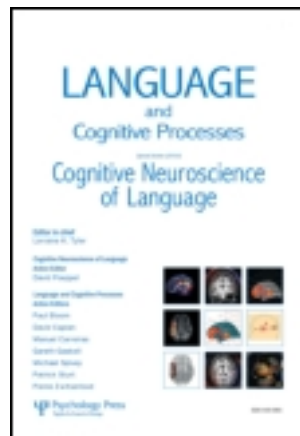


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Priming lexical stress in reading Italian aloud

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Two experiments using a lexical priming paradigm investigated how stress information is processed in reading Italian words. In both experiments, prime and target words either shared the stress pattern or they had different stress patterns. We expected that lexical activation of the prime would favour the assignment of congruent stress to the target. Results showed that participants were faster in naming target words that had the same stress pattern as the prime. Similar effects were found on target words that were included in lists in which all prime and target stimuli had the same stress type (Experiment 1) and in lists with mixed stress type and congruency between primes and targets (Experiment 2). Results indicate that, in single word reading, metrical information about stress position is activated in the lexicon, independent of segmental information.

Keywords: Word stress; Lexical priming; Metrical structure; Word naming.

In reading Italian aloud, the assignment of stress to three- and more syllable words is the only process that cannot be accomplished by applying rules, but rather requires accessing lexical entries. In a transparent orthography like Italian, simple rules are sufficient to obtain the correct print-to-sound mapping of all the words at the segmental level (Burani, Barca, & Ellis, 2006); but in contrast with this high regularity, there are no rules dictating

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that a three-syllabic word like “*matita*” [pencil] bears stress on the penultimate syllable (maTIta), whereas the word “*bibita*” [drink] bears stress on the antepenultimate syllable (BIbita).¹ A reader of Italian must learn the correct stress for these words by rote.

It is thus conceivable that, in the lexicon of Italian readers, the phonological representation of a polysyllabic word includes the representation of its metrical structure. However, considering the asymmetrical distribution of the two main Italian stress patterns—about 80% of three-syllables bear stress on penultimate syllable, and 18% bear stress on the antepenultimate syllable² (Thornton, Iacobini, & Burani, 1997)—it may also be assumed that only antepenultimate stress is included in the lexical representation, whereas the penultimate stress is the default pattern, consistent with the statistical properties of stress distribution (Colombo, 1992).

Whether the word’s metrical structure may be represented independently of the representation of its phonemic segments—as an autonomous level of representation—is still an open issue. For word production, it has been proposed that the metrical structure is computed separately from segmental information, and can be autonomously involved in preparing an utterance. Roelofs and Meyer (1998), for instance, found that the production of a Dutch response word was facilitated when participants knew in advance both the number of syllables and the stress location of the word.

Evidence of the latter type is lacking for reading aloud. If the stress of an Italian three-syllabic word is represented in the lexicon as a part of its metrical structure, autonomously from its segmental representation, then in reading it should be possible to prime the production of the stress pattern of a target word by accessing a prime word that has the same stress pattern as the target. Two main predictions can be conceived.

The first prediction follows from positing that the penultimate stress is applied sublexically by default (Colombo, 1992), whereas only the antepenultimate stress is lexically represented. Within this view, a low-frequency target word, prone to be read by means of sublexical print-to-sound conversion (Coltheart, Rastle, Perry, Langdon, & Ziegler, 2001), should be read faster and more accurately when it bears penultimate stress than when it bears antepenultimate stress. Accordingly, two results are expected: a main effect of stress type, with penultimate stress words read faster than antepenultimate stress targets (Colombo, 1992), and a larger stress priming facilitation on antepenultimate stress targets than on penultimate stress targets.

¹Penultimate stress is assigned by rule only in the case that a word has a heavy penultimate syllable (e.g., *bisonte*).

²The remaining 2% of three-syllabic words bear stress on the final syllable, and in this case stress is graphically marked (e.g., *colibri*).

Within the contrasting view, which posits that stress is autonomously represented for both antepenultimate and penultimate stress words and no default mechanism is at work, no difference in processing penultimate and antepenultimate stress words is expected, and stress priming should occur for both word targets with penultimate and antepenultimate stress pattern.

In reading aloud, the locus of the stress priming effect may also be at a nonlexical level, if readers rely on some sort of rhythmic pattern. Colombo and Zevin (2009) investigated stress and metrical computation in reading aloud. By using a “pathway priming” methodology (Zevin & Balota, 2000), in which a list of five primes preceded a target and all stimuli, both primes and targets, were read aloud, Colombo and Zevin (2009) tested stress computation within a lexical (word primes) or a sublexical (nonword primes) context. They found that stress can be represented separately from lexical and segmental information: a stress representation could be primed in reading aloud, but only when a sublexical mechanism was involved and there was a homogeneous stress context (primes and targets sharing the stress pattern). On the basis of these results the authors concluded that stress priming can be induced as a consequence of sublexical rhythmic processing.

In the present study, we adopted a priming paradigm in which a prime word is presented briefly before a target word, and only the target is read aloud. In contrast to the “pathway priming” paradigm, our paradigm allows us to investigate lexical priming in the absence of an overt prosodic/rhythmic context induced by reading primes aloud. To further ascertain that stress priming requires lexical retrieval and does not result from rhythmic priming, we manipulated the list context in which the prime-target pairs were presented. In Experiment 1, prime-target pairs with only congruent (or incongruent) stress patterns were presented in the same list; in Experiment 2, the two stress types and the two congruency conditions (prime and target with the same or different stress type) were mixed. This mixed list condition aimed at ruling out the possibility that stress could be assigned sublexically as a predictable prosodic pattern. If stress priming requires lexical retrieval and is not a consequence of sublexical rhythmic processing as argued by Colombo and Zevin (2009), then we can expect the same pattern of results in the two experiments, that is stress priming should occur for both word targets with penultimate and antepenultimate stress, with no difference for the two stress patterns, irrespective of list context.

EXPERIMENT 1

In Experiment 1, we investigated lexical phonological priming (Ferrand & Grainger, 1993), with primes and targets sharing the stress pattern (congruent condition), or having different stress patterns (incongruent

condition). If access to the prime word activates its metrical representation in the phonological lexicon as autonomous information, then targets in the congruent condition (in which the prime stress matches the target stress) should be named faster than targets in the incongruent condition, in line with Roelofs and Meyer's findings (1998). If both stress patterns are lexically represented, the congruent stress prime condition should facilitate the production of both antepenultimate and penultimate stress words.

Method

Participants

Thirty-two students of the University of Trento, all native Italian speakers.

Materials and design

Two sets of 32 low-frequency three-syllabic words, selected from the CoLFIS database (Bertinetto et al., 2005), were used as targets. One set included penultimate stress words and the other antepenultimate stress words. Stimuli were matched on familiarity, length in letters, orthographic neighbourhood size, orthographic neighbours' summed frequency, bigram frequency, orthographic complexity, number of embedded words, embedded words' summed frequency, and two initial phonemes (Table 1). Both targets with penultimate and antepenultimate stress had a stress neighbourhood composed mainly of stress friends, i.e., their orthographic ending was shared by a majority of words with either penultimate or antepenultimate stress, respectively (Burani & Arduino, 2004; Colombo, 1992). Accordingly, there was no bias towards assigning the penultimate stress on the basis of orthographic/phonological cues of the word ending (Arciuli, Monaghan, & Ševa, 2010; Ševa, Monaghan, & Arciuli, 2009).

Two sets of 32 medium-high frequency three-syllabic words were used as primes. One set included penultimate stress words and the other antepenultimate stress words, all selected from CoLFIS (Bertinetto et al., 2005). They were matched on the same variables as targets (Table 2).³ The two sets of 32 primes were paired with two sets of 32 target words, with no semantic relation between prime and target. Targets were divided between the two stress conditions (congruent and incongruent), matching initial phonemes and word length within each subgroup. All stimuli are listed in the Appendix.

The experiment had a 2 (congruent–incongruent stress pattern) × 2 (penultimate–antepenultimate stress) design, with both factors within participants. Four pure blocks were created: each block included stimuli

³ Because of their medium-high frequency, the familiarity ratings were not collected for the prime stimuli.

TABLE 1
Summary statistics: means (and standard deviations) for the three-syllabic target words in Experiments 1 and 2

<i>Item variables</i>	<i>Stress type</i>	
	<i>Penultimate</i>	<i>Antepenultimate</i>
Word frequency	1.39 (0.82)	1.46 (0.98)
Length in letters	7.13 (0.61)	6.84 (0.63)
Bigram frequency	11.18 (0.37)	11.16 (0.46)
N of orthographic neighbours	0.75 (0.98)	0.81 (0.9)
Neighbours' frequency	6.71 (11.29)	4.96 (8.98)
Familiarity	5.37 (1.1)	5.32 (1.13)
Contextual rules	0.43 (0.61)	0.65 (0.70)
N of embedded words	0.18 (0.39)	0.15 (0.36)
Embedded word frequency	0.34 (1.12)	0.65 (2.02)

Note: Word frequency measures are calculated out of one million occurrences (Bertinetto et al., 2005); bigram frequency is log transformed on the basis of the natural logarithm; number of contextual rules is a measure of orthographic complexity (see Burani, Barca, & Ellis, 2006); familiarity was measured on a 1–7 rating scale (1 = low familiarity, 7 = high familiarity).

from only one condition (penultimate-stress prime and penultimate-stress target; antepenultimate-stress prime and penultimate-stress target; antepenultimate-stress prime and antepenultimate-stress target; penultimate-stress prime and antepenultimate-stress target). To avoid facilitating effects due to sharing initial phoneme (Malouf & Kinoshita, 2007), primes and targets differed on initial phoneme.

Apparatus and procedure

Participants were tested individually. They were instructed to read the targets as quickly and accurately as possible.

Each trial started with a fixation cross, centred on the screen, for 400 ms. The prime was then presented for 86 ms (Ferrand & Grainger, 1993) in lower-case letters in the centre of the screen, followed by the target word displayed in the same position as the prime, in upper-case letters. The target remained on the screen until the participant began to read it aloud or for a maximum of 1,500 ms. The interstimulus interval was 1,500 ms. A practice preceded the experiment. Naming times were recorded by means of E-Prime software.

Each participant received 64 trials, presented in four blocks. Primes and targets were paired in such a way that for half of the participants a target was preceded by a penultimate stress word, and for the other half the same target was preceded by an antepenultimate one.

TABLE 2
Summary statistics: means (and standard deviations) for the three-syllabic prime words used in Experiments 1 and 2

<i>Item variables</i>	<i>Stress type</i>	
	<i>Penultimate</i>	<i>Antepenultimate</i>
Word frequency	18.56 (8.26)	19.06 (6.02)
Length in letters	7.06 (0.66)	6.81 (0.59)
Bigram frequency	11.38 (0.33)	11.23 (0.53)
N of orthographic neighbours	1.37 (1.73)	1.31 (1.33)
Neighbours' frequency	13.53 (25.39)	13.25 (18.13)
Contextual rules	0.65 (0.70)	0.59 (0.61)
N of embedded words	0.12 (0.33)	0.18 (0.39)
Embedded word frequency	3.15 (16.62)	3.09 (10.43)

Note: Word frequency measures are calculated out of one million occurrences (Bertinetto et al., 2005); bigram frequency is log transformed on the basis of the natural logarithm; number of contextual rules is a measure of orthographic complexity (see Burani, Barca, & Ellis, 2006).

The order of prime-target pairs was randomised within blocks and block order was counterbalanced between participants. The experimenter noted the naming errors.

Results

Responses shorter than 250 ms or longer than 1,500 ms (1.6% of all data points) were excluded from the analyses.

Results are reported in Table 3. A 2×2 analysis of variance was conducted on RTs (reaction times) as the dependent variable, with condition (congruent–incongruent) and stress type (penultimate–antepenultimate) as within-participant factors (in the analysis by items, the factors were between participants).

There was a main effect of condition, $F_1(1, 31) = 9.54$, $MSE = 2,595$, $p < .005$; $F_2(1, 124) = 12.89$, $MSE = 2,223$, $p < .001$, with congruent target words read faster than incongruent targets. There was no effect of stress type, $F_1(1, 31) = 3.27$, $MSE = 795$; $F_2 < 1$, and no interaction between the two factors, $F_1(1, 31) = 1.38$, $MSE = 1,091$; $F_2(1, 124) = 1.58$, $MSE = 2,223$.

Naming errors, including both phonemic and stress errors, were also submitted to a 2×2 ANOVA with error percentages as dependent variable and condition and stress type as within-participant (or, in the analysis by items, as between participants) factors. No factor reached significance (all $F_s < 1$).

TABLE 3
Mean latencies for correct responses and percentage of errors by condition (with standard deviations) in Experiment 1

<i>Target stress</i>	<i>Prime-target stress congruency</i>			
	<i>Congruent</i>		<i>Incongruent</i>	
	<i>Mean RT</i>	<i>%E</i>	<i>Mean RT</i>	<i>%E</i>
Penultimate	579 (80)	4.4 (5)	598 (70)	3.7 (5.6)
Antepenultimate	577 (88)	4.1 (5.4)	614 (72)	4.1 (4.5)

Discussion

Word targets preceded by stress-congruent primes were named faster than targets preceded by stress-incongruent primes. No main effect of stress type was found, and prime congruency similarly affected the reading of penultimate and antepenultimate words. The priming effect found in the congruent stress condition can be associated to the preactivation of stress information during processing of the prime. When the stress pattern activated by the prime matches the target stress pattern, then facilitation in reading the target aloud is obtained.

The next experiment investigated the presence of this effect in a mixed list condition, to rule out the possibility that stress was assigned as a predictable prosodic pattern.

EXPERIMENT 2

In Experiment 2, we mixed the two stress types and the two congruency conditions (primes and targets with the same or different stress type), in order to check whether the homogeneous stress of the targets in each list adopted in Experiment 1 affected metrical processing, and assignment of stress specifically, in target words. As Colombo and Zevin (2009) showed, there may be a tendency to homogenise the stress pattern assigned to a word with the stress pattern of its list context; thus, the effects obtained in Experiment 1 might be inflated because of this context effect. Since target's stress position in Experiment 1 was predictable, readers might have assigned stress in an automatic rhythmic way, homogenising the stress pattern to the metrical information activated on earlier trials. In this sense,

the stress congruency effect could be strategic, depending on context and not on the task (Rastle, Kinoshita, Lupker, & Coltheart, 2003).

In order to test whether the stress congruency effect obtained in Experiment 1 was strategic in nature, Experiment 2 manipulated list context so that stress could not be assigned sublexically as a predictable prosodic pattern. If stress priming depends on lexical retrieval, then we expect the same pattern of results obtained in the first experiment.

Method

Participants

Thirty-two students of the University of Trento, all native Italian speakers.

Materials and design

The same materials as in Experiment 1 were adopted. Four mixed blocks were created: each block was composed of 16 stimuli, four from each experimental condition (penultimate-stress prime and penultimate-stress target; antepenultimate-stress prime and penultimate-stress target; antepenultimate-stress prime and antepenultimate-stress target; penultimate-stress prime and antepenultimate-stress target).

Apparatus and procedure

Procedure was the same as in Experiment 1. Each participant read the 64 target stimuli in four different mixed blocks. Thirty-two target stimuli were assigned to each condition (congruent and incongruent stress pattern), counterbalanced across two lists.

Results

Responses shorter than 250 ms or longer than 1,500 ms (1.1% of all data points) were excluded from the analyses. Results are reported in Table 4. A 2×2 analysis of variance was conducted on RTs as the dependent variable, with condition (congruent–incongruent) and stress type (penultimate–antepenultimate) as within-participant factors (in the analysis by items, the factors were between participants).

The effect of condition was marginally significant by participants, $F_1(1, 31) = 3.77$, $MSE = 1,267$, $p = .06$, and significant by items, $F_2(1, 124) = 4.98$, $MSE = 1,214.56$, $p < .05$, showing that words in the congruent condition were read faster than words in the incongruent condition. There was no effect of stress type ($F_s < 1$), and no stress type \times congruency interaction ($F_s < 1$).

TABLE 4
Mean latencies for correct responses and percentage of errors by condition (with standard deviations) in Experiment 2

<i>Target stress</i>	<i>Prime-target stress congruency</i>			
	<i>Congruent</i>		<i>Incongruent</i>	
	<i>Mean RT</i>	<i>%E</i>	<i>Mean RT</i>	<i>%E</i>
Penultimate	598 (97)	3.5 (3.1)	609 (106)	2.14 (3)
Antepenultimate	600 (102)	2.05 (2.2)	614 (106)	2.8 (2.9)

Naming errors, including both phonemic and stress errors, were submitted to a 2×2 ANOVA with error percentages as dependent variable and condition and stress type as within-participant (or, in the analysis by items, as between participants) factors. No factor reached significance, condition and stress type: both $F_s < 1$; interaction: $F_1(1, 31) = 3.17$, $MSE = 22.153$; $F_2 < 1$.

Joint analysis for Experiments 1 and 2 To compare results from the two experiments, an analysis of variance was conducted with condition (congruent–incongruent), stress type (penultimate–antepenultimate) and experiment/context (blocked–mixed) as factors. Condition and stress type were within-participant measures in the analysis by participants, and between-participants measures in the analysis by items. Experiment/context was a between-participants factor. There was a significant effect of stress congruency again, $F_1(1, 62) = 13.28$, $MSE = 1,931$, $p < .01$; $F_2(1, 248) = 17.20$, $MSE = 1,740$, $p < .01$. The RTs in Experiment 2 were slower than in Experiment 1, resulting in a main effect of experiment in the analysis by items, $F_1 < 1$; $F_2(1, 248) = 5.97$, $MSE = 1,740.46$, $p < .05$; but, importantly, experiment/context did not interact with any other factor, stress type–experiment/context interaction: $F_s < 1$; stress congruency–experiment/context interaction: $F_1(1, 62) = 1.372$, $MSE = 863$; $F_2 < 1$.

Error percentages were submitted to analysis, with condition and stress type as within-participants measures in the analysis by participants, and between-participants measures in the analysis by items. Experiment/context was a between participants factor. There was a main effect of experiment, in the analysis by participants, $F_1(1, 62) = 6.68$, $MSE = 1,273.193$, $p < .05$; $F_2(1, 248) = 2.89$, $MSE = 44.327$, with more errors in Experiment 1. Experiment/context did not interact with any factor (all $F_s < 1$).

Discussion

The results of Experiment 2 are consistent with those of Experiment 1, and show that the stress congruency effect was present even when participants

could not rely on rhythmic strategies to assign stress. The effect was not modulated by list context, as shown by the absence of any interaction between stress congruency and list composition. This pattern of results rules out the use of task-specific strategies.

GENERAL DISCUSSION

In two experiments, stress information coming from prime activation affected the processing of a target word. Readers were faster to read a word when it was preceded by another word with the same stress pattern than when it was preceded by a word with a different stress.

The stress congruency effect was present on both antepenultimate and penultimate stress word targets. The absence of a main difference in latencies to penultimate and antepenultimate stress words confirms that no default mechanism is at work in stress assignment for words with a neighbourhood composed mostly of stress friends (Burani & Arduino, 2004). The similarity in stress priming effects for penultimate and antepenultimate stress targets suggests that both stress patterns are represented in the phonological lexicon and can be activated as a consequence of prime processing.

This stress priming effect may have a lexical source, because it was found in a list where target stress was unpredictable and thus it was not possible to apply any rhythmic cue. The presence of the stress priming effect under such conditions indicates that, in lexical access, the retrieval of stress information is partially autonomous with respect to the phonemic segmental material: when processing a prime, readers retrieve the metrical structure of the word, containing stress position, which then exerts an influence on target word reading.

Our results contrast with those reported by Schiller, Fikkert, and Levelt (2004) for Dutch picture naming. In that study, participants named pictures corresponding to bisyllabic words stressed on the first or second syllable. Target pictures were preceded by the auditory presentation of another bisyllabic word with same or different stress. Unlike the present study, Schiller, Fikkert, and Levelt (2004) did not find a stress priming effect in Dutch. However, it may be observed that all the Dutch word targets had a predictable stress. Stress was predictable both for words with initial stress, which is by far the dominant stress (or default pattern) in Dutch, as well as for words with final stress (all had a “super-heavy final syllable” to which “metrically regular stress” is applied). Thus, stress could be assigned through a nonlexical mechanism (see Miceli & Caramazza, 1993). The absence of lexical stress retrieval might be the main source for the absence of stress priming in the Dutch study. In contrast, the Italian words used in our study had a stress not predictable on the basis of metrical characteristics, with subsequent retrieval of stress from the lexicon and lexical priming.

The view that metrical information is stored in the lexicon apart from segmental information has been developed with reference to speech production (Levelt, Roelofs, & Meyer, 1999; Roelofs & Meyer, 1998). However, Roelofs (2004) argued that speech production and reading aloud may share the last stages of processing, i.e., phonological and phonetic encoding of the word. According to Roelofs (2004), a model of speech production as the *WEAVER++* and the DRC model of reading (Coltheart, Rastle, Perry, Langdon, & Ziegler, 2001) could be merged at the level of segmental spellout, which precedes the prosodification process.

In a dual route framework of reading (Coltheart, Rastle, Perry, Langdon, & Ziegler, 2001; Perry, Ziegler, & Zorzi, 2010), the activation of a polysyllabic word in the phonological lexicon may entail its prosodification, which involves syllabification of the word and stress retrieval. The preactivation of metrical information—stored separately from the segmental material—in the lexicon caused by a prime word would affect some component of the phonological output buffer that keeps a trace of stress information during processing. In the *CDP++* model (Perry, Ziegler, & Zorzi, 2010) the planning of a target's articulation would be affected by the preactivation of a congruent metrical structure in the Stress Output Nodes contained in the phonological output buffer. There, the information concerning prime stress may affect the reading of a target word at the level of its phonological encoding, which is also considered the locus of lexical stress encoding in naming (Schiller, 2006). Thus, the prime metrical structure can be exploited during prosodification of the target.

Single route connectionist models of stress assignment (Arciuli, Monaghan, & Ševa, 2010; Ševa, Monaghan, & Arciuli, 2009) may also be able to account for the present set of results by positing that the pattern of activation characterising the prime stress may affect the stress unit processing the target. Assuming that stress is part of an output representation, stress priming might affect the resting level of this output representation (Colombo & Zevin, 2009). However, the existing models are still underspecified regarding this issue, so they do not allow us to make more specific predictions at this stage.

In conclusion, metrical information can play an autonomous role in priming the assignment of the correct phonology to a word. Further investigations are needed to understand how metrical information may interact with other orthographic and/or phonological cues that speakers rely on when reading words aloud.

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APPENDIX

Congruent stress pairs–Penultimate stress target: licenza-BADESSA, cuscino-BUDELLO, profeta-CAMBUSA, medaglia-COMPASSO, stivale-CONCIME, cotone-FRAGORE, cancello-GAVETTA, sirena-IBISCO, bagaglio-INGHIPPO, polmone-INTRUSO, sicario-LASAGNA, tempesta-LOMBRICO, commedia-MANGUSTA, patata-MEDUSA, prigioniero-MIRTILLO, candela-NASELLO, allievo-NIRVANA, ribelle-PERNICE, cugino-POLENTA, nipote-POMATA, vigilia-RAMARRO, miscela-RUGIADA, coltello-STARNUOTO, maiale-SUSINA, indizio-TARALLO, cravatta-TIMBALLO, rancore-TOPAZIO, tabella-VANGELO, furgone-VESSILLO, metallo-VILUPPO, padella-ZAVORRA, stupore-ZITELLA.

Congruent stress pairs–Antepenultimate stress target: panico-BALSAMO, tessera-BUFALA, modulo-CALAMO, vicolo-COLICA, sintomo-COTTIMO, preside-FREGOLA, raffica-GANGHERO, comico-IBRIDO, cupola-INDACO, povero-INDOLE, complice-LASTRICO, canone-LOCULO, crimine-MAMMOLA, parroco-MESCITA, stomaco-MICROBO, protesi-NACCHERA, replica-NINNOLO, bambola-PERTICA, incubo-POLIPO, cellula-PORPORA, margine-RANTOLO, stimolo-RUGGINE, arbitro-STIPITE, calibro-SUGHERO, fulmine-TARTARO, coniuge-TIMPANO, sintesi-TOSSICO, tattica-VANDALO, maschera-VERTEBRA, missile-VIRGOLA, liquido-ZAZZERA, nuvola-ZIGOMO.

Incongruent stress pairs–Penultimate stress: tessera-BADESSA, panico-BUDELLO, modulo-CAMBUSA, vicolo-COMPASSO, sintomo-CONCIME, preside-FRAGORE, raffica-GAVETTA, comico-IBISCO, cupola-INGHIPPO, calibro-INTRUSO, complice-LASAGNA, canone-LOMBRICO, crimine-MANGUSTA, parroco-MEDUSA, stomaco-MIRTILLO, replica-NASELLO, protesi-NIRVANA, bambola-PERNICE, cellula-POLENTA, incubo-POMATA, margine-RAMARRO, stimolo-RUGIADA, arbitro-STARNUOTO, povero-SUSINA, fulmine-TARALLO, coniuge-TIMBALLO, sintesi-TOPAZIO, tattica-VANGELO, maschera-VESSILLO, missile-VILUPPO, liquido-ZAVORRA, nuvola-ZITELLA.

Incongruent stress pairs–Antepenultimate stress: cuscino-BALSAMO, cugino-BUFALA, patata-CALAMO, medaglia-COLICA, stivale-COTTIMO, cotone-FREGOLE, cancello-GANGHERO, sirena-IBRIDO, bagaglio-INDACO, polmone-INDOLE, sicario-LASTRICO, tempesta-LOCULO, commedia-MAMMOLA, profeta-MESCITA, prigioniero-MICROBO, allievo-NACCHERA, candela-NINNOLO, ribelle-PERTICA, nipote-POLIPO, licenza-PORPORA, vigilia-RANTOLO, miscela-RUGGINE, coltello-STIPITE, maiale-SUGHERO, indizio-TARTARO, furgone-TIMPANO, rancore-TOSSICO, tabella-VANDALO, cravatta-VERTEBRA, metallo-VIRGOLA, padella-ZAZZERA, stupore-ZIGOMO.