

3rd person pronouns and empty nouns: the view from Romanian *

Ion Giurgea & Rodica Ivan
The “Iorgu Iordan – Al. Rosetti” Institute of Linguistics
of the Romanian Academy

Summary

- The apparent gap in the distribution of THE + [NPØ] supports the analysis of 3rd person pronouns as THE+total-ellipsis, a view for which there is independent evidence
- But equating PRON with THE + [NPØ] faces a number of problems
- We propose that pronouns do contain an N-constituent, but their D, although it has the semantics of THE, differs from THE in terms of features; a minimal difference between THE and D_{pron} must exist because D_{pron} carries the features necessary for licensing an empty complement

1. Evidence for N-ellipsis in pronouns

1.1 Paycheck/Neontological pronouns (also called “pronouns of laziness”): the pronoun does not have the same reference as the DP that intuitively counts as its antecedent, nor is it bound by it. The only relation with its antecedent is that of N(ominal)-anaphora: the pronoun is interpreted as [THE NP], where the NP is that of the antecedent (Karttunen 1969; Elbourne 2005: “neontological pronouns”)

- Pronouns where the descriptive part contains a **variable** (e.g. *his*) which takes a different antecedent:

- (1) The man who gave **his paycheck** to his wife was wiser than the man who gave **it** to his mistress
(Karttunen 1969)
John gave **his paycheck** to his mistress. Everybody else put **it** in the bank.
(Elbourne 2005 < Cooper 1979)

The possessor that triggers disjoint reference may be implicit:

- (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)(y)(s) is at the end]
 $it = \iota y$.table-of-contents)(y)(s), where s is bound by *some*

- Pronouns where only the **situation (or time) variable** wrt. the description is evaluated is what varies (different situation => different (unique) individual in that situation)

- (3) This year **the president** is a Republican. Next year **he** will be a Democrat
(Elbourne 2005 < Cooper 1979)
 $he = \iota x$.president-USA(x)(s), where $\text{time}(s) \subseteq \text{next year}$

- (4) **Le médecin** a interdit à Marie de fumer. A moi, **il** ne m'a rien dit. (Fr., Corblin 2006 : 7)
'The doctor forbade Mary to smoke. To me, **he** didn't say anything.'
different situations of visiting a doctor → compatible with there being different doctors

- Pronouns for **parts of idioms**, with no referent in the actual world:

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- (5) a. Pierre a pris **la mouche**. Il **la** prend souvent pour un rien. (Fr., Corblin 2006 :8)
 Pierre has caught the fly he it catches often for a nothing
 ‘Pierre got ticked off. He often gets ticked off for a trifle.’
 b. Lui Petru i-a sărit **țandăra**. Îi sare **pro** adesea pentru un fleac. (Ro.)
 DAT Peter CL.DAT-has jumped splinter-the 3S.DAT jumps often for a trifle
 ‘Petru got ticked off. He often gets ticked off for a trifle.’
 c. Peter had his **guard** up. He’d often keep **it** up in situations like these.

- Another case where the referent of the pronoun differs from that of the antecedent is when the pronoun is interpreted generically and the antecedent refers to a specific individual, as in (6). These situations may be analyzed as involving a generic D + [NØ]_{anaph} (*they* = [D_{gen} [NØ]_{anaph}] with [NØ] = *babies*; see Heim (2011) for the idea that the generic D is a sub-type of THE); however, it may also be the case that mentioning a token makes the kind salient and the pronoun refers to this salient referent (exophoric use):

- (6) A: How’s **baby**? B: Oh, **she’s** crying now. A: Yes, **they** do tend to cry.
 (Huddleston & Pullum 2002: 17.2.3.[25])

1.2 The interpretation of grammatical (non-semantic) gender on pronouns

‘Non-semantic gender’: assigned to nouns, without reflecting a property of the referent. Pronouns that have a nominal antecedent with non-semantic gender typically show the grammatical gender of their antecedent:

- (7) a. Am pus **pantoful**_i pe scaun. Peste **el**_i am pus umbrela. (Ro.)
 have.1 put shoe(M)-the on chair over 3MS.ACC have.1 put umbrella-the
 ‘I put the shoe on the chair. I put the umbrella over **it**.’
 b. Am pus **cămașa**_i pe scaun. Peste **ea**_i am pus umbrela.
 have.1 put shirt(F)-the on chair over 3FS.ACC have.1 put umbrella-the
 ‘I put the shirt(f) on the chair. I put the umbrella over **it**.’

The gender feature on the pronoun cannot be the result of agreement because the pronoun may occur in a different utterance (see (7)), or there may be no linguistic antecedent at all (see (8)). In the exophoric use, where pronouns refer to entities salient in the context, the gender reflects the nominal concept that characterizes the referent:

- (8) [Context: a bill is at the hearer’s feet]
 a. Ia-**o**, ce mai aștepți? (Ro.: *hârtie, bancnotă* ‘banknote, bill’ are feminine)
 take.IMPV.2S-3SF.ACC what still wait.2SG
 ‘Take it, what are you waiting for?’
 b. Prends-**le**, tu hésites encore ? (French; *billet* ‘banknote, bill’ is masculine)
 take.IMPV.2S-3SF.ACC you hesitate still

As the gender feature cannot result from agreement with the antecedent and does not encode a feature of the referent, its presence can only be explained as resulting from the [NØ]_{anaph} inside the pronominal DP (see Sauerland 2007, Giurgea 2010, Patel-Grosz & Grosz 2017).

=> the antecedent of nominal anaphora can be provided by a salient concept in the extralinguistic context; NP-ellipsis does indeed allow extralinguistic antecedents:

- (9) a. [Sag produces an apple] (Hankamer & Sag: 1976 : 34)
 Hankamer : Did you bring **one** [NØ] for me ? [NØ] = *apple*
 b. Ai adus [**unul** [NØ]] și pentru mine? (Ro.)
 have.2sg brought one.MS also for me
 [NØ] = *măr* ‘apple’: NEUT (i.e. SG → M; PL → F)

A similar case is that of the uninterpretable number of lexical plurals (pluralia tantum):

(10) Have you seen **my scissors**? I'm afraid I forgot **them** at home

The gender on the pronouns can be interpretable (Romance: for animates) – the so-called ‘natural’ gender. When grammatical gender and natural gender are in conflict, a coreferent pronoun can take either of them (at least in the case of animates):

(11) A văzut **gărzile** dar nu se teme de **ele/ei**. (Ro.)
 has seen guards(F)-the but not REFL fears of they.F/they.M
 ‘(S)he saw the guards but is not afraid of them.’

2. Nominal ellipsis in definite DPs and the issue of THE+[NØ]

- At least in some languages (such as Romanian), DPs have systematic “noun-less” variants
 - However, for definite DPs a difference appears between partial ellipsis, which allows THE, and total ellipsis (no overt constituent in D’s complement), where we do not see THE
- => A natural hypothesis is that 3rd person pronouns spell-out THE+total-ellipsis

Two types of “noun-less” variants:

- with the recovery of a N(P)-property from the context (nominal ellipsis) – [NØ]_{anaph}
- without recovery of an N(P)-property; the descriptive content is +/-human, +/-female based on gender – [NØ]_{non-anaph}

[NØ]_{anaph}

- (12) a. Este nevoie de spitale. S-a decis să se construiască **unul/două/ câteva/multe / altele** [NØ] în anii următori. (Ro.) [NØ] = *spitale/ hospital(s)*
 is need of hospitals REFL-has decided SBJV REFL build.3 one /two/ some/many / others in years-the following
 ‘Hospitals are needed. It has been decided to build **one/two/some/a lot (of them)/ several/others** [NØ] in the following years.’
- b. Aceste șervețele sunt mai potrivite decât **acelea/celelalte** [NØ]. [NØ] = *șervețele/napkins*
 these napkins are more appropriate than those/ the-others
 ‘These napkins are more appropriate than **those/the others** [NØ].’
- (13) a. Se pare că îi plac doar trandafirii roșii, iar eu i-am adus **[[DØ] [NØ] galbeni]**. (Ro.) [NØ]/ones = *trandafiri/roses*
 REFL seems that 3S.DAT like.3PL only roses(M)-the red and I 3S.DAT-have.1 brought yellow.MPL
 ‘It seems she only likes red roses, and I brought her **yellow ones**’.
- b. N-a adus nimeni bere. Noroc că am eu **[[DØ][NØ]]** în frigider. [NØ] = *bere/beer*
 not-has brought nobody beer fortune that have.1 I in fridge
 ‘Nobody brought beer. Fortunately, I have **some** [NØ] in the fridge.’

[NØ]_{non-anaph}

- (14) [Context: no antecedent for the missing N]
- a. Am văzut **doi** [NØ] care se sărutau. [NØ] = +human (*people*) (Ro.)
 have.1 seen two which REFL were-kissing
 ‘I saw **two people** kissing’
- b. **Fiecare** [NØ] vrea să fie iubit. [NØ] = +human
 Each wants SBJV be.3 loved
 ‘**Every person/Everybody** wants to be loved’
- c. A intrat **[una [[N Ø] foarte beată]]**. [NØ] = +human +female
 has entered one.FSG very drunk.FSG

- ‘A very drunk **woman** came in.’
 d. Mi-a spus **multe** [NØ]. [NØ] = -animate
 me.DAT-has told many.FPL
 ‘(S)he told me **many things**.’

→ We expect that definite Ds, in particular the definite article and the demonstrative, should occur in such “noun-less” DPs¹

Demonstratives do have such uses (see (12)b), but for the definite article (THE), we find a difference between *partial NP-emptiness* and *total NP-emptiness*:

- With respect to **partial-NP emptiness**, THE behaves by and large like other like other Ds, bar the fact that sometimes special forms are used because THE is weak (affixal or clitic-like) and weak forms are not allowed before [NØ] (special forms are often taken from the (distal) demonstrative):

[NØ]_{anaph}

- (15) a. Mașina verde e mai frumoasă decât [cea [[NØ]_{anaph} roșie] (Ro.)
 car(F)-the green is more beautiful than the.FS red.FS
 b. El coche verde es más bonito que [el [[NØ]_{anaph} rojo] (Sp.)
 c. La voiture verte est plus jolie que [la [[NØ]_{anaph} rouge] (Fr.)
 the car green is more nice than the red
 d. **The** green car is nicer than **the** red **one**. [NØ]/[one] = mașină/coche/voiture/car

- (16) a. La traduction de l’interview m’a pris plus de temps que
 the translation of the interview me-has taken more of time than
 [celle [[NØ]_{anaph} de l’article]] (Fr.)
 celle of the article
 b. The translation of the interview took me longer than [that [[NØ] of the article]]
 ≠ The translation of the interview took me longer than **that** translation of the article
 [NØ] = *traduction/translation*

[NØ]_{non.anaph}

- (17) [context: no animate noun serving as a potential antecedent]
 Nu este indicat pentru [cei [[NØ]_{non-anaph} cu frică de înălțime]] (Ro.)
 not is suitable for the.MP with fear of height
 ‘It is not suitable for [those [[NØ]_{non-anaph} who are afraid of heights]].’
 [NØ] = +human (*people*)

- **Total emptiness**: many languages show different (spell-out) forms. The closest counterparts seem to be 3rd person personal pronouns (henceforth PRON):

- (18) a. A venit cu o mașină nouă. Mi-a spus că a cumpărat{-o /*cea [NØ]} în iunie. (Ro.)
 Has come with a car new me.DAT-has told that has bought-3SFG.ACC/the.FSG in June
 b. He came in a new car. He told me he bought {it/*the one} in June.

¹ There have been proposals that N-ellipsis in general requires a contrastive remnant (Giannakidou & Stavrou 1999, Eguren 2010, Cornilescu & Nicolae 2012), but such a general constraint is too strong (see Saab 2008, 2019, Saab & Lipták 2016, Alexiadou & Gengel 2012) – see (13), where there is no remnant at all, or (i) below, where ‘λx.x has a lawn-mower’ represents the given part of the sentence, the background of the focus, so there is no contrastive focus inside [una [NØ]] / *one* (the intonation confirms this, the entire DP being destressed):

(i) A: Are o mașină de tăiat iarba. B: Și eu am [una [NØ]]
 has a machine(F) of cutting grass-the also I have.1 one.FSG
 ‘A: (S)he has a lawn mower. B: I have one too.’

→ A common hypothesis is that **PRON** (e.g. *el*) spell out structures of the type [**THE** [_N∅]] (Postal (1969), Panagiotidis (2002), Elbourne (2001, 2005, 2013), Sauerland (2007), Kratzer (2009), Patel-Grosz & Grosz (2017), a.o.)

This idea could be implemented, in Distributed Morphology, by using special vocabulary insertion rules for THE in the context [_{DP} THE [∅]], or by assuming rules of phrasal spell-out for DPs made available by the null complement of THE.

3. Problems for equating PRON with THE+[_{NP}∅] (other than morphology)

However, pronouns may differ from THE in features that are relevant for syntax and semantics, which cannot be relegated to PF.

3.1 Binding: pronouns differ from DPs with overt Ns wrt. binding/coreference. Pronouns are subject to Condition B, non-pronominal DPs are subject to Condition C.

- (19) a. [The doctor]_i said that {he_i /*[the doctor]_i} is right.
 b. [The other]_i invited a friend of {his_i /*[the other's]_i}.

3.2 Difference in syntactic and semantic features

- Gender

- (20) Engl.: no gender on THE or on N; 3 gender forms for PRON_{sg}: *he, she, it*
 Swedish: two genders on THE and in other non-PRON DPs (common/neuter)
 4 gender forms of PRON_{sg}: *han* MASC, *hon* FEM.SG, *den* INAN.COMM, *det* INAN.NEUT

- **Syntactic features** that underlie distributional differences, see the special placement of clitics or Scandinavian object shift

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

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

- The difference between strong and weak forms (where under “weak” we include clitic, null forms) is not just a matter of PF.

- A PF-treatment is feasible where the strong forms must be used due to formal constraints and are clitic-doubled (formal constraints = where a prosodic word is necessary: for focus and contrastive topic marking, in PPs, coordinations, with modification by focal particles)

- But the use of strong forms goes beyond these “forced” cases: sometimes either form can be used, with certain meaning effects:

- Strong forms associated to a reduced degree of accessibility of the antecedent (e.g. antecedents placed in less prominent positions) – see overt vs. null subjects:

- (22) Vom discuta acum categoriile lui Kant. {E_i / ?*pro*_i} le obține pornind
 will.1PL discuss now categories-the GEN Kant he them.F.ACC obtains starting
 de la tipurile de judecăți. (Ro.)
 from types-the of propositions
 'We will now discuss Kant's categories. He obtains them based on types of propositions.'

- Strong forms restricted to +human (Cardinaletti & Starke 1999) – in some languages and for some forms²

- (23) a. ?? Non ho comprato **la machina**_i perchè non mi è piaciuta/sono piaciuti
 not have.IS bought the car because not me.DAT is pleased/are pleased
 né **lei**_i né il suo proprietario. (It., Cardinaletti & Starke 1999)
 neither 3FSG.STRONG nor the its owner
- b. Jag köpte inte bilen_i, för jag gillade varken **den**_i eller des ägare (Swedish, Holmberg 1999)
- c. N-am cumpărat maşina fiindcă nu mi-a plăcut nici **ea**, nici proprietarul ei. (Ro.)

In Ro., the restriction appears for the deictically used PRON (~demonstratives, cases when deixis is necessary to establish reference, not a mere exophoric use):

- (24) Ia-o pe EA.
 take.IMPV-3SFG.ACC DOM 3FSG.STRONG
 ✓ pointing to a woman
 * pointing to a table (*masă* ‘table’ is feminine)
 ‘Take HER/*IT’

- Strong forms sometimes reject paycheck (neontological) readings³:

Ro., this holds for strong objects (less so for overt subjects and not for complements of P):

- (25) Ioana l-a făcut pe fiul ei muzician. Dana {l-a făcut
 Ioana CL.ACC-has made DOM son-the her musician Dana CL.3MS.ACC-has made
 doctor. /* l-a făcut **pe el** doctor.}
 doctor CL.ACC-has made DOM him doctor
 ‘Ioana made her son a musician. Dana made him (= her own son) a doctor.’

- Null forms can be genderless, which allows them to occur in environments which exclude the corresponding strong forms:

- (26) a. A: [Vine mâine]_i. B: {*pro*_i/*E_i/*E_a_i} e imposibil(*ă)
 comes tomorrow 3MS 3FS is impossible
 ‘A: (S)he comes tomorrow. B: It’s impossible.’
- b. Cine bate la uşă ? (*pro*/*E_i /*E_a) e poştaşul.
 who knocks at door 3MSG.NOM 3FSG.NOM is postman-the
 ‘Who’s knocking at the door? It’s the postman.’

=> issue: if PRON is THE+total-emptiness, which series corresponds to THE+[NPØ]?

3.4 A gap in the possible THE+[NØ] combinations

As we have seen in §1.1, anaphoric relations between a pronoun and its antecedent can be at two different levels:

- the referential level: coreference and bound variable reading (*referential/indexical anaphora*)
- the NP-description level (*N-anaphora*), see neontological pronouns (no indexical anaphora) + the interpretation of grammatical gender

=> we expect 4 combinations of these relations:

² See Perlmutter et Oresnik (1973) for Slovenian, Jaeggli (1982) and Schrotten (1992) for Spanish, and Cardinaletti & Starke (1999) for Italian, German, Slovak, Hungarian, Hebrew, Gun

³ See Kurafuji (1998) for Japanese, Runić (2014), Bošković (2018) for Serbo-Croatian, Bi & Jenks (2019) for Mandarin

(i) [D_{def} [NØ]_{anaph}]_{anaph} : anaphoric pronouns with an N-antecedent (evinced by non-sem. gender)

(27) Am pus **cămașa**_i pe scaun. Peste **ea**_i am pus umbrela. (Ro.)
have.1 put shirt(F)-the on chair over 3FS.ACC have.1 put umbrella-the
'I put the shirt(f) on the chair. I put the umbrella over **it**.'

(ii) [D_{def} [NØ]_{non-anaoh}]_{anaph} : anaphoric pronouns with natural gender or with a non-nominal antecedent

(28) A văzut **gărzile** dar nu se teme de **ei**. (Ro.)
has seen guards(F)-the but not REFL fears of they.M
'(S)he saw the guards but is not afraid of them.'

(29) Crede [**că vom câștiga**]_i. **pro**_i este imposibil.
believes that will.1PL win is impossible
'(S)he thinks [**we will win**]_i. **That**_i is impossible.'

(30) [context: an object *i* is visible in the direction of pointing]
Ia uite-acolo! Mă întreb ce-o fi **pro**_i.
behold-there REFL ask.1SG what-may.3SG be
'Look over there. I'm wondering what **that** is.'

(iii) [D_{def} [NØ]_{anaph}] : neontological pronouns

(31) Unii nu-și mai găseau **cărțile** /**cartea de identitate**.
some.PL not-3REFL.DAT more were-finding cards(F)-the card(F)-the of identity
La mine, **pro/ea** stă mereu în portofel. (Ro.)
at me 3FS stays always in wallet
'Some couldn't find **their identity cards**. I always keep **it** in the wallet.'
pro/ea = *cartea de identitate* 'the identity card'

(iv) [D_{def} [NØ]_{non-anaoh}] : ??

We would expect an interpretation 'maximal sum of people/female humans/things in the current situation/world of evaluation'.

With partial ellipsis, this interpretation is possible, as expected, see (17), repeated below:

(17) [context: no animate noun serving as a potential antecedent]
Nu este indicat pentru [**cei** [[NØ]_{non-anaph} cu frică de înălțime]] (Ro.)
not is suitable for the.MP with fear of height
'It is not suitable for [**those** [[NØ]_{non-anaph} who are afraid of heights]].'
[NØ] = +human (*people*)

But with total ellipsis,

- no generic use:

(32) a. Acum vorbim despre **ei**. (Ro.)
now talk.1PL about them
'Now we're talking about **them**.'

Impossible interpretation: 'we're talking about humans in general'

b. **pro** sunt ființe sfâșiate de contradicții.

are beings torn by contradictions

'**They** are beings torn apart by contradictions.'

Impossible interpretation: 'humans in general are beings torn apart by contradictions.'

- an interpretation ‘maximal sum of humans in a restricted situation’ is sometimes possible (see (33)), but it seems to involve a different kind of pronouns, impersonals, whose reduced anaphoric potential indicate that they are not identical to definite 3rd person pronouns (see (34)):

(33) [context: no antecedent for *pro/they*]

Aici/În orașul ăsta, **pro** nu-și lasă mașinile în stradă.
 here in city-the this not-3REFL.DAT leave.3PL cars-the in street
 ‘Here/In this city, **they** (people) don’t leave their cars on the street.’
pro = [the maximal sum of people in the topic situation s] ?

(34) [context: no antecedent for *pro/they*]

Aici, **pro_i** fac curățenie duminica. ?? Admir comportarea **lor_i** / ??Un oraș ca al
 here do.3P cleaning Sunday-the admire.1S behavior-the their a city like AGR.GEN.MS
lor_i ar trebui să fie ținta noastră.
 their would must SBJV be goal-the our
 Here, **they_i** clean on Sundays. ??I admire **their_i** behavior / ??A city like **theirs_i** should be our goal.

N.B. Overt pronouns in Ro. completely lack this use:

(35) [context: no antecedent for *pro/they*]

Aici/În orașul ăsta, **ei** nu-și lasă mașinile în stradă
 here in city-the this they not-3REFL.DAT leave.3PL cars-the in street

THE+[NØ]_{non-anaph} with partial emptiness (non-empty restriction) does not show such reduced anaphoric potential:

(36) [**Cei de aici**]_i fac curățenie duminica. Admir comportarea **lor_i**.
 the.MP from here do cleaning Sunday-the admire.1S behavior-the their
 [**Those that live here**]_i clean on Sundays. I admire **their_i** behavior.

Conclusion: if PRON=THE+[NPØ], it is not clear why the combination in (iv) is unavailable

Interim conclusion: There are problems for the idea that the determiner found in PRON, call it D_{pron}, is always no more than THE. Perhaps D_{pron} might include THE as part of its hidden structure and/or its meaning, as opposed to being identical to it. But then, why is THE ruled out with *total emptiness*? That is, why does the spell-out of THE require the existence of an overt complement?

4. Towards an account: features for emptiness

The expectation that a plain THE should occur in total emptiness contexts is justified only if we consider that [NØ]_{anaph} and [NØ]_{non-anaph} are ordinary Ns. But there are already a number of restrictions in their distribution across languages that indicate that this assumption is unwarranted.

Proposal:

- (37) a. Pronouns are analyzable as D+[NPØ], but the D found in pronouns (D_{pron}) is different from THE
 b. D_{pron} has the semantics of THE but bears additional formal features needed for licensing an empty complement
 (i) [E] for [NØ]_{anaph}
 (ii) [+Ø] for [NØ]_{non-anaph}
 c. With partial emptiness, these features are not on D but on a lower head (n or Num) => THE, rather than D_{pron}, occurs in the D position

(i) [NØ]_{anaph} is a sub-case of ellipsis (see Elbourne (2005) for an ellipsis account of neontological pronouns), and general studies on ellipsis agree that ellipsis needs syntactic licensing and that it is associated to dedicated heads:

- (38) The heads F that introduce $[\text{N}\emptyset]_{\text{anaph}}$ carry a [E] feature (Merchant 2001), which comes with the interpretative requirement of an antecedent for the complement of F⁴.

Under the assumption that the *entire* complement of F_[E] must have an anaphoric antecedent and that traces are copies, a very low position for [E] must be assumed for cases with a complement remnant:

- (39) Examinarea ipotezelor a fost mai rapidă decât [cea $[\text{N}\emptyset]_{\text{anaph}}$ a surselor]]. (Ro.)
 examination-the hypotheses-the.GEN has been more fast than the GEN sources-the.GEN
 The examination of the hypotheses was faster than [that $[\text{N}\emptyset]_{\text{anaph}}$ of the sources]].

[E] can sit here on n if we assume that complements can attach higher than n. If n however is a nominalizer attaching higher than complements in complex event nominals (see Borer 1993, Alexiadou 2001, a.o.), we should assume that the genitive object in (39) does not reconstruct, presumably because this is an instance of A-movement. But ellipsis is also allowed with subcategorized PP complements, which do not need any A-movement (cf. Giurgea 2010):

- (40) E importantă referirea constantă la comentatori consacrați, dar și [cea $[\text{N}\emptyset]_{\text{anaph}}$ la surse]].
 is important reference-the constant to commentators established but also the to sources
 ‘It is important to constantly refer to established commentators, but also to sources’

N.B. The Engl. pro-N *one* is ruled out with complements (=> it is a pro-NP), but Engl. can use \emptyset + a strong form of THE (namely *that*) for complement remnants, see (39).

(ii) For $[\text{N}\emptyset]_{\text{non-anaph}}$, constraints in distribution are also noticeable across languages (see Engl. vs. Ro. in (41)a-c) and also within one language – even in Ro. there are some gaps in its distribution, see (41)d:

- (41) a. Am văzut **doi/mulți** $[\text{N}\emptyset]_{\text{non-anaph}}$ care se sărutau.
 have.1 seen two.MPL/many.M which REFL were-kissing
 ‘I saw **two/many people** kissing.’
 b. A intrat [**una** $[\text{N}\emptyset]_{\text{non-anaph}}$ foarte beată]].
 has entered one.FSG very drunk.FSG
 ‘A very drunk **woman/girl** came in.’
 c. Știe **multe /destule / altele** $[\text{N}\emptyset]_{\text{non-anaph}}$
 knows many.FPL enough.FPL/other.FPL
 ‘(S)he told me **many/enough/other things**.’
 d. * Știe **niște** $[\text{N}\emptyset]_{\text{non-anaph}}$
 knows some
 Intended interpretation: ‘(S)he knows some (things/people).’

Actually, in Ro. an $[\text{N}\emptyset]_{\text{non-anaph}}$ is indicated by the productivity of noun-less DPs with quantity expressions and various determiners (see section 2), but the relevant configuration can also be obtained by *incorporating a grammatical N* (analyzable, perhaps, as *an intransitive n*) into D – see pronouns of the type *somebody, something*.

$[\text{N}\emptyset]_{\text{non-anaph}}$ can be considered an intransitive n, and it is the absence of special forms of D that may decide between selection of $[\text{N}\emptyset]_{\text{non-anaph}}$ and incorporation.

→ Let us assume that $[\text{N}\emptyset]_{\text{non-anaph}}$ must be selected by nominal functional items. We can implement this assumption by postulating a selectional feature, [+ \emptyset], for a grammatical n with no phonological realization

→ like for $[\text{N}\emptyset]_{\text{anaph}}$, we may conclude that D_{pron} ≠ THE because it has an additional feature: [+ \emptyset]

⁴ For the use of [E] for nominal ellipsis, see Saab (2019) and references therein

5. Accounting for the issues raised in section 3

Main idea: once D_{pron} must differ from THE (by bearing the features for emptiness), we may assume *additional features* by which D_{pron} differs from THE

These features can be

- gender features
- features responsible for clitic placement => problems in section 3.2 solved
- the special features that differentiate strong and weak forms => problem in section 3.3 solved

5.1 The gap in the possible $D_{\text{def}}+[\text{NP}\emptyset]$ combinations (section 3.4)

- A widespread assumption is that the anaphoric use of pronouns and DPs in general (including the bound variable use) is marked by an *index* related somehow to D (be it on D itself, or in SpecDP, or in a projection above or below D; see Elbourne 2005; Schwarz 2009; Hanink 2017, 2021; Jenks 2018; Ahn 2019; Jenks & Konate 2022).

- These indices, which we may call *anaphoric indices*, differ from the indices informally used to mark coreference or a bound variable relation in that:

- they only occur on anaphoric elements
- they occupy a distinct position in the tree and are interpretable by being mapped to an entity via the assignment function

Anaphoric indices are also useful for definites with overt Ns. The fact that situation-relativized uniqueness is sometimes insufficient to establish reference can be seen in examples such as (42). In a context where George and his colleagues are all boys, there would be no unique boy in the described situation. However, if the description ‘boy in the situation x’ is supplemented with ‘co-referent with a salient individual’, uniqueness is finally achieved:

(42) I saw **George** with some colleagues at the mensa. **The boy** was exultant with joy.

Anaphoric definites are not an *alternative* to unique/maximal definites, but rather are a special sub-type thereof.

Evidence for a distinct anaphoric THE comes from various languages (West Germanic varieties, Akan, Korean, Mauritian Creole, Czech, Thai, Mandarin, Upper Sorbian, Ngamo, American Sign Language, Lithuanian, Icelandic, Hausa and Lakot) – see Schwarz (2019) for an overview

Various implementations:

(i) The index as an additional argument of D

(i.1) in SpecDP

(43) a. $[\text{DP } [the_{\text{weak}} \text{ s}] \text{ NP}]$ (Schwarz 2009)

$\llbracket the_{\text{weak}} \rrbracket = \lambda s \lambda P_{\langle e, st \rangle} : \exists ! x P(x)(s). \iota x. P(x)(s)$

b. $[\text{DP } i \text{ } [[the_{\text{strong}} \text{ s}] \text{ NP}]]$

$\llbracket the_{\text{strong}} \rrbracket = \lambda s \lambda P_{\langle e, st \rangle} : \exists ! x P(x)(s) \wedge x=y. \lambda y. \iota x. [P(x)(s) \wedge x=y]$

(44) a. $[\text{DP } the_{\text{weak}} \text{ NP}]$ (Jenks & Konate 2002)

b. $[\text{D}^x \text{P } [\text{D}/\text{id}_x \text{P } \emptyset] [[\text{D}^x the_{\text{strong}}] \text{ NP}]]$

$[\text{D}^x \text{P } [\text{D}/\text{id}_x \text{P } [that \text{ Index}]] [[\text{D}^x \emptyset] \text{ NP}]]$

(i.2) in a projection above D:

(45) a. $[\text{DP } the_{\text{weak}} \text{ NP}]$

b. $[\text{D}_{\text{deix}} \text{P } [\text{D}_{\text{deix}} \text{ } \emptyset \text{ Index}] [\text{DP } [the_{\text{strong}} \text{ s}] \text{ NP}]]$ (Patel-Grosz & Grosz 2017)

(ii) The index in the restriction of D (Simonenko 2014, Hanink 2017) => no distinct denotation for THE:

(46) $[\text{DP } \text{D } [\text{id}_x \text{P } \text{id}_x[\text{index}:i] [\text{NP}]]]$

$\llbracket \text{id}_x[\text{index}:i] \rrbracket^g = \lambda x. x=g(i)$

$\llbracket_{\text{idxP}} \text{id}_{\text{x}}[\text{index:i}] [\text{NP}] \rrbracket^{\text{g}} = \lambda x. \llbracket [\text{NP}] (x) \wedge x = \text{g}(i) \rrbracket$

Without deciding between these analyses, let us assume that pronouns with referential antecedents (be they anaphoric or exophoric) have a different structure, which we will represent by an [idx] feature

=> the gap in the $D_{\text{pron}} + [\text{NP}\emptyset]$ combinations can be represented as a lexical gap:

(47) There is no D_{pron} lacking both [idx] and [E]

This formalizes the intuition that pronouns must involve an anaphoric link, which may be indexical, descriptive (nominal-anaphora) or both. That is, it is not possible for a D_{pron} to be both non-anaphoric and to require a non-anaphoric NP.

Comment: Patel-Grosz & Grosz (2017) propose that pronouns, as opposed to demonstratives (such as German *der*), instantiate a structure with $the_{\text{weak}} + [\text{NP}\emptyset]$, with the anaphoric link realized exclusively via N-anaphora and the situation variable (the latter being proposed even for the bound var. reading). But:

- This predicts no problem for the configuration $[\text{DP } D_{\text{pron}} [\text{NP}\emptyset]_{\text{non-anaph}}$.

- Moreover, in the context in (42), where the situation variable+descriptive content seem insufficient to establish unique reference, pronouns are acceptable:

(48) I saw **George** with some colleagues at the mensa. **He** was exultant with joy.

Their evidence for pronouns without indexical anaphora: pronouns referring to inferable entities (“bridging definites”), something impossible for demonstratives, see (49):

In Ro. – reduced acceptability; demonstratives and strong forms disallowed (except where there is no competing weak form, see (49)c);

(49) a. Wenn ich schwanger werde, werde ich {es / # das} auf jeden Fall behalten. (Ge.)
if I pregnant become will I it DEM on every case keep
‘If I get pregnant, I will definitely keep **it** (= the baby).’

Ro.: Dacă sunt însărcinată, cu siguranță %îl păstrez (*pe el/*pe acesta/*pe acela)

a’. Wenn ich ein Kind kriege, werde ich {es / das} auf jeden Fall behalten.

if I a child get will I it DEM on every case keep

‘If I have a child, I will definitely keep **it**.’ (Patel-Grosz & Grosz 2017: ex. 34)

b. Hans hat so sehr geblutet, dass {es / * das} durch den Verband gedrunken ist
Hans has so much bled that it DEM through the bandage soaked is
und sein Hemd verschmutzt hat. (Patel-Grosz & Grosz 2017: ex. 38a)

and his shirt stained has

‘Hans bled so much that **it** (= the blood) soaked his bandages and stained his shirt.’

Ro.: A sângerat atâta încât {%pro/*el/*acesta} i-a trecut prin bandaj și i-a pătat cămașa.

c. Manche Frauen sind schon seit mehr als zwanzig Jahren verheiratet und wissen noch
many women are already for more than twenty years married and know still
immer nicht, was {sein / * dessen} Lieblingsbier ist. (Patel-Grosz & Grosz 2017: ex. 38b)
always not what his DEM.GEN favorite-beer is

‘Some women have been married for more than twenty years and still do not know what **his** (= the husband’s) favorite beer is.’

Ro.: % Unele femei sunt căsătorite de mai bine de 20 de ani și tot nu știu care-i berea **lui** preferată / *care-i berea preferată **a aceluia/ăluia/acestua**

Possible analysis: $[D_{\text{pron}} [\text{N}\emptyset]_{\text{anaph}}$, the N-concept becoming salient in the context

=> strong forms/demonstratives require [idx] (However, for other neontological readings such as paycheck sentences Ro. allows strong subjects, see (31): maybe because of a feature contrast?)

5.2 On some restrictions on strong forms

- The ban on neontological readings for certain strong forms, such as strong objects in Romanian (see (25), repeated below), can also be formalized in this system:

- (25) Ioana l-a făcut pe fiul ei muzician. Dana {l-a făcut
 Ioana CL.ACC-has made DOM son-the her musician Dana CL.3MS.ACC-has made
 doctor. /* l-a făcut **pe el** doctor.}
 doctor CL.ACC-has made DOM him doctor
 ‘Ioana made her son a musician. Dana made him (= her own son) a doctor.’

- (50) Strong object pronouns are always [idx]

- The restriction of deictic pronouns to humans in Ro. (see (24), resumed below):

- (24) Ia-o pe EA.
 take.IMPV-3FSG.ACC DOM 3FSG.STRONG
 ✓ pointing to a woman
 * pointing to a table (*masă* ‘table’ is feminine)
 ‘Take HER/*IT’

- (51) $D_{\text{pron}}[+\text{deix}]$ always selects a +human [$n\emptyset$] and is spelled-out as a strong form
 +deix is a variety of [idx], possibly involving more structure (see Ahn 2019, 2022, Jenks & Konate 2022)

5.3 On binding

- Once we admit that $D_{\text{pron}} \neq \text{THE}$, the different behavior wrt. binding (principle C) can be encoded: D_{pron} does not fall under principle C

- However, looking for a deeper explanation of the principle C may lead to problems for the general analysis of pronouns as $D_{\text{pron}}[+\text{NP}\emptyset]$:

Principle C has been argued to follow from a principle *Minimize Restrictors!* (Schlenker 2005; see also Johnson 2013, Bruening 2014). This account assumes a competition of alternative DPs and stipulates that DPs with less restrictors are preferred:

- Principle C effects arise in contexts where the antecedent belongs to a list of activated discourse referents/indices (which changes during processing; see Bruening 2014 for the syntactic conditions: precedence inside a phasal domain; the referent is moved out of the active set at the right edge of the phase in which it was introduced)
- Binding by (or co-reference with) an activated index can be performed via a ‘negative’ index

- (52) Minimize Restrictors! (Schlenker 2005: 405)
 In a definite description *the A B* [where B can be null; the order of A and B is indifferent], the description is deviant if A could be eliminated and replaced, if necessary, with a combination of negative indices and =,
 a. without changing the reference of *the A B* or making the sentence ungrammatical, and
 b. without changing the pragmatic effect of *the A B*

But a pronoun of the type $D[+\text{NP}\emptyset]$ does not have less restrictors than $D[+\text{overt-NP}]$.

- Possible solutions:

- (i) Pronouns in principle-C contexts only have an intransitive n => smaller restriction than DPs with NPs
- (ii) Pronouns in principle-C contexts have no interpretable restrictions, their ϕ -features are the result of agreement with the binder (cf. Johnson 2013)

Problem for (i): **non-interpretable gender on pronouns in principle C environments** (which has been so far assumed to indicate a structure with $[_{N\emptyset}]_{\text{anaph}}$, coming from agreement with the elided N):

- (53) a. [Această propoziție]_i; cuprinde propria [ei]_i negație.
 this sentence(F) includes own-the 3FSG.GEN negation
 ‘This sentence includes its own negation’
 b. Stiva_i s-a prăbușit fără s-o_i fi atins cineva.
 stack(F)-the REFL-has collapsed without SUBJ-3FSG.ACC PRF touched somebody
 ‘The stack collapsed without anyone touching it’

But it is unlikely that the features on such pronouns always result from Agree

Kratzer (1998, 2009) argues for uninterpretable ϕ -features on bound pronouns based on their uninterpretability in sloppy reading contexts; she also shows that **an Agree-chain is necessary, whenever possible** (in the following, we use Ro. counterparts of her German examples):

- (54) a. **Eu** sunt singura care **mă** îndoiesc de copilul **meu**. (Ro.)
 I am only(F)-the that REFL doubt.1SG about child-the my
 ‘I am the only one who has doubts about **her/my** child.’
 Possible sloppy reading: the others do not doubt about **their** children
 b. **Eu** sunt singura care **se** îndoiește de copilul **meu**.
 I am only-the that REFL doubt.3SG about child-the my
 only ‘I am the only one who has doubts about **my** child.’ (* sloppy reading)

However, Kratzer (2009:213) shows that there are **environments where agreement cannot be established** between the binder and the bindee and **yet the +Participant features can remain uninterpreted** (the pronoun can be a ‘fake indexical’). A Romanian example of this type is given in (55), where the fake indexical occurs in a relative whose subject is not related via an agreement chain with the binder in the matrix:

- (55) Numai eu **mă** supăr pe colegii care-**mi** critică articolele.
 only I REFL get-angry.1SG at colleagues-the who-me.DAT criticize articles-the
 ‘Only I get angry at the colleagues who criticize **my** articles’
 possible interpretation:
 ‘The others; don’t get angry at the colleagues who criticize **their_i** articles’
 ONLY (I) (λx . x gets angry at the colleagues who criticize x’s articles)

Kratzer accounts for such cases by indexical context shifters, i.e. lambda-abstraction operating on the [1st] and [2nd] features (adapted from Cable 2005): the bound pronouns in this case have valued Person, and the context shifter changes the reference of the index associated to 1st Person, from the Speaker to the variable bound by the lambda-operator.

However, **non-semantic gender** can also occur in sloppy reading contexts of this type, where no-agreement chain can be assumed – see (56), where gender cannot be assumed to come from N-ellipsis, because the N cannot be interpreted in the pronoun’s site (this would destroy the sloppy reading):

- (56) [speaking of various birds].
 Doar papagalul îi ține minte pe cei care **l-au** atacat.
 only parrot(M)-the CL.ACC keeps mind DOM the.MPL which 3MS.ACC-have attacked
 ‘Only the parrot remembers those who attacked it’
 = all other birds x are such that x does not remember those who attacked x
 ≠ all other birds x are such that x does not remember those who attacked the parrot x

=> proposal: there is an LF-matching operation that checks and deletes ϕ -features on bound pronouns, distinct from syntactic Agree:

- (57) a. In a configuration $DP(+\varphi_1) \lambda_i [\dots [[\text{Idx}][D[\text{Num}/n \varphi_2]]]\dots]$,
j can be equated with *i* iff the φ -feature sets φ_1 and φ_2 match (i.e. for each feature found in both sets, the value in φ_1 is the same as the value in φ_2)
 b. After binding applied according to (57)a, i.e. in the configuration $[\lambda_i [\dots [[\text{Idx}][D[\text{Num}/n \varphi_2]]]\dots]$, φ_2 can be erased

If φ -features are generated in D's complement (n, possibly Num), we should assume for bound pronouns a structure with $[\text{N}\emptyset]_{\text{non-anaph}}$ (implementable as an intransitive n, see §4 under (ii))

=>

- At least for bound variable pronouns, Minimize Restrictors! is satisfied because these features are not interpreted (they are erased by (57))

- For referential pronouns in principle C contexts, we may assume an intransitive n whose features do not cause a violation of the principle because there is no competitor with less features

The competition might be *structural*, between an intransitive n and an n+NP (for structural competition in the choice between personal and demonstrative pronouns, see Patel-Grosz & Grosz 2017).

N.B. 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 (which implies that the pronoun is not a bound variable):

- (58) a. To koritsi pije sto jrafiu **tu** ke to Janis epiis (Gr., Sauerland 2008:(35)-(36))
 the.NEUT girl(NEUT) went to-the office its and the Janis too
 'The girl went to her office and John too' (strict/sloppy)
 b. To koritsi pije sto jrafiu **tis** ke to Janis epiis
 the.NEUT girl(NEUT) went to-the office her and the Janis too
 'The girl went to her office and John too' (strict/*sloppy)
- (59) a. Das Mädchen soll **seine** Zähne putzen und der Junge auch (German, Sauerland 2008:(39))
 the girl(NEUT) should its teeth clean and the boy too
 'The girl should brush her teeth and the boy too' (✓sloppy)
 b. # Das Mädchen soll **ihre** Zähne putzen und der Junge auch (only strict → unnatural
 the girl(NEUT) should her teeth clean and the boy too reading)
 'The girl should brush her teeth and the boy should brush her/*his teeth, too'

Whether this generalization holds in Ro. is an open issue (we intend to test it in further research)

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