THE SYNTAX OF WORD-INITIAL CONSONANT GEMINATION IN ITALIAN

DONNA JO NAPOLI   MARINA NESPOR

Washington, DC   *Universiteit van Amsterdam*

Word-initial consonants may be lengthened in Italian under certain phonological, syntactic, and sociolinguistic conditions. This phenomenon is known in the literature as Raddoppiamento Sintattico (RS). The syntactic conditions on RS for two principal varieties of Italian are examined here, and it is proposed that RS is sensitive to the syntactic notion of 'left branch'. Thus RS is a phonological rule which has access to surface tree-structure. The proposal here accounts in a simple way for great masses of data and also delimits the possible structural analyses of any given sentence in Italian.*

This paper analyses the syntactic environments in which the sandhi rule of Raddoppiamento Sintattico (RS, 'syntactic doubling') operates in two varieties of Italian.[1] RS is the rule which results in a phonetic lengthening of the initial consonant of a word:

(1) *Fa caldo* 'It's hot.'
   without RS [fá káldo]
   with RS   [fá k:áldo]

RS is certainly one of the most important features in the regional varieties of Italian.[2] It varies from obligatory application, to optional, to not applying at all. The factors affecting these three possibilities vary from the entirely syntactic to a mixture of syntactic, phonological, and sociological. In many areas of southern Italy, RS is present in almost every utterance of two or more words. Given syntactic environments in which RS is possible, its frequency depends on phonological and sociological factors which differ greatly from region to region. Most works on Italian that discuss RS attempt to describe these phonological factors,[3] sometimes

[1] This rule has also been called Rafforzamento Sintattico 'syntactic strengthening'—perhaps because, in many varieties of Italian, RS results in an initial lengthened consonant which is not quite as long as a word-internal lengthened consonant (written as a double consonant, as in *tutto* [tut:o]). In this paper we do not assume either term to be superior to the other, and will use RS to refer to the rule. See Nespor 1977 for some discussion of the oscillographic evidence as to word-internal and word-initial syllable duration.

[2] By regional variety, we mean the standard language as spoken by people living in the different geographical areas of Italy. Regional varieties of Italian differ substantially with respect to phonology, somewhat with respect to vocabulary, and very little with respect to syntax. By and large they are mutually comprehensible. Regional varieties are not to be confused with dialects—which can differ substantially in phonology, vocabulary, and syntax, and are sometimes not mutually comprehensible.

[3] Among these works are Agard & Di Pietro 1965, Bianchi 1948, Donati 1956, Hall 1961, Lepschy 1966, 1967, Moretti & Consonni 1972, Muljačić 1972, Palazzi 1970, Regula & Jernej

by giving lists of words after which RS occurs, sometimes by noting phonetic regularities among these words. Some recent generative literature has tried to describe RS with a purely phonological rule.[4] The sociological factors involved in RS are by and large ignored in the literature known to us. Generally, in those varieties of Italian where RS is optional, we find it less frequently as the education and social class of the speakers go up.[5] If a speaker of a southern variety of Italian, with a high frequency of RS, moves at an early age to a northern city like Milan (where RS is very infrequent), and if he wants to improve his social standing, he may try to suppress his southern 'accent' by learning not to apply RS in optional environments—or, perhaps, even in environments previously obligatory for him.[6]

In this paper, we will not discuss further these important sociological factors for any variety of Italian, and we will discuss only briefly the phonological factors for Sicilian and Tuscan varieties. However, we will examine closely the syntactic environments for RS, showing that they are identical for the Sicilian and Tuscan varieties. Since there are no immediately obvious reasons why Sicilian and Tuscan RS should be any more similar to each other than RS in any other variety of Italian, we offer the tentative proposal that, while phonological and sociological factors account for the rich variety found in the frequency of RS in Italian varieties, syntactic factors remain constant from one variety to another. In fact, we believe that one of the reasons grammarians have not previously noted the syntactic regularities of RS is that they have stuck closely to an analysis of a single variety of Italian, often Tuscan, in which the phonological factors tend to conspire against the appearance of RS in many syntactic positions, though RS would occur there naturally in other varieties of Italian where different phonological factors operate.

1965, and Rohlfs 1966. Other works which attempt more than a phonological analysis will be discussed below in the text.

[4] See especially Saltarelli 1970 and Vogel 1977. For important criticisms of Saltarelli, particularly with respect to the claim that stress is the crucial factor for RS, see Di Pietro 1971.

[5] This contrasts with the facts on liaison as given in Selkirk 1972 and Rotenberg 1975, 1976. Note also that the frequency of RS does not correspond one-to-one with the frequency of word-internal double (or lengthened) consonants, though there is a general correlation (as noted in many of the studies on RS which we cite). Thus a well-educated Neapolitan and a well-educated Milanese might both exhibit little or no RS in their formal speech, although both have frequent word-internal lengthened consonants. Both contrast with the well-educated Trentino (a northern speaker) who exhibits little or no RS, and fewer word-internal lengthened consonants than most other speakers. Less educated speakers of these three varieties of Italian, however, would vary in a different way: the Neapolitan will use frequent RS plus frequent word-internal lengthened consonants; the Milanese will use infrequent or no RS, with frequent word-internal lengthened consonants, and the Trentino will exhibit infrequent or no lengthened consonants anywhere in his speech. The well-educated speakers in very informal speech behave similarly to the less well-educated speakers, in general.

[6] A typical obligatory case of RS, for many varieties of southern and central Italian, would be between the preposition *fra* and an object, as in *fra pochino* 'in a little while'. Typical phonological factors in various regional varieties of Italian favoring RS are (a) final stress in the first word, (b) monosyllabic first word, (c) single initial consonant other than a liquid in the second word, and (d) stress on some syllable other than the first in the second word. However, we emphasize that these phonological factors vary greatly from one variety to another, and we refer the reader to the works cited in this paper for detailed studies of such factors. In §1, below, we go into these factors for Sicilian and Tuscan only.

1. PHONOLOGICAL FACTORS. In Italian as spoken in Catania and Palermo, our 'Sicilian varieties', there are no phonological factors crucially affecting RS for a significant number of speakers. That is, if RS takes place between word **a** and word **b**, word **a** may end with any segment and word **b** may begin with any consonant. There are, however, factors which favor RS; e.g. if **a** ends with a vowel or a nasal, and **b** begins with a stop, RS is very likely. However, if **b** begins with a consonant cluster (or, for some speakers, with [l]), RS is less likely; but even in these cases it can apply. Also, for many speakers, the phonological environments typical of the Tuscan varieties described below favor RS (see Leone 1962).

In Italian as spoken in Empoli, Pisa, Isola del Giglio, and Firenze, our 'Tuscan varieties', the phonological environments for RS are much more restricted than in the Sicilian varieties. The most common environment is when word **a** ends in a stressed vowel or is monosyllabic.[7] For many speakers, however, not all monosyllables suffice: thus some speakers never apply RS if word **a** is the preposition *di* in any of its many uses. Certain words, when functioning as word **a**, almost always call for RS when the syntactic environment is proper, e.g. *come* 'how', *dove* 'where', *qualche* 'some', and *sopra* 'over'. (See fn. 3 for more complete lists.) Certain words, when functioning as word **b**, regardless of the phonetic shape of word **a**, highly favor RS in the right syntactic environments. Among these words are those beginning with [ts dz λ ñ š] (which are always long in many varieties of Italian), as well as *Dio* 'God', *santo* 'holy', *chiesa* 'church' and many others. (Again we refer to fn. 3.) Furthermore, a few words, when occurring as word **b**, resist RS; e.g., we never found a case of RS on the clitic *ne* in Tuscany (or in Rome, for that matter). And, as in the Sicilian varieties, our Tuscan speakers tended not to use RS if word **b** began with a consonant cluster or [l].

In this work, the grammaticality judgments of all examples are correct for the Sicilian varieties. Most of the judgments are also correct for the Tuscan varieties, though a few are incorrect or irrelevant because the proper phonological factors are lacking. The symbol *T is placed after any example which does not have the required phonological factors for the Tuscan varieties; i.e., *T indicates that an example simply does not test for RS in Tuscan.

1.1. THREE WORDS OF CAUTION. Before discussing the syntax of RS, we must point out, first, that many speakers of Italian (particularly southern speakers) have a rule, distinct from RS, which results in phonetic lengthening of word-initial consonants. This could be called Emotional Lengthening (EL); when it occurs, the word whose initial consonant is lengthened receives an intonation peak (most often the highest peak in the utterance). The environment for EL, as far as we can tell, has no syntactic or phonological requirements other than that the word begin in a consonant. Indeed, any word that is emphasized (because of surprise, irritation, excitement etc.) can undergo EL, even words in isolation: [8]

[7] A very nice pair offered by Camilli 1941 is *Gesùmmio* 'my Jesus', where RS takes place, and *Gesù Cristo* 'Jesus Christ', where it does not—since stress is retracted in the latter case and the true pronunciation is *Gèsu Cristo*.

[8] The fact that words in isolation can undergo lengthening of an initial consonant has been noted by various grammarians, e.g. Camilli 1941 and Norman 1937. But no one up to now, as far as we know, has recognized the need for at least two rules to account for initial consonant

(2) *B:ello!* 'Pretty!'

Thus, when we claim below that a given sentence could not have RS on a given word, we are making crucial use of intonation patterns. If a word can have its initial consonant lengthened in a given structure ONLY when it receives an intonation peak, we attribute the possibility of initial consonant lengthening to EL, and say that this structural environment does not allow RS.

A second point: we interviewed native speakers of Italian from various parts of central and southern Italy, Sicily, and Sardinia. Our most complete data are on speakers from Sicily and Tuscany; thus we present here only the data on speakers from those areas. However, none of the data we gathered from other areas (Napoli, Rome, Cagliari, among others) were inconsistent with our analysis of the syntax of RS in the Sicilian and Tuscan varieties.

Most speakers were asked to read a lengthy list of sentences which were selected to test particular syntactic structures, and which varied the phonological environment for each syntactic structure tested. The readings were recorded, and we then judged the tapes ourselves (sometimes asking the opinions of others, always native speakers); no mechanical devices were used to determine whether lengthening had occurred. With speakers who encountered difficulty with the list because of illiteracy, or with speakers who were willing to give us extra time, we recorded conversations. Again, we judged these tapes with our unaided ears. The speakers were not aware of what problem we were studying and, with only a few exceptions, had little or no idea what the study of syntax and phonology was. Every speaker was recorded separately.

We are convinced that the taping of sentences or of spontaneous speech is the only way to gather reliable data on RS. We found that if we asked a native speaker whether or not he would apply RS in a given example, it was impossible to get data that coincided consistently with what the speaker actually did in spontaneous speech. Many factors may interfere with the speaker's conscious knowledge of his own competence with respect to RS: educational training or admonishment against RS, and social stigma against RS, may contribute to a speaker's denying he has RS in a position where he actually exhibits it in spontaneous speech. However, a speaker who has a very restricted phonological environment for RS, but is accustomed to hearing other speakers who have relatively unrestricted phonological environments, may feel that RS is possible almost anywhere in the speech of these other Italians. Such a speaker, when questioned explicitly, may say he accepts RS in a position where in fact, neither he nor any other speaker we recorded exhibited RS. Thus we warn the reader against relying on native intuitions, since we think many speakers have little or no access to their intuitions about RS.

It is not unusual to find differences between what speakers predict is possible and what they actually say. Various studies have demonstrated the lack of a consistent correlation between intuitions and productions; see Lehiste 1973 for a very clear discussion.

---

lengthening. It is perhaps, useful, to point out that clitic pronouns are not 'words' in Italian and cannot undergo EL: **M:é lo fa* 'He does it for me.' But *M:e lo fá* is good: here EL has applied, not to the clitic, but to the whole utterance (which forms a single 'word' or 'group' in the sense of Zwicky 1977).

Third, we should point out that, in some varieties of Italian, primarily southern, certain consonants are frequently (always?) lengthened—regardless of their syntactic environment, and with no concurrent stress change (in contrast with EL). We have tried to avoid these consonants in our examples; in particular, we have not used as word **b** any item beginning with [b d λ ñ š ts dz].

2. THE PROBLEM. RS is found in some environments and not in others. We will first argue against four possible accounts of these environments; the first two have been previously proposed for RS, and the last two proposed for a similar phenomenon in French. Then we will offer our own account, giving first a sketch of other traditional accounts which influenced our work.

2.1. AGAINST A LIST OF LEXICAL ITEMS. Many grammarians (see fn. 3) give a list of lexical items after which RS may lengthen the initial consonant of the following word. While we agree that in Tuscan certain words favor RS, a list alone, with no discussion of syntax, is mistaken in at least two ways. First, the list inevitably includes items after which RS cannot apply if these items are in certain syntactic environments. Thus *come* 'like, how, as' usually appears on such lists, and is indeed often followed by RS:[9]

> (3) a. *Come_mai* 'How in the world?'
>   b. *Come_sembra?* 'How does it seem?'
>   c. *È bello, come_te.* 'He's handsome, like you.'

But no one allows RS after *come* in an S such as:[10]

> (4) *Noi studenti vogliamo sapere il perché e il come | per capire meglio il suo comportamento.*
>   'We students would like to know the why and how in order better to understand his behavior.'

This particular drawback of lists is caused by the fact that merely listing a lexical item misses the important fact that HOW the item is used is crucial to the possibility of RS. *Come* is most commonly used as a complementizer or as a preposition. This

---

[9] In all examples below, a curved line between two words means that RS may apply in that structural environment. A slash between two words signifies that RS cannot apply in that environment. Note that we do not mark every possible occurrence of RS in any given example, but only the occurrence of interest. Thus, in 3c, there would probably be RS on *bello* if there is RS on *te*, but we do not mark it.

An interesting question is the extent to which the application of RS at one point affects the likelihood of RS at other points in the same utterance. We would like to suggest that, within the analysis presented in this paper, there are 'more likely' and 'less likely' environments for RS. In particular, RS is less likely between sister nodes (of the same immediate mother) than it is elsewhere. It also seems that, if RS occurs in a less likely environment, then the chances of its occurring at all possible points to the right of that particular occurrence, in the same utterance, are great. We put these suggestions in a footnote instead of in the main text, however, since we did not design our data-gathering with such questions in mind, and so feel the need for further research. All we are reporting here is a general tendency found in our data. It is interesting to note that the influence here, if we are correct in our conjecture, is left to right, similar to that noted elsewhere by Napoli (1975b:429–30).

[10] Sentences like 4, and some of the problems they present for a 'list' account of RS, are noted by Pratelli 1970.

fact is crucial in accounting for the high frequency of RS after *come*, as we will show in §§4–5, below.

A second problem with any such list is that, for our Sicilian variety, the list would have to include the entire lexicon—since, in it, any word can be followed by RS, depending only on syntactic considerations: Sicilian RS is not sensitive to phonological factors at all. Thus, in Tuscan, usually only a monosyllable or a word ending in a stressed vowel can be followed by RS (see §1):

> (5) *Vado a⌣Roma* 'I'm going to Rome.'
> (6) *Vorrei vedere la città⌣vecchia* 'I'd like to see the old city.'

But in Sicilian, any word ending in a vowel can be followed by RS:

> (7) *Maria⌣canta* (*T) 'Maria is singing.'

Here, even words ending in a consonant can be followed by RS:

> (8) *Il camion⌣cade* (*T) 'The truck is falling.'
> (9) *Vado con⌣Toni* (*T) 'I'm going with Toni.'

For Sicilians, then, the list of words after which RS can occur would include the entire lexicon. But such a list would be deceptive, since RS cannot appear in many syntactic environments for these speakers. This particular drawback of a list account of RS has been neglected by traditional grammarians, who have generally described the phonologically more restrictive varieties of Italian with respect to RS.

2.2. AGAINST A PURELY PHONOLOGICAL RULE. Many grammarians have noted strong regularities in the phonological environments where RS may appear.[11] Some have proposed that RS is a totally phonological rule—i.e., that it has no access to syntax or semantics, but belongs only to the phonological component of the grammar. However, we show in this paper that RS cannot occur in certain syntactic environments, even when the proper phonological environment is present. Thus, for Tuscans, RS cannot apply in 10 between the direct object and the following prepositional phrase (PP), regardless of the fact that all required phonological factors are present:[12]

---

[11] These include Camilli 1941, 1963, Pratelli 1970, Leone 1962, and Fiorelli 1958. See also the works cited in fnn. 3–4.

[12] We would like to note that some linguists (including Hall) regard RS, in a variety of Italian such as our Tuscan, as an assimilation rule. These linguists say that a word with a final stressed vowel, e.g. *città* 'city', is truncated at the surface level and underlyingly has a final consonant (in this case *d*, since a *d* appears in related words, e.g. *cittadino* 'citizen') which assimilates to the initial consonant of the following word, e.g. *città⌣carina* 'pretty city'. Many of them go on to point out that the conjunction *e* 'and' and the preposition *a* 'to', after which RS often occurs, can also be considered truncated words, since they optionally appear with a final *d* before a following word that begins with a vowel: *a⌣Palermo*, *ad Palermo 'to Palermo'; *a Ostia*, *ad Ostia* 'to Ostia'. Some linguists also point out that typical positions for RS, e.g. between a preposition and its object, are also typical positions for assimilation between words: *in banca* [im baŋka] 'into the bank'.

We find the assimilation analysis less than convincing, for four reasons. First, to say that a word like *città* is truncated in the surface and underlyingly ends in a consonant is to say that, underlyingly, *città* is very different from the vast majority of other nouns in Italian—which end in a vowel. This explanation just replaces a surface abnormality (final stress) with an underlying

(10) *Carola   ha accompagnato Artù | per la lezione.*
     'Carola accompanied Artù for the lesson.'

In Sicilian, which puts virtually no phonological requirements on RS, RS is still not possible in 10.[13] A totally phonological rule for RS cannot account for data like that in 10, and thus is inaccurate.

2.3. AGAINST A TRACE ANALYSIS. We will argue below that RS in Italian lengthens a word-initial consonant only when there is a particular syntactic relationship to the immediately preceding word in surface structure. By this analysis, RS is an external sandhi rule. Thus we might reasonably look to analyses of such rules in other languages, to see if any of them can account for the Italian phenomenon. An interesting and important analysis for French liaison, involving the $\overline{X}$ notation of Chomsky 1970 and notions of trace theory, is offered by Selkirk 1972, 1974. While we will not discuss her analysis in detail here, we want to demonstrate that the trace of the French liaison analysis cannot be employed fruitfully in an analysis of RS.

Selkirk's analysis of liaison employs conventions for the introduction of word boundaries into a phrase marker, and the cancellation of such word boundaries, as proposed by Chomsky & Halle 1968. To these, Selkirk (1972:15), following up on a

---

abnormality (final consonant), and nothing is gained.

Second, there are many words that end in a stressed vowel, after which RS is possible in these varieties of Italian, and for which there is absolutely no evidence of an underlying final consonant: *tribù selvatica* 'a wild tribe'. Thus one would have to appeal to analogy (a weak appeal, in our opinion) to explain the behavior of *tribù* if RS were an assimilation rule. Alternatively, as Andrew Radford has pointed out (p.c.), one could say that the initial consonant lengthening in *tribù selvatica* is a separate phenomenon from RS, governed by different rules. Note, however, that the syntactic, phonological, and sociological factors, as well as the phonetic effects of the new putative rules here are exactly the same as those for RS—an arbitrary coincidence in this hypothesis, and one which tends to obliterate surface differences between the outputs of the two rules.

Third, there is the possibility that the optional *d* after *a* or *e* (and *o* 'or'), when they are followed by a word with an initial vowel, is epenthetic. Of course, diachronically one would propose an underlying *d* as in *ed* and *ad*. But synchronically the choice of deletion of an underlying final *d* in certain environments vs. insertion of a final *d* in the complementary environments must be made on empirical grounds, from evidence present in the language today—as well as on theoretical grounds (such as consistency with the rest of the grammar). And, in the language today, a case might be made for epenthetic *d*'s in word-final or morpheme-final position.

Fourth, RS can occur naturally in environments in which assimilation is either unusual or not found at all. Thus it can occur between subjects and their predicates, though assimilation is rare here (if it occurs at all): *Il re mori* 'The king died'; but *Ian bara* ??[iam bara] 'Ian is cheating.' However, even if it were shown that RS and assimilation between words could occur in precisely the same syntactic environments, this fact might be explained in various ways. A very promising path might be to look at other external sandhi rules in Italian and note their syntactic environments; perhaps external sandhi rules share (entirely or to a large extent) the same syntactic environment. If this were the case, there would be no need to analyse RS and assimilation as part of the same phenomenon in order to account for the similarities in their syntactic environments. Of course, further work on this problem is needed; we intend only to raise questions about the assimilation analysis.

[13] In fact, none of our consultants from any area of Italy used RS in 10; this is consistent with our tentative proposal that the syntactic environment for RS is identical for all varieties of Italian.

proposal made by Baker & Brame 1972, adds this Traces Convention: 'Transformations which move or delete constituents do not move or delete the word boundaries associated with these constituents.'

In her analysis, the possibility for liaison depends crucially on the number of word boundaries present at the potential site. If more than one word boundary is present,[14] liaison cannot take place. For example, in 11 the clitic pronoun *la* has been moved from the position in which we now have a bar.[15]

(11) *Nous la donnerons | à l'organisation révolutionnaire de Dhofar plutôt qu'à d'Erythrée.*

'We'll give it to the revolutionary organization of Dhofar rather than to that of Erythrée.'

The relevant part of the surface structure of the $\overline{\overline{V}}$ in 11, after the application of all the rules relevant to word boundaries, is given in Figure 1.
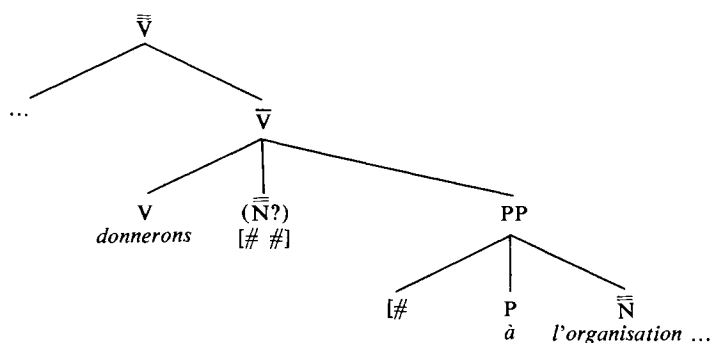

FIGURE 1.

[14] At most one word boundary is allowed for the liaison rule to apply. However, Selkirk 1972, 1974 proposes readjustment rules to delete a word boundary in certain syntactic structures, thus allowing the possibility of liaison at a site where two boundaries were present before the application of these rules. She also proposes rules which insert boundaries under certain conditions (1972:217–18), thus precluding the possibility of liaison at sites where only one boundary was present before the application of the readjustment rules. Clearly, the need for such rules in her analysis weakens its credibility. But, worse than that (as Richard Kayne has pointed out to us), the use of these rules makes counter-examples virtually impossible to find, since any proposed counter-example might be accounted for by another ad-hoc readjustment rule.

With enough ingenuity, it might be possible to propose similar readjustment rules in Italian and thus utilize boundaries in the description of RS. These readjustment rules would then be sensitive to the syntactic environment described in §4 below, and would remove the necessity for RS to have access to syntactic structure. We reject this kind of attempt to salvage a boundary-sensitive account of RS, since it is clear (from the data immediately following in the text) that any such account would call for highly arbitrary readjustment rules having no independent support elsewhere in Italian phonology or syntax, as far as we know, and applying to the vast majority of examples, rather than just to a few stubborn cases. Likewise, the criticism about the lack of empirical testability of Selkirk's liaison proposals would hold equally well for such proposals for RS.

[15] For justification that surface clitic pronouns are generated in the base in the same position that their full NP counterparts would occupy, see Kayne 1975. Ex. 11 is Selkirk's example 78 (1972:248). In Figure 1, the closing boundary of V (after *donnerons*) has been deleted by her X-Comp Rule.

Since there are three boundaries between *donnerons* and *à*, liaison cannot take place. Note that, without the Traces Convention, there would be only one boundary between *donnerons* and *à* (that which forms the left boundary of the PP), and we would have no explanation for the impossibility of liaison at the site marked by the bar in 11. Other examples from Selkirk 1972 which use the Traces Convention involve Relative Clause Formation, WH-Question Formation, and Clefting.[16]

If we apply the word boundary conventions to Italian, we find that sentences like

    (12) a. *Chi‿sono* 'Who are they?'
        b. *Chi è che il bambino immaginò‿grande*
            'Who is it that the child imagined to be big?'

have the following word boundaries at the relevant sites for RS in surface structure:[17]

    (13) a. *Chi* [#   [# #] [# *sono*
          S $\bar{\bar{N}}$ $\bar{\bar{N}}$ $\bar{V}$
        b. *immaginò* [# [# #] [# *grande*
              S $\bar{\bar{N}}$ $\bar{\bar{N}}$ $\bar{\bar{A}}$

Thus, at the sites for RS, four boundaries are present in 12a, and three or four (see fn. 17) in 12b; yet RS can apply at these sites for many speakers. Thus it is clear that Selkirk's Traces Convention gives the wrong result for the Italian data if we assume RS to be sensitive to the number of word boundaries. The Traces Convention is, of course, completely irrelevant to the RS phenomenon if RS is not sensitive to the number of word boundaries present. In §§4–5 we will give an analysis of RS in which no reference to word boundaries is necessary, and thus conclude that the Traces Convention is irrelevant to the analysis of RS.

2.4. AGAINST A SYNTACTIC DISTANCE ANALYSIS. Another analysis for French liaison, offered by Rotenberg 1975, involves the idea of syntactic distance. He gives

[16] Note that the data given in Selkirk 1972 to support the Traces Convention (such as ex. 11) have been questioned by Rotenberg 1976 for all examples except those of WH-Movement. Rotenberg also refutes the necessity for the Traces Convention even for WH-Movement examples. However, the fact that the French data here are questionable does not affect our argument against traces for Italian RS—since, regardless of what movement rule applies, no evidence for traces exists in Italian, as shown below in the text.

[17] Our analysis of RS presented in §§4–5, below, predicts that the $\bar{\bar{N}}$ and the $\bar{\bar{A}}$ of the $\bar{\bar{V}}$ in 12b and 13b will form a constituent in surface structure. We choose to call this constituent S here. However, if this constituent is of some other category (call it **B**, where **B** ≠ S), then the word boundary conventions will yield (a) instead of 13b:

    (a) *immaginò* [# [#] [#
             B $\bar{\bar{N}}$ $\bar{\bar{N}}$ $\bar{\bar{A}}$

Here we have one less word boundary than in 13b. The missing boundary from (a) is the opening boundary to the $\bar{\bar{N}}$. But note, as Guglielmo Cinque (p.c.) has pointed out to us, that if one were to maintain a Raising or Equi analysis here, the Selkirk proposal would still fail for Italian, since we would still have

    (b) *immaginò* [# #] ([#) [# *grande*
              $\bar{\bar{N}}$ $\bar{\bar{N}}$ S $\bar{\bar{V}}$

with at least three boundaries present.

basically two environments for liaison: 'liaison occurs only between two items **a** and **b** which are adjacent in the terminal string and whose immediately pre-terminal category symbols **A** and **B** are immediately dominated by the same node **C**' (3).

For more formal speech, Rotenberg adds, 'liaison occurs here not only when... the node immediately dominating **B** immediately dominates **A**, but also...when the node immediately dominating the node immediately dominating **B** immediately dominates **A**' (4). A pruning convention is added, increasing the number of possible environments for liaison. The two structures, then, which allow liaison between **a** and **b** are shown in Figures 2–3.[18]
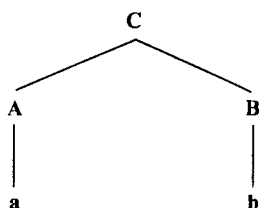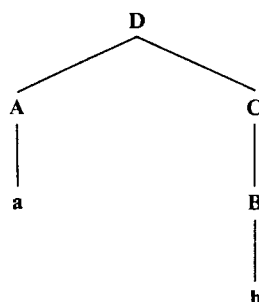

FIGURE 2.

FIGURE 3.

Two claims about syntactic distance are inherent here. First, the first node domin-ating **A** (in Figs. 2 and 3) must also dominate **B**. Second, no more than one node may intervene between **B** and the first node that dominates both **A** and **B**. Neither claim holds for Italian RS, as seen here:

(14) *La religione che praticò_perde fedeli* (speaking of Dante)
    'The religion he practiced is losing adherents.'

Here at least four nodes intervene between **A** (which is V in this case) and the first node that dominates both *praticò* and *perde* (which is S here), even given Roten-berg's pruning conventions; see Figure 4 (overleaf).

Likewise, at least two nodes intervene between **B** (which is also a V in this case) and the first node that dominates both **A** and **B**. As we will see in §§4–5, for RS to occur, the syntactic distance of **A** from the first node that dominates both **A** and **B** is restricted for $\overline{\overline{N}}$, $\overline{\overline{A}}$, $\overline{\overline{V}}$, and $\overline{\overline{P}}$, but not for S. However, this restriction occurs only as a direct result of pruning conventions like Rotenberg's,[19] in conjunction with our structural conditions (given in these sections below). If our analysis is correct,

[18] Note that it is irrelevant whether **C** in Figure 2 exhaustively dominates **AB** (see Rotenberg 1975:8, 15). In particular, a node may theoretically precede **A** in both cases. (More discussion is given in §8, below.)

[19] It is interesting to note that Rotenberg (albeit grudgingly) finds need for a 'dummy' determiner preceding all names. This is not pruned, and consequently blocks liaison: *après | Yves* 'after Yves'. Italian has no similar phonological evidence for dummy determiners: *da_Maria* 'at Maria's house' (*T for some speakers).
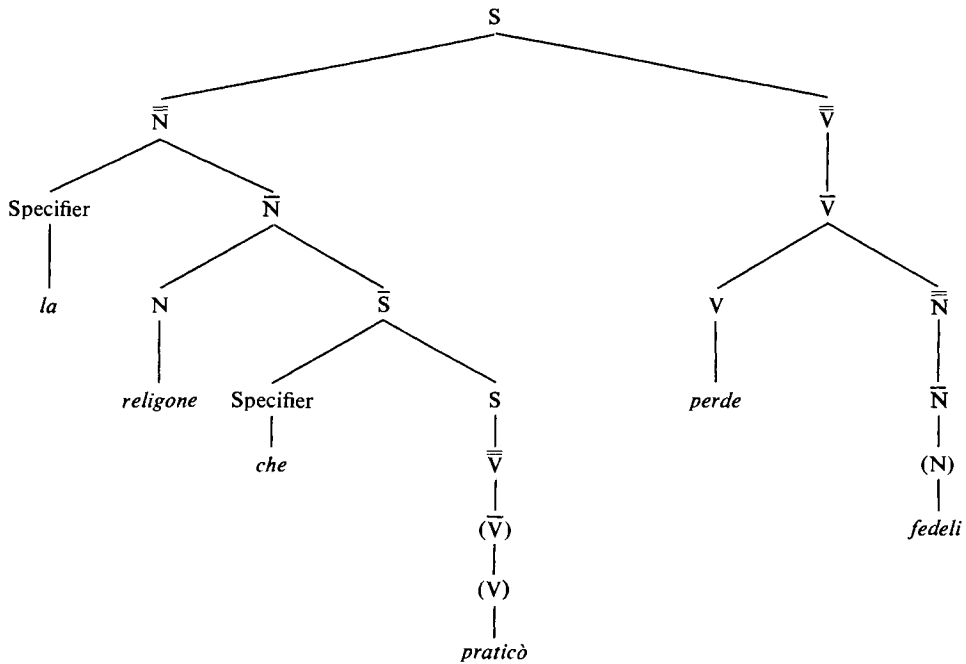
FIGURE 4.

the syntactic distance of **A** from the first node that dominates **A** and **B** is not a relevant factor for RS; and syntactic distance of **B** from the first node that dominates both **A** and **B** is unrestricted even with Rotenberg's pruning conventions. Therefore we conclude that the factor of syntactic distance, which Rotenberg claims to be crucial for French liaison, is not the key to Italian RS.

3. PREVIOUS SYNTACTIC ANALYSES FOR ITALIAN. Many grammarians have noted non-phonological restrictions on RS. Camilli 1941 proposed that RS occurs only if two words are 'united' by both meaning and pronunciation. Fiorelli seems to make a similar proposal in claiming that RS is limited to the context of a 'phrase'. Exactly what these two proposals mean in terms of present linguistic theory is unclear. An obvious possibility is that RS can apply only if the two words form a constituent. This proposal fails, however, because of examples like

(15) *L'ultimo re＿morì.*
       'The last king died.'
(16) *Ci portò＿tutto per Mario.*
       'She brought everything there for Mario.'

Here the two words certainly do not form a whole constituent.

Another possibility is that RS can apply only if the preterminal category symbols for the two words are both immediately dominated by the same node, **A**, without necessarily being the only nodes dominated by **A**. This is, of course, the syntactic environment for French liaison in less formal speech, as offered by Rotenberg 1975 (see §2.4, above). Again, this proposal fails because of examples where the two

words are an N immediately dominated by an $\bar{\text{N}}$, and a V (immediately ?) dominated by an S:[20]

> (17) *Vedrò la vecchia città_cadere.*
>   'I'll see the old city fall.'

Another discussion of RS that notes its syntactic aspect is given by Pratelli. He offers a very detailed analysis of the phonological environments for RS,[21] and concludes that RS takes place only within a 'stress group'. Without a thorough examination of stress assignment in Italian sentences, it is difficult to evaluate Pratelli's proposal. However, if we can assume that stress groups correspond some-how to syntactic structures, this proposal is clearly syntactically based; and, indeed, there is never a pause between the two words involved in RS. However, RS can apply between the subject of a sentence and its predicate, as in

> (18) *La città_cadde* 'The city fell.'

Hence we must allow the whole S to be considered a stress group, according to Pratelli. And if the whole S is a stress group, then RS, being a phenomenon limited to words within the same S (cf. *Vedo il re.* / *Canta* 'I see the king. He's singing'), has no real intrasentential syntactic restrictions in Pratelli's analysis; it should be possible between any two adjacent words which are in the same S. Thus Pratelli would have no explanation for the impossibility of RS in 10, above.

It is possible that one could reasonably analyse an S as being one large stress group made up of several smaller stress groups, and that Pratelli's analysis could be

---

[20] We say here that *cadere* in 17 appears in this structure:
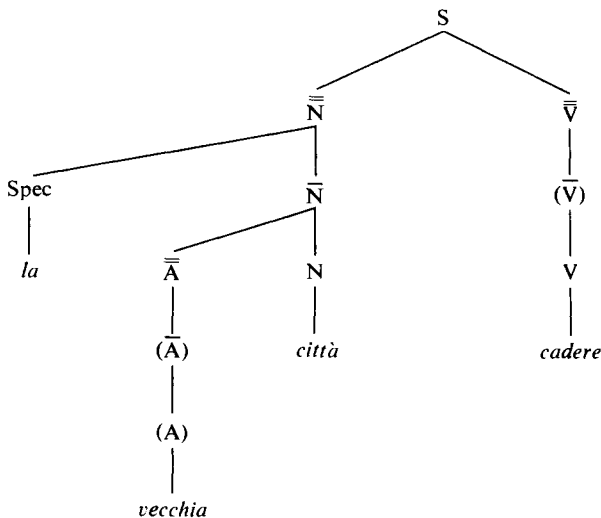
This claim is a consequence of our analysis, and is discussed briefly in §7, below. See Nespor 1977 for justification.

[21] As we claimed above, any such analysis is 'variety-particular'. Pratelli does not, however, say that he is analysing only one variety of Italian.

saved if RS could apply between two words only if the smallest stress group that included either one of them also included the other. But this would mean that, in 17, *la vecchia città* could not be considered a stress group—a regrettable consequence, in our opinion. Perhaps other modifications could save Pratelli's analysis. Since we cannot go into stress assignment here, we cannot fairly judge.

Thus, while the syntactic aspect of RS has clearly been recognized before, no one has previously made a proposal that accounts for the data we have amassed. Let us now try to do so.

4. THE LEFT BRANCH CONDITION. We propose the following syntactic condition, the LBC:

    (19) RS can apply between a word **a** and a following word **b**, where **a** is immediately dominated by the preterminal category symbol **A**, and **b** is dominated (not necessarily immediately) by the category symbol **B**, only if **A** is a left branch of the first node that dominates both **A** and **B**.

We define **A** as a left branch of a given node **C** if no branching nodes intervene between **A** and **C**, and if there are no daughters of **C** to the left of **A**. Note that we thus allow **A**, in a structure like Figure 5, to be called a left branch of $\bar{\text{N}}$ without
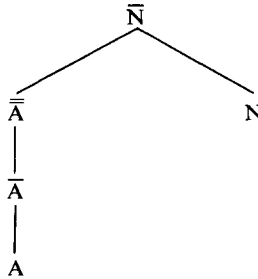
FIGURE 5.

requiring any pruning of the non-branching nodes dominating A. We have not assumed any pruning conventions here because they are not necessary to the formulation of the LBC, and because they are not independently motivated in the grammar, as far as we know. Should pruning conventions be shown to be operative in Italian in these cases, however, the definition of left branch could still stand as is. Note that, with this definition of left branch, $\bar{\text{N}}$ has three left branches, $\bar{\bar{\text{A}}}$, $\bar{\text{A}}$, and A. This fact presents no problem to our formulation of the LBC.

The LBC was formulated in an analysis of RS that uses the $\bar{\text{X}}$ notation proposed in Chomsky 1970. We will show how the LBC can explain many cases where RS is possible or impossible. The following examples are arranged to demonstrate that the LBC applies equally to the major categories of $\bar{\bar{\text{A}}}$, $\bar{\bar{\text{N}}}$, and $\bar{\bar{\text{V}}}$.[22] This means that $\bar{\bar{\text{A}}}$, $\bar{\bar{\text{N}}}$, and $\bar{\bar{\text{V}}}$ form a natural class with respect to RS, and thus offer support for the status of the notion 'major category' (as defined in Chomsky 1965 and in Chomsky

---

[22] We say here that the LBC applies to $\bar{\bar{\text{X}}}$; but what we mean is that the first node that dominates the preterminal category nodes, for the two words involved in any instance of RS, may be X, $\bar{\text{X}}$, or $\bar{\bar{\text{X}}}$, where X = A, N, V, or (as we will show below) P. Thus, saying that the LBC applies to $\bar{\text{X}}$ is a kind of shorthand.

& Halle 1968). We will discuss RS between subjects and predicates and other constituents of S in §5.

The $\overline{\mathrm{X}}$ notation analyses $\overline{\overline{\mathrm{A}}}$, $\overline{\overline{\mathrm{N}}}$, and $\overline{\overline{\mathrm{V}}}$ as in Figure 6, where the order and possible number of the complements of X is language-specific. In Italian, usually at most one complement of X may precede it, and usually not more than three may follow it.
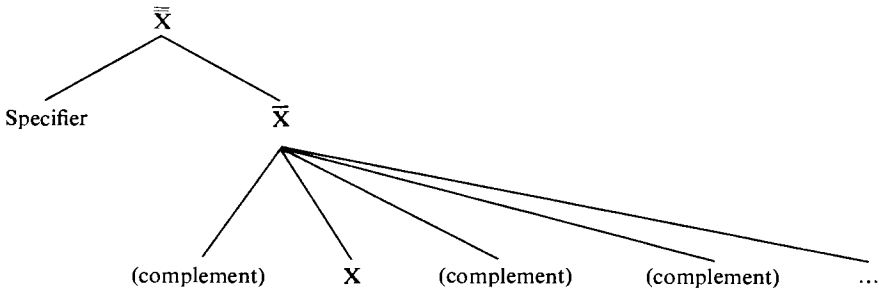

FIGURE 6.

Thus we expect RS to be possible between a single specifier and the following word; this can be either the first word of a complement of X, or X itself. This proves to be the case:

(20) Specifier, X
   a. $\overline{\overline{\mathrm{A}}}$ *Maria è più_calda che mai.*
      'Maria is hotter than ever.'
   b. $\overline{\overline{\mathrm{N}}}$ *Ho visto tre_cani.*
      'I saw three dogs.'
   c. $\overline{\overline{\mathrm{V}}}$ *Mario ha_fatto tutto.*
      'Mario did everything.'
(21) Specifier, complement of X
   a. $\overline{\overline{\mathrm{A}}}$ *È più_chiaramente bravo per i principianti.*
      'He's more clearly good for beginners.'
   b. $\overline{\overline{\mathrm{N}}}$ *Ho visto tre_grandi cani.*
      'I saw three big dogs.'
   c. $\overline{\overline{\mathrm{V}}}$ *Ha_sempre parlato bene di te.*
      'He's always spoken well of you.'

Note that this analysis accounts for the fact that the lists of lexical items that trigger RS, offered by many grammarians (cited in §2.1 above), contain the majority of specifiers (including S complementizers).

Furthermore, the LBC says that, in a structure like Fig. 6, we can have RS between an X not preceded by a complement and a following complement of X, and between the first complement of X and a following X or a following second complement of X (both complements preceding X, if such a case could be found).[23]

[23] Two complements of X preceding X is very unusual. A possible example for $\overline{\overline{\mathrm{N}}}$ is given in (a) below—where, as predicted, RS can take place between the two complements, but not between the second complement and X:

Again the facts are as predicted:

    (22) X, complement of X

        a. $\overline{\overline{A}}$ *È blu_nella faccia.*

             'He's blue in the face.'

        b. $\overline{\overline{N}}$ *Ho visto tre gru_galleggianti.*

             'I saw three floating cranes.'

        c. $\overline{\overline{V}}$ *Carlo fa_tutto.*

             'Carlo does everything.'

    (23) complement of X, X

        a. $\overline{\overline{A}}$ *Questa maestra è più chiaramente_contenta con i principianti.*[24] (*T)

             'This teacher is more clearly content with beginners.'

        b. $\overline{\overline{N}}$ *Ho visto tre grandi_cani.* (*T)

             'I saw three big dogs.'

        c. $\overline{\overline{V}}$ *Ha già_parlato.*

             'He has already spoken.'

However, if X is also preceded by a complement, then RS should be impossible between X and a following complement of X. It should also be impossible between any two complements of X that follow X. Once more the predictions are verified by the data:

    (24) complement of X, X, complement of X[25]

    (a) *un buon(o)_bravo | ragazzo* (*T) 'a good and smart boy'

However, we have not included such examples in the text because they are very unnatural. Instead one would prefer to say:

    (b) *un buono e bravo | ragazzo* (*T) 'a good and smart boy'

Here the two adjectives are conjoined, and thus form one complement of X. Note that *bravo* in (b) is not a left branch of the first node that dominates both *bravo* and *ragazzo*. Therefore we correctly predict that RS cannot apply here.

[24] An appropriate context for 23a might be something like this:

    Sì sì, d'accordo, quella maestra è chiaramente contenta con i principianti. Però, quest'altra è PIÙ chiaramente_contenta con i principianti. (*T)

    'Yes, yes, I agree, that teacher is clearly content with beginners. But this other is MORE clearly content with beginners.'

Più and *chiaramente* do not form a constituent here, as our analysis predicts. Under the reading of 23a in which *più* and *chiaramente* do form a constituent, we did not find RS between *chiaramente* and *contenta*. (We thank Joel Rotenberg for bringing this problem to our attention.)

[25] Guglielmo Cinque has pointed out to us that *proprio* in (a), below, must be analysed as a specifier in this particular use, to account for RS between the A and the following complement of A:

    (a) *Era proprio blu_nella faccia.*

        'He was just blue in the face.'

Evidence that *proprio* and *blu nella faccia* are indeed separate constituents can be easily obtained by using the appropriate tests discussed below in §6. Note also that *proprio* in this use does not normally occur in the presence of other specifiers:

    (b) **la proprio bella ragazza* 'the just pretty girl'

And unlike adjectival complements, but like many other specifiers, *proprio* in this use does not undergo gender/number agreement (cf. *più* 'more', *meno* 'less', *molto* 'very' etc.):

    (c) $\grave{E}$ {*proprio*, **propria*} *bella.*

        unmk.   f.s.

        'She is just pretty.'

   a. $\overline{\overline{\text{A}}}$ *È più chiaramente brava | per i principianti.* (*T)
        'She is more clearly good for beginners.'
   b. $\overline{\overline{\text{N}}}$ *Ho visto tre grandi gru | galleggianti.*
        'I saw three big floating cranes.'
   c. $\overline{\overline{\text{V}}}$ *Ha già visto | Carla.* (*T)
        'He has already seen Carla.'
(25) X, complement of X, complement of X
   a. $\overline{\overline{\text{A}}}$ *È bagnato di pipì | sulle gambe.*
        'He's wet with piss on his legs.'
   b. $\overline{\overline{\text{N}}}$ *Ho visto tre cani blu | misteriosi.*
        'I saw three mysterious blue dogs.'
   c. $\overline{\overline{\text{V}}}$ *Ho accompagnato Artù | nel bar.*
        'I accompanied Artù into the bar.'

The LBC correctly predicts that phrases which are ambiguous in a way related to constituency can appear with or without RS, depending on the meaning. For example, 26–27 contain the words *caffè per te*, but RS is possible only in 26. Since *per te* is a complement of the N *caffè* in 26, but of the V in 27, the LBC explains these data.

(26) *Ci sono due caffè sul tavolo: uno per te, l'altro per Luca. Io ho preparato il*
        caffè per_te e Maria quello per Luca.
        'There are two coffees on the table: one for you, the other for Luca.
        I made the coffee for you and Maria that for Luca.'
(27) *—Che hai fatto? Per chi è quella roba?—È per te. Ho preparato del caffè |*
        per te.
        'What did you do? Who's that stuff for?'—'It's for you. I made some
        coffee for you.'

Likewise, in 28, if RS takes place between *acqua* and *rossa*, only the water is red; but without RS, the S is ambiguous as to whether it is the jug or the water that is red:

(28) *Voglio una brocca d'acqua rossa.* (*T)
        'I want a pitcher of red water.' (RS possible)(*T)
        'I want a red pitcher of water.' (RS impossible)

Many more such examples can be constructed.

The LBC applies to PP's as well as to $\overline{\overline{\text{A}}}$, $\overline{\overline{\text{N}}}$, and $\overline{\overline{\text{V}}}$, thus offering support for the claim that preposition (P) is a major category. This is consistent with the proposal that the $\overline{\text{X}}$ notation be extended to include a $\overline{\overline{\text{P}}}$ (see Jackendoff 1973):[26]

(29) specifier, P
     È uscita proprio_con fretta. (*T)
        'She went out really in a hurry.'

[26] We do not give an example of a complement of P followed by its P, since P's always precede their complements in Italian. Also we do not give examples with more than one complement of P, since we can't think of any natural ones.

As Guglielmo Cinque has pointed out to us, 31 is also consistent with the claim that *giù* is a specifier of the following PP. We are not making such a claim here, but it is immaterial to our analysis what status *giù* has in this example.

(30) P, NP complement of P
   È andata a‿Roma.
     'She went to Rome.'
(31) P, PP complement of P
   È andata giù‿per le scale.
     'She went down the stairs.'

5. RS on $\bar{\text{S}}$ and on S. For a great amount of data, it looks as though the LBC applies to $\bar{\text{S}}$ and to S, as well as to $\bar{\bar{\text{A}}}$, $\bar{\bar{\text{N}}}$, $\bar{\bar{\text{V}}}$, and $\bar{\bar{\text{P}}}$—which is consistent with the frequent proposal that the $\bar{\text{X}}$ notation be extended to include an $\bar{\text{S}}$ (see Bresnan 1972, Selkirk 1972, among others). Thus, if we assume the structure in Figure 7 for $\bar{\text{S}}$ (where $\bar{\bar{\text{A}}}$ can be various kinds of sentential modifiers, and their position and
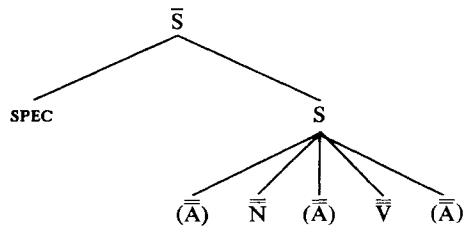

FIGURE 7.

number are language-specific), then the LBC says that RS can apply between SPEC and the first word of S, which can be the first word of $\bar{\bar{\text{N}}}$—or (as in Subject Pronoun Drop) the first word of $\bar{\bar{\text{V}}}$, or the first word of $\bar{\bar{\text{A}}}$ (where $\bar{\bar{\text{A}}}$ would be a sentential modifier). The data are as predicted:

(32) Specifier, $\bar{\bar{\text{N}}}$
   Ha detto che‿Carlo non viene.
     'He said that Carlo isn't coming.'
(33) Specifier, $\bar{\bar{\text{V}}}$
   Fa tutto ciò che‿vuole.
     'He does everything he wants.'
(34) Specifier, $\bar{\bar{\text{A}}}$
   Ha detto che‿quando verrà lui verrà anche lei.
     'He said that when he comes, she'll come too.'

Likewise, RS can apply between the first two nodes dominated by S:[27]

(35) $\bar{\bar{\text{N}}}\bar{\bar{\text{V}}}$ *Artù‿viene.*
       'Artù is coming.'
   $\bar{\bar{\text{N}}}$S *Ha detto che tu‿quando si è alzato lui, dormivi ancora.*
       'He said that you, when he woke up, were still sleeping.'

[27] In these examples, the first node of S dominates only a single word. We will discuss examples in which the first node of S branches, ending in a terminal string of more than one word.

Note that, in the second example under 35, while many (most?) speakers of Italian have a pause between *tu* and *quando*, and thus do not have RS there, we found RS here quite unmistakably for some Sicilian and Tuscan speakers (and Roman speakers, as well).

$\overline{V}\overline{N}$ *Verrà_Maria?*
        'Is Maria coming?'
$\overline{\overline{V}}\overline{\overline{A}}$ *Verrà_sicuramente?*
        'Is she really coming?'
$\overline{\overline{A}}\overline{N}$ *Però_Carla aiuta.*
        'However, Carla is helping.'
$\overline{\overline{A}}\overline{\overline{V}}$ *Però_canterà.*
        'However, she'll sing.'

However, RS cannot apply between the second and third nodes dominated by S, as predicted by the LBC:[28]

(36) $\overline{\overline{N}}\overline{\overline{V}}\overline{\overline{A}}$ *Maria verrà | per fortuna.*
            'Maria will come, fortunately.'
$\overline{\overline{N}}\overline{\overline{A}}\overline{\overline{V}}$ *Maria quando vorrà | verrà.*
            'Maria, when she wants, will come.'
$\overline{\overline{V}}\overline{\overline{N}}\overline{\overline{A}}$ *Verrà Artù | sicuramente?*
            'Will Artù really come?'
$\overline{\overline{V}}\overline{\overline{A}}\overline{\overline{N}}$ *Verranno però | quei fratelli?*
            'Will those brothers come, however?'
$\overline{\overline{A}}\overline{\overline{N}}\overline{\overline{V}}$ *Per fortuna Artù | verrà.*
            'Fortunately Artù will come.'
$\overline{\overline{A}}\overline{\overline{V}}\overline{\overline{N}}$ *Di sicuro verrà | quel ragazzo.*
            'Surely that boy will come.'

A very interesting prediction of the LBC is that when we have one S made up of three constituents, e.g. $\overline{\overline{N}}\overline{\overline{V}}\overline{\overline{A}}$ (where $\overline{\overline{N}}$ and $\overline{\overline{V}}$ each consists of only one word), and another S made up of two constituents, the same $\overline{\overline{V}}$ and $\overline{\overline{A}}$ but without $\overline{\overline{N}}$ (i.e. after Subject Pronoun Drop), then if RS follows Subject Pronoun Drop,[29] RS will be possible between $\overline{\overline{V}}$ (a single word) and the following $\overline{\overline{A}}$ only in the sentence which has undergone Subject Pronoun Drop. This is indeed the case. In 37 we see that the

[28] All the examples in 36 require that they be analysed with $\overline{\overline{A}}$'s which are not part of the VP, if our hypothesis about RS is correct. As with the other claims about constituency made in this paper, independent evidence is needed. (See §7 below for relevant discussion.)
    Note in particular that we are claiming the existence of a VP node in examples such as these (suggested to us by Andrew Radford):

   (a) *Maria è_carina* 'Maria is pretty.'
   (b) *Paolo verrà_con te* 'Paolo will come with you.'
   (c) *Io resterò_tuo per sempre* 'I'll remain yours always.'

Thus (a)–(c) differ from the examples of 36 in that *carina*, *con te*, and *tuo* are in the $\overline{\overline{V}}$, and not dominated directly by S.

[29] The ordering of RS after SPD is not suprising if SPD is a 'syntactic' rule and if RS is a 'phonological' rule, since we expect syntactic rules to precede phonological ones. However, as this paper shows, RS has some syntactic restrictions on its application; thus it is not a straight-forward 'phonological' rule. And, as is shown in Napoli 1974, 1975a, SPD must be able to follow certain phonological rules. Thus the data given in ex. 37, which are easily explained by the LBC only if RS follows SPD, do give us interesting information about the relative ordering of these two rules.

sentential modifier *per fortuna* contrasts with respect to RS with the VP modifier *lentamente* (37c–d are from Guglielmo Cinque):[30]

(37) a. *Maria verrà / per fortuna.*
'Maria will come, fortunately.'
b. *Verrà_per fortuna.*
'She'll come, fortunately.'
c. *Maria parlò_lentamente.*
'Maria spoke slowly.'
d. *Parlò_lentamente.*
'She spoke slowly.'

These data are inexplicable under any syntactic analysis of RS that does not 'count' constituents in some way. Thus they offer powerful support for the LBC.

The data in 37a–b consist of two S's related by a deletion transformation, where the transformation changes the left branch. Another kind of data that offer powerful support for the LBC consists of S's which are related by a movement transformation, where the transformation gives us a different word following the left branch, and thus a new site for RS. For example, in 38, RS cannot lengthen the initial consonant of *nel* since the word which precedes it is not the left branch of $\overline{V}$:

(38) *Maria ha visto Artù / nel parco.*
'Maria saw Artù in the park.'

But in the corresponding question, RS may lengthen the initial consonant of *nel*:

(39) *Chi ha visto_nel parco?* (*T)
'Whom did she see in the park?'

RS is possible here because WH-Movement has moved the direct object, so that *nel* now follows the left branch of $\overline{V}$.

Sentences in which the first node of an S is not a single word, however, at first seem to present a serious problem for the LBC. For example, we find that RS is possible between the last word of the subject and the first word of the predicate whenever the subject is sentence-initial—regardless of whether the subject is a single word, several words, or a complex NP:

(40) a. *La città_cadde.*
'The city fell.'
b. *L'ultimo re_morì.*
'The last king died.'

---

[30] This contrast, as expected, also holds for embedded S's:

(a) *La sorella che Giorgio vedrà / se può è Maria.*
'The sister whom Giorgio will see if he can is Maria.'
(b) *La sorella che vedrà_se può è Maria.*
'The sister whom he will see if he can is Maria.'

Note that our hypothesis for RS supports the proposal often made that *che* 'that' in a relative clause is a complementizer, not a relative pronoun (see Napoli 1977 and Kayne 1976, among others), because of S's like:

(c) *La sorella che verrà_se può è Maria.*
'The sister who will come if she can is Maria.'

Here *che* cannot be dominated by S (but only by $\overline{S}$). Sentences like (c) were suggested to us by Henk van Riemsdijk and Emily Rando.

    c. *La religione che pratica_perde fedeli.*
       'The religion he practices is losing adherents.'

Likewise, RS can apply between an S-initial subject and a following $\overline{\overline{A}}$ (i.e. a sentential modifier), regardless of whether the subject is a single word or not:

    (41) a. *La città_purtroppo cadde.*
         'The city unfortunately fell.'
      b. *L'ultimo re_purtroppo morì.*
         'The last king, unfortunately, died.'
      c. *La religione che praticò_purtroppo perde fedeli.*
         'The religion he practiced is unfortunately losing adherents.'

This is a problem for the LBC, in that we would expect RS only when the subject is a single word (and thus the left branch of S):

    (42) *Artù_viene* 'Artù is coming.'

The problem exists for all major constituents of S. Thus an initial $\overline{\overline{A}}$ can cause RS on a following subject or predicate, whether the $\overline{\overline{A}}$ is a single word or several:

    (43) a. *Dopo martedì_Maria non viene più.*
         'After Tuesday, Maria is not coming any more.'
      b. *Dopo martedì_non viene più.*
         'After Tuesday, she's not coming anymore.'

Likewise, an initial $\overline{\overline{V}}$ can cause RS on a following subject or $\overline{\overline{A}}$, regardless of whether the $\overline{\overline{V}}$ is a single word or several:[31]

    (44) *Mangiò i bignè_Mario sono sicura.*
         'Mario ate the cream puffs, I'm sure.'
    (45) *Mangiò i bignè_martedì.*
         'He ate the cream puffs Tuesday.'

A nice minimal pair is given in Nespor 1977, and a slight variation on it is given here as 46–47, where the final $\overline{\overline{A}}$ in 46 branches off the S, while that in 47 is off the $\overline{\overline{V}}$:

    (46) *Mangiò i bignè_solo.*
         'He ate the cream puffs alone.'
    (47) *Mangiò i bignè | solo.*
         'He ate only cream puffs', or 'He ate the cream puffs alone'.

These data suggest at least two possible alternatives to the LBC. One is that the LBC does not apply to S at all, but is limited to $\overline{\overline{A}}$, $\overline{\overline{N}}$, $\overline{\overline{V}}$, $\overline{\overline{P}}$, and $\overline{\overline{S}}$. However, 35–39 clearly showed that some condition similar to the LBC must apply to S, since RS is possible only between the first and second constituents of S. The second alternative, then, is that there is a slightly modified LBC (let us call it the LBC'),[32] which

---

[31] Note that, in 45, *martedì* is an $\overline{\overline{A}}$ of the S and not of the $\overline{\overline{V}}$. For proof of this, see Nespor 1977, where the *farlo* 'do so' test for $\overline{\overline{V}}$ constituency (similar to the test of Lakoff & Ross 1966 for English) is used.

    Also, some speakers reject 44 with or without RS; they object to the position of *Mario*. Most speakers accept 44, however.

[32] If we assume that the LBC' applies to $\overline{\overline{S}}$ as well as to S, then the LBC' is consistent with an analysis of 36 and 45 (and other such examples) in which the $\overline{\overline{A}}$ is directly dominated by S,

allows RS to apply between the first and second constituents immediately dominated by S:

    (48) LBC′: RS can apply on S between a word **a** and a following word **b**, where **a** is dominated by the category symbol **A** and **b** by **B**, only if **A** is a left branch of the first node that dominates both **A** and **B** and only if that node is S.

The difference between the LBC and LBC′ is seen in Figures 8 and 9, where **a** and **b** are the terminal elements. In Fig. 8, **A** immediately dominates **a**. In Fig. 9, however,
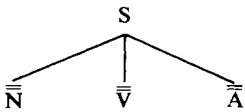
LBC

C
(D)   B
(E)   b ...
A
a

FIGURE 8.

LBC′

S
(D)   B
(E)   b ...
A
... a
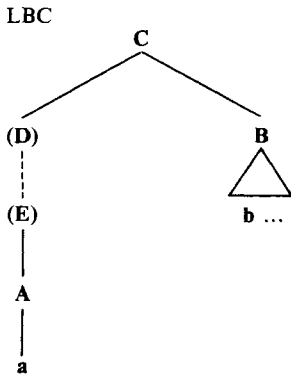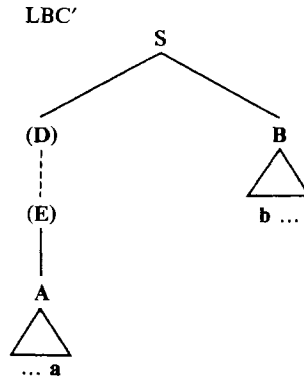
FIGURE 9.

not by $\overline{\overline{S}}$. That is, the LBC′ forces us into analysing the $\overline{\overline{A}}$ *per fortuna* in the first example of 36 as in (a), and not as in (b):

(a)

S
$\overline{\overline{N}}$ $\overline{\overline{V}}$ $\overline{\overline{A}}$

(b)

$\overline{\overline{S}}$
S $\overline{\overline{A}}$
$\overline{\overline{N}}$ $\overline{\overline{V}}$
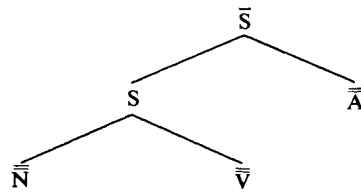
Both (a) and (b) (with $\overline{\overline{A}}$ on the left rather than on the right), however, are consistent with 43. Still, we must claim that 43 has the structure in (a) if we are to say that 43 and (c) below are structurally identical except for the order of elements, and still wish to account for the impossibility of RS in (c):

    (c) *Maria non viene più | finchè tu non dia le scuse.*
         'Maria isn't coming anymore until you apologize.'

Note that we have chosen a different adverb in (c), to avoid having an adverb that begins with *d*, since *d* is always long for some speakers.

    As Guglielmo Cinque points out (p.c.), this analysis of *dopo martedì* in 43 leads us to say that (d) is a violation of Kuno's S-Internal NP Clause Constraint (1973, after Ross 1969):

    (d) *Dopo martedì che Piero venga è una disdetta.*
         'After Tuesday, that Piero should come is a misfortune.'

The alternative is to say that LBC′ applies only to S and not to $\overline{S}$, and that in all relevant examples we are dealing with a structure like (b) rather than (a). We leave this question open for now, and write LBC′ with S and not $\overline{S}$, since our analysis could easily be modified (in the way indicated) to accommodate either structure (a) or (b).

A need not immediately dominate **a** (as seen in 40–46). In both cases, **A** is a left branch of the first node dominating **A** and **B**, and non-branching nodes may intervene between **A** and the first node dominating both **A** and **B**. Alternatively, we could say that, in Fig. 8, a strict requirement that the left branch of **C** be a single word is maintained, while in Fig. 9 a looser definition of the left branch of S as the first constituent immediately dominated by S (even if made up of many words) is maintained.

If we were to replace S by **C** (any node) in Fig. 9, then it is clear that any RS predicted by the LBC is also predicted by the LBC', since the cases described by the LBC are a proper subset of those described by the LBC'. A natural question, then, is whether the LBC is needed at all. That is, will the structure in Fig. 9, if we substitute the general node **C** for the specific node S (which is now there), correctly predict all the cases of RS and rule out all the structures where it cannot occur?

To answer this question we need examples of $\overline{\overline{X}}$ where the first constituent of $\overline{X}$ is not a single word, as in Figure 10, or the first constituent of $\overline{\overline{X}}$ is not a single word, as in Figure 11.[33]
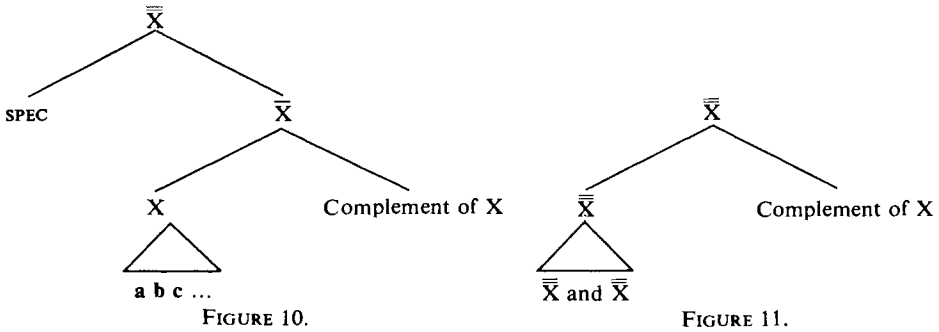
FIGURE 10.

FIGURE 11.

Examples of this second type are easy to find if we consider coördinate structures like Figure 12.

FIGURE 12.
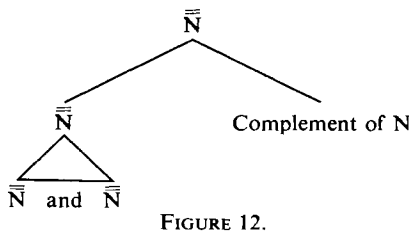
We find that RS cannot apply between the final N of the coördinate structure and the following complement:

(49) *le anitre e le gru | selvatiche*
       'the wild ducks and cranes'

---

[33] A simple test of a few movement rules will verify that 49, below, has the structure given in Fig. 12. We leave the question open as to whether this is a base structure or the result of Right Node Raising (as discussed in Maling 1972).

If RS applies between *gru* and *selvatiche*, only the cranes are understood to be wild. Thus RS occurs between *gru* and *selvatiche* only in the structure in Figure 13, not that of Fig. 12.
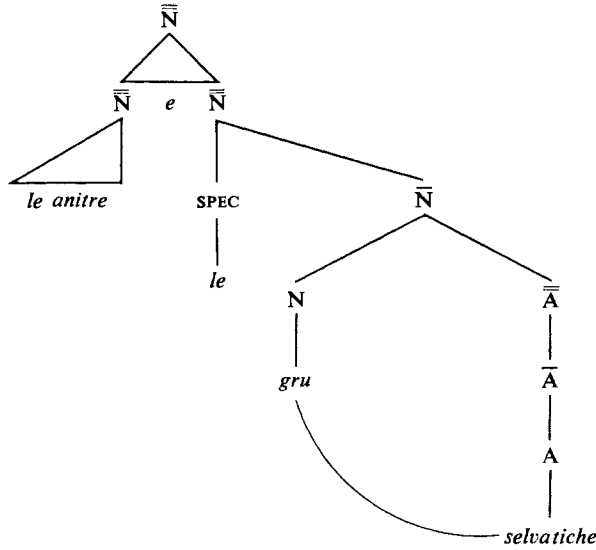

FIGURE 13.

But both structures in Figs. 12–13 are good ones for RS by the LBC', if the LBC' were to apply to $\bar{\bar{N}}$ as well as to S. The LBC, however, correctly predicts that RS can apply in Fig. 13, but not in Fig. 12.[34] It is interesting to note that a coördinate $\bar{\bar{X}}$ like that in Fig. 11 is in a sense an 'island' with respect to RS.

Thus, unfortunately, we must conclude that both the LBC and LBC' are necessary: the LBC applies on $\bar{\bar{N}}, \bar{\bar{V}}, \bar{\bar{A}}, \bar{\bar{P}}$, and $\bar{\bar{S}}$, while LBC' applies on S.

6. SPECIFIERS. Some interesting possible problems for the LBC are offered by S's in which the specifier of $\bar{\bar{X}}$ is not a single word.

We find that RS is possible on $\bar{\bar{X}}$ between a specifier and the following first word of $\bar{X}$, apparently regardless of whether or not that specifier is the left branch (the sole specifier) of $\bar{X}$. Thus RS is possible in the examples below:

(50) Specifier, X
$\bar{\bar{A}}$ *È molto più⌣carina di te.*
'She's much prettier than you.'

---

[34] For many Italians, it is possible to have a coördinate structure in which a final adjective agrees only with the last conjunct, but is intended to modify all conjuncts. Our analysis correctly predicts that, if RS applies between the last conjunct and the adjective, that adjective can be understood to modify only the last conjunct, and not all the other conjuncts as well:

(a) *un fuoco e un falò | grande*
'a big fire and a big bonfire', or 'a fire and a big bonfire'
(b) *un fuoco e un falò⌣grande*
'a fire and a big bonfire'

(Examples (a)–(b) were suggested to us by Andrew Radford.)

$\overline{\overline{N}}$ *Questi tre⌣cani son grandi.*
   'These three dogs are big.'
$\overline{\overline{V}}$ *I soldati son stati⌣pregati troppo.* (*T)
   'The soldiers have been begged too much.'
(51) Specifier, Complement of X
$\overline{\overline{A}}$ *È molto più⌣severamente dura di te.*
   'She's much more severely strict than you.'
$\overline{\overline{N}}$ *Questi tre⌣grandi cani son belli.*
   'These three big dogs are beautiful.'
$\overline{\overline{V}}$ *I soldati son stati⌣già pregati troppo.* (*T)
   'The soldiers have already been begged too much.'

In order to try to preserve the LBC, one might propose here a structure in which the two specifiers do not form a constituent, but one is higher than the other. A suitable label for the top nodes in such a structure might be $\overline{\overline{\overline{X}}}$, as in Figure 14; and we will use the $\overline{\overline{\overline{X}}}$ notation for convenience. However, it is not crucial to our analysis whether the top node in the tree in Figure 14 is a triple-bar node or some other (such as $\overline{\overline{X}}$), and we do not claim to offer evidence here that a triple-bar notation is needed.
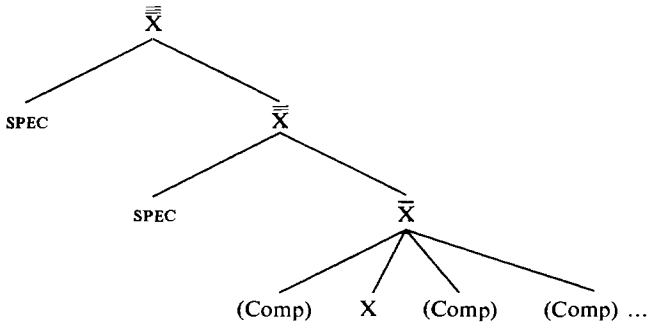

FIGURE 14.

Such structures have been argued for by Vergnaud 1974 and Halitsky 1975, among others. Independent motivation for such an analysis, however, is necessary.

Let us first consider the examples with $\overline{\overline{V}}$, since they have been the most studied, as far as we know. The question is whether the perfective auxiliaries *avere* 'have' and *essere* 'be', the passive auxiliary *essere* 'be', and the modals *potere* 'can' and *dovere* 'must' are main verbs followed by a $\overline{\overline{V}}$—or, instead, sisters to the verb form that follows them. It has been argued by Rizzi 1976 that the perfective auxiliaries embed complements in underlying structure, i.e. appear in a complex underlying structure; by Radford 1976 (Sec. II, adopting some arguments of Ross 1969) that the perfective, passive, and modal auxiliaries appear in a complex underlying structure; and by Napoli 1974 that the modals appear in a complex underlying structure. Thus there is universal agreement, as far as we know, on the complex nature of the underlying structure of these verbs. The derived structure, however, which is the one relevant to RS, is a more controversial matter. Both Rizzi 1976 and Radford 1976 argue for a simple derived structure of auxiliaries (i.e. one without an

embedded complement), in which they are Chomsky-adjoined with their dependent verb. But Radford 1977 shows that bounding evidence favors a simplex derived structure for perfective and passive auxiliaries, while pronominalization evidence favors a complex derived structure.

We cannot go into the relevant arguments here, since they would involve a long discussion which is tangential to the major thesis of this paper. Instead, we refer the reader to Nespor 1977 for further arguments that the proper derived structure is complex, as in Figure 15.
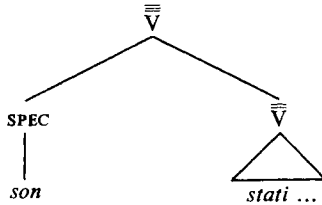

FIGURE 15.

As Fig. 15 shows clearly, if the proper derived structure is complex, then 50 $\overline{\overline{V}}$ and 51 $\overline{\overline{V}}$ present no problem for the LBC after all. But suppose that the proper derived structure is simplex, and that Rizzi 1976 and Radford 1976 are correct in saying that Chomsky-adjunction applies, yielding a derived structure for 50 $\overline{\overline{V}}$ and 51 $\overline{\overline{V}}$ something like that in Figure 16.
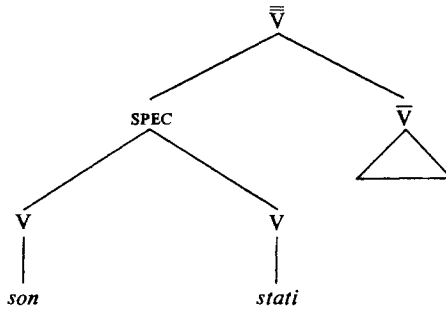
FIGURE 16.

Then 50 $\overline{\overline{V}}$ and 51 $\overline{\overline{V}}$ suggest that the LBC operates on $\overline{X}$ (where X = A, N, V, or P), but that the LBC' operates on $\overline{\overline{X}}$ as well as on S. Other than the data offered by specifiers, however, we have found no other evidence directly pertinent to the question of whether or not the LBC' operates on $\overline{\overline{X}}$.

While $\overline{\overline{V}}$ certainly leaves open the question presented by specifiers, $\overline{\overline{A}}$ and $\overline{\overline{N}}$ do not. Let us turn our attention to the $\overline{\overline{A}}$ and $\overline{\overline{N}}$ examples of 50–51. Again we need to determine whether *più* in 50 $\overline{A}$ and 51$\overline{A}$ forms a constituent with the words following it. Likewise, we need to determine whether *tre* in 50 $\overline{\overline{N}}$ and 51 $\overline{\overline{N}}$ forms a constituent with the words following it. This time the evidence is not conflicting: *più* and *tre* each forms a constituent with the words following. The evidence comes from the deletion rule that operates in answers of the following sort:

(52) —*È molto più carina di lui? —Sì, molto.*
　　 —'Is she much prettier than he?' —'Yes, much.'

(53) —*Son belli questi tre cani di cui stai parlando?* —*Sì, questi sì.*[35] *Ma quegli altri di cui ti parlavo ieri sono brutti.*

—'Are they beautiful, these three dogs you're talking about?' —'Yes, these are. But those that I was talking about yesterday are ugly.'

In 52, we see that *più* can be deleted, along with the words following it that are part of the $\bar{\bar{A}}$. In 53, we see that *tre* can be deleted, along with the words that follow it that are part of the $\bar{\bar{N}}$. If this deletion rule deletes only a single constituent,[36] then 52–53 are evidence that *più* and *tre* are left branches of the relevant node for RS. Thus 50 $\bar{\bar{A}}$, 51 $\bar{\bar{A}}$, 50 $\bar{\bar{N}}$, and 51 $\bar{\bar{N}}$ present no problem for the LBC.

Given that the data on specifiers are problematic only for $\bar{\bar{V}}$, and not for $\bar{\bar{N}}$ and $\bar{\bar{A}}$, we will leave unchanged our original formulations of LBC and LBC'. However, if further data show that $\bar{\bar{V}}$ requires a reformulation of the LBC' so that it applies to $\bar{\bar{X}}$ (but not to $\bar{X}$ or X) as well as to S, then $\bar{\bar{N}}$ and $\bar{\bar{A}}$ will present no problem for this reformulation. Note also that, if such a reformulation should be necessary, RS would offer very convincing evidence not just for the notion 'major category', but also for the $\bar{X}$ notation in particular, since the bars themselves would be crucial to the rule.

7. CONSEQUENCES FOR THE ANALYSIS OF ITALIAN SYNTAX. This analysis of RS for Sicilian and Tuscan varieties calls for very explicit syntactic analyses of many surface structures in Italian. In particular, if RS occurs between two words, the first must be part of the left branch of the first node that dominates both words. Furthermore, if the first word is not the entire left branch of that node, then that node must be S (this is precisely the distinction between the LBC and LBC'). Thus our hypotheses claim not only certain constituencies, but also often demand that a given node be S rather than any other category. Thus RS, as Emily Rando has pointed out to us, can be used as a tool to test the S-hood of many controversial structures and many structures as yet unstudied. Like analyses of other phenomena

[35] Guglielmo Cinque has brought to our attention the fact that (a) is not a proper response to 52:

(a) ?**Sì*, *molto più* 'Yes, much more.'

But (b) is a proper response to 53:

(b) *Sì, questi tre, sì* 'Yes, these three, yes.'

Why the elements following *più* cannot be simply deleted is a question. However, (a) in no way conflicts with our claim that *molto* and *più* do not form a constituent. Rather, the contrast between (a) and (b) is more a pecularity of *più* than a problem of specifiers in general. Contrast (a) to (c)–(d):

(c) *È molto meno carina di lui?*

'Is she much less pretty than him?'

(d) *Sì, molto (meno).*

'Yes, much (less).'

And note that (e) is a good possible alternative to (a):

(e) *Sì, molto di più.*

It's interesting to note that (e) is infinitely preferable to (a), while (d) is only slightly preferable to (f):

(f) *Sì, molto di meno.*

[36] We here invoke the time-honored assumption of generative syntax that deletion rules operate only on nodes (i.e. constituents).

that rely on particular syntactic assumptions, the LBC and LBC' could easily be disproved if inconsistencies arose; however, they could gain support from totally independent syntactic arguments that support the structures predicted by our RS analysis. Here we cannot go into independent evidence for the assumptions we have made nor for the predictions of our hypotheses, given that they cover the entire body of syntactic structures in Italian. Ample evidence to support many of these structures is given, however, by Nespor 1977, where some interesting predictions of the LBC and LBC' are examined in careful detail.

8. COMPARISON TO OTHER LANGUAGES. In our analysis of RS, we claim that the syntactic notion 'left branch' is crucial to a rule which has a phonetic effect. This claim is not really new.

Clements 1977 analyses tone groups in Anlo-Ewe. He finds that an NP which is the 'leftmost member of the constituent immediately containing it', where 'the sister constituent immediately to its right is a lexical category, V or N' (p. 11), forms a single tone group with a following constituent. Tone groups are surrounded by tone 'boundaries', which are then essential information to rules of tone raising. Thus the determination of whether or not an NP is a left branch must be accessible to a rule which has a phonetic effect (of tone raising).

Kevin Ford (p.c.) reports that Kikuyu, a Bantu language, 'employs two pitch levels, high and low, together with a process of downstep, which effectively lowers adjacent tones by the interval between low and high tones.' This downstep has the essential feature of 'distinguishing between major constituents of the sentence and of marking (by zero for contrast) the left-branch of a complex NP'. Here again, a syntactic left branch must be recognized by a rule which has a phonetic effect (although in this case, the rule will not apply after the left branch).

In Selkirk 1972, the notion 'dependent of a head' (as defined on pp. 50–51), when that dependent precedes its head, involves the notion 'left branch', even though no explicit mention is made of left branches. Monosyllabic dependents of a head in English lose stress when they precede their head or a codependent in surface structure, according to Selkirk (51). Thus stress reduction in English, a rule with a phonetic effect, uses the syntactic notion 'left branch'.

In Rotenberg 1975, the syntactic environments for French liaison are given as in Figures 2 and 3 above, repeated here for convenience as Figures 17–18.
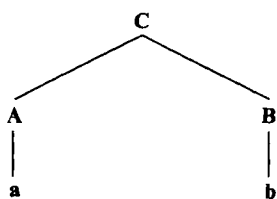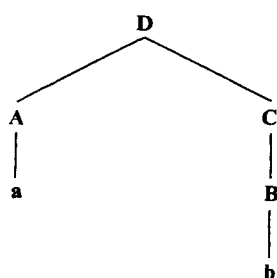

FIGURE 17.

FIGURE 18.

Theoretically, **A** may be preceded by other nodes also dominated by **C** (as in Fig. 17) or by **D** (in Fig. 18). And in formal French, **A** certainly can be preceded by other nodes, as shown by these examples (Rotenberg, p.c.):

(54) *Il racontait des histoires_à ses amis.*

    'He was telling some stories to his friends.'

(55) *Il dit tout_à l'envers.*

    'He says everything in reverse.'

For informal French, however, Rotenberg gives no examples in which **A** is not a left branch—except for PP's, since he analyses PP's as in Figure 19.
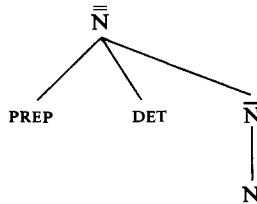

FIGURE 19.

With Jackendoff's analyses of PP's, however (1973, 1974), even this exception disappears. Thus, from the actual data on liaison given in Rotenberg 1975, it appears possible that **A** must be a left branch for liaison to occur in informal French. This speculation must remain just that until further research can settle the matter.

From these few examples, we can see that the syntactic notion 'left branch' may play a part in rules with phonetic effects. Thus Anlo-Ewe, Kikuyu, English, and perhaps French lend credence to our proposal that left branches are crucial to RS in Sicilian and Tuscan varieties—and possibly in every variety of Italian.

9. THEORETICAL IMPLICATIONS. Our analysis of RS gives serious support to generative grammar in general by making use of the notions 'constituent' and 'branch'. In particular, it supports the status of the notion 'major category' as defined in Chomsky 1965 and in Chomsky & Halle 1968, and it shows one more way in which the $\overline{X}$ notation of Chomsky 1970 can be used to capture this notion (as was seen in §4).

Furthermore, this analysis claims that phonological rules can have access to syntactic structure, at least to surface structure. Thus the phonological and syntactic components of the grammar cannot be perfectly discrete.

Finally, the fact that the left branch or a first constituent is crucial to RS is interesting from a psycholinguistic point of view. Why should the left branch and not the right one, the first constituent and not the last one, be crucial? Perhaps the traditional grammarians discussed in §3 were on the right track when they talked of 'phrases', or 'united' words and 'groups'. What RS tends to do is to signal the listener that a new constituent has started. The tie that RS forms between one word and the next tells us that the first word has begun a new constituent. This kind of signaling seems very natural to us; it may be the key behind Anlo-Ewe tone raising, Kikuyu downstepping, English stress reduction, and French liaison, as well as

Italian RS in our Sicilian and Tuscan varieties. It would be particularly interesting to examine external sandhi rules in left-branching languages with these speculations in mind. We leave these suggestions for future research.

REFERENCES

AGARD, FREDERICK, and ROBERT DI PIETRO. 1965. The sounds of English and Italian. Chicago: University of Chicago Press.

BAKER, C. L., and MICHAEL BRAME. 1972. Global rules: a rejoinder. Lg. 48.51–75.

BIANCHI, E. 1948. Alcune osservazioni sul rafforzamento consonantico nel parlar fiorentino. Lingua Nostra 9.76–7.

BRESNAN, JOAN. 1972. Theory of complementation in English syntax. MIT dissertation.

CAMILLI, AMERINDO. 1941. I rafforzamenti iniziali. Lingua Nostra 3.170–174.

——. 1963. Pronuncia e grafia dell'italiano. Florence: Sansoni.

CHOMSKY, NOAM. 1965. Aspects of the theory of syntax. Cambridge, MA: MIT Press.

——. 1970. Remarks on nominalization. Readings in English transformational grammar, ed. by Roderick Jacobs & Peter Rosenbaum, 184–221. Waltham, MA: Ginn.

——, and MORRIS HALLE. 1968. The sound pattern of English. New York: Harper & Row.

CLEMENTS, GEORGE. 1977. Four tones from three: the raised tone in Anlo-Ewe. Language and linguistic problems in Africa, ed. by Paul F. A. Kotey & Haig Der-Houssikian, 168–81. Columbia, SC: Hornbeam Press.

DI PIETRO, ROBERT. 1971. Review of Saltarelli 1970. Lg. 47.718–30.

DONATI, LEONE. 1956. Corso pratico di lingua italiana. Zurich: Fussli.

FIORELLI, PIERO. 1958. Del raddoppiamento da parola a parola. Lingua Nostra 19.122–7.

HALITSKY, DAVID. 1975. Left branch S's and NP's in English: a bar notation analysis. Linguistic Analysis 1.279–96.

HALL, ROBERT A., JR. 1961. Italian for modern living. New York: Chilton.

JACKENDOFF, RAY. 1973. The base rules for prepositional phrases. A Festschrift for Morris Halle, ed. by Stephen R. Anderson & Paul Kiparsky, 345–56. New York: Holt, Rinehart & Winston.

——. 1974. Introduction to the $\overline{\mathrm{X}}$ Convention. Bloomington: Indiana University Linguistics Club,

KAYNE, RICHARD. 1975. French syntax. Cambridge, MA: MIT Press.

——. 1976. French relative que. Current studies in Romance linguistics, ed. by Marta Luján & Fritz Hensey, 255–99. Washington, DC: Georgetown University Press.

KUNO, SUSUMO. 1973. Constraints on internal clauses and sentential subjects. LI 4.363–85.

LAKOFF, GEORGE, and JOHN R. ROSS. 1966. Criterion for verb phrase constituency. Springfield, MA: NTIS.

LEHISTE, ILSE. 1973. Phonetic disambiguation of syntactic ambiguity. Glossa 7.107–22.

LEONE, ALFONSO. 1962. A proposito del raddoppiamento sintattico. Bolletino del Centro di Studi Filologici e Linguistici Siciliani 7.163–70.

LEPSCHY, GIULIO. 1966. I suoni dell'italiano: alcuni studi recenti. L'Italia Dialettale 29.49–69.

——. 1967. La scuola linguistica di Praga. Il Verri 24.19–34.

MALING, JOAN. 1972. On Gapping and the order of constituents. LI 3.101–8.

MORETTI, M., and D. CONSONNI. 1972. Lingua madre. Torino: Società Editrice Internazionale.

MULJAČIĆ, ŽARKO. 1972. Fonologia della lingua italiana. Bologna: Il Mulino.

NAPOLI, DONNA JO. 1974. Una breve analisi dei verbi potere e dovere. Fenomeni morfologici e sintattici nell'italiano contemporaneo, ed. by Mario Medici & Antonella Sangregorio, 233–40. Roma: Bulzoni.

——. 1975a. Consistency. Lg. 51.831–44.

——. 1975b. A global agreement phenomenon. LI 6.413–36.

——. 1977. Variations on relative clauses in Italian. Studies in language variation, ed. by Ralph W. Fasold & Roger W. Shuy, 37–50. Washington, DC: Georgetown University Press.

NESPOR, MARINA. 1977. Some syntactic structures of Italian and their relationship to the phenomenon of raddoppiamento sintattico. Dissertation, University of North Carolina, Chapel Hill.

NORMAN, HILDA. 1937. Reduplication of consonants in Italian pronunciation. Italica 14.57–63.

PALAZZI, FERNANDO. 1970. Novissima grammatica italiana. Milano: Principato.

PRATELLI, RUFIN. 1970. Le renforcement syntactique des consonnes en italien. La Linguistique 6.39–50.

RADFORD, ANDREW. 1976. Italian syntax: bidirectionality in Raising. Doctoral dissertation, Linacre College, Oxford, England.

——. 1977. Italian syntax: transformational and relational grammar. Cambridge: University Press.

REGULA, MORITZ, and J. JERNEJ. 1965. Grammatica italiana descrittiva. Bern: Francke.

RIZZI, LUIGI. 1976. Ristrutturazione. Rivista di Grammatica Generativa, 1.1–54. Padova: CLEUP.

ROHLFS, GERHARD. 1966. Grammatica storica della lingua italiana e dei suoi dialetti: fonetica. Torino: Einaudi.

ROSS, JOHN R. 1969. Auxiliaries as main verbs. Studies in philosophical linguistics, ed. by William Todd, 77–102. Evanston: Great Expectations.

ROTENBERG, JOEL. 1975. French liaison, phrase structure, and semi-cyclical rules. Unpublished, MIT.

——. 1976. Semicyclicity, trace theory, and liaison: continued. Unpublished, MIT.

SALTARELLI, MARIO. 1970. A phonology of Italian in a generative grammar. Mouton: The Hague.

SELKIRK, ELIZABETH. 1972. The phrase phonology of English and French. MIT dissertation.

——. 1974. French liaison and the $\overline{\mathrm{X}}$ Notation. LI 5.573–90.

VERGNAUD, JEAN ROGER. 1974. French relative clauses. MIT dissertation.

VOGEL, IRENE. 1977. The syllable in phonological theory, with special reference to Italian. Stanford dissertation.

ZWICKY, ARNOLD. 1977. On clitics. Bloomington: Indiana University Linguistics Club.

[Received 23 October 1978.]