

“*One and Two, Once and Twice*”

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1. Introduction.

Perlmutter’s (1970) analysis of indefinite article *a/an* as a reduced form of numeral *one* was not immediately able, as he noted, to account for generic *a/an* or for phrases like:

(1) too long a book

which have no counterparts with numerals:

(2) *too long one book

(3) *too long two books

Barbiers (2005; 2007) argued that *one* is to be sharply distinguished from other numerals, in that *one* is indefinite and the others definite (in his sense of the term). In a way that was fairly close to Perlmutter, Barbiers took the numeral *one* to be a stressed, focussed version of the indefinite article.

In partial agreement with both of them, I will take there to be some relation between *a/an* and *one*, but I will suggest that there is no simple numeral *one* at all. *One* occurs in various syntactic contexts, only some of which involve what we would normally call numeral *one*. What we call numeral *one* will turn out to correspond to a combination of *one* and a silent element SINGLE (to be understood as a silent counterpart of *single*, using capital letters for silent elements).

The ‘noun-replacing’ *one* of:

(4) a blue one

is arguably the same *one* that appears as a subpart of numeral *one*, and does not replace a lexical noun; rather this *one* cooccurs with a silent noun. As I will suggest, this is so even in plural cases such as:

(5) two blue ones

In numeral examples like:

(6) They have just one car.

SINGLE is present:

(7) ...one SINGLE car

alongside *one*. In examples like (4) or (5), on the other hand, *one* is not accompanied by SINGLE.

2. Indefinite prenominal *one*

Perlmutter (1970, 235) noted a case in which even prenominal *one* seems not to be a numeral:

(8) That was a hell of a good paper.

(9) That was one hell of a good paper.

These two examples seem indistinguishable in interpretation (perhaps the second is a bit more emphatic), and the second does not seem to have the numeral interpretation that can be associated with *one*, as suggested, too, by there being no parallel example with true numerals:

(10) *Those were five hell of (a) good papers.

Another fairly straightforward instance of a prenominal non-numeral *one* is:

(11) There’s one John Smithfield here to see you.

in the interpretation in which it seems almost identical to:

(12) There’s a (certain) John Smithfield here to see you.

Somewhat different examples of prenominal non-numeral *one* can be found in temporal contexts such as:

(13) One day, he’ll realize that we were right.

(14) At one time, you found chemistry interesting.

(15) They were once interested in syntax.

(In the last example, *one* is properly contained within *once*.)

The sentences with *one* in this section all have an interpretation close to that of sentences in which *one* would be replaced by *a (certain)* or by *some*. Let me therefore speak of all of these as involving instances of indefinite *one*.

3. The unity of *one*

Perhaps the most obvious case of non-numeral *one* is:

(16) The red cars are more expensive than the blue ones.

Taking this *one* to be a noun unrelated to either numeral *one* or to the instances of indefinite *one* given in the previous section, as Barbiers (2005) does, seems implausible. At the same time, it does seem clear that there is no numeral interpretation associated with the *one* of (16). What's left, then, is to understand the *one* of (16) as being the indefinite *one* of (9)-(15).

Why, though, would the indefinite *one* appear in both (16) and (9)-(15), which at first glance do not seem to have much in common, and why does indefinite *one* have the same form as what we call numeral *one*? The core answer to both these questions, I think, is that English has a single indefinite *one* (which will turn out to be itself bimorphemic) that finds a natural place in all the above environments, including that of numeral *one*, in a way that I will try to make clear.

Unifying these various instance of *one* in English is supported by their all sharing a restriction to singular count nouns (as opposed to mass nouns and to plurals). This restriction is obvious for numeral *one*:

(17) You've written only one paper(*s) this year.

(18) You seem to have only one *(piece of) knowledge at your fingertips.

but the restriction to singular count nouns is also found to one extent or another in the other cases mentioned, e.g.:

(19) We've spent one hell of a day on that job.

(20) *We've spent one hell of days/time on that job.

I return below to the apparent plural exception seen in:

(21) We prefer blue cars to red ones.

while noting that mass nouns respect the restriction even here:

(22) *We prefer brown sugar to white one.

(23) *The shallow water is safer than the deep one.

4. The indefinite article is distinct from *one*

The indefinite *one* of:

(24) That was one hell of a good paper.

(25) There's one John Smithfield here to see you.

(26) At one time, you found chemistry interesting.

mentioned in section 2 would appear to have a lot in common with the indefinite article *a/an* of:

(27) That was a hell of a good paper.

(28) There's a (certain) John Smithfield here to see you.

(29) At a certain time in the past, you found chemistry interesting.

so much so that it would initially seem natural to take indefinite *one* and indefinite *a/an* to be variants of the same element, as Perlmutter (1970) and Barbiers (2005; 2007) did. (From a distributed morphology (DM) perspective, one might then (setting aside as phonology the question of *a* vs. *an*) take indefinite *one* and indefinite *a/an* to be two vocabulary items corresponding to a single morpheme.)

As Perlmutter noted, taking *one* and *a/an* to simply be variants of the same element leaves open the question why there exists a generic *a/an* that has no counterpart with *one*:

(30) A dog will always bark when happy.

(31) One dog will always bark when happy.

The generic interpretation available in (30) is not available in (31). Nor does taking *one* and *a/an* to be variants of one another immediately account for:

(32) too long *a/*one* book

Nor for:

(33) They're selling *one-drawer/*a-drawer* desks in the back of the store.

Nor for:

(34) I have a sister and you have *one/*a*, too.

Nor for:

(35) We have *a/*one* few days left.

Understanding the contrasts in (30)-(35) may be compatible with the idea that *one* and *a/an* are variants of one another, but, if so, it clearly requires making more precise the notion of 'variant' that is at issue. Perlmutter (1970) himself made a proposal in the required direction, by taking *a/an* to be a reduced form of numeral *one*. An updating of Perlmutter's proposal that would take into account Cardinaletti and Starke (1999) might take *a/an* to be a clitic counterpart of non-clitic *one*, with *a/an* then being associated with less syntactic structure than *one*. (From a DM perspective this would mean that *a/an* and *one* do not in fact correspond to a single morpheme.)

5. *One* contains a classifier

Let me execute this idea that *a/an* is a reduced form of *one* in a different way, however, starting from (30)/(31), and in particular from the fact that the contrast between (30) and (31) recalls the fact that in Chinese, according to Cheng and Sybesma (1999, 534), a singular classifier cannot occur within a generic DP introduced by *yi* ('*a/an/one*'). This leads to:

(36) *One* cannot occur in (31) (in the relevant reading) for the same reason that singular classifiers are excluded from Chinese generic DPs.

which in turn leads to:

(37) An English DP with *one* necessarily contains a singular classifier.

(Conversely, an English DP with *a/an* can (perhaps must) lack a classifier.) Assuming that the Chinese incompatibility between singular classifiers and generics reflects some universal such incompatibility, the impossibility of (31) (in the relevant reading) will now follow from (37).

That *one* is associated with a singular classifier and *a/an* not (necessarily) is close to Perlmutter's idea that *a/an* is a 'reduced form' of *one*, though its execution of the notion of 'reduction' in terms of the more specific notion of the presence vs. absence of a classifier has allowed an account of (30) vs. (31) that Perlmutter's less specific proposal was unable to achieve.

In Cardinaletti and Starke's (1999) terms, we would want in addition to relate the fact that *one* is associated with extra syntactic material (the singular classifier) to the fact that *one* is morphophonologically 'bigger' than *a/an*. We can do this as follows. *One* is '*w- + an*', where *w-* is the classifier and *an* the indefinite article. What difference in vowel quality there is between *one* and *an* is arguably due to independent properties of English phonology, perhaps involving (in part) stress. The necessary pronunciation of the *n* of *one* even before a consonant, as opposed to the necessary dropping of the *n* of *an* before a consonant, might again just be phonology. Or it might be related to the syntax, especially if the order 'classifier - indefinite article' (*w - an*; cf. Ghosh (2001, chap.3 on some Tibeto-Burman having 'CLF Num N' order) is produced by leftward movement from a structure in which the indefinite article preceded the classifier. (Here there might be a link to the fact that English allows *too long a book*, etc.)

From this perspective, the contrasts mentioned earlier between *one* and *a/an* look as follows. The impossibility of (38) is arguably not specific to *a/an*, but is parallel to that of (39):

(38) I have a sister and you have a *(sister), too.

(39) Mary has done the assignments and John has done the *(assignments), too.

That (38) becomes possible if the second *a* is replaced by *one*, as in:

(40) I have a sister and you have *one*, too.

must now be due to a licensing property of the classifier *w-* (that needs to be explored). The contrast in:

(41) We have *a/*one* few days left.

can be attributed to a clash between the classifier *w-* and *few* (+ silent NUMBER), parallel to:

(42) We have *a/*one* small number of days left.

and to:

(43) Mary has written *a/*one* number of papers this year.

in all of which it may be that *number*/NUMBER is not allowed to cooccur with a classifier.

As for:

(44) too long *a/*one* book

it looks like the classifier is incompatible with the preposing of the degree phrase (for reasons to be elucidated). Finally, the restriction seen in:

(45) They're selling *one-drawer/*a-drawer* desks in the back of the store.

may reflect the need in such examples for a numeral, which *a/an* is definitely not, from the perspective being pursued here.

6. The apparent plurality of *ones*

If indefinite *one* (in the entire range of examples under discussion) is akin to indefinite *a/an* except for the additional presence of the classifier morpheme *w-*, one might expect *one* to be limited to singular contexts, as *a/an* is:

(46) We bought a car(*s).

Yet English allows:

(47) We bought blue ones.

On the other hand, *one* is not always compatible with plurals:

(48) We bought exactly one book(*s).

(49) One day(*s) you'll see that we were right.

However, as with inflectional morphology in general, the very fact of saying that *ones* is plural in examples such as (47) may be misleading. What does go without saying is that in sentences containing *ones*, *one* is followed by plural *-s*. Saying beyond that that *ones* is plural normally goes with the (usually implicit) assumption that *one* and plural *-s* form a constituent. But that assumption is not straightforward.

In particular, we know that English adjectives quite generally are incompatible with a following plural *-s*:

(50) The other(*s) cars are red.

(51) They have two four-year old(*s) children.

Yet the following are perfectly possible:

(52) The others are red.

(53) They have two four-year olds.

which led me in earlier work (Kayne 2003) to propose that sentences like (52) and (53) contain a silent noun that is the true licenser of plural *-s*:

(54) the other N *-s*

(55) two four-year old N *-s*

with N in (53) (but not (52)) necessarily human (or higher animal - cf. in part *someone*). Somewhat similarly, the particular interpretation of:

(56) They're serving three different wines today.

can be analyzed in terms of:

(57) ...three different wine-KIND-*s*

with a silent noun corresponding to *kind* and with *-s* pluralizing KIND rather than *wine* itself (thereby eliminating the need for 'shifting' *wine* itself from mass to count).

The fact that plural *-s* in (52), (53) and (56) pluralizes a noun that is not visible suggests a way of understanding sentences like (47) with apparently plural *ones* that makes sense of the cooccurrence of *-s* with the indefinite singular *one*. The idea is that the *-s* of *blue ones*, for example, is associated with a noun that is silent and that is moreover distinct from the noun that singular *one* is directly associated with. That is, all instances of 'plural' *ones* must involve two silent nouns:

(58) blue one N N -s
with the first N singular and the second N plural. (This allows taking *one*, like *a/an*, to be limited to immediately singular contexts.)

What then would be the exact content of these two nouns in the last DP of a sentence like the following?:

(59) Susan writes short books and Mary writes long ones.
Thinking of (56)/(57) and of Heim (1987), van Riemsdijk (2005) and Leu (2008a), what comes to mind is:

(60) long [one KIND] [BOOK -s]
in which *one* goes with silent KIND and -s with silent BOOK, without there being any conflict between the singularity of indefinite *one* and the plurality of -s.

7. DPs with two indefinite articles

If the indefinite *one* of examples like:

(61) They would like to buy a blue one.
is akin, apart from the extra *w-* morpheme, to indefinite *a/an*, then examples like (61) in effect contain two indefinite articles. Having two indefinite articles in what looks like a simple DP is, however, something that is fairly common in the Germanic languages (cf. Leu (2008b) and references cited there) in a very visible way. A dialect example in English of the sort given by Wood (2002) is:

(62) a such a wonderful book
and in my English, the following is possible:

(63) We'll be there in a half an hour.
So there is clearly no general bar against taking the *one* of (61) to contain an indefinite article, though it remains to be understood why standard English rejects (62), as well as why perhaps all English rejects:

(64) *They would like to buy a blue a book.
The generalization seems to be that standard English allows two overt indefinite articles (again, taking *one* to contain *a/an*) in cases such as (61) only if the lexical noun is silent. Possibly the movement of *blue* in (61) to the left of indefinite *one* is an instance of pied-piping dependent on the movement of that silent noun. (Barbiers (2005 172) has the idea that DP moves, triggered by focus, to spec of *one* in Northern Brabantish, in a partially similar way.)

As is well-known, the *one* of (61) is incompatible with certain noun-‘complements’, e.g.:

(65) The best friend of my sister is taller than the best friend/*one of my brother.
(66) A large number of syntacticians were talking with a large number/*one of phonologists.
This is perfectly compatible with the present perspective, within which this restriction is to be seen as one concerning what can be ‘stranded’ in the context of a silent noun.

8. *Ones* and *a one*

Returning to *ones*, we can note that bare *ones* is impossible:

(67) *Mary knows linguists and Susan knows ones, too.
In my English, *ones* is fully acceptable only with a prenominal adjective:

(68) Mary knows interesting linguists but Susan knows only dull ones.
(69) ??Mary knows linguists that are interesting but Susan knows only ones that are dull.
In addition, in relative clause examples like (69), I find that contrast/focus is required, insofar as the following is pretty much unacceptable:

(70) *Mary knows linguists that are interesting and Susan knows ones that are interesting, too.
Contrast/focus seems to be relevant to prenominal adjectives, too, given (cf. Halliday and Hasan (1976, 95)):

(71) People who read interesting books generally profit considerably from the reading of those interesting books/*ones.

At first glance it appears that (67) contrasts minimally with:

(72) Mary knows a linguist and Susan knows one, too.

but it may be that a closer match in the singular to (67) is the following (with only an overt indefinite article preceding *one*), which shares the unacceptability of (67):

(73) *Mary knows a linguist and Susan knows a one, too.

as well as sharing with (67) sensitivity to prenominal adjectives:

(74) Mary knows a smart linguist and Susan knows a smart one, too.

(75) *Mary knows a smart linguist and Susan knows a one that's smart, too.

(true for me, though Halliday and Hasan (1976, 96, 102) accept some such examples) and sensitivity to contrast/focus:

(76) People who read an interesting book generally profit considerably from the reading of that interesting book/*one.

The preceding facts suggest that (74) is to be analyzed in a way parallel to (60), repeated here:

(77) long [one KIND] [BOOK -s]

i.e. (74) contains as a subpart:

(78) a smart [one KIND] LINGUIST

where the *a* of (74) is keyed to the singularity of LINGUIST (with a point of similarity to *that kind of linguist* vs. *those kind of linguists*). (Why 'one KIND' is not comparably available with mass nouns - **brown sugar and white one* - remains an open question; perhaps KIND could be replaced by an additional silent counterpart of the lexical noun/antecedent.)

The requirement for a contrastive/focussed prenominal adjective in (74) (and to a partial extent in (68)) can now be understood (as a first approximation) as a requirement concerning the need for 'one KIND' in these to be preceded by that kind of modifier, perhaps akin to the restriction seen in:

(79) Mary only appreciates linguists of the *(intelligent) kind.

(80) She only appreciates *(those) kind of linguists.

If this is on the right track, it suggests further that the adjective in (74) and (68) should be taken to be a modifier of KIND rather than of the lexical noun (much as Kayne (2005, chap.8) took *red* in *a red car* to be a modifier of COLOR, rather than of *car*, the implications for Cinque (2010) need to be explored).

9. Restrictions on *ones*

The licensing effect of a prenominal adjective seen with *ones* in (68) is not found (at least not for most speakers, it seems - cf. Halliday and Hasan (1976, 97)) with prenominal numerals, even if they are contrastive/focussed:

(81) Mary has three brothers but Susan has four *(ones).

In addition, in my English, a numeral actually degrades the acceptability of *ones* with a postnominal modifier:

(82) ?I don't have any pictures of you, but I do have ones of your children.

(83) I don't have four pictures of you, but I do (happen to) have five *(ones) of your children.

If the numeral is followed by an adjective, acceptability returns:

(84) Mary knows a lot of linguists but she knows only three intelligent ones.

(85) (?)She bought four syntax books yesterday and three other ones today.

whereas if the adjective precedes the numeral, the sentence remains unacceptable:

(86) Mary spent a beautiful three weeks in Italy and an even more beautiful four weeks/*ones in Spain.

(87) *She bought four syntax books yesterday and another four ones today.

This suggests a restriction (for most speakers) to the effect that in '[one KIND] [NOUN -s]', 'one KIND' cannot be directly modified by a numeral (for reasons to be elucidated).

There is another restriction on *one(s)* that seems less widespread than with numerals. It concerns prenominal possessors, and holds sharply in my English:

(88) I didn't like his paper, but I did like yours.

(89) *I didn't like his paper, but I did like your one/ones.

As with numerals, a prenominal adjective lifts the restriction:

(90) I did like your recent one/ones.

Why this restriction holds and why it holds only for some speakers remains to be understood. (Relevant is (for me) *?I have ones of you* vs. **?I have his ones of you*.)

An apparently comparable restriction for demonstratives holds for even fewer speakers. The following is possible for many speakers, though impossible for me (how best to express the intra-English variation seen in this section is left an open question):

(91) *I prefer those ones.

In my English, this restriction holds for *ones* but not for *one*:

(92) I prefer that one.

On the assumption that *that one/this one* will be acceptable to all, a link suggests itself to:

(93) I have one, too.

which contrasts with both **I have ones* and with **I have a one*.

Setting temporarily aside the question of the numeral reading of *one*, let us say that the *one* of (93) and (92) corresponds to the initial *one* of:

(94) I have one blue one.

This initial *one* clearly has no requirement that something (contrastive or focussed) precede it, as opposed to the second *one* of (94) (which is associated with KIND, as in (78)):

(95) *I have one one.

The idea that *one* is possible in (93) and (92) for the same reason that initial *one* is in (94) (because no relevant restriction holds of such instances of *one*) leads to the conclusion that the *one* of:

(96) *I have ones

(97) *I have a one

cannot correspond to the initial *one* of (94).

If what I'm calling initial *one* must be strictly initial within DP (apart from *that/this*, and perhaps apart from elements like *only*, *even*), then the *one* of (97) is clearly not an instance of initial *one*, as desired. As for the *one* of (96), it can hardly correspond to initial *one*, given:

(98) *I have one blue cars.

(99) *I have one blue ones.

As seen in these two examples, initial *one* is not compatible with plural.

Left undiscussed so far is the impossibility of:

(100) *I have a/one blue one car.

which is perhaps to be assimilated to that of (64) above.

10. Numeral *one*

As noted earlier, there are various clear instances of initial *one* that don't feel like instances of numeral *one*, e.g.:

(101) That was one hell of a paper.

(102) There's one John Smithfield here to see you.

(103) One day you'll see that we were right.

In (101) and (103), *one* cannot be contrastively stressed in the way that numeral *one* can be. In addition, numerals higher than *one* are impossible:

(104) *Those were two hell of a papers/hells of papers.

(105) *Two days you'll see that we were right.

In (102), on the other hand, *one* can be contrastively stressed, but that reflects the fact that (102) is perceived to be ambiguous between a true numeral reading and a reading close to that of *a certain*.

The question is how best to distinguish numeral *one* from initial non-numeral *one*. It doesn't seem that stress is sufficient since (to my ear at least) the initial non-numeral *one* in each of (101)-(103) is not unstressed. Let me suggest, then, a solution that has a syntactic aspect to it, namely that what we call numeral *one* amounts to initial (indefinite) *one* plus a silent counterpart of *single*. For example in:

(106) There's only one John Smithfield here to see you today.

with numeral *one*, we have:

(107) ...one SINGLE John Smithfield...

(Possibly non-numeral initial *one* is also accompanied by a silent element, though a distinct one, e.g. CERTAIN.)

The proposal in (107) may lead to an account of a contrast similar to one noted by Perlmutter (1970, 234):

(108) the only two/three/four books that you've ever read

(109) *the only one book that you've ever read

in terms of the contrast seen in:

(110) That's actually the (*only) (one) single book we've been meaning to read

(Note that, as seen here, numeral *one* can cooccur with overt *single*, too.)

11. Ordinals

The idea that numeral *one* is to be understood as indefinite *one* accompanied by silent SINGLE is in partial agreement with Barbiers's (2005; 2007) claim that *one* is very different from *two* and numerals higher than *two* (setting aside composites like 21, 31, etc.). He took numeral *one* to be a stressed, focussed version of the indefinite article. The present proposal doesn't rely directly on the notion of 'focus', using instead the presence of SINGLE.

Barbiers emphasized the relative systematicity of the cross-linguistic absence of a regularly formed ordinal based on *one*:

(111) Mary was the first/*oneth linguist to have proposed that.

From the present perspective, this must reflect the inability of ordinal *-th* to combine either with indefinite *one* by itself or with SINGLE (or *single*):

(112) *the (a/one) single-th linguist

Presumably, the numerals from *two* on up (apart again from complex numerals having 1 as a subpart) do not (necessarily) involve SINGLE. (Why ordinal *-th* differs from the *-ce* of *once* needs to be elucidated.)

12. *Two* and coordination

The proposal in (107) contains the claim that what we think of as numeral *one* is not a syntactic or semantic primitive. (Nor is indefinite *one*, if it is bimorphemic, as suggested earlier.) This type of proposal might now be extended to numeral *two* (with different details), as follows. In some varieties of English, *both* is extremely close to *two*:

(113) the two of us; the both of us

(114) the two books; the both books

The point of bringing in *both* is that *both* also occurs with coordination:

(115) both this book and that book

leading to the possibility that *two* might occur in parallel fashion, but with coordinated indefinites, as in:

(116) *two book and book

which is ill-formed, but perhaps becomes well-formed if part of the coordinate structure is silent:

(117) two book AND BOOK

(or perhaps 'two BOOK AND book'; in addition, classifiers will need to be taken into account).

(117) gives the impression that English should allow *two book* rather than *two books*. In fact, English allows both types:

(118) This file cabinet has two drawers.

(119) This is a two-drawer file cabinet.

In addition some speakers (myself not included) allow:

(120) You owe us five pound.

Since (117) provides us directly with (119) and (120), the question now is how to allow for (118). A perhaps relevant fact is that overt coordination as in (115) does not permit plural *-s*:

(121) *both this book and that book-s

(and similarly if *both* is omitted) This might suggest taking plural *-s* to be a coordinating element like *and*, except that plural *-s* would require the following conjunct, as in (117), to be silent (left open is how

best to extend this to instances of plural *-s* in the absence of any numeral, as well as the question how best to distinguish English from Hungarian, not to mention DP-internal number agreement.):

(122) two book s BOOK

13. *Three* and higher

The preceding amounts to saying that *two* is not a syntactic or semantic numeral primitive, but is rather essentially the notion of minimal coordination (cf. verb agreement in Hungarian). In this spirit, *three book* (as in *a three-book series*) might be analyzed as (cf. Pica (2011), using *other* rather than *and*):

(123) three [book AND TWO [BOOK AND BOOK]]

Four book could then be:

(124) four [book AND THREE [BOOK AND TWO [BOOK AND BOOK]]]

Whereas *five book(s)* (and higher) might rather be as in:

(125) five [book AND MANY BOOK]

Possibly some languages treat *four* as in (125), i.e. like *five*, rather than like *three*.

From the preceding perspective, *two*, *three* and *four* (if *four* is not akin to *five*) are quasi-uninterpretable in something like Chomsky's sense, insofar as the value of the numeral interpretation is given by the number of instances of the noun. Whereas *five* (or *four*) and higher would be interpretable.

We can note, also, that *three* is more complex than *two*, in the specific sense that (123) contains a silent numeral while (117) and (122) do not. This may be at least part of the reason for certain asymmetries in English between *two* and *three*. For example:

(126) both books; *throth books

i.e. there is no 'trial' counterpart to *both*. Similarly:

(127) half the books; *third the books

In addition, in contemporary English, we have:

(128) I've been there only twice/*thrice.

(though *thrice* is still marginally acceptable in *?a thrice-discussed question*; what the change in English concerning *thrice* might correlate with is not clear).

14. *Once* and *twice*

If the difference between *twice* and *thrice* does correlate with other differences between *two* and *three*, that gives us good reason to take *twice* (and *thrice*) to contain *two* (and *three*), in a sense that I will now try to make more precise. We can begin by taking *twice* to be 'tw + ice' (and *thrice* to be 'thr + ice'), with *tw-* the numeral morpheme transparently also found in *twelve*, *twenty*, *twin* and *two* (with the non-pronunciation of the /w/ of *two* phonologically regular, in all probability). Let us assume further than *-ice* is a single morpheme that is also contained in *once*. This *-ice* morpheme might have the interpretation of 'time'. Alternatively, and more likely I suspect, *tw-* and *-ice* cooccur with a silent noun TIME:

(129) tw- -ice TIME (or perhaps 'tw- TIME -ice')

If so, then the status of *-ice* will ultimately need to be determined (it might be related to the genitive/possessive 's despite the lack of voicing). From this perspective, *once* would then be:

(130) one -ice TIME (or 'one TIME -ice'; this perhaps supported by *one other time* vs. **once other*)

That English (and similarly for many if not all other languages) allows a silent TIME is suggested by:

(131) We should leave soon.

(132) ?We should leave at the soonest time possible.

with *soon* cooccurring with silent TIME in (131). (We can also note that (129) and (130) facilitate the work of the interpretive component.)

The presence of TIME in (130) is straightforwardly compatible with the possibility of a demonstrative, or to a more delicate extent of a definite article:

(133) Do it just this/the once.

In my English, this is not possible with *twice* (why some English seems to allow it at least with *the* remains to be understood):

(134) *Do it just this/the twice.

(135) If you had helped us just that once/*twice,...

Surprisingly, a plural demonstrative is for me even worse:

(136) **Do it just these twice.

(137) **If you had helped us just those twice,...

This suggests not only that it is singular silent TIME that is present in (129), as indicated there, but in addition that plural silent TIMES is not available at all with *twice*. (Cf. the proposal in Kayne (2003) to the effect that in *at the age of seventy*, there is a silent YEAR rather than a silent YEARS.)

That *twice* is accompanied by TIME and not by TIMES is also suggested by:

(138) ?John has been there two times, but we've been there only one.

vs.

(139) *John has been there twice, but we've been there only one.

insofar as this contrast recalls:

(140) ??Mary has won that race two times, but John has won it only one.

(141) Two-time winners of that race have by definition already won it one *(time).

(Cf. *J has been collecting twenty-year old cars for the past six *(years)* (if no other antecedent is present)). Also ?*Two times are enough* vs. **Twice are enough*.) Possibly, the fact that *twice* goes with TIME and not with TIMES is related to the contrast between (141) and the following:

(142) *Two-times winners of that race...

Cf. perhaps the general property of English that prohibits non-demonstrative pronominal modifiers from being immediately followed by plural -s (for reasons that remain to be understood):

(143) Frequent(*s) winners...

Note that no claim is being made that silent elements can never be plural. A plural silent noun seems appropriate in:

(144) Those three books are more interesting than these two.

and even:

(145) ?Those three times we were there were more interesting than these (other/more recent) two. which contrasts sharply with **these twice*, **those twice*.

The widespread occurrence and the non-negligible degree of articulation of silent elements of this sort is further suggested by the absence, alongside:

(146) John will two-time her for sure.

of:

(147) *John will twice her for sure.

the reason being that *two-time* in (146) does not have *two* modifying *time*; rather there must be at least as much structure as in *two at a time*, with *two* modifying a silent noun (akin to WOMAN/WOMEN) distinct from *time*. The possibility of silent plural WOMEN is not incompatible with the preceding discussion if we interpret the impossibility of (142) as keyed to the plural morpheme -s, rather than to the notion of plural in general. That such a distinction is appropriate is suggested (in my English) by:

(148) Four-children/*four-kids families are not as common as they used to be.

(149) Mice-catching/*rats-catching cats are becoming harder to find.

(150) Hair(*s)-pulling is to be discouraged.

Returning to *once*, we can note that attributing to it a subcomponent *one* is supported by the fact that *once* shows the same numeral vs. non-numeral ambiguity (interpreted earlier as presence vs. absence of SINGLE) as *one*. The numeral interpretation is found in:

(151) We've been there only once.

the non-numeral interpretation in (the normal interpretation of):

(152) You were once even happier together.

(153) We were young once.

15 Conclusion

There is no single morpheme corresponding to what we think of as numeral *one* (and similarly for non-numeral indefinite *one*). *One* is built upon the combination of a classifier and the indefinite article; numeral *one* in addition is accompanied by SINGLE. Nor is numeral *two* as 'simple' as it looks, and similarly for other numerals, all of which (apart from *one*) involve syntactic coordination.

Once and *twice* contain *one* and *two*, respectively. Both are associated with silent TIME, which in these cases must be singular, and cannot be plural. Silent elements often have intricate properties that cannot possibly be learned from the primary data without substantial help from built-in aspects of the language faculty.

References:

- Barbiers, S. (2005) "Variation in the Morphosyntax of *One*," *Journal of Comparative Germanic Linguistics*, 8, 159-183.
- Barbiers, S. (2007) "Indefinite Numerals *One* and *Many* and the Cause of Ordinal Suppletion," *Lingua*.
- Cardinaletti, A. and M. Starke (1999) "The Typology of Structural Deficiency: A Case Study of the Three Classes of Pronouns," in H. van Riemsdijk (ed.) *Clitics in the Languages of Europe*, Mouton de Gruyter, Berlin, 145-233.
- Cheng, L.L.-S. and R. Sybesma (1999) "Bare and Not-So-Bare Nouns and the Structure of NP," *Linguistic Inquiry*, 30, 509-542.
- Cinque, G. (2010) *The Syntax of Adjectives. A Comparative Study*, The MIT Press, Cambridge, Mass.
- Ghosh, R. (2001) *Some Aspects of Determiner Phrase in Bangla and Asamiya*, Doctoral dissertation, Tezpur University, Assam.
- Halliday, M.A.K. and R. Hasan (1976) *Cohesion in English*, Longman, London.
- Heim, I. (1987) "Where Does the Definiteness Restriction Apply? Evidence from the Definiteness of Variables," in E.J. Reuland and A.G.B. ter Meulen (eds.) *The Representation of (In)definiteness*, The MIT Press, Cambridge, Mass., 21-42.
- Kayne, R.S. (2003) "Silent Years, Silent Hours", in L.-O. Delsing et al. (eds.) *Grammar in Focus. Festschrift for Christer Platzack. Volume 2*, Wallin and Dalholm, Lund, 209-226 (reprinted in Kayne (2005)).
- Kayne, R.S. (2005) *Movement and Silence*, Oxford University Press, New York.
- Kayne, R.S. (2010) *Comparisons and Contrasts*, Oxford University Press, New York.
- Leu, T. (2008a) "What for Internally," *Syntax*, 11, 1-25.
- Leu, T. (2008b) *The Internal Syntax of Determiners*, Doctoral dissertation, New York University.
- Perlmutter, D.M. (1970) "On the Article in English," in M. Bierwisch and K.E. Heidolph (eds.) *Progress in Linguistics*, Mouton, The Hague, 233-248.
- Pica, P. (2011) "From Object-tracking Representation to Numbers: An Universal Base for Counting," poster presentation, 50 Years of Linguistics at MIT.
- Riemsdijk, H. van (2005) "Silent nouns and the spurious indefinite article in Dutch," in M. Vulchanova and T. Áfarli, *Grammar & Beyond: Essays in honour of Lars Hellan*, 163-178, Novus Press, Oslo.
- Wood, J.L. (2002) "Much about *Such*," *Studia Linguistica*, 56, 91-115.