

5. Prosody and information status in Italian and German L2 intonation

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1. Introduction

Not too long ago, in a paper on the phonological and phonetic influences in non-native intonation, Ineke Mennen reported the results of a survey of the major international journals on L2 acquisition carried out by Gut. Out of the copious literature on L2 acquisition in the previous 25 years only 9 papers were found that dealt with tone and intonation (Mennen 2007: 54). The picture has now changed: L2 intonation is attracting more interest by researchers and the studies of L2 production of intonation have widened the range of the target languages studied for the acquisition of L2 intonation. English, that still is the most widely investigated among the target languages of learners from various language backgrounds, is now flanked by other typologically similar languages such as German and Dutch, and typologically dissimilar ones such as Japanese, French and Italian (Ueyama 2012; Rasier/Hiligsmann 2007; Stella 2013).

All those studies have observed that the native language affects the non-native intonation production not only of speakers at the initial stages of their learning process, but also of speakers at intermediate and even at high levels of proficiency (Mennen 2004, 2007). Most of those studies have investigated phonetic aspects of intonation, such as pitch range variations (e.g. Mennen 2007, with references), the production of L2 pitch contours (e.g. Willems 1982) or the prosodic encoding of specific pragmatic functions, such as Contrastive Focus in isolated sentences (e.g. Ueyama/Jun 1998; Chen *et al.* 2001). Very few have addressed the acquisition of the prosodic marking of discourse-related properties, an aspect of the prosody-pragmatic interface that goes beyond the sentence level. Notable exceptions are the works by Rasier and colleagues (2007, 2010), Chen (2009), and Andorno and Turco (in press). Chen (2009) studied the use of intonation in reference maintenance in Turkish intermediate learners of

Dutch. Rasier and Hiligsmann examined the acquisition of the prosodic marking of *Given*, *New* and *Contrastive* information in the interlanguage of Dutch learners of French and of French learners of Dutch (2007). Andorno and Turco (in press) studied the acquisition of focus and topic sensitive operators by Italian intermediate learners of German and by German intermediate learners of Italian. The analysis of the positional and prosodic properties of the additive particle *anche* (It.) and *auch* (Ger.) in the productions of the native speakers as well as in those of the learners' interlanguages highlighted the differential learning process of the structural and prosodic requirements of the L2 information structure.

Along those lines, the present work addresses the question of how the information status of a discourse entity is prosodically realized by advanced learners of typologically different languages. Specifically, we will focus on two groups of speakers: Italians learning L2-German, and Germans learning L2-Italian, and we will examine how *Given*, *New* and *Contrastive* information is intonationally realized in their interlanguage compared to their source language and their target language. By analysing the principles governing the distribution of prosodic prominences in L1-Italian and L1-German as well as their phonological marking, we aim at discovering whether a differential learning pattern emerges in the two groups of speakers determined by the prosodic properties of their L1.

We adopt the theoretical framework of the Autosegmental-Metrical Theory of intonation (Beckman/Pierrehumbert 1986; Ladd 1996), that allows a principled separation of the phonological and phonetic aspect of the intonational structure.

2. The prosodic encoding of discourse-related properties

2.1. Germanic languages

It is widely accepted that Germanic languages avoid marking as prosodically prominent referential expressions that convey *Given* information¹. *Given* elements are “deaccented”: they are not assigned phrasal stress (phrase-level metrical stress) and are not associated with pitch accents (PA) that would otherwise be used to mark the same elements if they were occurring in all-*new* utterances (e.g. Halliday 1967; Bolinger 1968; Cruttenden 1993, 2006; Ladd 1996; Selkirk 2008; Fery/Samek-Lodovici 2006; Bauman/Riester 2012).

1. For an extensive overview of the different concepts of *Giverness* see Baumann/Riester (2012).

The following exchange (Selkirk 2006: 54) illustrates how the informational property of *Givenness* interacts with prosody.

- (1) A: Bin Laden has successfully avoided capture for nearly five years.
 B: It's not clear that the search for [*Bin Laden*]_{G(iven)} is still going on.
- | | | | |
 PA PA PA PA PA

The occurrence of “Bin Laden” in (1)B is deaccented by virtue of being anaphoric, i.e. *Given*. Notably, (1)B does not express narrow focus and “Bin Laden” does not qualify as postfocal. Hence, the deaccenting of coreferential “Bin Laden” can only be due to its information status.

The intuition that *Given* items lack prosodic prominence has a long history, as we could trace it as far back as the beginning of the studies on melody and intonation, namely in the work by Joshua Steele (Steele 1775: 40; see also Avesani *et al.* 2013) and in the work of Walker (1781) and Bell and Bell (1879) (quoted in Cruttenden 2006). The amount of empirical evidence that has been collected so far on the property of *Given* referents to be prosodically deaccented is such to induce Cruttenden to propose that it could be a cognitive universal (Cruttenden 2006). Recently, psycholinguistic studies have shown that listeners are sensitive to the prosodic marking of an entity’s information status: appropriate intonational accenting of *New* information and deaccenting of *Given* information affects off-line sentence comprehension (Birch/Clifton 1995) as well as on-line processing (Dahan/Tanenhaus/Chambers 2002; Chen/den Os/Ruiter 2007). Moreover, neurolinguistic studies using event-related potentials investigated the impact of different types of accentuation on the comprehension of referents and have shown that appropriate prosodic cues affect the construction of a mental model (e.g. Schumacher/Baumann 2010).

The association between deaccenting and information status is not to be conceived as an exceptionless one-to-one relationship, but at most as a strong association, as previous works on English have shown that also referents which have been already mentioned can be accented (Brown 1983; Terken/Hirschberg 1994; Bard/Aylett 1999). As Braun and Chen (2012) observe, most intonation patterns that are claimed to convey a certain meaning only represent the most frequent pattern that speakers choose to use in that context. Even with that proviso, however, all the previous works are compatible with a model of intonational meaning in which a pitch accent (or its absence) directly expresses the pragmatic/semantic values of the elements they are associated with (Pierrehumbert/Hirschberg 1990).

Along these lines, Baumann and colleagues have proposed that different degrees of *Givenness* directly correlate with specific pitch accents, building

on a tradition that sees *Givenness* as a scalar notion in which at least three categories are defined: *New*, *Given* and *Accessible* information (Chafe 1976, 1994; Lambrecht 1994; Prince 1981, 1992). Baumann and Grice (2004) presented perception data that showed how a (high) H* pitch accent was felt by German listeners to be the most appropriate marker of *New* information, and deaccenting the most appropriate for *Given* referents. *Accessible* information cannot be treated as a unitary category, as its deaccentability/accentability and the types of pitch accents chosen to mark it (H+L*, H*) are dependent on the semantic relation that holds between the antecedent and the anaphor. In a later production study (Röhr/Bauman 2010) it was shown that *Given* and *textually Accessible* information are preferably deaccented (respectively: 78% e 63%) while *inferentially Accessible* information is preferably accented (64%) with a H* or a downstepped !H* pitch accent.

2.2. Romance languages

Differently from Germanic languages, Romance languages fail to deaccent *Given* referents, as it has been observed in a number of studies (e.g. Ladd 1996; Avesani 1997; Swerts *et al.* 2002; Avesani/Vayra 2005). Indeed in (2) – the Italian counterpart of (1) – “Bin Laden” in B is anaphoric and *Given* but it requires to be produced with intonational prominence in order to be appropriate in the context of A; while its deaccentuation as in (2)B’ would induce a different reading of the sentence with “la caccia” interpreted as a narrowly focused phrase.

- (2) A: Bin Laden è riuscito a sfuggire alla cattura per quasi cinque anni.
 “*Bin Laden has successfully avoided capture for nearly five years*”
 B: Non è chiaro che la caccia a [Bin Laden]_G stia proseguendo.
 | | | |
 PA PA PA PA
 B’:* Non è chiaro che la caccia a [*Bin Laden*]_G stia proseguendo.
 | | |
 PA PA PA
 “*It’s not clear that the search for Bin Laden is still going on*”

Accenting of *Given* referents has been attested in read speech (Cruttenden 1983), in spontaneous speech (Avesani 1997) and in task-directed dialogues (Avesani/Vayra 2005). In the latter, only 6.5% of coreferential expressions were reported as lacking a pitch accent. Further experimental evidence comes from a comparative study on the accentuation strategies in Dutch and Italian in which different accent patterns within a Noun Phrase were obtained in a semi-spontaneous way

constituents are in the scope of Focus and *Given*. The informational properties of the two sentences are the same, while the prosodic properties radically differ according to the linear position of Focus and Background in the sentence: the background information occurring prefocally in (3)A is pitch accented, namely both referents “le mie sorelle” and “Marinella” receive a (high-falling H+L*) pitch accent, while the same *Given* referents, when occurring post-focally in (3)B are realized with a low and flat F0 contour with no evidence of pitch movements.

In related experiments, Bocci (2013) and Bocci and Avesani (2011, 2015) reported the results of a set of phonetic analyses on the metrical properties of *Given* elements in post-focal position, and showed that when such elements occur in a metrically strong position they are assigned phrasal stress, overriding their information status of *Given* and part of the background. Specifically, the stressed syllable of an element that is *Given* and occurs post-focally before a right dislocated topic is longer, has more spectral emphasis and more extreme F1 trajectories than the same item when it is *New* and occurs prenuclearly in a Broad Focus sentence. Therefore, the phonetic properties of a *Given* element can characterize it as more prominent than the same element which is informationally *New* only by virtue of the position it bears in the metrical structure. A *New* element that occurs in the sentence in a metrically weak position (i.e., prenuclearly within a phonological phrase in a Broad Focus sentence) is less prominent than the same element when it is informationally *Given* but happens to occur rightmost within a phonological phrase, that is, as a head of that prosodic domain. Within the framework of the Autosegmental-Metrical Theory, if an element is a metrical head, it has to be associated with a pitch accent and the only possible tonal specification for a low pitched element is a L* (low) pitch accent.

The preceding work on Italian highlights few important points: 1) *Given* elements are always (pitch) accented; 2) a *Given* element can be metrically promoted to prosodic head only by virtue of its position in the prosodic structure of the sentence; 3) its tonal specification is subjected to phonological constraints: a *Given* element can be marked by a fully-fledged pitch accent (e.g. H* or L+H* or H+L*) if it occurs in pre-focal position, but can be marked only by L* if post-focal; therefore 4) phonological constraints overrule the direct mapping of prosodic properties and discourse-related properties.

2.3. The distribution of phrasal prosodic prominences in Italian and German

More generally, it is useful to briefly sketch which principles Italian and German share that govern the assignment of prosodic prominences in a sentence and by which they diverge.

Both Italian and German, by default, place the highest prosodic prominence rightmost in a prosodic domain (Nespor/Vogel 1986; Büring 2009). Therefore, in Broad Focus sentences, the last metrical head of the final intonational phrase gets the highest prominence of the sentence. Those sentences represent the unmarked case, in which the prominence distribution is driven only by the phonological rules and by the prosodic representation. We will call it “structural” accentuation.

While in those types of sentences Italian does not allow any deaccenting, German does, and in two different conditions. In the first, deaccenting is driven by the language-specific requirements of the interface between information structure and prosody, by which a *Given* constituent is (preferably) not marked by a pitch accent, as we have seen in par. 2.1. In the second, deaccenting is driven by the language-specific requirements of the syntactic structure. For example, in German verb-final sentences the verb can be accented or deaccented according to the status of argument or of adjunct of the element that precedes it. The following sentences (from Truckenbrodt 2007) exemplify the case (the accented words are indicated with underlines):

- (4) A: (Was macht er gerade? “What does he do?”)
B: Er soll Linguistik unterrichten
“He MODAL Linguistics teach”
- (5) A: (Was macht er gerade? “What does he do?”)
B: Er soll in Ghana unterrichten
“He MODAL in Ghana teach”

In (4B) the verb (predicate) is preceded by an accented argument and is deaccented; in (5B) the verb is preceded by an accented adjunct and is accented.

In both cases of deaccenting, the informational and the syntactic one, the rightmost element of a sentence that would be normally accented if only the phonological requirement applied, can be deaccented in compliance with the requirements of the informational structure or syntactic structure. Hence, the phonological requirements on prominence distribution appear to be overridden by the informational and by the syntactic ones.

Summarizing, Italian and German appear to be typologically different as for the distribution of phrasal prominences: in German it is determined by the interplay of phonological (= metrical), informational and syntactic properties of a sentence, in Italian it is determined only by the requirements of the phonological structure.

In a typological perspective, it appears quite clear that the accent placement strategies of many languages – but not all of them – are sensitive both to pragmatic and structural factors, while there seems to be no language

where structural constraints are totally absent (Rasier/Hilgsmann 2007: 53). With respect to Italian, accenting strategies in German are highly marked, both in the sense of displaying a more complex pattern at the interface between prosody and the other components of the grammar and in the sense of typological implication (Haspelmath 2006).

3. Learning the prosodic encoding of information status in L2

The different strategies of accent placement may affect the learning of pitch accent assignment in an L2. If markedness plays any role in L2 learning we can predict that the process of prosody acquisition of L2-Italian and L2-German by native speakers of German and Italian respectively will not be symmetrical. German speakers will face less difficulty in learning L2-Italian than Italian speakers in learning L2-German, due to the higher degree of markedness of the principles ruling pitch accent distribution in German compared to Italian.

An asymmetry in the acquisition process is suggested by Eckman (1987, 1991, 2008), who offers an interesting theoretical framework for the analysis of prosodic transfer centered on two hypotheses: the *Markedness Differential Hypothesis* (MDH) and the *Structural Conformity Hypothesis*.

Based on those hypotheses, Eckman predicts that structures of an L2 that are marked will be more difficult to learn than unmarked ones; and that the degree of relative markedness of the structures in L1 and L2 has an impact on the learning process: structures that are marked in L2 with a lower degree of markedness than marked structures in L1 will be easily acquirable. Furthermore, as regards transfer phenomena, the theory predicts that marked structures in L1 will be less easily transferable in an L2 than unmarked ones.

An asymmetry in the acquisition of pitch accents distribution was confirmed recently by Rasier and colleagues (2007, 2010) who showed that native speakers of French have greater difficulty in acquiring the correct accentuation of L2-Dutch compared to native speakers of Dutch who learn L2-French.

In this paper our goal is to verify whether this asymmetry holds true also in the acquisition process of L2-Italian by German speakers and of L2-German by Italian speakers. We will pursue it by examining the effects of prosody transfer in the acquisition of L2 prosody, bearing in mind that the acquisition of a second language is a complex process that can not be explained simply by analyzing the native language, the target language and the learner's interlanguage (Selinker 1992). Therefore we will combine a contrastive analysis of the native languages (L1-German vs. L1-Italian), a contrastive analysis of the speakers' interlanguages (L2-Italian vs. L2-

German) and we will compare the speakers' interlanguages with their native languages (L1-Italian vs. L2-German; L1-German vs L2-Italian). The first type of comparison will allow us to obtain control data on which to assess the production of L2; the contrastive analysis of interlanguages in relation to the native languages will allow us to evaluate phenomena of prosodic transfer and possibly to distinguish universal and language-specific factors in the acquisition process of an L2.

3.1. *Method*

Accent patterns for L1- and L2-Italian and for L1- and L2-German were obtained via a simple dialogue game played by 3 pairs of Italian speakers and by 2 pairs of German ones. We adopted the experimental setting previously used by Swerts/Kramer/Avesani (2002), that aimed at eliciting a (semi)spontaneous conversation in which the pragmatic status of an Adjective and of a Noun was systematically changed within the same NP. Due to the controlled situational context of the game, both the noun and the adjective could assume the information status of New, Given and Contrastive entities.

The game is essentially an alignment task of figures played by the two participants in 32 moves. In each game, both players had an identical set of eight cards to their disposal, each card showing the picture of a fruit (a banana or a melon) in a particular colour (lilac, green, white, blue). Four of these cards are put on a stack in front of them, the other four cards are in a row before them. The four cards in the stack of Player A are the same as the four cards in the row of Player B, and vice versa. The game consists of a series of turns in which one participant (A) gives instructions to the other player (B) to select a card with a particular figure from the row in front of him/her and to put it on a numbered tableau on the table. While B follows the instruction, A removes the same card from his stack and puts it on his own tableau on the table. In each consecutive turn, the participants switch roles so that the original instruction-giver becomes the instruction-follower, and the other way around. The game is over when the players have no cards left. The game is played 8 times with a short interval between them for a total of 32 moves.

The players are given explicit instruction to describe the card they are moving in terms of its shape and its colour only, so that they can denominate them using exclusively a combination of a noun and an adjective. Each turn, then, consists uniquely of Noun Phrase (NP) such as "melone verde" ("green melon") in Italian and "grüne melone" in German (notice in German NPs, the adjective precedes the noun, in a reverse order compared to Italian).

The sequence in which the cards are played allows a formal and clear definition of the informative value of the fruit depicted on them (banana or melon) and of the fruit's colour (lilac, green, white, blue): the context of the game is set in such a way that in each move either the informative value of the fruit or/and of its color could change with regard to the previous move. A property is defined to be *New (N)* to the conversation if it is mentioned in the first turn of the current dialogue game, it is *Given (G)* if it was mentioned in the previous turn and *Contrastive (C)* if the object described in the previous turn had a different value for the relevant property. The whole set of pragmatic combinations in which the target Noun and Adjective could occur are the following: *New-New* (the first move at the beginning of the game); *Contrastive-Given*; *Given-Contrastive*; *Contrastive-Contrastive*.

Figure 1 exemplifies four moves of the game.

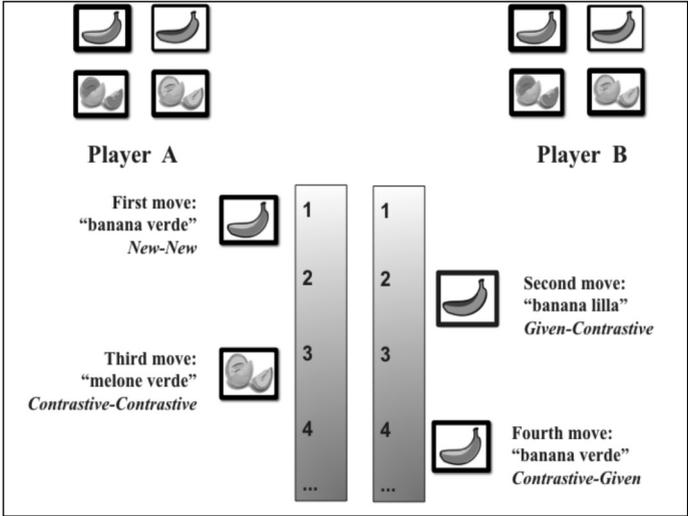


Fig. 1 - An illustration of the first 4 moves of the game played in Italian (word order: Noun+Adjective)

In the first turn (1) player A takes the first card of his stack, a green banana, and instructs player B to remove it from his row: both the adjective and the noun are *New* as it is the beginning of the game and a green banana has not been previously introduced in the discourse. Player B plays the second move (2), takes the first card of his own stack, a lilac banana, and instructs A to remove it from his row. "Banana" is now *Given* as it has been mentioned in the previous turn, while the colour "lilac" is a

contrastive property as the preceding banana was green. In turn 3, player A moves to the table a “green melon” card: this time both the noun and the adjective are informationally *Contrastive*, as the current card contrasts for both properties with the card played in the previous move.

The target figures that have been analyzed are “banana lilla”/“lila banane” (lilac banana) and “melone verde”/“grüne melone” (green melon). The target items are all-voiced and matched by stress position and by segment composition as much as possible in the two languages.

For each speaker and each L1 and L2 we have obtained 4 occurrences of *New* items (2 nouns and 2 adjectives), 4 occurrences of *Given* items (2 nouns and 2 adjectives) and 8 *Contrastive* items for a total of 320 occurrences (16 words × 10 speakers × L1 × L2).

3.2. *Subjects and analysis*

Two pairs of Germans and three pairs of Italian speakers, ranging from age 20 to 32, participated in the experiment. Prior to the beginning of the game, they had to fill in a sociolinguistic questionnaire. Their level of proficiency in L2 has been self-assessed according to the Common European Framework of Reference for Languages. Five out of six Italians declared a level of proficiency between B2 and C1 in L2-German: they have been studying German at Italian high schools and/or university for a time span ranging from 4 to 8 years (one speaker has studied German for 13 years). Three out of six German speakers declared the same level of proficiency in L2-Italian but, differently from the Italian speakers, had studied the language for no longer than 2 years. One German speaker never attended an Italian language course but learned Italian spontaneously living in Italy (where he stayed for four years). All of them spent periods abroad: three out of six Italians spent less than a month in a German speaking country, while the other three spent in Germany from 1 to 8 months. All the Germans have lived in Italy for a period of at least 5 months (up to 4 years).

The noun phrases produced by the speakers have been segmented, acoustically analyzed and prosodically annotated by two experts with the prosodic transcription system ToBI (Tone and Break Indices). The prosodic annotation allows us to identify: (i) the presence of a pitch accent, (ii) the type of a pitch accent used by a speaker, and (iii) the synchronization of the pitch accent’s tonal targets with the acoustic signal (i.e its alignment with the text). In case of disagreement on the annotation, the transcribers have discussed the case until an agreement was reached. On the annotated and segmented data we automatically computed: the duration of stressed syllables and vowels, the alignment of the tonal target in relation to the syllabic onset and the their pitch height (scaling).

3.3. Results

We will first present the results of the distribution of the pitch accents in the NP. We will examine how our speakers assign intonational prominences in their L1 and will compare these data with the distribution of prominences in the productions of their L2. We will then cross-compare L1-Italian and L1-German (par. 4.3.1); L2-Italian and L2-German (par. 4.3.2); L1-Italian and L2-German (par. 4.3.3); L1-German and L2-Italian (par. 4.3.4).

All noun phrases of all speakers have been produced in a single intonational phrase both in L1 and in L2. No juncture phenomenon (segmental lengthening, boundary tones, pauses) is ever present between the first and the second word of each NP.

The following table (Table 1) shows the percent distribution of pitch accents in the noun phrase as a function of the pragmatic status of noun and the adjective (N = *New*; C = *Contrastive*, G = *Given*). The bar-diagrams in figures 2 (2a, 2b, 2c, 2d) represent the prominence's distribution according to the pragmatic status independently for the first and second word of the noun phrase. The first three bars represent the percentage of association of a pitch accent with the first word of the phrase (word 1 = Noun in Italian, Adjective in German), the second three bars represent the percentage of association of the pitch accent to the second word (word 2 = Adjective in Italian, Noun in German).

Tab. 1 - Percent distribution of pitch accents within the NP according to the information status of the Adjective and the Noun (N=*New*; C=*Contrastive*; G=*Given*)

	L1-Italian		L2-German	
	{melone, banana}	{verde, lilla}	{grüne, lila}	{melone, banane}
NN	58%	100%	100%	100%
CC	67%	100%	100%	75%
CG	67%	100%	100%	83%
GC	67%	100%	100%	92%
	L1-German		L2-Italian	
	{grüne, lila}	{melone, banane}	{melone, banana}	{verde, lilla}
NN	100%	100%	100%	100%
CC	100%	100%	100%	100%
CG	100%	13%	100%	100%
GC	88%	100%	100%	100%

3.3.1. L1-Italian vs. L1-German

The graph bars in figure 2 summarize the results of pitch accent distribution in L1 and L2. The data are pulled by position of the word in the NP (Word 1 and Word 2) and by its information status (G=Given, C=Contrastive, N=New).

In L1-Italian (figure 2a), the final word of the noun phrase, Word 2, is always accented independently from its information status. When it represents *Given* information, it is pitch accented as much as when it represents *New* or *Contrastive* information, that is in 100% of the cases. This confirms the data in the literature.

Word 1, instead, can be deaccented. The missing PA in this context is due to phonological reasons: since Word 1 and Word 2 are phrased together to form a single intonational phrase, Word 1 occurs in prenuclear position, a position that can be optionally – not necessarily – associated with a pitch accent. The only metrical position that has to be mandatorily associated with a pitch accent is the head of the intonational phrase that

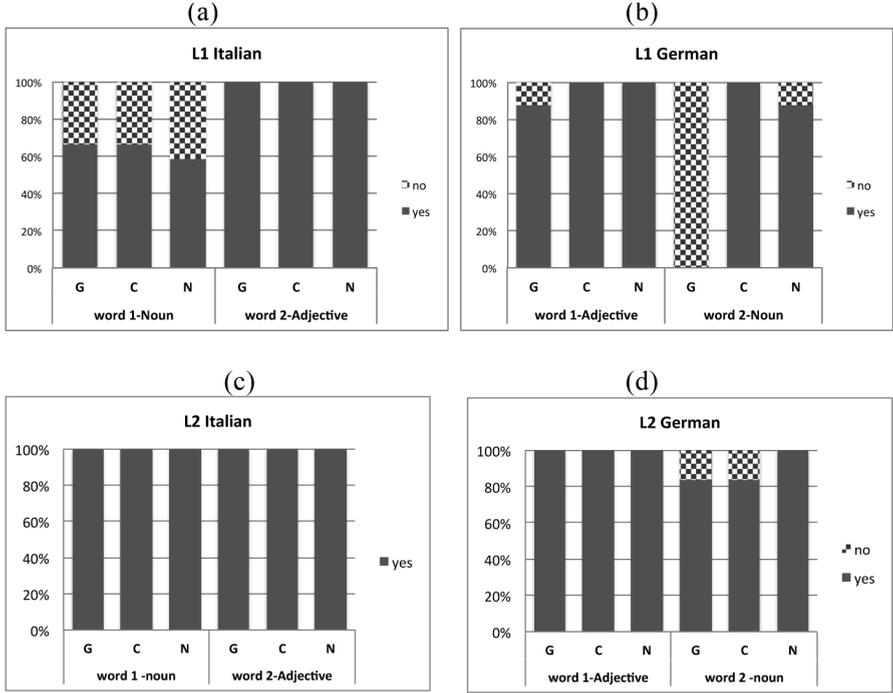


Fig. 2 - Pitch accents distribution as a function of the information status of the first and second word in the Noun Phrase in: (a) L1-Italian; (b) L1-German; (c) L2-Italian; (d) L2-German

occurs rightmost in it. In our case, this position is filled by the adjective as word 2. The fact that we are facing a structural and not a pragmatic deaccenting is proved by the empirical observation that a PA is missing on Word 1 independently of its pragmatic status and in the same percentage: 33% when it is informationally *Given* or *Contrastive*, 42% when it is *New*.

In order to verify the significance of the pragmatic status we built a linear mixed-effects model applied to the (Elogit) occurrences of a PA on Word 1 for L1-Italian speakers². The model included the pragmatic status (contrastive vs. given) of W1 as a fixed effect together with by-subject random slopes for the main effect. The Logit Model built on the data of L1-Italian, with items and subjects treated as random effects, confirmed that the presence or absence of an accent is not significantly predicted by the pragmatic status of Word 1 ($p > 0.5$). Deaccentation on Word 1, therefore, is not due to pragmatic reasons.

In L1-German (figure 2b) a word occurring in the final position of the noun phrase (Word 2: “melone”, “banane”) is deaccented most of the time (87%) if it presents *Given* information; it is always accented (100%) if it represents *Contrastive* information, and is accented in 87,5% of the cases if it is *New*.

When the word occurs in initial position in the noun phrase (Word 1: “grüne”, “lila”) it is always accented if *New* or *Contrastive* (100%) and it is accented, but to a lesser extent, even when it is *Given* (87,5%). These data are compatible with the results on Dutch reported by Swerts *et al.* (2002) and by Rasier and Hiligsmann (2007): in the first study, speakers accent an initial *Given* item of a *Given-Contrastive* sequence in 2 out of 8 cases, while in the same sequence examined by the second study *Given* gets accented in almost half of the cases (45%).

Our data, together with the ones already available in the literature, reveal the interaction between pragmatic and phonological restrictions on deaccentuation. Pragmatic deaccenting is sensitive to the position of the target word in the prosodic structure: even if a word bears the information status of *Given* it can be accented if it occurs in the prenuclear position of an intonational phrase, as “grüne” in the *Given-Contrastive* sequence “grüne MELONE”. Conversely, it is important to notice that in this same initial position, when deaccenting occurs, it does only with *Given* items: *Contrastive* and *New* adjectives are always accented.

2. This technique, increasingly recommended in the literature (i.e. Johnson 2008, a.o.), allows a more efficient analysis of the data compared to ANOVA. On the one hand, Mixed Logit Models allow avoiding the distortions caused by the application of ANOVA to categorical data, distortions that persist even after an arcsin transformation of the data (Jaeger 2008); on the other hand, they allow us to treat complex structures for random effect (see Baayen 2008 for a full explanation).

From these data we can infer that deaccenting in L1-German, when it occurs, affects only *Given* referents, differently from what happens in Italian. A Mixed Logit Model applied to the German data (including both the first and the second word) shows that the probability that a PA occurs is significantly lower when the word's information status is *Given* $p < 0.001$, while the conditions *New* and *Contrastive* information status are not significantly different ($p > 0.5$).

3.3.2. L2-Italian vs. L2-German

The results of the L2 productions of our speakers show that: i) German speakers always assign a PA to *Given* information in their L2-Italian, both in pre-nuclear (Word 1) and nuclear position (Word 2) (see figure 2c). Because they properly accent also items that represent *New* and *Contrastive* information, it turns out that word 1 and word 2 are always accented in every pragmatic condition. ii) Italians speaking L2-German always accent the first word of the NP independently from its information status. They can deaccent an item that is *Given* if it occurs in the nuclear position of the intonation phrase coextensive with the NP (word 2), but only in 17% of the cases. Notice, however, that also the item that is informationally *Contrastive* is deaccented in the same proportion (17%).

The tendency of L2 speakers to over-accent has been explained in literature as part of the process of interlanguage restructuring in the non-initial stages of language acquisition (e.g. Archibald 1997), and it has been imputed to general cognitive processes (hypergeneralization). In our data such a tendency is observable in the L2-Italian produced by L1-German speakers but not vice-versa (figures 2c and 2d): it is therefore difficult to impute the different distribution of prosodic prominences we see in the two groups of speakers to universal principles of language acquisition.

An alternative explanation for the over-accentuation in L2-Italian could be that German speakers are not fluent enough. If this were the case, associating a pitch accent to every word would be a secondary effect of their disfluency affecting the prosody of their interlanguage: every word is pronounced as an independent intonational phrase, as if it were "in isolation", and each intonational phrase carries a pitch accent. Even if we already noticed that all our German speakers are fluent in Italian, we wanted to experimentally verify the previous hypothesis by comparing the duration of word 1 in Italian as L1 and as L2. A statistically significant lengthening of word 1 in L2-Italian would show the presence of a prosodic boundary between the first and the second word, and would be an empirical evidence that the NPs have been realized as two independent intonational phrases, each endowed with a metrical head associated with a pitch accent. The results of a one-way ANOVA computed on the duration

of all the words occurring as word 1 of the NP in L1-Italian and L2-Italian show that there is no significant difference in the duration of Word 1 when it is produced by native Italians or by Germans speaking Italian as L2 ($F_{1,8}=0.416$, $p>0.5$). We can therefore exclude the possibility that the presence of a pitch accent on both words of the NP in L2-Italian is a secondary effect of a low fluency of the German speakers.

3.3.3. L1-German vs. L2-Italian; L1-Italian vs. L2-German. Prosodic transfer of the L1 prosodic system in the L2?

Summarizing our results, we have seen that in L1-German *Givenness* correlates with deaccentuation, mostly when the target word is in final position of the NP, and in a lower percentage when the word is in initial position. It is important to remember that if the first word is deaccented, that word can only represent *Given* information. Differently from German, in L1-Italian there is no pragmatic deaccentuation: a word can only be deaccented in the prenuclear, metrically weak, position of the intonational phrase coextensive with the NP, while no deaccenting can occur in the nuclear, metrically strongest, position of the intonational phrase. This type of deaccentuation is purely phonological, dependent upon the position of the word in the metrical structure and independent of its information status. From these data we infer that in L1-Italian deaccenting obeys phonological constraints only, and that in L1-German deaccenting obeys pragmatic constraints, but it is also sensitive to the phonological structure: pragmatic constraints outrank phonological constraints as deaccenting of *Given* items always applies in the strongest metrical position of an intonational phrase and optionally applies in the weaker prenuclear position.

To analyze the accent distribution in the interlanguage of German and Italian speakers, comparing it with the distribution in the native and the target language, we focus on the intonational properties of the second word in the noun phrase, in which the main differences between the two languages more clearly surface. To this aim we built a set of Logit models, starting with the maximal specification with the following fixed factors: pragmatic status of the word (*New* vs. *Given* vs. *Contrastive*), languages used in the game (Italian vs. German), mothertongue of the player (Italian vs. German) and their interactions. We only took into account the pragmatic values *Contrastive* and *Given*. Moreover, as the data showed “floor” and “ceiling” effects, we tested the significance of the planned contrasts comparing different models through the function ANOVA of R. As expected, the pragmatic status is significant only in the case German speakers playing the game in German ($p<0.001$). When the

game is played in L1-Italian or L2-Italian, the accentuation of a word does not significantly change in relation to its pragmatic status.

The same analysis has also been run to test the accent's distribution on the first word of the NP. In this case, the pragmatic status of Word 1 is marginally significant when German speakers play the game in German ($p=0.05$). When the game is played in Italian by native speakers of Italian or German, or in German by native speakers of Italian, the accentuation of Word 1 does not significantly change as a function of its pragmatic status.

The statistical analyses confirm that Italian speakers, who are advanced learners of German, transfer in their interlanguage the distribution of the accentual prominences their L1. The transfer is negative, because the accents' distribution does not significantly vary according to the pragmatic status of the word, as in the target language. On the other hand, German speakers do not show signs of negative prosodic transfer from their L1 to the target language, since the accentuation of both words in their interlanguage is not significantly different from that of native speakers of Italian.

These results are in line with the data on L2 acquisition presented by Rasier and Hiligsmann (2007). Dutch learners of French have less difficulties in the distribution of prosodic prominences in French NPs (78% correct distribution of pitch accents according to the pragmatic status of a word) than French learners of Dutch (47%).

3.3.4. Prosodic transfer of tonal properties

So far Germans appear to have acquired the (negative) relation between discourse properties and their prosodic marking that holds in Italian, while Italians have not acquired the (positive) relation that holds in German. But if we shift the attention to a purely phonological level and investigate if they have learnt also how to use of the native pitch accent inventory, Germans too appear to transfer their L1 prosody to their L2-Italian as much as Italians transfer their L1 prosody to their L2-German.

Table 2 shows the types of pitch accents used by the speakers playing the game in their native language or in the target language and in which percentage. The data are pulled by position of the word in the NP (Word 1 and Word 2) and by its information status (G=*Given*, C=*Contrastive*, N=*New*).

Let us consider Word 2. The data show that Italians use a variety of pitch accents in their L1: the monotonal H*, the bitonal falling accent H+L* and bitonal rising accent L+H*, independently of the information status of the word, and that no deaccenting occurs on *Given* information. Italians transfer the set of pitch accents used in this context in L1 to the L2: in the lower right section of Table 2 (Word 2 produced in German by the Italians), it can be noticed that they still use the same variety of pitch accents but also that some deaccenting occurs. However, both *Given* and

Contrastive referents result to be deaccented in small percentages, and the statistical analyses have shown that this distribution is not significant.

Germans do not show in their L2-Italian the same variety of pitch accents used by the native speakers. When they play the game in their native language, Germans use only H+L* for marking either *Contrastive* or *New* elements, and they transfer this pitch accent in their L2-Italian for marking all types of pragmatic status. They transfer it to all pragmatic contexts in L2-Italian (100% for G; 88% for C and N), while they use H* to a much lesser extent than Italians (23% for C and N), and never use L+H*. However, their prosodic transfer does not give rise to any incorrect use of pitch accent assignment, as the mostly used H+L* happens to be the default nuclear pitch accent in Italian declarative sentences: it is therefore perfectly acceptable in this context.

Tab. 2 - Types of pitch accents and their percent distribution according to the information status or the first and second word in the NP (N=*New*; C=*Contrastive*; G=*Given*)

L1 Italian							
Word 1 (N)	G	C	N	Word 2 (Adj)	G	C	N
H*	58%	63%	50%	H*	25%	21%	33%
H+L*	0%	0%	0%	H+L*	42%	50%	50%
L+H*	8%	4%	8%	L+H*	33%	25%	17%
no PA	33%	33%	42%	no PA	0%	4%	0%
L2 Italian							
Word 1 (N)	G	C	N	Word 2 (Adj)	G	C	N
H*	25%	44%	50%	H*	0%	13%	13%
L+H*	75%	56%	50%	L+H*	0	0	0
H+L*	0	0	0	H+L*	100%	88%	88%
no PA	0%	0%	0%	no PA	0%	0%	0%
L1 German							
Word 1 (Adj)	G	C	N	Word 2 (N)	G	C	N
H*	75%	100%	100%	H*	0%	0%	0%
H+L*	0%	0%	0%	H+L*	0%	100%	88%
L+H*	13%	0%	0%	L+H*	0%	0%	0%
no PA	13%	0%	0%	no PA	100%	0%	13%
L2 German							
Word 1 (Adj)	G	C	N	Word 2 (N)	G	C	N
H*	100%	92%	100%	H*	0%	4%	8%
L+H*	0%	8%	0%	L+H*	58%	42%	67%
H+L*	0%	0%	0%	H+L*	25%	38%	25%
no PA	0%	0%	0%	no PA	17%	17%	0%

4. Discussion and conclusions

When German learners speak L2-Italian they show to have acquired the proper prosodic accentuation of the target language where the distribution of pitch accents obey only structural (phonological) constraints. On the contrary, Italian learners of L2-German, who have an equivalent level of proficiency in L2, have not yet acquired the ability to properly associate pitch accents according to the pragmatic status of the lexical items.

Our data show only a faint (not statistically significant) trace of deaccentuation in the interlanguage of Italians, which is limited to the second word of the NP; we could interpret this as a sign of a phase in L2 learning in which Italians have begun to perceive the principles governing the pragmatic and phonological distribution of prosodic prominence in German, but are not yet able to apply them correctly.

In acquisitional terms, what has emerged is a different learning pattern in the acquisition of the prosodic encoding of discourse-related properties of the target language: the Germans show less difficulty in learning the distribution of pitch accents in L2-Italian than the Italians in learning that of L2-German.

The ease the Germans show in mastering the correct pitch accent assignment in L2-Italian and, conversely, the difficulty encountered by the Italians for L2-German is predicted by two theories that give markedness a key role in the process of L2 acquisition: the *Markedness Differential Hypothesis* (Eckman 1977) and the *Similar Differential Rate Hypothesis* (Major/Kim 1996). The first predicts that L2 marked structures are more difficult to learn than unmarked ones; the latter modulates the increased difficulty of learning marked structures in terms of a lower speed of learning.

Applied to our data, the task Germans face in learning the prosody of L2-Italian is lighter than that faced by Italian learners, as Germans must learn unmarked structures while Italians must learn marked ones. The weight of the two cognitive processes of learning is different: to produce the correct accentuation in L2-Italian, the Germans will have only to select one of the strategies of accentuation already present and active in their L1: the structural accentuation. Conversely, to properly produce the prosody of L2-German, Italians have to master a specific type of “pragmatic” accentuation which is not present in their L1 as well as its interplay with the phonological structure. For the Germans, the acquisition process is reduced to a suspension of the pragmatic constraints that govern the distribution of the prosodic prominences in their mother tongue. As a result, the default phonological rules take over, and the speakers apply them systematically to every NP. On the contrary, Italians have a more difficult task: first they must realize that prominences’ distribution is not only phonologically-based, and that the highest prominence is not necessarily allocated rightmost in a phrase. Then they have to master a new type of pitch accent association,

which is largely ruled by the information status of the lexical items in the NP. The most difficult case is represented by an item which is *Given* and final in the NP as in a *Contrastive-Given* sequence: they have to learn how to “de-link” the nuclear accent from the stressed syllable of Word 2, and associate the highest prominence according to the information status of the words in the NP, in this case to Word 1.

The resulting prosodic pattern [(Adj)_{acc} (N)_{deacc}]_{NP} is not impossible in Italian, but may be used to express a different phrase-level pragmatic configuration: a partition of the sentence in *Focus-Background* that does not necessarily coincide with a partition in *New-Given* information. So Italian learners of L2-German must take a step further by applying within the NP an “accented-deaccented” prosodic pattern which in Italian may have a different meaning when applied at the phrasal interface between prosody and pragmatics.

Although German learners of L2-Italian succeed better than Italian learners of L2-German in mastering the accentual distribution of the target language, the question remained whether they are equally facilitated in learning the tonal (phonological) properties of the intonational system of the target language and their phonetic implementation. In other words, whether they would transfer in the target language the type of pitch accents used in the native language and, in case a specific type of pitch accent appears in both the native and the target language, whether they would transfer the language-specific phonetic properties of alignment and scaling. In this paper we have addressed the first question, and showed that neither group of learners has a learning advantage over the other: both Italian and German learners transfer in the prosody of the target language the subset of the pitch accent inventory they used in playing the game in the native language.

An interesting aspect still remains to be investigated: whether the subjects are able to acquire the details of the phonetic implementation of pitch accents’ tonal targets, and when that will happen in the course of the acquisition process. There are findings in the literature suggesting that phonological properties of intonation are acquired earlier than their phonetic implementation (Ueyama 1997; Mennen 2004, 2007; Atterer/Ladd 2004). The data on Italian are still limited, though, and showed speaker-specific patterns (Stella 2013; Stella/Busà 2013). The question is of great relevance, since it can give a contribution to the debate on universal patterns of L2 acquisition. Our future analyses will add to this growing body of evidence.

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