

Intonational grouping, boundaries, and syntactic structure in French

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ABSTRACT

This paper describes the units and rules involved in (1) the lexicon-prosody interface, (2) the intonation grammar, (3) prosodic grouping, and (4) the syntax-prosody interface. All units are depicted in a multi-layered representation of prosodic structure.

INTRODUCTION

Given an arbitrary sentence several intonation patterns can be generated that are equally well-formed with respect to the grammar of intonation, although in a particular contextual setting some may be more appropriate than others. The acceptability of an intonation pattern depends on several factors: (1) the syntax of intonation units, (2) the alignment of these units with the segmental level, (3) the interaction between prosodic structure and syntactic structure, (4) the semantics of intonation units.

This paper will be restricted to the second and third aspects. The intonation model used and the semantics of basic intonation units have been described in Mertens [1987, 1990, 1992, 1993]. Although this paper will be about French, it states which parameters (in the sense of Hirst [1991:306]) of the model are language-specific and which are not.

At the level of prosodic form, the intonation group (IG, for short) is just a sequence of one or more tones that complies with the internal syntax of the unit. Our analysis for French is shown below. The tone paradigms (NA, AI, AF), their composition, and the internal structure are language-specific. The brackets indicate optional parts.

$$IG \rightarrow ((NA) AI) (NA) AF (NA)$$

The structure of the IG was defined on the basis of the data in a corpus, in such a way that each utterance could be analysed as a sequence of IGs. But the definition of the IG does not explain how sequences of IGs can be generated for arbitrary sentences, i.e. how the unit should be mapped onto the segmental chain. It will be shown that, in order to do so, an intermediate layer is needed between the syllable and the IG, as well as a rule on the grouping of syllables. Moreover an additional layer on top of that of the IGs is needed to represent the prosodic grouping of IGs; there will also be rules stating the grouping mechanism and the constraints from (linear) syntactic structure.

GENERAL OVERVIEW OF DESCRIPTIVE UNITS AND RULES

The segmental and suprasegmental chains appear to be interwoven in a rather complex way. The suprasegmental structure results from the use of tones which in turn are constrained by both morphemic and syntactic properties of the segmental chain. These relationships call for a *multi-layered representation* of prosodic structure in which each layer introduces a new descriptive unit of a higher level, resulting from the grouping of units of the preceding level. The following table gives an overview of the factors at play for each of these layers, and indicates the corresponding prosodic units.

should be *proportional* to the syntactic boundaries. This *correspondence view* is challenged by spontaneous speech data, as shown in Mertens [1993], where the following types of non-agreement are found.

1. Since the limits of packages are determined by those of the IGs, and eventually by those of the SGs, and since the latter can be either a constituent, part of a constituent, or more constituents, packages need not have the dimension of constituents.

2. The correspondence view implies the impossibility of having a major prosodic boundary at an internal boundary of a complex syntactic constituent. However, the speech data shows cases where a package merges a first constituent with only a part of the next constituent.

(4)

la lecture n'était pas eh un niveau auquel on s'intéressait	
WS . . ° . ° ° ° °	
SG (. . -) (. -) (-) (. . . -) (. -) (. . . . -)	
IG (. . +) (. . +) (. . . +) (. +) (. . . . +)	
IG 1...1 HH 1...1 HH 1.1 HH 11/LL \1.....1 HH	
P (1) (2) (3) (() 4)	
quand on faisait une théorie de la littérature	
WS ° . . ° ° °	
SG (-) (. . -) (. . -) (. . -) (. . . . -)	
IG (. . . +) (. . +) (. . . +) (. . . . +)	
IG 1.....1/LL \1.....1 HH 1.....\1 L-L-	
P ((5) 5) (6) (6)	
P (((6)) 6) (6)	

3. Since the prosodic grouping can only render a limited amount of hierarchical relations, the mechanism is unable to reproduce the entire syntactic structure, even for sentences of moderate syntactic complexity. So, at some point the agreement will fail.

4. Especially with contrasting tones (such as HL) one can find one or more constituents as the unstressed part of an IG, even with syntactically dominant elements.

These facts point to a new criterion for the syntax-prosody agreement.

Rule 4: IGs can be grouped in a package, and packages into larger packages, if the grouped elements are linked by a valency relation. There is no requirement for the inclusion of complete constituents.

The explicit representation of the levels of WS, SG, IG, and packages in the prosodic structure enable the relations between intonation, syntax, and morphology to be pinpointed and will hopefully bring about a better understanding of their interaction.

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