Two Types of Anaphoric Relations in Pronouns: Consequences for Their Syntactic Analysis

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1. Introduction

There is abundant evidence that pronouns do not only involve anaphoric relations at the reference level (co-reference with an antecedent or interpretation as a variable bound by the antecedent), but may also involve anaphora at the level of the descriptive content, more specifically, *nominal anaphora*, i.e., the recovery of an N(P)-antecedent from the context, which is a type of identity-of-sense anaphora. If we add the fact that nominal anaphora is a systematic phenomenon in DPs, surfacing as noun ellipsis or, in some languages, pro-N forms (see Engl. *one*), a natural conclusion is that 3rd person personal pronouns spell-out THE+[$_{NP}$Ø], filling an apparent gap in the distribution of nominal ellipsis (as first proposed by Postal 1966). However, this analysis faces a number of problems, which we will present in section 3. In order to solve these problems, within an analysis in which pronouns do contain an N-component, we propose that the D found in pronouns (D_{pron}), although it has the semantics of THE, differs from THE in terms of features (section 4). We argue that a minimal difference between THE and D_{pron} must exist because empty constituents must be licensed by features on the selecting head, which implies that D_{pron} carries the features necessary for licensing an empty complement.

2. Arguments for the existence of a null N in 3rd person pronouns

2.1. Paycheck pronouns

There are cases where the pronoun is neither co-referent by its antecedent nor bound by it, but the only relation with the antecedent is that of N(ominal)-anaphora: the pronoun is interpreted as [THE NP], where the NP is that of the antecedent. These pronouns are known as 'paycheck-pronouns', after Karttunen's (1969) example which introduced them in the linguistic literature (see (1)):

(1) The man who gave his paycheque to his wife was wiser than the man who gave it to his mistress.
it = the [paycheque of x]

A survey of these pronouns can be found in Elbourne (2005), who uses the term 'neontological pronouns', signaling the fact that the referent introduced is new. In examples such as (1), the absence of coreference is due to the fact that the descriptive part ('paycheck of *x*') contains an entity variable (*x*), which may take a different value. The variable may be introduced by an implicit possessor, see (2):

(2) Most books contain **a table of contents**. In some, **it** is at the end. (Heim 1990: 39)
SOME (*x* a book, *s* a situation containing x) [in *x*, ιy.table-of-contents)(x)(y)(*s*) is at the end]
it = ιy.table-of-contents)(*y*)(*s*), where *s* is bound by *some*

The variable that triggers disjoint reference may be a situation variable[1]:

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This work was supported by a grant of the Romanian Ministry of Research, Innovation and Digitization, CNCS - UEFISCDI, project number PN-III-P4-PCE-2021-0042, within PNCDI III.

[1] Elbourne (2005) also includes donkey pronouns in this category. However, languages with anaphoric articles indicate that donkey anaphora involves indexical (referential) anaphora (Schwarz 2009). An additional issue for Elbourne's approach is posed by indistinguishable participants, illustrated by so-called 'bishop sentences' (*If* ***a***

(3) This year **the president** is a Republican. Next year **he** will be a Democrat (Cooper 1979)
he = ιx.president-USA(*x*)(*s*), where time(s) ⊆ next year

As Corblin (2006) showed, pronouns can also stand for definite DPs that are part of idioms, in which case they completely lack reference. Again, nominal anaphora is crucial for the interpretation:

(4) Pierre a pris **la mouche**. Il **la** prend souvent pour un rien. (Fr.; Corblin 2006 :8)
Pierre has caught the fly(F) he it.F catches often for a nothing
'Pierre got ticked off. He often gets ticked off for a trifle.'

2.2. Non-semantic gender on pronouns

Even when the relation with the antecedent is referential anaphora, the behavior of gender in languages with 'non-semantic' gender indicate nominal ellipsis: pronouns show the grammatical gender of the noun of their antecedent, even when this feature does not express a property of the referent, but is an idiosyncratic property of the noun – see (5), where the feminine is a lexical feature of the noun *cămaşă* 'shirt'.

(5) Am pus **cămaşa**$_i$ pe scaun. Peste **ea**$_i$ am pus umbrela. (Ro.)
have.1 put shirt(**F**)-the on chair over 3**F**S.ACC have.1 put umbrella-the
'I put the shirt on the chair. I put the umbrella over it.'

The gender on the pronoun in (5) cannot be explained by agreement with the antecedent, because the antecedent is in a different sentence. The nominal antecedent can also be extralinguistic: in the exophoric use, where pronouns refer to entities salient in the context, the gender reflects the nominal concept that characterizes the referent, see (6)a. Nominal concepts characterizing a salient referent in the extralinguistic context can indeed serve as antecedents for noun ellipsis or pro-N, see (6)b:

(6) [salient referent: a hat - Ro. *pălărie* FEM, Fr. *chapeau* MASC]
a. Cumpăr-**o**! (Ro.) / Achète-**le** (Fr.)
buy.IMPV.2S=3**F**S.ACC buy.IMPV.2S=3**M**S.ACC
'Buy it!'
b. Am şi eu **una** aşa (Ro.) / b. J'en ai **un** comme ça. (Fr.)
have.1S also I one.**F** like-that I PRO-N=have.1S un.**M** like that
'I have one like that.'

2.3. The apparent gap in the distribution of [$_N$Ø] with THE

Whereas the facts presented so far support the presence of NP-ellipsis in pronouns, a look from the perspective of nominal ellipsis and noun-less DPs more generally will not only further support this view, but also suggest that the underlying structure of pronouns contains the definite article (we confine our discussion to languages with a definite article).

Nominal anaphora is a systematic phenomenon across all sorts of DPs. In certain languages, there is a complex repartition between null N(P)s and an overt pro-N form, see English *one* or the pro-N clitics of French (*en*), Catalan (*en*), Italian (*ne*) and Dutch (*er*). In other languages, null Ns are very productive, see Spanish, Romanian, German or Greek. This latter type is particularly relevant, because the full regularity of null Ns supports the existence of a configuration THE+[$_{NP}$Ø]. We will present the data of Romanian as illustrative for this type. (7)a-b show N-ellipsis in indefinite and definite DPs, respectively; (7)b also shows that determiners may take special strong forms before [$_N$Ø] (in Romanian, this happens for the definite article, which is normally an inflectional suffix, see *cea* vs. *-a* on *maşina*). (7)c shows that ellipsis is also possible in bare nouns, which presumably rely on a null D (on this type of ellipsis in Greek, see Giannakidou & Merchant 1996).

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bishop *meets* ***another bishop***, ***he*** *usually greets* ***him***). It appears, thus, that a dynamic treatment of donkey pronouns is preferable. For an overview of the various problems of 'e-type' analyses of donkey-anaphoric expressions, see Mandelkern & Rotschild (2020).

(7) a. Voia trandafiri. Am adus eu{unul/doi/mulţi/câţiva} [$_{N}$Ø]$_{anaph}$.
wanted.3S roses(M) have.1 brought I one.M/two.M/many.M/some
'(S)he wanted roses. I brought one/two/a lot(of them)/some [$_{N}$Ø]$_{anaph}$.'
b. Maşina verde e mai frumoasă decât [cea [[$_{N}$Ø]$_{anaph}$ roşie].
car(F)-the.F green is more beautiful than the.FS red.FS
'The green car is nicer than the red one.'
c. A: Ne mai trebuie zahăr. B: Am adus eu [[$_{D}$Ø] [$_{N}$Ø]$_{anaph}$].
us.DAT more needs sugar have.1 brought I
'A: We need sugar. B: I brought some.'

The empty N can also be non-anaphoric. In this case, the descriptive content is usually [human] (for the masculine), [human + female] (for the feminine) but can also be [-animate] (especially for the feminine plural and masculine singular; see Giurgea 2013 for details):

(8) a. Mi-a spus multe [$_{N}$Ø]$_{non\text{-}anaph}$.
me-has told many.FP
'She has told me many things.'
b. Nu este indicat pentru [cei [[$_{N}$Ø]$_{non\text{-}anaph}$ cu frică de înălţime].
not is advisable for the.MP with fear of height
'It is not suitable for those who are afraid of heights'

Now, in many languages the definite article behaves unlike the other determiners when it comes to the combination with null Ns or pro-Ns: the forms used when there is an overt adnominal constituent ('partial emptiness/partial ellipsis') are impossible with 'total emptiness/total ellipsis', see *cea* and *the one* in (9); if the repetition of the noun is avoided, personal pronouns are used instead:

(9) Avea o maşină nouă. Mi-a spus că a cumpărat**{-o /*cea}** în iunie. (Ro.)
had.3S a car(F) new me.DAT-has told that has bought-it(F)/the.FS in June
'He had a new car. He told me he bought {**it/*the one**} in June.'

This unexpected gap in the distribution of THE is only apparent if we analyze 3rd person personal pronouns as the spell-out of THE+total-emptiness, as proposed by Postal (1966) (for this type of analysis, see also Panagiotidis (2002), Elbourne (2001, 2005, 2013), Sauerland (2000, 2008), Kratzer (2009), Patel-Grosz & Grosz (2017), a.o.). This idea could be implemented, for instance, in Distributed Morphology, by using special vocabulary insertion rules for THE in the context [$_{DP}$ THE [Ø]], or by assuming rules of phrasal spell-out for DPs made available by the null complement of THE[2].

3. Problems for equating PRON with THE+[$_{N}$Ø]

3.1. Binding

One immediate issue for this analysis is the different behavior with respect to binding principles: while personal pronouns are subject to Principle B, DPs with THE (including with partial ellipsis), like all the other DPs, are subject to Principle C of the Binding Theory:

(10) [The doctor]$_i$ said that {he$_i$ /*[the doctor]$_i$/*[the smart one]$_i$} is right.

One could reformulate principle C as a requirement to use [$_{N}$Ø] for very local antecedents, but this account is not adequate for all cases. In the previous section, the presence of non-semantic gender on pronouns was taken as indicative for the existence of a null N with which the D spelled-out by the pronouns agrees, based on the fact that non-semantic gender is a lexical property of nouns. Note however that in certain cases when the pronoun is interpreted as a bound variable, assigning the nominal property of the antecedent to the bound variable does not yield the correct meaning – see (11),

[2] Neeleman & Szendrői (2007) proposed such rules for pronouns, but targeting KP. They reject the presence of an N-component in personal pronouns.

where the masculine gender on the pronoun *l* is due to the masculine gender of the antecedent noun *papagal* 'parrot', but the interpretation is not 'only(the parrot).(λx. x remembers those who attacked the parrot x)', but rather 'only(the parrot).(λx. x remembers those who attacked x)':

(11) Doar papagalul îi ţine minte pe cei care **l**-au atacat. (Ro.)
only parrot(**M**)-the CL.ACC keeps mind DOM the.MPL which 3**M**S.ACC-have attacked
'Only the parrot remembers those who attacked it.'

This means that the underlying structure cannot contain $[_N Ø]_{anaph}$. The gender on the pronoun seems to come from some sort of agreement. Kratzer (1998, 2009) argues, indeed, based on the phenomenon of fake indexicals, that bound variable pronouns may be generated as bare indices (intransitive Ds) that receive their φ-features from the binder, via an agreement chain, see (12), where the sloppy reading (in which *meu* 'my' is a fake indexical) is contingent on the person agreement on the verb of the relative:

(12) a. **Eu** sunt singura care **mă** îndoi**esc** de copilul **meu**. (Ro.)
I am only(F)-the which REFL.1S doubt.1S about child-the my
'I am the only one who has doubts about **her/my** child.' (✓ strict, ✓ sloppy)
b. **Eu** sunt singura care **se** îndoi**eşte** de copilul **meu**.
I am only-the that REFL.3SG doubt.3SG about child-the my
'I am the only one who has doubts about **my** child.'

However, in examples such as (11), there is no agreement chain between the pronoun and the binder. Discussing similar cases in German, but involving person, Kratzer (2009) proposes that [1st] and [2nd] person features can be bound by indexical context shifters. Such an account however cannot apply to gender in (11). We conclude that gender on bound variable pronouns does not always come from (syntactic) agreement, but can be valued and interpreted as mere signaling a binding relation. In formal terms, we can assume that the LF operation of lambda-abstraction comes with a matching requirement between the φ-features of the pronoun and the φ-features of the binding. If this requirement is satisfied, the φ-features of the pronoun are erased[3]. This account is compatible with an analysis of pronouns as D+$[_N Ø]$, but the $[_N Ø]$ must be non-anaphoric – see (8) for examples of $[_N Ø]_{non\text{-}anaph}$. Non-anaphoric empty Ns can be analyzed as intransitive n heads, bearing gender but selecting no lexical root.

3.2. Additional semantic or syntactic features

A problem for treating 3rd person pronouns as special spell-outs for THE+$[_N Ø]$ combinations comes from the existence of differences in semantic or syntactic features between pronouns and THE: in English, for instance, gender is only marked on personal pronouns. In Mainland Scandinavian, pronouns have special animate forms, opposing masculine and feminine, whereas the forms used for inanimates show the common vs. neuter contrast found with nouns (cf. Swedish *han* 'he', *hon* 'she', *den* 'it.COMMON', *det* 'it.NEUTER'). An analysis of *he* and *she* as reflecting a grammatical n [+animate] incorporated into THE does not solve the issues for which the THE+$[_N Ø]$-analysis was proposed: animate pronouns have uses relying on noun ellipsis (see (3) above) and block the use of *the one*.

Other features that cannot be relegated to PF by which pronouns may differ from THE are the features responsible for clitic placement, in languages where clitic pronouns have a special syntax, moving to dedicated positions inaccessible to other DPs, see e.g. Romance languages:

(13) Je connais **la théorie**. / Je **la** connais. (Fr.)
I know the theory(F) I 3FS.ACC know
'I know the theory / I know it.'

[3] The view that variable binding is contingent on agreement also in the case of gender is supported by a generalization that holds in Greek and German according to Spathas (2007) and Sauerland (2008): in cases of conflicts between grammatical and natural gender, the use of natural gender disallows sloppy readings.

3.3. A one-to-many correspondence in languages with strong and weak series

Clitics and other weak forms raise an additional problem for the THE+[$_N$Ø]-analysis. As the choice between strong and weak forms is not always a matter of PF (see below), the two series must reflect distinct syntactic items. But the THE+[$_N$Ø]-analysis provides a single underlying syntactic structure for 3rd person pronouns. Sometimes, indeed, there is no choice between strong and weak forms (where under 'weak' we include clitic and null forms, i.e. 'deficient' pronouns in the terminology in Cardinaletti & Starke 1999): strong forms must be used in cases of coordination, prosodic marking of focus or contrastive topic, modification by focal particles or appositions. For such cases, one might hold that the strong form is an alternative spell-out for the THE+[$_N$Ø]-constituent inserted whenever a prosodic word is required. But the use of strong forms goes beyond these "forced" cases: sometimes either form can be used, with subtle meaning effects. Thus, strong forms may be associated to a reduced degree of accessibility of the antecedent (e.g. antecedents placed in less prominent positions), see the preference of a strong form over a null subject in (14):

(14) Vom discuta acum categoriile lui Kant$_i$. **{El$_i$ / ??Ø$_i$}** le obţine pornind de la
will.1PL discuss now categories-the GEN Kant he CL.3FP.ACC obtains starting from
tipurile de judecăţi. (Ro.)
types-the of propositions
'We will now discuss Kant's categories. He obtains them based on types of propositions.'

In some languages, strong forms are associated to animacy (Cardinaletti & Starke 1999). It has also been noticed that strong forms tend to reject paycheck (neontological) readings (see Jenks & Konate 2022 and references therein). In Romanian, this holds for strong objects, but not for strong subjects:

(15) Unii nu-şi mai găseau cartea de identitate. 'Some couldn't find their identity cards'
a. La mine, **Ø/ea** stă mereu în portofel. / b. Eu n-**o** pierd (***pe ea**) niciodată
at me 3FS.NOM stays always in wallet I not-3FS.ACC=lose.1S DOM 3FS never
'I always keep **it** in the wallet.' 'I never lose it.'

We conclude that the difference between strong and weak series, at least in certain languages, is represented in narrow syntax, which raises the one-to-many correspondence problem for the THE+[$_N$Ø]-analysis of 3rd person pronouns.

3.4. A gap in the possible THE+[$_N$Ø] combinations

We have seen in §2.3 that [$_N$Ø] can be anaphoric as well as non-anaphoric (for the latter, see (8)). Moreover, the pronoun may be anaphoric at the referential level (being co-referent with or bound by an antecedent) or not – for the latter, see the paycheck pronouns discussed in §2.1. This predicts four possible combinations of anaphoric relations in pronouns, according to whether the N is +/-anaph and the entire DP is +/-anaph (for the latter, we will talk about 'indexical anaphora'). We have already seen examples of the combinations (i) [D$_{def}$ [$_N$Ø]$_{anaph}$]$_{anaph}$ (ex. (5), (6)a, (9)) and (ii) [D$_{def}$ [$_N$Ø]$_{anaph}$] (ex. (1)-(4), (15)). The combination (iii) [D$_{def}$ [$_N$Ø]$_{non\text{-}anaph}$]$_{anaph}$ is found when the antecedent does not contain an NP description (e.g. proper names, *John$_i$... he$_i$...*, non-nominal antecedents, e.g. *[That they will win]$_i$...it$_i$...*, see (16), as well as in at least some bound variable contexts, see the discussion in §3.1.

(16) Crede **[că vom câştiga]$_i$. Ø$_i$** este imposibil. (Ro.)
believes that will.1PL win is impossible
'(S)he thinks **[we will win]$_i$. That$_i$** is impossible.'

However, the combination (iv) [D$_{def}$ [$_N$Ø]$_{non\text{-}anaph}$], with neither of the anaphoric relations, does not seem to be attested. For instance, in Romanian, where the most widespread interpretation of [$_N$Ø]$_{non\text{-}anaph}$ is +human (+/-female), this combination would yield a new definite with the interpretation 'unique person/maximal sum of persons in situation *s*' for the masculine, or 'unique female person/maximal sum of female persons in situation *s*', for the feminine, where *s* can be variously

specified, yielding generic or particularized readings ('in the current situation'). But generic readings are clearly not available (one cannot use *they* to refer to people in general, unless it is anaphoric to a generic DP). When it comes to restricted situations, there is an impersonal use of the third plural which, at first glance, seems to correspond to the combination $[D_{def}\ [_N Ø]_{non\text{-}anaph}]$, 'maximal sum of people in situation *s*' (in Romanian, this use is only possible with *pro*, not with strong subjects), see (17)a. However, this type of 3rd plural pronoun differs from a run-of-the-mill definite DP in that it has restricted anaphoric antecedent potential for subsequent pronouns, see (17)b, and it is restricted to subjects (see Siewierska & Papastathi 2011).

(17) a. În oraşul ăsta, **Ø**$_i$ nu-şi lasă maşinile pe trotuar. b.?? Admir comportarea **lor**$_i$.
in city-the this not-3REFL.DAT leave.3P cars-the on sidewalk admire.1S behavior-the their
'In this city, **they**$_i$ **(people)** don't leave their cars on the sidewalk. I admire **their**$_i$ behavior'

Since definite DPs with THE have non-restricted anaphoric potential, it is unlikely that the impersonal pro_{pl} or *they* corresponds to the combination [THE $[_N Ø]_{non\text{-}anaph}$]. But we have seen that THE allows $[_N Ø]_{non\text{-}anaph}$ with partial ellipsis, see (8)b (in the corresponding English version, *those* can be analyzed as a strong form of *the* before $[_N Ø]$[4]). It is then unclear why this use cannot be found with total ellipsis.

4. Proposal

The various problems listed above concern not so much the existence of an N-component in 3rd person pronouns, but rather the identification of the D in pronouns with THE. We propose that pronouns do contain an N-component and a D with the semantics of the definite article, but this D is featurally distinct from THE. The assumption that a regular THE should occur in 'total emptiness' contexts (e.g. in (9)) is justified only if we consider $[_N Ø]_{anaph}$ and $[_N Ø]_{non\text{-}anaph}$ to be ordinary Ns. However, a number of restrictions in their distribution across languages indicate that this assumption is unwarranted. There is evidence that ellipsis in general must be syntactically licensed (see e.g. Lobeck 1995), and one way of encoding this licensing is to assign a licensing feature to the head that selects the elided phrase – see Merchant's (2001) E-feature (on its use for N-ellipsis, see Saab 2019). Thus, the definite D whose entire complement is elided ($[_N Ø]_{anaph}$) must differ from THE by carrying [E]. In partial ellipsis, [E] is on a lower head (this can be Num, or n; [E] can be very low, because complements of N can occur as remnants of ellipsis, e.g. *the destruction of Carthage was as cruel as [that of Corinth]*). This explains why a regular THE can occur with partial ellipsis, but not with total ellipsis (see §2.3). Note that, if number is generated on a lower head in D's complement (Num), this predicts that paycheck pronouns, which involve ellipsis of the entire complement of D, should have the same number as their antecedent. This prediction is confirmed by the contrast in (18), where the boldfaced pronoun doesn't have a referential antecedent, but stands for 'the book(s) I had to translate'[5]:

(18) Maria a uitat [**cartea** pe care trebuia s-o tradică]. {Şi eu am
Maria has forgotten book(F)-the DOM which had SBJV-CL.ACC translate.3 also I have
uitat-**o** / #Şi eu **le**-am uitat.} (Ro.)
forgotten-3FS.ACC also I 3FP.ACC-have forgotten
'Mary forgot [**the book** she had to translate]. I also forgot %**it**/#**them**.'

For $[_N Ø]_{non\text{-}anaph}$, constraints in distribution are noticeable across languages (see Romanian vs. English in (8)a)[6] and also within one language – even in Romanian there are some gaps in its distribution, see (19), and there are also idiosyncrasies in interpretation (for instance, *totul* 'all/whole.MS' has a [-animate] reading, but *unul* 'one.MS' has a [+human] reading).

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[4] In English this form is identical to the demonstrative, but strong forms of THE dedicated for the context _$[_N Ø]$ can be found, see Fr. *celui*, which cannot function alone as a demonstrative.

[5] We tested the English version of this sentence with 6 native speakers. Three of them found the paycheck reading difficult here even with the singular, but all rejected the version with number mismatch.

[6] On instances of $[_N Ø]_{non\text{-}anaph}$ in English, in examples such as *Some are born great; Few would disagree; Not much happened*, see Huddleston & Pullum (2002:414) and Elbourne (2013: 207).

(19) *Ştie nişte $[_{N}Ø]_{non\text{-}anaph.}$
knows some
Intended meaning: '(S)he knows some things'

We propose therefore that $[_{N}Ø]_{non\text{-}anaph}$ is selected by specific functional heads. $[_{N}Ø]_{non\text{-}anaph}$ can be analyzed as intransitive n heads: n_{human}, $n_{\text{-}animate}$ etc. (see §3.1). Although no ellipsis is involved, we propose that a licensing feature is necessary because these heads are empty. We label this feature [+Ø].

Once established that D_{pron} must be featurally distinct from THE, the fact that there may be other differences in features between THE and D_{pron} is no longer a problem. We have seen in §3.2 examples of such features: gender and the syntactic features that account for clitic placement. We may also assume featural distinctions between several D_{pron}s as an account for the distinction between strong and weak series (§3.3). For Romanian, Giurgea & Ivan (2023) argue that null subjects differ from overt subjects by bearing +G-Topic (see also Frascarelli 2007) and strong objects differ from clitics by bearing a [+contrast] feature. Moreover, Romanian also has [+deixis] strong personal pronouns that are restricted to $[_{N}Ø]_{non\text{-}anaph}$ +human.

The fact that D_{pron} is distinct from THE opens up a solution to the problem of binding (§3.1): binding principles may be formulated so as to refer to D_{pron}, as opposed to all other Ds.

The fact that pronouns cannot lack both nominal and indexical anaphora (§3.4) can be accounted for by adopting an analysis of anaphoric definites as involving a special anaphoric D. This analysis was argued for in Schwarz (2009) based on the existence of anaphoric articles in some West Germanic varieties. Since then, evidence for a distinct anaphoric D has been found in various languages (Akan, Korean, Mauritian Creole, Czech, Thai, Mandarin, Upper Sorbian, Ngamo, American Sign Language, Lithuanian, Icelandic, Hausa, Lakot, see Schwarz (2019) for an overview). Even in English, the fact that situation-relativized uniqueness is sometimes insufficient to establish reference can be seen in examples such as (20). In a context where Prof. Peter's colleagues are all professors, there would be no unique professor in the described situation. However, if the description 'professor in the situation *s*' is supplemented with 'co-referent with a salient individual', uniqueness is finally achieved:

(20) I saw Prof. Peters talking with some colleagues. **The professor** looked preoccupated.

Schwarz (2009) proposes that the anaphoric D_{def} has an additional index argument. In other implementations, the anaphoric relation is part of the restriction of THE (Simonenko 2014, Hanink 2017) or the index is generated in a functional layer above D_{def} (Patel-Grosz & Grosz 2017, Ahn 2019, Jenks & Konate 2022). Without choosing one of these implementations, we notate the additional structure involved in the anaphoric interpretation as [idx]. Pronouns with indexical anaphora will then all have D_{def}[idx], whereas neontological pronouns merely have D_{def}. The gap in the D_{def}+$[_{N}Ø]$ combinations discussed in section 3.4 can now be described as a lexical gap: there is no D_{pron} lacking both [E] and [idx] – i.e., the D_{def} marked [+Ø] also bears [idx]. A similar view is held by Jenks & Konate (2022), who use the feature [idx] for both indexical anaphora and nominal anaphora and claim that pronouns involve [idx] either on D or on N[7].

Summing up, we propose that pronouns spell-out three structures: D_{def}[idx] $[_{N}Ø]_{anaph}$, $D_{def}[_{N}Ø]_{anaph}$, and D_{def}[idx] $[_{N}Ø]_{non\text{-}anaph}$. Our analysis is compatible with a PF-account that uses phrasal spell-out for pronouns, in which the use of spell-out rules targeting a DP headed by D_{def} is made possible by the fact that the entire complement of D is null[8]. What our discussion has shown is that such an account cannot solve all the problems of the [D+$[_{N}Ø]$]-analysis of pronouns: a featural difference between THE and D_{pron} is a necessary ingredient of the analysis.

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[7] The main difference with respect to our system is that they do not assume any N-component in pronouns when [idx] is on D. But the use of non-semantic gender on anaphoric pronouns, illustrated in §2.2, shows that indexical anaphora may co-occur with nominal anaphora, indicating a structure [D[idx] $[_{N}Ø]_{anaph}$].

[8] An account using phrasal spell-out can explain the fact that pronouns block argumental DPs of the form *the one* (see (9)). *The one*-phrases can be used in predicative positions (e.g. *That's the one*), presumably because predicative definites represent a projection lower than the argumental DP (see Cheng et al. 2017).

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