Research Article

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Variation in the prosody of illocutionary adverbs

Abstract: Illocutionary adverbs such as *frankly*, *honestly*, and *seriously* have been commonly analysed as interpersonal (non-truth-conditional) modifiers that are characterised by syntactic and prosodic detachment from the 'host' they are associated with. However, recent accounts (*e.g.* Keizer 2018a) have shown that the formal (syntactic and prosodic) properties of such adverbs do not necessarily follow directly from the semantic non-truth-conditionality towards the main proposition. With respect to the prosodic realisation, such interpersonal adverbs can either be integrated into the respective utterance or detached from it (*i.e.* form a separate Intonational Phrase [IP]). The prosodic realisation is determined by the specific discourse-pragmatic features of such interpersonal adverbs, namely whether they are intended as separate (Subsidiary) Discourse Acts or whether they are part of a single Discourse Act at the Interpersonal Level (Keizer 2018a, 2018b, 2019, 2020). The aim of this article is to investigate these predictions by looking into the prosodic features of illocutionary adverb on the one hand and their discourse-pragmatic features on the other. It will be argued, based on the prosodic analysis of a set of spoken corpus data, that (i) the formation of separate IP is indeed triggered by the formation of Subsidiary Discourse Act, (ii) the formal properties (position and intonational pattern) are determined by the specific rhetorical function assigned to the respective Discourse Act, and (iii) the prosodic integration correlates with the adverbs being integral part of a single Discourse Act at the Interpersonal Level.

Keywords: illocutionary adverbs, prosodic integration, prosodic detachment, intonational phrase, phonological phrase, interpersonal modifiers, Subsidiary Discourse Act

1 Introduction

This article sets out to investigate the complex relation between the prosodic realisation and the discourse-pragmatic properties of certain interpersonal adverbs, focusing on the illocutionary adverbs *frankly*, *honestly,* and *seriously*. The aim is to offer a Functional Discourse Grammar (FDG) analysis of the variation that can be observed in the prosodic realisation of these elements, in particular their prosodic (non-)integration into the 'host' they modify. Following Keizer's (2018a) proposal to analyse interpersonal adverbs either as separate Discourse Acts or modifiers within a single Discourse Act and to correlate this with syntactic and prosodic (non-)integration, this contribution empirically explores the interface between these different levels of analysis. Particularly, the aim is to further explore the distinction between the two analyses at the Interpersonal Level (IL) by providing phonological evidence resulting from a prosodic analysis of these adverbs. More generally, the article is intended to point out the need for a discourse-functional approach to the so-called syntax-prosody interface, and FDG-internally, the need to devote more attention to the relation between the IL and the Phonological Level (PL).

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It has been hypothesised in the literature that semantic and syntactic non-integration of illocutionary adverbs (their non-truth-conditionality with regard to the main proposition and their extra-clausal status) triggers their prosodic non-integration in the form of 'comma intonation' (*e.g.* Haegeman 1988, Espinal 1991, Burton-Roberts 1999, 2006, Huddleston and Pullum 2002, Potts 2005):

(1)   *Honestly*, I don't mind.   (ICE-GB S1A-048-069)
(2)   You're such a snob, *honestly*.   (ICE-GB S1A-007-182)

However, prosodic research on these and similar extra-clausal elements has shown that their prosodic (non-)integration depends on several interacting factors, such as position, prosodic make-up, and discourse-pragmatic factors (*cf.* Dehé and Kavalova 2007). Furthermore, Keizer (2018a,b, 2019, 2020) has shown that a direct correspondence between syntactic, semantic, and prosodic (non-)integration of illocutionary adverbs is not as clear-cut as has been portrayed in previous accounts. In the case of such short interpersonal modifiers, it is more plausible that their prosodic (non-)integration reflects their discourse-functional status.

The following section offers an overview of the existing analyses of illocutionary adverbs, starting with a brief general overview (2.1), followed by a short discussion on their prosodic analyses (2.2), and ending with the FDG treatment of illocutionary adverbs (2.3), as well as the representation of prosody in the model (2.4). Section 3 comprises the present empirical study, stating the aim of the study and the research questions (3.1), reporting on the data and methodology (3.2), and the results of the prosodic analysis (3.3). Section 4 discusses the results within the framework of the FDG model, and the final section concludes the article.

2 Background

The following subsections briefly review the literature dealing with illocutionary adverbs and similar non-truth-conditional expressions that are generally considered to be extra-clausal constituents in the sense that they do not contribute to the truth value of the main proposition of the 'host' clause. In addition, some of the recent prosodic research on such elements will be presented, portraying the variation in the prosodic realisation of such extra-clausal elements. Finally, the last subsections will briefly introduce the FDG treatment of the adverbs in question, as well as the treatment of prosody on the whole in the theoretical model.

2.1 Interpersonal modifiers in previous accounts

It is generally acknowledged that there is a group of adverbs, analysed at the IL in FDG (see the introduction of this special issue), that have a different modifying function from other adverbs in that they are not part of the main proposition of the clause they modify. As such, they constitute a comment on the proposition of the 'host' clause, indicating how the propositional content of the statement is related to the context (Huddleston and Pullum 2002, 576). These adverbs can, for example, comment on the content of the proposition by expressing speaker's attitude (*unfortunately, sadly, luckily*) or comment on the performance of the illocutionary act (*frankly, honestly, seriously*), *etc.* (see Keizer 2020 for a classification of interpersonal adverbs).

Since the function of interpersonal adverbs is to comment on the host, they have been considered external to the proposition of the host, as evidenced by their non-truth-conditionality, by their inability to be clefted or questioned, and by the fact that they fall outside the scope of negation (*e.g.* Haegeman 1988, Espinal 1991, Burton-Roberts 1999, 2006, Huddleston and Pullum 2002, Potts 2005, see Keizer 2018a

for a comprehensive overview). They have therefore been argued to be (to some degree) external to the syntactic structure of their host sentence and have been classified as 'disjuncts,' 'supplements,' 'extra-clausal constituents/elements,' *etc*. The general view of these non-propositional adverbs is that they are elements that are linearly represented in the clause but are not part of its hierarchical structure in the same way as other syntactic constituents are – hence their extra-clausal status (*cf.* Dik 1997, 381, Huddleston et al. 2002, 1352).

Most theoretical accounts of interpersonal adverbs postulate that their semantic and syntactic non-integration is directly reflected in their prosodic non-integration, a characteristic traditionally referred to as 'comma intonation.' Potts (2005, 98), for example, states that such adverbs are special adjuncts ('supplements') that are characterised by the 'comma feature' which turns truth-conditional modifiers into non-truth-conditional ones (or in his terms 'at-issue' content into 'not-at-issue' content or 'conventional implicatures'). For example he compares the verbal modifier *luckily* with its attitudinal use and concludes that the only difference between them is that the latter has the comma feature and is thus prosodically set off from the host sentence.

In prosodic research, interpersonal adverbs (along with other sentence- or clause-oriented adverbs) have usually been included in the class of (paren)thetical expressions. Parentheticals are considered to be in their own intonational domain and to be marked by a change in pitch level, loudness, tempo, and (occasionally) by the presence of pauses (*e.g.* Crystal 1969, Pierrehumbert 1980, Nespor and Vogel 1986, Selkirk 1986, Bolinger 1989, Truckenbrodt 1999, Gussenhoven 2004; for overviews, see Astruc-Aguilera 2005, Dehé and Kavalova 2007, Dehé 2014). Accordingly, in prosodic theory, interpersonal adverbs are often described as being prosodically set off from the surrounding parts of their host. The prediction that these adverbs are realised as intonational phrases (IPs) is based on the hypothesis that, because they are extra-sentential insertions and syntactically isolated (independent) units, they are also prosodically isolated. Thus, the lack of syntactic integration into the surrounding text typically correlates with a lack of prosodic integration (Selkirk 1986 and related work, Nespor and Vogel 1986, Truckenbrodt 1999), which neatly substantiates the comma intonation feature.

In Nespor and Vogel's (1986, 188) Prosodic Hierarchy, for example, parenthetical expressions (illocutionary adverbs among them) by default form an IP, regardless of their position in the host sentence. Similarly, Match Theory (Selkirk 2005, 2011), an Optimality Theory treatment of syntax-prosody mapping, follows Potts (2005) in assuming that parentheticals have the syntactic comma feature because they are characterised by their own illocutionary force. More precisely, they are analysed as instances of embedded illocutionary clauses,[1] which must be matched onto the IP domain. This means that, just like root clauses, parentheticals are "performed as distinct speech acts and are set off by Intonational Phrase edges from what surrounds them" (Selkirk 2005, 6).[2]

In summary, the default description of non-truth-conditional, interpersonal adverbs in the literature is that they are syntactically, semantically, and prosodically non-integrated elements that have a primarily discourse-pragmatic relationship with their host. What is more, in much of the theoretical literature, the general view seems to be that prosodic detachment directly follows from the syntactic non-integration and/or the non-truth-conditionality of the adverb in question. However, as recent empirical research on various parenthetical expressions shows, the correlation between the different levels of analysis (syntactic,

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1 According to Selkirk, "the illocutionary clause is the highest syntactic projection of the sentence and carries its illocutionary force, which determines its appropriateness in a discourse context" (Selkirk 2011, 453). In other words, standard clauses have illocutionary clauses as a higher syntactic projection.

2 Both the Prosodic Hierarchy and Match Theory acknowledge the fact that there is some degree of non-isomorphism between syntax and prosody. Nespor and Vogel (1986) explain the mismatch by the restructuring of the IP due to the length, complexity, rate, and style of speech, *etc*. Match Theory states approximately the same, but formulates it in Optimality Theory terminology: the faithfulness constraints can be overridden by prosodic markedness constraints. In both approaches, any discourse-functional factors that might affect the prosody are regarded as irrelevant for the syntax-prosody mapping because such features are not considered to be part of the grammar.

semantic, and prosodic) is far from straightforward. Keizer (2018a,b), for example, points out that there need not be a direct correspondence between syntactic, semantic, and prosodic (non)integration. In her analysis of interpersonal adverbs such as *frankly*, it is shown that, while some prosodic features follow from the truth-conditional status and the syntactic features of the adverb in question, others are triggered by more specific discourse-pragmatic functions, namely whether it forms a separate Discourse Act or not. Consequently, only those that do are realised as separate IPs (Keizer 2018a, 76–83).

2.2 Prosodic variation

Empirical research on the prosodic features of parenthetical expressions (particularly the shorter ones like interpersonal adverbs) has shown that prosodic (non-)integration depends on several interacting factors, such as position, prosodic make-up, production/processing factors, and discourse-pragmatic factors (Allerton and Cruttenden 1974, Wichmann 2000, 2001, Watson and Gibson 2004, Peters 2006, Kaltenböck 2008, Dehé 2007, 2009, 2014, Dehé and Wichmann 2010a,b). Wichmann (2000, 96–7), for example, notes that the typical features of parenthesis, such as separation, lowered pitch, and rising terminal ending, may all be suspended due to the communicative function of the constructions in question (*e.g.* an aside, an appeal, a warning, a comparison, a revision, *etc.*; see also Bolinger (1989, 185–203)).

Kaltenböck (2008) explains left-bound and right-bound prosodic integration of comment clauses (CCs) as indicators of the scope the CC has over its anchor (a phrase or a clause). He defines scope in semantic-pragmatic terms as 'the topic to which the comment of the CC applies' (Kaltenböck 2008, 102–3). In cases of full prosodic integration of CCs (the left–right binding), it seems that the CC has semantically bleached and serves as a free-floating discourse marker or a filler. Dehé and Wichmann (2010a) come to a similar conclusion, namely that prosodically integrated and, crucially, unstressed, non-initial CCs are analysed as elements on a cline of grammaticalisation which have a discoursal or interactional function. Prosodically separate, prominent instances, on the other hand, are treated as epistemic markers of stance (Dehé and Wichmann 2010a). In other words, the various prosodic realisations seem to be discourse-pragmatically motivated.

Dehé (2009, 2014) approaches the prosodic properties of parentheticals in terms of Prosodic Structure Theory and particularly Match Theory (Selkirk 2005, 2011). Investigating non-restrictive relative clauses, clausal parentheticals, and CCs, Dehé evaluates the truth of the assumption that parentheticals are realised as prosodically isolated, *i.e.* the direct syntax-prosody mapping. She concludes that not all parentheticals form IPs and states that the presumed general mapping algorithm of 'map-parenthetical-to-IP' can be overridden by non-syntactic constraints such as prosodic weight or length, semantic scope, or discourse-pragmatic functions. Shorter parentheticals, in particular, may be integrated and, similar to Kaltenböck (2008), Dehé concludes that one of the reasons why CCs tend to be integrated is to indicate their scope over the preceding or following domain. In examples like *But my friend got it **I think** about twelve years ago*, integration with the left or the right element disambiguates which of these the CC relates to (Dehé 2009, 604–7). However, Dehé explains most 'mismatches' in terms of Nespor and Vogel's (1986) restructuring of the IP. This in principle means that prosodic integration here is more of an exception than the rule. The problem with this conclusion, however, is the fact that, in the case of CCs in her dataset, it is the majority that are realised as integrated, so prosodic separation is actually the exception.

The variation of the intonation of attitudinal and illocutionary adverbs has been described in some detail by Allerton and Cruttenden (1974). According to Allerton and Cruttenden (1974, 13), in the initial position, these adverbs can be part of "the pre-nuclear tune," where they are accented but do not have to carry the nuclear tone. In other words, they are integrated in a larger IP domain. When sentence-initial attitudinal adverbials are separate and carry a nuclear tone, they always bear a fall–rise (Allerton and Cruttenden 1974, 15) and the intonation of the initial illocutionary adverbs depends on whether they occur in statements or questions: whereas in statements, they may come with either a fall (*honestly, seriously,*

truthfully) or a fall–rise (*frankly, confidentially, candidly*), in questions, they all require a falling intonation (Allerton and Cruttenden 1974, 20–1). This variation is taken to express the difference in underlying speech act (declare: *I say honestly* vs command: *tell me honestly*).

Finally, some experimental studies have shown that sentential adverbs in final position, particularly those analysed as interpersonal in FDG, do not show clear characteristics of a separate IP: they appear to be detached but are deaccented (Astruc-Aguilera 2005, Astruc-Aguilera and Nolan 2007). Astruc-Aguilera and Nolan (2007, 252) also conclude that the non-canonical prosodic phrasing is pragmatically constrained, but do not specify what exactly is meant by this. These findings go hand in hand with Pierrehumbert's (1980, 95–96) conclusion that such expressions ('tags' in her terminology) usually lack pitch accents in final position, but are nevertheless set off by some final lengthening of the preceding domain. If they do carry pitch accents, they potentially take on a different meaning (*e.g.* vocative *He's my friend, John.* vs appositive *He's my friend John*).

In summary, the prosodic literature shows some puzzling differences between extra-clausal expressions in initial, medial, and final position. Given that an element's prosodic realisation varies according to the position in which it occurs, it is valid to ask whether the different mechanisms used for such realisations can be shown to serve different discourse-pragmatic functions. A further question is how exactly such functional and positional constraints are reflected in the prosodic realisation and what relations can be postulated to hold between interpersonal information and phonological encoding. Since FDG models the relation between the pragmatic, semantic, morphosyntactic, and phonological levels of grammar, it offers the tools needed for a systematic approach to the elusive interface between pragmatics and the other layers of the grammar of the adverbs analysed in this article.

2.3 Illocutionary adverbs in FDG

As in many other accounts (see Section 2.1), FDG analyses adverbs such as *frankly, honestly,* and *seriously* with regard to their (non-)truth-conditionality, *i.e.* as non-truth-conditional adverbs they are analysed at the IL, whereas as truth-conditional adverbs they belong to the Representational Level (see the introduction to this special issue). Consider the following two examples from Hengeveld and Mackenzie (2008, 128–9):

(3) *Frankly*, Sheila is ill.
    a) No. (She isn't.)
    b) *No. (You are not being frank.)

(4) Peter told me *frankly* that Sheila is ill.
    a) That's not true. (She isn't.)
    b) That's not true. (He was not being frank.)

Because the information conveyed by *frankly* in (3) cannot be denied together with the propositional content of the host statement, the adverb falls outside the main proposition. However, when *frankly* is a manner adverb, as in (4), its contribution to the truth-conditionality of the main proposition can be denied. The modifier, therefore, is part of the propositional content of the host.

With regard to the 'comma intonation' feature, it would follow that the interpersonal (non-truth-conditional) use would require such prosodic realisation, as in example (3), whereas the manner (truth-conditional) adverb in (4) would be prosodically integrated. However, as has been pointed out by Keizer (2018a,b), the correlation between the different levels of analysis (syntactic, semantic, and prosodic) of the interpersonal adverbs is not clear-cut. Instead, FDG postulates that the semantic, syntactic, and prosodic features of interpersonal adverbs are all triggered by their interpersonal status. Thus, although all interpersonal adverbs are semantically non-integrated (non-truth-conditional), they may be analysed

either as modifiers of a certain layer at the IL (*e.g.* modifiers of the Illocution of a Discourse Act), or as separate Discourse Acts (Keizer 2018a). Consider the following examples:

(5)   I *honestly* don't know.
(6)   I don't know, *honestly*.

In both of these examples, *honestly* could be analysed as the modifier of the Illocution at the IL (see representation in (7)), but *honestly* in (6) can additionally be analysed as a separate Discourse Act (see representation in (8)). In that case, the adverb is used as a Subsidiary Discourse Act which is related to its host (the Nuclear Discourse Act) by means of a rhetorical function Afterthought (Keizer 2018a, 76):

(7)   IL: (A_I: [(F_I: DECL (F_I): *honestly* (F_I)) (P_I)$_S$ (P_J)$_A$ (C_I)] (A_I))
(8)   IL: (M_I: [A_I: [(F_I: DECL (F_I)) (P_I)$_S$ (P_J)$_A$ (C_I: -I don't know-[3](C_I))] (A_I)]
          [A_J: [(F_J: DECL (F_J)) (P_I)$_S$ (P_J)$_A$ (C_J: -honestly-(C_J))] (A_J)$_{Afterthought}$] (M_I))

Keizer postulates that this distinction is exactly what is reflected in the syntactic status and prosodic realisation of the interpersonal adverbs: when functioning as modifiers, interpersonal adverbs are syntactically and prosodically integrated, and when functioning as separate Discourse Acts, they are syntactically and prosodically detached. The fact that as a separate Discourse Act *honestly* has its own illocutionary force triggers a prosodic realisation characterised by prominence, detachment, full intonation contour, and other cues that indicate a separate IP domain (Keizer 2018a, 76–9, see also Giomi and Keizer 2020, Kaltenböck and Keizer 2022). The present study is intended as an empirical prosodic investigation of this hypothesis with a further intention to model these adverbs at the interface between the IL and the PL in FDG. However, before the study is presented, a brief explanation of these two levels is due.

2.4 Prosody in FDG

The PL is where the prosodic realisation is captured in FDG. Like many other phonological models (*e.g.* Nespor and Vogel 1986), the PL is hierarchically structured with the assumption that its layers are in certain correlation with the layers postulated at other levels in FDG. The PL receives input from all three other levels in a top-down manner (for a brief description of the FDG architecture, see the introduction to this special issue), but crucially some levels can be skipped (Hengeveld and Mackenzie 2008, 421). This means that the information from the IL can be directly coded at the PL.

The highest layers at the PL are prosodically defined and comprise the Utterance (U), the Intonational Phrase (IP) and the Phonological Phrase (PP). Each layer is made up of the units from the lower layers and is characterised by phonological phenomena typical for that layer alone, specified by tertiary operators in the model (*e.g.* indicating a rising (r) or falling (f) intonation or neither (n) within an IP or a PP) (Hengeveld and Mackenzie 2008, 429). For example the IP is the domain of a single, systematically identifiable intonation contour that often correlates with a specific configuration at the IL (*e.g.* an IP with a rising intonation can be triggered by a Discourse Act with interrogative illocution) (Hengeveld and Mackenzie 2008, 432–6). Similarly, the PP is the domain capturing various phonological phenomena that do not extend to the entire IP, and which themselves correlate with certain discourse-functional phenomena represented at the IL (Hengeveld and Mackenzie 2008, 436–43). The interface between the IL and the PL postulates that the IP will typically (but not always) coincide with the Discourse Act and that the PP typically correlates with the

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3 The dashes indicate that the representation is a simplified one. There is further sub-structure within a Communicated Content but as this is irrelevant here it has been left out in the interest of readability.

Subacts within the Communicated Content of a Discourse Act (for a concise description of the structure of the Discourse Act, see the introduction to this special issue).

3 The study

3.1 The aim

If the prosodically detached interpersonal adverbs can be analysed as separate Discourse Acts with an illocution and specific discourse-pragmatic and rhetorical functions, then a prosodic analysis can help find out how these functions are mapped onto some specific prosodic phrasing and some particular intonational patterns. The same is true for adverbs functioning as modifiers within a single Discourse Act: it is necessary to establish the specific functions that relate them to their phonological features (*e.g.* accented/deaccented, integrated in the preceding/following domain, *etc*.) and the restrictions on their (clausal or linear) placement. In other words, it is necessary to investigate these adverbs prosodically in order to determine the exact relation between their interpersonal status and their phonological representation.

For a comprehensive analysis, all these factors and the relations between them need to be considered. Therefore, this article offers an empirically based FDG analysis of these relations to shed light on whether the proposed analysis is borne out by the phonological evidence and whether it indeed can account for the observed prosodic variation. The following research questions are addressed:

1. What prosodic realisations of illocutionary adverbs can be found in actual spoken data?
2. Does the position of an adverb play a role in its realisation, *i.e.* are there different realisations in different positions? If so, what constraints does the position of an adverb pose on its prosodic realisation, *i.e.* do position and prosody reinforce each other or is there a trade-off between them?
3. What are the particular discourse-pragmatic (sub)functions of the adverbs under investigation?
4. Is there a correlation between the function(s), position, and prosody? If this is the case, does it then fit the predictions of FDG (Keizer 2018a)?
5. What are the broader implications for FDG when it comes to the interface between the IL and the PL?

3.2 Data and methods

Since the aim of this study is to investigate the prosody and functions of illocutionary adverbs in actual spoken communication, a corpus of spoken language was used. The data were drawn from the spoken part of the British component of the International Corpus of English (ICE-GB version 3.0; *cf.* Nelson et al. 2002), which contains approximately 640,000 words from various text types, ranging from private conversations, telephone calls, business meetings, and classroom lessons to public broadcast discussions and commentaries, court hearings, and parliamentary discussions. ICE-GB is particularly convenient for a prosodic analysis because the transcription of the spoken data is accompanied by audio files which are, for the most part, suitable for an auditory and instrumental prosodic analysis.

Of the many adverbs that could potentially be used as illocutionary, the corpus contained only the adverbs *frankly*, *honestly*, and *seriously*. All the tokens of these three adverbs were retrieved by manual search after which the illocutionary uses were separated from the examples where the adverbs had a manner use (*e.g. to speak frankly*). In total, 52 tokens of illocutionary adverbs entered the analysis, 12 of which were instances of *frankly*, 33 of *honestly*, and 7 of *seriously*.

The adverbs were then divided according to the position relative to the clause they are associated with, namely the initial, medial, and final position. The initial position is taken to be the position before the

clause carrying the main proposition, possibly preceded by a conjunction or an extra-clausal element such as a comment clause:

(9)   *seriously* he was sitting there   (ICE-GB S1A-037-012)
(10)   but *frankly* that's nonsense   (ICE-GB S2B-021-013)
(11)   I mean *honestly* I'd prefer you two to be there   (ICE-GB S1A-048-097)

In addition, the data contained one instance of *seriously* standing on its own, with the speaker just uttering the adverb itself as a question. This instance was coded as the initial position because it obviously does not correspond to any other position as defined below.

The medial position is any position between the subject and the main verb:

(12)   I *honestly* don't know   (ICE-GB S1B-048-108)
(13)   Europe could *frankly* get along without us   (ICE-GB S2A-023-039)
(14)   Some of the rules of this House *quite* frankly baffle me   (ICE-GB S1B-051-086)

The final position is defined as any post-verbal position:

(15)   you're such a snob *honestly*   (ICE-GB S1A-007-182)
(16)   so I don't think they've behaved well at any stage *frankly*   (ICE-GB S2B-013-065)
(17)   Well she's an old battleaxe *honestly*   (ICE-GB S1A-039-120)

In the end, the data comprised 17 adverbs in the initial, 20 in the medial, and 15 in the final position. The prosodic analysis was done in Praat (Boersma and Weenink 2019). It included the identification of the tonal contours associated with the target adverb and with the material in its immediate environment (pitch accents and boundary tones in target positions). The identification of the prosodic boundaries additionally consisted of the measuring of the length of pause(s) in the vicinity of the target sequence as well as the length of the very last syllable of the target sequence (*cf.* Cruttenden 1997). Domain boundaries in terms of boundary tones were established following the conventional criteria found in the prosodic literature and using the ToBI (Tones and Break Indices) annotation system (Beckman et al. 2006), *i.e.* following the now widely accepted framework of Pierrehumbert (1980), further developed under the term Autosegmental-metrical (AM) model (Ladd 2008). In addition, the analysis relied on the extensive literature from outside the AM model when it came to the interpretation of pauses, identification of breaks and boundaries, and other cues to a detached intonation domain (*e.g.* Crystal 1969, Nespor and Vogel 1986, Bolinger 1989, Cruttenden 1997, Gussenhoven 2004).

In line with Pierrehumbert (1980) and Beckman and Pierrehumbert (1986), the IP domain comprises pitch accent tones (T*), phrase tones (T-), and boundary tones (T%). In addition, a lower prosodic constituent, the PP[4] is also identified. The main distinction between the two constituents is the existence/lack of an IP boundary tone (T%). So, whereas IPs are separated by such boundary tones, the PPs within an IP are separated from each other by phrase tones (T-).

The IP is thus intonationally defined in terms of a complete tonal contour (tune), modulated by the combination of the above stated tones. For example a combination of a high pitch accent (H*), a low-phrase tone (L-), and a high-boundary tone (H%) is an IP that has a fall–rise tune (H*L-H%). An IP with a nuclear fall would be a combination H*L-L%.[5] IP is also the domain across which declination applies, such that later pitch peaks within an IP are downstepped with regard to earlier ones (see *e.g.* Ladd 2008). Pitch reset

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4 Intermediate Phrase in the ToBI terminology (Beckman and Pierrehumbert 1986).
5 This is a simplified depiction of the IP structure, because an IP can, and usually does, have more than one pitch accent and more than one phrase tone. What is considered the tune here is the nuclear tune, i.e. the very last pitch movement that normally ends in an IP boundary tone (T%). All the other pitch accents and phrase tones are part of the pre-nuclear tune, or the head of the IP in the British tradition (Crystal 1969). Considering that the target sequence in the study is a single word, the realisation as

on unaccented syllables following a nuclear tone indicates the beginning of a new IP domain. More precisely, pitch discontinuities and a step-up in pitch on an unaccented syllable after a nuclear fall and a step-down in pitch on an unaccented syllable following a rise are seen as evidence for an IP boundary. Pitch continuation, *i.e.* a continuous rise or fall or no change in pitch level/direction in a target position, is taken as evidence against an IP boundary.

3.3 Results

The prosodic analysis has shown that overall the majority of the adverbs are integrated into the surrounding prosodic material, with some differences with respect to the position. Particularly, in the final position, the adverbs have shown a tendency towards prosodic separation. These results are presented in the following two subsections. The overall results according to the position and prosodic detachment/integration are summarised in Table 1.

Table 1: Number of prosodically integrated and detached adverbs with respect to position

	Initial	Medial	Final
Separate IP	6	2	9
Prosodically integrated	11	18	6
Total number	17	20	15

3.3.1 Prosodic separation

Adverbs characterised by prosodic separation were found in all three positions. They were detached from the rest of the utterance by forming a separate IP domain as defined in the previous section. The adverbs most commonly formed a separate IP in the initial (6 out of 17 instances) and final position (9 out of 15 instances), and there were only two instances of separate IP in the medial position (out of 20). Three patterns of IP tunes could be observed, namely H*L-L% (fall), H*L-H% (fall–rise), and L*L-H% (low rise). Whereas the H*L-L% was observed in all three positions, the H*L-H% and L*L-H% were found in the initial and final position, respectively.

   Most of the adverbs that were prosodically detached in the first position were characterised by the H*L-L% tune (example 18, plotted in Figure 1). Figure 1 shows the H* pitch accent associated with the lexically stressed syllable after which the pitch drops to an L-phrase tone and continues steadily to the L% boundary characterised by the lowest pitch as well as by significant final lengthening (on -*ly*). The pitch contour is then reset for the next IP domain, *i.e.* the following unstressed material (*he was*) is associated with a step-up in pitch until the next H* pitch accent on the lexically stressed syllable of *sitting*.

(18)   But no but listen when I asked him to describe somebody to describe a
       mate of his and to describe someone he liked and someone he didn't
       like he broke out in a sweat
       Seriously he was sitting there and he was going uh uh caring and he was
       struggling to find the words friendly   (ICE-GB: S1A-037 #12-14)

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a full IP would always result in only a nuclear tune. Therefore, a more detailed explanation of Pierrehumbert's (1980) framework is not necessary here.
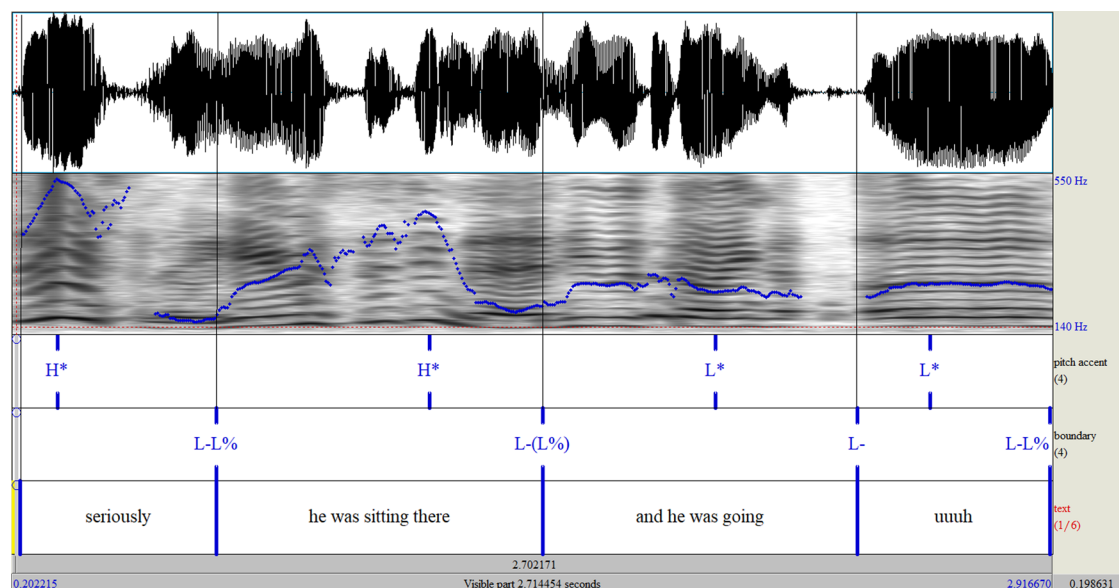
Figure 1: *Seriously* in the initial position separated from the following material with an IP boundary (ICE-GB S1A-037-012).

The second tune associated with the prosodically detached illocutionary adverbs in the first position was the H⋆L-H%, the fall–rise (example 19, plotted in Figure 2). As pointed out in the previous section, despite the fact that this example was uttered on its own, it was still considered as an instance of the initial position. Figure 2 shows an H⋆ pitch accent associated with the stressed syllable of *seriously* followed by a fall to an L-phrase accent, but unlike the contour in Figure 1, there is a final rise on the last syllable (*-ly*):

(19) (Speaker A proposes a Cadbury's creme egg eating competition mixed with drinking tequila and maggots and continues)
    A: Yeah this is it. We need a large kind of psychological finale.
    B: After all that?
    A: After all that. There will be people left after this.
    C: *Seriously?*
    A: We're going to have between eight and ten competitors.   (ICE-GB: S1B-079 #194-211)

As for the two instances of prosodic separation in the medial position, both were clearly characterised by prosodic detachment, being reset to or over the maximum level of the pitch peak in the earlier domain, thus breaking the declination. Example (20) and Figure 3 show one such instance for *frankly* (modified by *quite*), where we see that the H⋆ tone associated with the target sequence is as high or higher than the preceding H⋆ tone associated with the preceding intonational domain. Considering that the preceding IP ends in an L⋆ nuclear accent on *house*, such a reset represents a significant detachment from this IP. In addition, the target IP clearly ends with an L-H% boundary tone cued by significant final lengthening on *-ly* and the following pause.

(20) Mr Deputy Speaker I am not an expert on procedure <> and some of the rules of this House
    quite frankly baffle me and some of them I find irrelevant   (ICE- GB: S1B-051 #86)

Finally, the realisation as a fully detached IP was most prominent in the final position. This realisation was characterised by the strongest cues for IP boundary, with a very distinctive and auditorily prominent pitch reset on the targeted material preceded by significant final lengthening of the last syllable associated with the previous intonational domain. In addition, it was always characterised by a complete and clearly observable pitch contour, allowing for different patterns, depending on the pitch accent associated with the
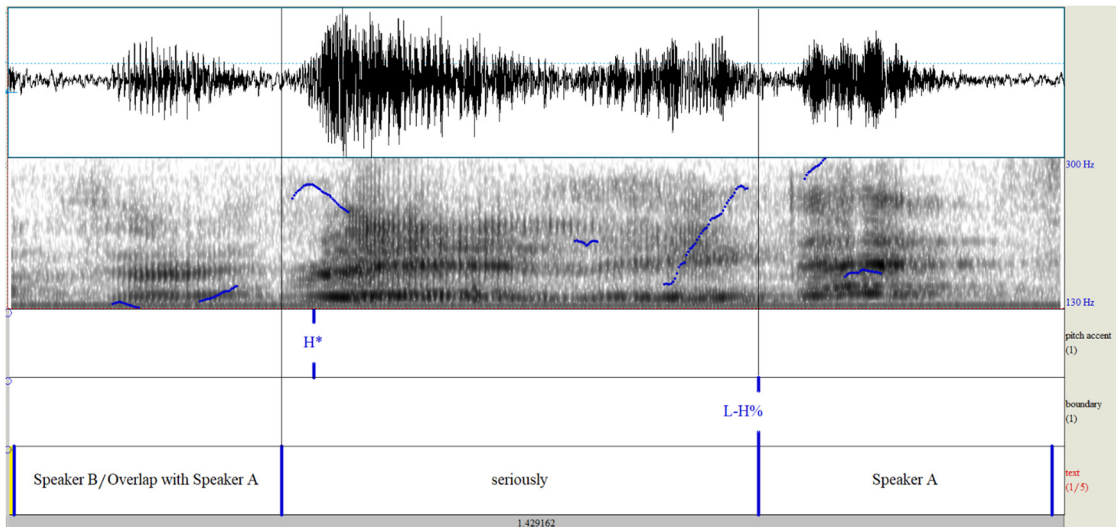
Figure 2: *Seriously* uttered on its own as a separate IP (ICE-GB S1B-079-210).
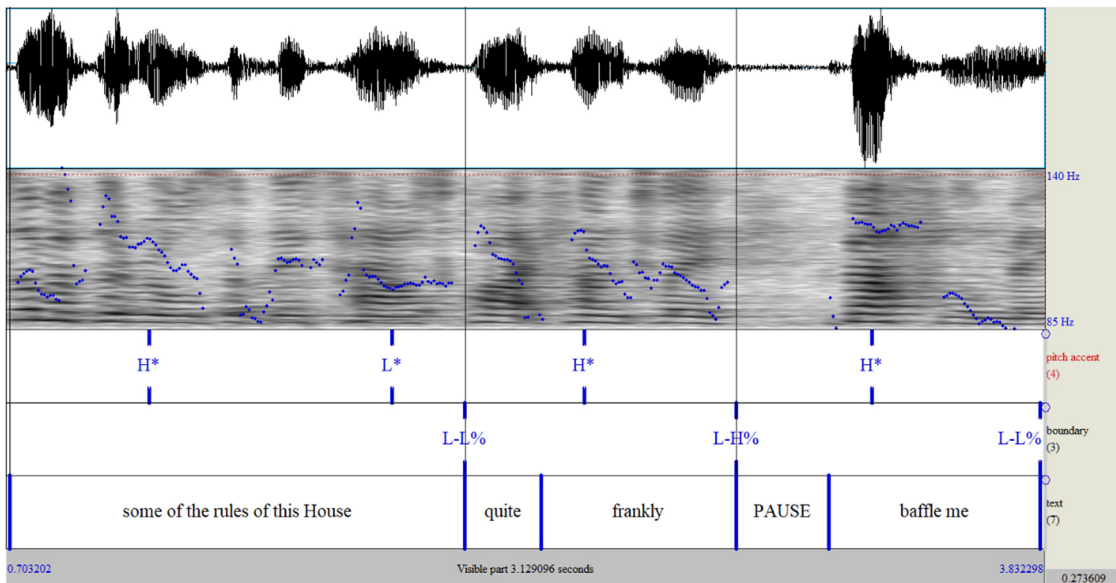

Figure 3: *Frankly* in the medial position separated from the surrounding material with an IP boundary (ICE-GB S1B-051-086).

stressed syllable (high or low) and the particular combination of the following phrase and boundary tones. As mentioned above, these IP tunes are H*L-L% (example 21, plotted in Figure 4) and L*L-H% (example 22, plotted in Figure 5):

(21) (Speaker A proposes to excuse the two other speakers from a visit to her mum's)
      A: Yeah but I can easily say one of you (unclear word)
      B: No don't don't don't don't (overlap with C)
      C: No don't *honestly*   (ICE-GB: S1A-048 #75-77)

(22) Then there's the question of paying for it
      And we've seen the shambles that they all got into over that as well
      So I don't think they have behaved well at any stage *frankly*   (ICE-GB GB: S2B-013 #63-65)
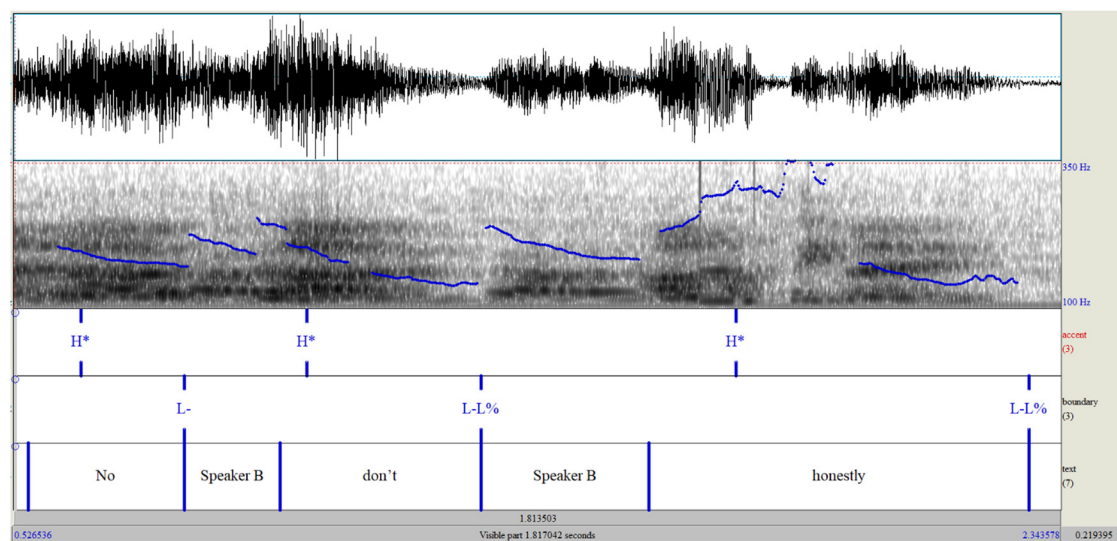
Figure 4: *Honestly* in the final position separated from the preceding material with an IP boundary (ICE-GB S1A-048-077).
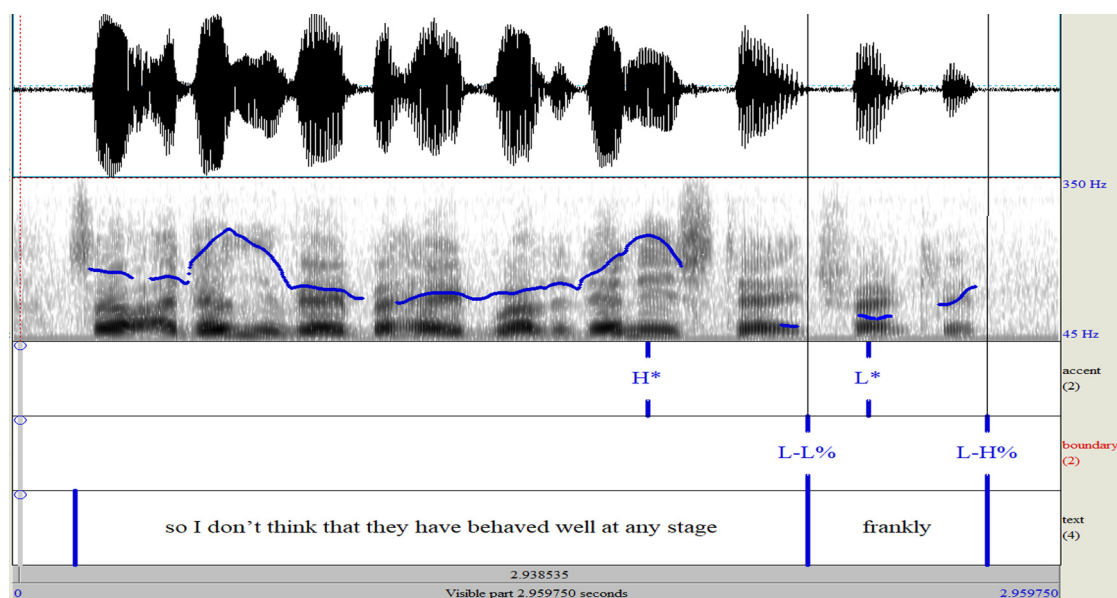

Figure 5: *Frankly* in the final position separated from the preceding material with an IP boundary (ICE-GB S2B-013-065).

The instances where the illocutionary adverbs under investigation were prosodically realised as separate IPs together with their relative position and the type of tune are summarised in Table 2.

Table 2: Tunes with respect to position

Initial	Medial	Final
H*L-L%	H*L-L%	H*L-L%
H*L-H%		L*L-H%

3.3.2 Prosodic integration

Prosodic integration was also observed in all three positions, but particularly in the medial position. As shown in Table 1, 18 out of the 20 examples in the medial position were integrated into the surrounding prosodic material, *i.e.* they did not prosodically form a separate IP as defined in Section 3.2. As for the initial and final adverbs, the numbers of integrated instances were lower: 11 out of 17 and 6 out of 15, respectively.

As opposed to the six initial adverbs that were associated with a full IP, the majority in the initial position were characterised by a much milder boundary than the one necessary for the formation of an IP. In many cases, some kind of a prosodic boundary could be observed, but this was best analysed as a PP boundary, as the contour associated with the adverb comprised only the pitch accent (T*) and the phrase tone (T-). As Figure 6 (example 23) shows, after the H* on the lexically stressed syllable, the pitch does not fall down to the lowest point in the speaker's range, and the final syllable is characterised by very little (if any) final lengthening, so it is safe to conclude that the boundary here is an L-phrase tone. In addition, there is no significant reset of the intonation in the following material, the accented element in the following material is lower in pitch than the pitch accent on the illocutionary adverb, so declination applies (see Section 3.2).

(23)   Now I don't know why (unclear word) did what he did uh
       But *frankly* it was sort of (unclear word) wouldn't he
       It was useful   (ICE-GB: S1B-008 #98-100)

The integrated adverbs in the medial position are also mostly characterised by a pitch accent on the stressed syllable and possibly only a PP boundary (example 24, plotted in Figure 7). Figure 7 shows that in such instances there is no evidence for an IP boundary, as there is no final lengthening, nor a reset on the following prosodic material. Therefore, the target adverb is associated only with an H* pitch accent and an L-phrase tone. If the adverb in the medial position is preceded by another accented content word, the adverb was unaccented and associated only with the phrase tone (example 25, plotted in Figure 8). Figure 8 shows, despite a lack of visible f0 track due to a lack of voiced segments, that the H* pitch accent is associated with the stressed syllable of *Europe* and that the pitch then drops to a low point in the speaker's range from the auxiliary until the last syllable in *frankly*, which is slightly lengthened and followed by a slight reset on *get*. In other words, there is no pitch accent associated with the lexically stressed syllable of *frankly* and it is also reasonable to assume the presence of a PP boundary after it.
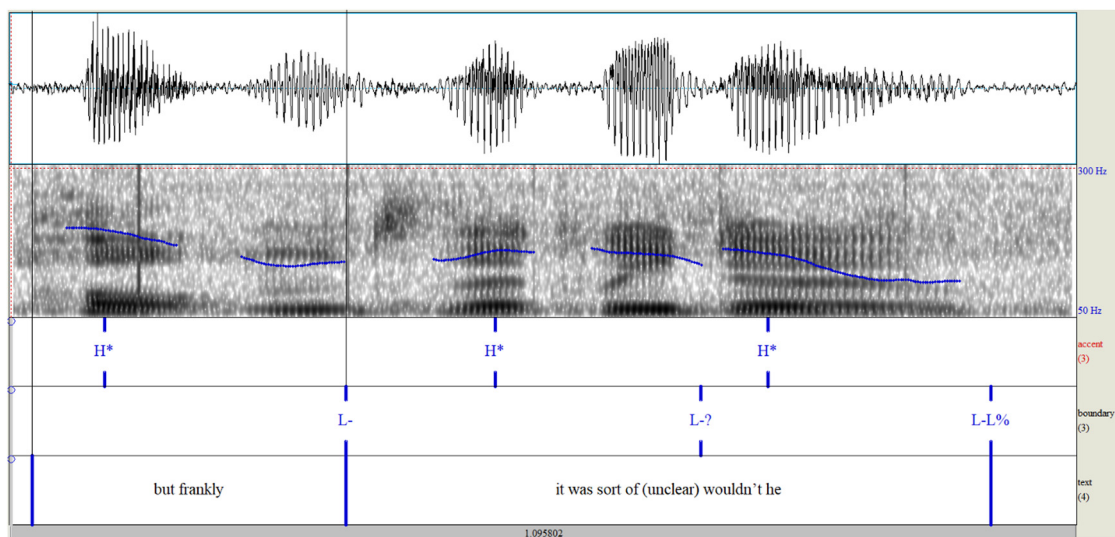

Figure 6: *Frankly* in the initial position integrated in an IP domain (ICE-GB S1B-008-099).
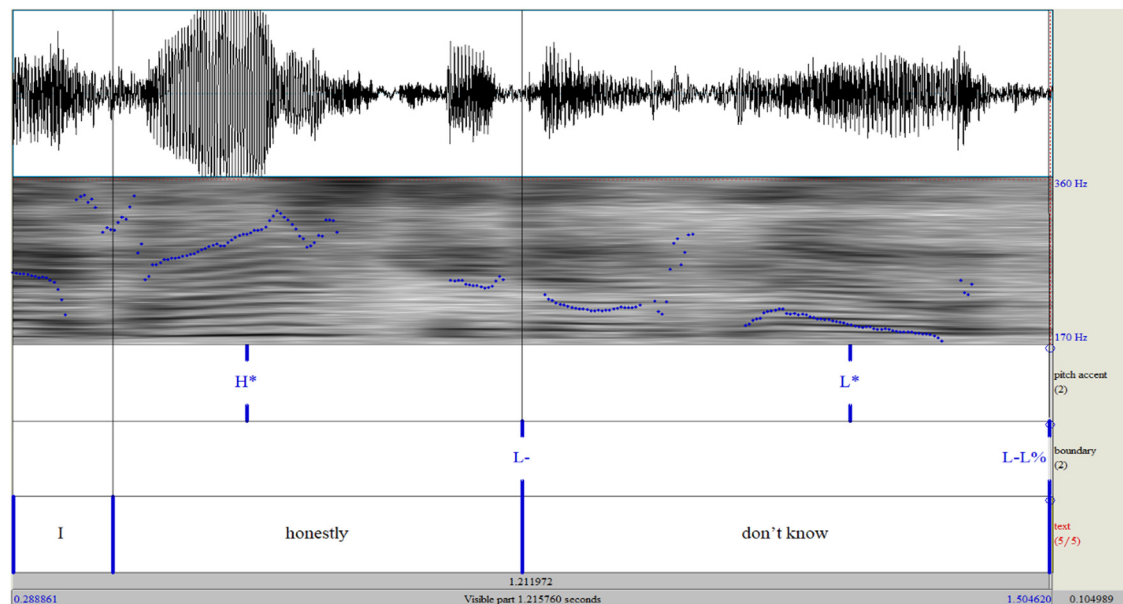
Figure 7: *Honestly* in the medial position fully integrated in an IP domain (ICE-GB S1B-048-108).
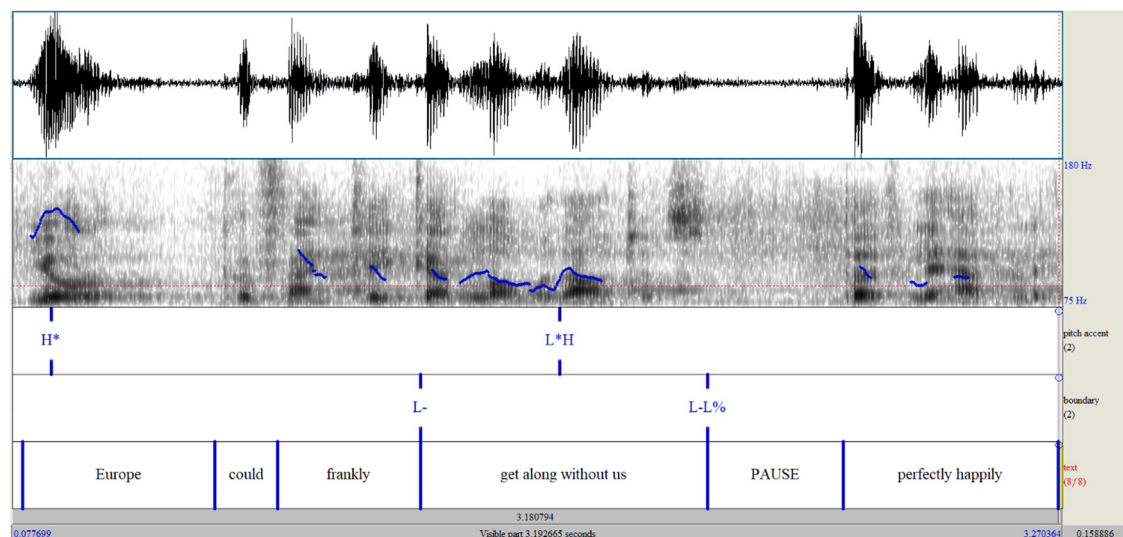

Figure 8: *Frankly* in the medial position as part of a phrase tone (T-) domain (ICE-GB S2A-023-039).

(24)   A: What attracted you to that form?
       B: I *honestly* don't know.   (ICE-GB: S1B-048 #107-108)

(25)   So the prospect of the United Kingdom which accounts for only about ten percent of the
       combined gross domestic product of the European Community becoming economically
       marginalized is all too real
       Europe could *frankly* get along without us perfectly happily   (ICE-GB: S2A-023 #38-39)

Interestingly, the two instances of these adverbs in the medial position that were part of a question (one *seriously* and one *honestly*) were accented and prominent, but still integrated, despite the fact that they were preceded by some other accented content word. This is different than any of the other instances in this

position preceded by an accented item (illustrated in Figure 8). Example (26), plotted in Figure 9, illustrates this pattern. Figure 9 shows that there is an L-phrase tone after the H* on *much* which ends on *we*, and that there is a "valley" in pitch contour associated with the stressed syllable of *seriously* pointing to an L* pitch accent. In addition to the observed f0 contour, the adverb is auditorily clearly prosodically prominent, as opposed to the instances portrayed in Figure 8.

(26)   How much longer do we *seriously* have to talk for?   (ICE-GB: S1A-038 # 268)

Lastly, the prosodic analysis showed that also in final position, the illocutionary adverbs under investigation can occur without significant excursions in pitch contour. This was seen as evidence that, even if there is some impression of a boundary, the element was unaccented (see Astruc-Aguilera and Nolan 2007 for similar results). In terms of prosodic realisation, such instances are very similar to the medial unaccented ones (Figure 8), the only difference being that they follow a nuclear (more prominent) pitch accent, which often ends in its own phrase boundary; as such, the adverbs, being IP final, are part of this IP boundary. Such a realisation suggests that the adverb in question is not a separate IP, but part of a longer IP, either as some kind of post-nuclear deaccented PP consisting of a phrase and a boundary tone (T-T%) (Pierrehumbert 1980, 95-96) or as an encliticised post-nuclear tail (Gussenhoven 2004, 292). An example of such a prosodic realisation can be found in Figure 10 (example 27):

(27)   (Speaker A points out how her grandma always wanted her to become a doctor)
       A: She wanted me to be a medical doctor.
       B: Well you are going to be a doctor.
       A: Yeah
       I put my foot down at being a medic so this is a compromise (laugh)
       Well she's an old battleaxe *honestly*
       I hope you never have the pleasure of meeting her (laugh)   (ICE-GB: S1A-039 #116-121)

The instances where the illocutionary adverbs under investigation were prosodically integrated are summarised in Table 3.
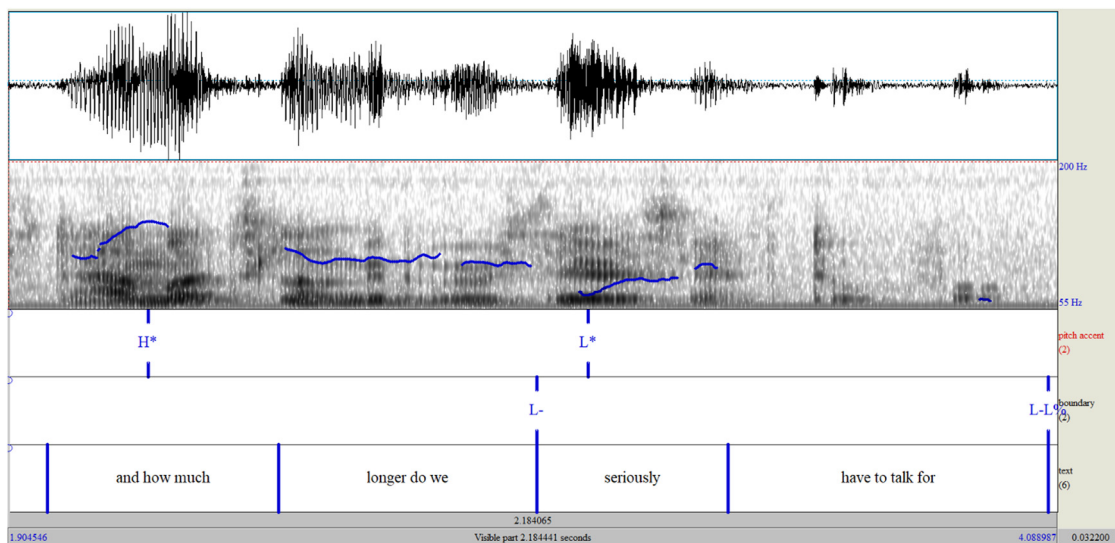

Figure 9: *Seriously* in the medial position with an L* pitch accent (ICE-GB S1A-038-268).
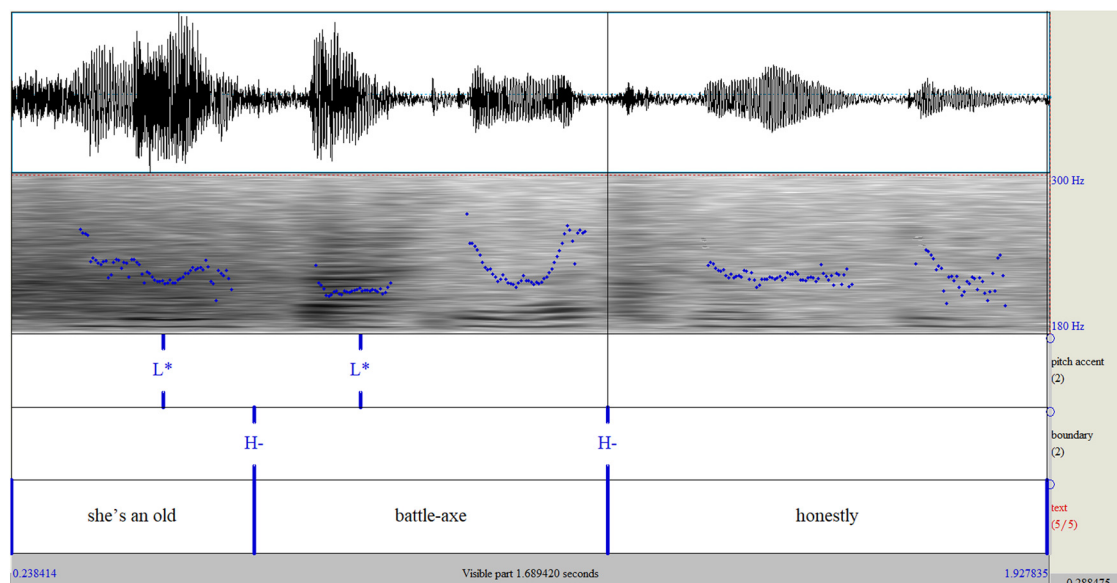
Figure 10: *Honestly* in the final position deaccented (ICE-GB S1A-039-120).

Table 3: Prosodic realisations of integrated adverbs with respect to position

Initial	Medial	Final
H*(L-)	H*(L-)	L-L%
	L-	L-H%

4 Discussion and analysis

The following subsections present a qualitative analysis of the three illocutionary adverbs discussed in this article, by looking at the correlation between their prosodic realisation, their position, and their specific discourse-pragmatic functions. The discussion is divided into three subsections: the first providing arguments in favour of analysing prosodically integrated uses of these adverbs as modifiers within a single Discourse Act (Section 4.1), the second arguing for an analysis of prosodically detached instances of these adverbs as separate Discourse Acts (Section 4.2), and the third offering representations of the two different uses at the IL and PL in FDG (4.3).

4.1 Within a single Discourse Act

There are a number of reasons to assume a correlation between integration at the PL and integration on the IL, *i.e.* the analysis of the adverb in question as an integral part of a single Discourse Act. The first one is the observation that the illocutionary modifiers in the initial position (the canonical position) do not necessarily have the comma intonation, as generally assumed in the theoretical literature (Section 2.1), *i.e.* they are not necessarily realised as a separate IP at the PL. This may be taken to indicate that these elements are part of a Discourse Act and are phonologically still integrated into the IP corresponding to this Discourse Act (*cf.* Keizer 2018a,b).

Another frequent observation is that illocutionary adverbs immediately following the unstressed subject (usually the first-person pronoun) again do not form an IP but are at most characterised by a PP

boundary after the accented adverb (Figure 7 and example 24). Additional evidence that these are integrated elements comes from the observation that when the subject is accented, the adverb becomes deaccented and is associated with a phrase tone. An adverb that is deaccented cannot be prosodically detached as a separate IP (Figure 8 and example 25). This is not the case with parenthetical expressions that are always analysed as separate Discourse Acts in FDG, *e.g.* sentential parentheticals analysed as Asides. These remain accented (and form a separate IP) even if the subject is accented and prominent (see *e.g.* Dehé 2009, 2014). Consider in this respect example (25), repeated for convenience as (28), and the same example modified in such a way that the illocutionary adverb is substituted by a sentential parenthetical expression (29):[6]

(28)   EUROPE_{accented} could (*frankly*)_{deaccented} get along without us perfectly happily.
(29)   EUROPE_{accented} could (*and we all KNOW this*)_{accented/separate IP} get along without us perfectly happily.

The only way for illocutionary *frankly* in (28) to remain accented in this scenario is for it to form a separate Discourse Act with some specific illocutionary force used for some specific discourse (rhetorical) function (Section 4.2).

Additional evidence for the possible integration of illocutionary adverbs comes from their use in final position, where these adverbs were again often found to be deaccented. The final position, or post-verbal position, is usually reserved for adverbs functioning as restrictive verbal modifiers, *e.g.* the manner use of *frankly, honestly,* or *seriously*. If the adverbs in question are used as illocutionary (non-restrictive) modifiers, they are assumed to be characterised by necessary prosodic detachment in this position (see *e.g.* Huddleston and Pullum 2002, 578). However, this detachment does not necessarily mean automatic realisation as a separate IP. An IP, as has been pointed out in Section 3.2, is not only characterised by a boundary, but also by a complete pitch contour. As was shown in Figure 10, illocutionary adverbs in final (post-verbal) position also come unaccented with no significant excursions in pitch contour. As such, the adverb in question is not a separate IP, but rather a deaccented post-nuclear PP (see below).

The reason for deaccentuation in the final, post-verbal position may be the speaker's wish to avoid the ambiguity that may arise between interpersonal and representational uses of these adverbs. Whereas in some languages, such as Dutch, adding some indication of the illocutionary status of *honestly* (*eerlijk*) is done lexically by adding the iconic *gezegd* (Hengeveld and Mackenzie 2008, 83), in English prosody alone signals this distinction. In other words, the illocutionary use in final position is cued by deaccentuation, *i.e.* it is realised at the PL as part of the post-nuclear tune, and thus differs from the manner use which, due to the principle of end-focus, is obligatorily characterised by the nuclear tone. Therefore, it is not the prosodic detachment in the form of a separate IP that cues the illocutionary (non-truth-conditional) use of the adverb in question, but its deaccentuation. If it had been phrased as a completely detached IP in this position, it would form a separate Subsidiary Discourse Act, typically functioning as an afterthought (*cf.* Keizer 2018a). As separate Discourse Acts, adverbs may perform a number of different functions with different illocutionary forces, *e.g.* reinforcement, persuasion, concession, *etc.* (Section 4.2). As an illocutionary modifier, it is still an integral part of the Discourse Act and therefore an integral part of the respective IP at the PL.

Another interesting observation that supports the correlation between prosodic integration and modification within a single Discourse Act comes from the instances exemplified in (26), plotted in Figure 9. These adverbs in the medial position (*honestly* and *seriously*, but not *frankly*) seem to serve an additional modifying function, different from the illocutionary one. This additional function resembles that of 'reality' adverbs (*e.g. really, actually*) in the sense discussed by Hengeveld (in press). In these instances, as shown in Figure 9, the adverbs in question are accented but form a PP with the main verb, *i.e.* they resemble the phonological realisation of manner adverbs, but are clearly not used as such. The intended meaning in (26)

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6 Even though this modified example allows us to only intuitively make the point that sentential parentheticals are by default phrased as separate IPs (and thus must carry a nuclear pitch accent), this intuition is supported by the findings reported in Dehé (2009, 2014).

is not *How long do we have to talk for in a serious manner?* but rather *How long do we really/actually have to talk for?*

4.2 Separate Discourse Acts

As pointed out above, the main argument in favour of assuming a correlation between illocutionary adverbs analysed as separate Discourse Acts at the IL and their realisation as IPs at the PL lies in the fact that the former can have more (diverse or extended) functions, which can only be coded by means of a separate IP. In these cases, the adverbs provide information as an aside, an afterthought, or some kind of reinforcement and are thus supplementary. This motivates the analysis of these adverbs as a Subsidiary Discourse Act rather than as a modifier of the Illocution within a single Discourse Act.

Some evidence for this interpretation comes from the fact that *frankly* and *honestly* are more or less synonymous when used for their basic illocutionary function. It is only when they are separate Discourse Acts that they show differences in meaning. This is most obvious in the final position. Whereas *honestly* in the final position can have the reading *I mean it* (functioning as some kind of reinforcement to what has been said), *frankly* has no such use. Instead, prosodically detached *frankly* is usually intended as an afterthought when occurring in the final position, expressing some kind of concession, where the speaker's communicative intention would be something along the lines of *let's be honest* or *I/we must admit* (Keizer 2018a, 81), similar to the phrase *to be honest* in this position. These distinctions become very obvious when we compare the two cases of prosodic separation in the final position, as in examples (21) and (22) and their respective prosodic realisations in Figures 4 and 5. The examples are repeated here as (30) and (31) for convenience:

(30)   (Speaker A proposes to excuse the two other speakers from a visit to her mum's)
        A: Yeah but I can easily say one of you (unclear word)
        B: No don't don't don't don't (overlap with C)
        C: No don't *honestly*   (ICE- GB: S1A-048 #75-77)

(31)   Then there's the question of paying for it
        And we've seen the shambles that they all got into over that as well
        So I don't think they have behaved well at any stage *frankly*   (ICE-GB GB: S2B-013 #63-65)

In (30), *honestly* is following a Discourse Act with an imperative illocution. It is more plausible here that the adverb in question is being used as a reinforcing act rather than as a modifier of the illocution. It is difficult here to construe a reading that an illocutionary modifier would have, namely *I am telling you honestly don't* (*to not to*). In (31), on the other hand, *frankly* does not have the same reinforcing function, but rather a mitigating/hedging one in the form of an afterthought indicating some sort of concession.

Both *frankly* and *honestly* (but not *seriously*) can actually be used as an afterthought in the sense described above, and both *honestly* and *seriously* (but not *frankly*) can form a Subsidiary Discourse Act functioning as reinforcement. Compare:

(32)   a)   No, don't, *seriously.*   (Reinforcement)
        b)   No, don't, *honestly.*   (Reinforcement)
        c)   No, don't, *frankly.*   (*Reinforcement)

This indicates that, when functioning as separate Discourse Acts, it is precisely the rhetorical function that relates them to the Nuclear Discourse Act (the 'host') and not their core illocutionary-modifying meaning.

Although these distinctions become clear from analysing the context of the examples in question alone, the prosodic analysis showed that in those cases where the adverbs functioned as Discourse Acts with the

reinforcement function, they were realised as IPs with a high nuclear tone (H*) and a low boundary (L%), whereas those functioning as afterthoughts (with the concession reading) were associated with a low nuclear tone (L*) and a high boundary (H%). More precisely, IPs associated with the afterthought carry a distinctive 'low rise' intonation, *i.e.* the combination of low nuclear pitch accent, low-phrase tone, and high-boundary tone (L*L-H%). The IPs associated with the Discourse Acts functioning as reinforcement are characterised by the H*L-L% pattern.

As shown in Section 3.3.1, illocutionary adverbs can also occur as separate Discourse Acts in medial ('interpolated') position (Figure 3). In that case, they are intended as asides (Keizer 2018a, 82), characterised by prominent prosodic detachment evident in the prosodic analysis by stronger pitch reset, longer boundary tones, and a complete intonational contour. All of these features cue a very distinctive parenthetical insertion, which can plausibly be taken to be triggered by a very specific communicative intention, making a separate contribution to the ongoing discourse. The parenthetical insertion of *quite frankly* in (20), for example, is much more likely to be intended to code some kind of concession or persuasion than to function merely as a modifier of the Illocution of the Discourse Act *Some of the rules of this house baffle me.*

In addition, illocutionary adverbs can serve as comments on a Nuclear Discourse Act within a previous Move. Consider example (19) in that respect, where *seriously* is clearly a separate Discourse Act with an interrogative illocution. It is prosodically isolated and is realised as an IP with an H*L-H% tune (Figure 2). Since FDG takes the Discourse Act, *i.e.* the smallest unit of communicative behaviour (Kroon 1995, 65, cited in Hengeveld and Mackenzie 2008, 60), as its basic unit of analysis (rather than the clause of the sentence), single words can, by themselves, form complete Discourse Acts. Note, however, that the same line of reasoning can be used to argue that illocutionary adverbs in the initial position with the same prosodic form can also be used as Subsidiary Discourse Acts, the prosodic pattern indicating a specific rhetorical function with respect to the Nuclear Discourse Act they are associated with. Consider the following (invented)[7] examples where the adverbs have interrogative illocution:

(33)   A: We need some money again.
       B: *Seriously*? You know, I can't keep on giving you money forever.

(34)   A: Why do you do it?
       B: *Honestly*? We need the money.

The fact that the adverbs here express an interrogative Illocution makes it obvious that they are separate Discourse Acts and, as such, realised as separate IPs, just like the one in (19). At first sight, one could assume that both of these are simply separate independent Discourse Acts, which would account for their realisation as separate IPs with a rising intonation. However, there is a crucial discourse-functional difference between the two: whereas the first one (33) is related to the interlocutor's previous Move in the form of a response that questions the previous speaker's sincerity in expressing the Discourse Act in (33A) and is indeed a separate independent Discourse Act, the latter (34) is obviously functionally related to the following Discourse Act by some rhetorical function. In (33), the omission of the following Discourse Act would make no difference, *i.e. seriously* could stand alone. *Honestly* in (34) cannot felicitously be used by itself here, as it is dependent on the following Nuclear Discourse Act, in which case it can be paraphrased as *if you want me to answer ADV/if you ask ADV, I answer you ADV*. In addition, this function is restricted to the initial position, which is a further indicator that we are dealing with a rhetorical function that relates two Discourse Acts.[8]

All of this shows that illocutionary adverbs realised as separate IPs can be formulated as separate Nuclear Discourse Acts, but, more importantly, that they can also form Subsidiary Discourse Acts in initial position. The exact prosodic realisation of the Subsidiary Discourse Act depends on the specific discourse function it fulfils and its relation to the Nuclear Discourse Act. In (34), *honestly* precedes the Nuclear Discourse Act and will form an IP ending in a high-boundary tone (H%) to mark its interrogative illocution, just like the example *seriously* plotted in Figure 2 (*cf.* Bolinger 1989, 171). The kind of pitch accent (H*/L* or a complex one) is irrelevant here, but we can assume that it will be an H* because it is the first (and only) pitch accent within the IP, and these are usually a high tone. This high pitch accent is followed by a low-phrase tone (L-) and terminates in a high boundary (H%). This pattern (H*L-H%) depicts what is generally called a fall–rise. The combination of the placement, the intonation pattern, and the fact that the para-phrase of this Subsidiary Discourse Act is *if you want me to answer ADV/if you ask ADV, I answer you ADV*, all together cue a particular rhetorical function. They may also relate the following Nuclear Discourse Act to the question in the previous Move, in which case their function could be described as some reaction to the previous Move of the interlocutor.

Finally, there are those prosodically detached adverbs in the initial position that were characterised by the H*L-L% tune (example 18, plotted in Figure 1). In fact, the majority of prosodically detached adverbs in this position had this contour. In these cases, the adverbs forming a separate IP are not a response to the previous Move, but rather constitute a "planned comment on the Illocution" (Keizer 2018a, 82). Admittedly, it is difficult to separate such use from the regular illocution-modifying use because this is the canonical position for such modifiers and the prosodic realisation of a full H*L-L% IP is only slightly different from the integrated H*L- PP in such instances. However, the fact that speakers indicate a stronger separation from the rest of the utterance can be seen as triggered by the formation of a Discourse Act that could allow for the 'planned comment' to be encoded.

4.3 FDG representations at the IL and the PL

The representational use of the adverbs investigated here (realis and manner) is distinguished from the interpersonal illocutionary use at the PL at the layer of a PP. Consider the following examples:

(35)   I *honestly* think too much.
(36)   I *honestly* think so.

Let us assume that in (35), *honestly* functions as a modifier of the illocution, and in (36), it is a realis modifier. This difference can be captured by assuming that the latter will fall within the scope of negation (*I don't honestly think so*), whereas the first one will tend not to (*I honestly don't think too much*). Now, at the

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illocutionary value of a Discourse Act. Consider the examples in (i) and (ii), which can be regarded as the counterparts of the English examples in (33) and (34). The operator *Ho'š/Ako'š* in (ii) overtly codes/indicates a rhetorical function that relates it to the following Nuclear Discourse Act (*do/if you want me to tell you honestly, I tell you honestly*), while the interrogative *Jel'* in (i) only points to the previous Move:

i.   A: Treba nam opet para.
     'We need some money again.'
     B: **Jel´** ozbiljno?   Znaš, ne mogu ti davati pare zauvijek.
     INTER-OP-FACTUAL seriously
     'Is it seriously? (Are you asking seriously?)'   You know, I can't keep on giving you money forever.'
ii   A: Zašto to ratite?
     'Why do you do it?'
     B: **Ho'š/Ako'š** iskreno?   Trebaju nam pare.
     INTER-OP-VOLITION honestly
     'Do/If you want (me to tell you) honestly?'   We need the money.'

PL, this distinction will be captured at the layer of a PP in that an interpersonal use will require a PP boundary and the representational one will not. In other words, the first example will be represented as two PPs within an IP, represented in (37) (compare the realisation plotted in Figure 7), and the second will only form one PP, represented in (38):

(37)   (IP$_i$: [(PP$_i$: /aɪˈɒnəstli/ (PP$_i$)) (PP$_j$: /ˈθɪŋkˈtuːmʌtʃ/ (PP$_j$))] (IP$_i$))

(38)   (IP$_i$: (PP$_i$: /aɪˈɒnəstliˈθɪŋksəʊ/ (PP$_i$)) (IP$_i$))

The same is true for the distinction between the illocutionary and the manner use. Consider (39) and (40) in this respect (compare the realisation plotted in Figure 10). In (39), the illocutionary use of *honestly* is cued by deaccentuation, *i.e.* it is realised at the PL as part of the post-nuclear tune, which is different from the manner use in (40), which is obligatorily[9] characterised by the nuclear tone (indicated here by the use of capital letters):

(39)   They told us THAT honestly.

(40)   They told us that HONESTLY.

In summary, the distinction between the use of these adverbs as modifiers at the IL and RL is coded partially at the ML (with illocutionary adverbs favouring the left periphery), but it is also reinforced at the PL at the layer of PP. Here, the illocutionary modifiers require a PP boundary to indicate their interpersonal status, as in the following representations:

(41)   *Honestly* I don't know.
      (IP$_i$: [(PP$_i$: /ˈɒnəstli/ (PP$_i$)) (PP$_j$: /aɪˈdəʊntˈnəʊ/ (PP$_j$))](IP$_i$))

(42)   I *honestly* don't know.
      (IP$_i$: [(PP$_i$: /aɪˈɒnəstli/ (PP$_i$)) (PP$_j$: /ˈdəʊntˈnəʊ/ (PP$_j$))](IP$_i$))

(43)   I don't *honestly* know.
      (IP$_i$: [(PP$_i$: /aɪdəʊntˈɒnəstli/ (PP$_i$)) (PP$_j$: /ˈnəʊ/ (PP$_j$))](IP$_i$))

(44)   I don't know *honestly*.
      (IP$_i$: [(PP$_i$: /aɪˈdəʊntˈnəʊ/ (PP$_i$)) (PP$_j$: /ˈɒnəstli/ (PP$_j$))](IP$_i$))

This is most evident when these elements are placed clause initially, where they form a PP on their own (41). When occurring clause medially, they will form a PP with the left-adjacent domain (usually the subject in the weak form, *e.g.* a personal pronoun) and will therefore carry the main accent of that PP (42) and (43). When they are used clause finally, they are post-nuclear and thus post-focal, but nevertheless detached from the nucleus of the IP by a phrase boundary (44). In this case, they can be analysed as a special kind of unaccented PPs (*cf.* Pierrehumbert 1980, 96, Hayes and Lahiri 1991, Büring 2009).[10]

As for the adverbs forming separate Subsidiary Discourse Acts, these are assigned different rhetorical functions, which trigger their position and their specific prosodic realisation. Therefore, in addition to the linear placement of the Discourse Act, the exact contour of the IP it is assigned at the PL is determined by the specific rhetorical function assigned at the IL. The combination of global (IP) and local (PP) operators at the PL is responsible for the exact prosodic realisation of the IP, *i.e.* its contour pattern (Hengeveld and

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9 In some specific cases, the manner adverb (40) can be deaccented, *e.g.* if the preceding element (*that*) receives contrastive or narrow focus. Certain specific features captured at the IL (contrast, emphasis, *etc.*) can of course also have some specific (local) effect on the phonological realisation, *e.g.* contrastive accentuation and post-contrastive deaccentuation. Indeed, the two uses would then probably be ambiguous. However, it is the wide, end-focus interpretation that is relevant here.

10 Considering that illocutionary adverbs that form the post-nuclear tail in final position are not focalisable (nor felicitously modifiable), they should perhaps be analysed, not as modifiers, but as (lexical) operators at the layer of the Discourse Act. The same analysis is plausible for the medial unaccented ones. This idea will not be further pursued here, but what remains relevant is the fact that, regardless of their exact function, these adverbs are still part of a single Discourse Act at the IL.

Mackenzie 2008, 434; see Section 2.4). However, to represent the above-discussed patterns at the PL, we first have to translate the tonal description from the ToBI terminology into the representations of the PL in FDG.

Section 3.2 described the tones that are necessary to form an IP, namely the pitch accent tone (T⋆), the phrase tone (T-), and the boundary tone (T%). The boundary tone is relevant for the terminal ending of the IP, *i.e.* considering that the tones here are 'targets' (Pierrehumbert 1980), it captures the final movement of the contour from the phrase tone to the boundary. This movement usually expresses the basic illocutionary distinctions, *e.g.* L-L% for a declarative and L-/H-H% for an interrogative illocution. Because the global operator on the IP is in charge of this kind of movement, it can be used to specify the movement towards the boundary, or simply the boundary tone (T%). The local operators on the PP are then the ones triggering the phrase tone (T-), or more accurately, the movement from the pitch accent towards the phrase tone ('targets'). Finally, we can make use of the operators 'h' and 'l' that mark a PP as high or low for pragmatic purposes such as the expression of Contrast or Focus (Hengeveld and Mackenzie 2008, 438) and use them to account for pitch accent tones (T⋆). Table 4 summarises these representations.

Table 4: Tones and operators

Tone	PL operator
T%	**f/r/n** on the IP
T-	**f/r/n** on the PP
T⋆	**h/l** on the PP

The rhetorical function Prelude that specifies the planned comment on the Nuclear Discourse Act triggers the P^{Pre} linear position (Keizer 2018a, 82) with the H⋆L-L% tune and the rhetorical function Reaction triggers the P^{Pre} linear position with the H⋆L-H% tune. The medially placed parenthetical Subsidiary Discourse Acts are characterised by the rhetorical function Aside (Keizer 2018a, 82), which specifies their relationship to the Nuclear Discourse Act. Finally, adverbs forming a Discourse Act placed after the Nuclear Discourse Act come in two different prosodic realisations that code two different rhetorical functions. The P^{Post} linear position with the H⋆L-L% tune is triggered by Reinforcement and the one characterised by L⋆L-H% is triggered by Afterthought (Keizer 2018a, 82).

Tentatively, we could then summarise by stating that in the P^{Post} position, Reinforcement at the IL motivates $(fIP_i: (fhPP_i) (IP_i))$, a fall (H⋆L-L%), whereas *e.g.* Afterthought motivates $(rIP_i: (flPP_i) (IP_i))$, the low rise (L⋆L-H%). (45) and (46) are the illustrations of such analyses for Reinforcement and Afterthought, respectively. Prelude in the P^{Pre} position also motivates a simple fall, *i.e.* $(fIP_i: (fhPP_i) (IP_i))$, whereas Reaction will be represented as $(rIP_i: (fhPP_i) (IP_i))$, a fall–rise. Aside will generally also appear in the form of a fall or a fall–rise, but may be differently patterned because it has been shown that the prosodic realisation of such parenthetical insertions may depend on various (also paralinguistic) factors (Wichmann 2000) and they have been shown to reduplicate the intonation contour of the preceding IP (Dehé 2014, 151).[11]

(45)   … don't, *honestly*.
       IL: $(M_I: [A_I: [(F_I: IMPER (F_I)) (P_I)_S (P_J)_A (C_I: -don't-(C_I))] (A_I)]$[12]
             $[A_J: [(F_J: DECL (F_J)) (P_I)_S (P_J)_A (C_J: -honestly-(C_J))] (A_J)_{Reinforcement}] (M_I))$
       PL: $(U_i: [(fIP_i: /ˈdəʊnt/ (IP_i)) (fIP_j: [(fhPP_j: /ˈɒnɪstli/ (PP_j))] (IP_j))] (U_i))$

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11 These representations are still under investigation and a study is in preparation that will help establish the exact relations between the tones and the operators at the PL. In addition, all the possible combinations of tonal targets will be analysed.
12 This representation is problematic because there do not seem to be any Subacts in the Communicated Content and it could perhaps be an example of a Prohibitive (Evelien Keizer, personal communication). However, this issue is beyond the point being made here, so it will not be addressed any further.

(46)   I don't think they have behaved well at any stage *frankly*.
     IL: (M$_I$: [A$_I$: [(F$_I$: DECL (F$_I$)) (P$_I$)$_S$ (P$_J$)$_A$ (C$_I$: -I don't...stage-(C$_I$))] (A$_I$)]
              [A$_J$: [(F$_J$: DECL (F$_J$)) (P$_I$)$_S$ (P$_J$)$_A$ (C$_J$: -frankly-(C$_J$))] (A$_J$)$_{Afterthought}$] (M$_I$))
     PL: (U$_i$: [(fIP$_i$: /aɪˈdəʊnt...ˈsteɪdʒ/ (IP$_i$)) (rIP$_j$: [(flPP$_j$: /ˈfræŋkli/(PP$_j$))] (IP$_j$))] (U$_i$))

5 Conclusion

The prosodic aspects of interpersonal adverbs are still not fully understood. Their prosodic shape and relation with the host certainly depends, among other things, on their position in the sentence (initial, medial, or final), on the interpersonal adverbs themselves, and on their discourse-functional properties. Illocutionary adverbs are no exception to this complexity, but there seems to be strong evidence that (non-) integration at the PL is primarily discourse-functionally determined.

This article has attempted to substantiate this claim by conducting a qualitative analysis of the functional, positional, and prosodic features of the interpersonal modifiers *frankly, honestly*, and *seriously*. It appears that there is substantial evidence to support the phonological distinctions with regard to the different analyses at the IL proposed by Keizer (2018a,b). In particular, when functioning as modifiers, interpersonal adverbs are syntactically and prosodically integrated into their host, and when functioning as separate (Subsidiary) Discourse Acts, they are syntactically and prosodically non-integrated.

The presence of a Discourse Act at the IL is reflected at the PL, where each Discourse Act is generally realised as an IP (Hengeveld and Mackenzie 2008, 62). The IP, being characterised by prosodic detachment and a complete intonational contour, allows for the coding of a specific illocutionary force, *e.g.* the interrogative illocution in *honestly* or *seriously*, as well as for reinforcement with a high nuclear tone for the same adverbs in final position, *etc.* In the case of interpersonal modifiers, and particularly short elements like illocutionary adverbs, it can be concluded that prosodic detachment reflects functional freedom (*i.e.* forming a separate Discourse Act). This is why, when used as modifiers within a single Discourse Act, the boundary after illocutionary adverbs in the initial position is not very strong, why they can also be fully integrated, and why in final position, they tend to be deaccented. As soon as they become separate functional units at the IL, this is reflected at the PL in the form of a stronger prosodic boundary and complete intonational contour.

Finally, there is clear indication that some specific discourse-functional features of these elements (*e.g.* certain rhetorical functions) are cued by distinctive intonational patterning. This is something that should be the subject of future studies. In addition, it would be useful to prosodically analyse other interpersonal adverbs to shed more light on the similarities/differences between them and to more precisely relate their phonological features to those represented at the IL. This inevitably implies that, to capture these various features more adequately, the PL itself requires more attention in future research.

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