Non-native interlanguage intonation systems: A study based on a computerized corpus of Spanish learners of English[1]

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Abstract

From an interest in language as it is really spoken, and using corpus linguistics as methodology, a longitudinal research project has been launched compiling speech data from primary school to university (UAM corpus[2]). The present article reports on part of this research in progress, focusing on a cross-linguistic intonation study using computer language learner and English native corpora. The study surveys the role of the intonation systems used by both language groups in the information structure of their conversations (Halliday 1970, 1994; Tench 1990, 1996; Lambrecht 1994). The spoken language of a group of 20 Spanish young adult speakers when reading aloud 40 short conversations has been digitally recorded over three years. The non-native corpus has been contrasted with a similar English native corpus. The Corpus data (224,000 words) were analysed quantitatively using software tools, automatic and manual annotations and statistical calculation. The research results aim to give a more accurate description of this specific group of learners' use of spoken English. A qualitative interpretation of the analysis shows relevant features such as avoidance, overuse and underuse of certain intonation patterns by non-native subjects, with important implications for the messages transmitted. These results may contribute to SLA theory by providing answers to some unresolved issues concerning the exact role of transfer. Finally, this research may also help to develop new pedagogical tools and classroom practices to deal with the specific needs and difficulties of these learners.

1 Introduction

The systemic functional tradition considers that linguistic analysis should be about language as it is actually spoken and written by human beings (eg Halli-

day 1994; Stubbs 1996). Computer corpus linguistics can provide an important way of studying these authentic language data. As Granger (1998) states, native and non-native language corpora may supply relevant information about what is typical in a particular language and what might be difficult for language learners. Considering the difficulty that non-native speakers of English have to acquire the intonation system, with the meaning it expresses, it is surprising that not more research has been done in this field. Specifically, to my knowledge, studies have not yet applied acoustic analysis to corpora of learner English, in order to pinpoint the differences in both form and meaning expressed. In this paper, I offer the first results of an on-going project which has this objective amongst its aims.

The present study, then, uses a cross-linguistic computer corpus of learner and native English in order to explore the role of English intonation as it is really used in spoken discourse. I intend to describe the extent to which the intonation systems used by non-native speakers may affect the information structure and meaning of their messages. However, the analysis aims to reflect not only 'errors' but also the learners' possible interlanguage systems (Selinker 1972, 1992; Corder 1981,1983; Leech 1998: xvi).

As Halliday states, intonation is not only a matter of making oneself understood or having a good pronunciation, but is a way of expressing different meanings (1970: 21). Intonation is in fact part of the grammar of a language (Halliday 1967: 10). Any change in intonation represents changes in the semantics of the final message, not only regarding speakers' attitude, but also the structure of information as perceived by interlocutors. Halliday (1970: 21) claims that there are always various possible intonation patterns for a sentence, and they will all carry different meanings. This means that, since there may be as many different patterns as intentions or meanings speakers may want to transmit, it would be impossible to contrast and study English native and non-native intonation.

To control this variable and be able to analyse the intonation patterns of the two language user groups, the likely 'neutral' intonation for each speech function has been used as a guideline (Halliday 1970: 26, 51), as outlined in section 3.2. Another difficulty for the study and description of intonation is the lack of a generally accepted prosodic transcription system. There have been attempts to develop language-independent transcription systems for intonation, such as INSIST (Hirst and Di Cristo 1998), Pierrehumbert's intonation model (1990), the ToBI transcription system (Silverman et al 1992), or Ladd's autosegmental metrical theory (1996). Although I take into account some of the theoretical issues proposed in those models, this study adopts Halliday's English intonation system (1970), implementing it with acoustic software tools (cf Wichmann

2000: 12–13). The resulting model is simple and accurate, and enables a cross-linguistic empirical intonation analysis. Halliday's systems are used as reference for the pragmatic interpretation of the prosodic data in the corpus as explained in section 3.3.

Finally, a number of scholars assign a broad universal character to intonation (eg Bolinger 1978, 1989: 57ff; Cruttenden 1981). However, the specific features of a particular speaker's FL intonation seem to be very much dependent on the mother tongue (cf Ladd 1996: 118; Hirst and Di Cristo: 1). The present study intends to gain better insights into this question in order to describe the exact role of universals and language transfer in the acquisition and production of English intonation systems by Spanish speakers.

2 Objectives

Using the theoretical background briefly presented above, the present longitudinal project in progress aims to provide a survey of the intonation patterns used by both non-native and English native language speakers. I intend to demonstrate that the difference between the two language groups does not only result in the non-natives sounding 'foreign', but it may affect the message transmitted regarding its information structure mainly in the textual and interpersonal metafunctions. My hypotheses for this study are the following:

Hypothesis 1: The intonation patterns used by native and non-native speakers do not always coincide, but provide different information and thus affect the information structure and meaning transmitted in the message.

Hypothesis 2: The main difference between the two language groups affects the three intonation systems: tone, tonality, and tonicity.

Hypothesis 3: There exists an approximative interlanguage system in non-native intonation.

3 Method
3.1 The corpus of native and learner English
As in any other field of applied linguistics, the methodology of computer corpus linguistics requires explicit design criteria to control all the possible variables that may affect the reliability of the compilation, the results and the possible replication of any research (cf Atkins and Clear 1992:5; Engwall 1994: 49). Following Ellis (1994: 49), Granger (1998: 8) lists some of the main criteria for

compiling a language learner corpus. The International Corpus of Learner English (ICLE), naturally, applies most of these criteria. Most of these criteria have been taken into account in the design of the present research, as shown below.

The corpus consists of spoken texts: learners' and native speakers' oral interpretation of written texts. The genre of the texts was short informal conversations. As the topic and situation were not technical, the language was not considered to be beyond the learners' level. Regarding the task setting, subjects were given the context provided for each conversation, and allowed time to prepare and familiarise themselves with the speech functions involved in each interaction. Finally they had to interpret those texts orally and in pairs. The researcher was not present during the recording.

With regard to the learners, the group of 20 subjects (ten males and ten females) forming part of this research was very homogeneous. They shared common features such as age (young adults: between 19 and 22 years old), mother tongue (Standard Spanish), region (from Madrid), and with no other foreign language except English. They also presented a similar upper-intermediate proficiency level decided on both external (students in first to third year of a training course for teachers of English at university, with a similar previous academic background) and internal criteria (language assessment and testing) (cf Atkins and Clear 1992: 5 on proficiency criteria). Their language learning background, context and experience was also fairly similar: they had been learning English as a FL at primary and secondary school for practically the same number of years and had not spent any time in an English-speaking country, as their questionnaires showed.

This part of the corpus data (224,000 words) was compiled longitudinally during their three-year university studies. The students were recorded twice a year when performing different language tasks: role-plays, debates, reading and telling stories, interviews, interpreting dialogues, etc. In order to compare the research results with a computerised native speaker corpus, a group of ten native speakers of Standard British English, with similar age and social backgrounds were also recorded in circumstances similar to the non-native speakers. We continue to increase the corpus, including different genres and the sort of tasks that these future infant and primary teachers of English will undertake in their professional practice.

3.2 Taxonomy for the analysis

The present research surveys the role of intonation in the organisation and management of information of any language exchange. I am mainly concerned with

the interpersonal and textual metafunctions of English as described by Halliday (1994: 36). The interpersonal metafunction is defined as the kind of meaning 'enacting social relationships'. It corresponds to the status of 'clause as exchange', depending on 'prosodic features' among others (ibid: 35). The textual metafunction is defined as a kind of meaning 'creating relevance to context'. It corresponds to the clause as message, depending on 'culminative patterns' (ibid: 35).

In a systemic functional description of English, these two metafunctions are partly expressed through intonation (cf Benson, Greaves and Mendelsohn 1988: 40; Halliday 1994: 36). I assume that intonation has the same hierarchical character of constituency as any other aspect of language (Halliday 1994: 292). In any English utterance three intonation systems can be distinguished: tonality, tonicity and tone, as defined by Halliday (1967, 1970) and Tench (1996). Tonality refers to distribution of an utterance into 'tone groups', that is, the system in intonation that divides speech into its separate individual intonation units. Each intonation unit contains a single unit of information and represents the speaker's perception and management of the whole message. Halliday (1967: 18–19, 1970: 3) finds that there is a tendency for an intonation unit to correspond to a clause, 'neutral tonality'. This is useful for the description of tonality in cross-linguistic analysis. Tonicity refers to 'the construction of feet into tone groups, showing how the tone group serves to organise discourse into information units, with each information unit comprising the functions of Given and New' (Halliday 1994: 292). And finally, tone for Halliday (1970: 22) 'expresses speech function'. The selection of tone, then, realises 'systems of key, relating to the mood system, and certain logical sequences, relating to the system of interdependency or "taxis"', that is the status of information (Halliday 1994: 292). Halliday's primary tone system is as follows: tone 1 (falling), tone 2 (rising), tone 3 (low rise), tone 4 (rise-fall-rise), tone 5 (fall-rise-fall), and the compound tones 13 (fall-low rise) and 53 (fall-rise-fall and low rise)(Halliday 1967, 1970).

Therefore, tonality and tonicity express the textual metafunction, while tone expresses the interpersonal metafunction, and the status of information as perceived by the speaker. Within the interpersonal metafunction a number of basic speech functions can be distinguished, as summarised in Table 1 adapted from Halliday (1994: 69) and Eggins (1999: 150–1).

Table 1: Speech role, commodity, and speech function

Speech role	Commodity	Speech functions	Speech functions	Speech functions
		Initiation	Expected response (supporting)	Discretionary alternative (confronting)
Give Demand Give Demand	Goods-&-Services Goods-&-Services Information Information	Offer Command Statement Question	Acceptance Undertaking Acknowledge-ment Answer	Rejection Refusal Contradiction Disclaimer

This list of basic speech functions has been used in order to describe the basic turns in the conversations forming part of the corpus. The neutral choice (Halliday 1970: 51) of the tone system that expresses these speech functions is outlined below.

I. Giving / Demanding information
Neutral tone system for the speech functions of initiating and responding.

    a. A falling tone indicates the speaker's certainty and dominance when giving or demanding information, realising the following speech functions: statements, answers, disclaimers, acknowledgements, statement-questions with tag, Wh-questions, second-attempt questions, alternative questions, etc.

    b. A rising tone indicates the speaker's uncertainty and deference to the presumed superior knowledge of the addressee realising the following speech functions: multiple questions, yes/no questions, echo questions, statement-questions with tag, contradictions, etc.

II. Giving / Demanding good-&-services
Neutral tone system for the speech functions of initiating and responding.

    a. A falling tone indicates the speaker's authority when giving or demanding the commodity, independently of the justification for such authority or not. The functions commonly associated with a falling tone are commands and related speech functions, such as prohibitions, demands, advice, recommendations, promises and threats, etc.

b. A rising tone indicates deference to the other person's authority or decision. The common speech functions realised by a rising tone are offers, requests, suggestions, invitations, warnings and appeals, etc.

The resulting taxonomy for the analysis of the present corpus data relates speech functions to the intonation systems that express them. The research examines these three intonation systems as exponents of the language exchange and final message transmitted.

3.3 Corpus annotation and analysis

The corpus is composed of 40 short conversations between 20 (ten female, ten male) non-native and ten (five female, five male) native speakers. Non-native informants were digitally recorded twice a year during three years. Both instrumental and auditory analyses are combined. Using software tools (Speech Analyzer, developed by the Summer Institute of Linguistics), each utterance within each conversation is saved in a separate file. Each file can be analysed using the phonemic, orthographic and tone annotation tools that the acoustic program provides, completing its analysis with manual annotation when necessary. The fundamental frequency variability across speakers is automatically normalised. The main results of this study in progress are described quantitatively in terms of pitch (movement and range) and its relation to time intervals (in milliseconds). Using Halliday's system (1970) as a guideline, each utterance is organised into intonation units or tone groups. Each intonation unit is divided into the corresponding number of feet. The pitch movement and range in each foot of an intonation unit are annotated by calculating the number of semitones which the contour falls or rises (+/- or H/L). For example, the following notation +5 –11 would mean that the feet contain a rising tone (+) ascending five semitones and a falling tone (-) descending 11 semitones. The tonicity system is analysed by identifying the tonic (underlined syllable in the transcription). As a result, a simple and accurate, language independent representation model of intonation is obtained. It enables us to collect empirical prosodic data on large corpora. The tone system is analysed in order to classify utterances into speech functions and to decide the status of the information. Results concerning secondary tones expressing attitudinal meanings are not reported here.

In order to validate my hypotheses several statistical analyses were accomplished. The percentage and mean of the three intonation systems used for each speech function within each language group were computed. The tables included in this article show the mean frequency of native and non-native intonation patterns. The results reveal interesting differences and similarities between both language groups.

4 Results

As stated in the introduction, the focus of the present research does not only centre on errors, but the aim is to provide a wider view of non-native English intonation systems based on authentic data derived from language learner corpus analysis. I aim to gain better knowledge of the learner's entire oral performance, in other words, his or her approximative system or interlanguage. However, this paper is only intended to present raw results at this stage, and will not attempt at a theoretical explanation of the observed phenomena. As this is a project in progress, only some of the results corresponding to the overuse, underuse and avoidance of intonation patterns in the three systems are reported here. I focus on speech functions in the area of giving and demanding information: statements, answers, Wh-questions, polar questions, multiple questions, and question tags. For their pragmatic interpretation, I use Halliday (1967, 1970, 1994), Lambrecht (1994), Tench (1996) and Eggins (1999). The status, organisation and management of information expressed by the intonation patterns are discussed below.

I. Giving /demanding information
I.1 Statements
Native speakers' statements are expressed by neutral tonality and tonicity systems. The intonation unit corresponds to a unit of information. The tonic corresponds to the major new information as the narrow focus of the conversation. The contrast in the status of information is also expressed by the tone system: new, asserted information is expounded by a falling pitch, while given or presupposed information is expounded by a low rising pitch. The falling pitch as the neutral tone of a statement speech function expresses dominance and certainty on the part of the speaker.

On the other hand, non-native speakers do not express this distinction between asserted and presupposed information in their speech functions, but use a falling tone for both types of information. In non-native speakers' statements there is a tendency to divide the tone group into more feet than in the case of native speakers. The tonicity system does not coincide either. Non-native speakers tend to use marked tonicity with the focus on presupposed or given elements. Tables 2 and 3 exemplify this:

Table 2:   Native speakers

NSS	//13 ∧We/	need some/	milk //
Pitch	+1	+7-9	-2+7
Time	0,14	0,45	0,35

Table 3:   Non-native speakers

NNSS	//1 ∧We/	need/	some/	Milk //
Pitch	+3	+1-1	-4	+5-3+4-7
Time	0,17	0,20	0,30	0,41

The example reported here corresponds to part of a conversation about the arrival of the milkman and the need to get some produce (Thompson 1990: 52). In the first utterance ('Here's the milkman, Harriet'), it is presupposed that the milkman brings milk. The listener understands that and answers accordingly ('Good! We need some milk). 'Milk' is presupposed, given or minor, information in this second utterance since it is recoverable from the context. The important information now is that 'we need some'; therefore, the tonic prominence is in 'need'. These textual and interpersonal metafunctions are expressed by the three intonation systems.

Native speakers express the difference in the status of information between major and minor by the tone pattern, using a falling (tone 1) for new, major and a low rise (tone 3) for old, minor information. In the utterances by non-native speakers, the intonation system does not express such contrast; instead they put the main falling pitch movement on presupposed information ('milk'). This presupposed element becomes the focus of the information unit receiving the tonic prominence. Tonicity is then unusually marked. The intonation unit is divided into more feet, which results in a different tonality system as well. As a consequence, the information is organised in different ways, as shown in Tables 2 and 3. Intonation waveform graphics will appear in later reports of the present research.

I.2 Answers
The results from the analysis of answers coincide with those from statements. Native speakers use neutral tonality and tonicity in answers as well. When the speech function is expressed by a compound tone group, the tonic with a falling pitch (tone 1) indicates new, asserted information; while the tonic with a low ris-

ing pitch (tone 3) represents the minor, given information, already mentioned in the interlocutor's question. Table 4 exemplifies this. However, non-native speakers do not express this distinction by their choice of the tone system, as illustrated in Table 5.

'Badminton is my favourite sport' is the answer to the question 'which sport do you enjoy most?' Both content words – 'badminton' and 'sport' – receive a similar prominence, and have a falling pitch that would correspond to tone 1. The contrast between new and given information is not clearly expressed. The message conveyed seems to be different from the one expressed by native speakers. Therefore, the same wordings with different intonation systems denote a different management of information.

Table 4: Native speakers

NSS	//13 Badminton's my/		favourite/	sport//
Pitch	+4 –1 + 2 –11 +1 –8 +4 –4		+4 -4+2-2	+8-4+8
Time	0,70		0,33	0,35

Table 5: Non-native speakers

NNSS	//1 Badminton's my //	//1favourite	sport //
Pitch	+6 –4 + 3 –1 +2 –7	+1 –2+3 +4-4	+4 –4 +5 –6
Time	0,82	0,37	0,43

I.3 Wh-questions

The analysis of Wh-question speech functions gives the following results. In general, the tone system used by non-native speakers seems to be close to that used by native speakers (primary falling, tone 1) except in the case of vocatives, which I do not discuss here. However, a more detailed analysis reveals certain differences, as illustrated in Tables 6 and 7. In order to express this speech function, native speakers use neutral tonality and the intonation unit corresponds to one unit of information. The tonicity, pattern choice is neutral as well: the last new lexical item has the tonic prominence. The focus is narrow: it involves new information (sister), assuming also elements of given information recoverable from the context. A falling pitch (tone 1) helps to expound the status of information: major and asserted. The tone system also corresponds to the neutral tone used for Wh-questions indicating knowledge or certainty about something (the interlocutor has got a sister). In non-native Wh-questions, the tonicity pattern is

frequently marked. In the example, 'at the moment' is circumstantial informa-
tion that does not take the tonic unless there is a 'good reason' for it (Halliday
1967: 22–23). Besides, the immediate context of the conversation and the gram-
matical cues (present continuous tense) reinforce the idea of the final adjunct
being rather secondary. The focus should be on the person in question 'sister'
instead, as it is in the native speakers' utterances.

Tables 6 and 7 also indicate a common phenomenon found in the corpus.
Native and non-native speakers present differences regarding the falling and ris-
ing movements and the range of pitch in each foot. Within the tonicity system,
native speakers clearly distinguish the focus of information. The difference in
the tonic pitch range is always wider with respect to the rest of salient syllables.
In the case of non-native speakers, the tonic pitch range is not as clearly differ-
entiated from the rest of the salient syllables.

Table 6:   Native speakers

NSS	// 1+What's your/	sister/	doing at the/	moment/	Jo//
Pitch	-1+4+1	-11	+2-4+3-1	-2+5	+1-7
Time	0,32	0,38	0,38	0,33	0,30

Table 7:   Non-native speakers

NNSS	// 13 What's your/	sister/	doing at the/	moment/	Jo//
Pitch	+5-1	+2-2	-2	+2-11	+7
Time	0,26	0,30	0,41	0,36	0,19

I.4 Yes – no questions
In general, in short yes-no questions both groups of speakers tend to use similar
intonation patterns: neutral tonality, tonicity and neutral tone 2 or 2, though with
some differences regarding secondary tones.

Table 8:   Native speakers

NSS	//2 ∧Are you/	hungry//
Pitch	+8	+4-15+9
Time	0,18	0,48

Table 9:   Non-native speakers

NNSS	//2 ∧Are you/	hungry//
Pitch	+8 –2	-1+5
Time	0,22	0,38

As in previous speech functions, there is a tendency to distinguish the tonic from the rest of the salient syllables by the pitch range and height in native speakers' utterances. 'Hungry' takes the tonic, expressed by the main falling-rising movement corresponding to tone 2, as displayed in Table 8. The pitch range falls 15 semitones to rise 9 (–15+9) with a high pre-tonic (+8+4). However, the pitch in non-native speakers' tonic only falls 1 semitone to rise 5 (-1+5); the pre-tonic is (+8-2). The difference in pitch range is very obvious. Therefore, the tonic may not be so easily identified as in native speakers' utterances.

On the other hand, when the utterance is longer, the choice of the tonicity pattern differs in both language groups (as reflected in Tables 10 and 11). Yet, the tone patterns coincide. In native speakers, there is a tendency to devote a relatively longer time to uttering the tonic than to the rest of the feet within the intonation unit.

Table 10:   Native speakers

NSS	// 2 ∧Do you/	feel a/	hundred/	Mr/	Kent//
Pitch	+3-1	+1-10+1-1	+3-1+3-2	+2-2+1	+6
Time	0,23	0,53	0,38	0,25	0,30

Table 11:   Non-native speakers

NNSS	2 ∧Do you/	Feel a/	hundred//	//2 Mr	Kent//
Pitch	+1	+3-4	-1+5	-5+2	+7
Time	0,15	0,15	0,33	0,28	0,27

I.5 Multiple questions

Both language groups produce similar results in the intonation patterns of short multiple questions. Neutral patterns of tonality, tonicity and tone (2 & 1) express the status and management of information of this speech function: incomplete (rising pitch, tone 2) and complete information (falling pitch, tone 1). Tables 12 and 13 illustrate this similarity:

Table 12: Native speakers

NSS	// 2∧A/	<u>boy</u> or a //	//1<u>girl</u>//
Pitch	-3	-12+10-2	+4-4
Time	0,06	0,50	0,14

Table 13: Non-native speakers

NNSS	// 2+∧A/	<u>boy</u> or a //	//1<u>girl</u> //
Pitch	-2	+10-1	+1-7
Time	0,18	0,48	0,32

I.6 Statement-question tag

This speech function may have many variants. The corpus includes the most usual ones. Those reported here are expressed by tones 1 & 2 and tones 1 & 1, with polarity changed. According to Halliday (1970:13), a tag cannot have a pre-tonic. This is perhaps one of the reasons why the tonic in the tag question is always placed in the auxiliary. The contrast between the general meaning of falling and rising tones is clearly expressed in question tags in my data, as reported below.

I.6.1 Statement-question tag expressed by tone 1&1

In the introduction, instructions for the reading and interpretation of the text say that the speaker is absolutely sure of him/herself, and s/he knows that the listener will agree. Native speakers read it using a neutral tone: a falling tone both in the statement and in the tag (1&1 or 1+&1+), with the polarity changed, 'expressing certainty or demanding an admission' (Halliday 1970: 28). The status of information expressed by tone 1& 1 corresponds to major information in the statement, seeking confirmation in the tag. They also use neutral tonality and tonicity patterns to express this speech function. The tonic prominence in the statement is located in the focus of information. The tonic prominence in the tag is always in the auxiliary. The tonality system separates the statement from the tag into two separate intonation units.

Non-native speakers use different tonality, tonicity and tone. First, the division of the tone group in the statement and tag is different from that of native speakers, as shown in Tables 14 and 15. The tonic is located differently, showing different information management and consequently different meaning. The last word within the tag, usually a pronoun or adverb, receives the main prominence.

As a result, the tag in non-native speakers' utterances has a pre-tonic. As I said, this is not possible in English according to Halliday (1970: 13). In addition, the tonic prominence in the statement is often difficult to distinguish since each syllable is uttered with similar prominence. As commented on earlier, the difference between the pitch range in the tonic and other salient syllables is smaller than in native speakers' speech. The use of the tone system 1&2 or 1&2 with a rising tone in the tag denotes uncertainty. Consequently, the meaning transmitted is the opposite of what would be expected.

Table 14: Native speakers

NSS	// 1 ∧But/	last No/	vember wasn't/	cold//	//1Was it//
Pitch	-3+2	+6-2	-10	+9	+2-9
Time	0,16	0,24	0,71	0,50	0,36

Table 15: Non-native speakers

NNSS	// 1 ∧But/	last No/	vember/	wasn't /	cold//	//2 Was/	It//
Pitch	-4	+4	+4	-7	+4	+1	+6
Time	0,31	0,34	0,51	0,37	0,43	0,23	0,28

I.6.2 Statement-question tags expressed by tone 1& 2

In the following example from the corpus (Tables 16 and 17) the speaker is not quite sure about the information s/he is providing. Native speakers express this meaning with a neutral choice of tone systems. The status of information expressed by the tone system (1 & 2) is major and incomplete. The speaker elicits information on the validity of the proposition. The tonic is located in the last lexical term of the statement. In the tag, the auxiliary receives the prominence. The use of a neutral tonality system separates the statement from the tag into two intonation units: (cf Table 16).

Table 16: Native speakers

NSS	// 1 ∧ It's/	Hall//	// 2 isn't it//
Pitch	+19	+4 –13	+12
Time	0,16	0,29	0,33

Non-native speakers coincide with native speakers in the tone system used, 1&2, although there are certain differences. Within the tonicity system, the tonic in the tag is again located in the pronoun instead of the auxiliary. Non-native speakers tend to make the last syllable prominent. The tonality system used by native and non-native speakers does not coincide either: the intonation unit is divided into more feet, as shown in Table 17. As a consequence, even though the contours used by native and non-native speakers seem to coincide, these differences make both language user groups sound different.

Table 17: Non-native speakers

NNSS	// 1 ∧It's/	Hall //	//2 isn't /	it //
Pitch	+8	–8	+9-2	+5
Time	0,19	0,37	0,38	0,24

Briefly, then, non-native speakers overuse tone 1&2 in statements and tag questions. When that use coincides with that of native speakers, then their interlanguage is nearer a native speaker's performance, although there are still differences regarding prominence, time, pitch movement and range within that general contour. Yet, when a native speaker uses a different contour, the differences affecting the status and organisation of information are greater, and the consequences for the meanings communicated also seem to be greater.

5 Discussion

The analysis of the results seems to show the existence of a non-native interlanguage intonation system. The non-native speakers approach the tone system used by native speakers when expressing Wh-questions, short yes-no questions, multiple questions, statements, answers, and tags seeking confirmation. However, a more quantitative analysis reveals differences regarding the intonation systems used.

Native speakers express the difference in the status of information within a speech function by the choice of tone. A falling tone expounds new information, while a low rise denotes given information. Non-native speakers do not express such contrast by their choice of tone. They avoid the use of a low-rise tone to express minor or given information, overusing a falling tone.

With regard to the tonicity system, non-native speakers often locate the focus in given rather than new information. Besides, the focus of information is

clearly expressed in native speakers' speech, since the tonic pitch range is always wider with respect to the rest of salient syllables. In the case of non-native speakers, the acoustic analysis demonstrates that the tonic pitch range is narrower, without a clear differentiation from the rest of salient syllables. As a result, the tonic prominence and the focus of information are not always easily identifiable. Therefore, non-native speakers avoid using a pitch range as wide as that of native speakers. There is a tendency to locate the tonic in the last word of the utterance, independently of its status or lexical category. Examples were found in statements, answers, and questions and also in tags. This could be regarded as a case of overuse of this tonicity pattern.

When the speech function corresponds to a short utterance, the tonality and tonicity pattern approach native speakers' systems. However, there are important differences concerning these two intonation systems when the utterances are longer. Even though the general contour is fairly similar, native and non-native speakers still differ in the falling and rising pitch movements within each intonation unit. The use of tone 1&2, with polarity changed in tag questions, seems to be a case of overgeneralization or overuse even in contexts where tone 1&1 would be preferable. It can be the direct consequence of limited instruction or even language transfer.

6 Conclusion

A general conclusion which can be derived from the present research seems to be that information management, and, thus, the meaning of the message transmitted by the two language user groups differ significantly. The textual and interpersonal metafunctions expressed by the three-fold English intonation system present important differences in native and non-native speakers.

Further analysis of the UAM learner corpus of English aims to present a more accurate description of this group of learners' interlanguage intonation systems. I hope this will lead to both a deeper understanding of language learning and help to develop new pedagogical tools and methodology for EFL, focussed on the needs and difficulties of these learners. Finally, this research may also contribute to SLA theory by providing answers to some recurrent but unresolved issues concerning the exact role of transfer, universals and interlanguage.

Notes

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