

(De-)accenting and discourse structure

Heleen Hoekstra

Utrecht University

Abstract

The research reported on in this paper is part of a larger study on sentence accent in (particularly) Dutch, in which a rather unconventional approach is followed. Instead of regarding accents chiefly as carriers of pragmatic information, the hypothesis is that it is not so much accent that carries information, but rather lack of accent in a position where the syntactic structure of the utterance ‘predicts’ one. The present paper discusses the question: given a definite NP that is a candidate for accent, in view of the syntactic structure, under what conditions is that NP left unaccented? The main conclusion is that de-accenting of definite NPs is determined by discourse grammar, which leads to the more general hypothesis that sentence accent in Dutch (and English) is essentially a matter of syntax: accenting is related to sentence syntax, de-accenting to discourse syntax.

1 Introduction

The research reported on in this paper is part of a larger study on sentence accent in (particularly) Dutch. Current theories on sentence accent share the view that accents are meaningful, in the sense that they indicate ‘focus’ (passim), ‘activation’ (Lambrecht, 1994), ‘linking’ (Vallduví, 1993), etc. A drawback of all these theories is that some accents are ‘explained’, but others are left unaccounted for. This problem, if acknowledged at all, is usually reasoned away by disposing of these accents as somehow ‘secondary’ or ‘minor’. An example of such a ‘secondary’ or ‘minor’ accent is the one on *terribly* in the following example from Lambrecht (1994: 110-111):

I heard something TERRIBLE last night. Remember MARK, the guy we went
HIKING with, who’s GAY? His LOVER just died of AIDS. [...] Mark is *terribly*
UPSET [my italics, HH].

The accent on *terribly* in the last sentence is not acknowledged, let alone accounted for, no doubt because it can neither count as a ‘focal’, nor as an ‘activation’ accent. It cannot be missed, though, any more than the one on *upset* can. I consider this an insurmountable drawback of this approach.

This is why I decided to approach the problem from the other end: instead of regarding accents chiefly as carriers of pragmatic information and, consequently, trying to unravel which accent contributes what to the interpretation of an utterance, the hypothesis is investigated that it is not so much accent that carries information, but rather lack of accent in a position where the syntactic structure of the utterance ‘predicts’ one. Stating the problem this way raises the following questions:

1. Where does the syntactic structure of an utterance ‘predict’ accents?
2. Given a constituent that is a candidate for accent, in view of the syntactic structure of the utterance it occurs in: under what conditions is that constituent left unaccented?

A tentative answer to the first question was given in Hoekstra (2000), in the form of an algorithm for the assignment of Sentence Accents in Dutch (SAiD). The present paper discusses

part of the second question, namely: how can we account for the well-formedness judgements as to when one can and cannot use an unaccented pronoun (or definite NP in general) to refer to some antecedent in a certain context?

2 Some examples

- (1) (i) Phoebe is gisteravond naar een concert geweest.
‘Phoebe went to a concert last night.’
(ii) PJ Harvey trad op.
‘PJ Harvey played.’
(iii) Die is hier op tournee op het moment.
‘She is on tour here at the moment.’
- (2) (i) Phoebe is gisteravond naar een concert geweest.
‘Phoebe went to a concert last night.’
(ii) PJ Harvey trad op.
‘PJ Harvey played.’
(iii) Sindsdien neuriet ze aan een stuk door *Oh my lover*.
‘She has been humming *Oh my lover* ever since.’

In the Dutch version of discourse (1), the pronoun *die* (meaning as much as ‘the latter’) can only refer to PJ Harvey. In (2), the pronoun *ze* (‘she’) can either refer to Phoebe or to PJ Harvey, though there is a slight preference for *Phoebe* as the antecedent, even apart from world knowledge, because *die* could have been used in case *PJ Harvey* had been the intended antecedent. As to the English equivalents: both in (1) and in (2) the pronoun *she* can either refer to Phoebe or to PJ Harvey. World knowledge makes us prefer the latter interpretation in (1) and the former in (2).

- (3) (i) Chandler ging naar de film
‘Chandler went to the movies’
(ii) en Monica naar een feest.
‘and Monica to a party.’
(iii) Na afloop ging-ie een kop koffie halen.
‘Afterwards, he went for a coffee.’

In (3), unlike in (1-2), there is only one possible antecedent for *ie/he*, namely *Chandler*, and yet, the discourse is not well-formed, as long as the pronoun is pronounced without accent.

Discourses (4-5) both start telling about Ross, Rachel and Phoebe, and then ‘zoom in’ on Phoebe.

- (4) (i) Ross ging naar een lezing
‘Ross went to a lecture’
(ii) en Rachel naar een feest.
‘and Rachel to a party.’
(iii) Phoebe bleef thuis.
‘Phoebe stayed at home.’
(iv) Ze/Die was met een liedje bezig
‘She was working on a song’
(v) en bovendien moest er iemand oppassen.
‘and besides, someone had to baby-sit.’
(vi) Toen Rachel tegen de ochtend thuiskwam,
‘When by dawn Rachel came home,’
trof ze d’r slapend op de bank.

- ‘she found her sleeping on the couch.’
- (5) (i) Ross ging naar een lezing
‘Ross went to a lecture’
(ii) en Rachel naar een feest.
‘and Rachel to a party.’
(iii) Phoebe bleef thuis.
‘Phoebe stayed at home.’
(iv) Ze/Die was met een liedje bezig
‘She was working on a song’
(v) en bovendien moest er iemand oppassen.
‘and besides, someone had to baby-sit.’
(vi) Ross en Rachel zetten de bloemetjes flink buiten.
‘Ross and Rachel lived it up thoroughly.’
(vii) Toen Rachel tegen de ochtend thuiskwam,
‘When by dawn Rachel came home,’
trof ze d’r slapend op de bank.
‘she found her sleeping on the couch.’

The difference between (4) and (5) is that in (5) the ‘substory’ on Phoebe is interrupted by a statement about Ross and Rachel (5,vi), whereas in (4) it is not. The effect of the interruption is that (5), as opposed to (4), is ill-formed, in the sense that *d’r/her* in the last sentence cannot be used to refer to Phoebe. This is astonishing, as the context is such that *Phoebe* is the only possible antecedent for the pronoun in question. For the only other female person mentioned in the story is Rachel, and Rachel is not a possible referent for *d’r/her* in (5,vii) on syntactic grounds: the use of the non-reflexive pronoun enforces disjoint reference of *ze/she* and *d’r/her*, so if *ze/she* refers to Rachel, *d’r/her* cannot refer to Rachel and hence must refer to Phoebe.

Discourses (6-7) tell a little story about Chandler, containing some digressions involving two other people.

- (6) (i) Chandler wou naar de film.
‘Chandler wanted to go to the movies.’
(ii) Monica kon niet mee,
‘Monica couldn’t join him,’
(iii) want die moest nog schoonmaken.
‘as she had to clean up.’
(iv) Joey kon ook niet:
‘Joey couldn’t come either.’
(v) die had een ‘hot date’.
‘he had a hot date.’
(vi) Dus ging-ie uiteindelijk maar alleen.
‘So he ended up going alone.’
- (7) (i) Chandler wou naar de film.
‘Chandler wanted to go to the movies.’
(ii) Monica kon niet mee:
‘Monica couldn’t come.’
(iii) die had al een andere afspraak.
‘she had another date.’
(iv) Dus ging-ie maar met Joey.
‘So he went with Joey.’

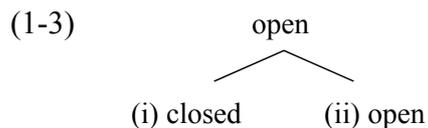
- (v) Toen-ie thuiskwam, stond ze op z'n antwoordapparaat
 'When he came home, she was on his answering machine,'
 om te vragen hoe de film geweest was.
 'asking how the movie had been.'

In neither of the two stories do we have a problem interpreting *ie/he* in (6,vi) and (7,iv), respectively, as referring to Chandler, in spite of the fact that in (6), (iv-v) were about Joey. Discourse (7), however, is ill-formed: in spite of the fact that Monica is the only female occurring in the story, one cannot use *ze/she* in (7,v) to refer to her.

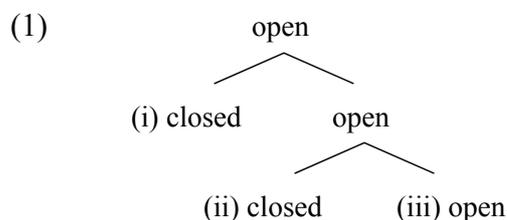
What these examples show is that in some contexts, an unaccented pronoun can be used to refer to a certain antecedent, even though there is another candidate in between, whereas in other contexts, an unaccented pronoun *cannot* be used to refer to a certain antecedent, even though it is both quite near and the only possible candidate.

3 Unaccented pronouns and discourse structure

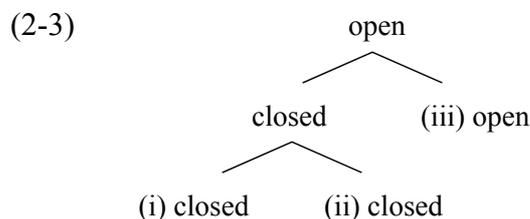
In the discourse grammar approach of Scha & Polanyi (1988), a discourse is parsed incrementally, from left to right, one clause at a time. At any point in the parsing process, only the right peripheral nodes (or vertices) in the parse tree are open for expansion, i.e. to forming new (sub)structures. For example, the parse trees representing the first two clauses (i-ii) of discourses (1-3) look essentially the same:



In (1), clause (iii) is a continuation of (ii) and hence is attached at (ii). The resulting structure is:

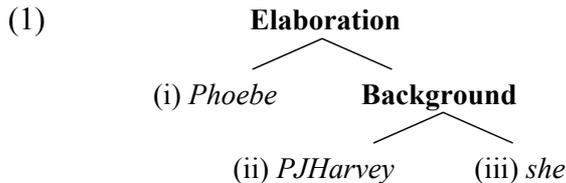


In (2) and (3), clause (iii) resumes clause (i) and hence is attached at the top node, resulting in:

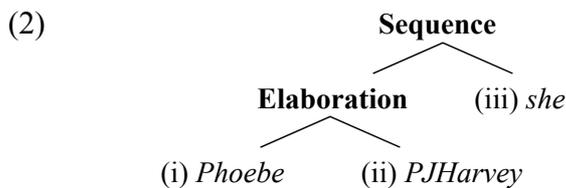


What do these representations reveal about the (im)possibilities of anaphora by means of an unaccented pronoun? Polanyi (1988: 616) states: "Pronominalization will not be permitted to elements in closed off constituents (...)." In (1), (ii) is an open node when (iii) is attached, so the rule permits a pronoun in (iii) referring to an antecedent in (ii). In (2) and (3), (i) has been closed off by the time (iii) is attached, so the rule forbids a pronoun in (iii) referring to an antecedent in (i). In other words, Polanyi's rule explains the acceptability of (1), as well as the unacceptability of (3), but not the acceptability of (2). This is where rhetorical relations come

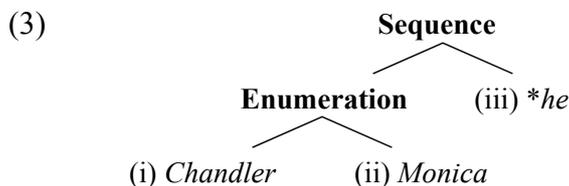
in. Scha & Polanyi (1988)¹ argue that subordinate and co-ordinate relations be treated differently: subordinations are binary structures in which one DCU (discourse constituent unit) is subordinate to the other and in which most of the relevant features (reference time, modal index, etc.) are inherited from the subordinating constituent; co-ordinations, on the other hand, are n -ary structures ($n \geq 2$) in which all elements have equal status. Among the information to be inherited from the subordinating constituent in a subordination is also a set of discourse referents, they claim. Let us consider the consequences of this assumption. (Of the rhetorical relations occurring in our examples, *Enumeration* and *Sequence* are co-ordinations and all the others subordinations.)²



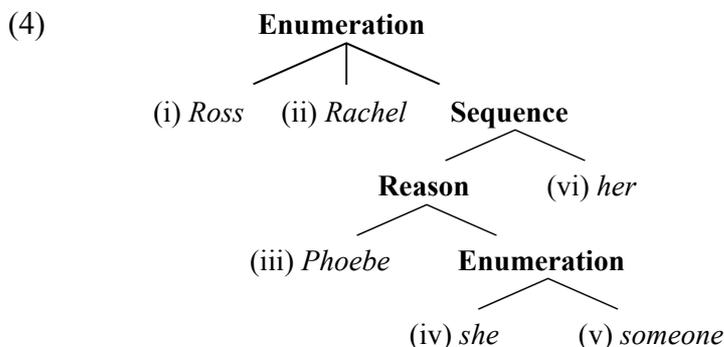
As to (1), the inheritance of discourse referents has no influence, as the node containing the antecedent *PJHarvey* (ii) is itself an open node at the time the node containing the pronoun *she* (iii) is attached.



In (2), the Elaboration node inherits the discourse referent *Phoebe* from the subordinating DCU (i), hence *Phoebe* can now function as an antecedent for *ze/she* in (iii), as the Elaboration node is an open node at the time (iii) is attached.



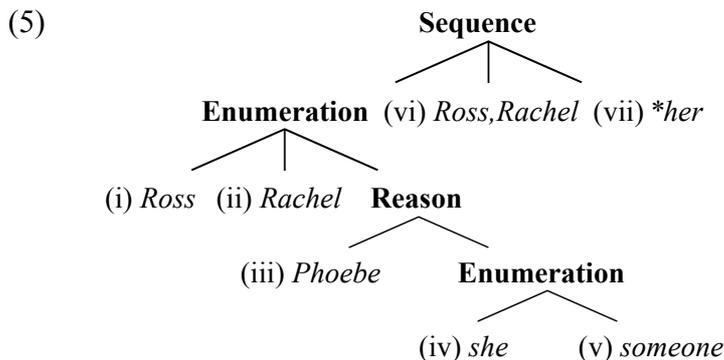
In (3), no inheritance takes place (Enumeration being a co-ordination), hence the node containing the only possible antecedent for *ie/he* (i) has been closed off by the time (iii) should be attached, whence the ill-formedness of the discourse.



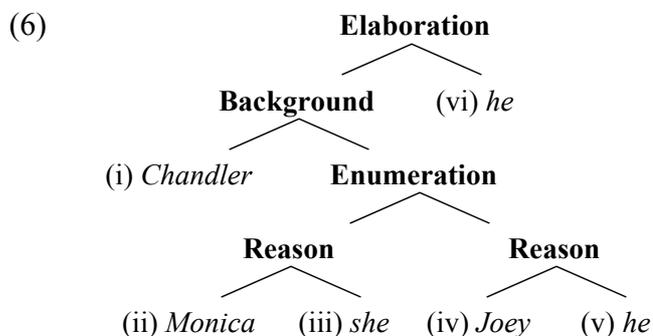
¹ A similar approach is taken in Asher (1993).

² The names of the rhetorical relations are taken from Hitzeman, Moens & Grover (1995).

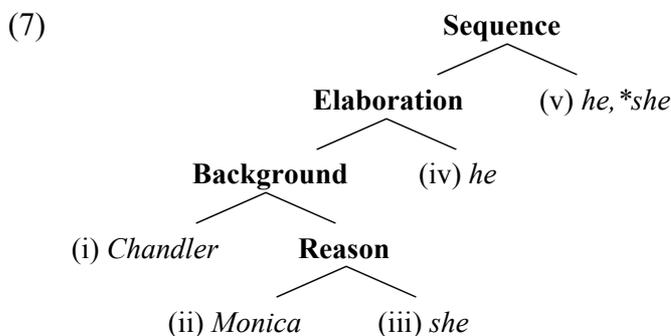
In (4), *Phoebe* in (iii) is inherited by the Reason node, and can now function as an antecedent for *d'r/her* in (vi).



In (5), no discourse referents are inherited by the upper Enumeration node, but apart from that, (vii) could not be attached anyway, as the Enumeration node was closed off by the attachment of (vi).



In (6), the Background node inherits *Chandler* from (i), hence (vi) can be attached.



In (7), (v) cannot be attached: the Elaboration node inherits *Chandler* from (i), via the Background node, which is the subordinating constituent, so the *ie/he* is not a problem, but *Monica*, though she can pass the Reason node, cannot pass the Background node, as the Reason node is the subordinated node, hence the *ze/she* in (v) cannot be parsed.

The conclusion is that the well-formed discourses (1,2,4,6) are accepted and the ill-formed ones (3,5,7) are rejected.

As to the Dutch personal/anaphoric (as opposed to demonstrative/deictic) pronoun *die*: Polanyi's statement that "Pronominalization will not be permitted to elements in closed off constituents (...)", which we found to be too strict for pronouns in general, does in fact apply to anaphorically used *die*. In other words: anaphoric *die* can only be used if its antecedent is available directly, as opposed to as a result of inheritance.

4 Accented (and unaccented plural) pronouns

Unaccented pronouns only occur if plain co-reference is at stake. Accented pronouns, on the other hand, indicate, e.g., subsectional anaphora (Van Deemter, 1991).³

If we replace the ungrammatical unaccented pronouns in the ill-formed discourses (3,5,7) from sections 2-3 by accented ones, we get the following effects on the well-formedness judgements with respect to these discourses: (3) becomes well-formed, (5) and (7) remain ill-formed.

In (3), the DCUs containing *Chandler* and *Monica*, respectively, form an Enumeration node. Hence, *Chandler* cannot be referred to by means of an unaccented pronoun. It is possible, however, to refer to Chandler and Monica as a couple by the unaccented pronoun *they*, which can be explained by assuming a ‘summation’ operation like the one proposed by Kamp & Reyle (1993). Apparently, co-ordinations, though not capable of inheriting discourse referents from their members, can construct discourse referents of their own by e.g. summation, which can then serve both as antecedents for unaccented plural pronouns in a co-reference relation and – is my claim – as context sets (Westerståhl, 1985) for subsectional anaphors, like an accented pronoun: as Chandler is the only male in the context set consisting of Chandler and Monica, the accented pronoun *HIJ/HE* can indeed be used to refer to him.

What about (5) and (7): why do they not become well-formed if we replace the unaccented pronouns *d'r/her* in line (5,vii) and *ze/she* in line (7,v), respectively, by their accented counterparts *HAAR/HER* and *ZIJ/SHE*, respectively?

At the time (5,v) has been uttered, a discourse referent representing the set consisting of Ross, Rachel, and Phoebe can be made available at the Enumeration node. Accordingly, it is indeed possible at this point in the discourse to use the unaccented pronoun *they* to refer to the three of them. Instead of *Ross and Rachel lived it up thoroughly* (5,vi) one could have said something like *Four hours later they were sitting on the couch, telling each other about their evenings*. (Note that *they* can only refer to the threesome here, not to any subset of them.) With Kamp & Reyle (1993), I take it that such a discourse referent is only constructed if the occurrence of a plural pronoun – or a subsectional anaphor, I claim – requires one. By the time (5, vii) is uttered, however, the required context set can no longer be constructed, as the only discourse referents available at that point are Ross and Rachel (from (5,vi)), and hence even an accented pronoun cannot be used to refer to Phoebe. But even if the required set (one including Phoebe) could be made available, using a pronoun would be improper, because the interpretation of the pronoun *haar/her* requires that its referent (i.c. Phoebe) be the only female in the context set or, more precisely, that it constitute the intersection of the context set and the set of females in the model (Hoekstra, 1993: 57-58), a requirement that would not be met, as the intersection would consist of Phoebe and Rachel.

In (7) as well, the required context set, i.e. one containing Monica, can no longer be constructed by the time line (7,v) is uttered. If the required set had been available, however, the accented pronoun *ZIJ/SHE* could have been used to refer to Monica, as she would indeed have been the only female in the context set.

Let me summarize the possibilities and impossibilities of context set construction in discourse grammar as proposed in this section. At any node, be it a subordination or a co-ordination, a

³ The term *subsectional anaphora* is used for a type of anaphora where the referent of the anaphor is interpreted as a subset of the referent of its antecedent, as in: *I saw a couple of children playing in the street. Two boys were kicking a can*. In this discourse, *two boys* can be analysed as anaphoric to *a couple of children*, in the sense that the set of two boys kicking a can is interpreted as a subset of the set of children playing in the street.

context set can be constructed out of the discourse referents of all (and only all) its daughter DCUs, i.e. subordinating and subordinated, or co-ordinated ones. However, this can only be done if the occurrence of a pronoun in the next utterance requires one. It is thus not allowed to assume the construction of a context set at a node A that is the subordinating DCU of a subordination B and to have B inherit this set from A in order to provide an antecedent for a pronoun in an utterance that occurs after B has been closed off.

We have seen what the effects are of replacing the ungrammatical unaccented pronouns in the ill-formed discourses (3,5,7) by their accented counterparts. What remains to be considered is what happens if we do the same with the unaccented pronouns in the well-formed discourses (1,2,4,6), that is, if we replace the (properly used) unaccented pronouns *die/she*, *ze/she*, *d'r/her*, and *ie/he* in (1,iii), (2,iii), (4,vi), and (6,vi), respectively, by their accented counterparts *DIE/SHE*, *ZIJ/SHE*, *HAAR/HER*, and *HIJ/HE*, respectively. All four resulting discourses sound weird when uttered out of further context. For instance, using *HAAR/HER* instead of *d'r/her* in (4,vi) suggests that Phoebe's sleeping on the couch is somehow contrasted with some other activity by someone else. It would be acceptable if, for example, discourse (4) would proceed: *whereas Emma* [the kid that Phoebe was supposed to look after] *was wide awake and playing with Hugsy*. In the extended discourse, the accented pronoun in fact functions as a subsectional anaphor, in much the same way as *HIJ/HE* in (3,iii) does.

Note the parallel between the behaviour of accented versus unaccented pronouns at discourse level on the one hand, and personal versus reflexive pronouns at sentence level on the other: roughly speaking, at sentence level, the accessibility constraints for reflexives are stricter than those for personal pronouns, but if the requirements for the use of a reflexive are met, then the use of a personal pronoun with the same antecedent is excluded; in much the same way, at discourse level, the constraints for unaccented use of a pronoun are stricter than those for accented use, but if the requirements for unaccented use are met, then accented use is excluded.

The findings from this and the previous section on pronouns can be summarized as follows: a (personal) pronoun, whether singular or plural, accented or unaccented, requires that its antecedent be available (either directly or as a result of inheritance or construction) at the node where the utterance containing the pronoun should be attached.⁴ Once the antecedent is established, an unaccented pronoun requires plain co-reference, an accented pronoun calls for some linking operation to be carried out (subsectional relativization, bridging, ...).⁵

5 Proper names

The next question to be discussed is: what are the effects of replacing the pronouns in (1-7) by, for example, proper names? Proper names are said to uniquely identify their referents, so it does not come as a surprise that replacing the unaccented pronouns *die/she* and *ze/she* in (1,iii) and (2,iii) by the de-accented proper names *PJHarvey* and *Phoebe*, respectively, takes away the referential ambiguity from these examples, and that the same goes, *mutatis mutandis*, for the other well-formed discourses, (4) and (6). What *is* surprising, though, is that replacing the ungrammatical unaccented pronouns *ie/he*, *d'r/her*, and *ze/she* in the ill-formed discourses (3,5,7) by the de-accented proper names *Chandler*, *Phoebe*, and *Monica*, respectively, hardly seems to render these discourses any less unacceptable.

⁴ For some pronouns, e.g. anaphorically used Dutch *die*, stricter conditions may apply (see section 3).

⁵ The term *bridging* is used for a type of anaphora where the antecedent evokes a frame within which the anaphor finds its interpretation and reference. Examples are: *a car – the wheels*, *a book – the writer*, *a restaurant – the waiter*.

Replacing the unaccented pronouns in the well-formed discourses (1,2,4,6) by the corresponding *accented* proper names has the following effect: when uttered without further context, the discourses become weird with the unaccented pronouns replaced by the corresponding accented proper names, just as weird as with the unaccented pronouns replaced by their accented counterparts (see section 4). As for the ill-formed discourse (3), replacing the unaccented pronoun *ie/he* by the accented proper name *CHANDLER* renders the discourse well-formed, just like replacing the unaccented pronoun by its accented counterpart *HIJ/HE* did (see section 4). The ill-formed discourses (5,7) did not become well-formed by replacing the ungrammatical unaccented pronouns *d'r/her* and *ze/she* by their accented counterparts *HAAR/HER* and *ZIJ/SHE*, respectively. Replacing the pronouns by the corresponding accented proper names does render the discourses well-formed. Apparently, the use of accented proper names is not subject to the accessibility constraints that the use of (accented) pronouns is. Note, however, that it is hard to determine whether these proper names are used anaphorically or for (re-)introducing a discourse referent.

In summary, de-accented proper names must satisfy the same conditions as unaccented pronouns: the antecedent must be available (either directly or as a result of inheritance or construction) at the node where the utterance containing the proper name should be attached, and the relation between anaphor and antecedent must be one of plain co-reference. They only differ from pronouns in that they leave less room for referential ambiguity. If accented, proper names can be used much more freely than pronouns: they can be used to introduce new elements into the discourse, unlike pronouns.⁶ Also, when used anaphorically, they do not seem to be subject to the accessibility constraints that pronouns are (though it is not always easy – or possible even – to decide whether an accented proper name is really used anaphorically, rather than for (re-)introduction). The only circumstance in which the use of an accented proper name is excluded seems to be when the accented proper name is used anaphorically and its relation with its antecedent is one of plain co-reference. Not many linguists will be surprised by the fact that pronouns on the one hand and proper names on the other show different behaviour. What *is* surprising is that the accessibility constraints for pronouns and proper names appear to be the same when they are left unaccented.

6 Conclusion

First, we have to assume that, within the discourse grammar approach, subordinations inherit a set of discourse referents from their subordinating DCU (in the spirit of Scha & Polanyi, 1988), and that at any node a context set can be constructed out of the discourse referents of all (and only all) its daughter DCUs, provided that the occurrence of a pronoun in the next utterance requires one (in the spirit of Kamp & Reyle, 1993). The accessibility conditions for pronouns in discourse can then be formulated as follows: a pronoun, whether singular or plural, accented or unaccented, requires that its antecedent be available (either directly or as a result of inheritance or construction) at the node where the utterance containing the pronoun should be attached. Once the antecedent is established, an unaccented pronoun requires plain co-reference, whereas an accented pronoun calls for some linking operation to be carried out (e.g. subsectional relativization, bridging). As for proper names: de-accented proper names must satisfy the same accessibility conditions as unaccented pronouns, whereas accented proper names are allowed in all contexts where de-accented ones are not.

⁶ A counterexample to the claim that pronouns cannot be used for introduction is a stylistic trick of the type *And then SHE entered!*, where *she* is intended to refer to 'the woman of my dreams', or something of the sort.

The general conclusion is that de-accenting of both pronouns and proper names – of definite NPs in general, actually – is solely determined by discourse structure. In fact, as will be argued in Hoekstra (forthcoming), this holds for *all* NPs.

This conclusion in turn yields a more general hypothesis to investigate, viz. that de-accenting *in general* is determined by discourse structure, in much the same way as accenting is determined by sentence structure (Hoekstra, 2000). In other words, my hypothesis is that sentence accent in Dutch (and English) is essentially a matter of syntax: accenting is related to sentence syntax, de-accenting to discourse syntax.

References

- Asher, N. (1993). *Reference to Abstract Objects in Discourse*. Studies in Linguistics; 50. Dordrecht: Kluwer Academic.
- Deemter, K. van (1991). *On the Composition of Meaning. Four Variations on the Theme of Compositionality in Natural Language Processing*. PhD thesis, University of Amsterdam.
- Hitzeman, J., M. Moens, & C. Grover (1995). Algorithms for analysing the temporal structure of discourse. In *Proceedings of the 7th Conference of the European Chapter of the Association for Computational Linguistics (EACL)* (pp. 253-260). Dublin.
- Hoekstra, H. (1993). Subsectional anaphora in DRT. In M. Everaert, B. Schouten, & W. Zonneveld (Eds.), *OTS Yearbook 1992* (pp. 53-62). Utrecht: OTS.
- Hoekstra, H. (2000). An algorithm for the assignment of sentence accents in Dutch. In H. de Hoop, & T. van der Wouden (Eds.), *Linguistics in the Netherlands 2000* (pp. 105-118). (AVT Publications; 17). Amsterdam: John Benjamins.
- Hoekstra, H. (forthcoming). *Sentence Accent without Focus: Evidence from Dutch and English* (provisional title). PhD thesis, Utrecht University.
- Kamp, H., & U. Reyle (1993). *From Discourse to Logic*. Dordrecht: Kluwer.
- Lambrecht, K. (1994). *Information Structure and Sentence Form. Topic, Focus and the Mental Representations of Discourse Referents*. Cambridge Studies in Linguistics; 71. Cambridge: Cambridge University Press.
- Polanyi, L. (1988). A formal model of the structure of discourse. *Journal of Pragmatics*, 12, 601-638.
- Scha, R., & L. Polanyi (1988). An augmented contextfree grammar for discourse. In *Proceedings of the 12th International Conference on Computational Linguistics (COLING)* (pp. 22-27).
- Vallduví, E. (1993). *Information Packaging: A Survey*. Research paper, Human Communication Research Centre, University of Edinburgh.
- Westerståhl, D. (1985). Determiners and context sets. In J. van Benthem, & A. ter Meulen (Eds.), *Generalized Quantifiers in Natural Language* (pp. 45-71). Dordrecht: Foris.