Coordinated Bare Definites

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Recent work on the syntax and semantics of functional projections within the noun phrase has had as one goal an explanation for the crosslinguistic distribution of ''bare'' (determinerless) noun phrases. This article provides an account for an apparent anomaly: the relatively free occurrence of bare noun phrases under coordination. We argue that this construction involves coordination of projections below the DP level, with the coordinated structure subsequently raising to Spec,DP. Our analysis accounts for the fact that these nominals are endowed with uniqueness conditions, but only in some cases, and for a number of other hitherto undocumented facts, including complex constraints on modification.

Keywords: coordination, DP, definiteness, bare nouns, pronouns

1 Introduction

In this article, we investigate the intriguing construction found in English and a number of Romance and Continental Germanic languages in which singular count nouns without any determiner (''bare singulars'') are coordinated. Strikingly, such coordinations have a distribution quite different from that of uncoordinated bare singulars in the same languages (Delfitto and Schroten 1992, Longobardi 1994, Chierchia 1998b). The basic pattern is illustrated in (1)–(2).

(1) A black cat and a brown dog were fighting in the street.
    a. [Cat and dog] were equally filthy.
    b. *Cat was filthy.

(2) He gave me a key, a letter for the landlord, and some instructions.
    a. I have to give [key and letter] to the tenant, and read the instructions myself.
    b. *I have to give key to the tenant, and keep the others myself.

The main question raised by this construction is why coordination should license bare singulars in languages that otherwise lack them entirely. The interpretation of these structures offers a clue to a precise answer: we will show that these coordinated bare nominals have a semantics close

to that of definites, and we will propose that this follows from the movement of the conjoined nominals to the Spec,DP position, with D empty.[1] This analysis of the bare noun coordination construction will in turn be used as a testbed for a more general proposal concerning the syntax-semantics interface of determiner phrases.

The structure of the article is as follows. Section 2 will show that coordinated bare singulars and (optionally) bare plurals pattern with definites, but only in certain respects. Section 3 will discuss and reject a potential analysis based on N-to-D movement. Section 4 contains the core proposal on the syntax of bare nominals and our analysis for the coordination facts. Section 5 discusses the pattern of modification and the relation to other cases of DP-internal coordination.

2 Definiteness

2.1 Coordinated Bare Singulars

The examples in (1) and (2) show that coordinated bare singular count nouns can occur in argument positions from which their noncoordinated counterparts are barred. Given that in English, bare plural count nouns can appear in most argument positions, one avenue of explanation that suggests itself is that somehow the conjunctions in (1) and (2) have a wider distribution because they are semantically equivalent to a bare plural.

There are, however, numerous reasons to reject this possibility. First, coordinated bare singular count nouns occur also in Italian, as illustrated in (3), the Italian equivalent of (1).

(3) Un gatto nero ed un cane scuro si azzuffavano per strada.
    a cat black and a dog dark were fighting in street
  a. Cane e   gatto erano {ugualmente luridi / animali senza   padrone}.
     dog and cat   were {equally   filthy / animals without an owner}
  b. *Gatto era {lurido / un animale senza   padrone}.
     cat   was {filthy / an animal   without an owner}

As is well known, in this language the distribution of bare plurals is narrower than it is in English: simple determinerless nominals are found only in argument positions selected by verbs

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[1] The elements of these conjunctions are typically objects that naturally occur together. This does not mean, however, that the construction can be dismissed as ''idiomatic,'' that is, as a set of precompiled lexical items with a categorial tag different from ''common noun.'' First, well-formed examples are easily constructed with a variety of nouns, not only those that commonly appear together. Even with the latter, a unitary syntactic explanation would certainly be preferable to postulating a large number of idiomatic lexical entries, many with multiple orders (*fork, knife, and spoon* but also *knife, fork, and spoon,* etc.). Second, the semantics of these conjunctions is perfectly compositional (unlike, say, *spic and span, by and large,* and other genuine coordination idioms). Third, if these were precompiled lexical items, it is not clear what their global category could ever be: not proper names, for lack of the appropriate rigid designator meaning, not (as we will argue in a moment) bare plurals, and not full-blown DPs (e.g., [D N&N] with only the N&N part ''visible''), as this would entirely beg the question of why conjunction is after all necessary to form the idiom, that is, why there is no idiomatic form *cat* meaning *the/a cat.* We conclude that the construction is productive. For some comments on a few special cases, see footnote 5.

or prepositions (Contreras 1986, Longobardi 1994). Thus, a bare plural in the same position as the coordinated bare singulars in (3) would be ungrammatical, whether with an existential or a generic predicate.

(4) *Gatti erano disponibili / sono animali.
    cats were available / are animals

Even more strikingly perhaps, the construction also occurs in French, a language in which bare plurals are barred from argument position altogether (see Delfitto and Schroten 1992, Chierchia 1998b).

(5) Un chien noir et un chat gras se battaient fougueusement dans notre jardin.
    a dog black and a cat fat were fighting furiously in our garden
    a. Chien et chat avaient tous les deux l'air très sale.
       dog and cat had both the appearance very dirty
    b. *Chien avait l'air très sale.
       dog had the appearance very dirty

Second, coordinated bare singulars and bare plurals exhibit a more subtle distinction. As illustrated in (6), coordinated bare singulars can be used anaphorically, but bare plurals cannot.

(6) We had to set the table for the queen. We arranged one crystal goblet$_h$, one silver spoon$_i$, and two antique gold forks$_j$.
    a. [Goblet$_h$ and spoon$_i$] were set on the right of the plate.
    b. ?*[Forks]$_j$ were dirty.

(6a) is perfectly acceptable with the anaphoric reference indicated; it is, however, impossible for the bare plural *forks* to refer back to *two antique gold forks.* Hence, to the extent that the generic and existential interpretations are also excluded for independent reasons, (6b) is highly marginal. This contrast is one facet of a broader generalization.

(7) Coordinated bare singular noun phrases have a definite meaning.

Thus, (6a) is acceptable in just the same way that (8) is acceptable in the same context.

(8) The goblet$_h$ and (the) spoon$_i$ were set on the right of the plate.

As definites, bare singular coordinations require uniqueness. The contrast in (9) is due to the world knowledge that companies may have one president and one vice president, but typically lots of employees and inspectors.

(9) a. At the company meeting, president and vice president gave an optimistic speech.
    b. ??At the company meeting, employee and inspector talked about their colleagues' motivation.

In a context in which it can be used anaphorically, the conjunction *employee and inspector* becomes fine.

(10) Critical speeches were given by a senior employee and a young, dynamic inspector. Inspector and employee agreed that their colleagues' motivation was too low.

In other cases, the antecedents have not been explicitly mentioned, but they are introduced via bridging from elements in the immediate context, as in these examples from the British National Corpus:

(11) a. The other major role of the sculptor is in the service of religion, where a high degree of interplay between *artist and patron* is not necessarily so important.
b. The novel (or so I hope) signals a separation between *author and narrator* with its very first sentence.

Further, coordinated bare singulars cannot appear in existentials with *there,* in contrast to bare plurals, as illustrated in (12).

(12) a.   There were forks on the table.
b. *There were goblet and spoon on the table.

This again follows if coordinated bare singulars are definites.

Italian provides an additional piece of evidence that is unavailable in English. Abstract nouns that appear with no determiner in English require a definite determiner in Italian.

(13) a.   La storia è importante.
the history is important
b. *Storia è importante.
history is important

Even in Italian, however, conjunctions of such nouns may appear without a determiner.

(14) a. La storia e   la storiografia   sono importanti.
the history and the historiography are   important
b. Storia e   storiografia   sono importanti.
history and historiography are   important

Coordinated bare nouns may function as definites in three additional contexts: as predicate nominals, as bound elements, and as kind-denoting noun phrases. There are cases in English where even uncoordinated predicate nominals can occur without a determiner.

(15) He was president/treasurer/king.

However, unlike in a number of other Western European languages, such cases are very limited; in general a determiner must appear, as illustrated in (16).

(16) He was *(the) judge/winner/loser.

Such nominals are however possible in coordinations, where a definite would otherwise be expected.

(17) a. He was judge, jury, and executioner.
    b. He was the judge, the jury, and the executioner.

(18) A: Which of the two won in that exchange?
    B: Well, I think Matt was (both) winner and loser.

Next, bare noun coordinations can have bound uses in cases such as (19), again alternating with definite descriptions.

(19) The marriage counselor didn't send any couple to the lawyer before warning (the) man and woman separately about the consequences of their action.

Finally, (20a) shows a case where a coordinated bare singular appears under *invent,* a verb that requires a kind-denoting object (Carlson 1977:466).

(20) a. Barnaby invented wheel and lever when his fellows were still puzzling over the notion of ''cave.''
    b. Barnaby invented *(the) wheel but failed to take out a patent.
    c. ?*Barnaby invented wheels.

Note that (20b) shows that an uncoordinated bare singular is of course ungrammatical, while a singular definite is perfect (again paralleling the coordinated bare singular). Further, the marginality of (20c) again shows a contrast between the coordinated bare singular and a bare plural.

2.2 Coordinated Bare Plurals

So far, we have discussed only coordinated bare singular count nouns, to show that they appear to have the semantics of definites. The same phenomenon can be observed in the coordination of bare plural count nouns. This is obscured by the fact that, as illustrated in (21), coordinations of bare plurals can also have indefinite interpretations, just like uncoordinated bare plurals.

(21) a. There were forks and knives on the table.
    b. There were forks on the table.

While in English this is the expected result of the normal coordination of two bare plurals, it is interesting to note that coordination can also widen the distribution of existentially interpreted bare plurals in languages like Italian or Spanish, where unmodified bare plurals in subject position are ill formed.[2]

(22) a. Giornata di mercato in città. [Clienti   ??(e   curiosi)]   gironzolavano per
    market day   in town [customers   (and onlookers)] walked   about
    i   banchi.
    the stands

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[2] We thank an anonymous *LI* referee for pointing out this fact.

b. Ogni giorno in Afganistan muoiono di fame   [uomini *(, donne, e
   every day   in Afghanistan die   of starvation [men   (women and
   bambini)].
   children)]

A proper account of bare noun coordination must thus be able to account for this fact, as well
as for the absence of the same effect in French.[3]

(23) ??Jour de marché en ville; clients et curieux se promènent autour des étalages.

                                                                              = (22a)

In order to show *definiteness* in coordinated bare plurals, it is necessary to find a context in
which only a definite would be acceptable: here, we would expect to find a contrast between the
(grammatical) coordinated bare plural and an (ungrammatical) noncoordinated bare plural. The
kind of anaphoric context in (6)–(10) is clearly one such case; in this context, coordinated bare
plurals are just as grammatical as their singular counterparts, as shown by the plural equivalent
of (6).

(24) We had to set the table for the queen. We arranged one crystal goblet$_h$, one silver
     spoon$_i$, two antique gold forks$_j$, and two platinum knives$_k$.
     a.   [Forks$_j$ and knives$_k$] were equally dirty.
     b. ?*[Forks] were very dirty.

An additional context is the subject position of atemporal (individual-level) predicates. As
pointed out by Milsark (1974), nonspecific indefinites are awkward in this position. Contrast the
simple, nongeneric bare plurals in (25a) with the multiple coordination of bare plurals in (25b).

(25) A refugees' ship just arrived in Puglia.
     a. ?*{Sailors / Sailors in the ship} are Albanian; the captain is Italian.
     b.   Sailors and passengers are Albanian; the captain is Italian.

The same meaning is available in Italian.

(26) Una nave di rifugiati è   arrivata in Puglia. Marinai *(e   passeggeri) sono
     a   ship of refugees has arrived in Puglia sailors   (and passengers) are
     albanesi, il   capitano è italiano.
     Albanian the captain   is Italian

As expected, *marinai e passeggeri sono albanesi* in (26) is a reference to the total group of sailors
plus passengers in the ship, and it cannot mean 'there are some Albanian sailors and passengers'.

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[3] It should be noted that longer conjunctions (''lists'') of bare nouns are better even in French.

(i) Jour de marché en ville; clients, curieux,   touristes, et   mendiants, tous se promènent autour des étalages.
    market day   in town clients onlookers tourists and beggars   all   walk   about the stands

As is well known, lists have unexpected effects in other constructions as well (e.g., they allow definites in existential
contexts; see Abbott 1992).

Next, in Italian and other Romance languages unmodified bare plurals are never interpreted as kinds, regardless of position (Longobardi 1994, Zamparelli 2002; see Chierchia 1998b for a different view); the only way to obtain a kind meaning is via a definite determiner. Since coordinated bare plurals may be interpreted as definites, we expect a kind reading to be available in this case. The expectation is borne out.

(27) a. Cani *(e gatti) diventano più comuni come si passa dal Sud al Nord
      dogs (and cats) become more common as one moves from South to North
      Italia.
      Italy
   b. Tigri *(e pantere) sono in pericolo di estinzione.
      tigers (and panthers) are endangered

The same points can be made even more forcibly in French, where, as mentioned earlier, bare plurals are barred from argument position altogether. (28a) offers a coordination of bare plurals with definite meaning; (28b), one with kind meaning.

(28) a. [Chiens *(et chats)] avaient tous l'air très sale.
      [dogs (and cats)] had all the appearance very dirty
   b. Le chien, le chat, et le lapin sont parmi les animaux domestiques
      the dog the cat and the rabbit are among the animals domestic
      les plus répandus; en particulier, [chiens *(et chats)] sont une/des espèce(s)
      most widespread in particular [dogs (and cats)] are a/sm species
      qui s'adapte(nt) facilement à la compagnie des êtres humains.
      which adapt(s) easily to the company of human beings

Taken together, these facts show that the generalization in (7) can be stated more generally as (29).

(29) a. Coordinated bare singulars must have a definite meaning.
   b. Coordinated bare plurals can have a definite meaning.

This disjunctive formulation is clearly still far from an adequate explanatory account. The difference between singular and plural, for instance, remains mysterious. But there are more general issues. In languages like English or Italian, definiteness is normally associated with an overt morpheme, the article or the demonstrative. It would seem natural to ask what the element that conveys ''definiteness'' is in bare noun coordinations. Surely, it cannot be the logical operator *and* (no theory on the semantics of conjunction makes it definite in any sense); and presumably, it cannot be the bare nouns either (if anything, outside of coordination bare nouns are associated with *indefiniteness,* as discussed in the last section).[4] Thus, the generalization in (29) leads to a compositionality puzzle: how do we get a definite meaning by combining ingredients that aren't in any way definite? Moreover, why is this meaning optional, but only in the plural? Is it exactly identical to what we obtain with the use of *the?* We will start answering these questions beginning with the third one.

2.3 Modified Definites

So far, we have shown coordinated bare nominals patterning as definites in anaphoric contexts, *there*-sentences, predicate nominals, and other cases. The natural question, at this point, is whether these nominals are in fact fully interchangeable with the coordination of two regular DPs introduced by the definite article. The answer is negative: there are various cases where a definite is fine, but the corresponding ''bare'' case is not. Consider, first of all, examples in which the two conjuncts are modified together by a PP (30a), a relative with subject or object gap (30b–d), or a reduced relative (30e).

(30) a. *I didn't see much of the film: man and woman in front of me were very tall.
     b. *After taking my hand, the doctor examined nail and finger that had become infected.
     c. ?*Cat and dog that were fighting all the time had to be separated; the other animals stayed together.
     d. ?*Only boys and girls that you met yesterday know Italian.
     e. ?*There are four tables and a dozen chairs in stock; others can be ordered. Tables and chairs currently available are made of cherry.

As the reader can verify, adding *the* before the bare nouns fully restores grammaticality in each case. Nonrestrictive modification, on the other hand, is fine.

(31) Cat and dog, which were always fighting, were both black.

In this context, it is also worth noting that a single adjective modifying both conjuncts also gives rise to unacceptability.

(32) There were two men, a German and a Frenchman, and two women, also one German and one French.
     *German man and woman were both dark-haired; French man and woman were much blonder.

Taken in isolation, the ungrammaticality of (32) suggests a number of possible explanations. Given (30a–e), however, it seems to fall under a general restriction, which we could capture by revising the generalization in (29) into something like (33).

(33) Bare noun coordinations (can) have the semantics of unmodified definites.

What are the possibilities of modification *within* each conjunct? It is not difficult to construct cases where distinct adjectives may accompany each noun.

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[4] Interestingly, even in telegraphic English, where bare singulars are possible, they function as either definites or indefinites: *Dog bites man. Man bites back.*

(34) We had to set the table for the queen. We arranged one crystal goblet and a golden one in the center, a silver spoon and a fine, antique golden spoon at her left side. [Crystal goblet and golden spoon] had to be expressly taken from the jewel room.

(35) There were two men, a German and a Frenchman, and two women, also one German and one French. [German man and French woman] got along pretty well; the others immediately hated each other.

In this case, however, the referents of the definite coordination have been explicitly introduced in the discourse. If we turn to cases where the unique antecedent of our coordinations can be identified only by means of an inference (e.g., in (36b) the fact that mercury is a metal), the possibility of using independent modifiers degrades.

(36) a. The pet shop owner had a dog and a cat from every country in the world.
    ??[Australian cat and New Zealand dog] were firm friends.
  b. For their customer test, the management ordered the lab to prepare a sample piece of cutlery from every metal in their shop.
    ??[Lead knife and mercury spoon] didn't score very well in the test.

Modification by a relative clause or a PP in each conjunct is even worse.

(37) a. *[Dog that I saw] and [cat that I heard] fight all the time.
  b. ??[Knife with the golden blade] and [fork with the silver handle] go on the left.

Finally, in those cases where *the* combines with *only* or with a superlative, bare nominal coordination is unacceptable.

(38) All the pet shop owner had in stock was ten turtles, one dog, two snakes, and one Siamese cat; he had just sold all the rest.
  a. *Only cat and only dog were both small, shaggy animals.
  b. *Biggest turtle and smaller snake cost the same.

Considering all these restrictions, we will henceforth refer to (singular) bare noun coordinations as *quasi definites*—meaning that these forms carry a presupposition of uniqueness, but do not have the full range of uses of normal definites.[5] We will return to this meaning in section 5.1.

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[5] There is another type of putative counterexample to the original generalization. Examples include these:

  (i) a. John and Mary are husband and wife. ≠ ?*John and Mary are the husband and (the) wife.
    b. For this you will need pen and paper. ≠ ?*For this you will need the pen and (the) paper.

It is not clear, however, whether this is a unified class. Bare singular coordination of the type in (ia) (without an interpretation of definiteness) occurs with kin terms in general, but only in predicative position (*They are mother and daughter/brother and sister/father and son*). In argument position, an indefinite reading is typically ruled out.

  (ii) I went to a meeting where there were lots of families.
    a. A husband and (a) wife came up to me.
    b. *Husband and wife came up to me.

In the meantime, the data above suggest a new but no more enlightening condition, which could be formulated along the lines of (39),

> (39) In bare noun coordinations, modified conjuncts may only refer to material that has been explicitly introduced in the discourse.

where *explicitly* includes bridging cases such as (9) or (11) but not logical inferences like those in (36).

3 Definiteness from N-to-D Raising?

Having established that bare singular coordination can have a quasi-definite interpretation, we must address the question of how this interpretation arises. Longobardi (1994) has proposed that a definite meaning can be triggered by N-to-D raising (as, e.g., in the case of proper names). This suggests that bare singular coordination could involve the coordination of two DPs, in each of which N has raised to D.

> (40) $[_{\text{Coord}}[_{\text{DP}} \text{goblet}_i \ldots t_i]$ and $[_{\text{DP}} \text{spoon}_j \ldots t_j]]$

However, such an analysis leaves many serious problems unresolved. First, it predicts that the bare singular conjuncts should not allow modification. The grammaticality of examples such as (34) and (35), repeated in (41), appears to show straightforwardly that this is incorrect.

> (41) a. . . . [Crystal goblet and golden spoon] had to be expressly taken from the jewel room.
>   b. . . . [German man and French woman] got along pretty well; the others immediately hated each other.

When the sentence is generic, however, these kin-term coordinations are also possible.

(iii) Husband and wife should always make decisions together.

The distribution of readings in this case appears to parallel exactly that of the bare plural of kin terms. That is, alongside (ia), (ii), (iii), we find examples like (iva–c).

(iv) a. Mary and Susan are sisters.
      b. I went to a meeting where there were lots of families. Sisters came up to me.
          (Not interpretable as 'One group of mutually related sisters came up to me'.)
      c. Sisters should always try to have separate bedrooms.

In this case, then, it does appear that these conjunctions behave like bare plurals in predicative and generic position. As for (ib), it is not even clear here whether we are in fact dealing with the same type of coordination, given that *paper* is a mass noun; this might simply be an idiomatic use of the bare singular *pen,* which does after all occur elsewhere with no coordination (*At this point I had to put pen to paper*). The conjunction in (ib) as a whole is of course idiomatic; substitution of semantically related words of the same category does not preserve grammaticality (although *pencil* works like *pen*).

(v) a. ?*For this you will need pen and cardboard.
     b. ?*For this you will need biro and paper.

It is certainly striking that there seem to be a number of such idiomatic uses of bare singular coordinations, but the considerations just enumerated we believe justify setting these aside, rather than treating them as important counterexamples to the generalizations in (33)/(39).

A line of reply is that Longobardi's N-to-D raising must occur at LF in English, in view of the adjective-name order in DPs such as *Little John* and *Ancient Rome.* (41) would thus reflect the premovement order. However, Longobardi shows that in (Central/Southern) Italian movement is overt: (42) and (43) show alternations where the N has moved to D over some adjectives, and (44b) a case where *casa* 'home' and *camera* 'room' have moved over the possessive adjective (examples adapted from Longobardi 1994). All of these cases are completely independent of coordination.

(42) a. l'antica   Parigi
        the ancient Paris
     b. Parigi$_i$ antica t$_i$
        Paris   ancient

(43) a. lo scorso giovedì
        the past   Thursday
     b. giovedì$_i$ scorso t$_i$
        Thursday past

(44) a. la   mia {casa   / camera}
        the my {home / room}
     b. {casa   / camera}$_i$ mia t$_i$
        {home / room}   my

Crucially, however, not just any adjective can appear after a noun raised to D. In contrast to the cases without N-to-D raising in (45), which are grammatical, the cases in (46) are ill formed.

(45) a. La Parigi texana è molto più piccola della   Parigi francese.
        the Paris Texan is a lot   smaller   than the Paris French
     b. Il sabato   ebraico non equivale   alla   domenica cristiana.
        the Saturday Jewish isn't equivalent to the Sunday   Christian

(46) a. ??Parigi texana è molto più piccola di   Parigi francese.
          Paris Texan is a lot smaller   than Paris French
     b. *Sabato   ebraico non equivale   a domenica cristiana.
          Saturday Jewish isn't equivalent to Sunday   Christian

But it is possible to construct cases of coordination analogous to (41) in Italian, where N precedes the restrictive adjectives that gave rise to ungrammaticality in (46).

(47) a. Il   presidente, il   senatore texano, ed il   consigliere ebraico discussero il
        the president   the senator Texan and the adviser   Jewish discussed the
        piano di ritiro . . .
        plan   of retreat
     b. . . . [Senatore texano] e   [consigliere ebraico] erano entrambi scettici
              [senator   Texan] and [adviser   Jewish] were both   skeptical
        sui   tempi.
        about the timetable

(48) a. Il sabato   ebraico non equivale   alla   domenica cristiana . . .
         the Saturday Jewish isn't equivalent to the Sunday   Christian
     b. . . . Tuttavia, se confrontati con le festività di altre culture, [sabato
            however if compared   with the festivities of other cultures [Saturday
         ebraico] e   [domenica cristiana] hanno indubbiamente molti punti in comune.
         Jewish] and [Sunday   Christian] have   undoubtedly   many points in common

The ability of N to precede the adjectives in (47) and (48) but not the same adjectives in (46) would remain unaccounted for in an N-to-D raising approach to our problem.

A second problem for the N-to-D raising analysis is that the meaning of a bare singular coordination does not have the semantic rigidity (consistency of identity across possible worlds) that is for many authors the hallmark of proper names (*pace* Russell in his later work; see Kripke 1980 for discussion, and Ludlow and Neale 1991 for a different view). Longobardi's cases of N-to-D raising, on the other hand, do display rigidity of reference. Thus, in (49a), where *camera* 'room' has moved over the possessive adjective, it is much harder than in (49b) to get the meaning that the speaker will switch to a different room.

(49) a. Camera mia cambierà.
         room   my will change
     b. La mia camera cambierà.
         the my room   will change

The strongly preferred interpretation for (49a) is that the room will change *aspect* (by being repainted, refurnished, or the like). The coordination cases do not show the same pattern: if the president and the vice president are currently Bill and Jack, (50a) can mean (50b), as well as the pragmatically dispreferred (50c).

(50) a. President and vice president change every four years.
     b. The president and the vice president change every four years.
     c. Bill and Jack change every four years.

Moreover, in Romance overt N-to-D raising is strictly restricted to *singular* nouns, while as we have shown coordinated bare definites can be plural.

Some of the previous points might perhaps be considered theory-internal and potentially susceptible to some technical solution. However, there are two related problems of a quite different order. First, an N-to-D raising analysis incorrectly predicts that coordination of a bare singular with a normal definite DP or a proper name should be possible, just like *John and his friend;* thus, (51a) should be grammatical with the structure given in (51b).[6]

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[6] Reversing the order of (51a) results in the grammatical string *the fork and spoon.* However, the constituency in this case is as indicated in (ia); note that in English this construction is not limited to definites, as shown in (ib).

(i) a. [the [fork and spoon]]
    b. [one/a/no [fork and spoon]]

For discussion, see Heycock and Zamparelli 1999, 2000, 2002.

(51) a. *. . . fork and the spoon must be . . .
    b. . . . [[$_{DP}$ fork] and [$_{DP}$ the spoon]] must be . . .

The point can be strengthened by a reference to Italian, once again using the special nouns *casa* 'home' or *camera* 'room'. When raised to D, these nouns may be coordinated with a full DP (52a), but not with a bare singular definite (52b).

(52) a. [Casa mia]$_i$ e   [la cattedrale di Santa Croce]$_j$ sono vicine . . .
      [house my] and [the cathedral of Santa Croce are close by
    b. . . . Tra   [casa mia e ??(la) cattedrale]$_{i+j}$ passa però   l'autostrada.
        between [house my and ??(the) cathedral]   runs however the highway

Similarly, a bare singular definite cannot be coordinated with a proper name, as shown in (53b).

(53) a. Il gatto dei   vicini   ed il mio cane Fido sono nemici giurati . . .
      the cat of the neighbors and my dog Fido are   sworn enemies
    b. *. . . {Gatto e   Fido / Fido e   gatto} non   perdono nessuna occasione per
          {cat and Fido / Fido and cat} don't lose   any   occasion to
      battersi.
      fight

The deepest and most general objection against a ''DP&DP'' analysis of these bare coordinations is related to this last point. Such an analysis does not suggest any reason why coordination should be a necessary condition for the occurrence of bare singulars; that is, it provides no insight into the ungrammaticality of an example like (54) (the equivalent of earlier examples such as (1b), (6b)).

(54) *. . . [$_{DP}$ Fork] must be placed on the left.

After all, coordination has no special licensing effect on bare singulars when it applies at the sentential level, or to predicate nominals without uniqueness presuppositions (contrast (55b) with (17)).[7]

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[7] Bare singulars do appear in the noncoordinate constructions given in (i) (Nigel Fabb, personal communication).
(i) A cat and a dog were fighting in the street.
    a. Cat was as filthy as dog.
    b. Cat was no filthier than dog.
The correct analysis of this type of bare singular is unclear to us. However, we do not believe that these comparative cases should be assimilated to the coordinated cases discussed in the body of this article, in particular because here the crosslinguistic distribution is quite different. Thus, in Italian there is no grammatical equivalent of either (ia) or (ib).
(ii) a. *Gatto era tanto   sporco quanto cane.
      cat   was as much dirty as   dog
    b. *Gatto non era più sporco di   cane.
      cat   not was more dirty   than dog

(55) a. *Fork is silver-plated and bowl is enameled.
     b. *John is gentleman and Englishman.

We therefore do not pursue the ''DP&DP'' analysis any further.

4 Definiteness from Movement to Spec,DP

Still retaining Longobardi's insight, we propose instead that bare noun coordination involves movement of a [$_{CoordP}$ NP Coord NP] structure to a single Spec,DP, with D empty, as illustrated schematically in (56).

(56) [$_{DP}$[$_{CoordP}$[$_{NP}$ goblet] and [$_{NP}$ spoon]]$_i$ [$_{D'}$ D^e . . . t$_i$]]

Our proposal is that this movement is a way to license the empty D^e via specifier-head agreement with a quantificational operator, the conjunction head *and*. To spell out this intuition, we need to lay out the semantic effects of movement to a specifier position within a more general analysis of the syntax-semantics interface of noun phrases: in order to explain why coordination can repair the ill-formedness of bare nominal arguments, it is necessary to understand what goes wrong with noncoordinated bare nominals.

4.1 The Syntax-Semantics Mapping within the DP

In what follows, we will make use of the minimal DP structure shown in (57).[8]

(57) [$_{DP}$ the [$_{NumP}$ three [$_{NP}$ gold forks]]]

In this structure, D functions as a variable or a constant, the referential element of the whole noun phrase, and NumP as its restrictor (see Higginbotham 1987, Stowell 1989, Longobardi 1994, and Zamparelli 1995 for this view). Following Zamparelli (1995), we assume that cardinal numerals are realized in Num. In addition, we adopt the strict mapping between DP-internal syntactic projections and meanings proposed there: when the DP layer contains overt lexical material, uniqueness presuppositions for the whole noun phrase are triggered. This material is typically the lexical determiner itself (*the, this, both,* etc.), but, crucially, it need not be: any constituent that ends up being interpreted at the DP layer is in fact sufficient to activate the D projection and trigger this meaning. But under the hypothesis that movement is governed by principles of economy, a constituent will be allowed to move to or merge in this layer (specifically, Spec,DP) only when this is the most economical way to guarantee the well-formedness of the whole DP.

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[8] In the system of Zamparelli 1995, the projection we call DP here corresponds to SDP, NumP to PDP, and NP to KIP or NP. In other work (Heycock and Zamparelli 1999, 2000, 2002), we have motivated the necessity for a projection associated with the formation of plurals, PlP, which corresponds to some extent to Zamparelli's (1995) KIP. Given the analysis in the works cited, bare noun coordination must in fact involve PlPs, rather than NPs. For the sake of simplicity, we do not make the distinction here, as it is orthogonal to the data at issue.

In other terms, we hold that the syntactic layer encoding ''definiteness'' can be activated by lexical material which isn't in any sense ''definite,'' but that this does *not* mean that any random constituent can be moved to Spec,DP just to trigger this meaning. This proposal can be stated as the principle in (58).

(58) *Activation Principle*
An empty functional projection can be licensed, and its semantic content activated, by the presence of appropriate material in its specifier.

The result is that we no longer need to ask the odd question of what is ''definite'' in the words *and, goblet,* and *spoon;* instead, we need to ask why placing [*goblet and spoon*] in Spec,DP is the most economical way to build a convergent structure. Uniqueness presuppositions—we propose—are an epiphenomenon of movement triggered by other factors, but these factors must be uncovered.

For illustration of how uniqueness should be associated with a position and not necessarily with overt lexical markers, consider a different domain, the behavior of possessive DPs such as *John's books.* Possessives are usually considered to be definite, hence endowed with uniqueness conditions; however, in predicate nominal position they can take an indefinite reading akin to the meaning of *books of John's* (see Mandelbaum 1994).

(59) a. *Context:* There are various sets of four books lying around the room.
b. Those$_i$ are John's books, and those$_j$ are also John's books.

If the definite meaning is taken to be primary, this shift could be approached by means of a semantic operator that optionally turns the definite into an indefinite in predicative contexts. However, an invisible operator analysis faces serious problems, since inserting a numeral after the possessor phrase blocks the indefinite meaning: in (60a), the possessive means (60b) (a canonical definite), and not (60c). The sentence is infelicitous because uniqueness presuppositions are violated.

(60) a. ??Those$_i$ are John's four books, and those$_j$ are also John's four books.
b. ??Those$_i$ are the four books that John has, and those$_j$ are also the four books that John has.
c. Those$_i$ are four books of John's, and those$_j$ are also four books of John's.

If *John's books* can be converted to an indefinite meaning, it is hard to see why *John's four books* cannot.

Suppose instead that the definite meaning is restricted to the DP layer, whereas NumPs always denote properties ($\langle e,t \rangle$-type elements). Predicate nominals are quintessential properties, and treating them as bare NumPs seems at least plausible.

(61) They are [$_{NumP}$ two good friends].

Suppose, further, that the variable meaning of possessives depends on the fact that the possessor morpheme may be realized in D or in some head below Num (see Holmberg 1993 for a similar

proposal). Correspondingly, the possessor phrase may appear in Spec,DP or in a specifier below NumP. But in the string *John's four books,* the morpheme -'*s* cannot be below Num (which is occupied by *four*); it must be realized in the higher position, the DP layer. As a result, the whole noun phrase takes the force of a full-fledged definite, and (60a) becomes an attempt to equate one object (a specific pile of books of John's) with two distinct ones (*those$_i$* and *those$_j$*).

(62) a. Those are [$_{NumP}$ John's [$_{NP}$ books]].   (indefinite)

b. Those are [$_{DP}$ John's [$_{NumP}$ four [$_{NP}$ books]]].   (definite)

4.2 The Licensing of D^e

In the cases we will be concerned with in the rest of this article, D is an empty category (D^e). The main idea is that the presence of an element in Spec,DP is motivated by the necessity to license this category via feature checking.

When no lexical element, but only D^e, is present in the DP layer, no reading of uniqueness arises, according to the principle stated in (58). We adopt the null assumption that D^e denotes a variable; uncontroversially, variables need to be *restricted,* and to be *bound.* In this case, the restriction is supplied by the noun and its modifiers, and the binding by adverbs of quantification (e.g., *always* in *Ten kids are always hard to keep quiet*) or by some existential operator (existential closure or analogous devices). In the particular case of empty D^{e}s, further licensing must be necessary, in order to explain the fact that in Italian and other languages bare arguments must be lexically selected ((63a) vs. (63b)).

(63) a. Ho   visto (tre)   cani.
         (I) have seen (three) dogs

b. Ieri   *(tre)   cani si sono azzuffati per strada.
         yesterday (three) dogs fought   in   street

One way to express the necessary licensing condition is to have D^e require *identification* (roughly in the sense proposed by Rizzi (1986)). In languages such as Italian and Spanish, this may be provided externally, in the form of selection by a lexical head (hence the grammaticality of (63a) even without the overt numeral). In addition, we propose that D^e may also be licensed internally, by attraction of a feature [+Qu] (for *quantificational*), which marks elements that participate in scope interactions. Lexical numerals such as *tre/three* (and with it *a, many, several, various,* etc.) possess this feature; therefore, if NumP contains one of these expressions, as in (64), the feature is attracted to D under the relation of predication that holds between NumP and D. In this case, D^e is identified internally, by its predicate.

(64) [$_{DP}$ D$^e_{[+Qu]}$ [$_{NumP}$ three$_{[+Qu]}$ [$_{NP}$ gold forks]]]

Consider, on the other hand, what happens when no numeral is available, and the noun is a singular count (a [−Plur] setting in the feature system we develop in Heycock and Zamparelli 1999, 2000, 2002; plural count and singular mass nouns are [+Plur]).

(65) *[$_{DP}$ D^e [$_{NumP}$ Num$^e_{[−Plur]}$ [$_{NP}$ gold fork]]]

In most languages that come equipped with an indefinite article, this case is severely ill formed. We propose that this fact is linked to the impossibility of bare singulars functioning as predicate nominals in these languages.[9]

(66) *This is table.

If this idea is correct, the problem for (65) is not that D^e is not identified or bound (it may be, in the appropriate contexts), but that D is not *restricted:* we have a variable but we do not know what sort of objects it ranges over.[10]

We propose, then, that the NumP layer plays a crucial role in turning a nominal into a predicate; just like the DP layer, this layer must be activated—either by some lexical material (an overt indefinite such as *some* or *a,* a numeral, or at least the marked Plur value, [+ Plur]), or by selection from a lexical head (an overt determiner such as *the* or *that*). If none of these possibilities is realized, the structure might still be salvaged by interpreting N as a proper name and raising it to D (as in Longobardi 1994). In this case, the noun is not used as restrictive material, and the D variable is replaced by a constant. When even this strategy is not available, the structure is ill formed.

Finally, let us consider an intermediate possibility: no numeral in NumP but a plural/mass noun (i.e., a [+ Plur] value).

(67) $[_{DP}$ D^e $[_{NumP}$ $Num^e_{[+Plur]}$ $[_{NP}$ gold forks]]]

In English, this example contrasts with the singular in (65) because D^e is successfully restricted: a NumP with a [+ Plur] feature is an acceptable predicate in this language. The same is true in Italian, where structures like (67) are also acceptable, as long as the independent requirement of identification is met (cf. (63)).[11] In French, on the other hand, bare plurals are generally unacceptable, even in complement position. This is because in this language bare plurals do not constitute legitimate predicates (contrasting with both Italian and English).

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[9] In Heycock and Zamparelli 2002, the failure of predication in bare count singular nouns is further reduced to the idea that in the absence of a lexical determiner the [−Plur] feature of singular count nouns remains unchecked. This work also addresses a potential counterexample: the existence of bare singular predicates (but not bare singular arguments) with ''profession nouns'' in various languages, including varieties of Romance (see also Munn and Schmitt, to appear, and references cited there).

(i) Gianni è insegnante.
   Gianni is teacher
   'Gianni is a teacher.'

For ease of exposition, in this article we continue to state the phenomenon in terms of predication. See Heycock and Zamparelli 2002 for details on the purely feature-based analysis.

[10] Treating D^e as an empty pronoun would of course solve this problem, but at the price of leaving the nominal material in the restrictor uninterpreted. In cases where overt pronouns are accompanied by a noun, as in *we teachers,* the noun does play a role in restricting the range of what is meant by *we.* Note the impossibility of *I teacher, *you teacher, where again the bare singular count noun cannot function as a nominal predicate.

[11] Various analyses of the exact licensing conditions in English, French, and Italian can be found in the literature (in Chierchia 1998b, Dayal 2000, the lack of the whole DP layer; in Longobardi 1994, the raising of N or of its features to the empty D at LF; etc.). The choice among these solutions rests on the formulation of a proper syntax-to-semantics parameter and is largely orthogonal to the problem at issue here.

(68) a. Sono   scarpe piccole.
         (they) are shoes small
     b. Ce   sont *(de)   petites chaussures.
         those are   (some) small   shoes

It is therefore predicted that they will not be able to restrict D^e, and structures parallel to (67) are (correctly) ruled out, regardless of the issue of identification.

4.3 The Role of Coordination

Our assumptions about the nature of what we tagged *CoordP* in (56), repeated here, are quite minimal.

(56) $[_{DP}[_{CoordP}[_{NP}$ goblet] and $[_{NP}$ spoon]]$_i$ $[_{D'}$ D^e . . . $t_i]]$

We assume that CoordP allows the transit of the categorial features of its conjuncts (in the trivial sense that a coordination of DPs behaves like a DP; a coordination of VPs, like a VP; etc.) and that *and* is a head of CoordP and is endowed with a quantificational feature $[+Qu]$ (since it participates in scope interactions; see, e.g., Clark 1992). Given this set of assumptions, consider the conjunction of two singular NPs under an empty D and Num.

(69) $[_{DP}$ D^e $[_{NumP}$ Num^e $[_{CoordP}[_{NP}$ gold fork] and$_{[+Qu]}$ $[_{NP}$ silver spoon]]]]$

The D^e head is empty and in need of identification. This time, the only source for a $[+Qu]$ feature is *and,* but this feature can be assigned to D^e only under predication. However, the $[-Plur]$ value on both conjuncts does not allow them to be predicates. Hence, any transmission of features is blocked. The only way for $[+Qu]$ to be attracted to D is by pied-piping the whole CoordP to Spec,DP and creating a configuration of agreement that allows feature sharing between *and* and D^e. But in this case, we have a lexical phrase in the DP layer at the end of the process. As a result, a quasi-definite meaning for the whole noun phrase results, even if no *lexical* element is responsible for this meaning.

Consider now what happens when the coordination contains *plural* nouns.

(70) $[_{DP}$ D^e $[_{NumP}$ $Num^e_{[+Plur]}$ $[_{CoordP}[_{NP}$ gold forks] and$_{[+Qu]}$ $[_{NP}$ silver spoons]]]]$

Again there is an empty D^e head in need of identification. But here the $[+Plur]$ allows each conjunct (and the coordination as a whole) to be interpreted as a predicate. The $[+Qu]$ feature may therefore be transmitted to Num and from here under predication to D^e, thereby licensing it. No material is moved overtly to Spec,DP, and the result is the indefinite plural reading, as in (71).

(71) I walked into the room and saw gold forks and silver spoons.

There is another possibility, however, parallel to the singular case: the conjoined NP moves to Spec,DP, as in (69). This second derivation gives rise to the definite reading found in examples like (72).

(72) On the table there was a lot of cutlery: gold forks$_i$, platinum knives, and silver spoons$_j$. Gold forks$_i$ and silver spoons$_j$ were equally filthy.

Since both derivations are available, we assume that the two possibilities are equivalent for the purpose of economy conditions.[12]

Since in Italian [+Plur] nominals make good predicates, the two derivations and the corresponding meanings will also be available. In French, on the other hand, a NumP with [+Plur] as its sole content cannot be a predicate; witness (68b). The only option left in this language is to raise the coordination to Spec,DP. As a result, only the quasi-definite reading is available.

Consider now an alternative analysis, suggested to us by a reviewer. One might accept the idea that what licenses the determinerless DP in this construction and its quasi-definite meaning is the coordinating head, but assume—contrary to our proposal—that feature transmission to D^e is not dependent on predication. As a result, the relevant features of *and* could always reach D^e at LF and trigger the definite meaning. The question that arises with such an analysis is why this abstract movement should be blocked by the intervention of adjectives, which are either specifiers or adjuncts between D and N. Indeed, (73) is as good a bare plural with or without the adjective: in Longobardi's analysis, this is because the relevant features of the noun *people* can reach D regardless of the presence of the adjective.[13]

(73) [(Old) People in front of me] were running in panic.

But now consider the ungrammaticality of (32), repeated here.

(32) There were two men, a German and a Frenchman, and two women, also one German and one French.
      *German man and woman were both dark-haired; French man and woman were much blonder.

If the [+Qu] features of *and* could just be attracted to D^e at LF, it is a mystery why this couldn't happen across an adjective. The same point can be made with Italian. As noted earlier, the adjective *scorso* 'last' allows overt movement of names of days to D (74a), and even (more marginally) of their conjunction (74b). But (74c), where the features of *e* 'and' should have moved at LF, is completely ungrammatical.

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[12] A potential alternative is of course to assume that the existential meaning is due to the coordination of two full DPs, each containing a bare plural with an empty D^e.

  (i) [$_{Coord}$[$_{DP}$ D^e gold forks] and [$_{DP}$ D^e silver spoons]]

However, this structure would not explain the improvement over uncoordinated bare plurals in Italian. Moreover, from the standpoint of economy it is at least plausible that the structure in (i) might lose out in competition with (70), which has the same overt lexical content but less structure. For evidence that coordination might be realized as low as possible, see Heycock and Zamparelli 1999, 2000, 2002. A separate issue is whether a DP-conjunction structure, with N-to-D movement in each conjunct, might be possible as an account for examples like (27); we leave this as an open question.

[13] Note that in this case a derivation via a kind meaning as in Chierchia 1998b is not available: *people in front of me* cannot refer to a kind.

(74) a. giovedì$_i$ scorso t$_i$
         Thursday last

    b. [giovedì e   venerdì]$_i$ scorsi t$_i$
        [Thursday and Friday]   last

    c. *scorsi [giovedì e   venerdì]
        last   [Thursday and Friday]

This paradigm thus confirms our proposal that in the singular the features of *and* capable of licensing the D head *cannot* move independently of the whole conjunction, whether at LF or before. In the plural, on the other hand, prenominal adjectives become possible in Italian and English, as predicted.

(75) Costose [spille   e   collane] luccicavano dalla   vetrina.
     expensive [brooches and necklaces] sparkled   from the shop-window

5 Further Consequences

5.1 On the Possibility of Modification

One immediate consequence of this analysis is that since the conjuncts are nominal projections smaller than the full DP, the failure of coordination with a full DP, as in (51a) and (53), follows from the general requirement that coordination is possible only between categories of the same type.

   We have proposed that the status of bare noun coordinations as quasi definites follows from the activation of the DP projection by the presence of lexical material in Spec,DP. The way the raised material is interpreted, however, needs to be spelled out in more detail. First, we assume that the coordination is not reconstructed in its base position; this is in fact a necessity in some cases, since as we have shown bare singular NPs are ungrammatical as predicates and cannot function to restrict the value of the D^e variable. The ill-formedness of the construction with shared modifiers, illustrated in (30)–(32), follows immediately. The modifiers in question are generated as adjuncts to the coordination (or to some functional projection above it—the precise way in which the modifier is connected is irrelevant at this point).

(76) a. [$_{DP}$ D^e . . . [$_{CoordP}$[$_{CoordP}$[$_{NP}$ man] and [$_{NP}$ woman]] [$_{PP}$ in front of me]]](cf. (30a))
    b. [$_{DP}$[$_{CoordP}$[$_{NP}$ man] and [$_{NP}$ woman]]$_i$ [$_{D'}$ D^e . . . [$_{CoordP}$ t$_i$ [$_{PP}$ in front of me]]]]

(76b) shows the situation after raising. The *minimal* structure sufficient to check the $[+Qu]$ feature on D, namely, the lower CoordP, has moved to Spec,DP. But since this constituent is never reconstructed, its semantics cannot combine with the semantics of the modifier: the denotation of *man and woman* (a set of couples, presumably; see Heycock and Zamparelli 2002) is never intersected with the set *things in front of me,* leading to ill-formedness. This explanation extends to the impossibility of stranding numerals and adjectives.

(77) a. *[men and women]$_i$ four t$_i$
    b. *[forks and spoons]$_i$ silver t$_i$

Again, at LF *four* and *silver* do not find the right type (if in fact *any* type) of semantic object to combine with.

The second question to address is, What does it mean for the nominal material to be interpreted in Spec,DP? As we have shown in (50), these expressions do not have the rigidity of proper names. Let us, then, consider the alternative possibility: that they are interpreted in a way similar to pronouns. Pronouns are clearly less able to distinguish between referents than definite descriptions, but they are capable of narrowing down their reference according at least to gender features.

(78) The couple came in. She was dark; he was blond.

Bare definite coordinations may then be seen as pronominals built on the fly. Their richer lexical content can be used to restrict the range of possible discourse antecedents, but not to derive new ones via inference, in contrast to ordinary definite descriptions. The difference between pronouns and definite descriptions is clear from the contrast in (79) (based on famous examples from Partee, cited in Heim 1982).

(79) I dropped ten marbles and found only nine of them.
The missing marble/*It is probably under the sofa.

If we extend this type of example to include bare NP coordination, we find that these nominals pattern together with the pronoun, though their additional content makes the contrast less sharp.

(80) At the party there was one representative from each country in the Americas. When I arrived, many had left. But . . .
a. *they were still there drinking tequila. (they = those who hadn't left)
b. ?*Canadian and American were still there drinking tequila.
c. the Canadian and the American were still there drinking tequila.

The same point can be made by looking at cases like (36), where conjunct-internal modification fails; the bare coordination is essentially only well formed when the referent of the noun-modifier group has been established in the previous discourse and no inference is necessary.[14] One extreme

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[14] It is interesting to compare this case with that of *epithets,* elements formally similar to definite descriptions but for which a pronominal interpretation has been proposed (Jackendoff 1972, Hornstein and Weinberg 1990, Dubinsky and Hamilton 1998). Epithets allow nonrestrictive modification, unlike pronouns but like bare NP coordinations and other definites.

(i) Every Old Estonian's mother thinks that the arrogant bastard, who has probably never lifted a finger in his life, is a god.

As with both bare NP coordinations and pronouns, however, restrictive modification with epithets is impossible; at most, the implied gender of the epithet can be used to pick out an antecedent, and only in contexts where an unstressed pronoun could do the same.

(ii) a. At the party there were people from all over the world.
*The French bastard insulted my partner.
b. Joe$_i$ and Jessica walked into the bar.
I think he$_i$/HE$_i$/the bastard$_i$ had been drinking.

example of (logical) inference is the one required by superlatives (which require the application of an ordering function) and *only* (which requires comparison with a context set)—both leading to strong ill-formedness in our coordination cases (see (38)).

As shown in (37), bare nominal coordinations where each conjunct is modified with a restrictive relative clause or other postnominal modifier are unacceptable. At first glance, this might seem to be on a par with the adjectival cases in (36). However, it seems that these examples are in addition ruled out by some constraint sensitive to *heaviness,* since even explicit previous mention of each discourse referent does not improve these cases.

(81) In the room was a man wearing spectacles and a woman wearing way too many fancy clothes.
  a. ?After a while, bespectacled man and overdressed woman started to talk to each other.
  b. *After a while, man with spectacles and woman with ridiculous clothes started to talk to each other.

That is, we take it that examples like (81b) are parallel to overly heavy possessor phrases.

(82) a. *[the dog that I saw]'s collar
  b. ??[the fork with the silver handle]'s tines

To sum up, prenominal modification of each conjunct in a coordination that has raised to Spec,DP is possible but restricted, while postnominal modification is ruled out entirely. Further, conjuncts containing cardinals are also completely ungrammatical, as shown by (83a) interpreted just as (83b).

(83) Standing around in the room were three boys, two girls, and an assortment of adults.
  a. *$[_{DP}[_{Coord}[_{NumP}$ three boys] and $[_{NumP}$ two girls]$]_i$ $[_{D'}$ D^e $t_i]]$ . . .
  b. $[_{DP}[_{D'}$ the $[_{Coord}[_{NumP}$ three boys] and $[_{NumP}$ two girls]]]]$ . . .

The sharp ungrammaticality of (83a) can be explained by considering the putative source.

(84) $[_{DP}$ D^e $[_{Coord}[_{NumP}$ three boys] and $[_{NumP}$ two girls]]]$

Here *and* is no longer the only source for the [+Qu] features: the numerals within each conjunct

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  c. There was a couple I had known for years sitting in the bar.
    I think ??he/HE/??the bastard/?*the BASTARD had been drinking.

Even when there is a discourse referent available, and the context makes clear what the anaphoric relation must be, the additional lexical content of an epithet does not make reference possible when an unstressed pronoun would fail. In this, epithets contrast with bare NP coordination.

  (iii) Of the two sisters, one$_i$ was very depressed and the other$_j$ was having a great time.
    a. I felt sorry for the poor thing.$_{i/\#j}$
    b. Depressive$_i$ and party-animal$_j$ were more similar under the skin than you would have thought.

The full pattern of contrasts deserves further study, but would take us too far from our main concern in this article.

are [+Qu] as well, and they transmit this feature to their NumPs' maximal projections. By hypothesis, a coordination inherits the categorial features of its conjuncts; therefore, CoordP ends up behaving like a NumP with [+Qu] features. Since NumP is a fine predicate, [+Qu] can be assigned to D^e under predication. The fact that this transmission is strictly local (i.e., no projection intervenes) means that this strategy is always preferred, hence the contrast with (70). Note that this result crucially depends on our assumption that definiteness is a side effect, not a trigger for CoordP movement; if D^e can be licensed in a more economical way, no movement occurs.[15]

The raising-to-specifier analysis of coordination can explain one last, unexpected difference between definites and our coordinated bare noun phrases: their ungrammaticality under partitives.

(85) We arranged one crystal goblet$_h$, one silver spoon$_i$, two antique gold forks$_j$, and two platinum knives$_k$.
    a. [Forks$_j$ and knives$_k$] were equally dirty.
    b. Many of [the forks and (the) knives]$_{j+k}$ were dirty.
    c. *Many of [forks and knives]$_{j+k}$ were dirty.

Building on Barker 1998, Zamparelli (1998) proposes an analysis of partitives in which an internal projection of the embedded definite DP is copied to a position adjacent to the external numeral, and erased at PF (cf. Kayne's (1994) analysis of postnominal possessives like *a friend of John's*).

(86) [$_{DP}$ many [~~forks~~]$_i$ of [$_{DP}$ the [forks]$_i$]]

In (85c), however, the internal projection to be copied has moved to Spec,DP, and it is unavailable to further movement owing to whatever blocks movement/copy out of a left branch in English (cf. *Whose$_i$ did you see [t$_i$ friend]?*).

(87) *[$_{DP}$ many [~~forks and spoons~~]$_i$ of [$_{DP}$[forks and spoons]$_i$ [$_{D'}$ D^e . . .]]]

5.2 Comparison with DP-Internal Coordination without Movement

The proposal that bare noun coordination derives from a single DP-internal position requires that any difference in form and interpretation between DP-internal coordination cases and bare noun coordinations can be derived by the movement to Spec,DP. Let us consider some cases.

First, recall that we have linked [+Qu] with the possibility of participating in scope relations. This makes some predictions concerning the possible scope of *and.* The possibility of wide scope for conjunction of full DPs, discussed in Clark 1992, is exemplified in (88).

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[15] This predicts that if a language has other ways to license a bare singular, coordinated bare singulars with the properties examined in this article should be impossible. This prediction seems to be borne out: in Brazilian Portuguese, which allows argumental bare singular count nouns, bare noun coordinations with the characteristics discussed in this article seem to be very marginal at best (Cristina Schmitt and Ana Muller, personal communication); in European Portuguese, which does not allow argumental bare nouns, singular bare noun coordinations are acceptable, although, for some speakers, they are possibly limited to animate objects (Joao Costa, Maria do Pilar Barbosa, Fátima Oliveira, personal communication).

(88) Someone must have lived in this house AND that castle.

(not necessarily the same person)

As predicted, the same scope possibility is found in the case of bare singular coordination.

(89) Someone must have lived in house AND castle.   (not necessarily the same person)

However, if D is filled by a determiner and the coordination does not raise to Spec,DP, *and* cannot take wide scope over the indefinite. Thus, (90) contrasts with both (88) and (89).

(90) Someone must have lived in the house AND castle.   (necessarily the same person)

Next, the data presented so far have concentrated on conjunction; plain disjunction seems less felicitous, for reasons we do not as yet understand. There is, however, still a contrast between *Cat is dirty and (91).

(91) a. ?Cat or dog will have to be tied up.
      b.   Either cat or dog will have to be tied up.

On the other hand, *X but not Y* coordination is degraded.

(92) There is a plate, a bowl, and a fork on the table.
      a.   The plate but not the bowl is made of sterling silver.
      b. ?*Plate but not bowl is/are made of sterling silver.

Interestingly, the same effect is also found in DP-internal coordination cases.

(93) a.   The plate and bowl are made of sterling silver.
      b. ?*The plate but not bowl is/are made of sterling silver.

Here it can probably be derived from the impossibility of DP-internal *not* (**the not dog*). This parallelism thus supports the raising-to-specifier analysis.

The next issue to address concerns reference. In English, DP-internal conjunction can have a *split* reading, in which the DP refers to distinct multiple entities (94a), and a *joint* reading, where it refers to a single entity with multiple properties (94b).

(94) a. The father and child are very similar.   (split: two people)
      b. My friend and colleague is recovering.   (joint: one person with two properties)

On the other hand, the interpretation of bare noun conjunctions in argument position is necessarily *split:* in (95a), a reading in which the two bare nouns refer to the same individual is impossible. But this is just the behavior shown by full DPs in the same type of position, as shown in (95b).

(95) a. *Friend and colleague is recovering.
      b.   [My friend] and [my colleague] are/?*is recovering.

Joint conjunctions of pronouns (e.g., *you$_i$ and you$_i$, I$_i$ and we$_{j,i\in j}$*) are equally bad, though constructing a plausible context to test the origin of their ill-formedness proves impossible. Thus, to

the extent their behavior can be determined, bare noun coordinations do not pattern differently from pronouns.

Perhaps more surprising—in an analysis in which bare singular coordination is originally DP-internal—is the fact that bare singular coordination in argument position is also available in languages where a split interpretation of DP-internal coordinated singulars is completely impossible. Italian is one such language: bare singular coordination is quite common, but the equivalent of (94a), a DP-internal conjunction where the split interpretation is forced, is ill formed.

(96) *Il   padre e   bambino sono simili.
     the father and child   are similar

The crosslinguistic variation in the distribution of the split reading is addressed in Heycock and Zamparelli 1999, 2000, 2002. There, we propose that Italian generates both joint and split readings, just as English does (split readings of *plurals* are in fact available in both languages). In Italian, however, the semantics of the NP is filtered at NumP, so that in the singular only the denotation corresponding to the joint reading reaches the D projection. But in the case of bare noun coordination, the denotation of the two NPs is never fed to NumP and never filtered: the NPs are directly interpreted in Spec,DP and do not reconstruct (see section 5.1). The existence of a split reading in Italian follows.[16]

6 Conclusion

In the last decade, much progress has been made toward establishing not only the syntax of the functional projections within the nominal system, but also a principled mapping between this structure and its semantics (see, e.g., Longobardi 1994, Chierchia 1998a,b). The existence of bare singular coordination of the kind examined in this article has always been somewhat of an embarrassment for this enterprise. The analysis presented here on the basis of a more comprehensive set of data offers not only a principled account of bare nominal coordination but also a theory of the pattern of well-formedness of noncoordinated bare nominals. In doing so, it sheds some light, we believe, on the syntax of definiteness and the semantics of DP-internal raising.

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[16] It also follows from our proposal that bare NP coordination should be possible with a mixing of singular and plural; this prediction is met.

(i) President and shareholders were playing in tune.

However, as discussed in Heycock and Zamparelli 2002, King and Dalrymple 2002, mixed numbers are possible in English DP-internal coordinations with invariant determiners such as *the,* so there is no clear empirical contrast between the two types of coordination in this respect; D^e can simply be seen as the limit case of a determiner unspecified for number.

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