

What is Raddoppiamento? Prosody and Length in Italian

The name Raddoppiamento refers to a lengthening phenomenon that takes place in Italian. Given a sequence of two words, word1 and word2, the initial consonant in word2 lengthens when word 1 ends in a stressed vowel. Example (1) illustrates the process:
(1) città santa [tʃi 'ta s:anta] “holy city”

This project presents acoustic data that sheds light on the phenomenon under question by showing the degree of lengthening and the factors that affect it.

We propose five hypotheses drawn from the literature on the topic. Two hypotheses test the traditional environment for Raddoppiamento, described above, and further test the boundary effects. Two more hypotheses look at a new environment, namely when the second word begins with a vowel. The boundary effect is also considered for this context. The last hypothesis tests a claim common to accounts of Raddoppiamento according to which final stressed vowels do not lengthen in Italian.

To test the different hypotheses, data from four native speakers of Tuscan Italian were recorded. The speakers read sentences that contained the environments under study, which were controlled for the following factors. First, both words could be within the same phrase or separated by an intonational boundary (example (2)). Second, the first word could have final or non-final stress (example (3)). Third, the initial segment in the second word could be a vowel or a consonant (example (4)). The combination of these factors allows us to control all the contexts and compare them in order to prove our hypotheses (see Table 1 for a summary of the stimuli).

Raddoppiamento has been widely discussed in several phonological works and different accounts have been proposed (among others Borrelli 2000, Nespor & Vogel 1979, Saltarelli 2003, Vogel 1978). After a review of the literature on the issue, it becomes clear that a solid empirical foundation is lacking. In order to present any satisfactory analysis of the process, we need to consider certain aspects that most works disregard. First, it is relevant to examine what happens when the target segment is a vowel. Second, the behavior of the stressed vowel that initiates the process should be taken into account.

Different constraints, both prosodic and syntactic, have been proposed to constraint the occurrence of Raddoppiamento. Nespor & Vogel (1986) claim that this process is restricted to the domain of the phonological phrase. On the other hand, Napoli & Nespor (1979) argue that the Italian lengthening process is subject to the Left Branching Condition, i.e., word1 must be part of the left branch of the first node that dominates both word1 and word2. However, these restrictions should be accompanied by data proving its effects. For this reason, apart from taking into account the segments involved in the process, we also consider the effects of the presence of stress and boundary, and the interaction between both. This will help understand which factors may block the lengthening from applying.

The results show that lengthening took place in the traditional Raddoppiamento environment, i.e., when word1 ends in stressed vowel and word2 begins with a consonant

and there is no intervening boundary between them. On the other hand, when the initial segment in word2 was a vowel, this did not lengthen. This result shows that any attempt at explaining the process must deal with the fact that only consonants are subject to lengthening. As far as the final vowel in word1 is concerned, this was significantly longer when it carried the stress than when it is unstressed. Finally, the presence of a boundary did not block the process. At the phrase juncture, the initial consonant in word2 was significantly longer when the preceding vowel was stressed than when the latter was unstressed (see table II for summary of results). In the view of this empirical evidence, some of the accounts of Raddoppiamento Sintattico will have to be revisited in order to accommodate all the data.

Table 1 Summary of stimuli

Phrase internally (#)				Phrase juncture (##)			
Final stress (´)		Non-final stress		Final stress (´)		Non-final stress	
V _{w1} V _{w2}	V _{w1} C _{w2}	V _{w1} V _{w2}	V _{w1} C _{w2}	V _{w1} V _{w2}	V _{w1} C _{w2}	V _{w1} V _{w2}	V _{w1} C _{w2}
à # I	à # s/p	a # i	a # s/p	à ## i	à ## s/p	a ## i	a ## s/p
ì # a	ì # s/b	i # a	i # s/p	ì ## a	ì ## s/p	i ## a	i ## s/p

- (2) Roma è una città santa (phrase internally) “Rome is a holy city”
 Se conosci la città, santa non è (phrase juncture) “If you know the city, it’s not holy”
- (3) La nostra è una facoltà ibrida (final stress) “Ours is a hybrid faculty”
 È una pianta ibrida (non-final stress) “It’s a hybrid plant”
- (4) Fu un giovedì acido (initial vowel) “It was a sour Thursday”
 Fu un giovedì sobrio (initial consonant) “It was a sober Thursday”

Table II Summary of results

Stress effect	Initial consonant in word2 lengthens after stress
	Final vowel in word1 lengthens when stressed
Boundary effect	Boundary is not a blocker of lengthening
Segment quality effect	Initial vowel in word2 does not lengthen after stress

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