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NOUNS AND COUNTABILITY

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The customary disjunctive marking of lexical entries for English nouns as [$\pm$ countable] does not match the fact that the majority can be used both countably and uncountably in different NP environments: this binary opposition is characteristic not of the nouns, but of the NP's which they head. Nevertheless, nouns do have countability preferences; some enter countable environments more readily than others. And not all nouns occur in all kinds of countability environments. A noun's countability preference can be computed by checking its potential for occurrence in a definitive set of countability environments. In the dialect examined here, well-formedness conditions on NP must consider eight levels of countability among English nouns—not, as custom has it, only two.*

NOUNS, COUNTABILITY, AND NOUN PHRASES

1.1. Tradition has it that a noun like *car* is countable, whereas *lightning* is uncountable: we talk about *one car* or *many cars*, but not normally about **one lightning* or **many lightnings*. More generally, the following rule is observed in English:

(I) If the head constituent of an NP falls within the scope of a denumerator, it is countable.[1]

Here the phrase 'falls within the scope [or domain]' of a denumerator means 'is denumerated' by it; i.e., the NP reference is quantified by the denumerator as a number of discrete entities. All denumerators are quantifiers, and the paradigm set of denumerators consists of the natural (cardinal) numbers from one to infinity. In addition, a denumerator is any quantifier which necessarily identifies one or more discrete entities (but not necessarily a precise number of them), and which can be substituted for a natural number within any—and perhaps every—NP, ranging over the same domain and causing no change in the well-formedness or ill-formedness of the NP. Thus the quantifiers in 1 are all denumerators, but those in 2 (other than the natural numbers *one* and *two*) are not:

$$(1) \quad [\left\{ \begin{array}{l} \text{one} \\ \text{a} \\ \text{each} \\ \text{every} \\ \text{either} \end{array} \right\} \text{car}]_{\text{NP}} \qquad *[\left\{ \begin{array}{l} \text{one} \\ \text{a} \\ \text{each} \\ \text{every} \\ \text{either} \end{array} \right\} \text{lightning}]_{\text{NP}}$$

[1] In order not to prejudice the issue, here and in Rule II, the word 'it' is ambiguous between coreference with the NP head vs. the NP as a whole.

$$[\left\{\begin{array}{l}\text{three}\\\text{several}\\\text{many}\\\text{both}\\\text{(a) few}\end{array}\right\}\text{cars}]_{\text{NP}} \qquad *[\left\{\begin{array}{l}\text{three}\\\text{several}\\\text{many}\\\text{both}\\\text{(a) few}\end{array}\right\}\text{lightning(s)}]_{\text{NP}}$$

$$(2)\ [\left\{\begin{array}{l}\text{one}\\\text{no}\end{array}\right\}\text{car}]_{\text{NP}} \qquad \begin{array}{l}*[\text{one lightning}]_{\text{NP}}\\ [\text{no lightning}]_{\text{NP}}\end{array}$$

$$[\left\{\begin{array}{l}\text{two}\\\text{some}\\\text{all}\end{array}\right\}\text{cars}]_{\text{NP}} \qquad \begin{array}{l}*[\text{two lightning(s)}]_{\text{NP}}\\ [\left\{\begin{array}{l}\text{all}\\\text{some}\end{array}\right\}\text{lightning}]_{\text{NP}}\end{array}$$

In summary, the quantifiers *no, all*, and *some* do not necessarily denumerate; but *a(n), each, either, several, many, both* and *(a) few* do. Only the latter are denumerators within the terms of Rule I.

Predictably, the morphological category of number intersects with countability; but there is no universally applicable correlation between the two. Thus, in Sinhalese (Indo-European) and Swahili (Bantu), uncountable nouns are formally plural; but in English they are formally singular, and the following rule can be set up:

(II) If the head constituent of an NP is plural, it is countable.

The surface morphology of a head noun usually indicates whether it is plural by a contrast of form; but when this is not the case (e.g. with such nouns as *sheep, means, scissors, measles,* or *physics*), Rule II is opaque, and recourse must be made to the syntactic context of the noun.

In many languages, not only is the NP reference named by the noun, but the NP also contains a constituent that identifies its salient characteristic. This supplementary classification of the NP reference varies from language to language, both in the type of characteristics indicated and in the range of NP environments that require supplementary classification. Thus Bantu noun class prefixes distinguish material differences in the reference of different NP's headed by the same noun stem: cf. Swahili *m-tu* 'person' vs. *ki-tu* 'artifact, thing'; Kikuyu *mu-ti* 'tree' vs. *gi-ti* 'wooden artifact, seat' vs. *ma-ti* 'woody mass, undergrowth'—or the Luganda series *mu-ganda* 'Ganda person', *ba-ganda* 'Ganda people', *ki-ganda* 'Ganda culture', *lu-ganda* 'Ganda language', *bu-ganda* 'Ganda country'. In numeral or demonstrative expressions, many languages require the presence of an NP constituent to classify the NP reference according to shape, configuration, consistency, or material characteristics (cf. Allan 1977a for extensive discussion): three such languages are Yucatec (Mayan), Kiriwina (Austronesian), and Thai (perhaps Sino-Tibetan). The reference of locative expressions is classified in one of four ways in the northeastern Australian language Dyirbal. In the Wakashan languages of northwestern America, the visibility and location of the NP reference must be encoded within the NP. English requires that the countability of the NP reference be known, and this affects NP constituency through application of the following rule:

(III) If his listeners do not already know the countability of the NP reference, the speaker must make it known to them.

This rule states a condition for disambiguation, i.e. for marking contrasts; it is not a rule for neutralizing contrasts. Thus the plural, which marks a contrast by unambiguously indicating countability, will never be neutralized through the operation of Rule III; but there are both countables and uncountables which are singular, and so under the stated condition Rule III will operate to decide the countability of singular NP's. Where the speaker judges that his listeners are already aware of the NP reference because of either previous mention or general knowledge, he uses a definite NP; otherwise the NP will be indefinite (cf. Allan 1977b:39 ff., Christophersen 1939, Grannis 1972, Hawkins 1978, Kramský 1972). Being aware of the NP reference entails knowing its countability; otherwise Rule III would operate to mark the countability of definite singular NP's, which it does not:

(3) THE LIGHTNING has frightened Caspar, and he's hiding under THE CAR.
    THIS CAR has front wheel drive.
    THIS WATER's cold.
    THAT FLOUR's damp; but then, so's THAT CUPBOARD.

Here there is no visible formal distinction between the countables *the car, this car, that cupboard* and the uncountables *the lightning, this water, that flour*. Indefinite NP's indicate that the speaker judges his audience not to be aware of the NP reference prior to this occasion of mentioning it; so he is required by Rule III to indicate its countability. Typically, plural indefinites are morphologically marked as countable; thus, by Rule II, all the emphasized NP's in 4 are marked for countability:

(4) LIONS can be dangerous.
    ONE-ARMED IRISH WASHER-UPPERS exist only in TELEVISION SITUATION
        COMEDIES.
    WORKERS came pouring out of the factory gate.
    Within TEN MINUTES the sugar I had dropped was cleared away by ANTS.

But singular indefinites have no comparable countability-marking in noun morphology; hence, to satisfy Rule III, countable indefinites are marked by a denumerator which ranges over the NP head, as in 5. By contrast, uncountable indefinites cannot take a denumerator, and often lack any determiner at all;[2] cf. 6:

(5) A LION can be dangerous.
    There's A LION escaped from the zoo.
    ONE CAR is not enough for the average Australian family.
    EVERY RECORD HE OWNS is badly scratched.
(6) SEA WATER is saline.
    SEA WATER got into the petrol tank.
    There is SOFT BROWN SUGAR on the table.

Because every singular countable falls within the scope of one or another determiner, we can usually assume that, if the head constituent of a singular NP does not fall within the domain of a determiner, it is uncountable.

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[2] Strictly speaking, the Determiner is not a constituent of NP structure, but a portmanteau term for Articles, Demonstratives, Possessives, and Quantifiers.

Exceptions to this rule of thumb are the closed class of pronouns and the restricted class of proper names. Exceptions that may be more apparent than real are the pronominal quantifiers *one, two, fifty, many, several* etc., as in

(7) I would like to take $\begin{cases} \text{one.} \\ \text{two.} \\ \text{several.} \end{cases}$

It seems likely that these quantifiers are the survivors of NP's in which they were originally determiners, and which have been beheaded—i.e. have lost their head nouns under certain specifiable conditions which will not be elaborated here (cf. Allan 1977b:169 ff., Jackendoff 1971). All such NP's, consisting only of pronominal quantifiers, are indefinite; they are also countable if the quantifier is a denumerator. Thus the principle is maintained that the countability of indefinite NP's is normally indicated. All other undetermined NP's consisting of pronouns or proper names are definite:

(8) Is this yours, or isn't it?
    Hermione is beautiful; but she's Henry's, or was when we were in Paris.

And we have already seen that definite singular NP's are not marked syntagmatically for countability. Indeed, for nouns like *management, congress,* or *government*—which may function as either common or proper names—the proper-name function is indicated by the lack of a determiner:

(9) Management reserves the right to dismiss staff who are persistently late.
    Congress believes that shorter working hours are the right of every worker.
    Government will publish a law banning transvestism in public urinals.

When determined, these nouns cease to be proper names. The same is true for regular undetermined proper names like *John* or *Hermione,* which are not used as fully-defining proper names in the following:

(10) I don't believe there is a management in this country that would accept such impossible conditions.
    The John I spoke of is Egbert's brother.
    Is there a Hermione in your class? I've always wanted to meet a Hermione, but such has never been my good fortune.

We can distinguish a fully-defining proper name from a proper name used as an appellative, viz. like a common noun. The proper name is fully defining when it is the sole constituent of an NP and when, for any and every occasion, the NP uniquely labels and guarantees the existence of the referent or set of referents (in either the real or a fictional world). It is not necessarily the case that the reference of a given proper name is identical on every occasion: not all Johns are the same John. So the significant characteristic of a fully-defining proper name is the fact that it always uniquely labels, and so fully defines, the referent or set of referents. As a result of the fact that it uniquely labels the referent, a fully-defining proper name is definite; because it guarantees the existence of the reference, it is specific (cf. Fodor 1970, Karttunen 1976, Palacas 1977, Partee 1972, Rivero 1975, 1977); hence the ungrammaticalness of **Is there Hermione in your class?* Any proper name in a

non-specific NP, an indefinite NP, or an NP where it is not the sole constituent, therefore is, not a fully-defining proper name. That is why the proper names in 10 are not fully defining; and also why fully-defining proper names do not permit restrictive relative clauses, though appositional clauses are acceptable:

(11) The London / *London } I am talking about is London, Ontario. (RESTRICTIVE)

London, which is for me the greatest city on earth, was my home for many years. (APPOSITIONAL)

(12) The John / *John } who will be in your class is a minister's son. (RESTRICTIVE)

John, who will be in your class, is a minister's son. (APPOSITIONAL)

(13) The congress / *Congress } taking place in Blackpool agreed on the following motion. (RESTRICTIVE)

Congress, taking place in Blackpool, agreed on the following motion. (APPOSITIONAL)

(14) A management / *Management } which denies the right of workers to hold union meetings during office hours will suffer the strike of an outraged work force. (RESTRICTIVE)

Management, which mercilessly exploits the work force, must be made to pay the price. (APPOSITIONAL)

Appellative proper names (ones that are not fully defining) are countable:

(15) I once knew a Euphemia.

My atlas lists six Lewistons but only one Paris.

There is only one { Noam Chomsky / River Thames } known to me.

Fully-defining proper names which are plural, e.g. *the United States* or *the Grampians*, are countable by Rule II—but nevertheless non-denumerable, because denumeration changes the status of a fully-defining proper name to an appellative. For the same reason, it is impossible (using NP-internal structural criteria) to see any sense in which a singular fully-defining proper name can be countable.

1.2. In English, then, countability is marked syntagmatically in singular NP's; in plural NP's it is marked morphologically, and on occasion syntagmatically as well. But uncountability is never marked. That countability is the marked member of the duo is 'natural': many languages mark countability morphologically or syntagmatically (or both), but have no marking for uncountability. And although languages exist which arguably make no such distinction between countables and uncountables (e.g. Bantu languages), none systematically marks uncountables while leaving countables unmarked.

1.3. For grammarians, the conventional wisdom is that countability is a characteristic of nouns, and consequently should be accounted for by marking the lexicon entry of a noun with a feature [± count]—or something equivalent (cf. Jespersen 1933:206, Chomsky 1965:82, McCawley 1975, Quirk et al. 1972:127)

The descriptive inadequacy of this analysis has hitherto been overlooked except by Weinreich—although McCawley had an inkling of it. Weinreich (1966:435) noted that 'it fails to account for the ability of English words [sic] to be used as EITHER count or mass nouns.' He suggested three alternative solutions. One was to create separate countable and uncountable lexical entries for the same noun; but this was rejected because it almost doubles the number of nouns in the lexicon, and because it failed to show that some nouns are more countable than others. His second suggestion was to make countability a feature on determiners, to be transferred to the (countability-neutral) noun 'by a concord-type rule'; but without discussing the interesting possibilities of such an hypothesis (cf. Allan 1977b, ch. 5), Weinreich rejected it on the grounds that determiners like *the*, *any*, *this*, and *my* are countability-neutral. The solution he adopted was to maintain the conventional binary marking for countability on the lexical entries for nouns, and in addition to mark NP nodes for countability. This bipartite proposal requires the use of a semantic calculator to resolve the various effects of locating a [± count] noun in a [± count] NP; but this is an unwelcome complication to the grammar of countability, and my own analysis will show it to be unnecessary. Weinreich's proposal contains two additional flaws. Although his model demanded it, he offered no solution to the problem of determining whether a given noun is countable or uncountable: e.g., on what grounds would he decide the countability of *cake*, and what would be the grounds for agreeing or disagreeing with him? His adherence to the conventional view of countability as a binary feature on the lexical class of nouns renders the problem insoluble. The second, and less serious flaw in Weinreich's proposal is the lack of explicit justification for his substantially correct claim that countability is a feature of NP's. I shall, below, justify a rather similar claim.

   Weinreich's discussion of countability can be seen as an attempt to shore up an indefensible traditional kind of analysis by introducing additional apparatus. In this paper I present a radically different approach, based on the assumption that countability is not in fact a characteristic of nouns per se, but of NP's; thus it is associated with nouns in syntagmata, not with nouns as lexical entries. Clear evidence for this lies in the fact that countability is indicated in singular indefinite NP's not by any modification of the noun, but by its falling within the domain of a denumerator. Thus a noun like *cake* can regularly be used both uncountably and countably, occurring both in undetermined singular NP's and in the scope of denumerators:

   (16) Hetty likes to gorge herself on cake.
   (17) Whenever Hetty gobbles down a cake, her diet 'starts tomorrow'.

There are many parallel examples involving nouns less frequently seen in both environments:

   (18) Oak is deciduous.
        An oak is deciduous.
   (19) Small farmers in Kenya grow corn rather than wheat.
        Triticum aestivum ssp. vulgare is a wheat suitable for high altitudes.
   (20) Nick Frenzy plays guitar with Noise.
        Carol has just bought a guitar.

(21) The scrapyard is full of smashed car awaiting recycling.
     The driveway was blocked by a car with its front end stove in.
(22) We went to school by car.
     Is there a school around here?
(23) In bed they were blissfully happy.
     You could buy a bed cheaply down on the lane.
(24) There's not enough table for everyone to sit at.
     We need a bigger table.
(25) Emmy finds squashed spider more nauseous than the thing alive.
     We were worried that even a squashed spider would upset Graham
        enough to make him suicidally depressive.

Innumerable examples may be found: there seems to be no absolute constraint to
stop any noun, other than pluralia tantum nouns and perhaps plural proper names,
from heading an undetermined singular NP (cf. Gleason 1965:137). It is true that
there may be constraints on the location of such NP's within sentence structure,
and restrictions on the inclusion of other NP constituents; but this will not alter
the fact that nouns commonly used within the scope of a denumerator—and
therefore countably—can elsewhere head undetermined singular NP's, and so be
uncountable. This makes it absurd to propose that countability is a function of
nouns per se. To maintain that lexicon entries for nouns are marked with a feature
such as [± count] would, for the majority of nouns, be either (a) contradictory or
(b) vacuous. First, for the lexicon entry to be simultaneously countable and
uncountable is a contradiction. Second, disjunctive countability-marking would
entail that a pair of homophonous, homographous, yet different nouns exist—one
countable, the other uncountable (cf. Yotsukura 1970:60); but then we face the
fact (of much greater significance than the inadequacies noted by Weinreich) that
the selection of one of the disjuncts rather than the other would necessarily be
determined by countability features in the intended host construction, viz. the NP.
This dependence proves that disjunctive marking in the lexicon is vacuous. Count-
ability must perforce be a feature of NP's and not nouns; only then can the
uncountable/countable pairs of identical nouns in 16–25 be properly accounted
for.[3] Exactly how this should affect our view of NP grammar has been discussed
elsewhere (Allan 1977b:144 ff.), and will not be considered here; instead, I will
discuss the consequences for nouns.

[3] I am grateful to William Bright for drawing my attention to recent philosophical literature
on mass terms, where ideas similar to the ones presented here have occasionally been advanced.
For example, Pelletier 1975 imagines a 'universal grinder' into which can be fed any object
labeled by a countable; the grinder chops and grinds it into a homogeneous mass, which is
then appropriately labeled by the same noun used uncountably. So he concludes that every
noun must have both a count and a mass sense (which, as we shall see, is not quite accurate).
Bunt (1976:81) writes: 'the count/mass distinction is not really a distinction between words,
but a distinction between ways of using words ... The count/mass distinction can be drawn not
only between bare nouns, but also between complex noun phrases. In what follows, when we
speak of mass nouns, this has to be understood as short for: noun phrases, used in a mass
sense' (cf. also Bunt 1979, Ware 1975). These philosophers seek to elucidate the semantics of
count and mass terms; with the exception of Bunt (1979:250–51), they virtually ignore the
syntax of countability. By contrast, in this paper I shall virtually ignore the semantics of
countability (which I discussed in Allan 1977b), to concentrate on the syntax of nouns in
relation to countability environments.

COMPUTING THE COUNTABILITY PREFERENCES OF NOUNS

2.1. Even though countability is characteristic of NP's and not nouns, it is still true that some nouns are generally located in countable NP's, while others are located in uncountable NP's. The former set includes *car, boat, beetle, carpet, closet,* and *table*; the latter *lightning, mankind, equipment, evidence, furniture,* and *physics.* Between these polar countables and uncountables are words like *cake, coffee,* and *lamb*—which are common in both countable and uncountable NP's in everyday language. These particular characteristics of nouns I call their COUNT-ABILITY PREFERENCES. The countability preferences of nouns can be computed by comparing the relative frequencies of their occurrence in countable and uncountable NP's, respectively. One way of doing this would be to take a large sample of texts, then add up and compare the actual countable and uncountable occurrences of the same noun, to build up a picture of countability usage; but however extensive the sample, this method would not provide a justifiable basis for a decisive statement about the countability potential of nouns. To discover the extent to which a noun is countable (as distinct from the extent to which it has been used in countable NP's within a given sample of texts), we must set up a test battery of countability environments consisting of every kind of unambiguously countable NP and every kind of unambiguously uncountable NP: then, for all these, a given noun will be tried as NP head, and the result judged for grammaticality. The set of such judgments will give a countability scan for the noun, from which its countability preference can be computed.

We can look to Rules I–II above as the starting point for discovering appropriate test environments for countability. Rule I states that an NP in which a denumerator ranges over the head constituent is countable; and we found that the set of denumerators is *a(n), each, every, either, several, many, both, (a) few,* and the natural numbers from *one* to infinity. But not all nouns that fall within the scope of one denumerator will fall within the scope of every other denumerator. Compare these examples:

(26)   John has bought his wife a car.
        Each car cost more to produce than it can sell for.
        Two cars were badly damaged by the falling wall.
        Many cars are not properly maintained because of the exorbitant cost.
(27)   Penelope's is an admiration that I treasure.
        *Each admiration contains an element of awe.
        *Both Charlotte and Emily admired Anna's poems, and it was these two
            admirations which she most appreciated.
        *Linda Ronstadt has received many admirations.
(28)   *A cattle has died in the west paddock.
        *Each cattle out in the hurricane was killed.
        *Two cattle were severely injured by the falling wall.
        Many cattle died in the cyclone.

Some nouns (like *car*) are countable with all denumerators; others (like *admiration*) are countable only with unit denumerators *a(n)* and *one*; and pluralia tantum nouns (together with one or two others like *cattle*) are countable only with fuzzy

denumerators. Fuzzy denumerators are those like (a) *few, several, many, a dozen or so, about fifty*, and high round numbers as in *five hundred cattle, 70,000 cattle*—denumerators which do not state a precise number, unlike (say) *two, fourteen*, or *twenty-one*. The various co-occurrence conditions demonstrated in 26–28 are tabulated in Figure 1.

TYPE OF DENUMERATOR	HEAD NOUN IN THE DOMAIN OF THE DENUMERATOR		
	car	*admiration*	*cattle*
A. unit, *a(n), one*	+	+	−
F. fuzzy (plural) e.g. *several, about fifty*	+	−	+
O. all others	+	−	−

FIGURE 1.

Type O denumerators are a motley collection; but as Fig. 1 shows, they can be logically excluded from our test battery, which need only differentiate environments containing unit denumerators from environments containing fuzzy denumerators: any noun which can fall within the domains of both unit and fuzzy denumerators will also fall within the domain of all other denumerators. For convenience, I shall refer to the test environment of NP's with a unit denumerator as the A + N Test, and that of NP's with a fuzzy (plural) denumerator as the F + Ns Test. With these two tests, four differences in countability can be computed: nouns like *car* occur in both environments; nouns like *equipment* in neither; those like *admiration* pass only the A + N Test; and those like *cattle* pass only the F + Ns Test.

Rule II states that, if the head constituent of an NP is plural, the NP is countable. This suggests that noun morphology, and in particular the acceptance of a plural inflection, might be an appropriate test for countability; and on many occasions it is. But the morphology of nouns like *sheep, means, scissors, measles*, and *physics* does not indicate their grammatical number, which can be determined only from the context of the noun. Thus we can do no better than decide the countability of these nouns by using the two tests for countability that have just been instituted. These reveal that *sheep* and *means* are fully denumerable, like *car*:

(29) Jim barbecued a sheep to celebrate.
A few sheep nibbled vacuously at the roadside herbiage.
(30) A phaeton is a most elegant means of transport.
Several means of transport are available from the station.

Scissors, like *cattle*, fails the A + N Test:

(31) *Don't you have even one scissors?

But, unlike *cattle*, it is not clearly grammatical in the F + Ns environment:

(32) ?How many scissors do we have?
?Quite a few scissors have disappeared that way.

Measles, like *equipment*, fails both tests:

(33) *Have you ever had a measles?
*Several measles broke out in the town.

And finally, *physics* is like *admiration* in passing only the A + N Test:

(34)   A physics in which energy is lost rather than transferred is quite
       inconceivable; where would the energy go to?
       *There are several physics: geophysics, astrophysics, nuclear physics—
       and I don't know what else.

With the exception of certain proper names (to be discussed in due course), any
noun which can be plural can also head NP's within the domain of a fuzzy denu-
merator, and so will pass (if perhaps only dubiously) the F + Ns Test. Hence, if a
countability test were defined on whether or not a noun can take a plural inflection,
it would give results identical to those of the F + Ns Test, making one of these tests
redundant. And there is no doubt which test is the more satisfactory: whereas noun
morphology does not necessarily indicate countability, the F + Ns Test unambigu-
ously defines countables. The conclusion must therefore be that a countability test
based on noun morphology, and in particular on the possibility of plural inflection,
would be redundant.

   Consider the emphasized NP's of 35, which have adjectival head constituents of
immutable morphological form, and which refer to groups of human beings:

(35)   THE MEEK shall inherit the earth.
       Politicians nowadays are forever claiming to succor THE POOR.
       Labor governments get their kicks by soaking THE RICH.
       In soap operas THE WICKED are always punished.

None of these NP's is denumerable:

(36)   *There isn't a poor now that we have a welfare state.
       *We passed two poor begging under the bridge.
       *Many poor cannot be blamed for their lot; but a few can.

However, we know that these NP's are countable—not only because of their
reference, but also because they govern plural NP-external number registration:

(37)   THE MEEK *ARE* going to inherit the earth, *ARE THEY*?
       THE WEALTHY *WERE* being soaked by the wicked lefties, who hated *THEM*.
       THE WICKED *ARE* always punished, *ARE THEY*?

Otherwise, only countable NP's govern plural external number registration:

(38)   THESE TWO GIRLS *WERE* stealing skirts, *WERE THEY*?
       THREE SHEEP *WERE* nibbling the carrot tops when farmer Giles noticed
          THEM.
       NOT ALL CATTLE *ARE* bovine, *ARE THEY*?
       There *ARE* THREE ELEPHANT browsing in that thicket, and one of *THEM*
          is a tusker.

It is not even necessary for the internal number of a countable NP to be plural when
the NP head is collective (cf. Allan 1979):

(39)   THE HERD *WERE* grazing peacefully when a lion disturbed *THEM*.
       MY COLLECTION *ARE* fetching higher prices than the valuers expected
          THEM to.

But uncountable NP's can never govern plural number registration:

(40) *THE LIGHTNING *ARE* frightening Caspar, who's always been terrified of
        THEM.
     *SUGAR *ARE* cheap this week, *AREN'T THEY*!
     *THE ADMIRATION OF HIS FRIENDS *ARE* what he wants most of all, *AREN'T
        THEY*?
     *EQUIPMENT *ARE* getting ever more expensive, *ARE THEY* not?
     *MEASLES *ARE* no fun to have, *ARE THEY*, doctor?

Therefore we can set up a countability test that will identify an NP as countable if it
governs plural external number registration. I will refer to this environment as the
EX-PL Test.

   It was pointed out in §1 that any undetermined singular NP which is neither a
pronoun nor a fully-defining proper name is uncountable. But any noun (except
pluralia tantum) can head such an NP; so this environment would be completely
unrevealing as a test of countability preference. The question arises whether any
restricted uncountable environment exists. To guard against the unusual use of the
noun in an uncountable NP, it would be best to look to one that makes universal
reference—either a generic NP, or an NP determined by a universal quantifier.
Generic NP's are difficult, if not impossible, to define. They are formally identical
with non-generic NP's; and the only intrinsic characteristic peculiar to them is the
scope of their reference. It might be that formal definition of generic NP's could be
achieved through identifying the predication on them (cf. Allan 1977b:70, Chafe
1970:189, Dahl 1975)—which is to say that there are no generic NP's, only generic
statements couched in generic sentences. Compare the generic statements of 41
with the non-generic ones of 42:

   (41) The lion is carnivorous.
        Sea water is saline.
   (42) The lion is hungry.
        Sea water had got into the petrol tank.

It is a defining characteristic of certain species to be carnivorous, but to be hungry
is not defining for any species; it is by recourse to this kind of knowledge, I think,
that we distinguish the generic NP *the lion* in 41 from the non-generic instance in
42: the projection of genericness on the subject NP of 41 is a result of the predica-
tion on it. It is often the case, as in 41, that a generic NP is the subject of a sentence
which describes some characteristic feature of the reference of that subject NP; but
this is not necessarily so:

   (43) Caspar is afraid of the dark.
        Emily likes eggs.
        I greatly respect the lion.

In each sentence of 43, it is the object which is the generic NP, and this is so because
of the predication on it—or by the nature of the statement in which the NP is
located (if this is not the same thing). It is clear from Dahl, though he never
proclaims it, that generic predications do not take for their arguments only the
kind of NP's that have traditionally been regarded as generic; e.g., it seems to me
that the following sentences are generic in that they make law-like statements:

   (44) Staring at some people makes them blush.
        Tickling their feet makes many people writhe.

If this is correct, the question arises whether the NP's *some people* and *many people*, despite the fact that they are explicitly NOT universal, are generic in 43. Perhaps, before making a serious attempt to define 'generic NP', it would be well to discover whether the effort is necessary for the present purpose. It seems that generic NP's can usually be recognized intuitively; on this assumption, let us consider the possibilities that generic NP's define countables—and more importantly for us, that there is a restrictive uncountable generic environment.

Although the plural generic defines countable NP's (by Rule II), all those nouns which may head plural generics may also head other plural NP's, and they are all accounted for already by either the F + Ns Test or the EX-PL Test. The *the*-generic mostly occurs with countables:

    (45) a.   The car is 20th century man's horse.
          b.   *Car is 20th century man's horse.
    (46) a. (*)The lightning frightens cowardly Caspar.
          b.   Lightning frightens cowardly Caspar.

The parenthesized asterisk of 46a indicates that the sentence cannot be interpreted generically, though it may legitimately have a non-generic interpretation—viz., for some particular occasion, there was lightning that frightened Caspar. The meaning of 46b is quite different from this, of course. But in some environments, the *the*-generic NP is headed by nouns that are typically uncountable:

    (47) Milquetoast is afraid of the dark.
         Caspar, our pet mole, hates the light.
         The lightning delights Vulcan the most; he doesn't give a fig for thunder.
         The admiration of one's peers gives a better trip than DMT.

So the *the*-generic NP's do not appear to provide a reliable test for countability. That brings us to those generics in which we are most interested, namely the uncountable generics—undetermined singular generic NP's like those emphasized here:

    (48) LIGHTNING is caused by the discharge of ELECTRICITY from the clouds.
         SEA WATER is saline.
         EQUIPMENT gets more and more expensive as it becomes more and more
            sophisticated.

These may be contrasted with

    (49) *Car is 20th century man's horse.
         *Spider has eight legs.
         *Bed is for lying in, not sitting on, according to my landlady.

Is this the restricted uncountable environment we have been looking for? Alas, it is not: against 49, we can set 50, in which the same head nouns which failed the uncountable generic environment of 49 are successful with different predications:

    (50) Car is the best mode of transport.
         Spider is a shrike's favorite food.
         Bed has so many happy associations for William and friend.

This finally wipes out the generic NP as a catalyst for testing countability, and so makes it unnecessary to define a generic NP.

Of course, the generic makes characteristic reference rather than universal reference; thus there is no contradiction in

(51) Lions can be dangerous; but not all lions are dangerous.
Dogs have four legs. But not every dog has four legs; and any dog that does not is abnormal.

So let us turn our attention from generic to universal NP's, and consider universal uncountable NP's with *all*. Compare 52 with 53:

(52) All lightning is caused by the discharge of electricity from the clouds.
All sea water is saline.
All equipment gets more and more expensive as it becomes more and more sophisticated.

(53) *All car is 20th century man's horse.
*All car is the best mode of transport.
*All spider has eight legs.
*All spider is a shrike's favorite food.
*All bed is for lying in, not sitting on, according to my landlady.
*All bed has so many happy associations for William and friend.

This may seem a suitably restrictive uncountable environment for the test battery; but, without qualification, it is flawed because of sentences like

(54) This may look like an old jalopy to you, but it's ALL CAR.
That stripper is ALL WOMAN, drooled Dirty Dick.
My boyfriend is ALL MAN, boasted Anita Bussom to Penny Plane.

The emphasized NP's of 54 can surface only as predicates (cf. Allan 1973), and therefore they are non-referring: the noun in each has very much the quality of an adjective, with *all* an adjectival qualifier in the sense of 'completely'. By contrast the *all* + N phrases of 52 are never predicates,[4] and they are typically used to refer to a genus. It is also significant that, in 52, the N of the *all* + N construction is not a covert NP: if it were, the preposition *of* could be inserted between *all* and N (cf. *all the lightning* = *all of the lightning*; *all Paris* = *all of Paris*). But **all of lightning*, **all of sea water*, **all of equipment* would be ungrammatical in 52. Hence, we can establish *all* + N as the restrictive uncountable environment we have been seeking, provided only that the N is not a covert NP (such that *all* + N = *all* + *of* + N), that the NP is not predicative, and that it is—potentially—genus-referring. Note that *all* is the sole determiner in both 52 and 53; to avoid controversy, I will make it a condition of this test that *all* must be the sole determiner. The singularity of the NP will have to be determined on the basis of NP-internal and NP-external number registration.

Thus we finish with a test battery containing only four NP environments to test the countability preferences of nouns. Having described the battery, it would be well to clarify exactly what is to be measured. Countability consists of the binary opposition between countableness and uncountableness; and the countability preference of a noun will be either the degree to which it potentially occurs in uncountable

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[4] In sentences like *They are all animals*, the word *all* is a floating quantifier appositive to *they*, and so not part of the predicate.

NP's or that to which it potentially occurs in countable NP's. The degree to which a noun is countable will be the negative complement of the degree to which it is uncountable, and vice versa; so, for the sake of simplicity, we must decide either to postulate that a noun is COUNTABLE to a certain extent (which implies that nouns are basically uncountable), or to say that a noun is UNCOUNTABLE to a certain extent (which implies that nouns are basically countable). All the evidence indicates that nouns are basically uncountable, with many of them being countable to a certain extent. Of the NP environments in the test battery, three out of four are countable because these are more restrictive than uncountable environments: so uncountable environments are the more general, and presumably more basic than countable ones. Again, countableness is marked in both morphology and syntax; uncountableness is unmarked, and so presumably is the basic form. Some nouns, like *lightning*, head only uncountable NP's; I find nothing to prevent the ungrammatical NP's **a lightning* and **these lightnings* from being interpreted as 'flashes of lightning', and their ill-formedness seems arbitrary. This opinion is substantiated by comparing the grammar of such nouns as *equipment* in standard English and in certain dialects spoken where English is a second language. In standard English, *equipment* can head only uncountable NP's; but in many African and Asian varieties of English, it is found in countable NP's, e.g. *At great expense we have bought a new equipment for the lab*, or *Many equipments have been removed from the laboratory by unauthorized persons*. Such instances of the countable use of *equipment* are correctly interpreted in terms of the standard English classifier construction 'pieces of equipment'—which is, of course, the denotation of the word in the non-standard dialects. Because no semantic anomaly results from the countable use of this noun and others like it, it is difficult to convince the ESL speaker that he should use it only in uncountable NP's. The point of interest here is that, however arbitrary it may seem, there are nouns that can never, in standard English, head countable NP's. However, all English nouns (except pluralia tantum nouns) can head uncountable NP's; and on those occasions, they occur in their unmarked base form. Even the pluralia tantum cease to be plural when used adjectivally,[5] cf. *scissor movement*, *pant(y)-hose*, *suspender belt*, *Nutcracker Suite*; and since the adjectival form of the noun is identical with the uncountable and unmarked form for all nouns, it follows that pluralia tantum have base forms which look just like the uncountable forms of most other kinds of nouns—even though they cannot be used to head uncountable NP's. Thus all nouns have what I have just called a base form, which is the adjectival and uncountable form. In consequence, it is justifiable to measure the countability preferences of nouns in terms of their degree of countableness.

2.2. The four NP environments which will provide a test for the countability of their head nouns are the A + N Test, the F + Ns Test, the EX-PL Test, and the *All* + N Test: of these, the first three define countable environments, the last one an uncountable environment. The procedure will be to try a noun as the head of each of these test NP's, and judge the resultant grammaticality. The degree of

[5] Viz. as a 'noun modifier' which holds the position in surface NP structure between the rightmost adjective and the head noun.

countability of a noun will be determined on the basis of its success (viz. gram-
maticality) in the countable frames, and of its failure (ungrammaticality) in the
uncountable frame. Where possible, I will conflate the F + Ns and the EX-PL Tests.

There is a set of nouns like *car* which are 100% countable, in the sense that they
occur in all the countable environments, but are ungrammatical in the *all* + N
uncountable NP's. Nouns like *beetle*, *needle*, *banjo*, *ball*, *deed*, *wall*, *table*, and *cat*
are in this set:

(55) The A + N Test
John has bought himself A NEW CAR.
Elspeth trod on A BEETLE.
Nick has A GUITAR as well as A BANJO.
Lucky found ONE BALL after losing two the day before.
ONE GOOD DEED deserves another.

(56) The F + Ns and EX-PL Tests
SEVERAL CARS chased Idi round the parade ground.
The sight of A FEW BEETLES gobbling up your roof timbers can make
your nights marish.
If you want THEM, there ARE ABOUT FIFTY NEEDLES in that drawer.
SEVERAL DEEDS ATTRIBUTED TO THE DYNAMIC DUO WERE actually
performed by Steed and Purdey—who carried THEM out without a
whisper.
There AREN'T TOO MANY GUITARS that sound like a uke, ARE there?

(57) The *All* + N Test
*ALL CAR is 20th century man's horse.
*ALL BEETLE tastes good to a woodpecker.
*ALL CAT is a feline quadruped.
*ALL GOOD DEED is rewarded, isn't it?

2.3. The next set of nouns to consider are those which succeed in all four envi-
ronments, and which thus differ from nouns like *car* because they are grammat-
ical when heading *all* + N uncountable NP's. This set seems to comprehend four
kinds of noun: (a) those like *oak*, *lamb*, *potato*, *jacaranda*, and *wahoo*—in which,
characteristically, the countable use describes a discrete object that is the source
for the constituent substance described by the isomorphic uncountable; (b) those
like *hair*, *stone*, or *cake*, whose countable form is typically used to indicate an
instance of what is denoted by the same noun used uncountably; (c) those like *wine*,
wheat, or *coffee*, whose countable use typically connotes species, types, or kinds of
substances denoted by the same noun used uncountably; and (d) nationality nouns
like *Greek* or *Russian*, which are fully inflecting, and others ending in -*ese*, like
Chinese (but not *English*, *Welsh*, *Irish*, *Dutch*, or *French*, which form a separate
class). The uncountable use of these nationality nouns denotes the language—and,
except occasionally in A + N constructions, the countable refers to the people.
Illustrations of these four kinds of noun are:

(58) The A + N Test
There is ONE OAK standing alone in a beech copse.
'Waiter, there's A HAIR in my soup!'—'It's rabbit, sir.'

Myself I prefer A RED WINE with white meat, but then I've never been a gourmet.

Up in Nyeri you need A WHEAT that likes high altitude.

I think the man I saw was AN ITALIAN because his words didn't quite keep up with his hands.

(59) The F+Ns and EX-PL Tests

Caspar poached A FEW OAKS from the forest and planted *THEM* in his garden, where *THEY ARE* a monument to his dishonesty.

Gerry tried to swap me SEVERAL WAHOOS for one sailfish but I didn't want *THEM*; *THEY* just *DON'T* have the cachet!

There *ARE* MANY CAKES with more egg in *THEM*, but none so tasty as this.

We have ABOUT FIFTY WINES on our list, sir. Would you wish to peruse it?

SEVERAL WHEATS *HAVE* been developed for high altitudes.

MANY GREEKS *BELIEVE* that democracy is a thing of the past, *DON'T THEY*?

(60) The *All*+N Test

All oak is deciduous.

To me all lamb tastes better than pork.

All brick is artificial; only stone is natural.

All wine is acidic.

All wheat is highly nutritious.

All Italian sounds mellifluous, no matter where the speaker comes from.

This is the most interesting class of nouns, because of the well-recognized concrete distinction between the countable and uncountable reference of the nouns, nicely brought out in sentences like

(61) Mary won't touch lamb because she adores lambs.

I have shown elsewhere (Allan 1977b:270 ff.) how the very different denotation and reference of the countable and uncountable use of the same noun derives from a common semantic item, as well as a common lexical form; this justifies talking about THE NOUN *lamb, oak, hair, Greek* etc.

The two sets of nouns considered hitherto have been successful in both the A+N and the F+Ns Tests; in consequence, any of these nouns may occur within the domain of all denumerators:

(62) Two cars collided head-on outside the house this morning.

Each beetle Graham sees he steps on.

Two oaks stood sentinel over the driveway entrance.

Each hair on her head is daubed with henna individually!

We shall have two wines: a rouge and a blanc.

Each hybrid wheat selects some advantages of its ancestors, but often also has unpredicted weaknesses.

Two Armenians stood arguing in front of the three Chinese.

The rest of the nouns I shall discuss do not share this characteristic: they can occur only within the domain of a restricted set of denumerators, or of none.

2.4. Consider a number of pluralia tantum nouns with different countability characteristics. At first sight, there seem to be three classes of them; as an example of each, I will take the nouns *cattle* and *scissors* and the NP head *poor*, which I will temporarily treat as a noun. They differ from each other only in respect of the F + Ns Test:

(63) The EX-PL Test

   Those cattle are going to have to be shot, aren't they?

   Those scissors you lent me are jolly blunt, aren't they, old girl?

   The poor are a burden to us richer folk, so I don't know why you should feel sorry for them.

(64) The *All* + N Test

   *All cattle is bovine.

   *All scissors was taken away, wasn't it?

   *All poor needs the help of the better off, doesn't it?

(65) The A + N Test

   *One cattle was injured when the livestock carrier crashed.

   *Give me a scissors, will you?

   *Whether we like it or not, we've got a poor.

(66) The F + Ns Test

   a.   We only run a few cattle.

   Several cattle have been lost to rustlers.

   About fifty cattle died in the cyclone.

   b.   ?How many scissors do you think we need to order?

   ?Only a few scissors could never be used as weapons.

   ?We've bought her several scissors since she started school, but she loses them.

   c.   *A few poor stood or knelt by the road side begging for baksheesh.

   *His charity has been extended to many poor.

   *Each year about fifty poor starve to death in New Delhi.

Cattle is unique—the only noun in its set. Like other pluralia tantum nouns, it is fully denumerable by using a classifier construction, and by ranging the denumerator over the classifier:[6]

(67) Not a single head of cattle was lost on the trail.

   We flushed out two head of cattle from the brush by the creek.

   We lost about fifty head of cattle in the cyclone.

All other pluralia tantum nouns (this excludes *poor*, of which more below) are like *scissors*. As can be seen from 66b, their occurrence within the domain of a fuzzy denumerator is not altogether impossible, though it is nearly always avoided by using a classifier construction instead—usually one containing the classifier *pair(s)*:

(68) How many pairs of scissors shall we need for the cut-out game?

   Bert's ruined several pairs of trousers that way.

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[6] What I am here calling a classifier might, in English grammar, be more appropriately called a 'quantifying adjunct'; but I have already used the term 'classifier' for similar components of other languages (cf. Allan 1977a), and it has a wide currency.

This group of pluralia tantum includes the /-š/ nationality names *Cornish, Dutch, English, French, Irish, Welsh*, and one or two others for which the head noun *-man/men* (or alternatively *person/people*) is used in free denumeration, instead of the classifier construction employed with pluralia tantum NOUNS. These nationality names are, of course, adjectives, and not subject to the morphological rules which govern nouns—even when they head NP's. Nor, in themselves, do they have any countability preference:

    (69)   He speaks an English that I can barely understand at all; and I was born in London.

    (70)   ?We encountered only two Russians, but several English—all wearing long shorts and knee socks.

In 69 *English* is in the domain of a unit denumerator; in 70, it is in the domain of a fuzzy denumerator. Because *English* can fall in both domains, it should be the case that it can be denumerated by all denumerators (cf. Fig. 1). But this entailment is false: *two English, *each English etc. are all ungrammatical. However, we note that, within the domain of a unit denumerator, *English* can only mean 'English language':

    (71)   *We picked up an English who claimed to be hitchhiking round the world.

And, within the domain of a fuzzy denumerator, *English* can only mean 'English people':

    (72)   *Traveling through Asia and Africa you come across several different English(es).

It seems that, unless *English* and other /-š/ nationality names constitute an exception to the entailments on denumerability that hold for all other nouns, we are not dealing with a single item *English*, but with two different ones. The nouns *English, Dutch* etc., referring to the languages, have a countability preference identical with that of *admiration*; I will discuss these nouns in due course. The pluralia tantum *English, Dutch* etc. refer to 'English people', 'Dutch people' etc.; and in this use, the nationality name is an adjective, not a noun, and has no countability preference. Elsewhere (Allan 1977b:177 ff.) I have accounted for the human reference of such NP's as *the police, the English, the poor* etc. by, in effect, postulating a head noun with the semantics of 'person/people'; this does not appear on the surface of these NP's as a lexical item, but remains understood. The same underlying NP constituent accounts for a number of other implicitly human-referring NP's as well. A detailed account of its distribution, and the conditions on its failure to surface, will not be given here; but it is a subset of these conditions that accounts for the behavior of the pluralia tantum *English* etc.—a behavior that has nothing to do with countability preference. The underlying head of these NP's is fully countable; but under certain conditions it may not surface, and under other conditions it cannot.

    Essentially the same explanation holds for pluralia tantum like *the poor, the wealthy, the wicked, the pure in heart*—in which the head is also an adjective not governed by the rules of noun morphology. With these human-referring NP's the underlying head noun fails to surface only when the determiner is *the* and the NP is plural: thus we never find *a poor*, but only *a poor man*; never *these poor*, but *these poor people*; not *some poor*, but *some poor man/men*; not *all poor*, but

all poor people. Thus *poor* etc. will be excluded from consideration here: they are adjectives, not nouns.

We are left with one set of nouns that consists only of *cattle*;[7] and another consisting of the regular pluralia tantum nouns *scissors*, *braces/suspenders*, *glasses/spectacles*, *pants*, *nutcrackers*, *pliers*, *scales*, *tights*, *tongs*, and *tweezers*, all of which have referents perceived as two moveable leg-like members pinioned to a bridge at one end, or so as to cross each other.

2.5. The next set of nouns to consider are those like *admiration*, *heat*, *sincerity*, *physics*, *thunder*; the LANGUAGE nouns *Cornish*, *Dutch*, *English*, *French*, *Irish*, *Spanish* and *Welsh*; and derived nominals with suffixed *-ness*, e.g. *darkness* or *redness*. These are nouns which are very restrictedly countable—only by the unit denumerator:

(73) The A + N Test
>   Hermione's is an admiration that I value very greatly.
>   A dry heat is so much more bearable than a damp heat.
>   Einstein was responsible for the development of a new physics.
>   The cavalry arrived with a thunder of hooves.
>   Sean's is an English full of the lilt of the Western Isles.
>   An oppressive darkness hung all around us.

(74) The F + Ns and EX-PL Tests
>   *I am vying for several admirations at the same time and failing miserably to win them.
>   *There are many heats and I have tried most of them: Lagos, the Sahara, bed with Fluzy Suzy, and the inside of Granny's fish and chip shop.
>   *You can detect several English(es) in the Caribbean.
>   *Few darknesses are as oppressive as this!

(75) The *All* + N test (which shows these nouns to be predominantly uncountable)
>   All admiration does the ego good.
>   All heat is a form of energy.
>   All mathematics requires a logical mind.
>   All thunder is shattering to my nerves.
>   All Welsh has initial consonant mutation rules, though there are dialect differences.
>   All darkness frightens Caspar Milquetoast, the booby.

The only countable NP's that such nouns can head are those with unit denumerators; otherwise, they may only head uncountable NP's. As a result of the relatively rare countable use of these nouns, countable occurrences sometimes appear to refer to instances or occasions of particular note:

(76) We got up in darkness.
(77) *We got up in a darkness.
(78) We got up in a pitchy darkness.

[7] For some Australian speakers of English, *cattle* is a fully countable noun just like *sheep*. Both may be denumerated using a classifier construction and the classifier *head*.

Clearly, the reference in 78 is to a particular kind of darkness, not just to ordinary darkness.

2.6. The noun *mankind* is like *admiration* in nearly all respects; it differs only in passing the EX-PL Test because of its collective semantics (cf. Allan 1979):

(79) Anthropophiles believe in a mankind full of sweetness and light, but we cynics see it rather differently.

(80) *Mr. Spock waxed eloquent on the differences between the several mankinds he's met with; but as usual no one was listening.

(81) All mankind shall praise his name.

(82) If we are to believe Doctor Who, mankind are his favorite species: but the Mekon fails to understand what he sees in them!

But *mankind* seems to be very unusual in this; its only peer is *womankind*.

2.7. The last set of nouns to be subjected to the tests are the true uncountables, which never head countable NP's: nouns like *lightning, equipment, laryngitis, measles,* and *ornithology,* and gerunds like *thinking, knowing, running, smiling,* and *swimming*. These are unacceptable in any of the countable environments, but are grammatical in singular NP's within the domain of *all*:

(83) The A + N Test
      *A lightning lit up the sky.
      *He borrowed one equipment yesterday.
      *I think she has caught a measles.
      *A smiling will help you win friends.

(84) The F + Ns and EX-PL Tests
      *Weren't they beautiful, those several lightnings that lit up the sky?
      *We need many equipment(s), but unfortunately we cannot afford them.
      *Few measles are as bad as these; I don't know what to do about them.
      *I've done about fifty swimming(s) this year, and it's only January third.

(85) The *All* + N Test
      All lightning is caused by the discharge of electricity from the clouds.
      All electronic equipment gets more and more sophisticated every year.
      All measles is dangerous.
      All running is said to be good for you—even running round the corner for a packet of smokes.

2.8. All nouns discussed so far in §2 have been common nouns; to complete the picture of countability preferences of English nouns, it is necessary only to consider the behavior of proper names. It was pointed out in §1 that a fully-defining proper name is invariably the sole constituent of an NP—more precisely, a definite and specific NP that cannot contain a restrictive relative clause. Thus a fully-defining proper name is defined not as a particular kind of noun, but as a class of NP, and conditions on its countability are not relevant to the present essay. However, an appellative proper name is one used like a common noun (what distinguishes it is that it is ordinarily used as a fully-defining proper name, whereas a common noun is not). An appellative proper name is, therefore, relevant to our analysis of the countability preferences of nouns. There may appear to be a problematic difference between a proper name like *Nepal* and one like *John*: *John* has many potential

referents, but at first sight *Nepal* has only one. However, the latter name can be used as an appellative; e.g., one can quite legitimately say things like

(86) I know there are two Oxfords, why not two Nepals?

I shall therefore assume that, in principle, all proper names can be used as appellatives; even though for some, such use would be very unlikely.

Singular appellative proper names are 100% countable, like *car*; thus they pass the A+N Test (87), the F+Ns Test (88), and the EX-PL Test (89):

(87) There is a Richard Devantpeau on the phone, dear.
(88) There have been several Tarzans, but J. W. was the best.
(89) Those six Lewistons, are they all in America?

An appellative proper name will fail the *All*+N Test:

(90) *All Noam is a linguist.
(91) (*)All Lewiston is agog at Rachel's exploits.

In 91, the parenthesized asterisk means that, although the sentence is grammatical, *all Lewiston* fails the *All*+N Test on the grounds that *Lewiston* is a covert NP. This is demonstrated by the synonymy between 91 and 91':

(91') All of Lewiston is agog at Rachel's exploits.

Like *car*, such proper names as these are genus-referring when they head plural NP's quantified by *all*:

(92) All cars are instruments of pollution.
     All Lewistons listed in my atlas are in the U.S.A.

It might be expected that plural proper names like *the United States*, *the Himalayas*, or *the Grampians* would have the same countability preference as pluralia tantum like *scissors*; but this turns out not to be the case, and they form a separate preference set. Perhaps the most significant difference is in their denumerability. The only denumerator that may range over a plural proper name is, rather surprisingly, the unit denumerator; so they pass the A+N Test, but completely fail the F+Ns Test. It seems that the plural morphology of these proper names is misleading: when used to refer to a single entity, e.g. a country (*The United States is in dire financial straits*), an institution (*It is a great squanderer of money, the United Nations*), or a place (*The Himalayas, that's where Edmund longed to climb*), they are singular. Thus they pass the A+N Test:

(93) To read Dickens you would never know there could exist a British Isles that is not fogbound.
     It isn't really a United Nations, but a Disunited Nations.
     There is only one Himalayas—nowhere else like it.

Plural proper names really are plural when used in referring to a country's people (*The United States are spying on Russia*), members of an institution (*The United Nations are by no means united*), or some other plurality (*The Himalayas* [the mountains] *lie between China and Nepal*). It is also the unmarked number for these names:

(94) There are some Grampians in Australia, as well as in Scotland; but I don't know exactly where they are.
     There is a Grampians in Australia, as well as in Scotland; but I don't know exactly where it is.

From this we see that plural proper names will pass the EX-PL Test. However, they fail the *All* + N Test (95) and the F + Ns Test (96):

> (95) *All United Nations is in New York.
> *All Himalayas is in Asia.
> *All Solomon Islands is to the west of PNG.
> (96) *There are quite a few British Isles.
> *We thought we could perceive several United Nations.
> *Knowing how the Scots have fled their homeland, I wouldn't be sur-
>   prised to find several Grampians dotted about the globe.

It is impossible to determine to what degree the ungrammaticality of 96 is a consequence of the very restricted class of real or imaginary potential referents for plural proper names.

Plural proper names like *Himalayas* constitute a distinct preference set by passing the EX-PL and A + N Tests, but failing the *All* + N and F + Ns Tests. However, all the tests to which singular proper names were subjected have shown them to fall in the same countability preference set as *car*.

THE COUNTABILITY PREFERENCES OF ENGLISH NOUNS

3. The four tests used to determine the countability preferences of English nouns have been the EX-PL Test (NP-external plural registration), the F + Ns Test (a fuzzy plural denumerator ranging over the noun), the A + N Test (a unit denumerator ranging over the noun) and the *All* + N Test (*all* ranging over the noun in a genus-denoting or genus-referring singular NP). In addition, Fig. 1 showed that any noun which passes both the A + N and F + Ns Tests is fully denumerable; i.e., it may occur within the domain of all denumerators. This actually gives us five environments for deciding the relative countability of nouns: the fifth—that of denumerators other than the unit, or fuzzy denumerators—will be referred to below by the abbreviation O-DEN.

Eight sets of nouns were identified in §2 as having distinct countability preferences; examples for each set are *car*, *oak*, *cattle*, *scissors*, *mankind*, *admiration*, *equipment*, and *Himalayas*. All these except the set represented by *equipment* are, to a greater or lesser extent, countable. None of the tests proves positive with all seven countable sets, and thus none serves to define the class of countable NP's; but that is not the intention of this paper, nor would it make any useful contribution to the computation of the relative countability preferences of English nouns. The results of subjecting nouns from each countability preference set to the five NP environments that have been identified are tabulated in Figure 2,[8] where the NP

NOUN ENVIRONMENT	*car*	*oak*	*cattle*	*Himalayas*	*scissors*	*mankind*	*admiration*	*equipment*
EX-PL	+	+	+	+	+	+		
A+N	+	+		+		+	+	
All+N	+		+	+	+			
F+Ns	+	+	+		?			
O-DEN	+	+						

FIGURE 2.

(+ indicates that the given NP environment defines the head noun as countable.)

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[8] In the *All* + N Test, it is FAILURE that gets a plus, not success.

environments are ranked in order of choosiness: the least choosy, EX-PL, is at the top, and the most choosy, O-DEN, at the bottom. The least choosy environment is the one with most plusses to its left, the most choosy that with fewest—the one that excludes all but the most countable nouns; thus the choosiness of each environment is in inverse proportion to the number of preference sets that it defines as countable. It follows that for a noun to be defined as countable by the EX-PL environment is much less significant than to be defined as countable by the O-DEN environment: this can be represented by making each 'plus' a reciprocal of the total number of plusses for a given NP environment. Thus each EX-PL plus is worth $1/6$, an $A+N$ plus is $1/5$, an $all+N$ plus is $1/4$, an $F+Ns$ plus is $2/7$ (because ' ?' is assigned the value of half a plus, see below), and an O-DEN plus is $1/2$. A countability score can be computed for each noun by summating the values assigned to each plus in the column below it. There is, of course, a problem with the value of ' ?' in the *scissors* column on the $F+Ns$ line; to give it the value of a plus would imply that pluralia tantum like *scissors* have the same countability profile as *cattle*, and that they are fully grammatical in the domain of a fuzzy denumerator. If this were true, the following sentences would not be dubious:

   (97) ?How many scissors do you need, for heaven's sake?
         ?Few nutcrackers are so constructed as to save the nuts from going the
              same way as their shells.
         ?Joe bought a few tights from this bloke at the pub, and when he got
              home he found the legs ended at the knee.
         ?The fire destroyed about fifty trousers in boxes at the back of the shop.

However, because these sentences are not ungrammatical, it would be wrong to assign no value at all to the ' ?' in Fig. 2, thus classing true pluralia tantum with plural proper names like *Himalayas*. A compromise is to assign half the value of the usual $F+Ns$ plus, viz. $1/7$, to the countability score of *scissors*. Using the arithmetically convenient denominator of 420, the countability scores for each noun representing a countability preference set are given in Table 1, along with the same scores expressed as percentages—on the basis of nouns like *car* being 100% countable. Also included is a digit indicating the level of countability of each set of nouns in relation to the other sets, expressed on a scale from zero to seven corresponding to the uncountable and the most countable, respectively. The rank order of nouns according to levels of countability was incorporated into Fig. 2.

REPRESENTATIVE NOUN	COUNTABILITY SCORE	PERCENTAGE COUNTABLE	LEVEL OF COUNTABILITY
car	589	100	7
oak	484	82	6
cattle	295	50	5
Himalayas	259	44	4
scissors	235	40	3
mankind	154	26	2
admiration	84	14	1
equipment	0	0	0

TABLE 1.

I doubt that the countability scores or the concomitant percentages of countability have any intrinsic value. To say that *car* is twice as countable as *cattle* is not, in itself, an interesting fact about English; a difference in countability is interesting only when related to the different environments in which one noun is grammatical and another is not. The significance of these scores is to rank the countability preference sets in respect of each other, i.e. to be the means of deciding the respective levels of countability. Thus the significant part of Table 1 is the level-of-countability scale from 0 to 7. Reference will have to be made to points on this scale when stating well-formedness conditions on the locating of nouns in NP's. If the arguments of this paper are accepted, the traditional matching of an α-countable noun from the lexicon with an α-countable NP environment cannot be based on a binary system, but instead will have to be based on an octal system correlated with the eight levels of countability. For example, it will need to be specified that a unit denumerator can range over a head noun only from levels 1, 2, 4, 6, and 7 if the NP is to be well-formed. A fuzzy denumerator may range over a plural head noun from levels 5, 6, and 7 in an assuredly grammatical NP; over a noun from level 3 in a dubious NP; or over a noun from level 0, 1, 2, or 4 only in an ill-formed NP.

Each preference set is defined by the behavior of a representative noun, as the NP head, in just two or three of the five tests; cf. Table 2. So it would be possible to guess the countability preference set of a noun, and to check the guess by submitting the noun to the tests defining the predicted set. However, the gamble would be inappropriate in serious analysis of countability preference, which would entail submitting the noun to all the tests instituted in §2.

LEVEL OF COUNTABILITY DEFINED	GRAMMATICAL IN THESE ENVIRONMENTS	UNGRAMMATICAL IN THESE ENVIRONMENTS
7	O-DEN	*All*+N
6	O-DEN, *all*+N	
5	F+Ns	A+N
4		F+Ns, *all*+N
3	?F+Ns	*all*+N, A+N
2	*all*+N, EX-PL	F+Ns
1	A+N	EX-PL
0		A+N, EX-PL

TABLE 2.

In Fig. 2, the five countability environments were ranked in order of choosiness; but more general relations also exist between them. For instance, there is the plural hierarchy: a noun grammatical in the O-DEN environment will also be grammatical in the F+Ns environment; and any noun that heads a well-formed F+Ns phrase will also be grammatical in an NP which has plural external number registration. This can be stated more formally:

(98) O-DEN $\rightarrow$ F+Ns $\rightarrow$ EX-PL
      (where $\forall x,y \in$ {O-DEN, F+Ns, EX-PL} when a head noun is wf in x then it is wf in y iff $x \rightarrow y$)

The relations between members of the plural hierarchy are (predictably) maintained within another hierarchy that encompasses all five countability environments; it is

defined on the lowest level of countability exhibited by any noun which may in that environment head a well-formed NP. Plural number registration of any kind is a mark of countability, but NP-internal plural is associated with more exclusive countable environments than is NP-external plural registration; and, of course, among internal plurals, nouns that enter F + Ns are of lower countability than those in O-DEN environments. Nouns of levels 0 and 1 can only enter singular environments, those with zero countability only the *all* + N environment. The hierarchy between the five countability environments is shown in Table 3.

NP environment	O-DEN > F+Ns > EX-PL > A+N > *all*+N

NP environment	O-DEN >	F+Ns >	EX-PL >	A+N >	*all*+N
Lowest level of countability of NP head	6	5(?3)	2	1	0

TABLE 3.

CONCLUSION

4. This paper began with a sketch of what is meant by countability. In the paradigm cases, that which is countable is denumerable. Although countability is a linguistic category, it typically has perceptual correlations: the reference of what is linguistically countable is ordinarily perceived in terms of one or more discrete entities. What is uncountable is typically, though not necessarily, perceived as an undifferentiated unity. The significance of the referential distinction between countable and uncountable is quite clear from 99, where it is just this distinction which gives the sentence its bite:

(99) It is because I like lambs that I don't like lamb.

The rule for English is that the countability of an NP must be known or made known to the audience. In a definite NP, it can be assumed to be known, because such an NP is used only where the speaker believes his audience to be aware of the reference, which will ordinarily mean knowing the countability. In indefinite NP's, however, this knowledge cannot be assumed; therefore countability must be indicated. An NP is either countable or uncountable, so only one of these need be marked; and in English, as in all other languages which mark only one, the countable NP is the marked opposition. In plural indefinite NP's, the only obligatory marking is the plural suffix on the head noun; in singular indefinite NP's, where the head-noun morphology is identical for countables and uncountables, there is obligatory inclusion of a denumerator. No problem arises from the fact that fully-defining proper names and pronouns—other than quantifiers and *one(s)*— are non-denumerable, because they are invariably definite NP's.

Although countability has been traditionally thought a subcategory of the lexical class of nouns, this view does not accommodate itself to the facts. Most nouns can be used either countably or uncountably, making it impossible to propose seriously that either plus or minus countable is the intrinsic property of each of them—although countability can be associated with each particular use of a noun in an NP. But then the fact that marking for countability is syntagmatic, in the singular, shows that countability is not intrinsic to the particular instance of a noun, but is a feature of its environment. So countability can be properly accounted for only as a subcategory of the NP.

Even though countability is characteristic of NP's, not of nouns, it is nonetheless a fact that nouns do show countability preference—insofar as some nouns more often occur in countable NP's, others in uncountable NP's, and still others seem to occur quite freely in both. In §§2–3, it was shown that these preferences can be computed in a non-arbitrary way by setting up a test battery of countability environments, defining the head noun as either countable or uncountable. A given noun is tried as the NP head, and the result is judged for grammaticality. The set of judgments gives a countability scan for the noun, from which its countability preference is computed. Countability is a binary opposition between the countable and the uncountable; and it must be decided whether to assume nouns are basically uncountable, and then environmentally induced to be countable to a degree—or vice versa. All the evidence points to nouns being basically uncountable, though most of them exhibit a degree of countability.

One unambiguously uncountable NP environment has been discovered, and four unambiguously countable ones.[9] A representative sample of all English nouns has been tested, and eight levels of countability found. The results are summarized in Figs. 2–3. This analysis of the countability preferences of English nouns is exhaustive for my dialect, in which the eight levels of countability exist. However, it is certain that other dialects of English will differ, because of different responses to the various countability tests.

What I hope to have shown in this paper is the true relationship between nouns and countability: that countability is a subcategory of the NP, not of nouns, and that nouns have computable countability preferences which can be incorporated into well-formedness conditions on English grammar.

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[9] Bunt (1979:270) writes: 'Certain adjectives, like size adjectives (*large, small, big, tiny, huge,* ...), are always count; if we meet a noun combined with such an adjective, it must be classified as a count noun.' But since these adjectives will combine with nouns from the three lowest levels of countability (0, 1, 2), as well as from the five higher levels, he is surely wrong. Cf. these data:

The equipment will be too large to fit inside this room.
The tiny equipment for Empress Eugenie's doll's house was made by the outfitters for a flea circus.
I have a huge admiration for Bette.
Mankind is small compared with the blue whale.

Restrictions do seem to exist on the co-occurrence of size adjectives and nouns of low countability, and I do not understand what they are. But (pace Bunt) size adjectives cannot define an unambiguous countability environment.

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