

SYNTAX AND INTONATION IN ITALIAN NOUN PHRASES

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ABSTRACT

The relationship between syntax and intonation in Italian noun phrases was studied. Acoustic examination of sentence-initial phrases in SVC sentences suggests that there are at least two syntactic factors that determine the tonal organization of a NP: branching construction and head-modifier relation. Branching construction triggers a boost of the protrusive FO movement in the left-most content word in a constituent, and possibly an inhibition of tonal protrusion in other words. The head-modifier relation seems to cause a tonal fusion of two adjacent content words.

1. SPEECH MATERIAL

In order to examine the syntax-intonation relationship in Italian noun phrases, FO contours of six types of noun phrases consisting of three content words were examined. The test phrases were put in a carrier SVC sentence 'NP è venuta/NP sono venuti a Padova' ('NP has/have come to Padova (place name)). The internal syntactic structure of the test noun phrases were systematically varied (Table 1).

Table 1. Test noun phrases.

Content words are underlined and stressed syllables are italicized.

1.	[N Adj] & N	la <u>dorma</u> <i>brasili</i> ana e il <i>bimbo</i>
2.	N & [Adj N]	il <u>rumeno</u> e il bravo <i>brasili</i> ano
3.	[Adj N] & N	la <i>bella</i> <u>brasili</u> ana e il <i>bimbo</i>
4.	Adj [N & N]	i <i>giovani</i> <u>allievi</u> e <i>allieve</i>
5.	[N & N] Adj	la <i>dorma</i> e il <i>bimbo</i> <u>brasili</u> ani
6.	N & [N Adj]	la <i>dorma</i> e il <i>bimbo</i> <u>brasili</u> ano

difference in branching construction is realized by the insertion of a pause.

A conspicuous tonal protrusion of the second content word is observed also in the right-branching construction in sentence 6 (N & [N Adj]), but it is less obvious in the left-branching construction [[Adj N] & N] in sentence 3. Thus sentences 2 and 6 have a more conspicuous protrusive movement in the second content words than do sentences 1 and 3. In the former sentences, FO contour in the second word is characterized by a rise followed by a fall, while in the latter sentences it is rather a break in the steep fall from the first content word, followed by another steep fall.

The conspicuous tonal protrusion due to right-branching, together with the conspicuous protrusion in the phrase-initial content word and the tonal inhibition of the phrase-final word, can be formulated as a general rule that the left-most content word in a branched constituent has a conspicuous tonal protrusion and other words inhibit their own protrusive movement.

However, the tonal protrusion due to right-branching in sentence 4 (Adj [N & N]) is observed in some utterances of speaker EF, but not in all speakers. Moreover, in some sentences with left-branching constructions, there is a conspicuous FO protrusion in the second content word. In fact, the difference in branching construction between sentences 6 (N & [N Adj]) and sentence 5 ([N & N] Adj), which are a quasi minimal pair, is realized in none of the speakers because of a conspicuous protrusion in the second word. The different tonal treatments for left-branching construction indicate that branching construction is not the only determining factor in the tonal organization

of a noun phrase.

The syntactic difference between the sentence set 1 ([N Adj] & N) and 3 ([Adj N] & N) and sentence 5 ([N & N] Adj) is the relation between the first two content words: in sentences 1 and 3, they are linked by a head-modifier relation, while in sentence 5 they are not linked by such a relation. This indicates that the local head-modifier relation is another syntactic factor determining phrase prosody: the second content word in the phrase which is not linked by a head-modifier relation with the first word has a conspicuous tonal protrusion in FO, whether it is the head or the modifier.

This rule predicts a more general rule that two content words linked by a head-modifier relation tonally fuse into one, inhibiting the protrusive movement of the second word. The inter-subject inconsistency found in sentence 4 (Adj [N & N]) could be interpreted as an interference between the mapping rule of the branching construction and the tonal fusion rule of the two words linked by a head-modifier relation.

3. CONCLUSION

Acoustic examination of FO contours of the noun phrases consisting of three content words suggest that there are at least two syntactic factors which determine the tonal organization of a noun phrase: branching construction and local head-modifier relation. Branching construction triggers a tonal boost at the left-most content word of a constituent, and possibly inhibits protrusive tonal movement of the other words. Head-modifier relation appears to cause a tonal fusion of two adjacent content words, regardless of which is the head and which is the modifier, inhibiting the FO protrusive movement

of the second word, and thus its tonal independence. Two words not linked by such a relation do not tonally fuse. In cases where these two rules interfere, intra- and inter-speaker instabilities appear. The overall results lead us to believe that the syntax-intonation relationship in Italian is not linear in nature.

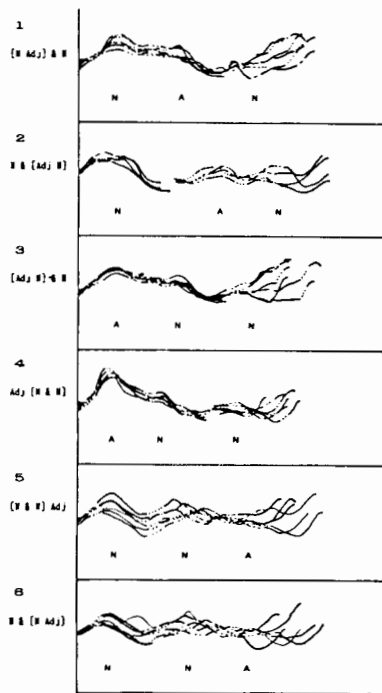


Figure 1.
F0 contours of test noun phrases
Speaker SG

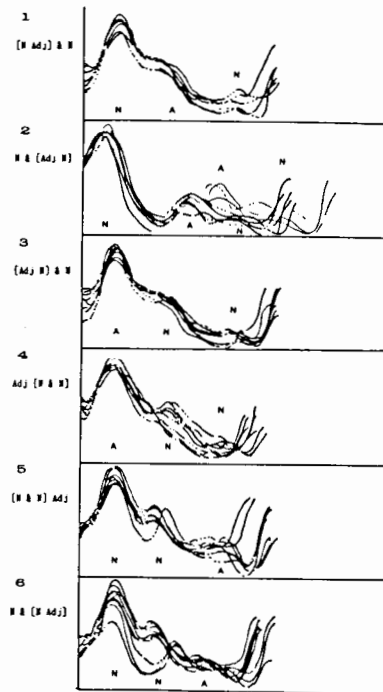


Figure 2.
F0 contours of test noun phrases
Speaker EF

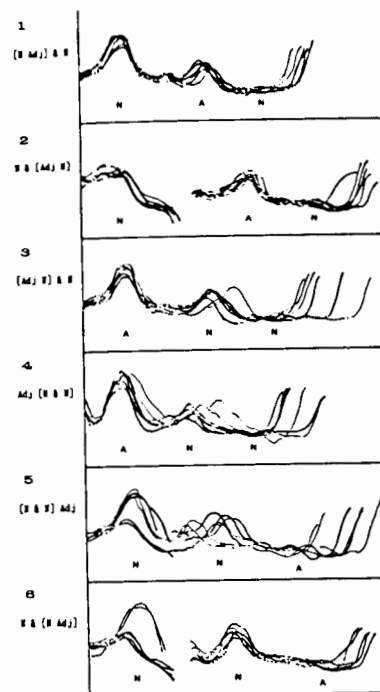


Figure 3.
F0 contours of test noun phrases
Speaker LT

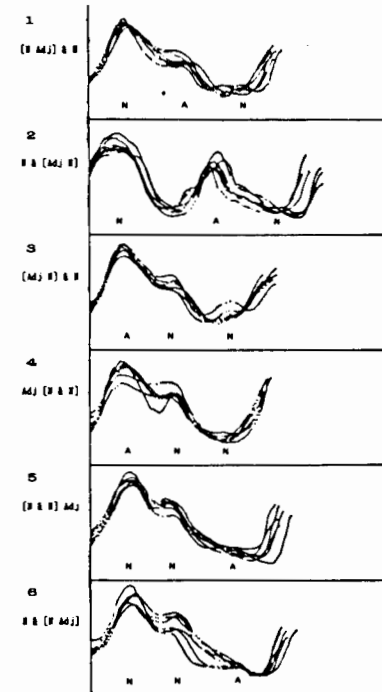


Figure 4.
F0 contours of test noun phrases
Speaker PC