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5.Emotion and melodic features of emphasis in Spanish produced by Chinese speakers

Tianshu Zhao[a], Dolors Font Rotchés[b]

[a]China University of Political Science and Law, China

[b]Universitat de Barcelona, Spain

ztsshenqing@hotmail.com, dolorsfont@ub.edu

Abstract

The commercial, diplomatic, and cultural relations between China and Spanish-speaking countries have recently grown exponentially, which has incited a high interest in learning Spanish in the Asian country. However, it is crucial for Chinese to learn the language since it has a marked foreign accent that often hinders fluency and effectiveness in communication with native Spanish speakers.

The present study aims to describe melodic features of the contours produced by Chinese-speaking learners in an affective and emotional context, and, consequently, to compare them with Spanish to determine the similarities and differences between the interlanguage and the target language.

For this purpose, 209 utterances produced in an emphatic context have been selected emitted by 31 Chinese speakers from the Chinese mainland, aged between 20 and 33 years old. The analysis has been carried out with the Melodic Analysis of Speech method (Cantero and Font-Rotchés 2009, 2020).

The results have shown us that the melodic features of both prelinguistic intonation and linguistic intonation differ greatly from those of the target language. The slighter movements compared to the target language that occurs in the first peak, the body and the final inflection are not conducive to expressive and effective communication. In addition, due to the great variety of contour features, it is complicated to determine melodic profiles that are characteristic of the interlanguage. Although Chinese learners are aware of using a more marked intonation to express their emotions, the use of melodic /+emphatic/ patterns is not always appropriate and does not always correspond to the needs of the context. The results of this study can help generate didactic proposals and develop teaching materials so that Chinese-speaking learners can overcome their intonational deficiencies and transmit emphatic nuances more adequately.

Keywords: Melodic analysis of Speech (MAS), Intonation, Interlanguage, Emphatics, Spanish spoken by Chinese.

1 Introduction

Currently, in China, there is a growing interest in learning Spanish given the increasingly close diplomatic, economic and cultural relations between China and Spanish-speaking countries. However, these relations could be compromised by the communicative difficulties that Chinese speakers have when speaking Spanish.

If we consider the marked phonic disparity between Spanish and Chinese, the former being intonational and the latter tonal, it is not surprising that Chinese learners have difficulties acquiring this foreign language. In addition to this difference between the target language and mother tongue, is the *mute language* phenomenon, which occurs with Chinese learners, meaning that they are adept in terms of grammar and vocabulary but show little proficiency in oral skills. This phenomenon is mainly due to the existing teaching methods in China, which emphasise literacy, grammar and correcting, to the detriment of teaching communicative and expressive skills at an oral level.

One of the most relevant aspects of communication that is insufficiently addressed in foreign language acquisition is prosody, which, in the case of the interlanguage — a concept coined by Selinker (1972) — of Spanish spoken by Chinese, can be the cause of communication difficulties between Chinese learners and native speakers of Spanish to the extent that it can interfere in the correct interpretation or lead to misunderstandings. In this regard, the melodic analysis of the interlanguage will allow, on the one hand, a detailed characterisation of the most relevant features of pronunciation by foreign speakers, as a premise for a more effective pronunciation teaching, and on the other hand, a better understanding of the developmental processes of phonic acquisition in foreign languages and the transfer effects from one language to another (Cantero and Devís 2013).

However, there are very few studies related to the phonic interlanguage of Spanish spoken by Chinese, among which, notably, is the research by Cortés-Moreno (2004, 2006) and Liu (2005) on the *Spanish spoken by Taiwanese speakers*, by Herrero-Fernández and Devís (2020) and Herrero-Fernández et al. (2021), on the *Intonation of involuntary (un)politeness in Spanish requests produced by Chinese speakers*, and Li (2020) on the *Production and perception of Spanish intonation by Chinese speakers*. There are also studies on contrastive analyses between Spanish intonation and Chinese tones (Planas-Morales 2009, 2010, 2014), the acquisition of vocalism (Cao et al. 2023;

Cao and Rius-Escudé 2019; Jiménez and Tang 2018) and other phonic aspects (Chen 2017; Pose 2017; Shen and Li 2014; Wang 2003; Yue 2016; Zhang 2019; Zhou 1995).

Recently, Zhao (2019) and Zhao and Font-Rotchés (2022) have investigated Chinese-produced absolute questions, the results of which have shown that Chinese learners show difficulties in producing interrogative utterances similar to the /+interrogative/ patterns of Peninsular Spanish, as most of them present melodies characteristic of suspended utterances and, to a lesser extent, declarative and emphatic utterances. Subsequently, research by Zhao (2023) has found that Chinese learners present melodic profiles, in other words, foreign accent features, that are very similar to the production of ones that are interrogative, neutral and suspended, which contrasts with the dispersed features of emphatic utterances. It seems, then — as Cortés-Moreno (2004, 2006) has already stated — that the expression of affectivity and emotions through intonation is one of the most complex phonic aspects for Chinese learners and that a good command of this aspect is of utmost importance to establish a full and competent communication with native speakers of Spanish.

In this sense, the present study aims to characterise the melodic features of the contours produced by Chinese speakers in an affective and emotional context, and, consequently, to see to what extent these correspond to the emphatic features and patterns of Spanish. We believe that the results may be of use to Spanish as a foreign language teacher to develop didactic proposals and be more effective in teaching Spanish in China.

2 The corpus and methodology

The corpus consists of 209 emphatic utterances produced by 31 Chinese speakers from mainland China, aged between 20 and 33 and of both sexes (25 women and 6 men). All the participants have at least an intermediate (B) level of Spanish (Consejo de Europa 2002) and have studied or worked in Spain but not in other Spanish-speaking countries.

The 209 melodic contours, which take place in an emphatic context, have been taken from a larger corpus of 26.5 hours of recordings. The recordings were obtained through individual or small group conversations on general topics moderated by the researcher and role-play activities in contexts such as going to eat in a restaurant, making enquiries about a flat and a job interview, among others.

We have based the research on the *Melodic Analysis of Speech (MAS)* method, described in detail in Cantero (2002), revised and extended in Font-Rotchés and Cantero (2007) and set out in the form of a protocol in Cantero and Font-Rotchés (2009, 2020).

This method establishes the criteria for obtaining the melodic contours of a language, interlanguage or dialectal variety based on acoustic and perceptual analysis. For the acoustic analysis of this study, we used the Praat software (Boersma and Weenink 2023). We extracted the vowel values of each emphatic utterance in Hz, standardised them and then plotted them on a graph in Excel. In our case, the whole process was carried out semi-automatically using the Praat script developed by Mateo-Ruiz (2010).

The method, because it offers objective data on the different parts of each utterance, is considered highly suitable for detailed studies of intonation features, as is the case of the descriptions of the dialectal accent of northern Spanish (Ballesteros 2011, 2021; Ballesteros and Font-Rotchés, 2019), southern and Canary Islands Spanish (Mateo-Ruiz 2014, 2021), the patterns of standard Spanish (Cantero et al. 2005, 2021; Cantero and Font-Rotchés 2007; Cantero and Mateo-Ruiz 2011; Font-Rotchés and Mateo-Ruiz 2011, 2017) and the melodic features of the foreign accent of the interlanguage Spanish spoken by Brazilians (Fonseca de Oliveira 2013, 2021), Catalans (Férriz and Font-Rotchés 2021), Swedish (Martorell and Font-Rotchés 2015; Martorell 2021, 2023), Hungarians (Baditzné 2012, 2018, 2021), Italians (Devís 2011, 2021), Polish (Urbanik-Pęk 2021, 2023) and Russians (Garmátina 2020, 2022).

3. Results

To prepare the results, we have based our research on the three different levels of analysis of intonation established by Cantero (2002): the *prelinguistic intonation,* which explains the integration of units in discourse and characterises the foreign accent; the *linguistic intonation*, which plays the role of linguistic distinctions and establishes melodic patterns; and the *paralinguistic intonation,* which has to do with the intonation of politeness, focus and emotion. Of the three levels, for the present study, we will delve deeper into the analysis of the first two levels: the prelinguistic and the linguistic.

3.1 Prelinguistic intonation

Prelinguistic intonation refers to one of the most essential features of a language, comprising the phenomena of accent, rhythm and melody, and is closely related to the

foreign accent and serves to organise speech phonically. The set of melodic features that characterise foreign speakers constitutes their melodic profile (Cantero and Devís 2011; Cantero and Font-Rotchés 2020; Cantero 2021).

Melodic features are the acoustic characteristics of the structural elements of the contour and will be described in the following section. They include the *anacrusis*, or rising syllables preceding the *first peak*, which is the first tonic vowel of the contour; the *body*, which goes from the first peak to the *nucleus*, or last tonic vowel of the contour; and the *final inflection*, which is the most significant part and goes from the nucleus to the end.

3.1.1 Melodic features of the first peak

The interlanguage contours produced by Chinese speakers in an emphatic context are characterised by the presence of a first peak, found in 68.4 % as opposed to 31.6 % without (see Table 1). When this is present, it usually occurs in the first tonic syllable in 66.3 % of cases, to a lesser extent in the post-atonic syllable, 23.8 %, and rarely in the pre-atonic, 8.4 % or post-tonic vowels, 3.5 %. This interlanguage relevance of the first peak in a tonic syllable contrast with the features established for melodic /+emphatic/ patterns of Peninsular Spanish, in which it is usually located in a post-atonic syllable (Cantero and Font-Rotchés 2007).

Table 1. Features of the first peak and its position in the emphatic utterances of the interlanguage spoken by the Chinese.

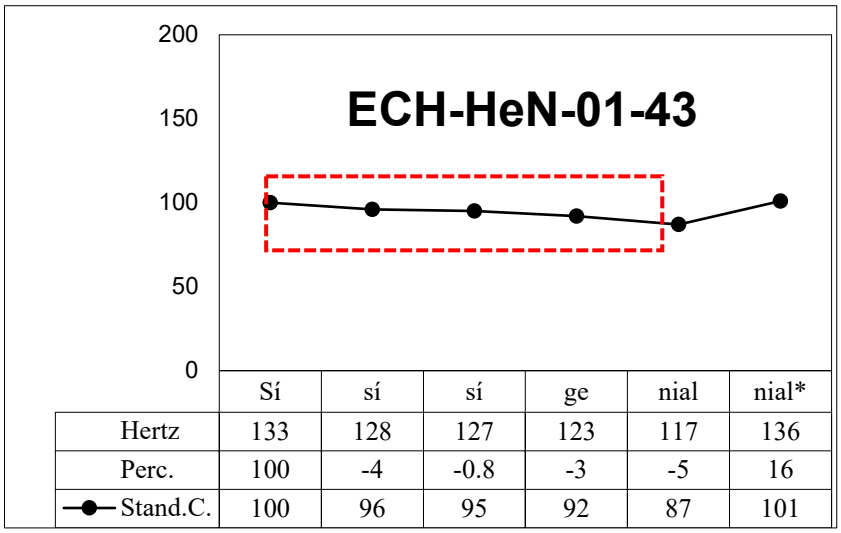
First peak	Without first peak	With first peak	Position			
			Tonic	Post-atonic	Pre-atonic	Post-tonic
No.	66	143	92	34	12	5
%	31.6	68.4	43.9	16.3	5.8	2.4
		100	66.3	23.8	8.4	3.5

Among the 143 utterances with a first peak, 84.6 % of cases show that this is located at a height of less than 40 %, split between slight (10–20 %) and moderate (21–40 %) rises. In a few cases, 15.4 %, the anacrusis exceeds 41 %, which would give it an /+emphatic/ feature (see Table 2).

Table 2. Height of first peak in emphatic utterances of the interlanguage spoken by the Chinese.

Height of first peak	10%–20%	20%–40%	41%–60%	≥61%
No.	76	45	11	11
	121		22	
%	53.1	31.5	7.7	7.7
	84.6		15.4	

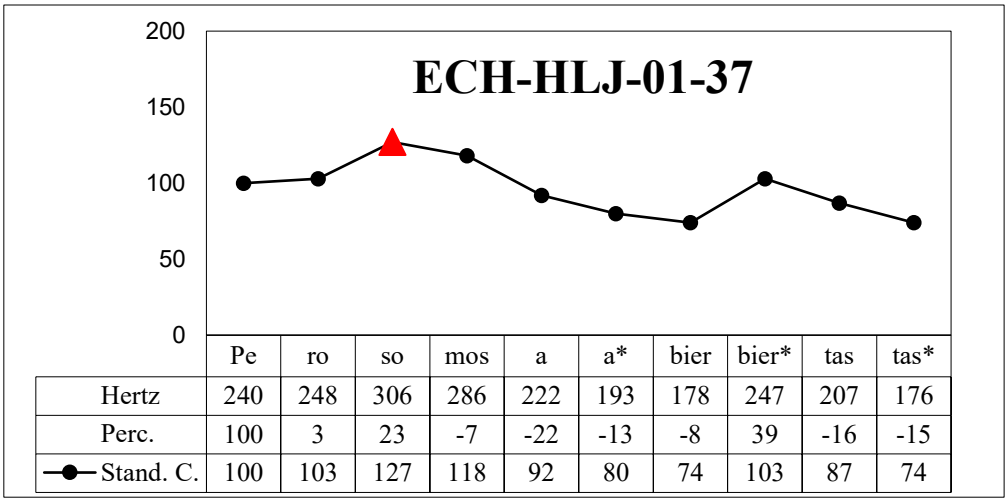
In Figure 1, an example with no first peak is shown, revealing that there is virtually no significant movement in the first tonal segments of the melody.



	Sí	sí	sí	ge	nial	nial*
Hertz	133	128	127	123	117	136
Perc.	100	-4	-0.8	-3	-5	16
Stand.C.	100	96	95	92	87	101

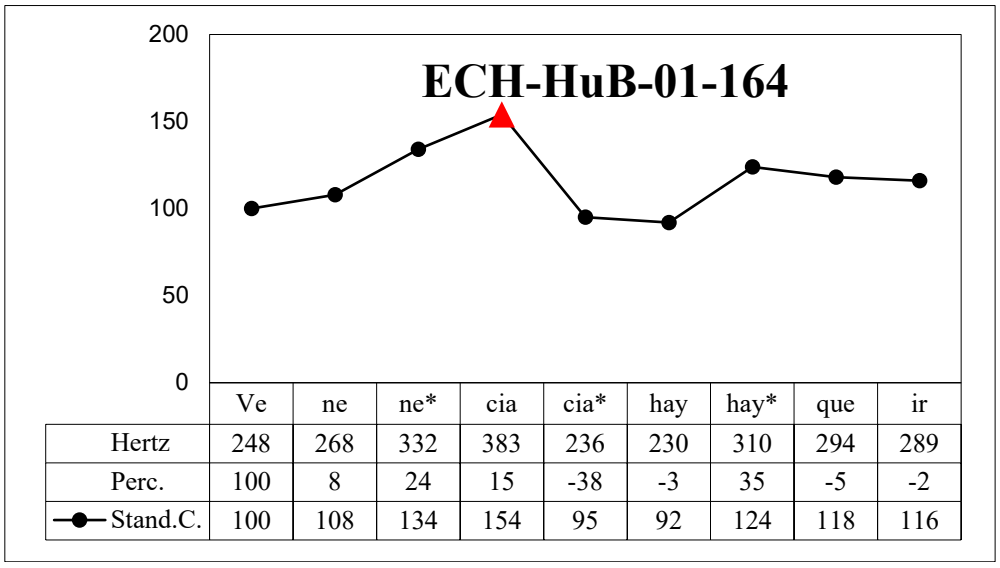
Figure 1. Melodic analysis of the utterance ECH-HeN-01-43 *¡Sí, sí, sí, genial!* (Yes, yes, yes, great!).

When a first peak is present, it usually occurs on the first tonic vowel, as in the example in Figure 2, where the first peak is on the *so* of *somos* and has a moderate rise of 27 %; or, to a lesser degree, it may move to the next atonic vowel, as in the contour in Figure 3, where the first peak is on *cia* of *Venecia*, with a marked rise of 54 %, giving it a feature of emphasis.



	Pe	ro	so	mos	a	a*	bier	bier*	tas	tas*
Hertz	240	248	306	286	222	193	178	247	207	176
Perc.	100	3	23	-7	-22	-13	-8	39	-16	-15
Stand. C.	100	103	127	118	92	80	74	103	87	74

Figure 2. Melodic analysis of the utterance ECH-HLJ-01-37 *¡Pero somos abiertas!* (But we are open-minded!)



	Ve	ne	ne*	cia	cia*	hay	hay*	que	ir
Hertz	248	268	332	383	236	230	310	294	289
Perc.	100	8	24	15	-38	-3	35	-5	-2
Stand.C.	100	108	134	154	95	92	124	118	116

Figure 3. Melodic analysis of the utterance ECH-HuB-01-164 *¡Venecia hay que ir!* (You must go to Venice!)

3.1.2 Melodic features of the body

The most striking feature found in Table 3 is the presence of different types of body, most of which coincide with the emphatic types of Peninsular Spanish (Cantero et al. 2005; Cantero and Font-Rotchés 2007), such as the zigzag, flat, falling-rising, non-declination and rising body.

The zigzag body, which is characterised by rising tonal inflections in the words of the body and which occurs in Spanish emphatic utterances, is the most common, as it is found in 37.3 % of the corpus. The body with a falling declination is found in 29.2 % of the corpus. When this declination is slight, it is a feature more typical of neutral contours

and this occurs in 70 % of the melodies of this type; only if it is very pronounced will it provide emphasis, a feature which is found in only 30 % of the corpus. The flat body, found in 15.8 % of utterances, is very frequent in neutral, suspended and interrogative utterances of the interlanguage. However, in an emphatic context, it could also provide a feature of emphasis in contrast to other types of adjacent contours, which contain relevant emphatic tonal features, a situation which does not usually occur in the corpus. The other body types, although a minority, falling-rising (9.6 %), no declination (5.7 %) or rising (2.4 %), are also similar to the emphatic contours of Spanish.

Table 3. Types of body of contours.

Body	Zigzag	Falling	Flat	Others		
				Falling-rising	No declination	Rising
No.	78	61	33	20	12	5
%	37.3	29.2	15.8	9.6	5.7	2.4

As for rising tonal inflections in the body, only 28.2 % of words contain them compared to 71.8 % that do not. These inflections usually culminate in a final atonic vowel (45.2 %) and, to a lesser extent, in an internal tonic vowel (29 %) or a final tonic vowel (18.3 %). There are scarcely any rising tonal inflections ending on an internal atonic vowel (3.2 %), or circumflex inflection (4.3 %) (see Table 4).

Table 4. Tonal inflections and their position in the words.

Tonal inflections	Unmarked words	Marked words	Rising				Circumflex
			Post-atonic	Internal tonic	Final tonic	Internal atonic	
No.	237	93	42	27	17	3	4
%	71.8	28.2	12.7	8.2	5.2	0.9	1.2
		100	45.2	29	18.3	3.2	4.3

In terms of the pitch range of the utterances in this group, Table 5 shows that, although they are emphatic, the most relevant feature is that 62.4 % of the contours have a narrow pitch range, less than 50 %, which is somewhat lower than in the interlanguage's neutral utterances (Zhao 2023). Such a narrow pitch range indicates that Chinese speakers convey little expressiveness compared to native speakers. Only in 37.6 % of cases is the

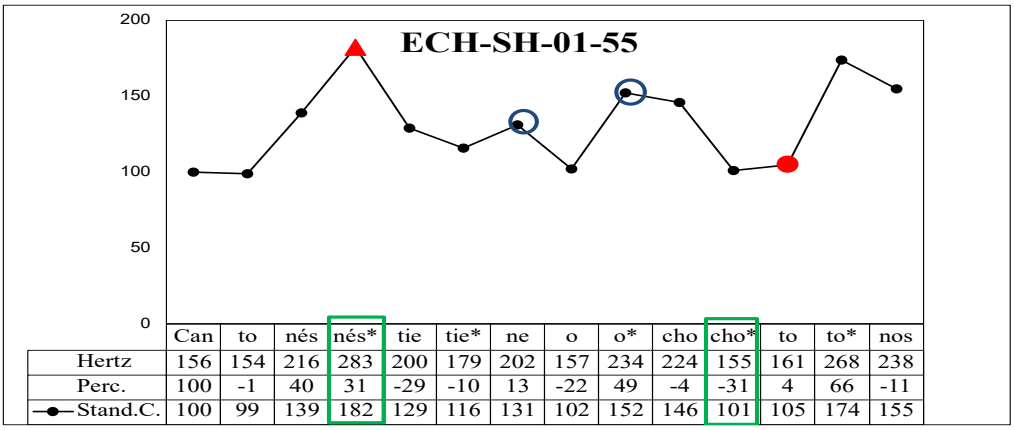
pitch range wide, more than 51 % and can reach 120 % or more, which confers an /+emphatic/ feature.

Table 5. Contour pitch range.

Range	≤ 15 %	16 %–30 %	31 %–50 %	51 %–85 %	86 %–120 %	≥ 121 %
No.	30	54	39	60	11	3
	123			74		
%	15.2	27.4	19.8	30.4	5.6	1.6
	62.4			37.6		

Although a good number of interlanguage contour bodies present tonal movements characteristic of emphatic utterances, they have far fewer rising internal tonal inflections than in Peninsular Spanish, and the rises are moderate or slight. For this reason, we find very narrow pitch ranges. These shortcomings are what characterise the interlanguage of Chinese learners speaking Spanish, who, despite making an effort to produce emphatic contours suitable to the context, do not sufficiently mark the melodies to convey the nuances and evidently do not facilitate interpretation or effective expressive communication.

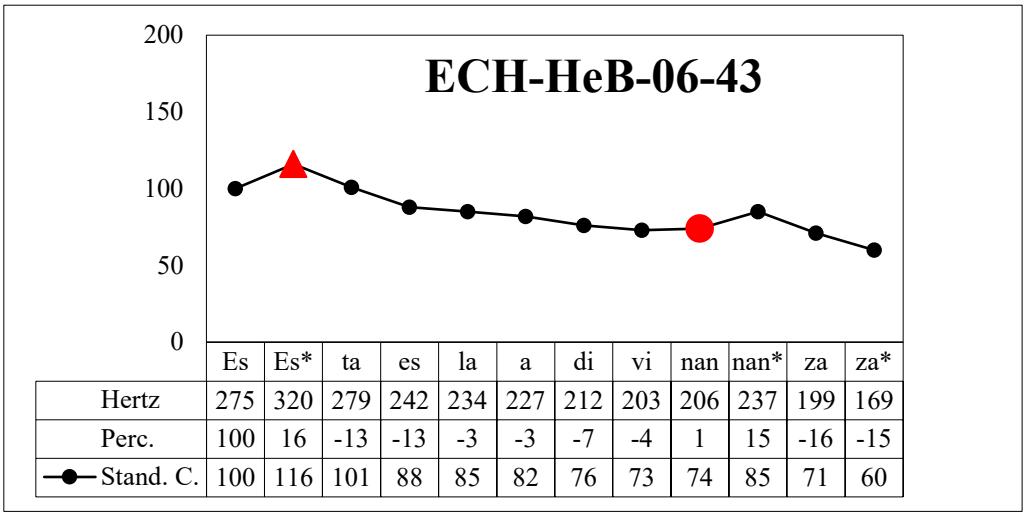
As mentioned above, the feature that is most present in the corpus is the zigzag body, such as the example shown in Figure 4. Tonal inflections are seen in all the words and, in general, are very marked due to the tonal rise that takes place in the final tonic or atonic vowels. These features result in a wide pitch range of 81 %, calculated from the lowest value (*cho* of *ocho*) to the highest value (*nés* of *Cantonés*). Contours with these very marked inflections remind us of the proposal of Liu (2005) for *sawtooth* patterns, which are frequently found in the interlanguage of Spanish spoken by Taiwanese. In the case of our research, the contour is in an emphatic context and the informant tries to emphasise the varieties of tones that exist in Cantonese, so she marks each word in the contour. This way of separating each word reminds us of the phenomenon observed by Liu (2005) in her research, according to which Chinese speakers structure contours under the *one phonic word=one phonic group* structure. In their contours, each word has a very marked inflection and a broken speech that gives the impression of hearing a set of phonic groups rather than a single phonic group or melodic contour, as it should be in Spanish. However, it must be said that this phenomenon of broken speech is not so frequent in our corpus.



	Can	to	nés	nés*	tie	tie*	ne	o	o*	cho	cho*	to	to*	nos
Hertz	156	154	216	283	200	179	202	157	234	224	155	161	268	238
Perc.	100	-1	40	31	-29	-10	13	-22	49	-4	-31	4	66	-11
Stand.C.	100	99	139	182	129	116	131	102	152	146	101	105	174	155

Figure 4. Melodic analysis of utterance ECH-SH-01-55 *¡Cantonés tiene ocho tonos!* (Cantonese has eight tones!)

The tendency of a falling declination body is a common feature in the melodic profile of neutral, suspended and interrogative utterances in Peninsular Spanish. In the case of emphatic utterances, this fall can provide features of emphasis when it is pronounced. In our corpus, however, most of the declinations are slight and do not fulfil this function. An example is given in Figure 5, which presents a moderate declination, 58 %, and contributes to the interpretation of the utterance as emphatic.

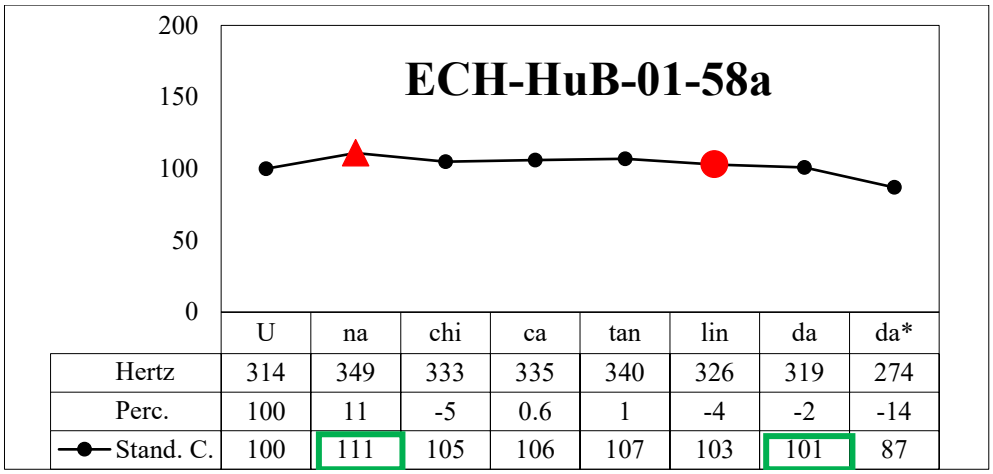


	Es	Es*	ta	es	la	a	di	vi	nan	nan*	za	za*
Hertz	275	320	279	242	234	227	212	203	206	237	199	169
Perc.	100	16	-13	-13	-3	-3	-7	-4	1	15	-16	-15
Stand. C.	100	116	101	88	85	82	76	73	74	85	71	60

Figure 5. Melodic analysis of the utterance ECH-HeB-06-43 *¡Esta es la adivinanza!* (That is the riddle!)

Cantero et al. (2005) noted that, on occasion, a flat declination can also act as a melodic feature of emphasis in contrast with its context. This type of contour is illustrated in Figure 6. The contour melody has no significant movement in the body, so the pitch range is very narrow, 7 %. It must be said, however, that the informant emits the melody in a rather high pitch, 330–345 Hz — bearing in mind that she usually speaks between 200–250 Hz — which provides a feature of emphasis to the contour. However, in our

corpus, not all utterances featuring flat bodies contain a change of tessitura. Most are flat melodies uttered within the informant's tonal register, which does not convey any emphatic features, nor are they typically found adjacent to clearly emphatic contours for there to be a contrast.



	U	na	chi	ca	tan	lin	da	da*
Hertz	314	349	333	335	340	326	319	274
Perc.	100	11	-5	0.6	1	-4	-2	-14
Stand. C.	100	111	105	106	107	103	101	87

Figure 6. Melodic analysis of utterance ECH-HuB-01-58a *¡Una chica tan linda!* (Such a cute girl!)

3.1.3 Melodic features of the final inflection

In the contours uttered by Chinese learners, the nucleus falls mostly on the last tonic vowel of the contour, as it does in Peninsular Spanish.

In terms of the direction of the final inflection, Table 6 shows that a final falling inflection is found in 34 % of the contours, with the falling inflection not exceeding 30 % in more than 80 % of cases. In addition to this, a rising final inflection with only a slight rise is found in 12.4 % of the contours. In both groups, the final inflections do not provide a feature of emphasis as the falls and rises are very slight. There is a flat final inflection in 16.3 % of the contours and most of them do not contain any features of emphasis.

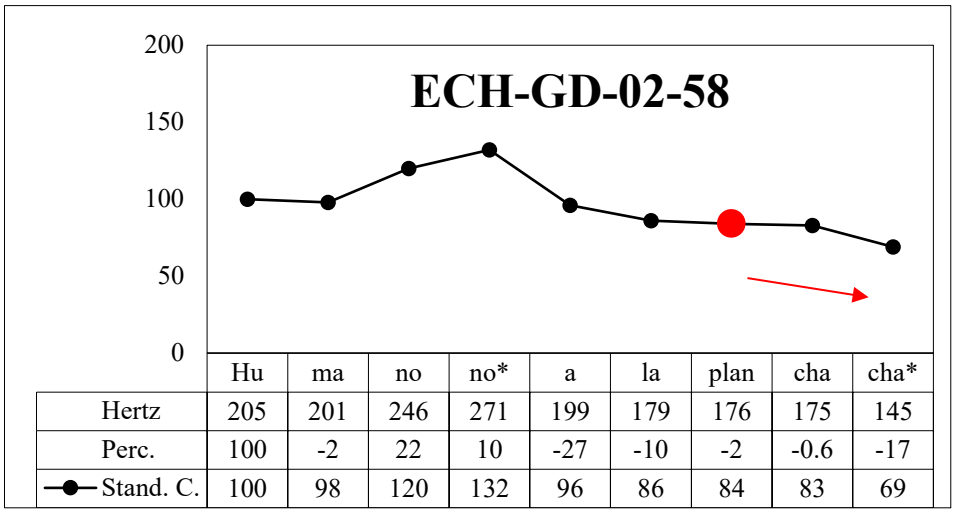
Table 6. Direction and tonal movement of the final inflection.

Final inflection	Falling	Flat	Rising	Circumflex		High nucleus
				Rising-falling	Falling-rising	
No.	71	34	26	54	10	14
%	34	16.3	12.4	25.8	4.8	6.7

The circumflex final inflection represents 30.6 % of the corpus, with a predominance of a rising-falling circumflex ending, as opposed to falling-rising, almost

half of which show slight movements, less than 20 %. In addition, there are also some melodies with a high nucleus, 6.7 %. However, in more than 80 % of the contours, the nucleus is at a very slight height, between 10 and 20 %. In these two cases, although a circumflex final inflection, or one with a high nucleus, are emphatic features of Peninsular Spanish, it is likely that the movement is not perceived as emphatic and does not provide affective information. These features will have to be verified in perceptual tests.

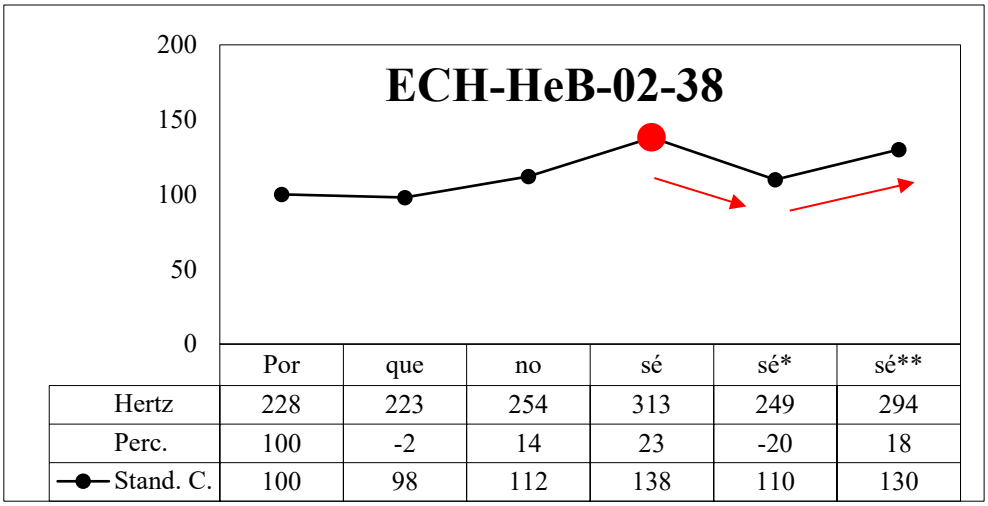
We have mentioned that the feature most present is the falling final inflection, as in the melody in Figure 7, where the nucleus is located in the last tonic vowel (*plan* of *plancha*) and the fall in the final inflection is 18 %. In the context, the informant wants to emphasise how hot it is in her city in summer, but she does not succeed because she produces too slight a downward movement at the end.



	Hu	ma	no	no*	a	la	plan	cha	cha*
Hertz	205	201	246	271	199	179	176	175	145
Perc.	100	-2	22	10	-27	-10	-2	-0.6	-17
Stand. C.	100	98	120	132	96	86	84	83	69

Figure 7. Melodic analysis of utterance ECH-GD-02-58 *¡Humano a la plancha!* (Grilled human!)

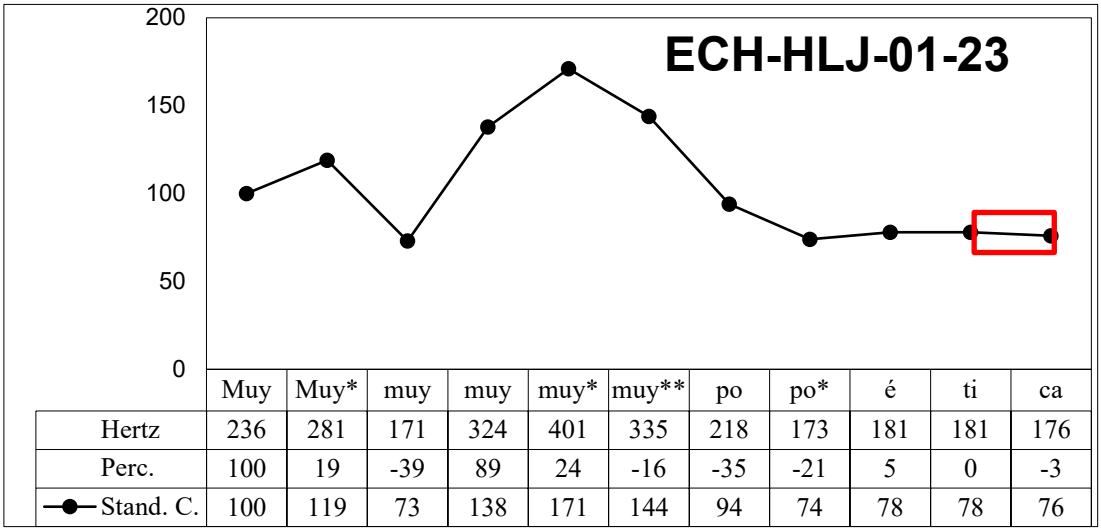
Contours with a circumflex final inflection represent a significant part of the corpus. Figure 8 shows a slight circumflex movement, a 20 % rise and an 18 % fall.



	Por	que	no	sé	sé*	sé**
Hertz	228	223	254	313	249	294
Perc.	100	-2	14	23	-20	18
Stand. C.	100	98	112	138	110	130

Figure 8. Melodic analysis of the utterance ECH-HeB-02-38 *¡Porque no sé!* (I just don't know!)

The flat final inflection is not an emphatic feature. However, in Figure 9, although the melody ends flat, it is emphatic due to a tonal inflection in the body with a very marked movement in *muy*, with a rise of 134 % — 100 % equals one octave of the musical scale.



	Muy	Muy*	muy	muy	muy*	muy**	po	po*	é	ti	ca
Hertz	236	281	171	324	401	335	218	173	181	181	176
Perc.	100	19	-39	89	24	-16	-35	-21	5	0	-3
Stand. C.	100	119	73	138	171	144	94	74	78	78	76

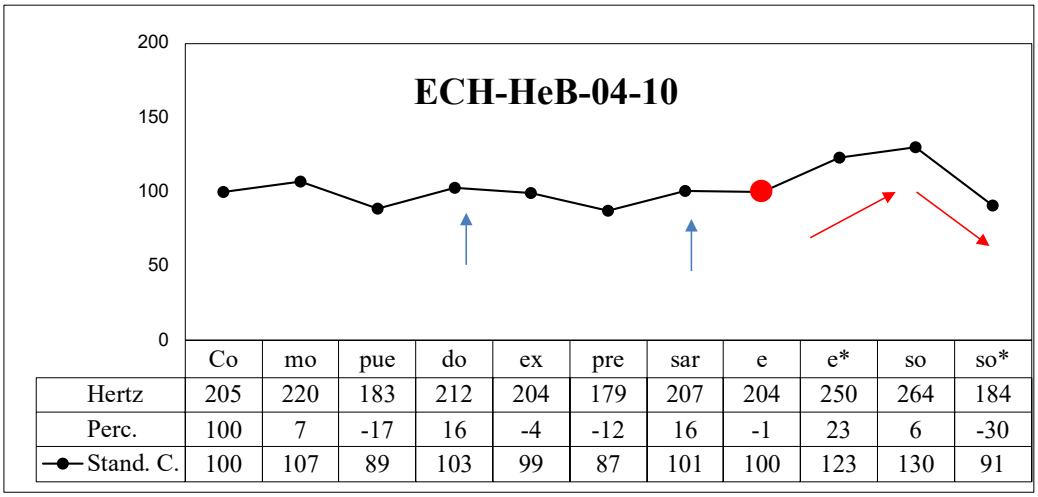
Figure 9. Melodic analysis of the utterance ECH-HLJ-01-23 *¡Muy muy muy poética!* (Very, very, very poetic!)

3.1.4 The melodic profile

Based on the above, we can identify the melodic profile of the emphatic utterances spoken by Chinese informants. It should be said that, unlike neutral, suspended and interrogative utterances (Zhao 2023), it is not easy to find contours with similar features that allow us to describe melodic profiles. A large variety of types has been found and

almost none of them reaches a representation of 10 % in the corpus. The two profiles that are present in at least 10 % of the contours in this group are discussed below.

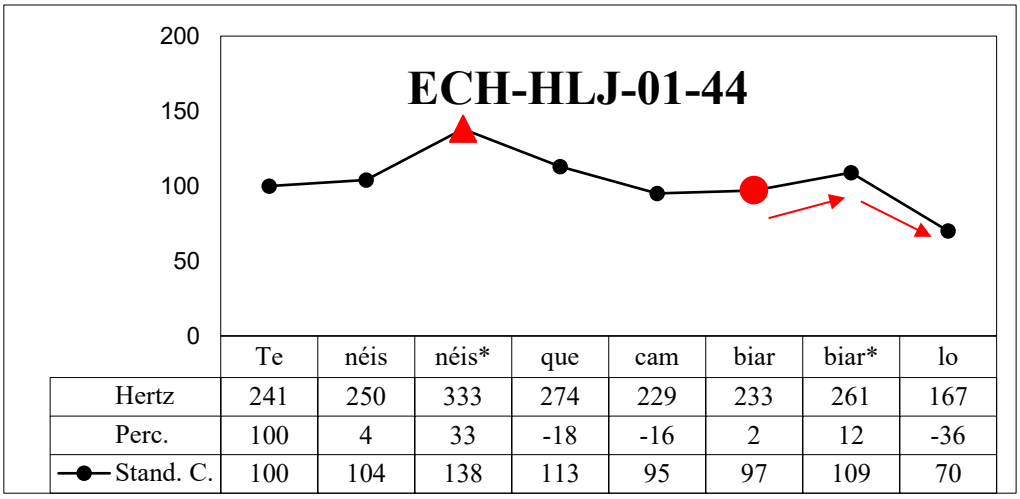
Profile Type 1, with a frequency of 13 % in the corpus, is characterised by the absence or presence of a first peak in the first tonic vowel or the post-atonic vowel with a rise of less than 40 %; a zigzag body with a slight or moderate rise culminating in the final atonic and internal tonic vowels, and whose pitch range is usually narrow, less than 50 % and, to a lesser degree, more than 50 %; a nucleus located in the tonic syllable and a rising-falling circumflex final inflection. Figure 10 shows an example with no first peak. The body has a zigzag due to the tonal inflections that culminate in the final vowels, *do* of *puedo* and *sar* of *expresar* and a narrow pitch range of 23 %. The nucleus falls on the last tonic vowel of the contour and the final inflection is a rising-falling circumflex.



	Co	mo	pue	do	ex	pre	sar	e	e*	so	so*
Hertz	205	220	183	212	204	179	207	204	250	264	184
Perc.	100	7	-17	16	-4	-12	16	-1	23	6	-30
Stand. C.	100	107	89	103	99	87	101	100	123	130	91

Figure 10. Example of the melodic profile Type 1 (ECH-HeB-04-10) *¡Cómo puedo expresar eso!* (How can I express that!)

Profile Type 2 is not as frequent, occurring in only 10 % of the contours. This profile is characterised by the absence or presence of the first peak located on the first tonic vowel or post-atonic vowel with a rise of less than 40 %; a falling body whose pitch range is usually less than 50 % and, to a lesser degree, more than 50 %; a nucleus located on the tonic syllable and a rising-falling circumflex final inflection. Figure 11 shows a contour with a first peak located on the first tonic vowel and a rise of less than 40 %. The body has a falling declination and the pitch range is 45 %. The nucleus falls on the last tonic vowel of the contour and the final inflection is a rising-falling circumflex.



	Te	néis	néis*	que	cam	biar	biar*	lo
Hertz	241	250	333	274	229	233	261	167
Perc.	100	4	33	-18	-16	2	12	-36
Stand. C.	100	104	138	113	95	97	109	70

Figure 11. Example of the melodic profile Type 2 (ECH-HLJ-01-44) *¡Tenéis que cambiarlo!* (You have to change it!)

3.2 Linguistic intonation

In Spanish, six types of /+emphatic/ melodic patterns have been established: Pattern VII (high nucleus final inflection), Pattern VIII (first peak coinciding with nucleus); Pattern IX (falling final inflection greater than 30–40 %); Pattern X (circumflex final inflection); Pattern XI (falling body with resituating rise and a rising final inflection greater than 60 %); and Pattern XII (zigzag body and falling final inflection). However, in the interlanguage of Spanish spoken by the Chinese, melodies similar to an emphatic pattern only represent half of the corpus. Specifically, Pattern X is the preferred pattern, found in 26.3 %, followed by VII, 6.8 %, and VIII, 5.8 %, while the rest, IX, XI and XII, have little presence in the corpus (see Table 7).

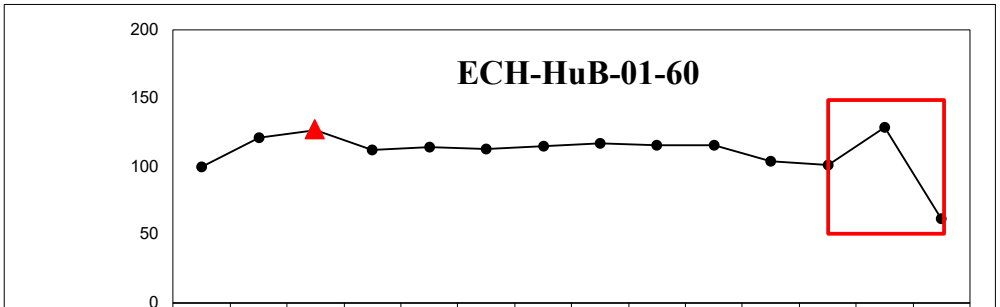
Table 7. Melodic patterns identified for emphatic utterances spoken by the Chinese.

Intonation	Neutral	Suspended		Emphatic						
Melodic Pattern	I	V	VIa	VII	VIII	IX	X		XI	XII
							Xa	Xb		
No.	54	34	17	14	12	3	55	10	5	5
%	25.8	16.3	8.1	6.8	5.8	1.4	26.3	4.8	2.4	2.4

Also relevant is the percentage of melodies similar to a neutral or suspended pattern, 25.8 % and 24.4 %, respectively. If these melodies lack emphatic features that suit the context in which they appear, they will not contribute to more expressive and effective communication.

The classification of contours according to their similarity to melodic patterns is based on the final inflection. However, using an emphatic pattern is not synonymous with its suitability to the context and, conversely, a contour that follows a non-emphatic pattern may carry other features of emphasis, such as a change of tessitura, making it suitable for expressing the required emotion in its context.

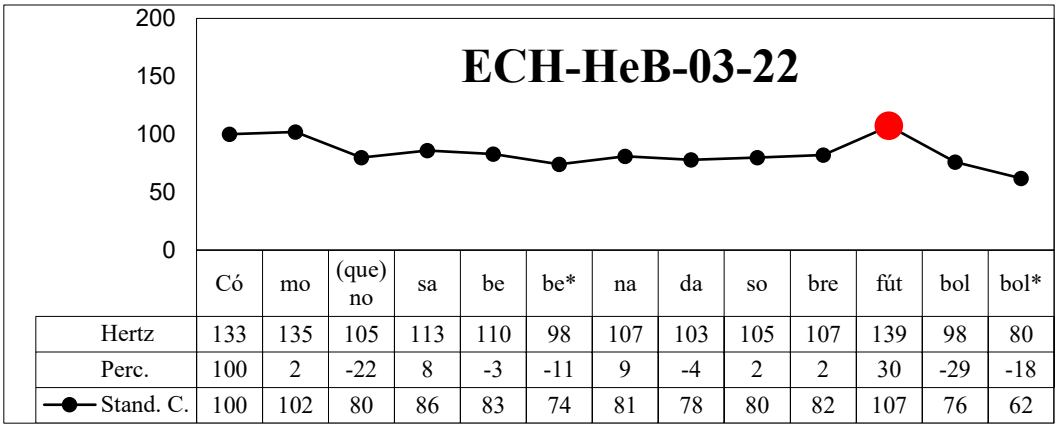
We will start by looking at emphatic intonation, which is the type of melody appropriate to the context. Figure 12 shows an example in which the final inflection is a rising-falling circumflex, similar to the Xa pattern, although the rise (28 %) is much smaller than the fall (52 %). In the context, the informant is complaining about a taxi driver because he asked her about her private life and she thinks he should be more professional. In addition to the circumflex final inflection, there is a very high pitch, between 338 Hz and 430 Hz, which constitutes emphatic features that favour the message that the informant expresses.



	Tie	Tie*	ne	que	ser	un	po	co	pro	fe	sio	nal	nal*	nal**
Hertz	338	409	430	379	386	381	388	395	391	390	351	341	437	209
Perc.	100	21	5	-12	2	-1	2	2	-1	-0.3	-10	-3	28	-52
Stand. C.	100	121	127	112	114	113	115	117	116	116	104	101	129	62

Figure 12. Melodic analysis of the utterance ECH-HuB-01-60 *¡Tiene que ser un poco profesional!* (He should be a bit professional!)

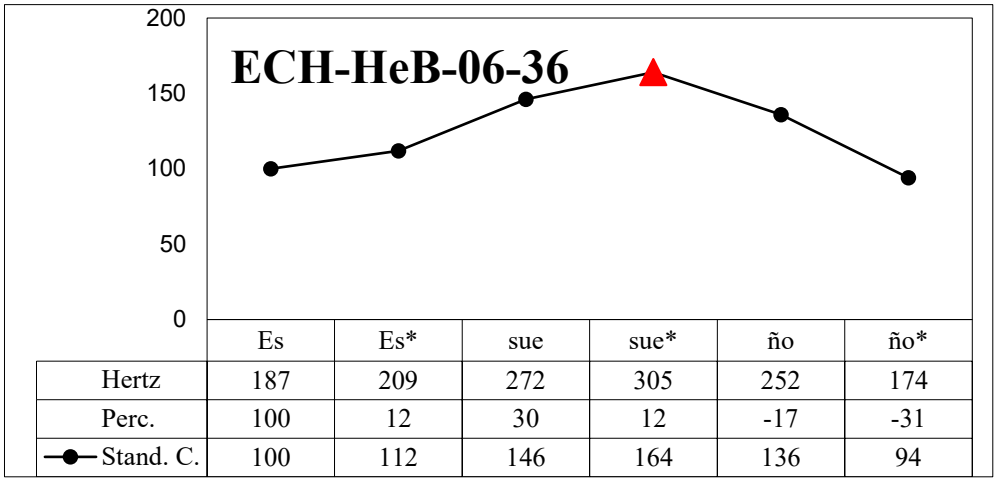
Another example is shown in Figure 13, with a contour similar to melodic Pattern VII only in terms of the high nucleus. In the context, the informant is surprised that the interviewer does not understand football. To express his surprise, he manages to focus on the word football with a rise of 28 %, followed by a relevant fall of 42 %.



	Có	mo	(que) no	sa	be	be*	na	da	so	bre	fút	bol	bol*
Hertz	133	135	105	113	110	98	107	103	105	107	139	98	80
Perc.	100	2	-22	8	-3	-11	9	-4	2	2	30	-29	-18
Stand. C.	100	102	80	86	83	74	81	78	80	82	107	76	62

Figure 13. Melodic analysis of the utterance ECH-HeB-03-22 *¡Cómo que no sabe nada sobre fútbol!* (How come they don't know anything about football!)

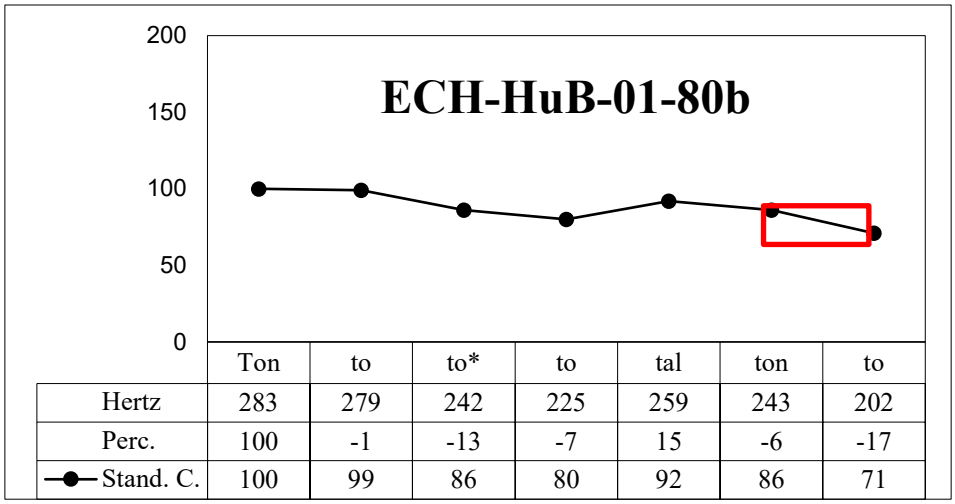
In the example shown in Figure 14, we see an example classified as Pattern VIII. In this contour, the first peak is also the nucleus of the melody, so there is no declination and the final inflection is a 43 % fall. In the context, the informant is pointing out that the word she said is *sueño* instead of *dueño*. For this, the syllable *sue* is at the peak of a very marked total rise of 64 %, followed by a fall of 42 %.



	Es	Es*	sue	sue*	ño	ño*
Hertz	187	209	272	305	252	174
Perc.	100	12	30	12	-17	-31
Stand. C.	100	112	146	164	136	94

Figure 14. Melodic analysis of the utterance ECH-HeB-06-36 *¡Es sueño!* (It's dream!)

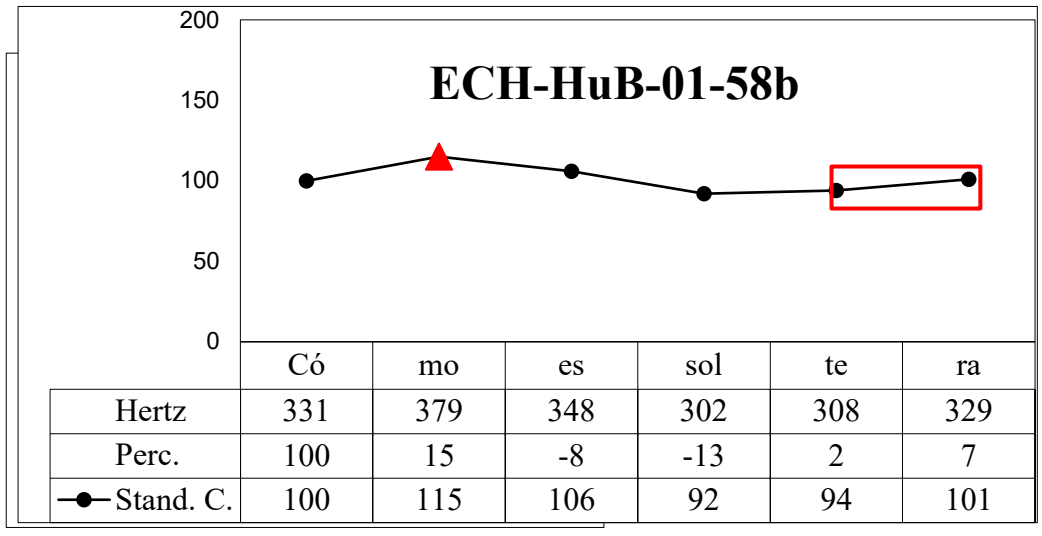
We have found that Chinese informants also use neutral intonation when producing emphatic utterances, such as the contour illustrated in Figure 15, which resembles Pattern I (rising final inflection of 10–15 % or falling final inflection of 10–30 %/40 %) in terms of a falling final inflection by 17 %. It is not characterised as emphatic because of the features it presents.



	Ton	to	to*	to	tal	ton	to
Hertz	283	279	242	225	259	243	202
Perc.	100	-1	-13	-7	15	-6	-17
Stand. C.	100	99	86	80	92	86	71

Figure 15. Melodic analysis of the utterance ECH-HuB-01-80b *¡Tonto total tonto!* (Stupid totally stupid!)

Suspended intonation is also present in our corpus, as can be seen in the example shown in Figure 16, which has a final inflection that is almost flat, similar to that of Pattern V (no final inflection or flat final inflection). In the context, the informant is imitating what a Peruvian taxi driver said when he expressed his surprise at learning that she was single. Although the final inflection resembles a suspended intonation, it is worth mentioning that the informant speaks the utterance in a higher-than-normal voice, between 302 Hz and 379 Hz, which has an /+emphatic/ feature.



	Có	mo	es	sol	te	ra
Hertz	331	379	348	302	308	329
Perc.	100	15	-8	-13	2	7
Stand. C.	100	115	106	92	94	101

Figure 16. Melodic analysis of the utterance ECH-HuB-01-58b *¡Cómo es soltera!* (How is it you're single!)

4 Discussion

Throughout the present study, we have described the intonational features of the interlanguage, in other words, the linguistic stage of the informants in relation to the target language. Following, we will discuss relevant aspects of prelinguistic intonation, which characterises the melodic profile and foreign accent of Chinese learners, and those of linguistic intonation, which determines and describes the melodic patterns they use.

With regard to the first peak, in the emphatic contours of the interlanguage of Spanish spoken by the Chinese, this is usually more present than in interrogative, neutral and suspended contours of the same interlanguage (Zhao 2023) and in the interlanguage of Spanish spoken by the Swedish (Martorell 2023) and Brazilians (Fonseca de Oliveira 2013).

This feature of the emphatic having more first peaks could be due to the effort of speakers to be more expressive, which produces more first peaks, or to the influence of their mother tongue, Mandarin, in which a phonic word is equivalent to a phonic group. When there is a first peak, it is mostly on the tonic vowel and, to a lesser extent, on a post-atonic vowel. These are features shared with the interlanguage of Spanish spoken by Swedish people (Martorell 2023). However, although we observe a tendency to present a first peak in these interlanguage contours, as in the target language, the two languages differ in the position of the first peak, which is more frequently found in the tonic syllable of the interlanguage and post-atonic syllable of Peninsular Spanish (Cantero and Font-Rotchés 2007).

As for the height of the first peak, we find that it is mostly lower than 40 % and a large part are lower than 20 %. It can be said that there are more first peaks with rises above 40 % in the emphatic contours than in the neutral and suspended contours of this interlanguage but fewer than in the interrogative contours (Zhao 2023). Therefore, we see that, in emphatic contours, the anacrusis rise is somewhat higher than in other types of utterances. Even so, in general, the rise presented by these contours is not sufficient, given that in Peninsular Spanish, a first peak must be higher than 40 % to be emphatic.

As for the body of the contours in this interlanguage, a very frequent feature found in our corpus was the tendency to produce slightly more than a third of the bodies in zigzag, a higher percentage than in the interlanguage of Spanish spoken by Russians (Garmátina 2022). However, there are few words containing rising tonal inflections. The amount is similar to that of this type of utterance in the interlanguage spoken by Swedish

learners (Martorell 2023) but higher than other types of utterances in the interlanguage of Chinese learners (Zhao 2023). With regard to the tonal inflections occurring in emphatic contours, unlike in the Spanish spoken by Swedish (Martorell 2023), which generally culminates in internal tonics but to a lesser extent, in the interlanguage of the Chinese, tonal inflections tend to culminate in final atonic vowels, followed by internal tonics.

It is worth noting the absence of circumflex inflections in our corpus, which occur in a much higher percentage in the target language. Such inflections are difficult for speakers of a foreign language to produce, as they are related to emphatic intonation. This absence is likely why Chinese speakers do not convey all the expressive nuances when communicating in Spanish.

The falling declination is a characteristic feature of Peninsular Spanish, but it occurs less frequently in our corpus. Furthermore, it only provides a feature of emphasis when the fall is pronounced, which is not the case for most of the contours in our corpus. In addition to this type, there is the flat body, which is less present in our corpus than in the Russian corpus (Garmátina 2022). This flat body provides emphasis by contrast or change of tonal register, which doesn't occur in our corpus either. Therefore, neither type favours the interpretation of these melodies as emphatic by native speakers of Spanish.

We have also found a marked tendency in our corpus to produce melodies with narrow pitch ranges compared to the target language. However, the pitch range of the emphatic contour is, in general, greater than other types of utterances in the interlanguage spoken by Chinese (Zhao 2023), a phenomenon that also occurs in the interlanguage spoken by Swedish learners (Martorell 2023). Having a low percentage of words with tonal inflections and bodies that are flat or have slight falls means that the pitch range is narrower. All these features, which are not emphatic, separate these contours from those of the target language.

In terms of the nucleus, this is mostly located in the last tonic vowel, as is the case in Peninsular Spanish. As for the final inflection of the contours of the interlanguage, these are characterised by slight tonal movements, whether rising, falling, circumflex or high nucleus, in contrast to Spanish, which tends to have more significant tonal movements. However, compared with other types of utterances in this interlanguage, we observe more circumflex and high nucleus final inflections, which are features typical of emphatic utterances. It should be said that in the interlanguage spoken by the Swedish (Martorell 2023) and Russians (Garmátina 2022), the percentage of circumflex final inflections is lower. This indicates that Chinese learners tend to produce more rising-

falling final inflections than other foreign learners, but we do not know if the cause is the influence of their L1, Chinese, which has a circumflex tone.

We have also noted that, Zhao (2023) has described very specific melodic profiles of interrogative, neutral and suspended utterances, however, it is extremely difficult to determine any emphatic contours, given the great variety of contours and melodic features produced. This diversity is evidence of the difficulties Chinese learners have when confronted with emphatic contexts.

At a linguistic level, however, we observe the presence of a greater variety of types of melodic patterns, which are complex to interpret. According to our observations, almost half of the contours are produced with /+emphatic/ patterns, a higher figure than that found in the interlanguage of Spanish spoken by Swedish learners (Martorell 2023) but lower than the interlanguage spoken by Brazilians (Fonseca de Oliveira 2013). This could be because Chinese learners try to utter more marked melodies to express their emotions, such as surprise, anger and irony, among others, or because of an influence of the L1. Despite this, the use of melodic /+emphatic/ patterns is not always suitable and does not always correspond to the needs of the context.

In particular, Pattern X (circumflex final inflection) is the one that appears more frequently in its rising-falling variant (Xa) than in its falling-rising variant (Xb). In comparison, the interlanguage of Spanish spoken by Brazilians also has a marked tendency to use Pattern X but both variants, Xa and Xb, occur in a balanced amount (Fonseca de Oliveira 2013). This production of a circumflex final inflection has also been described in research by Liu (2005) on the interlanguage of Spanish spoken by Taiwanese, in which the principal presence of the rise-fall movement is observed, a tendency identical to that of our corpus. Furthermore, in many emphatic utterances, the circumflex final inflection often coincides with a word. From our perspective, the frequent use of Pattern X is likely due to a transfer from the mother tongue. The circumflex intonation in Chinese is used to express subtlety, sarcasm, intentional ambiguity, etc.

To a lesser degree, Pattern VII (high nucleus final inflection) is found. Chinese informants tend to emphasise the last word to produce emphatic utterances and, in these cases, the intonation is usually appropriate as the speaker tends to focus on the last word. In contrast, utterances which are similar to other types of /+emphatic/ patterns are not found frequently in the corpus. The contours that have been classified as melodic Pattern VIII, characterised by a first peak and nucleus that coincide, are usually very short, which

benefits this coincidence and occurs in a lower percentage than in the interlanguage of Spanish spoken by Russians (Garmátina 2022).

In addition, neutral and suspended intonations occur at a frequency of about 25 %, respectively. The use of neutral and suspended intonation is also observed in the interlanguage spoken by Swedish (Martorell 2023) and Brazilians (Fonseca de Oliveira 2013). Bearing in mind that the classification is based on the final inflection, this does not imply that utterances belonging to such intonations do not have any stress features in the melodies. In this regard, there are contours which are produced with a very high-pitched voice, conferring a feature of emphasis, although their melody is similar to those that are neutral or suspended. However, in general, they are not characterised as emphatic because they do not usually have additional emphatic features.

5 Conclusions

After analysing the contours of the corpus found in an emphatic context of the interlanguage of Spanish spoken by Chinese from a prelinguistic perspective, which characterises the foreign accent of the learners, and a linguistic perspective, which lists the melodic patterns they use, we have reached the following conclusions.

From a prelinguistic point of view, the foreign accent of Chinese speakers is characterised by:

- A tendency to present a first peak with a slight or moderate rise of less than 40 % which usually takes place on the first tonic vowel. In addition to this, a large proportion of contours have no first peak. These features contrast with the emphatic features of the target language, Peninsular Spanish, which tends to have first peaks with rises that are more prominent and displaced to the post-atonic vowel.
- A predominance of zigzag bodies with few tonal inflections and slight rises and, to a lesser degree, slight or flat declinations. In addition, the pitch range is often narrow, usually less than 50 %. These features do not emphasise the speech of Chinese learners, resulting in their inability to express the richness and nuances of the target language.
- A presence of the nucleus located mostly on the last stressed vowel; a feature similar to that of Peninsular Spanish. However, the final inflection of the falling contour tends to present slighter movements than in the target language, which is not conducive to expressive and effective communication, nor is it facilitated by the

frequent flat final inflection that occurs. Circumflex and raised nucleus final inflections are suitable when the movements are marked but in our corpus these features are rare.

- An absence of melodic profiles that are characteristic of the interlanguage due to the great variety of contour features.

As for linguistic intonation, the melodic patterns used do not correspond to their communicative intention. Chinese learners, aware that they want to produce emphasis, try to use a more marked, more emphatic intonation to express their emotions and nuances, and this occurs in almost half of the contours. Despite this, the use of melodic /+emphatic/ patterns is not always suitable and does not always correspond to the needs of the context. The most frequently used pattern is Pattern X (circumflex final inflection), particularly Xa (rising-falling final inflection) and, with a much smaller representation, Pattern VII (high nucleus final inflection), which usually coincides with a focus on the last word. The rest of the /+emphatic/ patterns are not very common in our corpus.

It should be emphasised, that we have also observed an inappropriate use of neutral and suspended intonations, which are less frequently found in the corpus. An interesting feature that appears in the corpus in these neutral and suspended intonations is the use of a very high pitch. This melodic characteristic confers emphasis on these contours, which makes them appropriate to the emphatic context in which they occur. Even so, the number of contours produced inappropriately in the context is relevant and indicates the shortcomings of these learners of Spanish in expressing their emotions in speech.

In summary, the results highlight the fact that the learners lack a good development of their communicative skills in terms of mastering emphatic intonation in Spanish. They often express themselves with unsuitable melodic profiles and features of the first peak, body or final inflection or with intonational patterns that do not correspond to the communicative intention of the context, which can cause misunderstandings and make communication with native speakers difficult.

This research demonstrates the relevance of teaching the phonic aspects of Spanish to Chinese-speaking learners so that they can develop communicatively in a competent way in their day-to-day life with native speakers. In this regard, we believe that this type of research is the first pillar for developing didactic proposals aimed at Chinese learners of Spanish so that they can overcome their intonational deficiencies and, thus, be able to convey their emotions, irony, politeness and, in general, their affectivity more effectively.

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