immigrant languages.

A language that undergoes attrition for either of the reasons listed above will be designated as REDUCED and opposed to a FULL language, i.e. the language characterized by full conventionalized knowledge. Language death is the end result of language attrition, though language death can also be sudden, due to the physical disappearance of all speakers (Dressler 1972, 1981; Hill 1983; Campbell & Muntzel 1989:182-83; Menn 1989; Sasse 1992b, among many others).

1.2. ENDANGERED LANGUAGES? Endangered languages are usually thought of as those with small communities of speakers who have been exposed to a catastrophic environment, to a competing community that is more aggressive culturally or economically, or to political pressure. I will expand this understanding to include such cases when a part of a large and 'healthy' speech community moves to a different environment in which their language is no longer the one of economic, social, political, or cultural prestige and in which another language is dominant.² In this new setting, the community loses regular contact with the original speech community and adopts, fully or partially, the dominant language. Accordingly, the notions of 'healthy' and 'ailing' languages are relative; a language can be dominant under one set of circumstances and endangered under another.

²Though I will try to stay away from the metaphors of health and illness in language, such metaphors are quite common in linguistic literature devoted to the macabre topic of language death; for example, Sasse (1992a:77) talks about 'pathologically distorted version[s]' of languages.

In a classical case of language loss, when a language is spoken in just one environment and is gradually disappearing in that environment, a salvage study is required. In such a study, however, a linguist should bear in mind that the language may already have features that characterize it as dying. In particular, the remaining speakers may have been exposed to another, dominant, language for some time with resultant change in their language because of interference; at a yet later stage when only a single speaker remains, there is no longer a speech community to test that speaker's intuitions. Thus, unless a full version of a dying language exists elsewhere, the language that is studied cannot be compared to a reliable baseline. As a consequence, it may be impossible to decide if some features in this language pertain to its 'original' linguistic structure or whether they result from the reduction in the use of that language. Descriptions based on salvage studies are therefore prone to include some features which have found their way into the language as a result of attrition. The important problem awaiting a linguist is, of course, whether a certain structural characteristic is indeed typical of a given language or whether it is due to attrition. The solution is far from straightforward. It is known that even in languages spoken by large populations surrounded by another language, there is often significant structural change, and sometimes this change is not immediately obvious (Silva-Corvalán 1994:4-15, Sasse 1992a:76-77, Polinsky 1994a:588-89).

If, on the other hand, a language is spoken in several discrete environments, the linguistic description can benefit from comparing the resulting variants. A comparison between variants of the same language, in one case used as a dominant language and in another existing as secondary to a different dominant language, is particularly interesting because it enables the researcher to determine precisely which linguistic features arise under limited communication and are, therefore, characteristic of language disappearance. Such a comparison is undertaken in this paper, which contrasts six languages as spoken by terminal speakers, most of them in the U.S., to the full versions of these languages, existing elsewhere.

The languages surveyed in this study are: Eastern Armenian, Lithuanian, Polish, and Russian (all Indo-European), Kabardian or Circassian (Abkhazo-Adyghean), and Tamil (Dravidian). All are spoken as healthy full languages: Eastern Armenian in Armenia, Lithuanian in Lithuania, Polish in Poland, Russian in Russia and adjacent states, Kabardian in the Caucasus, and Tamil in India. The subjects in this study who do not speak these languages as their primary language show significant attrition. As I will demonstrate below, they exhibit significant lexical loss as well as a restructuring of their grammatical systems. Sociolinguistically, they have all lost contact with their full language communities. They cannot read the heritage language and those who speak languages written in a non-Latin alphabet (Armenian, Kabardian, Russian, and Tamil) could not even read the alphabets. For such speakers, the very existence of a full version of a given language is totally irrelevant. The languages represented by these terminal speakers will be referred to as reduced: Reduced Armenian, Reduced

Lithuanian, etc.³ For the terminal speakers surveyed in this study, use of their reduced language is restricted to limited contexts and is obviously secondary.

2. SUBJECTS AND PROCEDURES

2.1. SUBJECTS. Most terminal speakers surveyed in this study were either born in the country where their full language is spoken or born in the U.S. to immigrant families who speak that full language. Notably, first generation adult immigrants (parents of many of the subjects) are reported to maintain their first language as primary. Though such an immigrant language undergoes certain changes (see Silva-Corvalán 1994 for Spanish, Gonzo & Saltarelli 1983 for Italian, and Andrews 1993 and Polinsky *in press* for Russian), these changes are less significant than those observed in the speech of the next generation, who are dominant in another language.

Terminal speakers use the reduced language only if prompted to do so and only as a second choice. For example, they may speak it to their parents, grandparents, and others deemed not to speak their primary language competently. They always use their primary language with siblings, and the results discussed in the next section indicate greater language loss for those who grew up with siblings. With the exception of one case of extreme stigmatization (Kabardian speaker N), attitudes towards the reduced language ranged from indifference to slight disdain. As far as self-reporting is concerned, subjects with greater attrition invariably think they speak the reduced language well. This may be explained by their diminished awareness of linguistic structures and the overall perception of any utterance as well-formed (see below).

In this section, I briefly review some basic characteristics of each group of speakers: the age at which they left the L1 community, the number of years outside the L1 community or years speaking L2 as primary, and the lapse period (number of years not speaking L1 prior to the time of this study). Tables 2-6 below include this information for each individual speaker except for those of the Lithuanian group (for which adequate data for analysis are not yet available).

For Reduced Eastern Armenian, four speakers were interviewed. Three left Armenia between ages six and eight; one was born in the U.S. to an Armenian family. Of the three born in Armenia, two had had some schooling in Armenian prior to leaving the country, but neither can now read or write that language. The average period outside the L1 Armenian community is 18 years. The average lapse period is ten years.

For Reduced Lithuanian, the survey included four speakers, all born in the U.S.

³Most of the speakers surveyed use American English as their primary language, and one might suggest that the reduced languages should be referred to as American languages. However, not all of the speakers became dominant in English, and this justifies the use of the term reduced language.

to Lithuanian-speaking parents. Though they average 25 years outside the L1 community, all four had some instruction in Lithuanian through Sunday schools. The average lapse period is one year.

For Reduced Polish, I interviewed seven speakers. Six were born in Poland but left that country as children; the average age of leaving was nine. The speaker born to a Polish-speaking family in the U.S. was 23 years old at the time of the interview and had been living away from his parents for five years. While five of the Poland-born speakers can potentially qualify as incomplete learners, the story of the sixth (AN) is quite different. She left Poland when she was 21 and was 72 years old when interviewed. She had been married to an American and her children did not speak Polish. Thus, AN could qualify as a forgetter. Because of this speaker's data, the statistics in the Reduced Polish group may be somewhat skewed: the average period outside the L1 Polish community is 19 years; the average lapse period is nine years.

In the Reduced Russian pool, the largest in this study, two speakers out of twenty were similar to the older Reduced Polish speaker.⁴ Of these two potential forgetters, one left Russia when she was 16 and she was 89 at the time of the interviews (GA). The other (TO) was 18 years old when he found himself in a DP camp in Europe after World War II. He has been living in Canada and the U.S. since 1950, and his estimated lapse period is 40 years. Only one speaker (PE) was born in this country, to a third-generation Russian family. Overall, the average age of leaving the L1 Russian environment was nine, the average time outside the L1 community was 17 years, and the average lapse period was seven years.

For Kabardian and Tamil, the situation is slightly different. These speakers were exposed to the ethnic language at home but then went to school in an English-, French-, or Russian-speaking environment and subsequently reduced their use of the mother tongue to communication with parents. In the case of Tamil, the two speakers surveyed eventually left India and came to the U.S. as students. In the case of Kabardian, one speaker left rural Kabarda and settled in a Russian-speaking environment, while the other was born into a Kabardian family in the U.S. These speakers differ from the Russian and Polish subjects in that they were exposed to L2 early on. However, we can roughly estimate that they assumed L2 after entering school. For Tamil, the average age of switching to a dominant language is six, the average period of speaking English as the primary language is 23 years, and the lapse period is ten years. For Kabardian, the average age of switching to a dominant language is also six, the average period of speaking another language is primary is 33 years, and the lapse period is five years.

⁴The original pool for American Russian included yet another speaker, mentioned in Polinsky (1994b, in press). She was 14 when she left Russia and had only been in the U.S. 13 years when interviewed. She had no lapse period whatsoever, but she showed a high level of attrition. Since this speaker had general problems completing her education and finding a job, she was excluded from the pool as someone who may have learning disabilities. It is altogether unclear what specific effect learning disabilities may have on language loss.

Two general points warrant discussion here. One concerns language and dialect differences between individual terminal speakers of a particular reduced language. In the two small groups, Reduced Kabardian and Reduced Tamil, the two speakers had different dominant languages (for Kabardian, English and Russian, for Tamil, French and English). In larger pools, speakers were from different geographical areas and could, therefore, be expected to demonstrate regional differences. Of the 20 Reduced Russian speakers, for example, six are from Moscow, three each from Leningrad and Kiev, two from Odessa, and one each from Kharkov, Minsk, Omsk, Tashkent, western Belorussia, and California (grandparents from Central Russia).⁵

For Reduced Armenian, Reduced Polish, and Reduced Russian, the subjects were arranged into three groups, ranging from those who exhibited lowest attrition to those who exhibited highest attrition (see 41-43 below). In no case was there any discernible influence of geographical origin on the patterns of structural loss. The fact that such influence is found in speakers with less severe loss (see fn. 5) suggests that the degree of attrition is important for the leveling of regional distinctions. Under heavy attrition, examined here, such differences have already disappeared, while under less dramatic attrition, a larger segment of the linguistic system is retained, apparently including regional differences.

Differences between speakers also raise the question of the influence of the dominant language on the pattern of language loss. Most of the speakers surveyed in this study use English as their primary language, and the influence of English should certainly be taken into consideration. However, one Kabardian speaker (R) and one Tamil speaker (R) speak other languages as their primary; as the results below indicate, their overall pattern of loss of grammar and vocabulary is similar to that of the other speakers. This is a preliminary indication that certain loss characteristics are relatively independent of the external language.

Another general question emerging from the description of terminal speakers concerns the influence of various time factors upon a speaker's performance. More specifically, what effect, if any, does the time spent in the L1 community, the time spent outside that community, and the lapse period have on the overall performance of an individual speaker? To answer this question, we need to correlate each of these variables with the performance of individual speakers. I return to this question below.

2.2. CONTROLS. As a control, several strategies were used. For each language, I consulted at least one native speaker (one each for Tamil, Kabardian, and Lith-

⁵For American Russian, there is preliminary evidence that terminal speakers from southern Russia and Central Asia have a higher rate of diminutives (Polinsky in press) and that speakers with a relatively lighter degree of language loss show pronounced regional differences in the loss of cases (Lavine 1995). Interestingly, the regional differences under loss allow us to oppose southern Russian to all other variants of Russian; the same geographic polarization is characteristic of full Modern Russian (Comrie, Stone, & Polinsky 1996).

uanian, two for Polish, and three each for Armenian and Russian). I tried to choose speakers who had been exposed to another language for the least possible time (all the Armenian and Polish consultants and two Russian consultants were short-term visitors to the U.S.; the Kabardian and Tamil speakers live in this country).

To supplement the control groups, grammars of the languages were consulted for reference. Of course, the very languages involved in the sample are unevenly described. There is relatively much written about Standard Russian and Standard Polish, the literature on Armenian and Lithuanian is less extensive (and mostly dedicated to historical issues), and there is even less on Tamil (Schiffman 1979; Asher 1982; Lehmann 1989) and Kabardian (Turčaninov & Cagov 1940; Jakovlev 1948; Grammatika 1957; Colarusso 1992).

Furthermore, comparing a full and a reduced language raises another important question: which version of the full language—spoken standard, colloquial, regional variant, or normative—should be compared to the reduced language? For Tamil and Kabardian, this question will have to remain unanswered, partly because little or no stylistic study of the full languages exists. For the other four languages, it seems logical to compare the reduced language with the spoken full language, but again, even the notion of a spoken full language is quite vague.

The following solution was adopted: where the grammar recommendations disagreed with the control native speakers, the judgments of the latter were given precedence. Though this solution is not without faults, it is justified in light of the fact that normative grammars are based on written language and are promoted by schooling. Meanwhile, most terminal speakers surveyed here do not read the heritage language and few had any schooling in them. Finally, to minimize the effect of non-categorical phenomena, wherever full language speakers allowed variation in the same context, no such variant was considered attrition.

2.3. ELICITATION PROCEDURES. Each terminal speaker was given three tasks: (a) to translate sentences from the primary language into the reduced language, (b) to judge the grammaticality of isolated sentences, short texts, and pairs of contrasted constructions, and (c) to produce a spontaneous narrative (usually several life stories and/or the plot of a book or movie) and conduct a dialogue with the investigator. Several Reduced Russian and Reduced Polish speakers were also observed in a dialogue among themselves. The work on Reduced Lithuanian, which is still in the preliminary stages, included only the recording of a narrative/dialogue.

All these elicitation tasks were designed to target the grammatical system. In addition, each speaker was asked to translate a list of words from his/her primary language into the reduced language. Finally, several speakers were given specific narrative topics and were monitored for number of word tokens per minute and for pauses.

Elicitation and acceptability judgments sometimes proved ineffective; terminal speakers had great difficulty in translating syntactic structures and often accepted constructions which were ungrammatical in the full language (for details,

see Polinsky in press). On the other hand, they were quite firm in dismissing some structures warranted by the grammar of the full language (see Section 3.2 below).

On the practical plane, this suggests that familiar fieldwork elicitation techniques must be modified when applied to less competent speakers. Since salvage studies focus on languages that have already undergone significant attrition, this problem is much greater than one might expect. One of the by-goals of this study was developing elicitation techniques that would allow an investigator who is not fluent in a language nonetheless to conduct an inquiry into structural characteristics of a reduced language. The goal was to separate the evaluation of lexical fluency from the evaluation of grammatical performance.

2.4. LOSS OF RULES OR LOSS OF OBEDIENCE TO RULES? On the theoretical plane, the problems that arise with acceptability judgments imply one further question of whether language attrition affects competence or performance. It has been suggested, in studies of language acquisition, that children and L2 learners have competence and simply lack the obedience of the rules that are otherwise present (Grimshaw & Rosen 1990, Van Buren & Sharwood Smith 1985). One way of testing the competence-versus-performance model is to elicit acceptability judgments of correct and ungrammatical examples in the full language. If these judgments are consistent with the grammar of the full language, one can conclude that it is performance that is lost and that the competence has remained intact. Another way to test the model is to present subjects with a forced choice of forms or constructions; correct choices should serve as an indication of retained competence.

Though I cannot address this problem in the present work, I have conducted tests in which terminal speakers were asked to judge series of examples (some of which were fully grammatical, some marginally acceptable, and some clearly ungrammatical for full language speakers) and to choose between two or more alternative forms (forced choice). The design of a specific questionnaire is a serious task in itself and has to be geared to the grammar of an individual language; the questionnaire used for Russian is given in Polinsky (in press).

Three conclusions emerge from such tests. First, there is a clear distinction between structural features which are fairly strong and are retained better (for example, agreement) and other structural features which are poorly retained and often yield inadequate acceptability judgments (for example, modal marking). This is certainly consistent with the developmental picture of language acquisition. Some features are acquired early and these may be better retained. Others are acquired late or may not be completely acquired, and these may be lost more easily. Secondly, the results indicate that there is a certain threshold in language loss, prior to which speakers indeed lack the obedience to rules but after which they actually show degeneration of competence. The evidence for this comes from the fact that in the first case speakers show acceptability judgments no different from speakers of a full language (but make errors in their own speech), whereas the latter speakers accept ungrammatical and marginal sequences without correcting them. The

third conclusion bears on the distinction between incomplete learners and forgetters. Preliminary results suggest that incomplete learners and forgetters differ in acceptability judgments: acceptability judgments of the former are generally worse and more skewed than those of the latter (see Section 4 below).

If there is such a split in the retention of language categories and properties, what is the general relationship between language acquisition and language loss? Furthermore, if the degree of attrition can presumably affect either performance only or both competence and performance, how can these degrees of attrition be differentiated? The first question will not be discussed here. Part of a very general answer to the second question was just mentioned: the elicitation of acceptability judgments can be used to differentiate between those who have intact competence (who reject ungrammatical examples) and those who have degenerated competence (who accept ungrammatical sequences). The practical details of such a diagnostic have to do with the selection of actual language phenomena to be tested in acceptability judgments. The remaining part of a general answer to the second question will be given below when I introduce the correlations between the loss of individual language features.

3. MAJOR STRUCTURAL CHARACTERISTICS OF REDUCED LANGUAGES. The main goal of this section is to demonstrate those structural characteristics that recur across the six languages studied here. This implies a comparison between a full language and its reduced variant. For lack of space, I will not discuss full language characteristics in detail. However, pertinent full language examples—(b) in all paired examples that follow—will be provided, and they should suffice to illustrate the differences under consideration.

3.1. INFLECTIONAL MORPHOLOGY. All the full languages have rich nominal and verbal morphology. The attrition of each language is characterized by significant reduction, in terms of both the loss of irregular paradigms and the reduction of relevant nominal and verbal categories. For American Polish, this has been demonstrated by Preston & Turner (1984), Preston (1986), and Rappaport (1990), who discuss the loss of nominal paradigms and the decline of case inflections. The data in Andrews (1994), Lavine (1995), and Polinsky (in press) illustrate similar loss in American Russian (see also Sussex 1993:1012-28 for an overview). Macevichius (in preparation) demonstrates the loss of case and leveling of inflectional categories in American Lithuanian.

Overall, morphological leveling is well-known and probably the best described feature of language loss (e.g. Seliger & Vago 1991, Sasse 1990a). Some of the examples below clearly illustrate the decline of case and verbal forms; see (3a), (4a), (22a), (23a), (24a), (26a), (29a), (35a), (37a). In addition, the statistics on language loss in individual speakers provided in Section 4 below shows significant degeneration of case systems governed by adpositions, that is, use of a direct (nominative or absolutive) case form with adpositions which, in a full language, require oblique case. For Lithuanian, Polish, and Russian, there is an apparent loss

of case variation with copular verbs (the nominative wins) and under negation (the genitive of negation, an already weak feature in the spoken full languages, is either lost completely or only weakly retained).

My major preoccupation in this section is with the syntactic features of reduced languages, which have been studied much less. Of course, one can expect the decline of morphology to influence syntactic loss, but a certain degree of modularity can also be expected here.

3.2. PRO-DROP. Of the languages studied here, Polish, Tamil (in some varieties), and Kabardian regularly drop free unemphatic pronouns. In Polish and Tamil, this involves subject pronouns. In Kabardian, due to the complex agreement structure, subject, object, and even indirect object pronouns are typically omitted, as in (1) and (2), for example:

- (1) *pro_i* *pro_j* *wə_j-zo_j-gažă-Ø*
 pro_i *pro_j* 2SG.OBJ-1SG.SUB-teach-PRS
 '(I) am teaching (you).'
- (2) *yag'aap'ă* *pro_i* *Ø-y_i-ə-wəx̃-a-ś*
 school *pro_i* 3SG.OBJ-3SG.SUB-PRIOR-finish-PAST-DEC
 '(She/he) finished school.'

Thus, these languages normally allow null subjects (pro-drop),⁶ and Kabardian also allows null objects. Meanwhile, Reduced Polish, Tamil, and Kabardian lose the pro-drop feature, as shown by the (3-5a) in contrast with the full language forms of (3-5b) (see also 31):⁷

- (3) a. *ja_i znam* (*že*) *ona_j zapomniāła* *two imię*
 I know:1SG:PRS that she forgot:3SG.FEM:PAST your name:ACC
 'I know (that) she forgot your name.'
- b. *pro_i znam* (*že*) *pro_j zapomniāła*
 pro_i know:1SG:PRS that *pro_j forgot:3SG.FEM:PAST*
 two go imienia /*twoje imię*
 your name:GEN /your name:ACC
 'I know that she forgot your name.'

⁶For Full Tamil, the question of pro-drop is far from straightforward. There is significant dialectal variation even within standardized Tamil, and it seems that some normative varieties have pro-drop while others don't (Asher 1982:143-4). My main Tamil consultant, who grew up in the Madras area, accepted pro-drop examples only as marginal and restricted to first and second persons. Another consultant, however, insisted on the pro-drop parameter and allowed it for all pronominal subjects. Another language with idiolectal difference in the acceptance of pro-drop is Hebrew (Borer 1986). When a standard language itself allows variation, decisions about its reduced version are obviously complicated.

⁷The loss of the pro-drop feature is documented for Texas Polish by Rappaport (1990) and for American Hungarian by Fenyevesi (1994:113-14).

- (4) a. naan avar aaka pa_natt-e kuTi-tt-*een*
 I he:NOM for money-ACC give-PAST-1SG
 'I gave him the money.'
- b. *pro*_i (avan-ukku) pa_natt-e kuTu-tt-*een*
 *pro*_i he-DAT money-ACC give-PAST-1SG
 '(I) gave (him) the money.'
- (5) a. abə sə q°ə məɾ Ø-zə-yə-t+a-ś
 3SG:ERG 1SG to/for it 3SG.OBJ-1SG-3SG.SUB-give+PRF-DEC
 'She/he gave that to me.'
- b. *pro*_k *pro*_j *pro*_i Ø_k-q°ə-să_j-yə_i-t+a-ś
 *pro*_k *pro*_j *pro*_i 3SG.OBJ_k-to-1SG_j-3SG.SUB_i-give+PRF-DEC
 'She/he gave me that/it.'

The most striking fact is that terminal speakers, who generally show a high rate of acceptance any sequences (including ungrammatical and marginal ones), did not accept pro-drop examples elicited from native speakers; they corrected such examples by inserting overt pronouns or full NPs.

3.3. AGREEMENT. All six full languages in this study have a rich system of verbal agreement. Kabardian has the most complex agreement system (see Colarusso 1992). The simplification of agreement in Reduced Kabardian is illustrated by (5a) above and (26a) below; in (4a), the terminal speaker fails to use the oblique object agreement prefix (cf. 5b), replacing it with a plain object prefix.

3.3.1. NUMBER AGREEMENT. The full languages discussed here have regular subject-verb agreement, which they invariably lose or simplify in the reduced version. Cross-linguistically, third person singular becomes the most neutral verb form. Compare the Reduced Armenian use with the plural subject in (6a) and the Full Armenian of (6b); see also (12) below.

- (6) a. tyan-ner-ə na ajs lusankar-ə cujc tvec-Ø hjur-i-n
 boy-PL-DEF 3SG:RP this picture-DEF show-AOR:3SG guest-DAT-DEF
 'The boys showed the picture to the guest.'
- b. tyan-ner-ə hjur-i-n lusankar-ə cujc tvec-in
 boy-PL-DEF guest-DAT-DEF picture-DEF show-AOR:3PL
 'The boys showed the picture to the guest.'

Another commonly used form is the infinitive, as in the Reduced Polish of (7) (see also 31a below) and in the reduced (a) and full (b) forms of Armenian and Russian in (8-9); tensed translations are based on context:

- (7) wy poprawić z wódka
 you:PL improve:INF from/with vodka:NOM
 'You will feel better if you have a drink.'

- (8) a. andzrev-ə sezon-ə sks-el
 rain-DEF season-DEF begin-INF
 'The rainy season began.'
- b. sks-v-ec andzrev-ner-i sezon-ə
 begin-PAS-AOR rain-PL-GEN season-DEF
 'The rainy season began.'
- (9) a. moi klassy načinat' dnjom
 my:PL classes:PL begin:TRN:INF in the afternoon
 'My classes began in the afternoon.'
- b. zanjatija u menja načinalis' dnjom
 classes:PL by me began:INT:PL:PAST in the afternoon
 'My classes used to begin in the afternoon.'

Switching to a third person form or an infinitive is a gradual process; the number of non-agreeing forms varies across individual speakers. Further, the choice of the non-agreeing forms is largely language-specific. It seems that in those languages where the infinitive is productively used as a verbal quotation form, it also becomes prominent in the loss of agreement. Third person forms are used probably as default forms, because they are found in impersonal constructions.

In Kabardian, the infinitive is a relatively rare form and it does not emerge as the compensatory form in agreement loss. Instead, speakers tend to use the imperative, which seems to function as a common quotation form, and also to simplify the set of agreement prefixes.

GENDER AGREEMENT. Polish speakers lose or significantly reduce the distinction between personal and non-personal agreement in the plural. Some speakers invariably use the non-personal in all cases. For other Polish terminal speakers, plural agreement is restructured so that all animate nouns trigger personal agreement and the inanimate ones determine non-personal agreement; see examples (16) and (23a) below.

Tamil terminal speakers lose honorific agreement (well-attested in Full Tamil, e.g. Asher 1982:143-45, 174; Lehmann 1989:45, 91).

In Lithuanian, masculine and feminine agreement on adjectives and participles is used inconsistently and unpredictably. For example, contrasting with the full Lithuanian forms of (10b) and (11b), in (10a) the feminine pronoun co-occurs with the masculine form of the participle, and in (11a) the aberrant form may have been produced as a reflexive:

- (10) a. jinaĩ dar ne-bùvo grįž-ęs
 she still not-was return-PRT:MASC
 'She hasn't been back yet.'
- b. jinaĩ dar ne-bùvo grįž-us
 she still not-was return-PRT:FEM
 'She hasn't been back yet.'

- (11) a. jōs mamà iř tēv̆elis iřgi cia gīm-ę-s
 her mom and father also here be born-PAST:3-REF?
 'Her mother and father were also born here.'
- b. jōs mamà iř tēv̆elis iřgi cia gīm-ę
 her mom and father also here be born-PAST:3
 'Her parents were also born here.'

Overall, the agreement system is undergoing significant simplification in the speech of all the subjects. Moreover, there is apparently a general correlation between the loss of agreement and the loss or restructuring of other grammatical features, which will be discussed below.

3.4. RESUMPTIVE PRONOUN. None of the full languages requires a resumptive pronoun, a pronominal element co-indexed with the subject of the same clause. However, probably all the spoken variants of the full languages use resumptive pronouns co-indexed with subject and/or topic.

The terminal speakers surveyed here use resumptive pronouns quite frequently. In examples (12-16) for Reduced Armenian, Kabardian, Russian, Polish, and Tamil, respectively, the resumptive pronouns are shown in boldface:

- (12) c'arik-ner-ə **na** bac'v-ec
 flower-PL-DEF 3SG:RP open-AOR:3SG
 'Flowers open up.'
- (13) mǎ fəzər **abə** wa
 that woman:ABS 3SG.SUB:ERG:RP 2SG:OBJ?
 wə-yi-Lag-aś
 2SG.OBJ-3SG.SUB-see-PAST.DEC
 'That woman saw you.'
- (14) ètot *character* **on** vse vremja xočet ploxoe
 this 3SG:RP all time wants bad
 'This character is always plotting bad things.'
- (15) ta dziewczyna i chłopiec **oni** jechali do domu
 that girl and boy 3PL:RP were going:non to home
 'The girl and the boy were going home.'
- (16) paiyyan appa-vukka pathrikka **avan** ame-cc-aan
 boy father-DAT letter 3SG:RP send-PAST-3SG.MASC
 'The boy sent his father a letter.'

The relevant question is whether the avoidance of a resumptive pronoun is indeed a categorical feature of the full languages. Many full languages, including English, use a resumptive pronoun co-indexed with a heavily topicalized or left dislocated NP, in which case the pronoun is preceded by a substantial pause, as in the Full Polish example (17):

- (17) Nowakowie# oni siedzą po pas w długach
 Nowaks they:RP sit up to waist in debt
 'The Nowaks, they are up to their neck in debt.'

In a reduced language, pausing is very hard to measure, given that terminal speakers make frequent and unpredictable pauses (see 3.10 below). In the present study, no obligatory pausing before the resumptive pronoun was observed, and terminal speakers did produce examples where the pause was clearly not registered.

In addition, the resumptive pronoun in a full language always agrees with the topic in the relevant grammatical categories; note the Full Polish (17), where the resumptive pronoun is in the plural (*oni*). Since agreement in general is eliminated in reduced languages, the lack of agreement between the subject/topic and the resumptive pronoun is no surprise. Thus, in the Reduced Armenian example (6a) above, the resumptive pronoun fails to agree in number with the co-indexed NP.

An obvious explanation for the occurrence of resumptive pronouns in a reduced language is their occurrence in the spoken full languages: terminal speakers are simply following the internal tendencies of that full language. However, the rate of occurrence of a resumptive pronoun in three languages for which I was able to obtain some data is much lower than in the reduced language. Thus, in spoken Full Armenian, resumptive pronouns occur at a rate of about 11% whereas the average rate in the reduced variant is 37%. In spoken Full Polish, the rate of resumptive pronouns is about 9% while in the reduced language it is 48%. In spoken Full Russian, the rate is about 16% and in Reduced Russian 82%.⁸ This gap between a spoken full language and a reduced language is quite substantial and warrants explanation.⁹

Grammatically, there is one significant difference between the use of the resumptive pronoun in a full and reduced languages. In a reduced language, the resumptive pronoun is obligatory if the subject and the verb are separated by some other material, as in the Tamil example (16). If the subject and the verb are contiguous, more variation is observed.

Altogether, it seems that the use of the resumptive pronoun is related to the tendency of a spoken language to introduce an NP as a topic, often regardless of

⁸The Full Armenian data were kindly provided by Natalia Kozinceva, based on her observations of several Modern Armenian plays; the spoken Polish data are based on my text counts in three plays; the spoken Russian data are based on counts of a collection of texts (Zemskaja & Kapanadze 1978).

⁹Another question that needs to be addressed is the difference in the percentage of resumptive pronouns across individual reduced languages; the lowest percentage is in Kabardian (11%) and the highest in Russian (82%). This may have to do with the number of speakers available for a given reduced language, as the speakers of reduced Russian are more numerous and that probably affects the statistics. Note, however, that there are statistical differences between the use of the resumptive pronoun in the full languages, too. I am leaving this question for further study.

its syntactic function in a clause, and then to co-index this topic with a pronoun inside a grammatical clause. In other words, the original reason for the use of the resumptive pronoun is the same in a full and a reduced language. However, the inflated use of the resumptive pronoun in a reduced language is due to the loss of agreement; in the absence of agreement, the resumptive pronoun becomes the only means of signaling the syntactic function of a given NP.

3.5. COREFERENCE ACROSS CLAUSES. To discuss the changes observed in syntax across clauses, let me first review the major reference-tracking strategies. In the full languages under consideration, these rules are the same as in English, so English examples are used for illustration. I will concentrate on the properties characterizing subject controllers and I will not discuss coreferential reduction determined by object controllers. The full versions of all of the languages distinguish between three well-known strategies for reference tracking across clauses, namely: null copying, pronominalization, and the repetition of a full NP.

(i) An NP (controller) in one clause is coreferential to a null copy (target) across the clause boundary:

- (18)a. The house_i whirled around two or three times and \emptyset_i rose slowly through the air.

Note that in English, the absence of a null copy in such a sentence would lead to a different interpretation:

- (18)b. ?The house_i whirled around two or three times and the house_j rose slowly through the air.

(ii) An NP (controller) in one clause is coreferential to a pronominal copy across the clause boundary:

- (19)a. Dorothy_i felt as if she_i were going up in a balloon.
b. *Dorothy_i felt as if \emptyset_i were going up in a balloon.

(iii) An NP (controller) in one clause is coreferential to a full NP in another clause; no coreferential reduction occurs:

- (20) Jack_i and Jill_j went up the hill to fetch a pail of water; Jack_i fell down and broke his_i crown and Jill_j went tumbling after.

Certainly, each use of the null copy and of the pronominal copy may create processing ambiguity; however, languages tolerate this given the economy of coreferential reduction. The three types of targets form a hierarchy of coreferential reduction, where strategies differ in redundancy:

- (21) null copy > pronominal copy > full NP
least redundant most redundant

In the reduced languages studied here, null copying is uncommon, and its absence is more apparent in the speech of those subjects who have lower lexical proficiency. For instance, (22a) is a Reduced Russian equivalent of Full Russian (22b); (22a) could be possible in Full Russian only if two different third persons were described:

- (22) a. on_i smotrel kino i on_i dumal pro èto
 he watched movie and he thought about this:ACC
 'He was watching a/the movie and thinking about that.'
 b. on_i smotrel kino i \emptyset_i dumal ob ètom
 he watched movie and thought about this:LOC
 'He was watching a/the movie and thinking about that.'

Likewise, the occurrence of the pronominal copy in the second clause of Reduced Polish (23a) would be allowed in Full Polish only if a new participant were introduced; cf. Full Polish (23b):

- (23) a. $siedzia\acute{li}$ ich dzieci_i jedni i oni_i $plaka\acute{li}$
 sat:PER:PL their children alone and 3PL:PER cried:PER
 'Their children were sitting alone and were crying.'
 b. ich dzieci_i $siedzia\acute{ly}$ same i \emptyset_i $plaka\acute{ly}$
 their children sat:NON:PL alone and cried:NON:PL
 'Their children sat alone and cried.'

In some languages, the choice between null copy and pronominal copy depends on the transitivity of the verb. However, this is not the case for the full languages discussed here, and the use of the pronominal copy in the reduced language does not seem to reflect such dependence. Thus, the reduced examples (a) of Polish, Tamil, Kabardian, Armenian, and Lithuanian in (24-28) are transitive and behave the same as the intransitives above.

- (24) a. ten $pies_i$ on_i $ugryz\acute{ł}$ tego $ch\acute{ł}opca_j$ # a
 that dog he:RP bit that:ACC boy:ACC and
 ten $ch\acute{ł}opiec_j$ # jak on_j $urost\acute{ł}$ on_j $ugryz\acute{ł}$
 that boy as he grew up he bit
 $temu$ psu_i $ucho$ i on_j $odgryz\acute{ł}$ to $uszko$
 that:DAT dog:DAT ear and he bit off that little ear
 'The dog bit the boy and the boy, he grew up, bit the dog on the ear and bit off its ear.'
 b. ten $pies_i$ $ugryz\acute{ł}$ tego $ch\acute{ł}opca_j$ a ten $ch\acute{ł}opiec_j$,
 that dog bit that:ACC boy:ACC and that boy:NOM
 jak \emptyset_j $urost\acute{ł}$, \emptyset_j $odryz\acute{ł}$ $temu$ psu_i $uszko$
 as grew up bit off that:DAT dog:DAT little ear
 'The dog bit the boy and this boy, when he grew up, bit the dog's ear off.'

- (25) a. paiyyan_i poona_j aTi-cc-aan avan_i wot-in-aan
 boy:NOM girl:NOM hit-PAST-3SG.MASC 3SG run-PAST-3SG.MASC
 'The boy hit the girl and ran away.'
- b. paiyyan_i poon-e_j aTi-cc-aan intaa Ø_i wyot-in-aan
 boy:NOM girl-ACC hit-PAST-3SG.MASC and run-PAST-3SG.MASC
 'The boy hit the girl and ran away.'
- (26) a. ma fəzər_i abə_i sə q°ə txəLər zəyətəs #
 this woman:ABS 3SG:ERG 1SG to book gave:FIN
 ar_i dəhašxəs
 3SG:ABS laughed
 'The woman gave me the book and laughed.'
- b. txəLər_j fəzəž-əm_i Ø_j-q°ə-sa_k-yə_i-t-šri
 book:ABS woman-ERG 3SG.OBJ_j-to-1SG_k-3SG.SUB_i-give-MED
 Ø_i dəhašxəs
 laughed:FIN
 'The woman gave me the book and laughed.'
- (27) a. sarujc°-ə_i loy-ac sarujc°-ə_i get-ə cac°k-ec
 ice-DEF move-AOR:3SG ice-DEF river-DEF cover-AOR:3SG
 'The ice_i moved and the ice_i covered the river.'
- b. sarujc°-ə_i loy-ac jev Ø_i get-ə cac°k-ec
 ice-DEF move-AOR:3SG and river-DEF cover-AOR:3SG
 'The ice moved and covered the river.'
- (28) a. jiē_i tik bũvo práeita mēta, jiē_i tik nuvažiávo
 she only was last year she only go:PRF:3
 'She just went there last year, she had just been there.'
- b. jiē_i tik bũvo práeita mēta, Ø_i tik nuvažiávo
 she only was last year only go:PRF:3
 'She just went there last year, she had just been there.'

3.6. RELATIVE CLAUSES. All the full languages discussed here have well-developed strategies of relative clause formation, either on the basis of a participial construction preceding the head NP (as in Tamil and Kabardian, and archaically in Armenian and Lithuanian) or on the basis of a relativizer similar to English *which*, *who*. In reduced languages, these strategies of relativization undergo significant attrition. In lieu of conventional relative clauses, the reduced languages surveyed here juxtapose two clauses, the second one serving as a description of a noun in the first clause, as exemplified by the Reduced Russian of (29a) and the Reduced Lithuanian of (30a) in contrast with their full language forms in (29b) and (30b). Often the two clauses are connected by a conjunction, as shown in (29a).

- (29)a. ja znať odna devuška i ètot devuška
 I know:INF one:FEM:NOM girl:NOM and this:MASC girl
 on rodilsja v japonija
 3SG:MASC:RP was born:MASC in Japan:NOM
 'I know a girl who was born in Japan.'
- b. ja znaju odnu devušku
 I know:1SG:PRS one:FEM:ACC girl:ACC
 kotoraja rodilas' v japonii
 REL:FEM:NOM was born:FEM in Japan:LOC
 'I know a girl who was born in Japan.'
- (30)a. jinaĭ dar tûri pùssesserę tĕn Papilėi kur
 she still has cousin:ACC there Papilei where
 aš mačiaũ kĕletą kãrtų
 I saw:PAST:1SG couple times
 'She still has a cousin there in Papilei, whom I have seen a couple of times.'
- b. jinaĭ dar tûri pùssesserę ... kuriã ...
 she still has cousin:ACC who:ACC:FEM
 'She still has a cousin ... whom ...'

3.7. EMBEDDING. Here I will examine two types of embedding: irrealis forms in the embedded clause and control structures (infinitival clauses with null elements).

3.7.1. IRREALIS. All the full languages surveyed have a developed system of subjunctive or conditional forms. In full Armenian, the relevant forms include optative and subjunctive; within both mood categories, further distinction is made between hypothetical and counterfactual forms. Standard Polish distinguishes between present (hypothetical) and past (counterfactual) conditional, though in spoken full Polish there is a tendency to collapse the two meanings using the hypothetical form. Lithuanian has synthetic and analytical subjunctive, distinguished temporally; in spoken full Lithuanian, there is a slight preference for the analytical form with the verb 'be'. Russian has two conditionals, distinguished primarily on stylistic grounds (Xrakovskij & Volodin 1986:27); in the spoken language, only the analytical conditional is used. In Armenian, Lithuanian, Polish, and Russian, the position of the embedded clause with subjunctive forms is not fixed. In Kabardian, embedded subjunctives are expressed by special medial forms of the verb preceding the matrix verb (Colarusso 1992:151-67). Tamil has special particles marking off verbs of intentional and conditional clauses (Asher 1982:48-49, 44-45) as well as the intentional and optative forms of the verb (Asher 1982:166-67).

The reduced languages show a decline of irrealis forms. Such forms are either replaced by the indicative—as in the Reduced Polish of (31a) and the Reduced Russian of (32a)—or truncated, as in the Reduced Lithuanian of (33a).

- (31)a. jeżeli tylko ja wiedzieć o tych trzesienie
 if:IND only I know:INF about those:OBL shaking:NOM:PL
 ziemi nigdy nie ja przeprowadziła z Chicago
 earth:GEN never not I moved:PAST:IND:FEM from Chicago
 'If only I had known of these earthquakes, I would've never moved
 away from Chicago.'
- b. gdybym tylko *pro*_i wiedza-ł-a o tych trzesien-iach
 if:CND only know-CND-FEM about those:LOC shaking-LOC:PL
 ziemi nigdy nie *pro* przeprowadzi-ł-a-bym ...
 earth:GEN never not move-CND-FEM-CND
 'If only I had known of these earthquakes, I would have never moved
 away ...'
- (32)a. tak było, a to Tolstoj tak on nie napisał
 so was otherwise Tolstoj so he:RP not wrote:PAST:IND:MASC
- b. tak i *slučiłos'* *inače* Tolstoj tak nie napisał by
 so and happened otherwise Tolstoj so not wrote:CND:MASC
 'It was so, otherwise Tolstoj would not have written that.'
- (33)a. *tēn būvo tik dvi vālandas mēs septiņtā*
 there was only two hours:ACC we seven:ACC
vālandā būtum
 hour:ACC be:PRS:IND:2PL
 'There were only two hours and we would be/have been there at seven.'
- b. *tēn repetīcija būvo tik dvi vālandas mēs septiņtā*
 there rehearsal was only two hours:ACC we seven
vālandā būtumēm
 hour:ACC be:SBJ:1PL
 'The rehearsal lasted only for two hours and we would be there at seven.'

Those terminal speakers who distinguish between past, present, and future normally use the appropriate tense form to indicate whether the conditional is hypothetical or counterfactual; those speakers whose agreement loss is greater and who also show a degeneration of the tense system, use a single form.

3.7.2. EMBEDDED NON-FINITE CLAUSES. The decline in the use of a null copy under coreference stands out in the use of non-finite purpose or command clauses where the null copy in the embedded clause is co-indexed either with the matrix subject or with the matrix object. In other words, if English were undergoing attrition, instead of (34a), one might expect something like (34b) or (34c):

- (34)a. I plan to buy this book.
 b. I plan for me to buy this book.
 c. I plan that I buy this book.

Reduced languages invariably resort to the strategy illustrated in (34c): a non-finite clause is replaced by a finite clause, and the antecedent is repeated in that clause. For example, the Reduced Russian of (35a) may be contrasted with the Full Russian of (35b):

- (35) a. moj mat' on ne želaet i on
 my:MASC mother:FEM he:RP not wishes and he:RP
 ne govorit ob èto
 not speak about this:NOM
 b. moja mat' i ne želaet [Ø_i govorit' ob ètom]
 my:FEM mother:FEM not wishes speak:INF about this:LOC
 'My mother doesn't want to speak about this.'

Examples such as (35a) illustrate two different phenomena under dramatic attrition: the loss of control structures and the loss of null copying under coreference. In more general terms, instead of subordinating two clauses and reducing the coreferential entities, terminal speakers juxtapose those clauses without linking them.

Of the full languages surveyed here, Kabardian and Tamil consistently employ the opposition between medial and final verb forms in clause linkage; compare the medial form 'giving' in the full Kabardian example (26b) above. In the respective reduced languages, medial forms occur rarely; instead, speakers simply juxtapose finite final forms, for example, Tamil (25a) and Kabardian (26a) above and Kabardian (36a) below:

- (36) a. pšašə-m L'a-r Ø-y-a-L'ağ*-eğ-š #
 girl-ERG man-ABS 3SG.OBJ-3SG.SUB-PRIOR-see-PAST-DEC
 L'a-r Ø-q'e-dek''a+š
 man-ABS 3SG-DIR-go+PAST:DEC
 'The girl saw the man and the man left.'
 b. pšašə-m L'a-r Ø-y-a-L'ağ*-əri
 girl-ERG man-ABS 3SG.OBJ-3SG.SUB-PRIOR-see-MED
 L'a-r/mər Ø-q'e-dek''a-ğa-š¹⁰
 man-ABS/3SG 3SG-DIR-go-PAST-DEC
 'The girl saw the man and the man/he left.'

This is a manifestation of the same tendency: clause subordination is replaced by simple juxtaposition of clauses, with or without linkers.

3.8. VERBAL GAPPING. Gapping is a deletion of the predicate, under co-predication, which all six full languages allow freely and actually favor in the spoken versions. Reduced languages disfavor gapping, as illustrated in example (37a) from

¹⁰A similar full language example is given in Colarusso (1995:3).

Polish. Standard Polish speakers judge this example as funny and redundant; the full version with gapping and the deletion of the second nominal 'month' is shown in (37b).

- (37) a. ja przyjechałem na miesiąc a matka
 I came for month and mother
 s paniami przyjechali trzy miesiące
 with women came:PER.PL three months
 'I came for a month and my mother with her girlfriends came for three months.'
- b. *pro* przyjechałem na miesiąc a matka
 came for month and mother
 s paniami GAPPING na trzy
 with women for three
 'I came for a month and my mother with her girlfriends for three.'

Example (38) from Reduced Russian involves code-switching on the predicate; despite the fact that the predicates are in English, the terminal speaker fails to delete the predicate on the second occurrence:

- (38) moja mama goes mad esli ja stay over s Sharon moj
 my mom if I with my
 otec on goes mad esli moi druzja u menja doma
 father he:RP if my friends by me at home
 'My mother goes mad if I stay over at Sharon's and my father—if my friends stay over at my house.'

In addition, some features go beyond the syntax of a clause or sentence. In discourse, reduced languages are characterized by the so-called tail-head linkage of discourse units (Grimes 1975:316) and by the consistent overuse of 'and then' sequences (Polinsky 1994b, in press). These discourse characteristics find striking parallels in three unrelated language areas: in extended pidgins and creoles (Reesink 1990), in the development of the narrative (Berman & Slobin 1994:272-77), and in uneducated registers (E. Finegan, p.c.).

3.9. WORD ORDER. Two general issues arise with regard to word order. (1) Does word order variation decline under attrition? (2) Does attrition affect 'cross-category harmony' (Hawkins 1994), i.e. the consistency of head-dependent ordering across various language constructions?

The full languages surveyed here fall into three word order types: predominantly SVO (Polish, Russian), predominantly SOV (Kabardian,¹¹ Tamil), and SVO/SOV

¹¹Full Kabardian also has the OSV order, exemplified in (26b) above; the split between OSV and SOV is conditioned by tense and animacy (Polinskaja 1989). For the points made here, it is important that Reduced Kabardian demonstrates weaker V-final characteristics than Full Kabardian.

(Armenian, Lithuanian). In the latter group, the two basic orders are predictably distributed across tenses and persons. Only Kabardian and Tamil have fairly strict word order, and the other four full languages allow wide variation in word order, primarily for pragmatic purposes. Such word order variation is made possible by rich case morphologies and agreement forms. With a general decline in inflectional morphology, word order variation would expectedly decline, too. This is precisely what happens in the reduced languages.

For an intransitive clause, this is illustrated by the contrast between (8b) and (8a) above. While in Full Armenian, presentational focus constructions (see Hetzron 1975, Lambrecht 1994) have the VS order (8b), Reduced Armenian treats such constructions on a par with all other intransitives (8a).

For clauses with transitive or middle verbs, the preferred order in Reduced Armenian, Lithuanian, Polish, and Russian seems to be SVO; cf. (6a) above, which is SVO, and (6b), which is SOV. However, it is impossible to decide whether the SVO order prevails due to some structural considerations or as a result of interference from English, French, and Russian, which have SVO as their basic surface order. In Reduced Kabardian and Tamil, there appears to be variation between SVO and SOV, which in itself is an indication that the verb-final order is weakening.

Concerning cross-category harmony, reduced languages lose consistency in the ordering of heads and dependents across various constructions. Again, this may be partially due to the interference of a primary language. It is also due to internal lack of cross-category harmony, particularly in Full Armenian and Full Lithuanian, which are predominantly head-final but have some head-initial features, too (Armenian is NumN, AdjN; Lithuanian has prepositions, NumN, AdjN). Adpositions prove to be a stable category throughout: they remain postposed in Tamil and Kabardian and preposed in the other four languages. The unstable constructions seem to include Genitive-Noun, Adjective-Noun, Verb-Adverb. For example, in the Reduced Lithuanian of (39), the genitive 'dead' should precede the nominal 'recollection':

- (39) po pamald-ũ trũmp-as prisiminĩm-as žũvus-iũju ...
 after service-GEN:PL short-NOM recollection-NOM dead-GEN:PL
 'After the services, there will be a short commemoration of the dead ...'
 (Draugas, 1/10/95, p.6)

The medial position of heads, separating the dependents, is not maintained; cf. Reduced Lithuanian (40a) and Full Lithuanian (40b):

- (40)a. su viĩns kitũ
 with one other
 b. viĩnas su kitũ
 one with other
 'with each other'

Besides the interference of a primary language, another factor which makes the study of word order change under drastic attrition difficult is the fragmentation of speech segments, discussed in the next section.

3.10. PAUSING. Frequent and often unpredictable pauses in utterances constitute a striking characteristic of terminal speakers' performance. Such pauses can occur even within a single constituent, for instance, between a nominal and an adposition. Are pauses in a reduced language motivated by structural production or are they due to difficulty in lexical retrieval?

To answer this question, a simple test was staged with one American Polish speaker (AN), two speakers of American Russian (LE and TO), and an American Armenian speaker (L). Each speaker was offered two discourse situations, one which presumably involved relatively well known lexical material, and one which presumably required unfamiliar lexical material. LE, for example, is still living at home with Russian-speaking parents, who, according to her, quarrel a lot. She was first asked to describe an argument between her parents (a situation which is presumed to involve better known or at least recoverable lexical items) and then to describe the nature of her present job, where she speaks only English (situation which is presumed to involve unknown lexical items). Similarly, the Armenian speaker, who grew up spending a lot of time with his grandmother, was asked to describe her life story, which he had heard in Armenian. He was then asked to reminisce on the courses he had taken at law school. The two older speakers, TO and AN, were both asked to describe their home villages in Belorussia and Poland (type of discourse which would favor familiar lexical items), and were then asked to describe their neighbors in the respective senior housing buildings where they live (discourse disfavoring familiar lexical items). In addition, the transcribed interview with one speaker of Reduced Lithuanian was divided into two subparts, one in which he speaks about his family (presumably a familiar topic), and another in which he discusses Lithuanian art (less familiar).

To determine whether or not the two interviews elicited from each terminal speaker were similar in pausing, the following measures were chosen: mean number of words per minute; mean number of pauses per minute; mean number of words between two consecutive pauses (words within one tonal unit); and total number of constituents interrupted by a pause. The results are summarized in Table 1. Language differences in word length and individual differences in speech tempo notwithstanding, there appears to be a clear correlation between the unfamiliarity of a discourse situation and the number of pauses as well as the number of words within one tonal unit. This suggests that pausing is indeed a factor of lexical retrieval, rather than of the grammatical structure of the reduced language. Note that there was no difference between TO and AN, two older speakers, and LE, A, and D, three younger speakers, in the overall pattern of pause distribution.

TABLE 1. *Pausing and constituent interruption by terminal speakers in familiar and unfamiliar discourse situations*

	LE RUSSIAN	TO RUSSIAN	AN POLISH	L ARMENIAN	D LITHUANIAN
FAMILIAR					
W/min	7.16	5.48	6.4	6.09	—
P/min	2.2	1.5	1.33	2.71	—
W/btwP	5.3	5.12	4.67	5.78	5.8
IC	2	7	4	0	1
UNFAMILIAR					
W/min	5.22	4.56	4.15	4.38	—
P/min	4.35	3.36	3.87	4.25	—
W/btwP	3.18	2.76	1.67	2.98	3.16
IC	16	14	22	5	2

W/min = mean number of words per minute; *P/min* = mean number of pauses per minute; *W/btwP* = mean number of words between two consecutive pauses; *IC* = total number of interrupted constituents (constituents broken by a pause).

To conclude, this section has discussed several structural characteristics accompanying attrition that recur across the six reduced languages. Within each reduced language, these characteristics are displayed in a gradual manner; each speaker exhibits some attrition structures but also retains structures which are consistent with the grammar of the full language. It is well established that grammatical categories do not change wholesale across the board for all speakers. It is, in fact, typical of a moribund language to show fluctuations within a single category and to exhibit gradual and variable diffusion (Dorian 1981). What is unclear, however, is to what extent the variation within each characteristic is representative of overall language attrition and how individual characteristics are related to one another. To approach these questions, the next section presents quantitative data on variation between full and reduced languages.

4. MEASURING ATTRITION

4.1. CORRELATION BETWEEN INDIVIDUAL STRUCTURAL VARIABLES. The six reduced languages studied here share several morphological and syntactic features that make these languages structurally similar to one another and that set them apart from the healthy full languages. It is important to determine whether these features are indeed representative of language attrition in general and whether they are related to one another. The possibility that at least some of these features are related is suggested by the fact that the lack of agreement is related to the overuse of resumptive pronouns and that the decline of inflectional morphology results in more rigid word order.

Next, if the structural features are indeed related, accounting for all of them rather than for isolated features would be a more consistent task. Taking every structural variable in isolation, each speaker has occurrences that are grammati-

cal from the standpoint of a full language but also has consistently ungrammatical occurrences. Thus, we can compare variation across each structural variable and determine whether or not this variation is consistent for an individual speaker.

To test whether or not structural variables are correlated, I obtained statistics on those variables for which sufficient data were available, namely agreement, relativization, coreferential reduction, adpositional oblique forms of nominals, conditional/subjunctive, distinct medial verbal forms (in Kabardian and in Tamil), and pro-drop (where relevant). For each variable, the first fifty tokens per speaker were transcribed (though fewer than fifty tokens were available for some individuals). Within each variable, the percentage of correct constructions (grammatical according to the full language grammar) was calculated for each speaker. The relevant percentages for six of the languages are presented in Tables 2-6 (no statistical data on Lithuanian are yet available).

TABLE 2. *Reduced Russian: Summary statistics on attrition*

S	G	T1	T2	LP	LEX	AGR	-RP	CND	NC	REL	PON
B	m	7	11	0	86.5	60	20	28	27	18	12
G	m	6	16	2	82	54	10	19	11	22	10
K	m	9	17	4	88.5	74	36	44	36	15	18
KO	m	10	10	2	90	72	32	37	28	36	34
MA	m	7	17	7	74	32	12	12	14	17	0
NA	m	7	8	0	77	30	12	10	13	18	0
P	m	8	9	0	86	64	10	20	26	33.5	8
PE	m	0	21	—	69	3.5	5	11	8	4	0
S	m	9	12	4	88.5	66	28	32	35	42	10.5
TO	m	18	47	40	75.5	15	10	25	18	38	12.5
Z	m	11	12	2	84	50	14	13	23	51	10
ZH	m	9	18	8	89.5	84	24	36	33	55	20
A	f	5	12	0	77	36	16	11	15	26	4
E	f	7	14	2	89	68	30	56	37	44	20
GA	f	16	73	25	72	22	12	18	25	37	19
I	f	7	11	5	88.5	68	18	36	39	24.5	22
LE	f	7	13	0	90.5	66	20	47	21	74	24
M	f	9	12	5	88.5	72	22	33	29	78.5	14
N	f	12	3	0	90	70	18	41	21	85	30
SV	f	5	12	0	75	42	6	12	6.5	11	0

S = speaker; *G* = gender; *T1* = time spent in native-speaking community; *T2* = time spent outside native-speaking community; *LP* = lapse period; *Lex* = lexical proficiency; *AGR* = percent of correct agreement constructions; *-RP* = percent of constructions without a resumptive pronoun; *Cnd* = percent of correct conditional forms; *NC* = percent of correct null copying under coreference; *Rel* = percent of correct relative clauses; *PON* = percent of prepositional oblique nominals.

The percentages of correct constructions within each variable were then analyzed using the DataDesk statistical package. To determine whether two variables are correlated, regression analysis is usually performed and the Pearson coefficient of correlation is computed. However, this coefficient is a measure of the strength of the linear

relationship between two variables. In our case, there is no reason *prima facie* to assume the linearity of relationships.

TABLE 3. *Reduced Polish: Summary statistics on attrition*

S	G	T1	T2	LP	LEX	AGR	-RP	CND	NC	REL	PD
AD	m	0	23	3	70	56	23	27	13	24	12
J	m	7	16	2	74	70	60	82	14	25	18
M	m	10	16	4	94	98	88	90	90	75	76
Z	m	8	12	0	84	62	42	54	30	56	22
A	f	12	18	10	86	70	60	62.5	82	64	18
AN	f	21	51	45	81	54	32	59.5	18	58	14.5
R	f	9	9	0	90	85	54	87	21	66.5	69.5

See abbreviations in Table 2; PD = percent of pro-drop constructions.

TABLE 4. *Reduced Armenian: Summary statistics on attrition*

S	G	T1	T2	LP	LEX	AGR	-RP	CND	NC	AON
L	m	0	37	20	68	54.5	47.5	36	18	16
N	m	6	20	2	85	76	80	55	24.5	36
S	m	8	22	9	79	64	58	30	25	22.5
M	f	8	15	0	88.5	92	66	85	74	86.5

See abbreviations in Table 2; AON = percent of adpositional oblique nominals.

TABLE 5. *Reduced Kabardian: Summary statistics on attrition*

S	G	T1	T2	LP	LEX	AGR	-RP	MED	REL	PD
M	m	5	41	0	72	58	88	65.5	45	14
R	m	7	26	10	87	76	90	74	20	36

See abbreviations in Table 2; Med = percent of correct clause-medial forms of the verb; PD = percent of pro-drop constructions.

TABLE 6. *Reduced Tamil: Summary statistics on attrition*

S	G	T1	T2	LP	LEX	AGR	-RP	MED	REL	PD
R	m	6	26	12	86	74	30	27	77	24.5
V	f	6	20	8	81.5	68	12	24.5	59	15

See abbreviations in Table 2; Med = percent of correct clause-medial forms of the verb; PD = percent of pro-drop constructions.

Since there is at least a potential for non-linear relationships between individual variables, their relationship was correlated using the Spearman coefficient of correlation. The results of the computations for Reduced Armenian, Polish, and Russian are presented in Tables 7-9. Correlation coefficients for Kabardian and Tamil cannot be computed simply because of statistically insufficient data (see, however, the actual percentages in Tables 5 and 6).

TABLE 7. *Correlated attrition indices: Reduced Russian*
(Spearman rank correlation)

	LEX	AGR	-RP	CND	NC	REL	PON
AGR	0.882	1.000					
-RP	0.792	0.811	1.000				
CND	0.874	0.813	0.760	1.000			
NC	0.638	0.733	0.805	0.727	1.000		
REL	0.629	0.451	0.419	0.540	0.394	1.000	
PON	0.798	0.688	0.672	0.877	0.649	0.633	1.000
T1	0.285	0.263	0.322	0.374	0.408	0.602	0.534
T2	-0.394	-0.291	-0.153	-0.065	-0.099	-0.113	-0.077
LP	-0.178	0.020	0.116	0.100	0.346	0.137	0.206

See abbreviations in Table 2.

TABLE 8. *Correlated attrition indices: Reduced Polish*
(Spearman rank correlation)

	LEX	AGR	-RP	CND	NC	REL	PD
AGR	0.775	1.000					
-RP	0.667	0.855	1.000				
CND	0.750	0.883	0.847	1.000			
NC	0.893	0.613	0.685	0.536	1.000		
REL	0.964	0.703	0.631	0.786	0.821	1.000	
PD	0.883	0.855	0.709	0.775	0.757	0.775	1.000
T1	0.536	0.036	0.252	0.321	0.571	0.672	0.180
T2	-0.523	-0.664	-0.391	-0.468	-0.342	-0.342	-0.791
LP	-0.036	0.291	0.036	-0.036	0.126	0.162	-0.400

See abbreviations in Table 2; PD = percent of pro-drop constructions.

TABLE 9. *Correlated attrition indices: Reduced Armenian*
(Spearman rank correlation)

	LEX	AGR	-RP	CND	NC	REL	AON
AGR	1.000	1.000					
-RP	0.800	0.800	1.000				
CND	—	—	—	—			
NC	0.800	0.800	0.600	—	1.000		
REL	0.800	0.800	0.400	—	0.400	1.000	
AON	1.000	1.000	0.800	—	0.800	0.800	1.000
T1	0.632	0.632	0.316	—	0.105	0.949	0.632
T2	-1.000	-1.000	-0.800	—	-0.800	-0.800	-1.000
LP	-1.000	-1.000	-0.800	—	-0.800	-0.800	-1.000

See abbreviations in Table 2; AON = percent of adpositional oblique nominals.

As Tables 7-9 show, there is clearly a positive association among the individual measures of structural attrition. Certain structural variables are strongly correlated.

Agreement, coreferential reduction, and absence of resumptive pronouns are correlated in a strong positive manner across the three languages. In Reduced Polish, pro-drop is also strongly correlated with these variables. Other variables which are strongly correlated include conditional and adpositional obliques. This clustering of variables is significant; the first set clearly represents the syntactic component, while the second set includes two variables which represent morphosyntax.

The weaker correlations for relativization can be explained by the less obligatory nature of relative clauses. A relative clause is often optional and is a rhetorical device rather than a structural necessity. If speakers do not know how to use a relative clause, they can easily avoid it without making a mistake, but if speakers do not know how to use agreement, there is no way to avoid it without an error.

The variance observed in Tables 7-9 may be due to three factors. (i) The features included here represent just a minor part of the overall grammatical competence and the missing parts affect the statistics.¹² (ii) Smaller pools of speakers cannot be adequately compared to larger, more diverse pools of speakers. (iii) Individual variation among speakers cannot be ignored. This individual variation is particularly apparent in larger pools of speakers. Some speakers consistently display higher percentages of grammatical forms across several variables. This allows us to represent individual terminal speakers along a cline, where those with a high degree of correct forms are closest to the full language, and those with the lowest percentages of such forms represent greatest language attrition. Such a representation is reminiscent of the representation of creole speakers as acrolectal (closest to the lexifier language), mesolectal (intermediate), and basilectal (furthest removed from the lexifier); see also Silva-Corvalán (1994) for a similar representation of Spanish speakers in Los Angeles. In (41-43), the three reduced languages are presented as continua and each speaker is ordered on the continuum based on the average percentage of correct forms of the structural variables.

(41) Reduced Armenian attrition continuum

Speaker	L	S	N	M
% correct	34.4	39.3	54.3	80.7
basilectal			mesolectal	acrolectal

¹²One issue concerning missing parts needs to be addressed by language loss studies: How should one account for those features of a full language that are entirely missing from the declining language? For example, none of the reduced languages surveyed here has passive constructions while all the full languages, except Kabardian, do. The solution might be to dismiss the passive as part of the written standard rather than the spoken full language, but such ad hoc decisions would have to be made for many features, some of which are hard to predict.

(42) Reduced Polish attrition continuum

Speaker	AD	AN	Z	J	A	R	M
% correct	25.8	39.3	44.3	44.8	59.4	63.8	86.2
	basilectal		mesolectal			acrolectal	

(43) Reduced Russian attrition continuum

Speaker	PE	SV	NA	MA	A	TO	B	GA	Z
% correct	5.3	12.9	13.8	14.5	18	19.8	21	26.9	22.2
	basilectal								
	P	G	I	S	K	KO	M	ZH/LE	N
	26.8	27.5	34.6	35.6	37.2	39.8	41.4	42	44.2
	mesolectal								

Returning to the question of dialect differences, I may note that the continuum in (43) shows little association with the geographical origins of the speakers. Geographical dialect differences appear to have no effect on the degree of attrition demonstrated by an individual speaker.

4.2. CORRELATION BETWEEN STRUCTURAL AND LEXICAL ATTRITION. All the variables discussed so far represent knowledge of the grammatical component. The next question which naturally arises is whether or not the decline in grammatical knowledge is necessarily accompanied by a decline in lexical proficiency. The goal of this section is to establish that grammatical loss and lexical loss are indeed related.

A number of measurements of vocabulary production have been developed with regard to L1 and L2 acquisition; see Clark (1993:22-42, 74-125) and Pan et al. (1995). It is beyond the goals of this paper to evaluate the applicability of various lexical measures to a study of language loss. Let me note, though, that what is good for language acquisition may not necessarily work for language loss. In this pilot study, I used my own measure for estimating vocabulary attrition.

As a formal criterion for estimating attrition, the subjects were tested for their ability to translate 100 words of basic vocabulary (the Swadesh list) from their primary language into the heritage language. These translations are compared to the full language list obtained from dictionary translations and then checked with at least one full speaker. One point is deducted for a wrong translation or a blank answer. Half a point is deducted if a word is translated by the correct root but an incorrect form (e.g. the singular translated as the plural). The total number of erroneous forms is then deducted from the number of items on the list (100), and the result is taken as the numerical value of a speaker's lexical proficiency.

To illustrate this procedure, Reduced Armenian speaker L failed to translate 11 words altogether, mistranslated 12, and used a non-standard citation form for 18 words. Thus, he had 11 absent + 12 wrong + 0.5 x 18 form errors = 32. Accordingly, his lexical proficiency in Armenian was estimated at 68 percent.

Of course, the procedure described here has its drawbacks, some of which it

shares with the basic vocabulary procedure as applied in historical linguistics. First, one might object that there is a certain degree of arbitrariness in taking off points for the wrong forms, including wrong citation forms. However, any language (documented or not) has established citation forms for major word classes. In languages like the ones in this study, citation forms are codified by dictionaries; otherwise, citation forms can easily be established in interviews with competent speakers. The very absence of the standard citation form indicates some dissociation from the dominant linguistic environment, which can lead to attrition. Second, the basic vocabulary list was apparently designed for non-urban cultures. The speakers interviewed in this study commonly stumbled over words such as 'bark', 'louse', or 'ashes'. Though these are not particularly common concepts for a thirty-year-old in New York or Chicago, any competent speaker of the language would certainly know these words. A related issue is 'baby vocabulary': if subjects left the full language environment as very young children, is it legitimate to expect them to use an adult word (e.g. for breast or belly)? This paper does not offer a universal solution to this problem; however, since some baby words were attested, an ad hoc decision was made to deduct just half a point for the use of a baby word if a subject left the full language environment before age six.

The advantages of the measure are in its simplicity and its good potential for comparability across speakers. Unlike some other lexical measures, such as type per token ratio, the basic vocabulary test is independent of the length of an interview and discourse situation.

None of the terminal speakers in this survey had a complete basic vocabulary list. The lexical proficiency index for each speaker is given in Tables 2-6. This measure was correlated with the structural measures discussed previously. The correlations for Reduced Russian, Reduced Polish, and Reduced Armenian are shown in Tables 7-9.

As the results indicate, there is a positive across-the-board correlation between the maintenance of vocabulary and maintenance of grammar. Thus, high percentages of grammatical features (correct subject-verb agreement, absence of the resumptive pronoun, correct use of conditional, null copying across clause) are directly related to higher lexical proficiency scores. Importantly, this correlation is not bound to one variable but is reiterated across the variables.

This positive correlation, in my opinion, constitutes an important finding in itself. Without denying the modularity of language and the gradual process of language attrition, it still shows that non-aphasic attrition has consistent manifestations in various language components. Moreover, this correlation has an important parallel in L1 acquisition. As shown by a series of independent experiments, the level of lexical maturity and the level of grammatical maturity in L1 learners are closely related (Bates et al. 1994; Pan et al. 1995). This is just one of multiple indications that the study of L1 acquisition and L1 loss can be mutually beneficial.

Finally, this correlation has an important practical ramification. Since there is

a general correlation between lexical and grammatical loss, the measure of lexical loss—which is easier to establish—can serve as a preliminary indication of overall language loss.¹³ Accordingly, the simple lexical production test proposed here can be used as a tool for preliminary evaluation of speakers whose language undergoes attrition.

4.3. **SOCIOLINGUISTIC VARIABLES.** Finally, we need to examine the relationship between the degree of language loss and the time spent by a speaker outside the heritage language community. To this end, I computed the correlations between the lexical variable (as representative of overall language loss) and the three temporal variables (time in the L1 community, time outside the L1 community, and lapse period).

There is no correlation between the degree of loss and the lapse period. There is a positive correlation between the maintenance of a reduced language and the time spent in the reduced language community, and this finding is consistent with the findings by Lavine (1995:34). Despite this correlation, there is no significant difference between those speakers who were born into a L1 community and those speakers who were born in the U.S.; similarly, there is no difference between those who left the L1 community before age 7 and those who left after that age.

Contrary to Lavine's findings (1995:34), there is a very weak inverse correlation between the maintenance of a reduced language and the time spent outside the L1 community. The difference between his findings and mine may have to do with the general level of language attrition demonstrated by individual subjects. Lavine, as well as a number of other students of attrition, deal with much more competent speakers than the speakers surveyed here. Those competent speakers would probably score above the acrolectal speakers in (41-43); this, in turn, confirms that there are multiple degrees of attrition, from very minor to drastic, studied here; different degrees of attrition may be affected by different sets of sociolinguistic factors.

4.4. **INCOMPLETE LEARNERS VERSUS FORGETTERS.** One of the relevant questions in the study of attrition is whether the attrition is related to incomplete learning or to forgetting of the original system. There is little clarity as to how age may be linked to incomplete learning vs. forgetting; I suspect that eventually we will be able to come up with a continuum on which the two phenomena will only be the two extremes. To avoid the problem of choosing the cut-off age, I simply compared the data on three speakers who left the full language community as young adults (age 16 or older) with the data on the speakers of the same reduced languages who stopped being exposed to the full version of L1 as children. These three speakers (AN in the Reduced Polish group, GA and TO in the Reduced Russian group) are the best candidates for forgetters. For brevity, I will be refer-

¹³Note that this paper does not concern itself with changes and loss in the sound system; that system might require a different approach altogether.

ring to these subjects as forgetters and to all the other speakers of Reduced Polish and Reduced Russian as non-forgetters.

The first hint that there is no significant difference between the loss in these two types of speakers comes from the data on pausing (Table 1). The pausing experiment for Russian involved one forgetter (TO) and one non-forgetter (LE). Discourse topic had a significant impact on the performance of both speakers, and, if anything, LE seemed to be a bit faster than TO (which may also be due to the age difference).

The statistics on the loss of structural features demonstrated by GA and TO do not set them apart from the other Russian speakers (see Table 2). Similarly, the numerical data on AN's loss are not in any significant way different from the data for the Polish non-forgetters (Table 3). Thus, no structural difference between the forgetters and non-forgetters was observed. The forgetters clearly skewed the sociolinguistic variables, particularly due to the long lapse period, but this seems to be a trivial fact.

However, one significant difference between the forgetters and non-forgetters has to do with acceptability judgments. As mentioned above, all subjects were asked a series of questions involving acceptability judgments and forced choice. The forgetters seem to have better acceptability judgments than non-forgetters. More specifically, they less frequently use the no-choice option, that is, 'I don't know'—the answer which plagues studies of advanced loss. Thus, for Reduced Russian, in the fourteen sets of examples involving forced choice (two sets on person/number agreement in the verb, gerund control, gender agreement, mobile stress in the inflectional paradigm, lexical choice, lexical choice related to register variation, conditional form, ambiguous reflexive, prepositional oblique, predicate adjective, deictic vs. pronominal reference, active vs. passive, and reflexive verb), GA chose the correct form in seven sets, the incorrect in five and gave 'I don't know' only in two (14%); TO chose the correct form in nine sets, the incorrect in two and gave 'I don't know' in three (21%). Meanwhile, for the rest of the Reduced Russian pool, the average incidence of no choice is 7.5 sets, over 50% of the forced choice sets. For Reduced Polish, where 12 forced choice sets were used, AN gave three no choice, the lowest in the pool; the rest gave anywhere from five (A) to eleven (AD) no choice.

This bifurcation suggests that there may be a significant difference between forgetters and incomplete learners. This difference appears to be reflected, however, in their passive skills and eventually in the competence, rather than in their actual language production. Though this is an extremely preliminary finding, based on a very crude test, it is worth investigating. The implications are quite clear: if indeed forgetters differ from incomplete learners in maintaining a better language system, though not displaying it in speech production, a series of diagnostic tests, geared to a specific language system, can distinguish the two groups early on and allow us to study each group in its own right.

5. CONCLUSION. In addressing language attrition and loss, it is important to distinguish three types of problems. First, is there a particular set of linguistic characteristics that are consistently retained across languages? Second, is there a particular set of linguistic characteristics that are consistently lost across languages? And third, what new linguistic characteristics (if any) arise as compensatory under language attrition? This paper has not dealt with the first question, but it has addressed the second and the third.

With regard to loss of linguistic characteristics, the overall important finding is that structural attrition is not a random process and that even under severe attrition there are specific language characteristics which undergo serious change. These characteristics include: decline of inflectional morphology, loss of null subjects, loss of various types of agreement, emergence of resumptive pronouns, decline in null copying under coreference, decline of relativization, attrition of embedded clauses, loss of verbal gapping, increasingly rigid word order, and decline in the consistency of head-dependent ordering. The statistics presented above indicate that at least some of these characteristics are closely related. This suggests that language attrition has a set course along which it progresses and that it is typologically consistent.

Given that the syntactic characteristics of attrition prove to be related, the question arises whether these characteristics can be accounted for in a unified manner. It seems that the decline of null subjects, null copying, relativization, the loss of gapping, and the emergence of highly frequent resumptive pronouns are indicative of one and the same general tendency, namely, to use redundant elements in speech. This tendency, known as overuse, elaboration, or overmarking (Berman & Slobin 1994:318-20, 372-73), is also characteristic of language acquisition and of adult uneducated registers. Though this paper does not deal with discourse phenomena in detail, it is there that one finds further evidence for various types of overmarking, such as redundant conjunctions, tail-head linkage, and redundant hedges (Polinsky 1994b). The increasing redundancy of expression clearly compensates for the loss of agreement and inflectional forms; terminal speakers develop more elaborate rules of syntax, which require consistent overmarking of relationships between words.

Another reason for overmarking under attrition probably has to do with overall diminished language competence. The review of pauses occurring in the speech of language attriters suggests that they are only capable of producing and controlling relatively small speech segments, at the level of a phrase or very short clause. They have enormous difficulty in combining these small segments into longer clauses, sentences, and paragraphs. It is as if they maintain rules allowing them to construct plausible clauses and clause constituents but hardly have any grammar left which would allow them to put clauses together into sentences and texts.

This account is consistent with the distinction between structural proficiency, which is related to the morphosyntax of a language, and rhetorical proficiency,

which allows one to link smaller units into larger sentential or textual segments (Berman & Slobin 1994:597). What this account adds to the existing descriptions of language attrition is another dimension of gradual attrition: not only does attrition result in differential marking on some items or categories, but it is also modular in affecting different language capabilities at a different rate. In particular, the attrition of syntax seems to follow the hierarchy in (44):

(44) discursive syntax > sentential syntax > clausal syntax > phrasal syntax

The statistics presented here confirm that the attrition of individual language characteristics applies differentially to discrete language items and also varies from one terminal speaker to another. This is particularly apparent in larger speaker pools, where speakers can be arranged along a continuum ranging from those with lowest attrition (acrolectal) to those with the highest attrition level (basilectal).

One of the major findings of this paper is a strong positive correlation between the loss of various syntactic characteristics and lexical loss. This correlation has important correspondences in language acquisition studies, where lexical and grammatical maturity are also found to correlate. This finding also has a practical corollary; lexical proficiency, which is fairly easy to assess, can serve as an indication of structural attrition.

It was also found in relation to the lexicon that the frequent and often aberrant pausing observed in speech under attrition is determined by difficulties in lexical retrieval, rather than structural factors. This is confirmed by significant difference in the length of tonal units and the number of pauses in discourse situations involving familiar and less familiar vocabulary (see Table 1).

The pausing problem reflects a more general property of the subjects surveyed in this study: all have a very high level of attrition. This presents the researcher with a serious problem: certain conventional methods of eliciting language data prove useless with such speakers. One of the most apparent failures concerns the elicitation of acceptability judgments. It appears that terminal speakers often fail to produce any acceptability judgments, typically accepting everything that is proposed to them. The notable exceptions to the 'everything-goes' acceptability judgments include two elliptical phenomena, pro-drop and verbal gapping. While these phenomena are perfectly acceptable to competent full language speakers, speakers of the reduced languages reject them. This is another manifestation of the syntactic redundancy discussed above.

Lastly, the significant change in acceptability judgments from a full language to a reduced language raises the question: does attrition, at least at the level described here, affect performance (obedience to linguistic rules) or the rules themselves? If the rules remained intact, one would expect the subjects in this study to demonstrate acceptability judgments similar or identical to those of full competent speakers. The inflation of judgments observed in actuality suggests that the very system of linguistic rules, not just performance, also undergoes attrition in severely reduced

language varieties. However, there are also individual differences across this more general phenomenon, and these differences are suggestive of the distinction between incomplete learners, who lack competence in a linguistic system, and forgetters, who, depending on the level of attrition, may lose the ability to produce the language on-line but may still maintain the system as such in a better way than the first group.

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