Non canonical syntactic structures in discourse : tonality, tonicity and tones in English (semi-)spontaneous speech

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extrapositions, 66 right dislocations, 154 *it*-clefts and 152 *wh*-clefts. Due to the poor acoustic quality of many examples in ICE-GB, the prosodic analysis was conducted aurally.

2.1. Non-canonical syntactic structures

The structures studied are grouped under the term non-canonical syntactic structures in the sense that they can be considered as a reorganization of the canonical order. Four structures are considered:

- Extrapositions: they are traditionally analysed as a reorganisation of the canonical order of the sentence, with a movement of the subject (or object) clause from its normal position to a position at or near the end of the sentence [2] [3] [4].

  It's clear who they are.

- Noun-phrase right dislocations (henceforth RDs): a noun phrase appears at the right of the sentence and its canonical position is filled by a co-referential pronoun [4] [5].

  It looks swollen that foot.

- Two types of clefts:

  it-clefts: *It's John who broke the vase.*

  wh-clefts: *What we want is peace.*

  A cleft sentence is classically considered as coming from a simple clause (here *John broke the vase* or *We want peace*) which has been divided into two separate sections, each containing its own verb [6] [7] [3] [4].

Each of the structures analysed is composed of two parts:

- Extrapositions: the main clause (*it is clear*) and the extraposed clause (*who they are*).
- Right dislocations: the clause itself (*it looks swollen*) and the dislocated element (*that foot*).
- *it*-clefts: the first part with the focused element (*It's John*) and the relative clause (*who broke the vase*).
- *wh*-clefts: the *wh*-clause (*what we want*) and the predicate (*is peace*).

This distinction is essential for the prosodic analysis (2.2).

2.2. Prosodic analysis

We follow the British tradition here and in particular, the systems known as the three Ts, tonality, tonicity and tone [8].

Tonality is the chunking, the division into tone units, or intonation phrases. Indeed, following phonologists like [9] or [10], we consider that an intonation phrase (IP) is a segment of speech which occurs with a coherent prosodic contour (pitch and rhythm). Phonetic clues make it possible to segment the discourse into IPs: the presence of pauses (silent or not), an anacrusis at the beginning of the IP, the lengthening of the final syllable of the IP and pitch reset (see [10] [11] [12]). Following [13], we consider that there is only one level of

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Non-canonical Syntactic Structures in Discourse: Tonality, Tonicity and Tones in English (Semi-)spontaneous Speech

Abstract

This paper presents a corpus study of four non-canonical English structures used for information packaging – extrapositions, right dislocations, *it*-clefts, *wh*-clefts. We study the relations between the information structure and the prosodic patterns (tonality, tonicity and tones) and show that the canonical (expected) prosody of these structures is not the most frequent one in semi-spontaneous speech, meaning that the canonical use of these structures might not be canonical at all in terms of frequency. It is argued that in discourse the pragmatic functions of the non-canonical structures studied derive from the complex interactions between syntax and prosody. Tonality reveals the informativeness (relevance at this point of discourse) of each part of the structure, adding meaning to that of the syntactic structure. Inside the intonation phrase, tonicity indicates what is old or new information, sometimes countering the canonical use of syntax, and can be used for highlighting or contrastive purposes. As for tones, their function is to mark contrast, emphasis or implication on the part of the speaker.

Index Terms: prosody; syntax; discourse; information structure; extraposition; right dislocation; *it*-cleft; *wh*-cleft.

1. Introduction

The information structure of a sentence can be expressed both through prosody and the use of a particular syntactic structure, for instance non-canonical structures such as cleft sentences. Four structures of that kind are studied here: extrapositions, right dislocations, *it*-clefts and *wh*-clefts. The question addressed is the following: what happens prosodically when such structures are used? The aim of this paper is to study the way the prosody/syntax interface functions. Linguists often determine the prosodic pattern of a syntactic structure on the basis of its information structure. One syntactic structure is generally described as corresponding to one (at most two) specific prosodic pattern(s). In discourse, it is clearly more complex and meaning partly springs from the subtle interactions between the syntactic structures and the prosodic patterns. In the present study, a detailed prosodic analysis coupled with a discourse analysis are conducted in order i) to test how frequently the expected (canonical) prosodic patterns are used in discourse and ii) when a non-canonical pattern is found, to determine what the role of prosody is.

2. Corpus and method

Drawing on the oral component (mostly dialogues) of ICE-GB [1] (a syntactically parsed corpus of spontaneous speech in British English), to which we added various examples all taken from (semi-)spontaneous speech, we conducted two separate analyses which were then combined: a prosodic analysis and a discourse analysis. The queries on the corpus resulted in the examination of a total of 86

boundary, associated with the intonation phrase. IP boundaries are marked by slashes in the examples. For the present study, we focused on the presence or absence of an IP boundary between the two parts of the structures. We coded 1 IP when there was no boundary and 2 IPs when a boundary was present at that particular place. If there is an IP boundary elsewhere in the structure, it is not considered relevant here: example (23) below is coded as 2 IPs (it contains three in fact, one in the first part and two in the second part).

Tonicity is the place of the nuclear accent. The principle that there is only one nuclear syllable in an IP is adopted. It is the most prominent one, that bearing the tone (the distinctive pitch movement) of the IP (see for example [14] or [15]). The nucleus bears on the last lexical item of the IP. If it moves left, then it is considered as marked. The nuclear syllable is underlined in the examples below. When the structure is pronounced in a single IP, we coded - F (F standing for Fall, but it could be another tone, see below) when the tonic is found in the second part of the structure and F - if the tonic is in the first part.

The tone is the distinctive pitch-movement. The symbols used are F for a simple fall, R for a simple rise, HF for high fall and FR for fall-rise, which are the most common tones in English. The first two tones are neutral, the last two are not, and referred to as marked in the present paper.

What we shall call the canonical prosodic pattern is the pattern commonly acknowledged by linguists and which corresponds to the canonical use of the syntactic structure in terms of information structure. It slightly varies according to the structure under consideration, but in any case the pattern is made up of 1 IP and a neutral tone (F or R). What differs according to the syntactic structure is the place of the tonic (on the first or second part of the structure, see section 3).

2.3. Discourse analysis: information structure

The common point between the structures analysed is that they are concerned with information packaging [3] [16] [17] [5]. A separate discourse analysis of the corpus was conducted, the context being closely looked at in order to confront the information structure found in discourse to the notions found in the literature on the structures.

Following [18] [19], we consider that information can be discourse-old (given: having been previously mentioned in the discourse) or hearer-old (known: shared knowledge). These two notions are opposed to, respectively, discourse-new and hearer-new information.

Extrapositions: the extraposed element is generally discourse-new information (but not always) [20] [21]. Extraposition is mandatory when the content of the extraposed clause is discourse-new [20] [21] [5].

Right dislocations: the content of the dislocated element is always discourse-old [5].

Clefts: clefts are syntactically analysed as focusing structures in English [22] [8] [18] [7]. They contain a foregrounded element FE, or focus (*John, peace* in the examples above) and a presupposition PP (*who broke the vase, what we want*) [3]. The PP is defined as an open proposition (for instance *John broke x*) and the FE is a value assigned to the variable in that open proposition (*the vase*) [3] [7]. In *wh*-clefts, the presupposition has to represent information that the speaker can assume the hearer is thinking about, and thus

matches the notion of old or given information. In *it*-clefts, the PP also canonically represents old information [18].

3. Results

For each structure, the results of the prosodic analysis are given in a table. The third column refers to the examples below the tables.

3.1. Extrapositions

What can be considered as the canonical prosodic pattern for extrapositions is one IP, with the tonic in the second part of the sentence in a neutral position and with a neutral tone (Fall or Rise) (represented by - F). Indeed, in extrapositions the extraposed element is canonically new, and hence should be accented (see for instance [3] [23]).

Table 1: *Extrapositions*

		Ex	% (tokens)
Canonical prosody (- F)		1	43% (37)
Non-canonical prosody			57% (49)
1 IP	Marked tonic (- F)	2	10.5% (9)
	Marked tone (HF)	3	1% (1)
2 IPs	F/F	4	18.5% (16)
	FR/F (+/- marked tonic)	5	13% (11)
	HF/(H)F	6	14% (12)
Total			100% (86)

(1)   I mean it'd been left to me to <u>organize</u> it F

(2)   Then it doesn't matter <u>who</u>'s involved F

(3)   I never realised how hard it is to <u>talk</u> HF

(4)   I mean at that stage / it might not have been made off<u>icial</u> F / that you need to be from the from the family of <u>Aaron</u> F

(5)   So it 's im<u>por</u>tant FR/ that every time a product leaves one of these <u>stages</u> F/that it works <u>properly</u> F

(6)   But someone who 's who 's computing / they forget how difficult it <u>is</u> HF / for you to understand <u>anything</u> HF

3.2. Right dislocations

The dislocated element in noun phrase right dislocations is said to be outside the nucleus of the clause [3] [24], and always corresponds to old information, so canonical prosody in this case means one IP with a tonic on the last accented element of the core sentence with an F tone, and a deaccented dislocated element (F -).

Table 2: *Right Dislocations*

		Ex	% (tokens)
Canonical prosody (F-)		7	44% (29)
Non-canonical prosody			56% (37)
1 IP	Marked tone FR -	8	16.5% (11)
	Marked tone and tonic HF -	9	1.5% (1)
2 IPs	Marked tonic F -	10	3% (2)
	F/F	11	23% (15)
	F/F marked tonic	12	6% (4)
	HF/HF +/- marked tonic	13	4.5% (3)
	FR/R	14	1.5% (1)
Total			100% (66)

(7)   It's a bit <u>scary</u> this F

(8) It looks <u>swollen</u> that foot FR

(9) This does not sound like Dickens to <u>me</u> the bit you've given us HF

(10) A <u>good</u> run that F

(11) It is very <u>odd</u> F/ this whole aspect of code <u>switching</u> F

(12) And it got <u>out</u> F/ this <u>poor</u> wasp F

(13) It's just a<u>mazing</u> HF/ the way she's so <u>quick</u> at picking up the music HF

(14) Is that something you <u>saw</u> FR / this piece of jagged <u>metal</u> R/ or something you assumed must be <u>there</u> FR

3.3. *It*-clefts

In *it*-clefts, the first part of the structure contains the focused element, and the rest of the structure is presupposed and corresponds to discourse-old information. If prosodic focus corresponds to syntactic focus, then a canonical prosody means one IP with a tonic on the last accented syllable of the focused element, with a neutral tone (F), the rest of the sentence being deaccented (see stressed-focus *it*-clefts [18]).

Table 3: *It-clefts*

		Ex	% (tokens)
Canonical prosody (F -)		15	11% (17)
Non-canonical prosody			88.9% (137)
1 IP	- F	16	19.5% (30)
2 IPs	F/F	17	46.7% (72)
	F marked tonic /F	18	11% (17)
	HF/F or FR/(H)F	19	11.7% (18)
Total			100% (154)

(15) it's the nasal <u>retina</u> that that decussates F

(16) So so you mean that it's the nerves that <u>feed</u> them F

(17) It is the <u>system</u> F / that is res<u>ponsible</u> F

(18) It's the <u>second</u> Monday F / that we get back from Easter holiday F

(19) a. Indeed it may be because they are <u>ideals</u> HF/ and <u>not</u> truths F/that they are so deeply a<u>ttached</u> to them F

b. It's not the nasal <u>field</u> FR / that <u>decussates</u> F

3.4. *Wh*-clefts

A *wh*-cleft starts with the presupposed part, the focus being at the end of the structure. The prosody of a *wh*-cleft is canonical when there is one IP with a neutral tone (F) at the end of the second part of the structure (- F).

Table 4: *wh-clefts*

		Ex	% (tokens)
Canonical prosody (- F)		20	8% (12)
Non-canonical prosody			92.1% (140)
2 IPs	F/F	21	49.3% (75)
	FR/F	22	28.3% (43)
	FR/F marked tonic	23	9% (14)
	R/F	24	5.5% (8)
Total			100% (152)

(20) What you have to do is maybe <u>check</u> F

(21) When I said we've got the right mistake what I <u>meant</u> really F/ was that we've now got a pair of e<u>xamples</u> F

(22) So what one <u>wonders</u> is FR / what went on in his <u>mind</u> HF

(23) What <u>I</u> want FR / is some <u>new</u> people FR / telling me some <u>new</u> lies F

(24) What matters <u>now</u> R / is not what the police <u>do</u> F / but how they <u>do</u> it F

4. Discussion

What can be seen first of all from the figures in the tables above is that in our data the canonical prosodic patterns of the four structures analysed do not correspond to the most common prosodic patterns. It is striking when we consider cleft sentences (8% and 11% of the examples for *it*-clefts and *wh*-clefts respectively). This means that what is considered as the canonical use for these structures might not be, in terms of frequency, canonical at all. So what does the confrontation between the prosodic and the discourse analyses tell us about the use of these structures?

4.1. Tonality and informativeness

We claim that when there are 2 IPs associated with an F/F pattern, then it means that each part of the structure is informative. The notion of informativeness is to be distinguished from that of old/new information such as defined in 2.3. An item is informative when it is relevant at this point of discourse. Conversely, it is uninformative when it is not relevant at this point of discourse. This notion sometimes matches that of old/given information but not always. An item can be given, but important for the speaker at a particular point of discourse: it is informative.

One might think that the presence of two (or more) IPs in the sentence (independently of the tones) is due to its length (for instance (5)), but this is not necessarily the case. Quite short occurrences uttered with two IPs can be found, not only with RDs (12) but also in the more complex structures, for instance (17). There is more than just length involved here. In (17), the presupposition *someone is responsible* has just been mentioned in another cleft, so it is discourse-old, but the speaker decides to make it a highpoint in her discourse (see [16] for that notion). For her, it is informative. If the speaker had pronounced only 1 IP with F -, she would have decided to highlight only the contrastive focus (*the system*). The presupposed part would not have been prosodically highlighted and would have truly corresponded to old information not worth underlining again. This is what happens in (15), where *(something) decussates* is a presupposition that has just been mentioned by the same speaker (see (19b)).

2 IPs with an F/F pattern say more than the canonical prosodic pattern associated with the structure does. It reveals the informativeness of both parts of the structure. It is clear with RDs. In (11), even if *this whole aspect of code switching* is discourse-old (it is even the theme of the discourse), the speaker needs to make sure that the co-speaker has understood the reference of *it* and adds a dislocated element which is pronounced with a separate IP. The F/F pattern is quite frequent when the RD aims at clarifying the reference of the co-referential pronoun, or is an afterthought [25]. In both cases, the element is informative. The fact that with RDs the most common prosodic pattern is not the canonical one, while RDs are all discourse-old, shows that the notion of givenness is not sufficient to account for the structure.

The same is true of clefts. With *it*-clefts, if the presupposition is new and the focus old (which is the case in clefts used for transition, such as *It is then that…*), one might expect 1 IP with - F, but the pattern is always 2 IPs, which again is an indication that givenness is not a satisfactory explanation for the number of IPs. Informativeness is at stake. In (19b), the speaker (presumably a teacher) underlines that it is important not to mix up the nasal field and the retina as far as decussation is concerned. In that case, both *field* and *decussates* are relevant elements in the discourse at that point, and that is what is indicated by the second IP on *that decussates* (this kind is close to *informative-presupposition it-clefts* [18], or *all-new it-clefts* [26] [27]). Conversely in (15), which takes up (19b), we find the canonical pattern with one IP, the presupposition now being clear. In the *wh*-cleft (21), the speaker has been misunderstood and *mean* is important here, hence the separate IP for the presupposition. This could be called an "all-informative *wh*-cleft", though not in the sense of "all-new" but of "all-relevant" [28].

F/F extrapositions can also be analysed in the same way. In (4), the question is why the Aaronites ruled over the Levites. The content of the extraposed clause is old information (it has just been mentioned by the co-speaker), but it is nevertheless pronounced in a separate IP because it is relevant at this point. The content of the predicate is also informative (it is new here) and is announced in a separate IP as well.

With clefts, the presence of 2 IPs associated with F tones adds meaning to the syntactic structure. The syntax of clefts is concerned with focus and presupposition. Tonality for its part expresses the informativeness (or not) of each part of the structure. With right-dislocations, tonality indicates the pragmatic function of the structure, depending on the informativeness of the dislocated element. As for extrapositions, their function is to answer the principle of end-weight or end-focus [3]. Tonality reveals which part of the structure (extraposed clause and/or main clause) is informative.

4.2. Tonicity and givenness

Tonicity is concerned with old and new information at the level of the IP. As already mentioned, independently of the number of IPs, a displaced nucleus indicates that what follows is old information. This is what happens at the level of the sentence in the canonical pattern of *it*-clefts: the nucleus is not at the end of the IP and the second part (the presupposition) is old. When a nucleus is displaced (not on the last lexical item of the IP), it can serve to highlight an element, as in the case of extrapositions: in (2) *who* is the main point of the speaker, *(somebody) is involved* being given in the context. Very often the word bearing the nuclear tone becomes contrastive. For instance in (23) the nucleus on *I* makes it contrastive. The same thing happens in (10) or (18). Tonicity is also sometimes a tool to highlight the speaker's emotional attitude. In (12) the nucleus on *poor* means that the speaker is sorry for the wasp.

With *it*-clefts, the canonical pattern is F -, with one IP and a nucleus on the focus, what follows being deaccented. If the nucleus falls on the presupposed part instead of the focus, then prosody counters the syntactic structure, showing that everything is actually old information. In (16), the non-canonical prosody indicates that this cleft is only used for recapitulation (the speaker only sums up what the co-speaker just said). The cleft here plays a part at the level of the

organization of discourse. It is not used in a canonical way (to mark contrast). This type of "all-given" *it*-clefts is less acknowledged in the literature.

4.3. Non neutral tones

4.3.1. Emphatic HF

The non neutral tones can have various functions. With *it*-clefts, if the HF tone falls on the focus, it will serve to highlight the focalisation which is already present through the syntactic structure (in that case it is in accordance with syntax): in (19a) it highlights a contrast. The HF tone can also express the speaker's attitude (such as emphasis) (22). In extrapositions it is likewise used for emphatic purposes (6).

4.3.2. Implicational and contrastive FR

The FR tone indicates a particular attitude of the speaker towards their speech (see [10] among others). It is a non-neutral tone and according to the structure it can have various meanings. With an RD such as (8), it involves greater implication on the part of the speaker (for instance empathy with the co-speaker). This also holds for *it*-clefts. In (19b), the presence of the FR tone on the first part of the cleft underlines the speaker's warning to be careful not to mix up the nasal field and the retina. With a *wh*- cleft, its function is to draw the attention of the co-speaker on the second part of the structure (the focused element) [23] [29] [30] [28]. The first part of the cleft then brings in little information (in spite of the presence of a separate IP). In (22), *what one wonders* has no particular importance. What is relevant is the end of the sentence, and this is marked by the FR tone in the first IP (the *wh*-clause). The same is true for extrapositions (5).

More classically, the FR tone can also be used as an indication of contrast (see [10] [14] among others), as in (14) (RD) where *saw* is opposed to *assumed* or in (23) (*wh*-cleft).

5. Conclusion

This study shows that the canonical uses of the structures under consideration are not in fact canonical in terms of frequency, as revealed by prosody. Indeed, the canonical prosodic patterns are not the most frequent ones.

Prosody can be in accordance with syntax and highlight focalization or contrast in clefts for instance, or counter it to bring in new meaning. It can play a part at two levels, either by telling us what the discourse function of the structure is (RDs), or by revealing its information structure in terms of informativeness (tonality) or givenness (tonicity). Tonality plays a part at the level of the sentence (2 IPs associated to the F/F pattern indicating that both parts of the structure are informative) and tonicity at the level of the IP - whether the IP corresponds to the whole sentence or not. The tones come into play at yet another level. They can be used for emphatic (HF) or contrastive (FR) purposes. Depending on the structure, the FR tone can also have various functions, but is very often implicational.

This study mainly bears on the relations between prosody and information structure. Prosody can have other functions not mentioned here but which are worth investigating, for instance at the level of the interaction –such as indicating that an RD is a "discourse-filler" (F/F) – or at the level of the discourse presuppositions (contradicting the opinion of other speakers) (FR).

6. References

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