The Main Reference Mechanisms of Danish Demonstrative Pronominal Anaphors

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Abstract

In this paper we account for the main differences in the reference of personal and demonstrative intersentential pronouns which we discovered in Danish texts and dialogues. We consider the use of demonstrative and personal pronouns referring to individual and abstract entities, such as facts, propositions, situations and events. Many of the referential differences between the two types of pronoun confirm the accounts of the corresponding English pronouns in (Webber, 1988; Gundel et al. 2001). Furthermore we found some referential peculiarities which have not been described in the literature, but are important for anaphora resolution.

1. Introduction

The most common use of personal pronouns is anaphoric, while the most common use of demonstrative pronouns is deictic. However demonstrative pronouns can also be used as anaphors.

Third person neuter singular personal pronouns and singular neuter demonstratives not only refer to individual entities, but can also refer to so-called abstract entities, which comprise facts, propositions, situations and events[1]. In this paper we look at cases in which abstract entities are introduced in discourse by verbal phrases, one or more clauses, one or more sentences or utterances. The intersentential pronominal anaphors which refer to individual entities are in the following called *individual anaphors*, while anaphors referring to abstract entities are called *abstract*.

Two examples of anaphors referring to abstract entities are given in (1), where the first occurrence of the pronoun *det* (it/this/that) refers to the verbal phrase *lære bogstaver og tal* (learn letters and numbers), while its second occurrence refers to the fact that today children in pre-school class are allowed to learn letters and numbers.

(1)
Da Evas storesøster Annika, der nu er ti, gik i børnehaveklasse, måtte børnene ikke lære bogstaver og tal. Det må de i dag, og det er en god idé.
[BERLINGSKE]
(lit. When Eva's elder sister Annika, who now is ten, was in the pre-school class, were the children not allowed to learn letters and numbers. It are they allowed to today, and that is a good idea.)
(When Eva's elder sister Annika, who now is ten, was in the pre-school class, the children were not allowed to learn letters and numbers. Today they may, and that is a good idea.)

In cognitive-based theories of referring expressions it is assumed that speakers make assumptions about the status of entities in the addressee's mental state and this influences their choice of referring expressions. In all these theories pronominal anaphors are assumed to refer to the most salient entities in discourse, defined as being known/old" (Prince, 1981; Prince, 1992), "in focus" (Gundel et al., 1993), "topic prominent" (Givón, 1983) "accessible" (Ariel, 1988; Ariel, 1994). Some of the theories further distinguish among the different types of pronoun.

On the basis of the distance between antecedent and anaphor in texts, Ariel (1994) arranges referring expressions on a scale of accessibility marking. The simplified fragment of Ariel's scale which is relevant to this paper is given in figure 1. In the figure the elements on the left of the scale are the least marked and, consequently, the most accessible ones.

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cliticized pronouns < unstressed pronouns < stressed pronouns < proximal demonstrative < distal demonstratives

Figure 1: Extract from Ariel's Accessibility Marking Scale

In Ariel's scale cliticized pronouns refer to more accessible entities than unstressed personal pronouns, stressed pronouns and proximal and distal demonstrative pronouns in the given order. Ariel's scale is similar to the ordering of referring expressions proposed by Givón (1983) on the basis of a cross-linguistic study of these expressions.

Also in Gundel et al.(1993)'s Givenness Hierarchy personal pronouns refer to the most salient entities, i.e. those entities that are "in focus" in the attentional state, while demonstrative pronouns usually refer to entities which are less salient, i.e. that are "activated" in the attentional state.

Kameyama (1998) extends her centering model to treat stressed pronouns. She assumes that unstressed and stressed versions of the same pronoun in the same position in discourse have the same denotational range, but indicate different preferred values. She uses the focus constraint in Rooth' s (1992) theory of focus interpretation. According to Rooth a focused phrase always implies a set of alternatives with at least one element different from the ordinary semantic value of the same unfocused phrase. Kameyama implements Rooth's theory by assuming that stressed pronouns signal a different presupposition than their unstressed counterparts.

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[1] A classification of abstract entities can be found in (Asher, 1993).

If a stressed pronoun is met, it takes the complementary preference of its unstressed equivalent, if there are competing antecedents.

Webber (1988) notices that abstract entities introduced by a clause are accessible to immediate subsequent reference with demonstrative pronouns, while they are often inaccessible to reference with the personal pronoun *it*.

On the same line Gundel et al. (2001) propose that abstract entities are activated in the addressee's attentional state, while individual entities are in focus. In this way they explain the reference by personal and demonstrative pronouns in examples such as (2).

(2)
  a. Max destroyed his leaf collection last night. **That** was dumb.
  b. Max destroyed his leaf collection last night. **It** was dumb.

(Gundel et al., 2001:38)

In (2a) the demonstrative *that* refers to the act of destroying the leaf collection, while in (2b) the personal pronoun *it* refers to the leaf collection.

According to Gundel et al.'s analysis personal pronouns can only be used to refer to abstract entities when the abstract entities are brought "in focus" in the preceding discourse by syntactic, semantic and pragmatic factors. Some of these factors are analyzed further in (Gundel et al., 2003).

The analysis of personal and demonstrative individual abstract anaphors in Danish written texts and transcriptions of dialogues confirms Webber's and Gundel et al.'s proposal that demonstrative pronouns usually refer to less accessible entities than those referred to by personal pronouns. However, the Danish data indicate more peculiarities in the reference of the various types of pronoun, which we discuss in the following.

In section 2 we present the Danish data while in section 3 we propose a unified account of the differences in reference between personal and demonstrative pronouns. Finally, in section 4, we make some concluding remarks.

2. The Danish data

We analyzed the occurrences of Danish demonstrative and personal pronominal anaphors in a number of texts and transcriptions of dialogues between humans. The written texts are from the Bergenholtz corpus (Bergenholtz, 1990), henceforth BERGENHOLTZ, newspaper articles from *Berlingske Tidende* 1999, henceforth BERLINGSKE and computer manuals, henceforth EDB. The dialogues belong to three corpora collected by researchers from different institutes at the University of Copenhagen: "Samtale hos Lægen" ("Talking with the doctor") (Duncker and Hermann, 1996), henceforth SL; the BYSOC corpus, collected under "Projektysociolingvistik" (Project Urban Sociolinguistics) (Gregersen and Pedersen, 1991); "Projekt Indvandrerdansk" (Project Immigrant Danish) (Jensen, 1989), henceforth PID.

The texts we analyzed contained 764 intersentential pronominal occurrences, while the dialogues contained 795.

2.1. Individual Anaphors

Danish pronominal anaphors include third person demonstrative, possessive and personal pronouns.

The singular forms of third person personal and possessive pronouns distinguish among four genders: feminine, masculine, common and neuter. The feminine and masculine genders are semantic because they refer to the sex of the referent. The common and neuter genders are syntactic and refer to the gender of their antecedents.

Personal pronouns occur in nominative, accusative and genitive forms and have reflexive and irreflexive forms. Reflexive forms, however, are not relevant for intersentential pronominal uses.

In table 1 the third-person personal pronouns are given.

Number	Gender			
	masculine	feminine	common	Neuter
Singular	*han*(he) *ham* (him) *hans* (his)	*hun* (she) *hende* (her) *hendes* (hers)	*den* (it) *dens* (its)	*det* (it) *dets* (its)
Plural	*de* (they) *dem* (them) *deres* (theirs)			

Table 1: Third person personal pronouns

The pronouns *den/det/de* can also be definite articles and demonstratives.

The Danish demonstrative pronouns are given in table 2. In the table we have not included the genitive forms of the demonstratives.

singular common	singular neuter	Plural
den (this/that)	*det* (this/that)	*de* (these/those)
denne (this)	*dette* (this)	*disse* (these)
den her (this)	*det her* (this)	*de her* (these)
den der (that)	*det der* (that)	*de der* (those)

Table 2: Demonstrative pronouns

When used as demonstratives *den/det/de* are always stressed. In written language it is not always possible to distinguish between the personal and the demonstrative *den/det/de*. Of all the demonstrative pronouns only *denne/dette/disse* can refer to humans.

Analyzing the Danish data we found that *denne/dette/disse* never corefer with a subject antecedent intrasententially, although they can refer to a preceding coordinated nominal which, together with the nominal in which the demonstrative occurs is the subject, as illustrated in example (3). In (3) the demonstrative *dennes* (this') refers to the immediately preceding coordinated nominal *en god veninde* (a good friend).

(3) *En god veninde og **dennes** mand sørgede for at flytte Lillian Christensens møbler og de øvrige ejendele fra lejligheden i Brøndbyøster til Æblehaven, da hun for et år siden fik en af de nye ledige lejligheder.*

(A good friend and **this'** husband took care of moving Lillian Christensen's furniture and the rest of her property from the flat in Brøndbyøster to Æblehaven, when she one year ago got one of the new vacant flats.)
[BERLINGSKE]

Intersententially *denne/dette/disse* have only seldom a subject antecedent and in these cases there are no other antecedent candidates.

The fact that *denne/dette/disse* never refer to subject antecedents intrasententially has not been accounted for in the Danish literature. However the same phenomenon seems to occur in Swedish and Norwegian (Fraurud, 1992; Johannessen, 1996).

Fraurud (1992) reports that Swedish traditional norms for written language state that the pronoun *denne* (this) must be used to refer to a human antecedent which is not the subject of the clause, while personal pronouns can only be used to refer to subjects. The latter rule is not followed in informal language any more.

Johannessen (1996) analyzes occurrences of the Norwegian *denne/dette/disse* (this/these) and notices that they never refer to subjects intrasententially while they often refer to non-subjects intersententially.

The fact that *denne/dette/disse* do not refer to subjects intrasententially and prefer non-subject antecedents intersententially is perfectly compatible with Gundel et al.' s (1993) proposal that demonstrative pronouns often refer to entities that are only activated in the hearer's cognitive status. In fact subject entities often have the highest degree of accessibility/topicality, see *inter alia* (Givón, 1983; Brennan et al. 1987; Grosz et al. 1995).

2.2. Abstract Anaphors

The Danish pronouns that can refer to abstract entities are the third person singular personal pronoun in neuter gender *det* (it) and the singular demonstrative pronouns in neuter gender. These pronouns are the stressed *det* (this/that), *det her* (this), *det der* (that) and *dette* (this).

In Danish pronominal abstract anaphors are used in more contexts than in English. In fact they are used in cases where elliptical constructions or the anaphoric *so* and *too* are (or can be) used in English. Some of the particular Danish occurrences of abstract anaphors are in (4).

(4)
a. **A:** *er du øm her ved livmoderhalsen*
   (does it hurt here by your cervix uteri)
   B: *nej. . . det tror jeg nu ikke*
   (lit. no. . . that think I not)
   (no. . . I don't think so)
   [SL]
b. *og så prøvede jeg så at gå lidt i svømmehallen og det prøver jeg sådan ind imellem, men jeg hader det*
   [SL]
   (lit. and then tried I then to go a little to the swimming pool and **it** try I still from time to time, but I hate **it**)
   (and then I tried to go a little to the swimming pool and I still try from time to time, but I hate **it**)
c. *Alle faldt, men det gjorde jeg ikke*
   [PID]
   (lit. All fell, but **that** did I not)

(All fell, but I did not)
d. **A:** *Blev du færdig med opgaven?*
   (Did you finish the task?)
   B: *Ja, det blev jeg*
   (lit. Yes, **that** did I)
   (Yes, I did)
   [PID]

All the antecedents of the abstract anaphors in our data were in the immediate preceding right frontier of the discourse tree confirming Webber (1991)'s analysis of English anaphors.

The most frequently used abstract anaphor in both Danish written texts and dialogues is the unmarked pronoun *det* (it) (Navarretta, 2002). In contrast to this studies of English abstract anaphors (Webber, 1991, Hegarty et al. 2002) indicate that the most common English abstract anaphors are the demonstrative pronouns *this* and *that*. However, the majority of the occurrences of the unmarked *det* (it) in Danish occur in contexts which semantically require an abstract entity. These contexts are very frequent including expressions such as *det gør man* (so does one), *man skulle det* (lit. one should it) (one should), *han synes det* (lit. he thinks it) (he thinks so), *ja, det er jeg* (lit. yes, it am I) (yes, I am).[2]

The unmarked *det* also occurs in 93 % of the cases where the antecedent is also a pronominal abstract anaphor, as it is the case for the second occurrences of *det* in (1) and (4b).

In Danish the preferred interpretation of the pronoun *det* in contexts which allow both a reference to individual and abstract entities is often the abstract entity, even if there is an individual candidate antecedent, when the preceding sentence/utterance describes a generic situation. This is illustrated in example (5) where *det* in the second sentence refers to the entity evoked by the previous utterance and not to the neuter nominal phrase *kollegiets vaskeri* (the college's laundry).

(5) *Det er dødsygt at sidde på kollegiets vaskeri. Det hader jeg.*
   (lit. It is dead boring to be in the college's laundry (neuter gender). It/that (neuter gender) hate I.)
   (It is dead boring to be in the college's laundry. I hate that.)
   [PID]

The abstract *dette* (this) is mostly used in written language. In 33 % of its occurrences it is used to indicate that the pronoun refers to an abstract entity in cases where there are competing individual antecedents in the preceding utterance as illustrated in (6), where the demonstrative refers to the situation, *43 pct. af danskere . . . dårligere år* (43 % of the Danes. . .worse year) and not to the immediately preceding nominal *et dårligere år* (a worse year). This use confirms the account of demonstrative abstract pronouns proposed in (Webber, 1988; Gundel et al. (2001).

(6) *På det personlige plan er danskerne blandt de mest optimistiske i den internationale sammenligning. 43 pct. af danskerne tror på, at 1999 bliver et bedre år for deres eget vedkommende end det forgangne, mens kun 10 pct. forventer et dårligere år. Dette er en mindre*

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[2] A list of the Danish contexts which require or prefer an abstract entity is given in (Navarretta, 2002).

nedgang i optimismen i forhold til sidste år.
[BERLINGSKE]
(lit. On the personal level (neuter gender) are the Danes among the most optimistic in the international comparison (common gender). 43 % of the Danes believe that 1999 will be a better year (neuter gender) for them personally than the preceding (neuter gender), while only 10 % expects a worse year (neuter gender). **This** (neuter gender) is a minor fall in the optimism compared to last year.)

(On the personal level the Danes are among the most optimistic in the international comparison. 43 % of the Danes believe that 1999 will be a better year for them personally than the preceding one, while only 10 % expects a worse year. **This** is a minor fall in optimism compared to last year.)

In 27% of its occurrences the abstract *dette* (this) is used to refer to the last mentioned situation in the previous sentence, often expressed in a subordinated clause, and not to the abstract entity evoked by the whole sentence or to a preceding abstract anaphor. This use is illustrated in the examples in (7).

(7)

a. *Japans nationalbank har tidligere udtrykkeligt afvist at gennemføre opkøb af statsobligationer og har i den forbindelse henvist til, at **dette** vil stride mod bankens regler undtagen under "ekstreme omstændigheder".*
[BERLINGSKE]
(Japan's national bank has earlier explicitly refused to buy government bonds and has in that context referred that **this** will go against the bank's rules except in "extreme circumstances").

b. *Det kræver, at vi sætter behandlingen af narkomanerne i første række. En måde, hvorpå **dette** kan ske, er, hvis man begynder at udlevere narko til de hårdest ramte narkomaner. Og **dette** skal selvfølgelig ske under streng kontrol.*
[BERLINGSKE]
(It requires that we give first priority to the treatment of drug addicts. One way in which **this** can happen, is, if we begin to dispense drugs to the hardest hit drug addicts. And **this** must of course happen under strict control)

c. *Jeg lytter som pensionist meget til P2, og jeg synes bestemt , at den nye og nyere musik får megen sendetid i dag- og aftentimerne; **dette** synes jeg er både godt og rimeligt.*
[BERLINGSKE]
(As a retired person I listen a lot to P2, and I think certainly that new and recent music get much transmission time in the day and evening hours; **this**, I think, is both good and reasonable)

In (7a) the pronoun *dette* refers to the entity evoked by the subordinate infinitive clause, i.e. the Japans bank buying government bonds and not to the entity evoked by the whole preceding sentence, i.e. the bank refusing to buy government bonds. In (7b) the first *dette* (this) refers to the entity evoked by the subordinate clause *vi sætter behandlingen af narkomanerne i første række* (we give first priority to the treatment of drug addicts) and not to that evoked by the whole sentence or to the entity referred to by the abstract *det* (it/this/that) in the main clause. Similarly the second *dette* refers to the entity evoked by the subclause *man begynder at udlevere narko til de hårdest ramte narkomaner* (one begins to dispense drugs to the hardest hit drug addicts) and not to that evoked by the whole preceding sentence, *En måde . . . ramte narkomaner.* (A way . . . hit drug addicts) or that referred to by the preceding abstract anaphor *dette* (this). In (7c) *dette* refers to the fact evoked by the subordinate clause*, at den nye og nyere musik får megen sendetid i dag- og aftentimerne* (that the new and recent music get much transmission time in the day and evening hours) and not to the complex situation evoked by the whole preceding sentence.

This use seems to be in line with the use of the individual anaphors *denne/dette/disse* which do not refer to subject entities. In the abstract case *dette* indicates that the reference is to the entity evoked by a preceding subordinate clause and not to the entity evoked by the whole preceding sentence.

In few cases *dette* and the stressed *det* (the former in texts, the latter in dialogues) are used instead of the unmarked *det* to refer to the most salient abstract entity. In these cases the two demonstratives emphasize the entity they refer to or mark a contrastive reading, see *inter alia* (Vallduví, E. and E. Engdahl. 1995; Rooth, 1992). In example (8a) the unmarked *det* (it) is neutral, while *det* (that) in (8b) signals a contrastive reading such as "of all the things in the world you could possibly ask me to do this is the worse one".

(8)

a. **father:** *vil du gå på stranden?*
(would you like to go to the beach?)
child: *det VIL jeg GERNE*
(lit. it WILL I WITH PLEASURE)
(yes, I would)

b. **father:** *gider du hjælpe mig med at rydde op?*
(would you please help me tidying up?)
child: *DET gider jeg I HVERT FALD IKKE*
(lit. IT like I IN ANY CASE NOT)
(I do REALLY NOT feel like doing THAT)

Fraurud (1992) in her study of the Swedish abstract pronominal anaphors does not find any referential difference between the Swedish *det* and *dette*.

In our data *det her* (this) is always used to refer to some concepts which must be inferred from the context. In example (9) the deictic *det her* (this) refers to the inferable concept of writing a letter to a dead person.

(9)

L: *men øh, men du kunne overveje at skrive et brev til din veninde ££ og selvfølgelig skal du ikke sende det*
(but uh, but you could consider to write a letter to your friend ££ and of course you must not send it)
P: *nej nej*
(no no)
L: *jeg kan godt forstå du ser mystisk ud ansigtet*
(I perfectly understand that you look suspicious)
P: *ja*
(yes)
L: *men jeg mener det, faktisk*
(but I mean it, really)
P: *nå*
(well)

L: *fordi.. øh*
(because.. uh)
P: *nå ja man kan skrive sig ud af det*
(well yes one can "write oneself out of it")
L: *ja*
(yes)
P: *ja*
(yes)
L: *ja, altså du som du aldrig fik sagt til hende fordi du ikke kom derop engang til, det skulle du prøve at sætte dig at skrive et brev til hende*
(yes, so you that you never managed to tell her because you did not come up there once again, that you should try to write in a letter to her)
P: *ja det kan godt være det var en*
(Yes it could well be an)
L: *der er ikke nogle steder at sende det hen, men det er klart øh det er jo ikke noget jeg har fundet på **det her***
(there are no places to send it to, but it is clear uh it is certainly not something I have hit upon **this**)
P: *nej*
(no)
L: *det er jo noget man ved dem der har forstand*
(it is something one knows them who have knowledge)
P: *ja*
(yes)
L: *på de ting*
(about those things)
P: *ja*
(yes)
L: *der kan hjælpe*
(which can help)
[SL]

All the occurrences of the pronoun *det der* (that) in our data are cataphoric. Finally all the occurrences of abstract pronouns preceded by the quantifier *alt* (all), i.e. *alt det* (all this/that) and *alt dette* (all this) refer to a group of previously mentioned situations as in example (10) where *alt dette* (all this) refers to all the precedingly mentioned events indicating how the Government supports the national church.

(9) *Støtten består i, at man opretholder en lukkelov, der beskytter søndagen, at man sikrer, at præster får en videnskabelig forsvarlig uddannelse på universiteterne i Århus og København, hvor der findes teologiske fakulteter. Staten betaler også 40 pct. af de almindelige præsters løn (ikke præster til særlige opgaver) og hele biskoppernes løn. Staten betaler også konsulentbistand fra arkitekter, bygningssagkyndige, eksperter fra Nationalmuseet, Akademiet for de Skønne Kunster o.a. **Alt dette** gør man, fordi kirken er en offentlig institution.*
[BERLINGSKE]
(The support consists in keeping a Shop Act, which protects the Sunday, ensuring that priests get a scientific proper education at the universities in Århus and Copenhagen, where there are teologic faculties. The Government also pays 40 % of the gage of common priests (not priests with particular duties) and the whole gage of bishops. The Government also pays advisory assistance from architects, building experts, experts from the National Museum, the Academy of Fine Arts etc.

All this is done, because the church is a public institution.)

This use of demonstratives preceded by the quantifier *alt* has also been described in Swedish by (Fraurud, 1992).

Thus the Danish data confirm that individual personal pronouns refer to the most accessible/salient entities in discourse, i.e. entities that are "in focus" using Gundel et al.'s (1993) terminology, while demonstratives refer to less accessible entities.

The most frequently used abstract anaphor in Danish is the unmarked personal pronoun *det*. *Dette* (this) and the prosodically marked *det* (this/that) are used to emphasise the referent and/or to indicate that the pronoun has an abstract antecedent, when there are competing individual antecedents in the preceding utterance. Furthermore *dette* (this) is often used to refer to the entity evoked by the last mentioned subordinate clause in the previous sentence, instead of to the entity introduced by the whole sentence or referred to by a precedent abstract anaphor. It seems also that in Danish there is a preference for interpreting pronominal anaphors as abstract if there is a possible ambiguity between an individual antecedent and an abstract antecedent evoked by a clause describing a generic situation. This is not confirmed by the English literature. *Det her* (this) is often used to refer to concepts that can vaguely be inferred from the context, while demonstrative anaphors preceded by the quantifier *alt* refer to more situations in the immediately preceding discourse.

3. Our Account

The differences in reference between the various pronominal types which we found in the Danish data can be summarized as follows.

Personal pronouns usually refer to the most salient entity in the utterance, as proposed in all cognitive-based theories.

Demonstrative pronouns are used in the following two cases:
1. to indicate that the antecedent is not the most expected one in the present context, i.e. it is "activated", but not "in focus" in the hearer's cognitive status
2. to emphasise the entities the anaphors refer to or to set them in a contrastive reading (Vallduví and Engdahl, 1995; Rooth, 1992)

The fact that demonstrative pronouns can be used to refer to salient entities (case 2) is compatible with Gundel et al.'s (1993) Givenness Hierarchy whose different statuses are in an unidirectional entailment relation.

Differing from English (Webber, 1991; Hegarty et al., 2002), the most common abstract pronominal anaphor in Danish is the unstressed personal pronoun *det* (it). In many cases this anaphor refers to abstract entities in contexts that semantically require or that preferentially take an individual entity. In Danish these contexts are very frequent explaining the frequency of the abstract *det* (Navarretta, 2002).

According to Webber (1988) and Gundel et al. (2001; 2003) in ambiguous contexts, i.e. in contexts where an anaphor can refer to either an abstract or an individual entity, and the abstract entity is introduced by clauses or sentences, individual entities are "in focus", while abstract

entities are only "activated" in the hearer's cognitive state. Thus abstract entities can only be referred to by demonstrative pronouns, unless the abstract entity is put "in focus" in the addressee's attentional state by syntactic, semantic and pragmatic factors. This analysis seems to be confirmed by the Danish data in most cases and we certainly agree with Gundel et al. (2003) that many factors influence the degree of salience of entities in discourse (this is the case for both individual and abstract reference as proposed by i.a. (Navarretta, 2002)).

However the Danish data also indicate a number of language-specific peculiarities in the reference of the different types of demonstrative pronoun, such as the reference of *dette* and *det her* that must be accounted for in order to correctly resolve these pronouns.

4. Concluding Remarks

Concluding also in Danish, as in English, it is important to distinguish between the reference of personal pronouns and demonstrative pronouns, both when they refer to individual and abstract entities.

Our account of the differences in reference between personal and demonstrative pronominal abstract anaphors is in line with cognitive-based studies (Ariel, 1988; Gundel et al., 1993; 2001). Our study also indicates that different demonstrative abstract anaphors are used in different contexts. Some of these differences can be accounted for in an automatic resolution algorithm by applying different strategies when resolving each type of pronoun.[3]

It would be interesting to investigate whether some of the referential peculiarities of the Danish demonstrative pronouns also occur in other languages.

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[3] An algorithm for dealing with the resolution of Danish individual and abstract anaphors is in (Navarretta, 2002; 2004).