

# A Contrastive Study of Function in Intonation Systems (part 1)

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## ▶ key words

intonation system  
tone language  
lexical pitch  
pragmatic intonation  
semantic intonation  
syntactic intonation

## ▶ 要旨

この研究は、世界の諸言語におけるイントネーション体系が意味表出に際してどのレベルで機能しているかという観点を類型論的に分析しようとするものである。

イントネーションを広義にピッチの変化と捉え、声調言語は語彙のレベルにおいてピッチの高低を弁別的に規定していると定義することができる。声調言語においてはピッチの変化が弁別的となる単位を語彙レベルに限定するために、イントネーションとして体系的に発話単位で統語的・意味論的・語用論的な機能を担わせることができないと仮定する。

声調言語でない言語は、イントネーション体系を統語的／意味論的にのみ区別するタイプと、語用論のレベルでの伝達をも包含するものとに2分する。統語的／意味論的とは、イントネーションだけで題述と疑問を区別するような機能である。それに対して語用論レベルとは、皮肉・哀願・遠回しの命令など対人関係的における非常に微妙なニュアンスを指す。

本研究の目的は、この3分割が合理的であり、かつ世界の諸言語は基本的にこの3タイプのいずれかに分類できるという枠組みを提示することである。

# 1. INTRODUCTION

In the spoken mode in each language, various phonetic and/or phonological parameters are combined to form characteristics of its own: stress accent vs. pitch accent, syllable timed vs. stress timed rhythm, syllable structure in terms of the combination of consonant(s) and vowel, patterns of consonant cluster, existence of consonant geminate, and so on. In this paper, intonation systems are contrasted crosslinguistically adding the viewpoints of syntax, semantics and pragmatics.

Each intonation system of the individual languages presents assorted status of realization with regard to its function of expressing the meaning of the utterance. Such differentiation can be considered syntactically, semantically and pragmatically.

For the syntactic and semantic sphere, those utterances are subject to be studied which can be distinguished only with the intonation alternation. If the same succession of the phonemes are interpreted as a statement with the falling intonation and as a question with the rising counterpart, these utterances can be regarded as intonational minimal pairs. These intonational minimal pairs are observed and well documented in many languages, especially in such languages as English and German.

*Pragmatic meaning* refers to interpersonal connotations communicated by implicit manner of expression, such as irony, rhetoric question, roundabout entreaty. This is realized with intonation in English while it is final particles in Japanese<sup>\*1</sup>.

The most important purpose of this paper is to establish the legitimacy of the tripartite of pragmatic, syntactic, intonation systems and tone languages in terms of the function of pitch movement. Such classi-

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\*1 Kadooka (1999) discusses the interpersonal metafunction of sentence-final particles of Japanese and Chinese, together with the pragmatic function in the English intonation system. Katagiri (1997), on the other hand, is a paper combining the viewpoints of intonation phonology and sentence final particles.

fication will be considered to be related to other phonological parameters in some implicational ways. These kinds of implications can be grouped into prototypical combinations of the parameters.

On the phoneme level, typological methodology has occupied a considerable position in phonology. This paper will shed a new light into the phonological typology from the suprasegmental perspective of intonation, focusing on the level of function in which intonation works.

In what follows, I will exclusively use the term *prosody* referring to suprasegmental phonemes such as stress, accent, intonation, and tone. More comprehensive concept of prosody is, it seems, to consider these suprasegmentals in an interrelated manner; one of them is supposedly related to another. E.g. intonation system is less predominant in tone languages with regard to syntactic/semantic/pragmatic function.

Let us consider in brief here how the parameters are organized by inspecting the well-documented languages.

English is a stress-timed language with plethoric patterns of consonant clusters, and the accentuation is mainly made with word stress. Intonation system is for conveying ideational and interpersonal meaning, in the level of clauses.

Swedish, another Germanic language, is similar to its cognate English in that stress play crucial role on the one hand while tone is also necessary in the lexical level. In the latter aspect, Swedish is comparable to Japanese<sup>\*2</sup>.

It is well known that Japanese is syllable-timed, or mora-timed if we want to be more accurate. If the combination of a true consonant followed by a glide to be considered as a consonant cluster (C cluster), it has limited patterns of C clusters. Word accent with pitch contour is predominant while the intonation within clauses is functional to some

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\*2 For a brief summary of the intonation system of Swedish, see Gårding (1998) and the bibliography therein, listed in (1) in section 2 below.

extent, though lesser than in English.

Chinese is a tone language. Tone is assigned to each syllable/character, hence intonation within a clause is not so meaningful as in sentence-intonation oriented languages like English and German. As for Beijing Chinese, on the other hand, lexical stress is prerequisite phonologically though it is autonomously determined due to the distinction of tonic and atonic syllables. In Cantonese the situation is different; every syllable should carry its own tone and no counterparts for Beijing atonic tone.

In the papers which will follow the present one, we will look into the combination of such parameters, probing various phonological parameters exemplified above. Further, some discussion will be made whether any systematicity can be found or not across the languages in terms of logical necessity of the composite of the parameters; for instance, which of the accent pattern of tone, pitch, or stress is most probable for those languages in which various types of consonant clusters are allowed?<sup>\*3</sup> This paper will be the first step to investigate the correlation between the parameters.

## 2. LANGUAGE CATALOGUE

Intonation can be defined as the move of pitch in the domain larger than one word. It is connected with semantics, and to syntax in the lesser extent, in that the identical utterance can make different connotation with the alteration of intonation pattern. As observed in many languages, a particular statement is interpreted as assertion when terminated with a falling tone, whereas it is decoded as an interrogation with a rising intonation.

It is inconsistent from one language to another to what extent into-

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\*3 At present, the following correlation is in the author's idea; in those languages with rich system of C clusters, typically represented by English, tend to be stress timed and with pragmatic intonation.

nation patterns are minutely dissected and phonologically systematized. A rough distinction between affirmation and interrogation such as above mentioned seems fairly universal; it is found in many of the non-tone languages. English is more noticeable in that elaborated system of intonation is used by the native speakers, and it has been well studied into the accumulation. To name only a few: O'Connor and Arnold (1973), Halliday (1967, 1970), Bolinger (1978), Cruttenden (1997), Gussenhoven (1986, 1992) and Tench (1996). Since the references listed at the end of this paper is far from exhausting, readers should refer to that in Kadooka (1999).

Hirst and Di Cristo (1998b) is an accumulation of the description on intonation systems of the twenty languages, with the intention of integrating the style of each paper as unanimously as possible. The names of the languages and the authors are as follows:

- (1) American English (Dwight Bolinger), British English (Daniel Hirst), German (Dafydd Gibbon), Dutch (Johan 't Hart), Swedish (Eva Gårding), Danish (Nina Grønnum), Spanish (Santiago Alcoba, Julio Murillo), European Portuguese (Madalena Cruz-Ferreira), Brazilian Portuguese (João Antônio de Moraes), French (Albert Di Cristo), Italian (Mario Rossi), Romanian (Laurenția Dascălu-Jinga), Russian (Natalia Svetozarova), Bulgarian (Anastasia Misheva, Michel Nikov), Greek (Antonis Botinis), Finnish (Antti Iivonen), Hungarian (Ivan Fónagy), Western Arabic<sup>\*4</sup> (Thami Benkirane), Japanese (Isamu Abe), Thai (Sudaporn Luksaneeyanawin), Vietnamese (Đỗ Thế Dung, Trần Thien Huong, Georges Boulkia), Beijing Chinese (Paul Kratochvil)

The names of these languages are part of the titles of the papers in

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\*4 Dialect spoken in Morocco.

Hirst and Di Cristo (1998b); the title of Bolinger's paper is, for instance, 'Intonation in American English.' The same is true for the other languages. Instead of listing in the bibliography at the end of this paper, (1) will substitute the records of the references consulted for these 20/22 languages.

If we count American/British English and European/Brazilian Portuguese separately, the number of the languages attested is 22. Needless to point out, these selections are not made in proportion with the number of the existing language families of the world. 17 out of 22 belong to the Indo-European family. With this regard, this language catalogue is not idealistic from the typological perspective in that the proportion of the existing natural languages is not reflected on the numbers of the languages investigated, which is pointed out by the editors themselves (Hirst and Di Cristo (1998a:3)). However, we will make this a starting point and pursue whether we can find some meaningful implicational correlations between the parameters and the languages.

Of these 22 languages, three are tone languages belonging to the same phylum of Sino-Tibetan family: Thai, Vietnamese and Beijing Chinese. Then the other 19 languages can be bifurcated into syntactic and pragmatic intonation systems.

In short, only pragmatic intonation systems carry interpersonal nuances defined in Kadooka (1999). In syntactic intonation system languages, only the basic semantic/syntactic differentiation is made: statement with falling pitch contour and question with rising intonation for instance. The detail of these points will appear in the following sections.

### **3. TRIPARTITE IN FUNCTION OF INTONATION SYSTEMS**

In this section I would like to suggest the tripartite classes in the functional domain of intonation systems: pragmatic, syntactic and tone languages. This terminology seems inconsistent in that the category 'tone

languages' is heterogeneous to those of pragmatic and syntactic functions of intonation. Below are the explanations for each of the three categories.

The pragmatic classes are those in which interpersonal nuances, in the sense defined in Kadooka (1999), are mainly realized by intonation patterns when one intends to imply the nuances implicitly. The typical case is English. The intonation system of this class is the most advantageous use among the tripartite classification. It was testified in Kadooka (1999) that tag questions in English are functionally equivalent to final particles in Japanese and Chinese to some extent. But the interpersonal nuances carried by tag questions are much less eloquent than intonation in English.

Those which belong to the syntactic category are probably universal, from the statistical perspective in that the intonation makes the minimal pair of declarative and interrogative statement; falling intonation stands for the former and the rising the latter<sup>\*5</sup>. Such 'basic' distinction can also be observed in the pragmatic class. That is to say, there is an implicational order in the two categories in that if a given language utilizes pragmatic intonation function, syntactic distinction is prerequisite in that language, but not *vice versa*.

The third group, tone languages overlap with the accentual categories. It is meant that in tone languages contour movement is reserved for distinguishing lexical categories, hence sentence intonation is essentially insignificant. Syntactic function is subsidiary or almost deficient in

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\*5 Hirst and Di Cristo (1998a:39) state as follows in regard to this distinction:

Qualitative pitch differences relative to the distinction between statements and yes/no question are observed in dialects of Danish, Portuguese, Spanish, Romanian, Greek and Arabic.

In addition to these six languages, Japanese seems to belong to the same category in that the plain statement and yes/no question can be minimal pair with the difference of intonation.

these languages. One of the representative examples of this class is Chinese, which is supported by the following fact that the description in Kratochvil (1998) on Beijing Dialect of Modern Chinese, one of the collections in Hirst and Di Cristo (1998b) listed in (1) above, is devoted to that of tone system of that dialect, not mentioning on the intonation system in the clause level<sup>6</sup>.

Definitionally, it can be posited that tone languages are paraphrased as those which distinguish the pitch contour inherent to all the lexical categories. In other words, Japanese is not a tone languages in that some of the lexicon are recognized by the pitch accent but not all, as exemplified below:

(2) tonal patterns on the noun *hasi* (my own accent<sup>7</sup>):

|      |             |      |          |      |        |
|------|-------------|------|----------|------|--------|
| hasi | 'chopstick' | hasi | 'bridge' | hasi | 'edge' |
| L-H  |             | H-L  |          | H-H  |        |

Notice, however, that H/L pitch contour is not inherent in all the lexical categories in Japanese. Typical are functional word such as case particles *wa*, *ga*:

- (3) a.    hasi        ga        ore-ta                      b.    hasi        ga        ore-ta  
           L-H        H        L-H-L                      H-L        L        L-H-L  
           chopstick NOM    broken                      bridge
- c.    hasi    ga        ore-ta  
           H-H    H        L-H-L  
           edge    NOM    broken

Here the pitch height of the particle *ga* is dependent on that of the precedent mora; it is realized as low in (b) while it is high in (a, c). This is

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\*6 The editors themselves make the same kind of excuse as foreword to Kratochvil (1998).

\*7 My accent basically belongs to the Keihan dialect, which is drastically different from the Tokyo accent.

an evidence that Japanese is not a tone language, in which all the lexical items should be assigned its inherent tone.

Some of the spontaneous utterances in Japanese entail characteristic intonation patterns; unmarked prominence indicated with underlines in the following instances based on my own observation:

- (4) a. so:-desu ka (falling intonation): 'I see.'  
b. so:-desu ka \*<sup>8</sup> (rising intonation): 'Is that so?'  
c. so:-desu ka: (falling-rising): 'I don't think so.'  
d. so:-desu ka (rising-falling): 'Ooooooh, I see.'

The difference between (a) and (b) is basically a syntactic one in that confirmation (a) and questioning (b) of the hearer are distinguished with the intonation.

The intonation pattern in (c) and (d), on the other hand, are pragmatic. (c), with the fall-rise nucleus in the particle *ka*, entails the prolongation in the vowel of that syllable, suggesting the strong doubt of the hearer against the speaker's statement. (d) with the rise-fall pattern<sup>9</sup> on the first syllable sounds theater-like effect; if such intonation is heard in the daily conversation, the intention of the speaker may interpreted with some purpose: the hearer is greatly surprised to know the fact for the first time, or he/she should like to pretend so.

Notice that the utterances with the pragmatic intonation patterns

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\*8 The assignment of the prominence to the last syllable *ka* is tentative. It may be that the first syllable *so*: be given as the same degree of prominence as that of *ka*. In order to *ka* to carry the rising nucleus, it should be more prominent than the other syllables in the utterance. If too much emphasis be laid on the last syllable, the message itself would sound similar to (4c). Conclusion should be drawn after phonetic verification.

\*9 Here this example of the rise-fall intonation pattern is given tentatively. If this pattern is included, altogether four of them are distinguished in the Japanese intonation contour variation: fall, rise, fall-rise, and rise-fall. I shall preserve the existence of the last one until it is attested more rigidly, however.

such as (4c, d) are absolutely rare in Japanese spontaneous speech. It will be difficult to find more examples like these. In this regard Japanese should be classified with the syntactic/semantic intonation system.

The criterion to divide pragmatic and syntactic/semantic systems is whether intonation mainly carries the interpersonal nuances or not; those intonation systems which plays crucial roles in communicating interpersonal nuances are pragmatic, while other means take place of such task in the syntactic/semantic system languages.

From the viewpoint of function of intonation, (4a)-(4d) and (4b)-(4d) are alike respectively. The former pair displays hearer's confirmation of the speaker's statement, while the latter presents doubt about it.

The categorical difference in these two pairs derives from the alteration of syntactic/semantic and pragmatic functions. (4a,b), those with syntactic/semantic function but not pragmatic, merely carry the intention of hearer's agreement and questioning, respectively. In (4c,d), in addition to these 'basic' significations, 'distinguished' or pragmatic nuances are adjoined. (4d) is in contrast with (4a) in that exaggerated surprise is expressed with the rise-fall intonation in the first syllable. This exaggeration is for the hearer to win the speaker's favor. The theater-like effect is synthesized by the exceptional contour pattern of rise-fall and the extra-long vowel in *so::*. The speaker would realize after this hearer's response that the hearer is impressed by what the speaker had said. In (4c), hearer's doubt is multiplied with the fall-rise intonation, suggesting strongly that the hearer does not believe in what the speaker said at all. The speaker would feel embarrassed by this hearer's emotional expression. These speaker's feelings are caused by the pragmatic function carried by intonation.

My hypothesis is that the interpersonal nuances suggested by pragmatic intonation in some languages are substituted by other means in other languages. It was shown in Kadooka (1999) that final particles play major pragmatic role in Japanese and Chinese. If we postulate that in each language implicit communicative devices are prerequisite, in what

way it is realized is different from one language to another. It is hardly imaginable, to put in other words, that interpersonal relationships between individuals would not go without subtle and/or minute conflicts in any culture, language should behave eloquently in the communication of interpersonal nuances.

As a framework for this tripartite, Campbell (1997:55-57) may be appropriate. His suggestion is that the levels of the correlation between semantic stratum and prosody can be classified into eight stages, including the phoneme-level distinction such as *oji-san* and *ojii-san* tagged as Seg/Pro. L0<sup>\*10</sup>. According to his definition, intonation is a Pro. L4 distinction, labeling its function as *attitude* while its realization is tagged as *speech act*. Interpersonal nuances, the subject of Kadooka (1999), seems to include his classification of L5: emotion — interpersonal and L6: sincerity — commitment<sup>\*11</sup>. It seems that the level L7: individuality — voice quality also belongs to the domain of pragmatics, but it is out of the scope of phonology. His main point is manifested in the title in Campbell (1997): “pragmatic intonation.” This seems to be line with the aim of this paper.

(to be continued)

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\*10 It is not stated in his Japanese description what this labelling *Pro. L* stands for.

\*11 The detail of the definitions of these terms are not explicit in Campbell (1997). They are too vague as the linguistic definition.

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