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The only real pro-nouns

Comparing English *one* and Italian *ne* as Noun Phrase pro-forms

Abstract: The study of pronouns has focused on personal pronouns replacing Determiner Phrases (DPs), paying little attention to pro-forms like English *one(s)* and Italian *ne*, which replace subparts of DPs, namely Noun Phrases (NPs). Although *ne* should be functionally equivalent to *one*, the two forms seem to obey different constraints. In this paper, we argue that the differences are superficial, and can be ascribed to independent properties of Italian and English. We show that the diverging acceptability of *one(s)* and *ne* when these forms appear 'bare', i.e. without a determiner, confirms a Ca rlsonian view of bare nouns, but points to a difference between English and Italian existential bare nouns. We study the conditions for bare *ne* and show that they shed light on verbs and verb uses which take objects only as representatives of their kinds.

Keywords: pro-NPs, pronouns, syntax/semantics interface, kinds, ones, ne

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1 Introduction

In generative grammar the linguistic analysis of pronominal elements has primarily focused on pronouns replacing whole nominals, i.e. Determiner Phrases (DPs), in the terminology of Abney (1987). These forms, e.g. *they* in (1), are literally speaking 'pro-DPs'.

(1) You have $[_{\mathrm{DP}}$ four small bikes$]_i$. They$_i$ are all heavy.

With a few early exceptions, much less attention has been payed to pro-forms that replace subparts of DPs, namely functional projections including the noun and possibly some of its modifiers, marked NP in (2). Pro-forms for these projections include English *one* (2) (Postal, 1966; Ross, 1967; Jackendoff, 1977), Italian *ne* (Belletti and Rizzi, 1981; Cordin, 1988; Cardinaletti and Giusti, 1991) and French *en* (Kayne 1975a).

(2) You own $[_{\mathrm{DP}}$ four small $[_{\mathrm{NP}}$ (red) bikes$]_i]$ and I own $[_{\mathrm{DP}}$ two big ones$_i]$.

Pro-NPs cannot be easily assimilated to other pro-forms. For instance, Elbourne's (2005) influential attempt to see personal pronouns as disguised definite descriptions with indexes, (3) has no obvious way to treat the pro-NP *one*.

(3) them = [$_{DP}$ [THE *i*] [NP]] NP contextually derived

Moreover, to the best of our knowledge, examples of quantificational binding of a pro-NP cannot be constructed[1] (Déchaine and Wiltschko 2002, Sec. 3.2 reach the same conclusions, within an analysis that tries to derive the distribution of Japanese *kare* from its NP status). Therefore, even if *one* uses an anaphoric index to obtain coreference in (2), this index must have very different properties than those of pro-DPs.[2]

Since pro-DP theories do not easily apply to these forms, new theories have to be developed. This article will provide an analysis for a specific but representative case, Italian *ne*, contrasted with English *one(s)*. We will show that these forms have many similarities and that their differences can be derived from independent properties of Italian and English: the fact that *ne*, unlike *one*, is a *clitic* pro-form, plus some more general differences in the meaning and derivation of determinerless nominals in Italian and English.

One striking difference between Italian *ne* and English *one* is that the former can appear 'bare', i.e. without any associated determiner or numeral, but only after certain verbs and with certain types of modifiers. We will link these two facts, characterizing the class of verbs that can select *ne* in a way which will account for the modification pattern.

The article is structured as follows. In §2.1 we delimit the analysis by excluding non pro-NP cases of *one* and *ne*. Next, §2.2 and §2.3 introduce the main points of similarity and difference between the two forms. Many of these differences are explained in §3 in terms of the different clitic status of *ne* and *one*. The last difference—the existence of 'bare *ne*' but not 'bare *one*'—is taken up in §4, and explained in terms of the different behavior of bare nouns in the two languages.

1 Here is our best attempt. *Color* is sometimes said to be a second-order property, since one can say *My phone is white, and white is a color*. Thus, we can try to build (i) (the predicative position of *one* insures that it is interpreted as a property), aiming for the meaning 'Seeing red makes me wish my phone was (a nice) red, seeing green, that it was (a nice) green, etc.'. But this meaning is impossible (contrast with: *My phones is red, and a particularly nice one*).

(i) *Every color$_i$ I see makes me wish my phone was (a nice) one$_i$.

Note that it is anyway unlikely that *color* is a 2^{nd}-order property in (i). It might be a normal property ranging over the *nominalization* of color terms, hence an <et>-type object.

2 For reasons of space, we are not able to carry out a detailed analysis of the binding properties of pro-NPs vs. pro-DPs in this paper, nor address possible similarities between *one/ne* and *kare*. We hope to address these topics in future work.

In §5, we address some syntactic and semantic constraints for bare *ne*, while §6 is devoted to the structure of *ne* antecedents.

2 The distribution of Italian "ne" and English "one"

2.1 Delimiting the analysis: non-pro-NP "ne" and "one"

Before laying down the data on *one* and *ne*, it will be useful to stake out the facts we want to cover, excluding some non-pro-NP uses of these forms.

First, the *one* we address in this article is distinct from the numeral *one* and from the impersonal *one* found in sentences such as *One always needs to be careful with data*. Pro-NP *one* can pluralize (we will write it as *one(s)* in what follows), and the numeral and pro-NP forms can coexist within the same DP (4a): the *one* before the adjective *red* is the numeral, while the *one* after *red* is the pro-NP. In (4b), *one* is the numeral; these cases (which might involve a 'silent noun' after the numeral, see Kayne 2005, Ch.10) will not be discussed here.

(4) a. I have two red socks and you have only [one red one].
b. I have two socks and you have [only/exactly one].

Italian *ne* is ambiguous, too. Beside being a pro-NP, it can be a pro-PP (Cordin 1988); in (5), for instance, *ne* plays the role of an 'of' PP or a possessive (in (5a) 'the museums of Florence/its museums', in (5b) 'Giorgio's best friend/his best friend').

(5) a. Il sindaco di Firenze ne cura particolarmente i
the mayor of Florence$_i$ NE$_i$ cares_for especially the
musei
museums
"The mayor of Florence takes special care of its museums"
b. Quanto a Giorgio, Marco ne è il migliore amico
as for Giorgio$_i$, Marco NE$_i$ is the best friend
"Marco is Giorgio's best friend"

We believe that ultimately certain types of the pro-PP *ne* could be unified with the pro-NP *ne* usage illustrated in detail in the next sections (see also Cardinaletti and Giusti 1990), but since nothing in the present discussion hinges on this, in what follows we focus on the clear pro-NP cases and set (5) aside.

2.2 Similarities and differences between "one(s)" and "ne"

Once the non pro-NP uses are spelled out and set aside, we can clearly see that the pro-NP *ne* as it appears in e.g. (6), is a faithful counterpart of *one(s)*, modulo the fact that *ne* is a *clitic* pronoun, which must be realized to the left of a finite verb, starting from within an object position (there are no subject clitics in standard Italian). Here and after, we gloss *ne* as ONE(S).

(6) Tu hai [$_{DP}$ due bici$_i$ rosse] e io ne$_i$ ho [$_{DP}$ una blu].
you have [$_{DP}$ four bikes$_i$ red] and I ONE(S)$_i$ have [$_{DP}$ a blue]
"You have two red bikes and I have a blue one"

Following a vast literature on clitics (Kayne 1975b, a.o.) we assume that *ne* has moved onto the V head from a DP-internal position, which is the same position *one(s)* occupies.

Both *one(s)* and *ne* can pick up nouns and modifiers, as in (7) (note that adjectives are often post-nominal in Italian; in (7b) *ne* refers to *bici rosse* 'red bikes').

(7) a. You have [$_{DP}$ four nice [$_{NP}$ red bikes]$_i$] and I have [$_{DP}$ two ugly ones$_i$]
b. Tu hai [$_{DP}$ quattro belle [$_{NP}$ bici rosse]$_i$] e io ne$_i$ ho
you have [$_{DP}$ four nice [$_{NP}$ bikes red]$_i$ and I ONE(S)$_i$ have
[$_{DP}$ due brutte]
[$_{DP}$ two ugly]

In (7) *ones* and *ne* have an antecedent in a previous clause. *Ne*, however, can also be found in the Clitic Left Dislocation Construction (CLLD, Cinque 1990), where its antecedent is a topicalized form: a bare N, optionally preceded by *di* 'of' (8a), or a full definite DP, obligatorily preceded by *di* (8b). Other cases are out (8c).[3]

(8) a. (di) ragazzi, ne ho visti (due)
(of) boys, ONE(S) I_have seen (two)
b. Di quei quattro ragazzi arrivati ieri, ne ho visti due
of those four boys arrived yesterday, ONE(S) I_have seen two
c. *alcuni/due/quei ragazzi, ne ho visti (due)
some/two/those boys, ONE(S) I_have seen (two)

3 The pro-DP clitic *li* (they$_{clit.}$) is in complementary distribution with *ne* in the contexts in (8): it is impossible with *(di) ragazzi* and *di quei quattro ragazzi arrivati ieri* 'of those 4 boys who arrived yesterday', but perfectly grammatical when the antecedent is *alcuni/due/quei ragazzi* 'some/two/those boys'. Again, this fact points to different anaphoric properties for pro-NP and pro-DP pronouns.

In this paper, we will sometimes use forms like those in (8a) as antecedents. Their syntactic nature will be taken up in Section 6.

2.3 Three differences between "ne" and "one(s)"

A first difference is that *one(s)* is compatible with the presence of a 'strong determiner' (in Milsark's 1974 sense: roughly definites, demonstratives and universals) (9). Pro-NP *ne* is incompatible with each of them (10).

(9) Speaking of your bikes, I still have {those red ones / the red ones / the ones you gave me / every one I bought}

(10) Di bici, ne ho ancora {*quelle / ??le due (che mi hai dato)
of bikes, ONE(S) I_have still { those / the two (that you gave me)
/ *ciascuna}
/ each-one }

(11) DIFFERENCE 1: D_{strong} MODIFIER ONE / *D_{strong} (MODIFIER) NE

Note, however, that *one(s)* cannot appear with *the* or *the NUM*, unless it is modified (i.e. **the (two) ones* vs. (i.e. *the (two) red ones*).

A second difference between *one* and *ne*, originally observed in Cardinaletti and Giusti (1990), is that *ne* can strand post-nominal modifiers and pre-nominal numerals, but not prenominal adjectives. This contrasts of course with the situation of *one(s)*, which is very often accompanied by prenominal adjectives.[4] Since many adjectives in Italian can appear before or after N, in a structure such as (12) we do not know if the *ne* trace is to the left or the right of the stranded adjective:

(12) a. NE_i+V [$_{DP}$ Num t_i ADJ]
b. NE_i+V [$_{DP}$ Num ADJ t_i]

To see which of (12) is correct, we need to make use of one of the Italian adjectives that change meaning in pre- and post-N position, e.g. *puro* 'mere/pure' or *vero* 'genuine/truthful':

(13) a. Una pura formalità / una sostanza pura
A mere formality / a substance pure
b. Un vero tradimento / una dichiarazione vera
A genuine betrayal / a declaration truthful

4 *One(s)* can of course be followed by PPs, relatives and the rare post-N English adjectives (e.g. *the ones alive*). There is no contrast with *ne* on this point.

Using *ne* with these adjectives, we see that the only surviving meaning is the post-N one ('pure' and 'truthful' in (14a and b) respectively), hence the oddity of the two sentences.

(14) a. ??Di formalità, ne devo concludere una pura.
of formality, NE I_have to_conclude a pure
b. ??Di tradimento, costui ne ha commesso uno vero
of betrayal, he NE has committed one genuine

We conclude, with Cardinaletti and Giusti (1990), that the only possible structure is (12a).

(15) Difference 2: DET MODIFIER ONE / DET (*MODIFIER) NE

The last important difference between *one(s)* and *ne* is the fact that *one(s)* must appear with a modifier of some sort: *one(s)* can have an unmodified bare noun as antecedent (see (16)), but it cannot serve as a verbal argument all by itself (a 'bare unmodified *ones*', parallel to a normal bare plural), witness (17), where the two examples were chosen to represent the two possible meanings of English bare plurals—kinds and individual objects (Carlson, 1977). In contrast, *ne* can appear without any modifier or numeral (18), always with the *existential* interpretation (as if preceded by a narrow scope 'some') which characterizes Italian bare nouns (see Section 4.2 below). Some additional constraints on these cases will be discussed in Section 5.2.

(16) I like watching birds$_i$, particularly [large ones$_i$].

(17) a. *I like [large birds$_i$], in fact I like [ones$_i$] regardless of size.
b. *I shoot [large birds$_i$], you shoot [ones$_i$,] no matter what their size.

(18) Leoni, in Africa, ne ho visti
Lions, in Africa, one(s) I_have seen
'As for lions, in Africa I saw some'

(19) Difference 3: *(MOD) ONE / (MOD) NE

Having laid out the data, we turn to those aspects that depend on a syntactic difference between *ne* and *one(s)*: the clitic status of *ne* and non-clitic status of *one(s)*.

3 The clitic status of "ne" and its consequences

Some distributional differences between *ne* and *one* immediately follow from the fact that *ne* is a clitic and *one(s)* is not. While *one* can appear within subjects (*As*

for Belgian beers, the dark ones are the best), hence pre-verbally, the requirement for *ne* to C-command its trace forces the base position of this clitic to be post-verbal: the object of a transitive verb (20a), or the post-verbal subject of an unaccusative (20b) or passive verb (20c). The last two cases take the auxiliary *essere* 'be' and the participle agrees in gender and number with *ne*, which in turns shares ϕ-features with the numeral (here *una*, '1') and the antecedent.

(20) a. Ragazze, ne$_i$ ho vista una t_i
girls-FEM, ONE(S)$_i$ I_have seen-SING-FEM a-SING-FEM t_i
'Girls, I saw one'

b. Ragazze, ne$_i$ è arrivata una t_i
girls-FEM, ONE(S)$_i$ is arrived-SING-FEM a-SING-FEM$_i$ t_i
'Girls, one arrived'

c. Ragazze, ne$_i$ è stata vista una t_i
girls-FEM, ONE(S) is been seen-SING-FEM a-SING-FEM t_i
'Girls, one has been see'

With unergative verbs like *cenare* 'dine' *ne* is impossible both with pre-verbal and post-verbal subjects (21) (Burzio, 1986).

(21) *Ragazze$_i$, {molti ne$_i$ hanno cenato / ne$_i$ hanno cenato molte }
girls$_i$, {many ONE(S)$_i$ have dined / ONE(S)$_i$ have dined many }

To explain this fact we assume, with Longobardi (2000), that post-verbal subjects of unergatives are the result of subject extraposition to a left-peripheral position, followed by movement of the predicate remnant to a specifier position further to the left of the subject:

(22) A last interesting case is the possibility (marginal for some speakers), of *ne* in with what looks like the pre-verbal subject of an unaccusative or passive verb. We suggest, instead, that *tre* in (23) is the topicalized remnant of a post-V subject from which *ne* has been extracted, as shown by the structure in (24).

(23)%Tre, ne sono arrivati ieri.
Three, ONE(S) are arrived yesterday.

(24) [tre t_i]$_j$ ne$_i$ sono arrivati t_j ieri

3.1 Strong determiners and "ne"

The fact that *ne* needs to move from within the DP also accounts for (11), i.e. the fact that *ne*, unlike *one(s)*, is incompatible with 'strong determiners' (see (10) above). Demonstratives, universal or proportional quantifiers

are known to block subextraction (25) (Fiengo and Higginbotham 1981; Enç 1991; Diesing 1992), so the incompatibility with *ne* is fully expected. We remain agnostic as to the precise analysis of (25), but we believe that it will naturally extend to the pro-NP *ne*.[5]

(25) [Who did Mary make {a / ∅ / ??each / ??this / ??most} film(s) about t]

Constraints on extraction are also responsible for the impossibility of moving *ne* from a predicate nominal, illustrated in (26). Following insights in Moro (1997) and Zamparelli (1996), we assume that copular *be* selects a predicative subpart of the DP (Zamparelli's PDP) without lexically marking it. In the 'Barrier' framework adopted in these works, this resulted in the predicative phrase being an island for sub-extraction, as shown with a full Wh DP in (27).[6,7]

(26) *[Brave professoresse]$_i$, Anna e Lucia ne$_i$ sono [due t_i]
[good professors]$_i$, Anna and Lucia ONE(S)$_i$ are [two t_i]

(27)??[Di cosa]$_i$ credi che Carlo sia un insegnante t_i ?
[of what]$_i$ you_think that Carlo is a teacher t_i ?

5 Interestingly, the extraction of the pro-PP *ne* is more liberal, since it is allowed after certain definites:

(i) Quanto alla CED, ne$_i$ conosco personalmente il maggiore esperto t_i
as for_the CED, of_it$_i$ I_know personally the main expert t_i

In a barrier-framework, the difference might be derived from the fact that pro-PP *ne* in (i) is selected by a lexical element, the noun, while the *ne* in (10) isn't. In a phase-based framework, the difference could be cast in terms of *antilocality* (Grohmann, 2003): the NP cannot move to the edge of the nominal phase (Chomsky, 2001) from a position immediately below Num because this movement is 'too close' to be visible at the interface.

6 See Chomsky 1986. Again, we leave open how this constraint could be exactly recast in a phase-based approach. The degraded status of (26) compared to (27) could be due to the fact that in the former *ne* violates anti-locality.

7 As Moro observes, the presence of the clitic *ci/ce* 'there' make the copula behave more like a lexical verb asserting existence, thus making *ne* extraction possible:

(i) [Brave professoresse]$_i$, ce ne$_i$ sono [due t_i]
[good professors], there ONE(S) are [two t]
"as for good professors, there are two"

3.2 The impossibility of pre-N adjectives

The fact that pre-nominal adjectives are impossible with *ne* (15) is open to various explanations. A first possibility is that the pre-N adjectives block the movement of the *ne* N/NP to V. This would be expected if the adjectives were hosted in [Spec,NP] under the assumption that only maximal projections move (28a) (multiple pre-N adjectives would require multiple Spec positions), less so if they are in the specifiers of independent functional projections, as proposed in Cinque (1994), Scott (2002) and other 'cartographic' approaches (28b).

(28) a. $[_{\text{DP}}$ 3 ... $[_{\text{NP}}$ $[_{\text{AdjP}}$ pure $][_{\text{N'}}$ ne $]]]$
b. $[_{\text{DP}}$ 3 ... $[_{\text{FP}}$ $[_{\text{AdjP}}$ pure $]$ F^0 $[_{\text{NP}}$ ne $]]]$

A second possibility is to resort to some version of Relativized Minimality (Rizzi, 2001). Adjectives and nouns are both predicative categories which share agreement features, so it is not entirely implausible that attributive adjectives in the specifier of a functional projection might block leftward NP movement in (28b). The problem of this approach is that it is at odds with well-established theories of N-movement inside DPs. According to Cinque's theory of adjective position, in Romance languages N moves left, past the lowest adjective (as a head in Cinque 1994, as an NP in Cinque 2010). This of course presupposes that adjectives do not block N(P) movement.

Fortunately, the distinction drawn in Sproat and Shih (1990) and Cinque (2010) between 'direct' and 'indirect' modification offers a promising solution for *ne*. In Cinque's theory, direct modifiers have an individual level interpretation, are non restrictive and potentially non-intersective; indirect ones are based on reduced relative clauses, can have a stage-level interpretation and are restrictive and intersective. The latter end up being post-nominal in some languages as a result of leftward movement of the complex that includes all direct modifiers and the noun:

(29) $[_{\text{DP}}$ ... $[_{\text{FP}}$ *direct_modifiers* N $]_i$ *indirect_modifiers* $t_i]$

We can hypothesize, then, that the adjectives stranded by *ne* are all cases of indirect modification. Evidence comes from the observation that adjectives which form idiosyncratic meaning combinations with a noun and which cannot be used across a copula, such as *nucleare* or *marino* in (30), are also deviant when their nouns are picked up by *ne* (31):

(30) a. Due fisici {nucleari / ??che sembravano nucleari}
two physicists {nuclear / who seemed_to_be nuclear}

b. una tartaruga {marina / ??che era marina}
a turtle {marina / which was marine}

(31) a. ??Di fisici, ne conosco due *t* nucleari.
of physicists, I know two *t* nuclear
b. ??Di tartarughe, lo zoo ne ha due *t* marine.
of turtles, the zoo has two marine *t* ones

The question, now, is why direct modifiers are impossible, that is why (31) could not be derived by replacing *fisici* with *ne* and stranding the direct modifier *nucleare* on the way to V, as shown in (32).

(32) ne_i+V [$_{DP}$ ... [Direct_modifiers *t* nucleare *t*]]

A possible answer is simply that *ne* corresponds to the FP that hosts all of the direct modification adjectives (that is, a pro-FP, not a pro-NP). This, however, would introduce an asymmetry with English *ones*. Most English speakers we consulted accept cases such as (33), where *ones* is clearly a pro-NP (it can be part of N-N compounds, which are certainly within the direct modification section).

(33) a. You met two theoretical physicists and I met two nuclear ones.
b. Land turtle are much rounder than sea ones.

In addition, (32) must be impossible even for regular nouns, not just pro-NPs, or we would generate the unattested order N_i > *indirect modifiers* > *direct modifiers* t_i. It looks like NP *must* pied-pipe its FP—a fact that suggests that the structure in (28a) might after all be on the right track, or at least that FP should be seen as a projection whose features are only minimally distinct from those of NP—an 'extended NP' of sorts. The fact that *ne* can pick up a noun with or without its (direct) modifiers points to the same conclusions: *ne* sees FP and NP as one and the same projection. The need for *ne* to carry along its extended projection clashes, however, with the requirements of its clitic status. Clitics must be simple, 'small', necessarily unstressed elements. From the cliticization standpoint, *ne* should raise alone. These two conflicting constraints (being phonologically simple, *qua* clitic, pied-piping direct modifiers), can be both satisfied only if *ne* does pied-pipe the whole FP, but this FP contains no overt material apart from *ne* itself.[8]

8 Alternatively, we could assume that adjective-hosting FPs are simply absent when empty. This is probably a more parsimonious possibility, but one which should be settled on the basis of theoretical considerations broader than the facts considered here.

(34) $[_{\text{NP/FP}}$ (* *Direct-modifiers*) $[_{\text{NP}}$ ne $]]_{i+\text{V}} \ldots [\text{DP } [_{\text{NumP}}\ t_i$ *Indirect-Modifiers* $t_i]]$

Additional evidence for the need to pied-pipe direct modification comes from a comparison between the three partitive structures in (35). (35a) is a normal partitive and (35b) seems to be derived by raising the FP/NP *nuclear physicists* across the partitive head *of*. But (35c), where the NP has moved alone stranding its direct modifier, is severely ill-formed.

(35) a. two of those [nuclear physicists] who hate the bomb
b. two [nuclear physicists] of those who hate the bomb
c. *two [physicists] of those [nuclear] who hate the bomb

Returning to (34), it is important to remark that like all clitic movements, the raising of *ne* to V does not affect its meaning. At LF, the meaning of N must still be combined with its (indirect) modifiers and with the numeral.

4 The (im)possibility of bare pro-forms

4.1 Bare and modified pro-NPs

Let's now address the fact that *one* must be modified (but not just by a numeral, see the next section), while *ne* can appear alone (cf. (19) above). The puzzle can be presented in the following form. (36) shows that a modified *one* can pick up a whole bare plural (*dogs*), interpreted either as a kind (36a) or as an existential (36b), and can itself be part of a bare plural.

(36) a. I love $[\text{dogs}]_i$, no matter what their size. You only like [small ones_i].
b. I saw $[\text{stray dogs}]_i$ as I was jogging — [large and small ones_i].

But *ones* alone can never function as a bare plural, as shown in (17), repeated below as (37). Why is this so?

(37) a. *I like [large birds_i], in fact I like [ones_i] regardless of size.
b. *I shot [large birds_i], you shot [ones_i], no matter what their size.

This fact is particularly puzzling for theories such as Chierchia (1998), which assume that bare plurals are simple NPs (or Ns). In these theories, one would in fact expect that *one(s)* should be the *only* way to refer to

bare nominals. In actual fact, the only pro-form that picks up a bare plural is *they/them*:

(38) I like dogs$_i$ and you like them$_i$/*ones$_i$, too.

We can hypothesize that *ones* in (38) is out precisely because *them* is possible, but this intuition must be spelled out with care, since sometimes, as in (17)/(37), we want to refer to a *subpart* of the whole DP antecedent (i.e. an NP/FP), and *they* is a pro-DP.

The explanation that we would like to propose rests on the theory of bare plurals proposed by Longobardi (2001). In this theory (i) bare nominals in argument positions are uniformly DPs with an empty D (D^0); (ii) D^0 needs licensing. In English, one way of being licensed is to attract nouns with certain features (plural count or singular mass); (iii) this movement gives nominals the possibility of functioning as 'proper names of kinds of things' (a syntactic implementation of the well-known semantic proposal in Carlson 1977); (iv) like other proper names in English, nouns raise to the D position via head-movement at LF (or feature movement, in syntax).

One problem with the original implementation of this theory is that bare plurals can contain modifiers and relative clauses whose meaning must be compositionally assembled. But modifiers (semantic type <<et><et>>, see e.g. Heim and Kratzer 1998:4.3) can combine with nouns only if nouns denote properties (type <et>). If the noun becomes entity-denoting (<e>) by moving to D, the relation with its modifiers cannot be maintained.

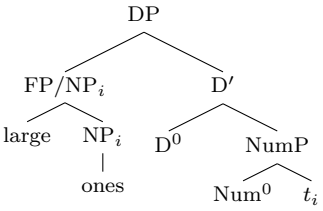
To address this problem, we depart from point (iv) above, and assume the following. First, we follow Chierchia (1998) in proposing that those plural properties which are 'cognitively salient' and exhibit a sufficiently regular behavior can be turned into kinds by a null operator (Chierchia's "down", $^\cap$). This operator applies to the semi-lattice structure that comes from the normal composition of a property-denoting plural noun with its modifiers[9], and returns a kind (type <e_k>) . Following Borer (2004), we also propose that to realize its <e_k>-type kind meaning, the whole phrase containing the noun and its modifiers must move to [Spec,D^0] across an empty NumP (39),

9 We assume that the denotation of (count) nouns is a set S of atomic individuals, which the (subsective and restrictive) modifier restricts to a subset S′. The effect of the plural operator (say, the PL head of Heycock and Zamparelli 2005) is to create the power-set of S′, minus the empty set. This structure (the set of all possible non-empty sets which can be formed with the elements in S′) can be algebraically characterized as a semi-lattice (see e.g. link83)

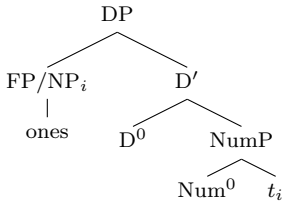
(39) $[_{DP}\ [_{FP/NP}$ African elephants$]_i$ D^0 $[_{NumP}$ Num^0 ... $t_i]$ ...]

Applied to the two structures in (17)/(37), this model makes the two bare nouns [*large ones*] and [*ones*] move to [Spec,DP], giving (40a) and (b), respectively (like above, we write FP/NP for the functional projection containing 'direct modification' material, see Section 3.2 above).

(40) a.



b.



Adopting the so-called 'Neo-Carlsonian' approach to the semantics of bare nouns, we also assume that bare nouns in English undergo this movement in all cases, i.e. even when they are interpreted existentially (contra e.g. Diesing 1992). This is because in this approach the existential meaning of English bare nouns is derived from the kind meaning via the 'Derived Kind Predication' (DKP) shift in (41) (here $^\cup$ is Chierchia's "up" operator, which maps kinds to properties). By hypothesis, the kind meaning which fuels this process requires raising to [Spec,DP].

(41) If P applies to objects and k denotes a kind, then
$DKP(P,k) = \exists x[^\cup k(x) \wedge P(x)]$ (cf. Chierchia 1998, ex.28c)

A persistent idea in linguistics, from Postal (1966) to Distributed Morphology, is that the phonetic form of a pronoun is a direct spell-out of the features the pronoun is endowed with. With this in mind, let's look at (40b). Here the FP/NP in [Spec,D^0] receives features from D^0;[10] but the spell-out of a plural pro-form with D features in English is *they/them*, not *ones*. *Qua* D-level pro-form, *they/them* picks up DPs, hence the contradictory flavor of (42).[11]

(42)??I like [large birds]$_i$, in fact I like them$_i$ regardless of size.

10 Which features are relevant remains unclear: +DEFINITENESS, according to Postal (1966), PERSON, according to **?**, or a more specific 'referential' feature.

11 It is interesting to note that if we associate the pro-DP with a modifier, as in object depictives (see Williams 1980, Rizzi 1986), *them* seems to be able to pick up a subpart of the antecedent (compare (ia) with ... *while wolves prefer live ones*).

(i) a. Jackals eat dead [sheep]$_i$, while wolves prefer them$_i$ alive.
b. I like [girls]$_i$ with short hair, you prefer them$_i$ with long pony tails.

What happens when a pre-nominal modifier is present? In this case, too, the filled FP complex formed by *one* and its modifiers moves to [Spec,D^0], as shown in the first tree in (40). Now *ones* is no longer in a direct Spec/Head relation with D^0, which it does not C-command. Therefore, it becomes impossible to spell-out D^0 and *ones* together, generating *them*, since the semantic material from the adjective intervenes. The pronominal features in the raised NP must then be spelled out as *one(s)*, as desired.

4.2 Italian "ne"

The structures in (40) explain why in English a modifier must be present with *ones*, but not why the putative Italian equivalent of *one*, i.e. *ne*, can in fact appear without any modifier or numeral ("bare *ne*"), as in (43).

(43) a. Funghi, ne ho visti *t* ieri.
mushrooms, ONE(S)I_have seen *t* yesterday
'As for mushrooms, I saw them/some yesterday'

b. Di bravi linguisti, ne ho incontrati *t*.
of good linguists, ONE(S) I_have met *t*
'Good linguists, I have met'

These examples can be glossed in English with *some* or with a DP proform, *them*, which can however receive a non-maximal reading: the word *them* in the glosses of (43a) does not imply that I have seen the total set of contextually available mushrooms. This is likely to be an application of DKP to the kind meaning picked up by the pronoun from its antecedent (i.e. DKP($\boldsymbol{see'}$,$\boldsymbol{them}_k$)).

We are now in a position to derive the existence of bare *ne*, but not bare *one(s)* from independently established differences between bare nominals in English and Italian. As is well-known, argumental bare nominals in Italian (and in fact, most Romance languages, see Contreras 1986 for Spanish) are limited to lexically selected positions (verbal or prepositional objects). Moreover, when possible, bare DPs never refer to kinds (Longobardi 1994, 2001 ,Zamparelli 2002, Dayal 2004, a.o., *pace* Chierchia 1998). To obtain a kind meaning, Italian uses definite nominals.

One reviewer reports the intuition that this reading might come more easily if the pronoun is shortened to *'em*. In any event, this phenomenon is probably not linked to pronouns in particular. It is indeed possible to say: *I remember those dead soldiers alive*, where *alive* is an indirect modifier.

(44) io {odio / adoro / stermino} ??(i) ratti.
I {hate / adore / exterminate (the) rats
possible meaning: "I hate/love/exterminate rats" *(as a species)*

Note that this does not mean that the basic denotation of Italian nouns should be different from that of English nouns, as proposed in Chierchia (1998). Italian and English behave in fact on a par in the other constructions that express nominal genericity, the singular definite generic (*The dodo is extinct*) and the subkind reading (*most mammals live on average less than man = most types of mammal...*). Following the spirit of reducing putative 'semantic parameters' to interface conditions (Borer 2004, Longobardi 2008), we propose that Italian is just like English in allowing some plural/mass properties to be turned into kinds by the "up" operator $^{\cup}$. Crucially, however, Italian does not carry out the NP-to-[Spec,DP] movement which would allow its bare nouns to express this meaning. As a result, Italian must express the kind meaning of a plural nominal with different means, i.e. the definite article, in ways which will not concern us here.

The net result of this situation is that verbs that require kind-denoting objects take definite objects and do not accept bare nouns in Italian (see (45a) and (46a)), whereas with verbs that take existential objects the two languages behave alike ((45b) and (46b)).

(45) a. I {hate / adore / wiped out} *rats* 'kind'
b. I just saw *rats* in the yard. $\exists$

(46) a. *Io {odio / adoro / stermino} *ratti.* = (45a)
b. Ho appena visto *ratti* per strada. = (45b)

The existential meanings of (45b) and (46b) look identical, but they are actually derived by two different routes: in English, the bare FP/NP raises to [Spec,DP] as explained in Section 4.1, a kind meaning is expressed, but the DKP applies and generates an existential meaning over tokens. In Italian, on the other hand, bare nouns do not raise to the D position (which needs to be licensed externally), the existential reading comes directly from the noun's base position, where NP is interpreted as a property. The rest of the structure (D itself, or a VP-level existential closure *à la* Diesing 1992) provides the quantificational force.

If this proposal is correct, Italian *ne*, unlike English *one(s)*, never establishes the Spec/Head relation with D that, in the absence of an adjective, would make it surface as a pro-DP (e.g. the clitics *lo/la/li/le*). As a result, bare *ne* is possible in Italian, but strictly with an existential meaning.

This predicts, correctly, that kind-selecting verbs like those in (46) will be impossible with bare *ne*.

(47) *Ratti, ne {odio / adoro / stermino}. cf. (46a)

5 Bare "ne": syntactic and semantic constraints

Two interesting additional constraints on bare *ne* remain to be discussed: one in its modification pattern, the other in the range of verbs which can select it.

5.1 Modifiers and bare "ne"

As discussed in Section 3.2, *ne* can be followed by 'indirect modification' material, including adjectives and relative clauses.

(48) Di lucciole, ne ho viste due {verdognole / grosse / che
of fireflies, ONE(S) I_have seen two {greenish / big / which
Marco aveva messo in un barattolo} proprio qui
Marco had put in a jar} right here
"as for fireflies, I saw {two green ones / two big ones / two which Marco had put in a jar} right here"

But if we remove the numeral *due* 'two' from (48), turning the sentence into an example of bare *ne*, the modifiers become much worse:[12]

(49) Di lucciole, ne ho viste (?? {verdognole / grosse / che
of fireflies, ONE(S) I_have seen ({greenish / big / which
Marco aveva messo in un barattolo}) proprio qui.
Marco had put in a jar}) right here

However, if we precede the adjective with *di* 'of', the judgment is reversed: now bare *ne* is possible, numeral + *ne* is not (50).

12 A caveat: it is possible to rescue (49) by making a pause after the verb and placing the adjective sentence-finally. This is a characteristic sign of right topicalization. Using the adverbial *proprio qui* 'right here' makes this reading less likely, but of course with the right intonation the adverbial can also be right topicalized. The judgements refer to a reading without pauses which is perfectly possible in (48).

(50) Di lucciole, ne ho viste (*due) di {verdognole / grosse / più lente} proprio qui.
of fireflies, ONE(S) I_have seen (two) of {greenish / big / slower} right here

To make matters worse, certain subject relatives are still possible with bare *ne*:

(51) Di lucciole, ne ho viste che volavano vicino a Marco.
of fireflies, ONE(S) I_have seen which flew near Marco
"Fireflies, I saw some flying near Marco"

Note that a regular bare plural has none of these constraints. It can be followed by any of the modifiers above, but not by *di* (unlike in French, where this construction seems to have a wider distribution, see Kayne 1994).

(52) Ho visto lucciole (*di) {verdognole / che volavano / che Marco vorrebbe avere}.
I_have seen fireflies (of) {greenish / which flew / which Marco would_like to_have})

5.2 Kind, Token and Token-of-Kinds predicates

As we have seen, the range of verbs that can select *ne* is semantically restricted. Being an existential, like any Italian bare noun, *ne* is of course incompatible with kind-selecting verbs (47). But even with token-selecting verbs, bare *ne* is not always equally acceptable. Verbs like *vedere* 'see', *fotografare* 'photograph' or *osservare* 'observe' combine smoothly with bare *ne* (see B's reply in (53)).

(53) A: Nella foresta purtroppo non ho visto [bradipi]$_i$.
In the forest unfortunately I have not seen [sloths].
B: Io ne$_i$ ho {visti / fotografati / osservati}.
I ONE(S)$_i$ have {seen / photographed / observed}

Interestingly, in the same context, a reply like (54), containing verbs such as *spulciare* 'groom', *ricontare* 'count again', *stuzzicare* 'poke', sounds

stranger with bare *ne*, particularly when a manner modifier is added. All these cases improve once an overt numeral is added.[13] [14]

(54) B: ??Io ne ho {spulciati per bene / ricontati / stuzzicati
??I ONE(S) have {groomed with care / re-counted / poked
a lungo}.
at length}

To make sense of this strange difference, observe that the two sets of verbs also behave differently in the presence of a definite object.

(55) a. Ieri per la prima volta ho {visto / fotografato
yesterday for the first time I_have {seen / photographed
/ osservato} [i bradipi].
/ observed} [the sloths]
can mean: 'Yesterday I have {seen / photographed / observed} sloths for the first time'

b. Ieri per la prima volta ho {spulciato / ricontato
yesterday for the first time I_have {groomed / re-counted
/ stuzzicato} [i bradipi].
/ poked} [the sloths]
'Yesterday I {groomed / re-counted / poked} the sloths ...'
(some salient one)

Let's focus on the meaning of the bracketed nominal. Above and beyond the normal maximal-set reading provided by the definite, which requires a salient set of sloths, (55a) has a natural indefinite reading which can be rendered in English with a bare plural. In (55b), instead, the bracketed nominal tends to keep its expected maximal/unique reading. Zamparelli

13 Another caveat is in order. With stress, especially in exclamative contexts, it is possible to furnish a bare *ne* with an unpronounced amount expression roughy meaning 'quite a large number of', as in (i):

(i) Eh, se ne ha, di guai!
Eh, whether ONE(S) he_has, of troubles!
cf. 'Boy, quite some troubles, he has got!'

Modulo its particular discourse function, this construction patterns like a non-bare case of *ne*. We set it aside in the discussion that follows.

14 We are aware that a full corpus-based analysis of the verbs that occur with pro-NP *ne* would have been very interesting. The problem is that while bare-*ne* appears to be very common (as shown by searches carried out in the ITWAC web corpus), the vast majority of the naturally attested cases are pro-PP *ne* (i.e. cases like (5)).

(2002) points out that Italian definite noun phrases can express an indefinite meaning in cases such as (56), and argues that this meaning arises via the kind meaning these definites make available, through an application of the DKP, as shown in (57).

(56) a. Ogni settimana, il mio sito web viene attaccato da[gli
every week, my web site is attacked by[the
hacker].
hackers]
'Every week my web site gets attacked by hackers'

b. La casa è sporchissima. In cantina ci sono [i
the house is filthy. In the basement there are [the
topi] e sotto il lavello vivono [gli scarafaggi].
mice] and under the sink live [the cockroaches]
'The house is filthy. There are mice in the basemnet and cockroaches live nunder the sink'

c. Nel 1986 [i ladri] hanno svuotato il mio appartamento.
In 1986 [the thieves] have emptied my apartment.
'In 1986 thieves have emptied my apartment'

(57) $[\![(56d)]\!]$= [DKP(**empty_my_apt**$'$,**the_thieves**$'_k$)]

This reading of definites is limited to nominals which can refer to kinds (inserting a numeral between the article and noun will block it, precisely because it blocks kind-reference), and common of objects where the species is normally more salient that the individual. Wild animals are a case in point: if cockroaches are taking over one's sink, one normally worries about how many, not which individual ones. Naming them is just superfluous.
Just as there are nouns, like animal names, that favour a kind-oriented view of their referents, so there are verbs that do the same with their arguments. If I intend to photograph or document a certain kind of object, it does not matter which specimen I find (good-looking is better, of course, but to a point). If I want to see or observe 'brown bears', any token will do, as long as it is a token of *that* kind. So, these verbs take individual tokens, not kinds, but they take them merely *qua* representatives of their kind. Seen from the angle of specificity, they have two sides: they can select arguments which are extremely specific at the kind level, but completely non-specific with the respect to tokens. At a cognitive level, this behaviour might simply be a function of the ease with which an action performed on one token can be transferred to another one. If I see one brown bear, I am able to recognize the next. Likewise, if acting on one token gives me a special knowledge which will apply to any token of the same kind, I am in a sense acting on the species as a whole.

Let's then call predicates that take tokens but are kind-oriented in the way described '*Token-of-Kind*' (ToK) predicates. Most predicates are not, or not primarily, token-of-kind. Contrast 'pruning roses' with 'touching roses'. The first requires special skills which, once mastered can be transferred to other roses. One can say: now I know how to prune this type of plant. 'Touching roses', on the other hand, does not seem to require the same level of expertise, just like 'remembering' or 'counting' them: these predicates are thus less ToK-oriented. Adding certain manner modifiers ('randomly touching roses') makes predicates even more token-oriented: carrying out the action on one individual will not have any import on our ability to interact with the next.

Our claim, now, is that token-of-kind predicates (or uses of predicates) will be precisely those that tend to interpret definites in an 'indefinite' way, via the DKP, and those which allow bare *ne* (in ways to be discussed momentarily). For instance, in (58a) it is easier than in (58b) to understand *le rose* as 'roses' (a bare plural).[15] And in (59), bare *ne* is better with the first verb than with the second.

(58) a. Ho già potato [le rose] (dunque so farlo).
I_have already pruned [the roses], (so I know how to do it)

b. Ho già toccato a caso [le rose]
I_have already touched randomly [the roses]
(??dunque so farlo).
(so I know how to do it)

(59) Rose, ne ho {potate / ??toccate a caso}.
roses, ONE(S) I_have {pruned / touched randomly}

15 Note that the same effect is also visible with the *singular* definite generic, and is linked to the so-called 'avant-garde reading' discussed by Carlson (1977) in connection with sentences such as *The horse came to America with Columbus*, where *the horse* is a token, but acts as a representative of the kind. Again, the choice of predicate makes a difference, see *build* vs. *repair*, *spot* vs. *cure*:

(i) a. Meucci built [the telephone] in 1849
b. ?Meucci repaired [the telephone] in 1849 *only a specific phone*

(ii) a. John spotted [the ivory-billed woodpecker] in 2006.
b. ?John cured [the ivory-billed woodpecker] in 2006. *a specific individual*

5.3 Deriving bare "ne"

How to derive the token-of-kind oriented meaning of bare *ne*? We believe that the answer comes from the pattern of modification examined in 5.1. We can summarize it as follows: while *ne* with a numeral cannot strand 'direct modifiers', in Cinque's sense, bare *ne* does not accept *any* modifier, direct or indirect, with the only exception of those introduced by *di* and certain relative clause structures. We will deal with these last cases at the end.

Our solution is based on the idea that when verbs like *vedere* 'see' are used as token-of-kind verbs, they embed a form of DKP in their lexical entry: they take a kind-denoting object and extract 'representative' tokens to serve as arguments. Specifically, we assume that beside its regular, $<e_o<e_o t>>$ meaning, *vedere* 'see' has the lexical entry in (60), a function which applies the lexical relation $\mathbf{vedere}'$ to an existential closure over the tokens extracted from the kind by means of the $^{\cup}$ operator.

(60) $[\![\text{vedere}]\!] = \lambda x_k \lambda y \exists g[\ ^{\cup}x(g) \wedge \mathbf{vedere}'(y,g)]$

Like other Italian bare nouns, *ne* is not normally kind-denoting, witness **ratti, ne adoro* 'rats, ONES I adore' (see (47) above). In Section 4.1, however, we argued that this fact can be reduced to a syntactic difference—in Italian common nouns do not raise to [Spec,D^0] while in English they do. So, while a $<e_k>$-type denotation is in principle available to both Italian and English nouns, only the latter language manages to express it via normal bare nouns. Suppose now that the kind meaning is derived from a noun's property denotation via the "down" operator (i.e. $^{\cap}[\![N]\!]$).[16] We propose that, when *ne* incorporates into a ToK verb[17], *ne* plugs its kind meaning ($^{\cap}[\![ne]\!]$) inside a ToK semantics similar to the one in (60) above, yielding (61):

(61) $[\![V_{ToK}+\text{ne}]\!] = \lambda y \exists g[\ ^{\cup\cap}[\![ne]\!](g) \wedge [\![\mathbf{V}_{ToK}]\!](y,g)]$

The form $^{\cup\cap}[\![ne]\!]$ might seem strange at first: why to interpret a property as a kind, if $^{\cup}$ immediately turns it back into a property? Recall, however, that $^{\cup\cap}P$ is not always equivalent to P: kinds can only be formed from certain semantically plural properties (Chierchia 1998, a.o.). This is useful

16 Alternatively, kinds might be the primitive meanings of nouns, as in Krifka (1995), Zamparelli (1996)—the choice is orthogonal to the present point.

17 According to Kayne's (1975) approach to clitic movement, *ne* would initially move as a phrase. We leave open at this stage whether this phrase should be the DP subpart $[_{NP}\ ne]$, or the whole DP containing just *ne*.

to explain the fact that while singular *ne* is normally possible when a numeral is present (62), a bare singular *ne* is ungrammatical, since the "down" operator cannot turn a singular count noun into a kind (i.e. $^{\cap}[\![\text{ne}]\!]$ is undefined if *ne* refers to N_{sing}). We take this as evidence for the need for token-of-kind arguments to go 'to the kind and back'.

(62) A proposito di orso/orsi, ieri ne ho visto *(uno).
apropos bear/bears, yesterday ONE I_have seen$_{sing}$ (one)

One feature of the analysis in (61) is that it is conditioned on *ne*-to-V movement, so it does not extend to Italian bare nouns in general. Note that after this movement, *ne* is interpreted *at the verb*. This offers a plausible solution to our second puzzle, the reason why modifiers are impossible with bare *ne*: if *ne* is interpreted at the verb (i.e. it is not 'reconstructed'), a modifier cannot apply to its base position; semantically, there is nothing to modify.

This leaves the problem of those modifiers which are acceptable with bare *ne*. We want to propose that they all contain a null pro-form which is able to directly pick up the antecedent of *ne*. Let's begin with the *di* modifiers we saw in (50), repeated below as (63).

(63) Di lucciole, ne ho viste (*due) di {verdognole / grosse / più lente} proprio qui.
of fireflies, ONE(S) I_have seen (two) of {greenish / big / slower} right here

The *di* we see in these cases cannot be the preposition *di* 'of'—prepositions do not take adjectives. Rather, we prefer to regard it as an instance of the 'copular *di*' we see in the Q-of-Adj construction in (64) (Zamparelli 1996, ch.3, den Dikken 1998).

(64) a. Gianni berrebbe (un) qualcosa di fresco.
Gianni would_drink (a) something of cool
"Gianni would drink something cool"
b. Cosa vuoi di fresco?
what you_want of cool?
'Would you like something cool, and if so, what?'

Here, *qualcosa* 'something' is of the same category as *ne* (note that it can be preceded by an indefinite article, in (64a)), and *di* is obligatory. Both den Dikken (1998) and Zamparelli (1996) (1996) analyze it as a nominal equivalent of the copula, a particle identified with a KI(nd)P head in Zamparelli (1996) and with F in the present work. This particle takes

a small-clause predicative structure whose subject, a pronominal empty category, moves to [Spec,*di/of*] to be licensed. *Di* is the FP head.

(65) $[_{\text{FP/NP}}\ pro_i$ di/of $[_{\text{SC}}\ t_i$ *Predicate*$]]$

Building on this analysis, we propose that in the acceptable modification cases the *di*-modifiers are not a stranded part of the V argument (which has been incorporated), but rather *adjuncts*.

(66) $[_{\text{VP}}\ [_{\text{DP/FP/NP}}$ ne$]_i$+V $[_{\text{FP}}\ pro_i\ [_{\text{F}'}$ di $[_{\text{SC}}\ t_i$ *Modifiers*$]]]$

Turning to the 'relative clauses' we see with bare *ne*, they are actually *pseudo-relatives*, the same structures we see in (67) applied to a proper name (type <e>, just like bare *ne*).

(67) Ho visto Dumbo che {volava vicino / Marco osservava }.
I_have seen Dumbo which {flew nearby / *Marco observed }
'I saw Dumbo {fly nearby / *Marco observed}'

As (67) also shows, this class of Italian modifiers must have a gap in *subject* position, a fact which has been linked to the presence of a *pro* as RC head (Guasti, 1988). They contrast with the ill-formed relative we saw in (49) above, which are genuine (object) relatives, cannot have *pro* heads and pattern as any other modifier.

5.4 "Ne" uses: a summary

It may be useful, at this point, to schematically lay out the various *ne* data and point to their analysis. Let's first consider the well-formed cases:

(68) $[_{\text{FP/NP}}$ ne$]_i$+V $[_{\text{DP}}$ 3 t_i *Indirect_modifiers* t_i $]$ *cf. ex.* (48)
Ne interpreted in the base as a property, modified by indirect modifiers. Normal indefinite DP interpretation.

(69) $[_{\text{FP/NP}}$ ne$]$+V_{ToK} $[_{\text{DP}}\ \text{D}^0\ t_k\ ]$ *cf. ex.* (60)
Bare *ne* interpreted as a token-of-kind by a token-of-kind verb.

(70) $[_{\text{DP/FP/NP}}$ ne$_i]$+V $[_{\text{FP}}\ pro_i$ di $[_{\text{SC}}\ t_i$ *modifiers* $]$ *cf. ex.* (63)
Like above, *ne* interpreted at the verb, picked up by the empty pro-form in [Spec,*di*]

Ill-formed cases.

(71) *$[_{\text{FP/NP}}$ ne$]_i$+V $[_{\text{DP}}\ \text{D}^0\ [_{\text{FP}}$ *Direct_Mods* $t_i]_j$ *Indirect_Mods* t_j $]$
Ne cannot strand Direct Modifiers (Sec. 3.2).

(72) *[$_{\text{FP}}$ *Direct_Mods* [$_{\text{NP}}$ ne]]$_i$+V [$_{\text{DP}}$ D^0 t_j *Indirect_Mods* t_j]
Ne cannot be cliticized into V with its Direct Modifiers (see (34)).

(73) *[$_{\text{FP/NP}}$ ne]+V$_{ToK}$ [$_{\text{DP}}$ 3 t_k]
Ne interpreted as a token-of-kind at V. Just like the modifiers, the numeral cannot apply to the trace position (wrong type).

A final, interesting case to consider is the possibility for bare *ne* not to be interpreted by rule (60) (i.e. $\lambda y \exists g[\ ^{\cup\cap}[\![ne]\!](g) \wedge [\![\mathbf{V}_{ToK}]\!](y,g)]$), but rather 'reconstructed' in the base position, as it happens when an overt numeral is present. This would give rise to the normal existential interpretation of Italian bare plurals, but would also allow indirect modifiers without *di*.

(74) *[$_{\text{FP/NP}}$ ne]$_i$+V [$_{\text{DP}}$ D^0 t_{ij} (*Indirect modifiers)*]
Bare *ne* interpreted at the base as a property ([[ne]](x)).

The fact that this case is not found suggests that the 'lexical' interpretation in (61) is preferred. This could be seen as a blocking effect (an 'elsewhere condition': specific rules win over general ones), or perhaps as a function of the additional cost of positing a default existential quantifier to bind the variable of which *ne* is predicated in (74).

6 "Ne" antecedents

Let's now return to the issue of the forms that can be antecedents for *ne* in the CLLD constructions. Since *ne* is a pro-NP, the possibility to pick up bare nouns plus modifiers in topic position (as in e.g. *[ragazzi con jeans]$_i$, ne$_i$ ho visti* '[boys with jeans]$_i$, ONE(S)$_i$ I have seen'), is expected. Less expected is the possibility of cases like (75a) (*di*+BN) and (b) (*di*+DP).

(75) a. di ragazzo/ragazzi, ne ho visto/i (uno/due)
of boy/boys, ONE(S) I_have seen (one/two)
b. Di quei quattro ragazzi arrivati oggi, ne ho visti due
of those 4 boys arrived today, ONE(S) I_have seen two

As above, the *di* in (75a) cannot be the preposition *di* 'of': *ragazzo* is a bare singular count and prepositions do not productively select such

complements in Italian[18]. We propose that these *di*+N cases are another instance of the 'copular *di*' construction seen above in (66), where (i), *di* is a functional head F (KI(nd)P in Zamparelli 1996, the edge of direct modification in the present approach), taking a predicational structure whose subject *pro* is moved and licensed in [Spec,*di*]; (ii) *ragazzo* is a property, which is applied to the *pro* internal subject, giving (76b).

(76) a. [$_{\text{FP}}$ *pro* [$_{\text{F}'}$ di [$_{\text{SC}}$ *t* [$_{\text{NP}}$ ragazzo/i]]]]
b. λx[**ragazzo**$'$(x)]

Since the whole constituent is an FP, *ne* can take it as its antecedent.
The situation with (75b), where the antecedent is a normal PP embedding a definite DP, is different. For these cases, we simply propose that the topicalized PP is actually picked up by the pro-PP *ne* (the one in (5) above), yielding a normal partitive (i.e. *two of those four boys ...*). Indeed, replacing the definite with an indefinite such as *alcuni* 'some' yields ungrammaticality, as expected from a partitive:

(77) *Di alcuni ragazzi, ne ho visti (due)
of some boys, ONE(S) I_have seen (two)
(cf. *"I saw two of some boys").

7 Conclusions

This work is, to our knowledge, the first detailed comparison of two pro-NP forms which have received comparatively little attention in the recent literature on pro-forms. Our study points to the conclusion that *one* and *ne* are actually quite similar (the only remaining lexical difference being, perhaps, the fact that *ne* can pick up both mass and count antecedents, while *one* can only pick up count ones). The differences that emerge, we argued, can be explained as the result of two factors: the fact that *ne* is a clitic (so, it cannot be extracted from 'strong DPs', and it incorporates into V), and the idea that bare nominals in English, but not in Italian, have to raise to [Spec,DP] and establish a relation with D^0 which essentially turns them into pro-DPs.
Unlike *one(s)*, Italian *ne* can be bare, but in this case it is stripped of modifiers and restricted to verbs which select objects denoting non-specific

18 The only other productive case of P+N is found in *pseudopartitives*, but N must be plural count or singular mass in that construction. There is nothing 'massy' in *ragazzo* 'boy'.

'tokens of kinds'. We tried to give an informal characterization of this class, and we proposed a explanation which links the modifier restriction to the verb semantics.

We have, however, just scratched the surface. Still missing is a precise characterization of the cases where *one* and *ne* simply do not appear overtly (as, arguably, in *when he mixed the cards, two (*ones) were set aside*), as well as a comparative analysis of their binding properties. We will discuss these issues in future work.

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