More thoughts on determiners

This is an extended rumination on the syntactic properties of determiners. Once I'm comfortable with the structure I will return to the semantics, and to writing a program that embodies all of this. But for now I'm just thinking about syntax.

This rumination is pretty informal, and leads through a series of suggestions, observations and provocations. What I need to know right now is

- where do I say something that is transparently stupid?

- what should I read to see other people who have said the same thing?

- what examples have I missed? I'm extracting examples by running regexes over the BNC. This will tell you about whether the examples you make up in your head occur in freely occurring text, but it won't prompt you to think of things you haven't thought of. So any ideas on what I **haven't** looked at would be very welcome.

As just noted, the examples are obtained by running regexes on the BNC, which is 100 million words and is the largest corpus I have access to (I am aware of one larger one, namely the TenTen corpora – 10^{10} words per language, but I haven't got and can't get a copy). But 100 million is enough to provide some useful information. Regexes are a fairly blunt instrument, and they produce quite a lot of false positives. False negatives don't worry me – if something doesn't occur in the BNC then it is vanishingly rare (less than 1 in 10^8). False positives aren't a big theoretical issue, because so long as there are some real positives then the phenomenon I am interested in does occur, but I do remove them manually because they clutter up the argument.

DET + of + NP(+def)

We start with the observation that a wide range of quantifiers (e.g. '*many*', '*some*', numbers) can combine with '*of NP(+def)*', and that this is fairly common (17% of occurrences of these quantifiers).

```
                   we just have to ask how *** many of *** our congregation have been added during
          provide home care for one in *** four of *** all those dying with AIDS in
              at home for up one in *** four of *** all those who died of AIDS
                                Brian was *** one of *** the very first members of the
          These factors help explain *** some of *** the reasons why the total number
n necessary office work and telephoning *** some of *** our low-dependency clients to see how
                          We make the *** most of *** this and scoot off to the
   Cedria is a full-time volunteer and *** one of *** national network of volunteers .
sexual intercourse between two people , *** one of *** whom is infected .
                               For *** most of *** them there is a cure
```

There's nothing monstrously weird about this. It's how you do quantification over known sets, and while it's not obvious (to me) why you need to include '*of*' as a case-marker, it's no more unobvious than why you have to use it in things like '*a piece of cake*'. At any rate, I'm not going to worry about it.

When you come to look at '*all*', the case-marker becomes optional:

```
       Interest was expressed in *** all of the *** organisational aspects of home care inclu
               This can make *** all the *** difference to someone who feels unsafe
       a single agency can not give *** all of the *** support required .
   donor to state that he satisfies *** all the *** conditions relating to Gift Aid (
```

```
                            &bquo &hellip *** all the *** residue of my estate &equo .
organisations to ensure that people get *** all the *** care they need in the way
                    &bquo Thank you for *** all the *** help you gave to us and
```

Cases without '*of*' are quite a lot more frequent (this would have been evident if I had included more examples, but that would have been too many examples to look at), but I can't see any difference in meaning, and I could include '*of*' in nearly all the cases above that don't have it and omit it from the ones that do, without changing the grammaticality or the meaning.

This doesn't happen with any of the other determiners that take '*of*': here are **all** the occurrences of these determiners with an NP beginning with '*the*' in the A section of the BNC (16 million words). In almost all of them, the determiner has an elliptical N (see below), and the '*the*' is the start of the following NP; and the others feel strongly ungrammatical '*some the best examples of the Gibbons technique*', '*the scene of one the gravest blows to democracy carried out*'. None of them seem to me to involve complex determiners of the kind we had with '*all the things*', '*all the works*', . . . above.

```
            problem , however , it is *** one the *** novel shares with many of the
          the travelling to get to the *** one the *** night after and seeing a different
          work you have done made you *** any the *** better ?
                    One the glass , *** two the *** show , three the end .
                            One by *** one the *** members of the crowd trickled out
jective interpretation of events is not *** one the *** institution of policing is geared up
            Now , he concluded gloomily , *** some the *** best examples of the Gibbons technique
tutionally established in America , and *** one the *** tendency towards which in this country
                            One by *** one the *** gerbils were scooped up , turned
          real winner , though &mdash the *** one the *** highlighted products of London 's solariums
              to gloat at the scene of *** one the *** gravest blows to democracy carried out
          difficult for any company , even *** one the *** size of BAe , to go
                        Not even *** one the *** size of GM , which has
              by the KGB , and for *** some the *** advertisements confirmed their darkest fear
otally different situation now from the *** one the *** Government inherited . &equo
              number of votes , while in *** two the *** Greens did better .
              they are of Welsh slate , *** many the *** work of Madge Whiteman .
          deserve to be better known as *** many the *** months that elapsed proved fatal .
                    After a minute or *** two the *** Asian suddenly slid out from the
          the sexual instinct &bquo is never *** any the *** original object but only a surrogate
              in 1989 , to restrict to *** two the *** number of parties allowed to fight
              for many hours on day *** one the *** river seemed amazingly narrow , one
                            One by *** one the *** dogs on the left of the
                            One by *** one the *** Corporals who commanded each rig section
      James Whittaker , that anyone was *** any the *** wiser .
              &bquo But if there is *** one the *** people of Birkenhead will support him
                            With *** some the *** feet .
                            With *** some the *** shoulders .
, even foreseeable , obscured for *** most the *** suicide of the art .
              So he turned up with *** one the *** following day .
```

So '*all*' does something no other determiner does: it allows you to drop the case marker when it combines with a NP(+def). Note that not all NP(+def)s have an explicit determiner. Pronouns are also +def, but in this case '*all*' follows the pronoun.

```
        ( &bquo no the characters say *** they all *** speak in some version of her
          or genuine life , has for *** them all *** the aspects of a hallucination .
              its aims , matter , and *** they all *** feel an excitement about the job
          sooner or later it gets to *** them all *** , even Hilda , love at
          I have been able to give *** them all *** a good education and every chance
      And that is perhaps the way *** they all *** want it .</hi>
        me I should respond , as *** they all *** told me my true nature ,
                        Are *** they all *** cottars and tinkers ?
```

I think that these examples all do universal quantification over the plural set denoted by '*they*'/'*them*', e.g. that if we replace '*they*' by '*the people*' then'*Are they all cottars and tinkers ?*' is pretty much the same as '*Are all the people cottars and tinkers ?*'.

It's not quite as simple as that, because when '*all*' is associated with '*they*' then it can (must?) follow the adjacent verb if it is an auxiliary or a copula:

```
            None of them is new and *** they are all *** straightforward .
              Over a period of time *** they will all *** be ill .
             The point is that *** they are all *** vital young men with love on
                          And *** they 'd all *** packed them up this morning .</p>
   would look at that noticeboard and *** they would all *** understand the implications behind wh
fered alternative accommodation , which *** they were all *** sensible enough to accept .
             a risk , and a risk *** they could all *** get by without taking .
          reminded her of me ) and *** they were all *** dumped in my front hall .
     pain arising from injuries , but *** they are all *** banned .
                          And *** they are all *** widows now .
```

Once we recognise that this can happen, we can have a look at other examples where '*all*' follows a definite NP. My regexes here do produce quite a lot of false positives, but I am pretty confident that in the examples below you could replace '*NP all*' by '*all NP*' and retain the same truth conditions.

```
poverty and the availability of hand *** guns all play *** their part .
      their second message , and the *** fuss all died *** down , but he 's always
        of that term , my final-year *** class all came *** up my office to give me
                          The *** boys all liked *** him , too &mdash and some
 to give an undertaking that their *** entries all comply *** with age ceilings .
      in which the ladies of the *** chorus all wore *** wellington boots .
```

I am **not** saying that these are the only ways that '*all*' gets used, but they do look to me like a very closely linked group: '*all*' means every member of the set/property denoted by the specifiee, if the specifiee is +def then you may, but don't have to, choose to mark it with '*of*'; and if you don't mark it with '*of*' then you can, and in some circumstances must, right-shift '*all*'. Note that something similar-ish happens with '*each*', where you do mark the target with '*of*' if it's an accusative pronoun but you just right-shift it if it's a subject-case one. These are quite a lot rarer than ones with '*all*', but I think that that's just because '*each*' is rarer than '*all*'.

```
      as some would see it ) *** they each *** had for the Tradition &mdash at
         In some older dances *** they each *** hold a corner of a handkerchief
 the amount of time and effort *** they each *** put into the deal .
   on its books and is sending *** them each *** a booklet when their policies are
                  Clearly *** they each *** believed there was a real issue
```

Note that '*each*' and '*all*' both occur with the '*of NP(+def)*' form as well:

```
January and March this year &mdash *** all of them *** long-term detainees held without charge
     shares with many others , not *** all of them *** writers ; it is a condition
       areas or &bquo rooms &equo , *** each of them *** having a different function or theme
         one of them senses smoke , *** all of them *** will sound an alarm .
         leaf by leaf , then patted *** each of them *** carefully with a tea towel .
 possible in the seventies , not *** all of them *** successful &hellip
                  What *** all of them *** contend is that the auditory effect
```

Again I can see barely any difference between '*all of them*' and '*them all*': '*She threw all of them away except one*' and '*She threw them all away except one*' are virtually interchangeable. The last one is interesting: this is how you do an '*of NP(+def)*' version of the subject – '*What all of them contend is …*' = '*What they all contend is …*'. Likewise '*all of them will sound an alarm*' = '*they will all sound an alarm*'.

I don't think that '*all*' and '*each*' in examples like '*they are all vital young men*' and '*they each believed there was a real issue*' are adverbials: the parellels with '*all of them are vital young men*' and '*each of them believed there was a real issue*' make me discinclined to believe this, as does the fact that '*all*' in '*it gets to them all*' has to be linked to '*them*'. '*all*' in these sentences isn't just some floating adverbial, it's a specifier on the preceding NP.

Summary to this point: a lot of determiners can combine with a simple NN or a phrase of the form '*of NP(+def)*'. In the cases of '*all*' and '*each*', you can drop the '*of*' from this construction, and in that case you may (and sometimes must) shift the '*all*'/'*each*' to follow its target.

Ellipsis

Determiners normally determine something. There are, however, fairly frequent cases of things that you would normally regard as determiners with no following NN. Again, my regexes for this are a bit flaky, but here's a pile of examples:

```
    in military or police custody &mdash *** some executed *** without trial and many others as
       is internationalism , a feature , *** some might *** say , of twentieth-century art ;
                 of art , or aesthetics , *** many do *** not in fact contain any art
            possible , so we apologise if *** any are *** missing , and guarantee , they
   but it is increasingly unlikely that *** any would *** be acceptable to the United board
        , another was better organised , *** two had *** marvellous raw materials , another was
              in Canada from my village , *** four came *** back .
```

There are some others which are so common that we've more or less come to assume that there are two distinct words: we say that '*this*' and '*that*' can be either determiners or pronouns, and that '*one*' can be a a determiner or a noun. But once we accept that '*many*', '*some*', numbers bigger than one, . . . can appear without a noun, then it looks as though maybe '*this*' and '*that*' are also noun-less determiners rather than pronouns. '*One*' can appear as all sorts of apparently different things – I may return to that later. I've only done examples with '*this*' below, because '*that*', like '*one*', is so multipurpose that we get loads of other readings which will just confuse things. I quite like '*For some this makes hospitalization inevitable*', because it also contains an elliptical use of '*some*' as well.

```
      helpful in identifying the need for *** this service *** .
              , bquo With the opening of *** this office *** in Glasgow , ACET 's volunteer
not all employers offer their employees *** this facility *** ) .
             or dying with AIDS , even *** this is *** increasingly common . equo
                            For some *** this makes *** hospitalization inevitable .
       specified in the Deed , and *** this is *** the sum that is payable each
```

Summary : at least some things which are normally thought of as determiners can appear without a following NN. Just to make matters even more challenging, some of these can also include a phrase that you would normally think of as an NN post-modifier: determiner+0+relative clause, determiner+0+PP (always a post-modifier: if you wanted a premodifier you'd say '*a long one*', '*a simple one*', . . .

```
                     Indeed , there are *** some who *** feel that there should be no
            While the party contains *** many who *** actively seek peace and reconciliation ,
            The Conference would wish *** all who *** may take part in the referendum
ghly organized pressure group headed by *** many who *** had previously mounted the Pro-Life Anti-ab
           His words were taken up by *** many who *** would not have dreamed of opening

  Military Prison outside Kuwait City , *** some for *** over a month , reportedly in
        , lined with Baroque statues ( *** many between *** 1700 and 1720 ) , and
              in a number of books , *** some by *** investigative outsiders , some in memoirs
              state , it is seen by *** many in *** the alliance to inhere in the
   dedicated pastors and much liked by *** many in *** the local community , immediately opposed
```

Semi-determiners

It is fairly common practice to distinguish between adjectives and specifiers/determiners. '*red*' is an adjective, i.e. is a word which adds some information to the description supplied by the head noun; '*the*' is a determiner, i.e. it tells you what to do with this description (e.g. find an entity which can be proved to fit the description using only information that is in the minutes). We know that for some kinds of NP, you don't have to have a specifier ('*I was playing tennis*', '*She prefers*

peaches to pears'): there is a lot of discussion of what you are supposed to do with the descriptor in these situations, almost all of it wrong (Ramsay (1992) gets it right, everyone else gets it wrong), but it is clear that there is some kind of implicit specifier here. And that sort of already says that you can add information to an NN/NP which already as a specifier – '*I was playing really rubbish tennis*', '*She prefers ripe peaches to underripe pears*'.

Well, it sort of already says that, but of course the specifier on a bare noun like '*tennis*' or '*peaches*' is only implicit, so maybe that's why you can add an adjective to it. There are, however, some words that would, again, normally be regarded as determiners but which can be preceded by explicit determiners. I'm just going to include some cases with '*two*' and '*many*' here, because other examples tend to be less clearcut and include more false positives. I will do some later, but for now I'm just offering these as examples to show that there are cases where things that are normally regarded as specifiers can appear in more adjective-like positions:

```
ard planning and good communication are *** the two *** foundation stones that must be in
        help and perhaps I can combine *** the two *** visits .
 first hand information is generated by *** the many *** missions and research trips Amnesty sends
      even the functions and methods of *** the two *** sorts of writer have drawn apart
                          This is one of *** the many *** books which address the snobbery of
```

We already know that there is an order in which simple adjectives can occur – that you can say '*a big red bus*' but not a '*a red big bus*', '*a fine young lamb*' but not so easily '*a young fine lamb*' – and one simple way to deal with this is by assigning a 'strength' to each adjective, requiring them to be attached in order of strength (this is a fairly yuk way of doing it, and it should really be something about either the permanance or the discriminatoriness of the property described by the adjective, but it's a useful working approximation).

So I am now going to say that there are two things we care about:

modified: an NN can have modifiers attached to it. The modifier will assign a number to the feature `modified`, with the constraint that you can't add a modifier to a phrase which already has higher value modifier attached to it.

specifier: a phrase has a specifier if it consists of a description and an instruction telling you what to do with that description (er, this is a very proof-theoretic way of looking at it, which of course is what I like. It could be rephrased model theoretically, e.g. by saying that a specifier takes an entity of type $e \to t$ and turns it into something of type $(e \to t) \to t$ (e.g. 'a' = $\lambda P \lambda Q \exists X (P.X Q.X)$, where P and Q are themselves properties/functions from $e \to t$)).

Given that, we can say that a word can modify something headed by an N so long as it hasn't already been modified by something stronger; and that certain bare nouns come with a built-in specifier, and certain modifiers can supply one. **There is no strong link between these**, in particular a modifier can add a specifier to something that already has one. So in '*the two foundation stones*', '*stones*' has a built-in specifier; this is inherited when the adjective '*foundation*' is added; '*two*' is a stronger modifier than '*foundation*', so it can be added, doing two things: it improves the description by saying how many foundation stones there were, and it adds a specifier; '*the*' is stronger yet, and its job is to add a different specifier without enriching the description. All of ' *planning and good communication are stones*', ' *planning and good communication are foundation stones*', '*planning and good communication are two foundation stones*', ' *planning and good communication are the two foundation stones*' are grammatical and meaningful (well, the first one's a bit odd): as we add modifiers we get to know more about these stones, and we get different instructions about what to do with this description (do what you do with bare plurals for '*stones*' and '*foundation stones*', introduce some stones into the minutes with '*two foundation stones*', find a pair of foundation stones in the minutes with '*the two foundation stones*').

Summary: some words which modify phrases headed by Ns include an instruction about what to do with the description encoded by the target phrase. These instructions can be overridden by 'stronger' modifiers.

Special cases

A lot of N modifiers display very idiosyncratic behaviours. With any luck, the patterns described above can be used to explain, though probably not predict, these behaviours. The current section looks at a number of such cases.

'*few*'

'*few*' accepts elliptical targets (first four below) and combines with '*of*' (next four). Nothing so odd here.

```
              down a word or two , *** few will *** turn as naturally to painting or
      &equo common in such chefs , *** few are *** offered jobs .
      baskets for the summer , but *** few arrange *** for a similarly splendid winter and
         And of those that do , *** few will *** try them more than once or

                      There can be *** few of *** us who can not make a
se-pipe will disperse larger colonies , *** few of *** the insects surviving to climb back
committed organic gardeners , there are *** few of *** us who never need to resort
      autocracy can produce , but which *** few of *** the chief officers seem willing to
```

It can also combine with a preceding '*the*', just like '*many*'. Uniquely (I think) it can combine with a preceding '*a*':

```
            for the format is one of *** the few *** in which a generous number of
ropologist Jacques Maquet knew was that *** a few *** weeks after finishing this sombre painting
      who could not wait to climb *** the few *** steps to the communal toilet on
            Representatives of *** the few *** people they had come to know
      shouts of laughter broke out as *** a few *** of them came out from the
            They had made sure of *** the few *** proprietors between there and Dunkeld ;
```

'*a few*' and '*the few*' do appear with '*of NP[+def]*', but they are pretty rare – 3% (24/719) of the occurrences of '*a/the few*' in `BNC/A`.

```
      shouts of laughter broke out as *** a few of *** them came out from the gate
            to the end , one of *** the few of *** her generation who integrated the immense
      crack of the 15 pounders as *** a few of *** them opened fire , the guns
                      As *** a few of *** us stand and look at the
```

'*few*' does also display a couple of other unusual behaviours. Firstly, it accepts a small range of adverbs as modifiers:

```
                  I have *** far fewer *** friends and I am partially sighted
  the illustrations in any general book *** relatively few *** are in colour ; a careful
      who had any career success were *** extremely few *** in number .
      my own life there have been *** very few *** genuine beginnings , only three or
  listed &mdash and there are still *** dismally few *** &mdash such an attitude inevitably lead
            There are *** surprisingly few *** popular patterns of cutlery &mdash
```

Secondly, '*a few*' co-occurs very frequently with '*only*':

```
gesting visits at breakneck speed where *** only a few *** items or rooms will be seen
rmation about sitters for portraits are *** only a few *** of the varied topics which can
      terms of reference which can give *** only a few *** useful results , for on the
            It takes *** only a few *** minutes .
  to remember events that had happened *** only a few *** minutes earlier .
      country , may be contrived in *** only a few *** years in a garden by reversing
```

'*the few*' does also occur, though very very rarely: seven instances in the entire BNC. Some are elliptical, or elliptical with a post-modifier, but I don't think there's a huge amount to be read into that.

```
        extended to all , essentially affect *** only the few *** ; and now an attempted prohibition
              to live out my life with *** only the few *** possessions I have managed to buy
                    had no voice at , and *** only the few *** remaining Polish gentry had any represe
              oil and orange juice , but *** only the few *** scheme-housing children had bathrooms .
              , at the highest level , *** only the few *** are competent .
                  in so low a tone that *** only the few *** near them had heard him .
                  Up now I have heard *** only the few *** reluctant words in the lane .
```

I'm not at all sure that there is any big connection between '*only*' and '*a/the few*'. I think that it is probably a sentence modifier, probably along the lines suggested by Ramsay (1994). I will return to this to see how '*only*' combines with other specifiers.

'*least*', '*most*'

'*least*' and '*most*' share a number of behaviours. Most of these are fairly straightforward, and I will go through these first to eliminate them before we get to the interesting ones.

The first, and most obvious, thing is that '*most*' can behave as a fully-fledged specifier:

```
        town as the defendant &equo ( *** most blacks *** live in the same part of
                        In reality , *** most attorneys *** have made almost no preparation for
            interests , as is true of *** most groups *** of artists , but their initial
                  It will be clear to *** most people *** here that the attack is deserved
            , and are still , for *** most people *** , including themselves , palpably Jewish
```

Some people think that '*most attorneys have made almost no preparation*' means '*more than half the set of attorneys have made almost no preparation*', some think it's a rule that allows you to infer '*X has made almost no preparation*' from the assumption that X is an attorney so long as you have no evidence that he or she has actually made some preparation. They are both tenable positions, and I am not concerned (here) with which, if either, is right. I am simply taking these as examples where '*most*' is a specifier. The regex that returned me these examples does **not** return anything comparable for '*least*'. I do not believe that '*least*' can be used in this way.

Then they can both function as straightforward adjectives, meaning something like '*smallest*' and '*greatest*': you could more-or-less substitute '*smallest*' and '*greatest*' for '*least*' and '*most*' in the folliing examples and get something that was almost grammatical and meant almost the same. These uses just about always occur with '*the*': I found no examples of either of these being used as an adjective with '*a*'. This shouldn't be surprising – there can only be one thing that is at the extreme end of a scale, so uniqueness is pretty well guaranteed.

```
      wisest of our ancestors never had *** the least conception *** of any of 'em .
bquo something exquisitely fresh , with *** the least amount *** of modification in the process of
at the constructivism that has received *** the most attention *** in psychology and philosophy has
  their wretched clothes &hellip without *** the least sign *** of sympathy . &equo
                  But if there was *** the least chance *** of getting out before bedtime he
```

They can also both be used as adverbs, generally but not always for modifying adjectives (or adjectival gerunds (gerundives? I can never get this straight)). There are occasional uses as straight VP modifiers (see fourth group) but they are much rarer. This time you do get indefinite NPs (third group), which seems odd at first sight, because again the adjectival phrase ('*most boring*', '*most frightful*') puts the entity at the extreme end of some scale, and hence uniqueness would seem to be guaranteed.

```
        with other agencies , is the *** most effective *** way of ensuring the needs of
                        The *** most common *** way for the virus to spread
                        It is *** most important *** to appoint at one Executor when
  this global epidemic wherever it is *** most needed *** .

            : Making it</hi> must be the *** least pious *** book that has ever been written
                        The *** least expensive *** method is to root your own
                But even in the *** least conducive *** conditions , with no wind ,
aining the greatest efficiency with the *** least possible *** expense and labour
```

```
              as Harsnet had written ) , *** a most boring *** subject .
         in the morning and then had *** a most frightful *** pain in her tummy . &equo</p>
                 , the peace lily , is *** a most elegant *** houseplant , with glossy green lance-
            man of God to officiate at *** a most solemn *** sacrament &equo . &equo
```

(there are no examples of this with '*least*')

```
                at the very heart of what *** he most wished *** to believe .
      of little flights of steps where *** he least expected *** them .
Wimbledon remains favourite as the one *** they most want *** to win ) are due very
        speak &mdash to those steps which *** they most enjoyed *** and thus performed best , they
              who could not say the things *** he most wanted *** to say but who , nevertheless
```

I think that the above are all the straighforward uses of '*most*' and '*least*'. But they also take part in the construction that started this ramble through the thickets of determiners and specifiers – '*at (the (very)?)? least/most N*':

```
quo every Parishioner shall communicate *** at the least three *** times in the year , of
                             There 's *** at least one *** track from all eight albums ,
           Hall on perhaps two , or *** at the most three *** , separate occasions simply for th
        the same basic source , or *** at the very least two *** sources .
                There 's usually *** at least two *** of them .
                           There 's *** at least one *** blown over is n't there ?
```

These are fairly rare (these are all the instances of any variation on this pattern in the BNC). They all seem to have much the same truth conditions: a Montague-style translation would be $\lambda P \lambda Q(\exists X :: \{|X| \geq N \& P.X\}Q.X)$ – I can't see that the presence of '*the*' makes any difference at all, and '*very*' is commentary rather than propositional content. The last one is interesting, since it seems to me to be another example of a quantifier where some element has been displaced – I think that '*Only send in three tracks at the most (naturally your best)*' and '*Only send in at the most three tracks (naturally your best)*' say the same thing, with '*at the most*' having been displaced for some kind of discourse reason.

If we don't demand that '*at (the (very)?)? least/most*' is followed by a number, we get the following:

```
 disappointing for a reader who expects *** at the least *** some evaluation of the shows .
          are unhappy here , that 's *** at least *** partly my fault .
       This makes the anthropologist *** at the least *** an uncomfortable associate , at the
   evening to realise that there was *** at the very least *** and latest , an unfinished convers
                          There 's *** at least *** an hour or so of sunshine
        is a cognisant act involving , *** at the very least *** , a conception of a one's
      has a rather privileged status ; *** at the very least *** , that it has a beginning
            have been revealed ; or , *** at the very least *** , and least interestingly , that
            meal in a restaurant , then *** at the very least *** we should all have seen the
achieved a respectable measure of unity *** at most *** levels of the party .
             with a debt which is , *** at the most *** charitable interpretation , expensive .
```

There are many more of these than of '*at (the (very)?)? least/most N*'. A few of them may actually be instances of this pattern, e.g. '*There 's at least an hour or so of sunshine*' is pretty similar to '*There 's at least one hour or so of sunshine*', so maybe (maybe) '*an*' here is a number. Of the others, it is notable in a good number of cases that '*at the very least*' is wrapped in a pair of parenthetcal commas; and that examples involving '*most*' tend to have multiple readings – one where '*at (the (very)?)? most*' is a specifier, and one where the whole thing is a PP ('*at most levels of the party*', '*at the most charitable interpretation*'). It's hard to see how you would disambiguate this unless the surrcounding syntactic context did it for you (which it will in these two examples, so maybe everything will just come out in the wash).

I think the big question here is how strong is the connection between '*at least N*' and just plain '*at least*'. I don't see much wrong with the interpretation above for '*at least N*', and while there may or may not be neat ways of computing whether or not '*At least six dogs won prizes*' contradicts '*At most three animals won prizes*', I think that saying that there was a set of dogs of cardinality $\geq$

6 is about right. But obviously this won't work for things like '*This makes the anthropologist at the least an uncomfortable associate*'. So either the '*at the least*' has two different meanings, one when it combines with a number to make a complex specifier and one when it combines with something else, which would be annoying; or just saying that it's about the cardinality of a set won't work.

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