Syntax of Dutch

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Published by Amsterdam University Press

den Dikken, Marcel and Hans Broekhuis.
Amsterdam University Press, 2012.
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Chapter 6
Numerals and quantifiers

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Introduction

This chapter will discuss the use of numerals and quantifiers within the nominal projection. Generally speaking, these elements occur in prenominal position after the determiners, as in (1a&b). This can be accounted for by assuming that the structure of the noun phrase is as given in (1c), where D indicates the position of the determiners and NUM/Q the position that can be occupied by a numeral or a quantifier. We will see, however, that, especially in the case of quantifiers, there are several deviant patterns that cannot be readily accounted for by means of the structure in (1c).

(1)  a.  de drie boeken
    the three books
  b.  de vele problemen die hij had
    the many problems that he had
  c.  [DP D [NUMP NUM/Q [NP ... N ...]]]

We will start in Section 6.1 with a discussion of the numerals. Section 6.2 will be concerned with the quantifiers. Section 6.3 conclude this chapter with a more detailed discussion of so-called °quantitative er, given that this element may only occur in association with indefinite noun phrases that contain a cardinal number or a well-defined subset of quantifiers: Ik heb er [NP twee/veel [e]] ‘I have got two/a lot of them’.

6.1. Numerals

Traditionally two types of numerals are distinguished: cardinal numerals like *vijf* ‘five’ and ordinal numerals like *vijfde* ‘fifth’. These two types of numerals will be discussed in separate sections.

6.1.1. Cardinal numerals

This section starts in 6.1.1.1 with a discussion of the form of the cardinal numerals. It will be shown that the rules for coining numerals are pretty complex and allow a relatively large amount of variation. Section 6.1.1.2 focuses on the semantics of the numerals, and will show that determiner-less noun phrases normally allow two readings, which we will refer to as the indefinite and the partitive reading. Section 6.1.1.3 discusses the position of the numerals within the noun phrase. Finally, Section 6.1.1.4, discusses modification of the numerals.

6.1.1.1. Simple and compound forms

The rules for the formation of complex cardinal numerals are themselves rather complex and often leave room for several alternative options. Three processes may be involved; see also Booij (2010:ch.8). The first is DERIVATION, that is, cases where the complex form is derived by means of a bound morpheme. This is mainly the case with the formation of those numerals from 20 to 90 that correspond to multiples of 10; two examples are given in (2a). The second process seems to involve COMPOUNDING, and forms complex cardinal numerals from simpler ones that can occur independently. It must be noted, however, that at least some of these
complex forms may plausibly be analyzed as phrases, which is also reflected in the orthographical rules, which require some of these complex numerals to be written as one word, but others as separate words; some examples are given in (2b). Finally, complex numerals can be formed by means of COORDINATION with *en* ‘and/plus’, as in (2c). Although this process results in formations that are phrase-like, the orthographic rules require a complex form to be written as a single word when it refers to a number below 100, which may be related to the fact that the element *en* must be obligatorily realized in such cases. The complex numerals above 100, on the other hand, must be written as separate words, which may be related to the fact that the conjunction *en* is optional in these cases.

(2)  

b. Compounding: * Vijf-tien* (15), *Vijf-honderd* (500), *Zes miljoen* (6,000,000)  
c. Coordination: *Vijfenvijftig* (55), *Honderd (en) Vijf* (105)

Example (3) provides the cardinal numerals from 0 to 19. The numerals corresponding to 0 to 12 (given in small caps) are all base forms. The remaining numerals are compound-like with the numeral *tien* acting as the second member of the compound. The first member is one of the numerals corresponding to 5 to 9, or one of the irregular bound morphemes *der-* and *veer-*, which also feature in *dertig* ‘thirty’ and *veertig* ‘forty’ (these irregular forms are given in italics).

(3) The numerals 0 to 19

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>NUL</td>
<td>10</td>
<td>TIEN</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>ÉÉN</td>
<td>11</td>
<td>ELF</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>TWEE</td>
<td>12</td>
<td>TWAALF</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>DRIE</td>
<td>13</td>
<td>der-tien</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>VIER</td>
<td>14</td>
<td>veer-tien</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>VIF</td>
<td>15</td>
<td>vijf-tien</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>ZES</td>
<td>16</td>
<td>zes-tien</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>ZEVEN</td>
<td>17</td>
<td>zeven-tien</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>ACHT</td>
<td>18</td>
<td>acht-tien</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>NEGEN</td>
<td>19</td>
<td>negen-tien</td>
<td></td>
</tr>
</tbody>
</table>

Example (4) shows that the numerals corresponding to the multiples of 10 from 20 to 90 all feature the bound morpheme *-tig*. Most of these forms are regular derivations from the simple numerals in Example (3), but there are also less regular formations. The first is *twintig* ‘twenty’, in which the morpheme *-tig* is attached to the form *twin-*, which does not appear elsewhere in the numeral system. Other more or less irregular forms are *dertig* ‘thirty’ and *veertig* ‘forty’, which are derived from the bound morphemes *der-* and *veer-*, which also appear in *dertien* ‘thirteen’ and *veertien* ‘fourteen’. Finally, there is *tachtig* ‘eighty’ where the first morpheme features a /t/ in the onset which is not found in the base form *acht* ‘eight’. The remaining numbers between 20 and 100 are phrase-like, and are built up by means of coordination of one of the numerals from 1 to 9 and one of the forms in the first column in example (4) by means of the conjunction-like element *en*. As was mentioned above, these combinations are written as single words; the ortho-
graphical system apparently treats these combinations as compounds employing the “binding” morpheme -en-. Some examples are given in the second and third columns of the table in (4).

(4) Numerals from 20 to 100

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>twin-tig</td>
<td>21</td>
<td>éénentwintig</td>
<td>29</td>
</tr>
<tr>
<td>30</td>
<td>der-tig</td>
<td>31</td>
<td>éénendertig</td>
<td>39</td>
</tr>
<tr>
<td>40</td>
<td>veer-tig</td>
<td>41</td>
<td>éénenveertig</td>
<td>49</td>
</tr>
<tr>
<td>50</td>
<td>vijf-tig</td>
<td>51</td>
<td>éénenvijftig</td>
<td>59</td>
</tr>
<tr>
<td>60</td>
<td>zes-tig</td>
<td>61</td>
<td>éénenzeventig</td>
<td>69</td>
</tr>
<tr>
<td>70</td>
<td>zeven-tig</td>
<td>71</td>
<td>éénenzeventig</td>
<td>79</td>
</tr>
<tr>
<td>80</td>
<td>tacht-ig</td>
<td>81</td>
<td>éénentachtig</td>
<td>89</td>
</tr>
<tr>
<td>90</td>
<td>negen-tig</td>
<td>91</td>
<td>éénennegentig</td>
<td>99</td>
</tr>
</tbody>
</table>

The first column of table (5) gives the names of the numerals that correspond to 10 to the power of 2, 3, 6, 9 and 12. Names for larger numbers do exist, but these are normally not found in colloquial speech. Numerals referring to multiples of these numbers are again compound-like and are normally formed by placing one of the numerals between 0 and 999 in front of the numeral in the first column of table (5). In the second and third column some examples are given.

(5) Higher numeral (round figures)

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>$10^2$</td>
<td>honderd</td>
<td>$2 \cdot 10^2$</td>
<td>tweehonderd</td>
<td>$12 \cdot 10^2$</td>
<td>twaalfhonderd</td>
</tr>
<tr>
<td>$10^3$</td>
<td>duizend</td>
<td>$2 \cdot 10^3$</td>
<td>tweeduizend</td>
<td>$500 \cdot 10^3$</td>
<td>vijfhonderdduizend</td>
</tr>
<tr>
<td>$10^6$</td>
<td>miljoen</td>
<td>$2 \cdot 10^6$</td>
<td>twee miljoen</td>
<td>$500 \cdot 10^6$</td>
<td>vijfhonderdmiljoen</td>
</tr>
<tr>
<td>$10^9$</td>
<td>miljard</td>
<td>$2 \cdot 10^9$</td>
<td>twee miljard</td>
<td>$500 \cdot 10^9$</td>
<td>vijfhonderdmiljard</td>
</tr>
<tr>
<td>$10^{12}$</td>
<td>biljoen</td>
<td>$2 \cdot 10^{12}$</td>
<td>twee biljoen</td>
<td>$500 \cdot 10^{12}$</td>
<td>vijfhonderdbiljoen</td>
</tr>
</tbody>
</table>

Four additional remarks on the higher cardinal numerals in Example (5) are in order.

I. Numerals corresponding to the multiples of 100 between 1,000 and 10,000

The majority of the numerals corresponding to the multiples of 100 between 1,000 and 10,000 can be realized in more than one ways. One option is to use a compound which takes -honderd as its second member: it seems that in speech this is the only option for the multiples of 100 between 1100 and 2000.

(6) a. elfhonderd [1,100]              f. zestienhonderd [1,600]  
b. twaalfhonderd [1,200]             g. zeventienhonderd [1,700]  
c. dertienhonderd [1,300]             h. achttenhonderd [1,800]  
d. veertienhonderd [1,400]             i. negentienhonderd [1,900]  
e. vijftienhonderd [1,500]  

An alternative form is regularly used for multiples of 100 between 2,000 and 10,000, so that the regular forms in the primeless examples of (7) alternate with the forms in the primed examples.
Numerals and quantifiers

(7) a. vijfentwintighonderd  a’. tweeduizend vijfhonderd  [2,500]
b. drieënzeventighonderd  b’. vierduizend driehonderd  [4,300]
c. vierentachtighonderd  c’. achtduizend vierhonderd  [8,400]
d. tweeënnegentighonderd  d’. negenduizend tweehonderd  [9,200]

This does not hold, at least not in colloquial speech, for the numbers 2100, 3100, etc. These numbers are normally expressed by means of the regular compound with –honderd; using the forms in the primed examples of (8) is possible provided that the numeral één is included but it feels somewhat emphatic and artificial.

(8) a. éénentwintighonderd  a’. tweeduizend *(één) honderd  [2,100]
b. éénendertighonderd  b’. drieduizend *(één) honderd  [3,100]
c. éénenveertighonderd  c’. vierduizend *(één) honderd  [3,100]

Compound forms with -honderd are never used for the multiples of 1000 in (9a-d). The same thing holds for numbers over 10,000. This is illustrated in (9e).

(9) a. duizend  a’. *tienhonderd  [1,000]
b. tweeduizend  b’. *twintighonderd  [2,000]
c. drieduizend  c’. *dertighonderd  [3,000]
d. tienduizend  d’. *honderdhonderd  [10,000]
e. tienduizend vijfhonderd  e’. *honderdenvijfhonderd  [10,500]

II. Compound numerals of which the first part exceeds 1000

Occasionally, the first part of a compound-like form is a numeral higher than 1000, as in the primeless examples of (10). In these cases speakers tend to use yet another way of expressing the number, examples of which are given in the primed examples. This option is restricted to fairly round figures; for other cases see the examples in (13) below.

(10) a. twaalfhonderd duizend  a’. één komma twee miljoen  [1,200,000]
twelve hundred thousand  one comma two million
b. twaalfhonderd miljoen  b’. één komma twee miljard  [1,200,000,000]
twelve hundred million  one comma two billion
c. twaalfhonderd biljoen  c’. één komma twee biljoen  [1,200,000,000,000]
twelve hundred billion  one comma two quadrillion

Of course, this way of expressing the numerals in (10) is related to the fact that in Dutch the comma is used to divide a whole number from a decimal portion instead of the period (as in English). Thus, één komma twee miljoen corresponds to one point two million in English.

III. Numerals preceded by an article and/or (ander-)half

The second and third columns of the table in (5) show that the orthographic conventions are somewhat complex: the compound-like forms derived from honderd ‘hundred’ and duizend are treated as single words, whereas the complex forms based on miljoen, miljard and biljoen are written as two separate words. This may be related to the fact that the latter forms seem to have noun-like properties that are missing, or at least less prominent, in the case of honderd and duizend. Two of
these properties are the ability to be preceded by the indefinite article *een* ‘a’ and the ability of taking a modifier like *half* ‘half’ or *kwart* ‘quarter’; this is shown in the primeless and singly-primed examples in (11). Still there is need for some caution: the doubly-primed examples show that all forms allow plural formation, which is also a nominal property, and a Google search revealed that the forms marked with a star do occur on the internet, especially with nouns indicating a measure unit like *euro* or *kilometer*.

(11)  

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>*een honderd boeken a’. a half honderd boeken a”. honderden boeken</td>
</tr>
<tr>
<td>b.</td>
<td>*een duizend boeken b’. a half duizend boeken b”. duizenden boeken</td>
</tr>
<tr>
<td>c.</td>
<td>een miljoen boeken c’. een half miljoen boeken c”. miljoenen boeken</td>
</tr>
<tr>
<td>d.</td>
<td>een miljard boeken d’. een half miljard boeken d”. miljarden boeken</td>
</tr>
<tr>
<td>e.</td>
<td>een biljoen boeken e’. een half biljoen boeken e”. biljoenen boeken</td>
</tr>
</tbody>
</table>

The examples in (11a&b) are unacceptable on the intended reading but marked with a number sign because they are possible with an approximate reading “about a hundred/thousand books”. This reading is not relevant here, since in that case we are dealing with one of the spurious uses of the indefinite article; cf. Section 5.1.4.3, sub II. Note further that example (11b’) involving *duizend*, contrasts sharply with examples like (12b&b’), which offers a third option in addition the (a)-examples in (7); this contrast does not show up in the case of *honderd*.

(12)  

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>*anderhalf honderd boeken a’. tweeëneenhalf honderd boeken</td>
</tr>
<tr>
<td>b.</td>
<td>*anderhalf duizend boeken b’. tweeëneenhalf duizend boeken</td>
</tr>
<tr>
<td>c.</td>
<td>anderhalf miljoen boeken c’. tweeëneenhalf miljoen boeken</td>
</tr>
<tr>
<td>d.</td>
<td>anderhalf miljard boeken d’. tweeëneenhalf miljard boeken</td>
</tr>
<tr>
<td>e.</td>
<td>anderhalf biljoen boeken e’. tweeëneenhalf biljoen boeken</td>
</tr>
</tbody>
</table>

IV. The conjunction *en* ‘and’

The remaining numerals are phrase-like in nature. The several subparts of the numeral are generally optionally conjoined by means of the conjunction *en*. Some examples are given in (13). Note that, in contrast to *honderd* and *duizend*, the elements *miljoen* and *miljard* are obligatorily preceded by the numeral *één*.

(13)  

<table>
<thead>
<tr>
<th>Example</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>honderd (en) vieren twintig hundred and twenty-four</td>
</tr>
<tr>
<td>b.</td>
<td>duizend (en) vieren twintig thousand and twenty-four</td>
</tr>
</tbody>
</table>
c. één miljoen (en) tweeduizend (en) vierentwintig  
    one million and two thousand and twenty-four  
    \[1,002,024\]

d. één miljard (en) drie miljoen (en) tweeduizend (en) vierentwintig  
    one billion and three million and two thousand and twenty-four  
    \[1,003,002,024\]

### 6.1.1.2. Semantics

The easiest way to explain the core meaning of the cardinal numerals is by using Figure 1 from Section 1.1.2.2.1, repeated below, to represent the subject-predicate relation in a clause. In this figure, \(A\) represents the denotation set of the subject NP and \(B\) the denotation set of the verb phrase, where \(A\) and \(B\) are both contextually determined, that is, dependent the domain of discourse (domain D). The intersection \(A \cap B\) denotes the set of entities for which the proposition expressed by the clause is claimed to be true. In an example like *Jan wandelt op straat*, for example, it is claimed that the set denoted by \(A\), viz. \{Jan\}, is included in set \(B\), which is constituted by the people walking in the street. In other words, it expresses that \(A - (A \cap B) = \emptyset\).

![Figure 1: Set-theoretic representation of the subject-predicate relation](image_url)

The semantic function of the cardinal numerals is to indicate the size or cardinality of the intersection of \(A\) and \(B\). In (14a), for example, the numeral *twee* ‘two’ indicates that the cardinality of the intersection \(A \cap B\) is 2.

(14)  

a. Er lopen twee jongens op straat.  
    there walk two boys in the street  
    ‘Two boys are walking in the street.’

b. \(\emptyset\) twee Npl: \(|A \cap B| = 2\)

Normally, the numerals do not give any information about the remainder of set \(A\), that is, \(A - (A \cap B)\) may or may not be empty. Information like this is usually expressed by means of the determiners: in addition to the information expressed by the numeral that the cardinality of the intersection of \(A\) and \(B\) is 2, the definite determiner *de* in (15a) expresses that \(A - (A \cap B)\) is empty.

(15)  

a. De twee jongens lopen op straat.  
    the two boys walk in the street  
    ‘The two boys are walking in the street.’

b. de twee Npl: \(|A \cap B| = 2\) & \(A - (A \cap B) = \emptyset\)
In the absence of the definite determiner, it is the sentence type that provides additional information about the cardinality of $A - (A \cap B)$. In (14a), for example, the sentence contains the °expletive *er* and is therefore presentative; the subject introduces a set of new entities into the domain of discourse, and from this we may conclude that there was no mention of boys in the domain of discourse before the sentence was uttered. The most plausible reading is therefore one according to which $A - (A \cap B) = \emptyset$.

It seems, however, that we are dealing here instead with a conversational implicature (Grice 1975) than with syntactically or lexically encoded information. The first reason to assume this is that the implication that $A - (A \cap B)$ is empty is absent in non-representative clauses. In (16a), for example, the subject is interpreted as specific, that is, at least known to the speaker, and now the implication that all boys in the domain of discourse are part of the intersection of A and B is absent.

(16) a. twee jongens lopen op straat
    two boys walk in the street
    ‘Two boys are walking in the street.’

    b. $\emptyset$ twee Npl; $|A \cap B| = 2 \& A - (A \cap B) \geq 0$

An even more compelling reason is that the implication in expletive constructions like (14a) that $A - (A \cap B)$ is empty can be cancelled when the context provides sufficient evidence that set A is not exhausted by the intersection $A \cap B$. Consider for example the small discourse chunk in (17). Since the context leaves no doubt that many students were involved in the protest action, neither (17b) nor (17b') implies that the two students who were arrested exhaust the complete set of demonstrating students.

(17) a. Er was gisteren een grote demonstratie op de universiteit.
    there was yesterday a big protest action at the university
    ‘There was a big protest action at the university yesterday.’

    b. Er werden twee studenten gearresteerd.
    there were two students arrested
    ‘Two students were arrested.’

    b'. Twee studenten werden gearresteerd.
    two students were arrested

Normally, and also in this work, the difference between (14a) and (16a) is discussed in terms of the PURELY QUANTIFICATIONAL versus the PARTITIVE reading of indefinite noun phrases: the former is supposed to only express the quantificational meaning of the cardinal numeral, whereas the latter expresses in addition that we are only dealing with a subpart of the denotation set of the NP. In the latter case, the noun phrase *twee studenten* ‘two students’ is treated as essentially synonymous with the true partitive construction in (18a) where the partitive *van-PP* explicitly refers to the superset from which the entities referred to by the complete noun phrase are taken; see 4.1.1.6 for further discussion of this construction.
The data in (17b&b’) show, however, that this one-to-one correspondence cannot be maintained. This does not mean that we cannot make a distinction between purely quantificational and partitive indefinite noun phrases, but that we must keep in mind that the distinction is probably not syntactic in nature, but rather forced upon us by the context in which the indefinite noun phrase is used. For the moment, we may therefore simply conclude that the meaning expressed by the numeral is restricted to indicating the cardinality of the intersection $A \cap B$ in Figure 1.

6.1.1.3. Noun phrases containing a cardinal numeral

This section discusses noun phrases containing a cardinal numeral. Section 6.1.1.3.1 starts with a discussion of the properties of the head noun. This is followed in 6.1.1.3.2 by a brief discussion of determiners in noun phrases containing a cardinal numeral. Section 6.1.1.3.3 concludes with a discussion of the position of the cardinal numerals within the noun phrase.

6.1.1.3.1. The head noun

The examples in (19) show that the cardinal numerals, with the exception of ‘one’, are normally followed by a plural count noun. There are, however, many exceptions to this general rule, which we will discuss in the remainder of this section.

(19)  
a. één boek/*boeken            c. honderd boeken/*boek  
one book/books                    a.hundred books/book
b. twee boeken/*boek            d. honderd en één boeken/*boek 
two books/book                   hundred and one books/book

I. Substance nouns

The primeless cases in (20) show that substance nouns may follow a numeral when they refer to conventional units of the substance denoted by the noun. One might wish to explore the possibility that these noun phrases are actually binominal constructions involving an empty noun corresponding to the container noun in the primed examples; cf. the discussion of example (60) in 1.2.2.1.3.

(20)  
a. drie koffie                a’. drie koppen koffie  
three coffee                  three cups [of] coffee
‘three, e.g., cups of coffee.’

b. twee suiker                 b’. twee klontjes/pakken suiker

two sugar                     two lumps/packs [of] sugar
‘two, e.g., packs/lumps of sugar’

There is, however, a conspicuous difference between the primeless and primed examples, which suggests that a binominal analysis of the primeless examples in (20) is not feasible; the examples in (21) show that the two nominal constructions differ in number, the noun phrase *drie koffie* triggers singular agreement on the finite verb in (21a), whereas the binominal construction *drie koppen koffie* triggers
plural agreement. Note further that the examples in (21) show that it is the number of the head noun that determines subject-verb agreement, and not the numeral.

(21) a. Er staat/*staan drie koffie op de tafel.
    there stands/stand three coffee on the table

b. Er staan/*staat drie koppen koffie op de tafel.
    there stand/stands three cups [of] coffee on the table

II. Measure nouns

Another exception to the general pattern is that nouns referring to conventional measure units may appear in their singular form. The following three subsections discuss three different subcases.

A. Measure nouns in binominal construction.

A first group of measure nouns are those that may appear in a binominal construction. Example (22) shows that these nouns often have the option of appearing either in the singular or in the plural form; cf. Section 4.1.1 for additional discussion. The difference between the primeless and primed examples is that in the former, the speaker is referring to a total amount of three meters/liters/kilos of the substance denoted by the second noun, whereas in the latter case the speaker is referring to three units of the substance denoted by the second noun of one meter/liter/kilo each.

(22) a. drie meter draad
    three meter [of] thread

b. drie liter wijn
    three liter [of] wine

c. drie kilo suiker
    three kilo [of] sugar

(23) a. twee dozijn/*dozijnen knikkers
    two dozen/dozens [of] marbles

b. twee gros/*grosen knikkers
    two gross/grosses marbles

c. twee miljoen/*miljoenen knikkers
    two million/millions marbles

The examples in (24) show that in these cases also it is the number of the noun, and not the cardinal numeral, that triggers subject-verb agreement, which is of course related to the earlier observation that the speaker is referring to a total amount of three meters of thread in (24a), but to three threads of one meter each in (24b); cf. the discussion of (22).
(24) a. Er ligt/*liggen nog drie meter draad op de plank.
   there lies/lie still three meter [of] thread on the shelf
b. Er liggen/*ligt nog drie meters draad op de plank.
   there lie/lies still three meters [of] thread on the shelf

B. Measure nouns denoting time units

The situation is somewhat more complex when the measure noun denotes a certain
time interval. It seems a totally idiosyncratic matter whether a numeral can or
cannot be followed by a singular noun: the nouns seconde ‘second’, kwartier
‘quarter of an hour’, uur ‘hour’ and jaar ‘year’ in (25) seems to prefer the singular
form (which of course cannot be heard in the case of seconde(n) ‘second(s)’, where
the plural -n is mute in spoken language). The plural forms are marginally
acceptable when the temporal noun phrases refer to discrete entities, that is, discrete
time units; cf. the discussion of (28) below.

   you must the bar four second/seconds in the liquid keep
   ‘You must keep the bar in the liquid for four seconds.’
b. Ik zit al drie kwartier/*kwartieren op je te wachten.
   I sit already three quarter/quarters for you to wait
   ‘I have already been waiting for you for three quarters of an hour.’
c. Ik zit al drie uur/*uren op je te wachten.
   I sit already three hour/hours for you to wait
   ‘I have already been waiting for you for three hours.’
d. Ik ben drie jaar/*jaren weg geweest.
   I am three year/years away been

The nouns minuut ‘minute’, dag ‘day’, week ‘week’ in (26), on the other hand,
clearly prefer the plural form, the singular forms yielding questionable results at
best. For many speakers the same thing holds for the noun maand ‘month’, although
there are varieties of Dutch that also accept the singular form.

(26) a. Ik heb het ei vier minuten/*minuut gekookt.
   I have the egg four minutes/minute boiled
   ‘I have boiled the egg for four minutes.’
b. Ik ben drie dagen/*dag weg geweest.
   I am three days/day away been
   ‘I’ve been away for three days.’
c. Ik ben drie weken/*week weg geweest.
   I am three weeks/week away been
   ‘I’ve been away for three weeks.’
d. Ik ben drie maanden/*maand weg geweest.
   I am three months/month away been

A remarkable property of the temporal noun phrases in (25) and (26) is that they
always trigger singular agreement on the verb when they are used as a subject of a
copular construction (which suggests that we are dealing with °second order
predication). So, both (27a) with the singular noun kwartier ‘quarter’ and (27b) with
the plural noun weken ‘weeks’ trigger singular agreement on the verb zijn ‘to be’.
This remarkable fact can possibly be accounted for by appealing to the fact that the noun phrases refer to a singular time interval.

(27) a. Drie kwartier is/*zijn wel erg lang voor een lezing.
   three quarter is/are  very long for a talk
b. Drie weken is/*zijn wel erg lang voor een vakantie.
   three weeks is/are  very long for a holiday

Note that the nouns in (25) can also appear in their plural form when the noun is modified by means of an attributive adjective. In these cases the noun phrases no longer refer to a continuous time interval; as with the nouns in the primed examples in (22), the temporal noun phrases seem to refer to discrete entities, that is, discrete time units. This also accounts for the fact that these noun phrases trigger plural agreement on the finite verb, as is shown in (28c).

(28) a. de drie beslissende seconden/*seconde
   the three decisive  seconds/second
b. de drie  langste  uren/*uur van mijn leven
   the three longest hours/hour of my life
c. de drie gelukkigste jaren/*jaar van mijn leven zijn/*is voorbij
   the three happiest years/year of my life  are/is past

Example (29a) shows that a numeral can also be followed by the singular noun *uur in noun phrases that refer to certain times of the day. A similar function is performed by proper nouns referring to certain months in noun phrases that specify certain days of the year; note that (29b) alternates with the construction in (29b′) which involves an ordinal numeral.

(29) a. zes uur
   six  o’clock
b. elf september 1973
   eleven September 1973
b′. de elfde september van het jaar 1973
   the eleventh  September of the year 1973

C. Measure nouns denoting monetary units

When the noun refers to a certain monetary unit, like the dollar or the euro, the noun is normally singular. The same thing holds for the noun cent, which refers to the smaller unit in which prices are expressed; cf. dit boek kost vierentwintig euro en veertig cent ‘This book costs twenty four euros and forty cents’. Examples are given in (30).

(30) a. Dit boek kost twintig euro/*euro’s.
   this book costs twenty  euro/euros
b. Deze pen kost vijftig cent/*centen.
   this pen costs fifty  cent/cents

Nouns referring to certain coins or bank notes, on the other hand, are normally in the plural. Examples of these nouns are given in (31). Note that knaaak in (31b)
Numerals and quantifiers

refers to coin that was in use when the guilder was still the monetary unit in the Netherlands; it seems that there are still no well-established names for the coins that are currently in use, apart, of course, from euro and cent.

(31)  a. Dit boek kost twee tientjes/tientje.
     this book costs two tenners/tenner
     b. Deze pen kost twee knaken/knaak.
     this pen costs two quarters/quarter

The fact that the noun in (31a) is obligatorily plural is probably related to the fact that we are dealing with a noun derived from a numeral by means of a diminutive suffix, given that the examples in (32) show that the diminutive counterparts of the nouns in (30) also require the plural ending. Still, this cannot be the whole story given that the noun knaat in (31b) is not a diminutive form.

(32)  a. Dit boek kost twintig eurootjes/eurootje.
     this book costs twenty euros/euro
     b. Deze pen kost vijftig centjes/centje.
     this pen costs fifty cents/cent

The plural forms of euro and cent can also be used provided that they refer to the actual coins. So whereas the noun phrase twintig euro in (33a) refers to a collection of banknotes and/or coins that make up a total amount of twenty euros, the noun phrase twintig euro’s in (33b) refers to a set of one euro coins with the cardinality 20. The primed examples show that, again in these cases, it is the number on the noun, and not the cardinal numeral, that determines subject-verb agreement. This is illustrated in the primed examples.

(33)  a. Jan heeft nog twintig euro in zijn portemonnee.
     Jan has still twenty euro in his wallet
    a’. Er liggen twintig euro op tafel.
     there lie twenty euros on the table
     b. Jan heeft nog twintig euro’s in zijn portemonnee.
     Jan has still twenty euros in his wallet
    b’. Er liggen twintig euro’s op tafel.
     there lie twenty euros on the table

III. Other cases

In addition to the cases discussed above there are some more isolated cases in which the noun following the cardinal numeral is singular. Some examples are given in (34). Observe that (34b) shows that in this case the number on the noun also determines subject-verb agreement.

(34)  a. Ik heb dat boek drie keer/keren gelezen.
     I have that book three time/times read
     ‘I have read that book three times.’
    b. Vier man is genoeg om die tafel op te tillen.
     four persons suffice to lift that table
     ‘Four persons suffice to lift that table.’
It seems that sequences consisting of a numeral and a singular noun are normally not preceded by a determiner, unless the noun phrase is modified and/or strongly \(D\)-linked. Note that these cases differ from the ones in (34) in that they trigger plural agreement on the finite verb when the noun phrase functions as subject, as in the (b)-examples.

(35) a. Pff, die drie keer dat hij drugs gebruikt heeft.
   well, that three time that he drugs used has
   ‘Phff, those three times that he has used drugs.’

   a’. De drie keer dat ik daar geweest ben, was het erg stil.
   the three time that I there been am, was it very quiet
   ‘It was very quiet the three times that I have been there.’

   b. Die vier man daar zijn genoeg om die tafel op te tillen.
   those four man over there are enough in order to that table prt. to lift
   ‘Those four persons suffice to lift that table.’

   b’. De vier man, die de tafel op getild hadden, kregen een biertje.
   the four man, who the table prt.-lifted had, received a beer
   ‘The four men, who had lifted the table, were given a beer.’

6.1.1.3.2. The determiner

There do not seem to be many special restrictions on the determiner preceding the cardinal numeral. As is shown in (36a-c), definite articles, demonstratives and possessive pronouns all give rise to an equally acceptable result. When the noun phrase is indefinite, as in (36d), we can perhaps postulate the empty indefinite article \(\emptyset\), just as in the case of other plural indefinite noun phrases.

(36) a. de vier boeken over taalkunde
   the four books about linguistics

   b. die vier boeken over taalkunde
   those four books about linguistics

   c. mijn vier boeken over taalkunde
   my four books about linguistics

   d. \(\emptyset\) vier boeken over taalkunde
   \(\emptyset\) four books about linguistics

The indefinite article \(een\) ‘a’ cannot be combined with a numeral, which is of course related to the fact that noun phrases containing this article are inherently singular: adding the numeral \(één\) ‘one’ is therefore redundant, and adding some other numeral leads to a contradiction. In the next section, we will see that the complex demonstrative \(zo\,n\) ‘such a’, which is the result of contraction of \(zo\) and \(een\), cannot be followed by a numeral either.

(37) *een één/vier boek over taalkunde
    a one/four book about linguistics

Example (38a) shows that the cardinal numeral \(één\) ‘one’ is special in that it can never be preceded by the definite article \(de/het\), or a demonstrative or possessive pronoun. It is, however, generally assumed that the numeral \(één\) may appear after a
demonstrative pronoun when it is inflected; example (38b), taken from Haeseryn et al. (1997), clearly seems to demonstrate this. It must be noted, however, that inflected *ene* also appears in other environments with a more deictic meaning, in which case it is in opposition to *andere* ‘other’. The examples in (38c) illustrate this. It might therefore be premature to decide on the basis of meaning alone that *ene* is a cardinal numeral in (38b). Before we can do that, we should first make a comparison of the two uses of *ene* in (38b) and (38c). We will leave this for future research.

(38)  a. *het/dat/mijn één boek
   the/that/my one book
   b. Zelfs dat *ene* boek vond hij al te veel.
   even that one book considered he already too much
   ‘He already considered that one book too much.’
   the/that/my one book considered he very good the/that/my other not
   ‘Of the/those/my (two) books he considered one very good, but the other not.’

6.1.1.3.3. *The position of the cardinal numeral within the noun phrase*

As we discussed in the introduction to this chapter, numerals (and quantifiers) can be assumed to be generated in the position NUM in the structure in (39a). This predicts that numerals generally follow the determiners and precede those elements that are part of the NP-domain, that is, the head noun itself and the attributive modifiers, as in (39b). These predictions seem to be borne out; example (39c) shows that the numeral cannot precede the definite article, and example (39d) that it must precede the attributive modifiers of the head noun.

(39)  a. [DP D [NUMP NUM [NP ... N ...]]]
   b. de acht gele rozen
   the eight yellow roses
   c. *acht de gele rozen
   d. *de gele acht rozen

More must be said about the order in (39d), however, since the result is acceptable when the attributive adjective is assigned contrastive accent, as in (40a). This is possible when domain D contains various bouquets, consisting of eight roses each: (40a) can then be used to distinguish the yellow bouquet from the bouquets containing roses of another color. The fact that this order of the numeral and the attributive modifier requires that the roses be part of domain D correctly predicts that this order cannot be found in indefinite noun phrases like (40a’). In (40b&b’), we give some comparable examples taken from the literature: again, the marked order requires the referents of the noun phrase to be part of domain D, so that the indefinite noun phrase in (40b’) yields an infelicitous result.

(40)  a. de GELE acht rozen             b. die LEUKE vier dochters van hem
   the yellow eight roses              those nice four daughters of his
   a’. *Ø GELE acht rozen             b’. *Ø LEUKE vier dochters van hem
The ungrammatical example in (39c) cannot be saved by assigning it a special intonation pattern: cardinal numerals never precede the definite article. The same thing holds for the D-linked demonstrative and possessive pronouns in (41). Note in passing that the primed examples are acceptable when the numeral is preceded by *alle* ‘all’; this will be discussed in Section 7.1.2.2.

(41) a. die boeken  b. zijn vier dochters  
    those three books  his four daughters  
    a’.*drie die boeken  b’. *vier zijn dochters  

Haeseryn et al. (1997) have claimed that the non-D-linked demonstrative pronouns *zo’n* and *zulke* behave differently. The primeless examples in (42) show that these demonstratives cannot be followed by a numeral: for (42a), this does not come as a big surprise, of course, since we saw in (37) above that the article een ‘a’, which acts here as part of the complex determiner *zo’n* ‘such a’, cannot be combined with a cardinal numeral either; for (42b), on the other hand, no such explanation seems available. The data become even more mysterious when we consider the primed examples, which are certainly better than the primeless ones. Although some speakers of Dutch reject examples like (42b’), the fact that these examples are considered fully acceptable by at least some speakers pose a problem for the assumption that the non-D-linked demonstratives are situated in the D-position of (39a), and suggest that they are actually lower in the nominal projection than the cardinal numerals.

(42) a. *zo’n één boek  a’. Eén zo’n boek maakt alles goed.  
    such a one book  one such a book makes everything well  
    ‘One book like that makes everything well.’  

b. *zulke drie boeken  b’. *drie zulke boeken maken alles goed  
    such three books  three such a book makes everything well  
    ‘Three book like that makes everything well.’

6.1.1.4. Modification

This section will show that it is possible to modify the cardinal numerals, and discusses some of the means that can be used.

I. Adverbial approximative modifiers

Cardinal numerals can be readily modified by two types of adverbial phrases: those of the first type are approximative modifiers, which indicate that the cardinality expressed by the numeral is approximately correct, and those of the second type indicate that the cardinality is precise. Examples of the former are *bijna* ‘nearly’, *circa* ‘about’, *ongeveer* ‘approximately’, *ruim* ‘over’, and *zowat* ‘about’; examples of the latter are *precies* ‘exactly’ and *exact* ‘exactly’.

(43) a. Jan bijna/ongeveer/ruim duizend boeken.  
    Jan has nearly/about/over a thousand books  
    ‘Jan has nearly/about/over a thousand books.’  

b. Jan heeft precies/exact duizend boeken.  
    Jan has exactly/precisely a thousand books  
    ‘Jan has exactly a thousand books.’
Normally, approximate modifiers are only used with fairly round figures. Without further context, it would sound weird to say something like (44a), since using the numeral ngenhonderd en zevenennegentig (997) suggests that the speaker is able to give the precise number of books involved so that the modifier is superfluous; examples like (44a) are only felicitous when it is known from the context that, for some reason, Jan aims at collecting precisely 997 books. This restriction does not hold, however, in cases like (44b), where the noun can also be preceded by fractions. So bijna ngenhonderd en zevenennegentig euro ‘nearly nine hundred and ninety seven euro’ could refer to, e.g., an amount of €996.89.

  Jan has nearly/about/over nine hundred and ninety seven books
b. Jan heeft bijna/ongeveer/ruim ngenhonderd en zevenennegentig euro. 
  Jan has nearly/about/over nine hundred and ninety seven euro

II. Approximative constructions introduced by the spurious article een

The use of approximative adverbial phrases is not the only way to express the notion of approximation. Dutch has available an ample variety of means to express this notion. The examples in (45), for example, show that there is a small set of adjectives that can have this function; like the approximative adverbs, they precede the numeral they modify.

(45)  a. een kleine honderd boeken 
  a small hundred books
  ‘slightly less than a hundred books’
  b. een dikke/goede honderd boeken
  a fat/good hundred books
  ‘somewhat more than a hundred books’

The examples in (45) seem related to (46a) where no adjective is used and a “spurious” indefinite article expresses the meaning “approximately” all by itself; the adjectives in (45) can probably be seen as modifiers that make the approximative reading in (46a) more specific. Although some examples can be found on the internet, it seems to us that the adjectives in (45) cannot readily be added to example (46b), where the indefinite article is replaced by the spurious non-D-linked demonstrative zo’n: %zo’n kleine/dikke honderd boeken. Note further that the approximative reading of een and zo’n can be enhanced by using a juxtaposition of two numerals, as in the primed examples.

(46)  a. een honderd boeken   a’. een zes, zeven euro 
  a hundred books  a six seven euro
  ‘about a hundred books’  ‘about six or seven euro’
  b. zo’n honderd boeken   b’. zo’n zes, zeven euro
  such.a hundred books  such.a six seven euro
  ‘about a hundred books’  ‘about six or seven euro’

The suggestion that the adjectives in (45) modify the meaning expressed by the spurious indefinite article can be further supported by the fact, shown in (47), that
the indefinite article cannot be replaced by a definite one, which suggest that the adjectives do not express an approximative meaning all by themselves.

(47) a. *de kleine honderd boeken
   the small hundred books
b. *de dikke/goede honderd boeken
   the fat/good hundred books

However, Haeseryn et al. (1997) note that the adjectives *dik and *goed in (45b) are also used without the article een in spoken language. Although examples like (48a) sound marked to us, especially with *goed, they can readily be found on the internet. We must therefore conclude that, at least for speakers who accept and produce these examples, these adjectives do express an approximative meaning all by themselves. This does not hold for klein, however; (48b) is certainly not acceptable.

(48) a. %dik/goed honderd boeken
b. *klein honderd boeken

The constructions in (46) seem to alternate with the constructions in (49), where the numeral is expressed in a postnominal of-phrase. It is not clear to what word class of belongs; normally, of is used as a conjunction or as an interrogative complementizer, but neither of these functions seems appropriate for characterizing it in these examples. Note further that it is not possible in constructions like these to add an approximative modifier, but the approximative reading can be enhanced by using numerals in juxtaposition.

(49) a. een boek of honderd a’ een euro of zes, seven
   a book OF hundred an euro OF six seven
   ‘about a hundred books’ ‘about six or seven euros’
b. zo’n boek of honderd b’ zo’n euro of zes, seven
   such.a book OF hundred such.a euro OF six seven
   ‘about a hundred books’ ‘about six or seven euros’

Example (50a) is yet another way of expressing the same meaning. The noun phrase een stuk of honderd in this construction seems to have more or less the same structure as the phrase in (49a) and functions as a complex numeral modifying the noun boeken. According to our own intuition, zo’n is impossible in this construction, although examples like (50b) can be found on the internet (although een stuk of occurs about 700 times as often as zo’n stuk of); we therefore marked it with “%”.

(50) a. [[een stuk of honderd] boeken] b. %zo’n stuk of honderd boeken
   a piece OF hundred books such.a piece OF hundred books
   ‘about a hundred books’ ‘about a hundred books’

Despite the fact that the examples in (49a) and (50a) express more or less the same meaning, they exhibit rather different syntactic behavior. The first difference involves subject-verb agreement. Since the noun preceding the numeral in (49) is singular, it need not surprise us that this noun phrase triggers singular agreement on the verb in (51a), although plural agreement seems possible for some speakers.
Example (51b), on the other hand, shows that this is different with the noun phrase in (50a); the finite verb does not agree with the singular noun *stuk*, but with the plural noun *boeken*, a phenomenon that is common in several types of binominal constructions; cf. Section 4.1.1.

(51)  a.  Er staat/**staan** een boek of honderd in de kast.
    there stands/stand a book OF hundred in the bookcase

    b.  Er staan/**staat** een stuk of honderd boeken in de kast.
    there stand/stands a piece OF hundred books in the bookcase

The second difference concerns modification of the noun. The examples in (52) show that the noun *boek* can be modified when it is part of the structure in (50a), but not when it is part of the structure in (49a).

(52)  a.  een (*interessant) boek of honderd
    an interesting book OF hundred

    b.  een stuk of honderd interessante boeken
    a piece OF hundred interesting books

The third difference is illustrated in (53) and concerns the fact that the numeral can be replaced by the modifier *wat* ‘some’ in (50a), whereas this is impossible in (49a).

(53)  a.  *een* boek of wat
    a book OF some

    b.  een stuk of wat boeken
    a piece OF some books

    ‘some books’

III. Approximative constructions introduced by a spurious preposition

A totally different way of expressing an approximative meaning is by using a PP headed by, e.g., the prepositions *rond*, *tegen* or *over* (other prepositions are also possible; cf. Section 5.1.4.3, sub II), which must be followed by the definite article *de*. Both the preposition and the definite article are spurious given that the PP behaves like an indefinite noun phrase, which is clear from the fact, illustrated in (54), that the “PP” may function as a subject (it triggers agreement on the finite verb) in an expletive construction.

(54)  a.  Er staat rond de duizend euro op mijn spaarrekening.
    there stands around the thousand euro on my savings account

    ‘There is about a thousand euro on my savings account.’

    b.  Er zitten/**zit** tegen de duizend leerlingen op deze school.
    there sit/sits against the thousand pupils at this school

    ‘There are nearly one thousand students at this school.’

IV. Modifiers indicating an upper or lower bound

So far, most of the modification constructions express an approximative meaning. There are, however, other modifiers which convey that the cardinality expressed by the numeral is an upper or a lower bound. Modifiers that indicate that the cardinality
expressed by the numeral is an upper bound are given in (55a), and modifiers that indicate a lower bound in (55b).

(55)  

a. hoogstens/ten hoogste/hooguit/maximaal veertig boeken  
   at most forty books
   ‘at most forty books’

b. minstens/tenminste/minimaal/zeker veertig boeken  
   at least forty books
   ‘at least forty books’

Similar meanings can be expressed by means of the comparative phrases meer/minder dan + NP ‘more/less than + NP’ in (56a). This example raises the question whether the quantifier meer modifies the numeral or whether it is the numeral that modifies meer. The latter analysis can be supported by claiming that a comparative is normally modified by means of a dan-phrase. However, this particular use of the dan-phrase, shown in (56a), would be special in that it must precede the modified noun, and cannot follow it. As illustrated in (56b), dan-phrases used as modifiers of comparatives do not normally precede the modified noun. This fact may be given in support of the former analysis, according to which it is the comparative that modifies the numeral; see (179) in Section 6.2.5 for similar constructions with degree quantifiers.

(56)  

a. Zij heeft meer/minder <dan veertig> boeken <*dan veertig>.  
   she has more/less than forty books
   ‘she has more/less than forty books’

   she has more/less than Jan books

V. Some problematic cases

Some disputable cases of modification of the numeral are given in (57). One possibility is to assume that the postnominal phrase is a modifier of the prenominal numeral.

(57)  

a. Jan kreeg drie boeken meer/minder dan Peter.  
   Jan received three books more/less than Peter

b. Jan kreeg drie boeken te veel/weinig.  
   Jan received three books too many/few

c. Jan kreeg drie boeken extra.  
   Jan received three books extra

Alternatively, one might argue that the noun phrase consisting of the numeral and the noun acts as a modifier of the postnominal phrase, that is, by assuming that the function of the noun phrase drie boeken is similar to that of the measure phrase drie centimeter in examples like het zwembad is drie centimeter te lang ‘the swimming pool is three centimeters too long’, where the noun phrase clearly modifies the AP (cf. Section A3.1.4.2). A characteristic of these nominal measure phrases is that they can be separated from the phrase they modify by means of wh-movement: Hoeveel centimeter is het zwembad [AP t, te lang]?’ ‘How many centimeters is the swimming pool too long?’ Since the noun phrases in (57) exhibit the same property, it seems plausible that they, too, act as modifiers.
(58) a. Hoeveel boeken \textsubscript{i} kreeg Jan \textsubscript{t} meer/minder dan Peter.  
\textit{how many books received Jan more/less than Peter}

b. Hoeveel boeken \textsubscript{i} kreeg Jan \textsubscript{t} te veel/weinig.  
\textit{how many books received Jan too many/few}

c. Hoeveel boeken \textsubscript{i} kreeg Jan \textsubscript{t} extra.  
\textit{how many books received Jan extra}

Note that the noun phrase \textit{drie boeken} can be omitted in the examples in (57a&b), which seems to support the analysis suggested in (58). The fact that this is not readily possible in example (57c), however, constitutes a potential problem for the suggested analysis.

6.1.1.5. Special cases

In the sections above we focused on cardinal numerals in prenominal position. Although this is indeed the core use of the numerals, they can also be used in a variety of other constructions. Although we will not treat them extensively here, we at least want to briefly mention these cases before concluding this section. A first case worthy of mention involves numerals that are premodified by the quantifier \textit{alle} ‘all’. In such cases the numeral does not follow the definite determiner, as is usually the case, but precedes it. These cases are more extensively discussed in Section 7.1.2.2.

(59) a. <alle vier> de <*alle vier> jongens  
\textit{all four the boys}

b. <alle vier> de <*alle vier> boeken  
\textit{all four those books}

c. <alle vier> mijn <*alle vier> broers  
\textit{all four my brothers}

Cardinal numerals expressing a cardinality larger than 1 can also occur as the complement of the preposition \textit{per}: in cases like these the numeral is in a paradigm with bare nouns like \textit{stuk} ‘piece’ and \textit{paar} ‘pair’; cf. Section 4.1.1.3.3, sub III.

(60) Die batterijen worden alleen per stuk/paar/twee/vier verkocht.  
\textit{Those batteries are only sold by the piece/in pairs/in lots of four.}

Cardinal numerals can occasionally be used as postmodifiers of [+HUMAN] plural personal pronouns, in which case they indicate the cardinality of the group referred to, as in (61a). In this position, it is common to add the suffix \textit{-en} to the numeral (which some speakers actually seem to prefer). This use of the numeral is in various respects similar to that of \textit{allen} and \textit{beiden} in (61b), which is more extensively discussed in Section 7.1.2.2.2, sub IID.

(61) a. Ik heb jullie drie/drieën gisteren gemist.  
\textit{I have you three/three yesterday missed}

b. Ik heb jullie allen/beiden gisteren gemist.  
\textit{I have you all/both yesterday missed}
The form derived by means of -en is also used in constructions like (62a), which are more extensively discussed in Section 5.2.2.5.3. An alternative way of expressing the same meaning is by adding the diminutive suffix -tje to the numeral, in which case the resulting form clearly functions as a noun, witness the obligatory presence of the plural affix -s. Example (62c) shows that the diminutive suffix can also be used with the numeral één ‘one’, although in this case the preposition in is used, not the preposition met (some speakers also allow op in this context).

(62)  a. We komen met zijn/ons drië/n vieren.
     ‘We will be/come with four.’

b. We komen met zijn/ons drietjes/viertjes.
     ‘We will be/come with three/four.’

c. Ik kom in mijn eentje.
     ‘I will come alone.’

Note, finally, that the constructions in (62a&b) also occur with quantifiers like allen and beiden (or diminutive beidjes); this is shown in (63).

(63)  a. Wij/jullie/zij doen het met z’n allen/beiden/beidjes.
     ‘We/youpl/they do it all/together.’

b. Wij doen het met ons allen/beiden/beidjes.
     ‘We do it all/together.’

For more discussion of examples like (61) to (63), including their diachronic development, we refer to Booij (2010: section 9.5) and the references cited there.

6.1.2. Ordinal numerals

This section discusses the ordinal numerals. Section 6.1.2.1 starts by discussing the form of the ordinal numerals, and 6.1.2.2 continues with a discussion of their semantics. Section 6.1.2.3 concludes the discussion by showing that cardinal numerals need not be placed in the NUM position, but may also occur in some position following the attributive adjectives.

6.1.2.1. Simple and compound forms

The ordinal numerals are derived from the cardinal ones by means of affixation with -de or -ste. The former suffix is more or less restricted to the ordinals derived from the cardinal numerals corresponding to 0 to 19, with the exception of the irregular form eerste ‘first’ and the form achtste ‘eighth’. Note that the ordinal numeral derde ‘third’ is not derived from the cardinal numeral drie but features the morpheme der-, which also appears in dertien (13) and dertig (30). The ordinal numeral vierde, on the other hand, is derived from vier (4), not from the irregular morpheme veer-, which is used in veertien (14) and veertig (40).
The ordinal numerals 1st to 19th

<table>
<thead>
<tr>
<th>Numeral</th>
<th>Dutch</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>&quot;nulde&quot;</td>
<td>10th &quot;tiende&quot;</td>
</tr>
<tr>
<td>1st</td>
<td>eerste</td>
<td>11th &quot;elfde&quot;</td>
</tr>
<tr>
<td>2nd</td>
<td>tweede</td>
<td>12th &quot;twaalfde&quot;</td>
</tr>
<tr>
<td>3rd</td>
<td>derde</td>
<td>13th &quot;ertiende&quot;</td>
</tr>
<tr>
<td>4th</td>
<td>vierde</td>
<td>14th &quot;veertiende&quot;</td>
</tr>
<tr>
<td>5th</td>
<td>vijfde</td>
<td>15th &quot;vijftiende&quot;</td>
</tr>
<tr>
<td>6th</td>
<td>zesde</td>
<td>16th &quot;zestiende&quot;</td>
</tr>
<tr>
<td>7th</td>
<td>zevende</td>
<td>17th &quot;zeventiende&quot;</td>
</tr>
<tr>
<td>8th</td>
<td>achtste</td>
<td>18th &quot;achttiende&quot;</td>
</tr>
<tr>
<td>9th</td>
<td>negende</td>
<td>19th &quot;negentiende&quot;</td>
</tr>
</tbody>
</table>

Higher numerals may also end in -de provided they are complex forms ending in one of the numerals in (64) taking this suffix. Two examples are given in (65).

(65) a. honderd en zesde
    hundred and sixth

  b. driehonderd (en) vijftiende
    three hundred and fifteenth

In all other cases, the ordinal is derived from the cardinal numeral by means of affixation with -ste. We illustrate this for some round figures in Example (66). The fact that biljoenste sounds somewhat weird probably reflects the fact that the use of that high an ordinal numeral is uncommon.

(66) Other ordinal numerals

<table>
<thead>
<tr>
<th>Numeral</th>
<th>Dutch</th>
<th>English</th>
</tr>
</thead>
<tbody>
<tr>
<td>20th</td>
<td>twintigste</td>
<td>100th &quot;honderdste&quot;</td>
</tr>
<tr>
<td>30th</td>
<td>dertigste</td>
<td>1000th &quot;duizendste&quot;</td>
</tr>
<tr>
<td>40th</td>
<td>veertigste</td>
<td>1,000,000th &quot;miljoenste&quot;</td>
</tr>
<tr>
<td>50th</td>
<td>vijftigste</td>
<td>1,000,000,000th &quot;biljoenste&quot;</td>
</tr>
</tbody>
</table>

The formations in (67) are often also considered ordinal numerals; the form in (67d) is the interrogative form of the ordinal numeral, derived from hoeveel ‘how many’.

(67) a. laatste ‘last’

  b. voorlaatste ‘penultimate’

  c. middelste ‘middle’

  d. hoeveelste ‘what number in the ranking’

6.1.2.2. Semantics

This section discusses the semantics of the ordinal numerals. When an ordinal number is used in prenominal position the noun phrase normally refers to an entity
in an array, that is, an ordered set of entities. When the ordinal numeral is preceded by a cardinal one, the phrase functions as a fraction.

6.1.2.2.1. Use as prenominal modifiers

Ordinal numerals can only be used as prenominal modifiers when we are dealing with an ordered set of entities, and the numeral is used in order to identify the intended referent from that set. Since the set is normally part of domain D, it does not come as a surprise that in the majority of cases the ordinal numeral requires a definite determiner to be present.

(68)  

a.  Zijn eerste boek ging over het nomen.  
   his first book was about the noun  

b.  De vierde kandidaat kreeg de baan.  
   the fourth candidate got the job

In many cases, it is implicitly clear what the principles underlying the ordering are; in the examples in (68), for example, the ordering seems temporal. When it is not unambiguously clear where the listener must start counting, this can be made explicit by means of a modifier. Typical examples of such modifiers are the van-PPs in (69).

(69)  

a.  het vierde boek van links/rechts  
   the fourth book from left/right  
   ‘the fourth book from the left/right’

b.  de derde plank van onder/boven  
   the third shelf from below/above  
   ‘the third shelf from below/the top’

Indefinite determiners are mainly restricted to cases where the speaker/writer is providing an enumeration, for example when he argues against or in favor of a certain hypothesis: in (70a), use of *een tweede probleem* ‘a second problem’ sounds completely natural. There are also some sporadic contexts in which no article is required to the left of the ordinal numeral. Examples like (70b) seem restricted to more or less “telegraphic” registers.

(70)  

a.  Er zijn verschillende problemen voor deze hypothese. Het eerste probleem betreft ..... Een tweede probleem heeft te maken met .....  
   there are several problems for this hypothesis the first problem concerns A second problem has to do with

b.  Vierde punt op de agenda is de opvolging van onze voorzitter.  
   fourth item on the agenda is the succession of our chairman

Ordinal numerals are also used in several more or less “fixed” expressions like those shown in (71). In these cases, the ordinal numeral and the noun constitute a lexical unit, which is also clear from the fact that the noun can be plural; nouns following an ordinal numeral are normally singular: *het tweede boek/*boeken ‘the second book/*books’.
Numerals and quantifiers

6.1.2.2.2. Use in fractions

Fractions are normally derived from ordinal numerals, in which cases the ordinals are preceded by a cardinal numeral, as is shown in the primeless examples in (72). In these cases the ordinal numeral does not, of course, help to pick out a referent from an ordered set, but functions as the denominator of the fraction. The denominator of \( \frac{1}{2} \) and \( \frac{3}{4} \) need not be expressed by the ordinal numerals tweede and vierde but can also be the forms half ‘half’ and kwart ‘quarter’, as in the primed examples.

(72) a. één tweede (1/2) a’. een half one second a half
b. drie vierde (3/4) b’. drie kwart three fourth three quarter
c. vijf vierentachtigste (5/84)

Actually, the forms in the primed examples are much preferred in colloquial speech over the primeless regular forms. For example, it would normally be considered odd to use een tweede or een vierde in (73a&b) to refer 500 or 250 cc of wine. Especially with tweede, but also with vierde, it is rather the reading “a second/fourth liter of wine” that is prominent in these examples. In (73c), on the other hand, the prominent interpretation is 125 cc of wine.

(73) a. Voeg een halve/kwarte liter wijn bij de vruchten.
add a half liter [of] wine to the fruits
b. Voeg een kwart/vierde liter wijn bij de vruchten.
add a quarter liter [of] wine to the fruits
c. Voeg een achtste liter wijn bij de vruchten.
add an eighth liter [of] wine to the fruits

For completeness’ sake, note that half and kwart should probably not be considered ordinal numerals. Especially in the case of half this would be doubtful since this form exhibits adjectival inflection; when the modified noun is [+NEUTER], as in (74a), half is inflected with an attributive -e ending, which is lacking when the noun is [+NEUTER].

(74) a. een halve/kwart cake
a half/quarter cake,[-neuter]
b. een halve/kwart brood
a half/quarter bread,[-neuter]
6.1.2.3. The position of the ordinal numeral within the noun phrase

Section 6.1.1.3 has shown that cardinal numerals are generated in the position NUM in (75a), which accounts for the fact that these numerals in (75b) follow the determiners but precede the nominal head and its attributive modifiers.

(75)  a.  [DP D [NUM [NP ... N ...]]]

b.  Hij bewonderde die drie fraaie bomen.
   he admired those three fine trees

As is shown in the (a)-examples in (76) the ordinal numerals normally occupy this position as well. The noun phrase *de derde ongetekende cheque* can have two different meanings depending on the intonation; when it is pronounced as one intonational phrase, it is claimed that the check under discussion is the third unsigned one; when the ordinal numeral and adjective are separated by an intonation break, the check under discussion may be the only unsigned one (which happens to be unchecked). The two cases differ syntactically in that in the second case, the order of the attributive adjective and the ordinal numeral can be reversed. Example (76b), which can be pronounced either with or without an intonation break, is more or less synonymous with (76a'), but not with (76a).

(76)  a.  Hij stuurde de derde ongetekende cheque terug.
   he sent the third unsigned check back
   ‘He sent back the third unsigned check.’

   a'. Hij stuurde de derde, ongetekende cheque terug.
   he sent the third, unsigned check back
   ‘He sent back the third check, which was not signed.’

b.  Hij stuurde de ongetekende (,) derde cheque terug.
   he sent the unsigned third check back
   ‘He sent back the third check, which was not signed.’

Normally speaking, the ordinal and cardinal numerals are in complementary distribution, which suggests that the two compete for the same position NUM in (75a). An exception must, of course, be made for those cases where the ordinal numeral and the noun constitute a lexical unit. In those cases, the lexicalized form can be preceded by a cardinal numeral, as in (77a). Another exception is given in (77b): in this example the two numerals seems to make up a complex modifier, which pick out the first/last two candidates in an ordered set. Example (77c) shows that the ordinal numeral in these complex modifiers is restricted to *eerste* and *laatste*; an ordinal like *derde* ‘third’ is excluded.

(77)  a.  de twee [N eerste ministers]
   the two prime ministers

   b.  de [NUM eerste/laatste twee] kandidaten
   the first/last two candidates

   c.  *de [NUM derde twee] kandidaten
   the third two candidates
6.2. Quantifiers

This section discusses quantifiers like alle/sommige/vele ‘all/some/many’. We will begin in Section 6.2.1 with a discussion of some more general properties of, and notions related to these quantifiers. After that, Sections 6.2.2 to 6.2.4 will discuss the universal, existential and degree quantifiers in more detail.

6.2.1. Introduction

This section will discuss some more general semantic and syntactic properties of (noun phrases containing) quantifiers. We will start with a brief discussion of the core meaning of the quantifiers. This will be followed by a discussion of the distinction between what has become known in the literature as weak and strong quantifiers. After that we will briefly discuss the fact that quantifiers display different behavior with respect to the question of what kinds of inference are licensed by using certain quantifiers. We conclude with a brief discussion of the independent use of quantifiers, that is, their use as an argument or a floating quantifier.

I. Core semantics

The easiest way to explain the core meaning of the quantifiers is by using Figure 1 from Section 1.1.2.2.1, repeated below, to represent the subject-predicate relation in a clause. In this figure, A represents the set denoted by the subject NP and B the set denoted by the verb phrase. The intersection $A \cap B$ denotes the set of entities for which the proposition expressed by the clause is claimed to be true. In an example like *Jan wandelt op straat*, for example, it is claimed that the set denoted by $A$, viz. \{Jan\}, is properly included in set $B$, which is constituted by the people walking in the street. In other words, it expresses that $A - (A \cap B) = \emptyset$.

![Figure 1: Set-theoretic representation of the subject-predicate relation](image)

The quantifiers have a function similar to that of the cardinal numerals, namely, to indicate the size or the cardinality of intersection $A \cap B$. They differ from the cardinal numerals, however, in that they do not do this in a very precise manner. An existential quantifier like sommige or enkele ‘some’ in (78a), for example, simply indicates that $A \cap B$ has a cardinality larger than 1. The degree quantifier veel ‘many’ in (78b) indicates that the cardinality of $A \cap B$ is larger than a certain contextually defined norm $n$. And the universal quantifier alle ‘all’ in (78c) expresses that the intersection of $A$ and $B$ exhausts set $A$, that is, that $A - (A \cap B) = \emptyset$. 
(78) a. Sommige/Enkele deelnemers zijn al vertrokken.
    some/some participants are already left
    ‘Some participants have already left.’

    a′. sommige: \(|A \cap B| > 1\)

b. Veel deelnemers zijn al vertrokken.
    many participants are already left
    ‘Many participants have already left.’

    b′. veel: \(|A \cap B| > n\)

c. Alle deelnemers zijn al vertrokken.
    all participants are already left
    ‘All participants have already left.’

    c′. alle: \(|A \cap B| > 1 \& A - (A \cap B) = \emptyset\)

Since the quantifiers perform a similar function as the cardinal numbers without making the cardinality of \(A \cap B\) precise, some Dutch grammars refer to these quantifiers as “indefinite cardinal numerals”; other grammars, like Haeseryn et al. (1997) divide these quantifiers into “indefinite cardinal numerals” and “indefinite pronouns”.

II. Strong and weak quantifiers

The examples in (78) are all “partitive” in the sense that set \(A\) is already part of domain \(D\). Quantifiers can, however, also be used in presentational sentences, that is, to introduce new entities into domain \(D\), although it is not the case that all quantifiers can be used in this way: the (a)-examples in (79) show, for example, that the existential quantifiers enkele and sommige differ in that only the former can be used in a presentational “expletive construction. This means that the difference between sommige and enkele is similar to that between the weak and the strong form of English some, which are given in the glosses and translations as sm and some, respectively. Like enkele, the degree quantifier veel ‘many’ can be used both in a partitive construction like (78b) and in a presentational expletive construction like (79b). As is shown in (79c), the universal quantifier alle ‘all’ cannot be used in presentational sentences. Because the properties of the quantifier in the partitive and presentational constructions correlate with, respectively, the weak and the strong forms of English some, they are often referred to as weak and strong quantifiers.

(79) a. Er zijn al enkele deelnemers vertrokken.
    there are already sm participants left
    ‘Sm participants have already left.’

    a′. *Er zijn al sommige deelnemers vertrokken.
    there are already some participants left
    ‘Some participants have already left.’

b. Er zijn al veel deelnemers vertrokken.
    there are already many participants left
    ‘Many participants have already left.’

c. *Er zijn al alle deelnemers vertrokken.
    there are already all participants left
The examples in (79) show that noun phrases with weak and strong quantifiers behave like, respectively, indefinite and definite noun phrases. There is yet another way in which this correlation holds. First, consider the two (a)-examples of (80), which show that in noun phrases containing a cardinal numeral the head noun of the primeless example can be left implicit when so-called ‘quantitative er’ is present (provided, at least, that the content of the noun is recoverable from the discourse or the extra-linguistic context). The contrast between (80a’) and (80b’) shows, however, that this is only possible when the noun phrase is indefinite.

(80) a. Jan heeft drie boeken meegenomen.
   Jan has three books prt.-taken
   ‘Jan has taken three books with him.’
   a’. Jan heeft er [DP drie [NP e]] meegenomen.
   Jan has ER three prt.-taken
b. Jan heeft de drie boeken meegenomen.
   Jan has the three books prt.-taken
   ‘Jan has taken three books with him.’
b’. *Jan heeft er [DP de drie [NP e]] meegenomen.
   Jan has ER the three prt.-taken

The examples in (81) show that we find a similar contrast between noun phrases containing a weak quantifier and those containing a strong quantifier: leaving the head noun implicit is only possible in the former case.

(81) a. Jan heeft er [DP enkele/*sommige [NP e]] meegenomen.
   Jan has ER sm/some prt.-taken
   ‘Jan has already taken some of them (e.g., books) with him.’
b. Jan heeft er [DP veel [NP e]] meegenomen.
   Jan has ER many prt.-taken
   ‘Jan has already taken many of them with him.’
c. *Jan heeft er [DP alle [NP e]] meegenomen.
   Jan has ER all prt.-taken
   ‘Jan has already taken all of them with him.’

III. Logical properties of quantifiers: Valid inference patterns

Quantifiers may differ in the logical inferences that they license. High degree quantifiers like *veel ‘many’, for example, allow the semantic implication in (82a), whereas low degree quantifiers like *weinig ‘few’ do not allow this inference; the inference instead goes in the opposite direction, in that example (82b’) implies (82b).

(82) a. Veel kinderen drenzen en schreeuwen. ⇒
   many children whine and yell
   a’. Veel kinderen drenzen en veel kinderen schreeuwen.
   many children whine and many children yell
b. Weinig kinderen drenzen en schreeuwen. ⇒
   few children whine and yell
b’. Weinig kinderen drenzen en weinig kinderen schreeuwen.
   few children whine and few children yell
Another implicational difference between these two quantifiers is given in (83). If example (83a) with the high degree modifier *veel* ‘many’ is true, the same thing holds for example (83a’), where the VP *zwemmen* ‘to swim’ denotes a superset of the VP *in de zee zwemmen* ‘to swim in the sea’ in (83a). In contrast, this implication is not valid in (83b&b’), where the quantifier *weinig* expresses low degree, since there may be many children swimming in the swimming pool; again, the inference goes in the opposite direction: example (83b’) implies (83b).

(83)  a. Er zwemmen veel kinderen in de zee. ⇒
there swim many children in the sea
‘Many children swim in the sea.’

a’. Er zwemmen veel kinderen.
there swim many children

b. Er zwemmen weinig kinderen in de zee. ⇒
there swim few children in the sea
‘Few children swim in the sea.’

b’. Er zwemmen weinig kinderen.
there swim few children

These kinds of implications, which have been extensively dealt with in the formal semantic literature of the last two or three decades, are not limited to quantifiers: example (84) shows, for example, that definite noun phrases behave in essentially the same way as the sentences involving a high degree modifier.

(84)  a. De kinderen drenzen en schreeuwen. ⇒
the children whine and yell

a’. De kinderen drenzen en de kinderen schreeuwen.
the children whine and the children yell

b. De kinderen zwemmen in de zee. ⇒
the children swim in the sea

b’. De kinderen zwemmen.
the children swim

The semantic properties of the quantifiers of the type discussed above have repercussions for, e.g., the licensing of *negative polarity elements: a noun phrase containing the quantifier *weinig* ‘few’ can, for example, license the negatively polar verb *hoeven* ‘have to’, whereas a noun phrase containing the quantifier *veel* ‘many’ cannot. Since correlations like these have given rise to a vast amount of literature, which deserves a more extensive discussion than we can give here, we will not discuss the issue any further, but we hope to return to it in future work. For the moment, we confine ourselves to referring to Zwarts’ (1981) pioneering work on this topic.

(85)  a. Weinig mensen hoeven te vrezen voor hun baan.
few people have to fear for their job
‘Few people need to fear losing their job.’

b. *De/Veel mensen hoeven te vrezen voor hun baan.
the/many people have to fear for their job
IV. Use as modifier or as independent argument

So far, we have only discussed examples with quantifiers that are used as modifiers of the noun phrase. A quantifier can, however, also be used as an independent constituent, that is, as an argument or a ‘floating quantifier. Examples of these two uses are given in, respectively, the primeless and the primed examples of (86). The following sections will also discuss these independent uses.

(86)  

\[ \text{a. Allen ging naar de vergaderzaal.} \]  
\[ \text{all}_{[+\text{human}]} \text{ went to the meeting.hall} \]  
\[ \text{a’. Ze zijn allen naar de vergaderzaal gegaan.} \]  
\[ \text{they are all}_{[+\text{human}]} \text{ to the meeting.hall gone} \]  

\[ \text{b. Alle zijn uitverkocht.} \]  
\[ \text{all}_{[-\text{human}]} \text{ are sold.out} \]  
\[ \text{b’. Ze zijn alle verkocht.} \]  
\[ \text{they are all}_{[-\text{human}]} \text{ sold} \]  

The examples in (86) show that there are two spellings for the independent occurrences of the quantifiers ending in a schwa: with or without a final -n. The presence of this orthographic -n, which is not pronounced in spoken Dutch, depends on the feature [±HUMAN] of the referent or associate: the form without -n is used with [-HUMAN] and the form with -n with [+HUMAN] nouns. Note that [+HUMAN] should be understood as “consistently human”: conjunctions which are not consistently human, like mannen en hun auto’s ‘men and their cars’, take alle, not allen, as their independent quantifier. Note further that the examples in (86) are all formal, and most often found in writing; in colloquial speech, the preferred way to express the intended contentions would take the form of the primed examples with allemaal ‘all’ substituted for alle(n) ‘all’: Ze zijn allemaal naar de vergaderzaal gegaan/Ze zijn allemaal verkocht.

6.2.2. Universal quantifiers

This section discusses the universal quantifiers. We will start in Section 6.2.2.1 with their use as modifiers of the noun phrase. After that, we will examine their use as independent constituents: Section 6.2.2.2 discusses their use as arguments, and Section 6.2.2.3 their use as floating quantifiers.

6.2.2.1. Use as modifier

Dutch has three universal quantifiers that can be used as modifiers: ieder/elk ‘every’ and alle ‘all’. These quantifiers are all universal in the sense that examples like (87) express that the set denoted by student is a subset of the set denoted by the VP een studentenkaart krijgen ‘to receive a student ticket’. In terms of Figure 1, this means that A - (A ∩ B) = ∅.

(87)  

\[ \text{a. Iedere/elke student krijgt een studentenkaart.} \]  
\[ \text{every student receives a student ticket} \]  
\[ \text{b. Alle studenten krijgen een studentenkaart.} \]  
\[ \text{all students receive a student ticket} \]
The quantifiers *ieder* and *elk* in (87a) are more or less free alternants, although Haeseryn et al. (1997: 350) note that some speakers have a weak tendency to use *ieder* for [+HUMAN] nouns and *elk* for [-HUMAN] nouns. These two quantifiers differ from the quantifier *alle* in (87b) in several respects, which we will discuss in the following subsections.

I. Number

The most conspicuous difference between the two types of modifiers in (87) is that noun phrases containing *ieder/elk* trigger singular agreement on the verb, whereas noun phrases containing *alle* trigger plural agreement. This is illustrated again in (88). These examples demonstrate the difference in grammatical number in yet another way: noun phrases modified by *ieder/elk* can only act as the antecedent of a singular pronoun like *zijn* ‘his’, whereas noun phrases modified by *alle* can only be the antecedent of a plural pronoun like *hun* ‘their’.

![Example](image)

This difference in number is not a purely grammatical matter, but is also reflected in the semantics. For example, verbs like *zich verzamelen* ‘to gather’ or *omsingelen* ‘to surround’ require their subject to be plural or at least to refer to a group of entities: such verbs may take a noun phrase modified by *alle* as their subject, but not a noun phrase modified by *elk/ieder*.

![Example](image)

The reason for this contrast in acceptability is that the noun phrases modified by *alle* may refer to the set of entities denoted by the head noun as a whole, that is, they allow a collective reading. Noun phrases modified by *elk/ieder*, on the other hand, do not allow this reading, but, instead, have a distributive reading: a noun phrase like *iedere/elke student* expresses that the property denoted by the VP holds individually for each entity in the set denoted by the head noun *student* or *soldaat*.

II. Distributivity versus collectivity

The examples in (89) in the previous subsection have shown that noun phrases modified by *elk/ieder* have a distributive reading, whereas noun phrases modified by *alle* can have a collective reading. It must be pointed out, however, that *alle* is
also compatible with a distributive reading: this is the preferred reading of example (90a), the meaning of which is more or less equivalent to that of example (90b).

(90)  a.  Alle boeken kosten € 25.
      all books cost € 25
    b.  Elk/Ieder boek kost €25.
       every book costs €25

In other cases, noun phrases with *alle* are ambiguous between a collective and a distributive reading. This ambiguity can be readily illustrated by means of (91a). Under its distributive reading, this example is semantically equivalent to (91b); both sentences express then that the property of singing a song holds for each student individually, that is, the meaning of these sentences can be satisfactorily represented by means of a universal operator: $\forall x (x:\text{student}) (x \text{ has sung a song}).$ Under the collective reading of (91a), on the other hand, it is expressed that the students sang a certain song as a group, a reading unavailable for (91b). For this reading the semantic representation with a universal operator seems inappropriate: it is therefore important to note that, strictly speaking, it is somewhat misleading to use the notion of universal quantifier for this collective use of *alle.*

(91)  a.  Alle studenten hebben een lied gezongen.
      all students have a song sung
    b.  Elke/iedere student heeft een lied gezongen.
       every student has a song sung

The collective reading of *alle studenten* can be forced by adding a modifier of the type *met elkaar* ‘together’ or *samen* ‘together’, as in (92a). That these modifiers force a collective reading is clear from the fact illustrated in (92b) that they are not compatible with the distributive quantifiers *ieder* and *elk.*

(92)  a.  Alle studenten hebben met elkaar/samen een lied gezongen.
      all students have with each/together a song sung
      ‘All students sang a song together.’
    b.  *Elke/iedere student heeft met elkaar/samen een lied gezongen.
       *every student has with each/together a song sung

III. Predicative use

The fact that noun phrases with *alle* are ambiguous between a collective and a distributive reading, whereas noun phrases with *elk/ieder* only have a distributive reading, probably also accounts for the fact that only the former can be used as predicative noun phrases. In (93a), the predicative noun phrase refers to a group of students that consist of the four girls mentioned in the subject of the clause. In (93b), on the other hand, the predicative noun phrase does not refer to a group, and hence it cannot be predicated of the subject of the clause.

(93)  a.  Die vier meisjes zijn alle studenten die ik heb.
      those four girls are all students that I have
    b.  *Die vier meisjes zijn iedere/elke student die ik heb.
       *those four girls are every/each student that I have
IV. Numerals

Another difference between the two types of universal quantifiers comes to the fore in noun phrases containing an ordinal numeral. An example like (94a) is fully acceptable, and expresses that the 100th, 200th, etc. visitor will receive a present. Example (94b), on the other hand, gives rise to a virtually uninterpretable result.

(94)  a.  Iedere/elke honderdste bezoeker krijgt een cadeautje.
    every/elk hundredth visitor receives a present
    b. *Alle honderdste bezoekers krijgen een cadeautje.
    all hundredth visitors receive a present

When the noun phrase contains a cardinal numeral, the use of the quantifiers *ieder and *elk gives rise to a somewhat marked result: example (95a) divides the set of visitors into groups of ten persons each. Example (95b) is fully acceptable in a context where the cardinality of the set of visitors is 10; the quantifier *alle then emphasizes that the property denoted by the VP *een cadeautje krijgen ‘to get a present’ applies to all entities in this set. Generally it is assumed that the quantifier and the numeral constitute a phrase, which functions as a complex pre-determiner. The use of this pre-determiner *alle + numeral is discussed more extensively in Section 7.1.2.2.

(95)  a.  Iedere/elke tien bezoekers krijgen een cadeautje.
    every ten visitors receive a present
    b.  Alle tien (de) bezoekers krijgen een cadeautje.
    all ten the visitors get a present

V. Generic use

The universal quantifiers *elke/iedere and *alle are not only used to quantify over a set of entities that are part of domain D, but they can also be used in generic statements, expressing a general rule which is assumed to be true in the speaker’s conception of reality. As discussed in Section 5.1.1.5, we must distinguish the three types of generic statements in (96). Here, we will only discuss the first two types.

(96)  a.  De zebra is gestreept.
    the zebra is striped
    b.  Een zebra is gestreept.
    a zebra is striped
    c.  Zebra’s zijn gestreept.
    zebras are striped

    When a generic statement contains a definite noun phrase, the generic statement generally applies to (entities that belong to) a certain species. Example (97a) refers to a certain species of birds, and it is claimed that this species is extinct. In this case, the definite article cannot be replaced by the universal quantifiers *alle and *elke/iedere.

(97)  a.  De Dodo is uitgestorven.
    the Dodo is extinct
    b. *Alle Dodo’s zijn uitgestorven.
    all Dodos are extinct
c. *Elke/Iedere dodo is uitgestorven.
every dodo is extinct

Note, however, that the universal quantifier alle would be acceptable in a situation in which the noun denotes a species that can be divided into several subspecies: in such a case, alle would quantify over all subspecies. The quantifiers elk/ieder would still yield an unacceptable result in such a case. The examples in (98) aim at illustrating this.

(98)  a. De Dinosaurus is uitgestorven.
the Dinosaur is extinct
b. Alle Dinosaurussen zijn uitgestorven.
all Dinosaurs are extinct
c. *Elke/Iedere dinosaurus is uitgestorven.
every dinosaur is extinct

When a generic statement contains an indefinite noun phrase, the generic statement generally applies to a prototypical member of the set denoted by the head noun. Example (99a) claims that the prototypical zebra is striped. In this case, the indefinite article can readily be replaced by the universal quantifier alle: example (99b) simply claims that the property of being striped holds for all zebras. The quantifiers ieder and elk can also be used in this context, but, as Haeseryn et al. (1997: 349) note, in this case the sentence has an emphatic flavor: each and every entity that is a zebra is striped.

(99)  a. Een zebra is gestreept.
a zebra is striped
b. Alle zebra’s zijn gestreept.
al all zebras are striped
c. *Iedere/Elke zebra is gestreept.
every zebra is striped

VI. Agreement

The grammatical gender feature may also serve to distinguish elk/ieder and alle in that the form of the former depends on the gender of the head noun, whereas the latter is invariant. This distinction is of course related to the fact that the head noun is singular in the former case, whereas it is plural in the latter: gender agreement of a modifier and a singular head noun is very common, whereas the form of the modifier of a plural noun is generally insensitive to the gender of the noun; cf. Section 3.2.1.

(100)  a. *Ieder and elk
   iedere/elke man
   every/each man
every/elk kind
   every/each child
b. alle mannen/kinderen
   all men/children
   [de man]
   [het kind]
Observe that the *de*-nouns *mens* ‘person’ and *persoon* ‘person’ are exceptional in not accepting/requiring the inflectional -*e* ending. This is illustrated in (101).

(101)  

a.  elk(*e)/ieder(*e) mens  
    every/each  person  

b.  elk(e)/ieder(e) persoon  
    every/each  person

VII. Non-count nouns

A final difference between *iets/elk* and *alle* involve non-count nouns. Since universal quantifiers typically quantify over a set of discrete entities, universal quantifiers are not expected to combine with non-count nouns. As is shown in (102a) for abstract non-count nouns, this expectation is indeed borne out for *elke/ieder*. The quantifier *alle*, on the other hand, can combine with such non-count nouns. It seems reasonable to connect this difference to the fact that only *alle* can give rise to a collective reading: in the case of non-count nouns, this collective reading appears in the guise of a “total quantity” reading.

(102)  

a.  *Elke/iedere ellende  is ongewenst.  
    every  misery  is unwanted  

b.  Alle ellende  is voorbij.  
    all misery  is passed  
    ‘All misery has passed.’

Of course, this does not mean that *iets/elk* can never be combined with a non-count noun, but if it does there will be a semantic clash between the reading of *iets/elk* and that of the non-count noun, and as a consequence the non-count noun will get reinterpreted as a count noun. The noun phrase containing the substance noun *wijn* in (103a), for example, normally refers to some contextually determined quantity of wine. In (103b), on the other hand, *iets/elk* trigger a count noun interpretation on this noun, which now means “type of wine”. The quantifier *alle* allows both the non-count and the count noun interpretation: in the former case the noun *wijn* appears in the singular, as in (103c), and in the latter it appears in the plural, as in (103c’).

(103)  

a.  De wijn  wordt  gekeurd.  
    the wine  is  sampled  

b.  Elke/iedere wijn  wordt  gekeurd.  
    every wine  is  sampled  

c.  Alle wijn  wordt  gekeurd.  
    all wine  is  sampled  

c’.  Alle wijnen  worden  gekeurd.  
    all wines  are  sampled

6.2.2.2. Use as argument

When a universal quantifier is used as an argument, it will generally be realized as the [+HUMAN] quantified pronoun *iedereen* ‘everyone’ or the [-HUMAN] quantified pronoun *alles* ‘everything’ in (104), discussed in Section 5.2.
(104) a. Iedereen ging naar de vergaderzaal.
   everyone went to the meeting.hall
b. Alles is uitverkocht.
   everything is sold.out

The quantifier *alle(n)* in (105) may perform the same role as the quantifiers *iedereen/alles* in (104): if the context provides sufficient information about the intended referent set, it is possible to use *alle(n)* as a pronominal quantifier instead of the full quantified noun phrases *alle studenten/boeken* ‘all students/books’.

(105) a. Alle studenten/Allen gingen naar de vergaderzaal.
   all students/all went to the meeting.hall
b. Alle boeken/Alle zijn uitverkocht.
   all books/all are sold.out

It is also possible to use the modifiers *ieder* and *elk* as arguments, although this is considered very formal. The independent use of these quantifiers seems more or less restricted to contexts in which they are modified by means of a postnominal *van*-PP where the complement of *van* is a plural pronoun/noun phrase. In examples like (106), there is a strong tendency to use *ieder* for [+HUMAN] referents; the tendency to restrict the use of *elk* to [-HUMAN] entities seems somewhat weaker.

(106) a. Ieder/Elk van ons weet dat de voorzitter geroyeerd is.
   each of us knows that the chairman expelled is
   ‘Each of us knows that the chairman is expelled.’
b. Elk/Elk van die boeken is een fortuin waard.
   each of those books is a fortune worth
   ‘Each of those books is worth a fortune.’

There are, however, some idiomatic examples in which *ieder* is used independently without a modifier being present as in, e.g., *ieder zijn deel* ‘everyone will get his share’. Furthermore, *ieder* can be used independently without a modifier when it heads an indefinite noun phrase introduced by the article *een*; this seems impossible with *elk* (although some incidental cases can be found on the internet).

(107) Een ieder/elk weet dat de voorzitter geroyeerd is.
    an each knows that the chairman expelled is
    ‘Everyone knows that the chairman is expelled.’

6.2.2.3. Use as floating quantifier

Floating quantifiers are quantifiers which are associated to noun phrases occurring elsewhere in the sentence, but with which they do not form a syntactic constituent. This use, which is restricted to universal quantifiers, is illustrated in (108). In this case, too, the difference between *ieder/elk* and *allen* seems to be that the former have a distributive reading, whereas the latter has a more collective flavor: it is, however, harder to demonstrate the difference here since it is not the case that (108b) can be used to express that the students received one hundred euros as a group.
Our impression can perhaps be substantiated by means of the examples in (109).

Since the predicate *bij elkaar komen* requires a plural/collective subject, we may account for the contrast between the two examples by appealing to the fact that the quantifiers *ieder* and *elk* force a distributive reading of the subject, whereas *alle(maal)* allows either a collective or a distributive reading. Recall that the use of *allen* is somewhat formal: in speech it is generally the form *allemaal* that is used.

The use of floating quantifiers with [-HUMAN] antecedents seems somewhat more restricted than with [+HUMAN] ones. The use of the distributive quantifiers in (110a) seems to give rise to an especially degraded result: although *elk* is accepted by some speakers, *ieder* is categorically rejected. In (110b), *allemaal* is clearly preferred to *alle*.

When the antecedent is interrogative, only the floating quantifier *allemaal* seems possible: *elk/ieder* and *alle(n)* all give rise to a degraded result. In (111), we give examples involving a [+HUMAN] antecedent.

Here we will not go any deeper into the properties of these floating quantifiers. A more general discussion on floating quantifiers can be found in Section 7.1.4.3, which also includes a discussion of floating quantifiers like *beide* ‘both’ and *alletwee* ‘all two’.

6.2.3. Existential quantifiers

This section discusses existential quantifiers like *sommige* ‘some’ and *enkele* ‘some’. We will start in Section 6.2.3.1 with their use as modifiers of the noun phrase. After that, Section 6.2.3.2 will continue with their use as arguments; existential quantifiers cannot be used as floating quantifiers.
6.2.3.1. Use as modifier

This section discusses the use of existential quantifiers like *sommige* ‘some’ and *enkele* ‘some’ as modifiers of a noun phrase. These quantifiers are existential in the sense that examples like (112) express that the set denoted by the VP *op straat lopen* ‘to walk in the street’ is not empty.

(112) a. Sommige jongens lopen op straat.
    some boys walk in the street
    ‘Some boys walk in the street.’

b. Er lopen enkele jongens op straat.
    there walk some boys in the street
    ‘Some boys walk in the street.’

Although the two translations given in (112) are the same, there is a clear difference between the two examples. The noun phrase in (112a) refers to a subset of the boys in domain D. In terms of Figure 1, this means that it expresses that the intersection of the set of boys (set A) and the set of entities that are walking in the street (set B) is non-empty: \(A \cap B \neq \emptyset\). Example (112b), on the other hand, does not presuppose a set of boys in domain D: it rather functions as a presentational sentence that introduces some new entities into domain D.

Note that it is often claimed that the existential quantifiers *sommige* and *enkele* express not only that the relevant set is non-empty, but also that the cardinality is both higher than 1 and rather low. It is not clear *a priori* whether this is all actually part of the lexical meaning of the quantifier. If we were correct in our earlier assumption in Section 5.1.1.1 that the plural marking on the noun expresses that \(|A \cap B| \geq 1\), the implication in (112) that \(|A \cap B| > 1\) may indeed be due to the presence of the quantifier. However, the fact that the cardinality is construed as rather low may be the result of a conversational implicature: since the speaker can use a high degree quantifier to express that the cardinality is high, the absence of such a high degree quantifier suggests that the cardinality is only moderate (Grice’s Maxim of Quantity). For the moment, we leave this issue as it is, and assume that the existential quantifiers simply express that the relevant set is non-empty and that they may or may not impose further restrictions on the cardinality of the set.

The quantifiers *enkele* and *sommige* (on their non-D-linked reading) are, respectively, °weak and strong quantifiers. As we have seen in Section 6.2.1, one of the properties of strong quantifiers like *sommige* is that they cannot occur in existential constructions containing the expletive *er* ‘there’, whereas weak quantifiers like *enkele* can; cf. example (112). Another property seems to be that, unlike at least some weak quantifiers, strong quantifiers cannot occur in nominal measure phrases. Some examples are given in (113). Note, however, that the distinction between weak and strong quantifiers is not absolute: as we will see the quantifier *enkele* can also be used as a strong quantifier, in which case it does not introduce new entities into domain D, but simply quantifies some set of entities within domain D.
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(113) a. Dat boek kost enkele/*sommige tientjes.
that book costs some tenners

b. De schat ligt enkele/*sommige meters onder de grond.
the treasure lies some meters under the ground

As is shown in (114), universal quantifiers cannot be used in constructions containing expletive *er either, nor in nominal measure phrases, so they must be considered strong quantifiers as well. In other words, universal quantifiers like *alle ‘all’ or *elk ‘each’ form a natural class with existential quantifiers like *sommige. *Enkele, on the other hand, forms a natural class with the cardinal numerals, which can occur in these constructions.

(114) a. *Er lopen alle jongens op straat.
there walk all boys in the street

a’. Er lopen vijf jongens op straat.
there walk five boys in the street

b. *Dat boek kost alle tientjes.
that book costs all tenners

b’. Dat boek kost drie tientjes.
that book costs three tenners

The examples in (112) express that the cardinality of the set of boys walking in the street is larger than 1. In this respect, the quantified noun phrases *sommige jongens and *enkele jongens seem to behave as plural counterparts of the noun phrases in (115a&b) introduced by the indefinite article een ‘a’ (note, however, that because een must be stressed in (115a), we cannot exclude the possibility that we are actually dealing with the numeral één ‘one’ in this example). Therefore, it would be justified to also treat the indefinite article in this section. However, since we have discussed this element in Section 5.1 on articles, we will refrain from doing so. The same thing holds for the negative article in (115c), which can readily be considered a negative existential quantifier (∼∃x).

(115) a. Eén jongen loopt op straat.
a/one boy walks in the street

b. Er loopt een jongen op straat.
there walks a boy in the street

c. Er loopt geen jongen op straat.
there walks no boy in the street

In the remainder of this section, we will discuss various types of existential quantifiers in more detail. In the course of the discussion we will observe that the distinction between existential and degree quantifiers is not always clear-cut.

I. Enkele ‘some’ and sommige ‘some’

The most common existential quantifiers are *enkele and *sommige. The two differ in that the former can be weak whereas the latter is necessarily strong. That *enkele can be a weak quantifier is clear from the examples in (116), in which *enkele is used as the modifier of a subject. Under neutral intonation, the clause preferably takes the form of an expletive construction, as in (116a); example (116b) is normally
pronounced with emphatic °focus on the quantifier. The two examples differ in interpretation: in (116a) the subject introduces some new entities into domain D, whereas in (116b) the subject has a partitive reading, that is, domain D already includes a set of boys and the sentence expresses that some of these boys are walking in the street.

(116)  a.  Er    lopen enkele jongens  op straat.
    there walk some boys         in the.street
    ‘There are some boys walking in the street.’

   b.  Enkele/**Enkele jongens lopen op straat.
    some boys walk in the.street
    ‘Some (of the) boys are walking in the street.’

That the quantifier sommige is necessarily strong is clear from the fact that the expletive construction in (117b) is impossible. This quantifier therefore cannot be used to introduce new discourse entities, but normally quantifies over a pre-established set of boys in domain D.

(117)  a.  Sommige jongens  lopen op straat.
    some boys walk in the.street
    ‘Some boys walk in the street.’

   b.  *Er    lopen sommige jongens  op straat.
    there walk some boys         in the.street

II. Wat ‘some’

Another existential quantifier that is quite frequent is wat ‘some’. This quantifier is clearly weak, as shown by the fact that only the expletive construction is acceptable in (118); the (b)-example cannot be remedied by means of assigning emphatic accent to the quantifier.

(118)  a.  Er    lopen wat jongens  op straat.
    there walk some boys         in the.street
    ‘There are some boys walking in the street.’

   b.  *Wat jongens lopen op straat.

A conspicuous difference between wat, on the one hand, and enkele and sommige, on the other, is that the former can readily be used as a modifier of non-count nouns, whereas the latter normally cannot. This is shown in (119).

(119)  a.  Ik heb   wat bier    gekocht.
    I have some beer bought

   b.  *Ik heb enkele/sommige bier gekocht.

The ability to act as a modifier of a non-count noun is also a property of degree modifiers such as veel ‘many/much’ discussed in Section 6.2.4. It might therefore be the case that wat is not a simple existential quantifier, but that it is actually a degree quantifier. Such a point of view could be supported by pointing out that, unlike enkele and sommige, wat can be modified by °intensifiers like nogal, vrij, tamelijk, heel, aardig. This is illustrated in (120), where the cardinality of the set denoted by boeken is indeed compared to some implicit norm.
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(120) a. Jan heeft nogal/heel/aardig wat boeken.
   Jan has quite/very/quite some books
   ‘Jan has a quite a few books.’
   b. *Jan heeft nogal/heel/aardig enkele/sommige boeken.

To conclude this discussion on *wat*, we want to mention in connection to the observation that *wat* can precede non-count nouns that Haeseryn et al. (1997: 370) note that, in contrastive contexts, *sommige* can sometimes also be combined with substance nouns like *bier* ‘beer’ with a “kind” interpretation, as in (121a). Although we have indeed found a small number of such cases on the internet, we much prefer the use of the plural form *bieren* here, in which case we are clearly dealing with a count noun.

(121) a. %Sommig bier heeft een bittere nasmaak.
   some beer has a bitter aftertaste
   b. Sommige bieren hebben een bittere nasmaak.

III. Other cases

Besides the existential quantifiers discussed above, Dutch has many other formatives that can be used in a similar fashion. This section briefly discusses some of these formatives: we first start with a number of simple forms, and conclude with some forms that are phrase-like.

A. Enig(e)

Example (122a) shows that the form *enige* can be found in formal language as a weak quantifier. Example (122b) shows that it differs from *enkele* in that it can also combine with non-count nouns. In this respect it resembles *wat*, from which it differs, however, in not allowing degree modification; cf. (122c).

(122) a. Er liggen enige/enkele boeken op de tafel.
   there lie some/some books on the table
   b. Enige/enkele tijd geleden was ik ziek.
   some/some time ago was I ill
   c. nogal/heel/aardig wat/enige boeken
   quite/very/quite some/some books

The examples in (123) show that *enige* can also be used as an equivalent of English *any*, as in (123a), or as an attributive adjective corresponding to “only” or “nice”; cf. Haeseryn et al. (1997: 366ff.). Note that the ambiguity of (123c) can be solved by using the superlative form *enigst* in (123c′); although there is normative pressure to not use this form, it is often used with the meaning “only”; for more discussion, see www.onzetaal.nl/advies/enigste.php.

(123) a. Heb je wel enig benul van wat dat kost?
   have you prt. any idea of what that costs
   ‘Do you have any idea of what that costs?’
   b. Dat is de enige oplossing.
   that is the only solution
c. Hij is een enig kind.
he is a cute/only child

c’. Hij is een enigst kind.
he is an only child

B. Verscheidene, verschillende/meerdere, and ettelijke

The quantifiers *verscheidene/meerdere* ‘various’, *verschillende* ‘several’, and *ettelijke* ‘a number of’ in (124) can be used either as weak or as strong quantifiers. These quantifiers are always followed by a plural noun and tend to be used when the cardinality of the relevant set is somewhat higher than 2. For this reason, it is not so clear whether these quantifiers must be considered existential quantifiers: they might as well be degree quantifiers.

(124)  
\begin{align*}
a. & \text{Er liggen verscheidene/verschillende/ettelijke/meerdere boeken op de tafel.}  
   & \text{there lie various/several/a.number.of/several books on the table}  
   & \text{‘Various/several/a number of books are lying on the table.’}  
b. & \text{Verscheidene/Verschillende/Ettelijke/Meerdere boeken waren afgeprijsd.}  
   & \text{various/several/a.number.of/several books were prt.-priced}  
   & \text{‘Various/Several/A number of/Several books were marked down.’}
\end{align*}

The quantifier *verschillende* in (124) suggests that the entities in the relevant set of books are of different sorts. This is even clearer in the case of *allerlei/allerhande* ‘all kinds sorts of’ in (125), which can only be used when the relevant set contains different categories of books, e.g., novels, books of poetry, textbooks, etc.

(125)  
\begin{align*}
\text{Er liggen allerlei/allerhande boeken op de tafel.}  
& \text{there lie all sorts of books on the table}  
& \text{‘All sorts of books are lying on the table.’}
\end{align*}

Note, finally, that *verschillende* can also be used with the meaning “different”, in which case it clearly functions as an adjective, as shown by the fact that in this use it can be modified by a degree adverb and be used in predicative position.

(126)  
\begin{align*}
a. & \text{Dit zijn twee totaal verschillende opvattingen.}  
   & \text{this are two completely different opinions}  
b. & \text{Deze twee opvattingen zijn totaal verschillend.}  
   & \text{these two opinions are totally different}
\end{align*}

C. Menig(e)

The final simple form we will discuss here is *menig(e)‘many’. This form is typically used in writing, and can only be used with singular count nouns. Like the quantifiers discussed in the previous subsection, *menig* tends to be used when the cardinality of the relevant set is somewhat higher than 2, and it should for that reason perhaps be considered a degree quantifier. The uninflected form *menig* is used with *het*-nouns, and, optionally, with some *[-HUMAN] de*-nouns, especially with *man* ‘man’, *persoon* ‘person’, and nouns denoting professions. The inflected form *menige* is used in all other cases.
According to our judgments on the examples in (128), the quantifier *menig* is
strong; it is preferably °D-linked, as in (128a), and thus normally quantifies over a
presupposed set in domain D. Examples like (128b) sound marked, although it must
be noted that the example improves considerably when the sentence contains an
adverbial phrase like al ‘already’: *Er werd al menig staker ontslagen* ‘there were
already many strikers fired’. Given that similar examples can be readily found on
the internet (a search on the string [*er werd menig*] resulted in nearly 100 hits), we
conclude that, at least for some speakers, *menig* may also be weak.

     *Many a striker was fired.*

Noun phrases modified by the strong quantifier *menig* can readily be used in
“generic” statements, that is, in contexts in which *menig* quantifies over all relevant
entities in the speaker’s conception of reality. This is illustrated in (129).

(129)    *Menig werknemer is ontevreden over zijn salaris.*
     *Many employees are not satisfied with their salary.*

D. Complex forms
Besides the simplex forms above, there are several phrasal or phrase-like
constructions that seem to act as existential modifiers. Some examples are given in
(130). Examples such as (130a) are extensively discussed in Section 4.1.1, to which
we refer for further information. The phrase-like forms *deze of gene*
and *één of andere* can be paraphrased as “some”: the former seems to behave like a strong
quantifier, whereas the latter is preferably used as a weak quantifier.

(130)  a. *een paar schoenen*
     *a couple [of] shoes*

b. *Deze of gene specialist moet toch kunnen helpen.*
     *this or yonder specialist must be.able help*
     ‘But some specialist must be able to help.’

b’. *Er moet deze of gene specialist toch kunnen helpen.*
     *there must this or yonder specialist be.able help*

c. *Er loopt één of andere hond voor ons huis.*
     *there walks one or another dog in.front.of our house*
     ‘There is some dog walking in front of our house.’

c’. *Er loopt één of andere hond voor ons huis.*
     *there walks one or another dog in.front.of our house*
Despite its quantificational meaning, \textit{deze} of \textit{gene} in (130b) can probably best be considered a complex determiner: if it is a determiner comparable to simple \textit{deze}, its strong nature would follow immediately. The examples in (131a&b) show that a similar approach is clearly not feasible for \textit{één of ander}, given that this modifier can be preceded by a definite article. Note that despite being formally definite the noun phrases \textit{de een of andere gek} and \textit{het een of andere boek} behave like weak noun phrases, just like their formally indefinite counterparts in the primed examples; they all may enter the expletive construction. The data in (131b&b′) suggest that we are dealing with a complex adjectival phrase in these examples: just like adjectival \textit{ander} ‘different’, the phrase \textit{een of andere} exhibits gender agreement with the noun.

\begin{enumerate}
\item[(131) a.] Er staat de een of andere gek te zingen. \hspace{1cm} [definite, -neuter] \\
there stands the one or other madman to sing ‘There is some madman singing.’
\item[(131) a′.] Er staat een of andere gek te zingen. \hspace{1cm} [indefinite, -neuter] \\
there stands one or other madman to sing ‘There is some madman knocking on the door.’
\item[(131) b.] Er werd het een of andere boek gepresenteerd. \hspace{1cm} [definite, +neuter] \\
there was the one or other book presented ‘Some book was presented.’
\item[(131) b′.] Er werd een of ander boek gepresenteerd. \hspace{1cm} [indefinite, +neuter] \\
there was one or other book presented ‘Some book was presented.’
\end{enumerate}

Finally, we should mention cases like \textit{de nodige bezwaren} ‘a good many objections’. Here we are clearly dealing with a borderline case. The noun phrase is formally a definite noun phrase, and \textit{nodige} seems to act as a regular attributive adjective. However, the noun phrase does not refer to some entities in domain D, and again it can be used in the expletive construction. Note that the translation in (132) is somewhat misleading in that it suggests that a fairly large number of objections were raised, but this is not necessarily so; what seems to be implied is that the number of objections was sufficiently large to be relevant.

\begin{enumerate}
\item[(132)] Er werden de nodige bezwaren geopperd. \\
there were the need objections given ‘There were raised a good many objections.’
\end{enumerate}

\textit{IV. Special uses of the existential quantifiers}

This subsection concludes the discussion of the existential quantifiers used as modifiers with two special uses of the quantifiers \textit{sommige} and \textit{enkele}.

\textit{A. The use of sommige in “generic” contexts}

The quantifier \textit{sommige} is sometimes used in “generic” contexts, that is, to quantify over all relevant entities in the speaker’s conception of reality: an example like (133a), for example, expresses that there is a subcategory of junkies that will never overcome their addiction. Such a “generic” use is not possible with \textit{enkele}: in example (133b), the quantifier \textit{enkele} must quantify over a contextually defined set of junkies.
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(133) a. Sommige junkies komen nooit van hun verslaving af.
   ‘Some junkies will never overcome their addiction.’

b. Enkele junkies komen nooit van hun verslaving af.
   ‘Some of the junkies will never overcome their addiction.’

In such “generic” cases, sommige may also trigger a “kind” interpretation on the noun it modifies. For example, sommige medicijnen ‘some medicines’ in (134a) may refer to, e.g., the types of medicines that fall into the class of barbiturates. Enkele in (134b) again does not have this effect: it can only quantify over a contextually defined set of medicines.

(134) a. Sommige medicijnen kunnen de rijvaardigheid beïnvloeden.
   ‘Some medicines may influence the ability to drive.’

b. Enkele medicijnen kunnen de rijvaardigheid beïnvloeden.
   ‘Some of these medicines may influence the ability to drive.’

B. The use of enkele as an attributive modifier

Enkele can also be used as an attributive modifier. This use of enkele is characterized by the fact that enkele is followed by a singular noun. In (135a&b), the meaning of enkele is still quantificational in nature: despite the fact that the modified noun is singular, the noun phrase may actually refer to a non-singleton set with a low cardinality. In (135c), on the other hand, the presence of the numeral één ‘one’ triggers a reading of enkele that can be properly rendered by means of English single. In (135d), enkele has the meaning “one-way”: the phrase een enkele reis is especially used to refer to a one-way ticket.

(135) a. Die enkele bezoeker die hier komt, is het noemen niet waard.
   ‘Those few visitors who come here are not worth mentioning.’

b. Ik ben hier slechts een enkele keer geweest.
   ‘I have been here only once.’

c. Ik ben hier slechts één enkele keer geweest.
   ‘I have been here only once.’

d. een enkele reis naar Amsterdam
   ‘a one-way trip to Amsterdam’

6.2.3.2. Use as argument

When an existential quantifier is used as an argument, it is generally realized as the [+HUMAN] quantified personal pronoun iemand ‘someone’ or the [-HUMAN] quantified personal pronoun iets/wat ‘something’. Some examples are given in (136). These quantifiers are normally used as weak quantifiers, which is clear from
the fact that, as subjects, they are preferably used in expletive constructions. Examples like (136a′&b′), without the expletive er, are acceptable, but they generally require a special intonation pattern; these examples would be quite natural if the quantifier were assigned contrastive or emphatic °focus. Example (136b′) with *wat is, however, still excluded. We refer the reader to Section 5.2 for further discussion of these pronouns.

(136)  a.  Er heeft iemand gebeld.     a′.  ′Iemand heeft gebeld.
    there has someone called
    ‘Someone has called.’
b.  Er is iets/wat gevallen.      b′. ′Iets/*Wat is gevallen.
    there is something fallen
    ‘Something has fallen.’

Many of the modifiers discussed in the previous section can also be used as independent arguments. This will be illustrated in the following subsections.

I. Enkele and sommige

The examples in (137) show that when the context provides sufficient information, it is possible to use sommige(n) as a pronominal quantifier instead of the full quantified noun phrases sommige studenten/boeken ‘some students/books’. Recall that when the quantifier ends in a schwa, Dutch orthography requires a (mute) suffix -n on the quantifier when the elided noun is [+HUMAN]; when the elided noun is [-HUMAN] this -n is not used.

(137)  a.  Sommige studenten/Sommigen gingen naar de vergaderzaal.
    some students/some went to the meeting.hall
b.  Sommige boeken/sommige zijn uitverkocht.
    some books/some are sold.out

The independently used quantifier sommige(n) is a strong quantifier. It is not so clear whether weak quantifiers like enkele ‘some’ can also be used as independent arguments. Consider the examples in (138). The fact that we are dealing with expletive constructions guarantees that the quantifiers in these examples are weak. The second occurrence of er in the primed examples is so-called quantitative er, which is associated with an interpretative gap in the noun phrase, which therefore has the form \([ON \, enkele \, [NP \, e]]\). The fact, illustrated in the doubly-primed examples, that quantitative er cannot readily be left out suggests that, like the cardinal numerals, the weak quantifier can only act as the modifier of a noun phrase, which happens to be phonetically empty here, not as an independent argument.

(138)  a.  Er gingen enkele studenten naar de vergaderzaal.   [weak quantifier]
    there went some students to the meeting.hall
    ‘There were some students going to the meeting hall.’
a′.  Er gingen er [enkele [e]] naar de vergaderzaal.
    there went ER some to the meeting.hall
a′′. ??Er gingen enkelen naar de vergaderzaal.
    there went some to the meeting.hall
b. Er werden enkele boeken verkocht. [weak quantifier]
   there were some books sold
   ‘Some books were sold.’
   
b’. Er werden er [enkele [e]] verkocht. [strong quantifier]
   there were ER some sold
   
b”. ’’Er werden enkele verkocht.
   there were some sold

When enkele is used as a strong quantifier, similar complications do not arise; the primed examples in (139) are fully acceptable, just like those in (137) with the strong quantifier sommige.

(139) a. Enkele studenten gingen naar de vergaderzaal. [strong quantifier]
   some students went to the meeting.hall
   a’. Enkelen gingen naar de vergaderzaal.
   some went to the meeting.hall
   b. Enkele boeken waren beschadigd. [strong quantifier]
   some books were damaged
   b’’. ’’Enkele waren beschadigd.
   some were damaged

The examples in (140) show that it is also possible to have er after the finite verb (in which case the spelling of enkelen in (139a’) changes to enkele); this occurrence of er then simultaneously performs the function of expletive and quantitative er, and the quantifier is construed as a weak quantifier modifying an empty noun phrase.

(140) a. [Enkele [e]] gingen er naar de vergaderzaal. [weak quantifier]
   some went ER to the meeting.hall
   b. [Enkele [e]] waren er beschadigd. [weak quantifier]
   some were ER damaged

II. Wat

The evidence given in (138) in support of the claim that weak quantifiers cannot be used as independent arguments is not conclusive, given that dropping quantitative er does not give rise to fully ungrammatical results. Somewhat stronger support for this claim is provided by the existential quantifier wat, which cannot be used as a strong quantifier. As is shown in (141), dropping quantitative er in the primed examples gives rise to completely ungrammatical results.

(141) a. Er gingen wat studenten naar de vergaderzaal.
   there went some student to the meeting.hall
   ‘There were some students going to the meeting hall.’
   a’. Er gingen er [wat [e]] naar de vergaderzaal.
   there went ER some to the meeting.hall
   a”. *Er gingen wat naar de vergaderzaal.
   there went some to the meeting.hall
b. Er werden wat boeken verkocht.
    there were some books sold
    ‘Some books were sold.’

b’. Er werden er [wat [e]] verkocht.
    there were ER some sold

b’’. *Er werden wat verkocht.
    there were some sold

Note that (141b’’) without quantitative er is acceptable when the verb is singular, as is shown in (142a). But in this case we are not dealing with the use of the modifier wat as an independent argument, but with the colloquial form of the [-HUMAN] quantified personal pronoun iets ‘something’. In this use wat can be modified by the degree modifiers heel ‘very’ and nogal ‘quite’, in which case it receives the interpretation “a lot”. Other modifiers that can be used are flink ‘quite’ and behoorlijk ‘quite’.

(142) a. Er werd wat/iets verkocht.
    there was something sold
    ‘Something was sold’.

b. Er werd daar heel/nogal wat verkocht.
    there was there very/quite something sold
    ‘A lot was sold there’.

III. Other cases

With the other simple quantifiers discussed in 6.2.3.1, we generally also find a contrast between weak and strong quantifiers. The weak quantifiers in (143), for instance, can only occur when quantitative er is present.

(143) a. Er liggen verscheidene/verschillende/ettelijke boeken op de tafel.
    there lie various/several/a.number.of books on the table
    ‘Various/several/a number of books are lying on the table.’

b. Er liggen ??(er) verscheidene/verschillende/ettelijke [e] op de tafel.
    there lie ER various/several/a.number.of on the table

The forms allerlei and allerhande in (144), however, can be used as independent arguments in formal language. The independent use of these forms requires singular agreement on the finite verb: in (144b), quantitative er is present and the verb exhibits plural agreement; in (144b’), quantitative er is absent and the verb exhibits singular agreement. Independent allerlei and allerhande therefore pattern with wat in (142) rather than with sommige in (137).

(144) a. Er liggen allerlei/allerhande boeken op de tafel.
    there lie all.sorts.of books on the table
    ‘All sorts of books are lying on the table.’

b. Er liggen/*ligt er [allerlei/allerhande [e]] op de tafel. [modifier of [NP e]]
    there lie/lies ER all.sorts.of (things) on the table

b’. Er ligt/*ligt allerlei/allerhande op de tafel. [independent argument]
    there lies/lie all.sorts.of (things) on the table
Example (145) shows that the formal strong quantifier *menig* cannot be used as an independent argument, which may be related to the fact that, when the referent is [+HUMAN], the special form *menigeen* is used; a corresponding [-HUMAN] form does not exist, though.

(145) a. Menig staker werd ontslagen.
    many striker was fired
    ‘Many strikers were fired.’

b. Menigeen/*Menig werd ontslagen.
    many was fired

The examples in (146a&b) show that the phrase-like quantifiers *deze of gene* and *een of ander* can also be used independently. The latter is special, however, since it can be preceded by a definite determiner and must therefore be analyzed as the head of an NP. The construction as a whole is also special, since the article *het* does not make the noun phrase definite, which is clear from the fact that it occurs in an expletive construction. In this connection it can be noted that *het een of ander* seems to be in a paradigm with *het een en ander* in (146b’), the head of which cannot be used as a modifier. The latter differs from the former in that (despite its triggering singular agreement on the verb) it is semantically plural in the sense that it refers to a non-singleton set of entities. Finally, example (146c) shows that *het nodige* can also be used independently.

(146) a. Deze of gene heeft geklaagd.
    this or that has complained
    ‘Somebody (or other) has complained.’

b. Er is gisteren het een of ander gebeurd.
    there is yesterday the one or other happened
    ‘Something has happened yesterday.’

b’. Er is gisteren het een en ander gebeurd.
    there is yesterday the one and other happened
    ‘Several things have happened yesterday.’

c. Er is gisteren het nodige gebeurd.
    there is yesterday the needed happened
    ‘A good many things have happened yesterday.’

6.2.4. Degree quantifiers

This section discusses degree quantifiers. Section 6.2.4.1 deals with their use as modifiers of the noun phrase. Section 6.2.4.2 is concerned with their independent use as arguments; degree quantifiers cannot be used as floating quantifiers.

6.2.4.1. Use as modifier

This section discusses the use of gradable quantifiers as modifiers of the noun phrase. We will start with a discussion of the high/low degree quantifiers *veel/weinig* ‘many/few’, which indicate that the cardinality involved is higher/lower than some tacitly assumed norm. After that, we will discuss the degree quantifiers
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like voldoende ‘sufficient’, genoeg ‘enough’ and zat ‘plenty’, which indicate that some tacitly assumed norm is met.

I. High and low degree quantifiers

This section will discuss some properties of the high and low degree quantifiers veel and weinig. It must be noted that these quantifiers are not only used as modifiers of the noun phrase, but can also be used as adverbial phrases. Since it would disturb our present discussion too much to also discuss this adverbial use here, we will return to it in a separate section; cf. 6.2.6.

A. Core semantics and the nature of the head noun

The semantic representations in (147) show that degree quantifiers like veel/weinig ‘many/few’ are not only existential but express in addition that the cardinality of the intersection of the set denoted by the noun jongens and the VP op straat lopen ‘to walk in the streets’ is higher/lower than a certain contextually determined norm. Note that this norm is not some absolute number, but may have some lower and upper bound. In the semantic representations in (147), n and n’ refer to, respectively, the lower and the upper bound of this range.

(147) • Degree quantifiers with count nouns
   a. Er lopen weinig jongens op straat.
      there walk few boys in the street
   a’. ∃x (x:boy) (x walk in the street & 1 < |A ∩ B| < n)
   b. Er lopen veel jongens op straat.
      there walk many boys in the street
   b’. ∃x (x:boy) (x walk in the street & |A ∩ B| > n’)

The degree quantifiers differ from the purely existential ones in that they modify not only (plural) count nouns like jongens ‘boys’ in (147), but also non-count nouns like the substance noun water in (148). Of course, the notion of cardinality is not applicable in the case of non-count nouns; instead, the degree quantifier expresses that the quantity of the substance denoted by the noun is higher/lower than a certain contextually determined norm.

(148) • Degree quantifiers with non-count nouns
   a. Er zit veel water in de fles.
      there is much water in the bottle
   b. Er zit weinig water in de fles.
      there is little water in the bottle

B. Weak and strong use

In (147) and (148), the noun phrases modified by the degree quantifiers are the subject of an expletive construction, and are therefore clearly “weak. It is, however, also possible to use such noun phrases strongly. Examples of strong noun phrases with degree quantifiers are given in (149). As with the existential quantifier enkele, the degree modifiers veel and weinig may either quantify over a pre-established set of entities in domain D, or be more “generic”, that is, quantify over all the relevant entities in the speaker’s conception of reality. Under the first reading, an example
like (149) makes the specific claim that of a contextually determined set of books
the cardinality of the set of books that contain printer’s errors is higher than some
tacitly assumed norm. Under the second, “generic” reading, the speaker makes the
more general claim that a relatively large proportion of all existing books contain
printer’s errors. Example (149b) exhibits the same type of ambiguity.

(149)  a.  Veel boeken bevatten honderden zetfouten.
    many books contain hundreds of printer’s errors

    b.  Weinig boeken bevatten geen zetfouten.
    few books contain no printer’s errors

C. The adjectival nature of the quantifier

The quantifiers veel and weinig are adjectival in nature, which is clear from the facts
that these quantifiers can be modified by degree modifiers such as erg ‘very’ or te
‘too’, and that they can even be the input for comparative and superlative formation
(although the superlative form of weinig often gives rise to a marked result).

(150) Adjectival properties of veel and weinig

<table>
<thead>
<tr>
<th></th>
<th>VEEL</th>
<th>WEINIG</th>
</tr>
</thead>
<tbody>
<tr>
<td>DEGREE MODIFICATION</td>
<td>erg/te veel boeken</td>
<td>erg/te weinig boeken</td>
</tr>
<tr>
<td></td>
<td>‘very/too many books’</td>
<td>‘very/too few books’</td>
</tr>
<tr>
<td>COMPARATIVE FORMATION</td>
<td>meer boeken</td>
<td>minder boeken</td>
</tr>
<tr>
<td></td>
<td>‘more books’</td>
<td>‘fewer books’</td>
</tr>
<tr>
<td>SUPERLATIVE FORMATION</td>
<td>de meeste boeken</td>
<td>*de minste boeken</td>
</tr>
<tr>
<td></td>
<td>‘most books’</td>
<td>‘fewest books’</td>
</tr>
</tbody>
</table>

It therefore does not really come as a surprise that quantificational veel can be found
in the same position as the attributive adjectives, that is, in a position following the
plural determiner de ‘the’ in (151a). In this position veel must be inflected. When
the definite determiner is absent veel can either be inflected or uninflected: vele/veel
boeken. In order to account for these two possibilities, one may assume that the
form depends on the absence or presence of the phonetically empty indefinite article
∅: the two forms can then be assumed to correspond to (151b) and (151c),
respectively. The primed examples in (151) show that, although the inflected form
of weinig is at least marginally possible, it leads to a severely degraded result when
no overt article is present.

(151)  a.  de vele/*veel boeken           a’.  ‘de weinige boeken
    the many books                   the few books

    b.  ∅ vele boeken                  b’.  ∅ weinige boeken
    ∅ many books                     ∅ few books

    c.  veel boeken                    c’.  weinig boeken
    many books                        few books

The differences in inflection may be taken to indicate that the quantifier may
occupy two different positions within the noun phrase: [dp D [op Q [np ... N ]]]. The
uninflected quantifier may be taken to occupy the regular quantifier position Q, as
in (152a), whereas the inflected quantifier may be taken to occupy the position of an attributive adjective within NP, as in (152b).

\[(152) \text{a. } [\text{DP } D [\text{QP veel } [\text{NP } ... N ]]] \]
\n\[(152) \text{b. } [\text{DP } D [\text{QP Q } [\text{NP vele N ]]]] \]

There is, however, one problem with such an assumption. As is shown by (153a), attributive adjectives may license N-ellipsis: the only requirement for this is that the context provides sufficient information to identify the content of the empty noun; cf. Section A5.4). N-ellipsis is, however, never possible with the high degree quantifier *veel* in (153b); this would, of course, be unexpected if it functions as an attributive adjective. We leave this point for future research, while noting that the superlative form of *velle, meeste* ‘most’, can be used in this construction; cf (153c).

\[(153) \bullet \text{N-ellipsis} \]

\[(153) \text{a. } \text{Hij heeft } [\text{DP de blauwe e] verkocht.} \quad \text{He has sold the blue one(s).'} \]
\n\[(153) \text{b. } *\text{Hij heeft } [\text{DP de vele e] verkocht.} \quad \text{He has sold the many} \]
\n\[(153) \text{c. } \text{Hij heeft } [\text{DP de meeste e] verkocht.} \quad \text{He has sold the most} \]
\n\nII. Voldoende ‘sufficient’, genoeg ‘enough’ and zat ‘plenty’

Besides the high and low degree quantifiers discussed above, there are quantifiers such as *voldoende* ‘sufficient’, *genoeg* ‘enough’ and *zat* ‘plenty’, which express that the cardinality of the intersection satisfies a certain contextually determined norm. The examples in (154) with *voldoende* ‘enough’ show that degree modifiers of this type are able to modify both count and non-count nouns, and are normally used with a weak reading. Recall from the discussion of the semantic representations in (147) that \( n \) and \( n' \) in (154a’) refer to, respectively, the lower and the upper bound of the range that falls within the contextually determined norm.

\[(154) \text{a. } \exists x (x: \text{boy}) (x \text{ walk in the street } \& n \leq |A \cap B| \leq n') \]
\n\[(154) \text{b. } \exists x (x: \text{boy}) (x \text{ walk in the street } \& n \leq |A \cap B| \leq n') \]

The degree quantifiers like *genoeg* and *zat* allow somewhat more freedom in their syntactic distribution than the other degree quantifiers; (155) shows that these quantifiers need not be placed in prenominal position, but can also occur postnominally. This is reminiscent of their behavior as modifiers of the adjectives illustrated in the primed examples, where they must follow the modified element.
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(155) a. Hij heeft <genoeg> boeken <genoeg>.
   he has enough books
   a’. Hij is <*genoeg> oud <genoeg>.
       he is enough old
   b. Hij heeft <zat> boeken <zat>.
       he has plenty books
   b’. Dat is <*zat> moeilijk <zat>.
       that is enough difficult

The quantifiers genoeg and voldoende (but not zat) can also be negated, thus expressing sentential negation. Two examples are given in (156). The examples differ in that sentential negation is brought about by means of the negative adverb niet in the case of genoeg, whereas in the case of voldoende negation is brought about by means of affixation with on-. Since negation is morphologically expressed on the quantifier itself in the case of voldoende, one might suggest that the negative adverb niet forms a constituent with the quantifier genoeg in (156a), and in fact there is some evidence that this is indeed the case; as (156a’) shows, the presence of niet excludes postnominal placement of the quantifier, which might be due to the fact that the quantifier is now complex.

(156) a. Hij heeft niet genoeg boeken.
   he has not enough books
   ‘He doesn’t have enough books.’
   a’. *Hij heeft niet boeken genoeg.
   b. Hij heeft onvoldoende boeken.
       he has not.enough books
       ‘He doesn’t have enough books.’

Although there is some reason to assume that sentential negation is realized as part of the quantifier in (156), this cannot be the case for all negated quantifiers. This is clear from the examples in (157) with the quantifier genoeg. Example (157a), which has basically the same meaning as (156a), shows that the noun phrase genoeg boeken can be topicalized while stranding the negative adverb niet, which suggests that sentential negation can also be expressed externally to the quantified noun phrase, which is confirmed by example (157b), in which sentential negation is realized on the time adverb nooit ‘never’. Example (157c) shows that sentential negation can also be expressed within the noun phrase by means of the negative article geen ‘no’; this case contrasts sharply with the one in (156a), however, in that the quantifier must be placed postnominally.

(157) a. Genoeg boeken heeft hij niet.
    enough books has he not
   b. Hij heeft nooit genoeg boeken.
       he has never enough books
   c. Hij heeft geen <*genoeg> boeken <genoeg>.
       he has no enough books
The examples in (156a&b) express that the cardinality of the set denoted by the noun does not satisfy the lower bound of the contextually determined norm. It is also possible to express that the cardinality exceeds the upper bound of this norm by using the complex phrase *meer dan genoeg/voldoende* ‘more than enough’; *zat* sounds somewhat marked (although we found a couple of cases on the internet). A more extensive discussion of examples like (158a) can be found in Section 6.2.5.

(158) a. Hij heeft meer dan genoeg/voldoende boeken.
   ‘He has more than enough books.’

   b. *Hij heeft meer dan zat boeken.

6.2.4.2. Use as argument

This section discusses the use of the degree quantifiers as independent arguments. As in the previous section, we will discuss the high/low degree quantifiers *veel* and *weinig*, and the degree quantifiers *voldoende*, *genoeg* and *zat*, which indicate that some tacitly assumed norm is met, in separate subsections.

I. High and low degree quantifiers

This section will make a distinction between uninflected and inflected *veel/weinig* and show that these two instances differ in several respects.

A. Uninflected *veel* and *weinig*

Like most existential quantifiers, the degree quantifiers *veel* and *weinig* are normally not used as independent arguments: example (159b) is acceptable due to the presence of °quantitative *er*, but example (159c), in which the quantifier is truly independent, is unacceptable.

(159) a. Er lopen veel/weinig jongens op straat.
   *there walk many/few boys in the street*

   b. Er lopen er [veel/weinig [e]] op straat.
   *there walk ER many/few in the street*

   c. *Er lopen veel/weinig op straat.
   *there walk many/few in the street*

Things are different, however, when we are dealing with non-count nouns. Since the quantitative *er* construction requires the empty noun to be plural, it does not really come as a surprise that example (160b) is excluded. However, in contrast to (159c), (160c) is acceptable. This example can be construed with a count noun interpretation, in which case *veel/weinig* can refer to a certain quantity of wine. Alternatively, *veel/weinig* may be construed as referring to a set of discrete entities of a miscellaneous sort (“loads of different things”).
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(160) a. Er zit veel/weinig wijn in de fles.
there is much/little wine in the bottle
b. *Er zit er [veel/weinig [e]] in de fles.
there is ER much/little in the bottle
c. Er zit veel/weinig in de fles.
there is much/little in the bottle

The judgments on the examples in (159) and (160) remain the same when the quantifiers 
veel and weinig are modified by degree modifiers like erg ‘very’ or te ‘too’, or when

they are replaced with their comparative forms meer ‘more’ and minder ‘less’. Replacement by

the superlative forms (het) meest ‘(the) most’ and (het) minst ‘(the) least’ is of course

excluded since this would make the noun phrases definite; definite noun phrases do not license

quantitative er and are not possible in expletive constructions.

The examples in (161) show that veel/weinig can also be used as the predicate

in a copular construction or as a measure phrase with verbs like kosten. In this case,

veel and weinig can also be replaced by both the comparative and the superlative

form; the latter can optionally take an -e ending.

(161) a. Dat is erg veel/weinig.
that is very much/little
‘That is quite a lot/very little.’
b. Dat is meer/minder dan je nodig hebt.
that is more/less than you need have
‘That is more/less than you need.’
c. Dat is het meest(e)/minst(e).
that is the most/least

(162) a. Dat kost/weegt veel/weinig.
that costs/weighs much/little
b. Dit boek kost meer/minder (dan dat boek).
this book costs more/less than that book
c. Dat boek kost het meest(e)/minst(e).
that book cost the most/least

B. Inflected vele(n) and weinige(n)

The examples in (151), repeated here as (163), show that veel may also occur in an
inflected form; inflected weinige gives rise to a marked/degraded result. When no

overt article is present, veel can either be inflected or uninflected, and we assume

that the form depends on the absence or presence of the phonetically empty

indefinite article Ø.

(163) a. de vele/*veel boeken
the many books
a’. ‘de weinige boeken
the few books
b. Ø vele boeken
Ø many books
b’. ‘Ø weinige boeken
Ø few books
c. veel boeken
c’. weinig boeken
many books
few books
The (a)-examples in (164) show that quantified non-count nouns never occur in noun phrases containing a definite article. If we conclude from this that it cannot co-occur with the indefinite article either, we correctly predict that non-count nouns are always preceded by the uninflected forms.

(164) a. *de vele/veel melk
   the much milk
   a’. *de weinige melk
   the little milk
b. *Ø vele melk
   Ø much milk
   b’. *Ø weinige melk
   Ø little milk
c. veel melk
   much milk
c’. weinig melk
   little milk

It is not really surprising that the quantitative er construction in (165b) is acceptable to about the same degree as the examples in (165a). What is surprising, is that the independent uses of these quantifiers in (165c) also give rise to a more or less acceptable result; this shows that the inflected forms differ markedly from their uninflected counterparts in (159c), which cannot be used as independent arguments. Furthermore, the fact that both the independent use of *velen and that of *weinigen are judged grammatical suggests that there is in fact no direct relation between these independent uses of the quantifiers in (165c) and their use as modifiers of the noun phrases in (165a&b). Recall that the orthographic rules require a (mute) -n on the independently used quantifiers in (165c) when they are [+HUMAN].

(165) a. Er lopen vele/*weinige mensen op straat.
   there walk many/few people in the street
b. Er lopen er [vele/*weinige [e]] op straat.
   there walk ER many/few in the street
c. Er lopen velen/slechts weinigen op straat.
   there walk many/only few in the street

The fact that the independently used quantifiers *velen and *weinigen in (165c) function as the subject of an expletive construction shows that they can be used as weak noun phrases, but they can also be used as strong noun phrases, as is illustrated by (166a). The remaining examples in (166) show that such independently used quantifiers can be used in all regular argument positions, that is, as a direct or indirect object or as the complement of a preposition.

(166) a. Velen/Slechts weinigen hebben geklaagd over de kou. [subject]
   many/only few have complained about the cold
b. Ik heb daar velen/slechts weinigen ontmoet. [direct object]
   I have there many/only few met
   ‘I have met many/only few people there.’
c. Ik heb velen/slechts weinigen een kaart gestuurd. [indirect object]
   I have many/only few a postcard sent
   ‘I have sent many/only few people a postcard.’
d. Ik heb aan velen/slechts weinigen een kaart gestuurd. [complement of P]
   I have to many/only few people a postcard sent
   ‘I have given an unsatisfactory mark to many/only few people.’
II. Other degree quantifiers

The degree modifiers which express that the cardinality of the intersection satisfies a contextually determined norm pattern more or less like uninflected *veel* ‘many’ and *weinig* ‘few’. When *genoeg*, *voldoende* and *zat* trigger plural agreement on the finite verb, they must be accompanied by quantitative *er*.

(167) a. Er lopen genoeg/voldoende/zat jongens op straat.
    there walk enough/enough/plenty boys in the street
b. Er lopen er [genoeg/voldoende/zat [e]] op straat.
    there walk ER enough/enough/plenty in the street
c. *Er lopen genoeg/voldoende/zat op straat.
    there walk enough/enough/plenty in the street

However, when these elements trigger singular agreement, quantitative *er* cannot be realized. Just like *veel/weinig* in (160c), the quantifiers in (168c) can be construed with a non-count noun interpretation, in which case they refer to a certain quantity of wine, or they can be used to refer to a set of discrete entities of a miscellaneous sort.

(168) a. Er zit genoeg/voldoende/zat wijn in de fles.
    there is enough/enough/plenty wine in the bottle
b. *Er zit er [genoeg/voldoende/zat [e]] in de fles.
    there is ER enough/enough/plenty in the bottle
c. Er zit genoeg/voldoende/zat in de fles.
    there is enough/enough/plenty in the bottle

6.2.5. Modification of quantifiers

As we have already briefly mentioned, the universal and degree quantifiers discussed here can be modified by means of adverbial phrases: this is not possible with existential quantifiers. In the subsections below, we will briefly discuss the various possibilities.

I. Universal quantifiers

Universal quantifiers are typically modified by approximative modifiers like *bijna* ‘nearly’, *nagenoeg* ‘almost’, *vrijwel* ‘nearly’ and *zowat* ‘about’. Some examples are given in (169).

(169) a. Bijna/vrijwel/zowat iedereen is op vakantie.
    nearly/nearly/about everyone is on holiday
b. Bijna/vrijwel/zowat alle boeken zijn verkocht.
    nearly/nearly/about all books are sold

Being subject to modification by the approximative modifiers is a typical property of all universally quantified elements. It also holds for the pre-determiners *al* and *heel* in (170a&b), which are more extensively discussed in Chapter 7, and for universally quantified adverbial phrases like *nooit* ‘never’, etc.
Numerals and quantifiers

(170) a. Bijna al de boeken zijn verkocht.
   nearly all the books are sold
b. Bijna heel het huis is schoon gemaakt.
   nearly whole the house is clean made
c. Hij is bijna nooit thuis.
   he is virtually never at home

In addition to the approximate modifiers above, universal quantifiers can be modified by modifiers that emphasize the fact that all entities satisfying the description are included, like echt ‘really’, letterlijk ‘literally’, volstrekt ‘completely’, werkelijk ‘really’, etc.

(171) a. Hij heeft echt alles/alle boeken gelezen.
   he has really all/all books read
b. Hij heeft met werkelijk/letterlijk iedereen/alle buren ruzie.
   he has with really/literally everyone/all neighbors quarrel

Another way to achieve the same semantic effect is by using the X maar dan ook X construction in (172), involving the conjunction maar. Note that the emphasizing modifiers illustrated in (171) can also be part of the second conjunct of this construction; cf. Hoeksema (2001).

(172) a. Hij heeft alles, maar dan ook (echt) alles gelezen.
   he has all but DAN OOK really all read
b. Hij heeft alle, maar dan ook echt alle boeken gelezen.
   he has all but DAN OOK really all books read

II. Negative existential quantifiers

Approximative modifiers can be used not only with universal quantifiers, but also with negatively quantified noun phrases such as niemand ‘nobody’ or geen boek ‘no book’. This is, of course, not surprising given the fact that a negatively quantified phrase can readily be paraphrased by means of a universal quantifier; cf. the equivalence rule $\neg \exists \Phi \iff \forall \neg \Phi$.

(173) a. bijna niemand
   nearly nobody
b. bijna geen student/studenten
   virtually no student/students

It is also possible to use modifiers that emphasize that no entity satisfying the description is included, like echt ‘really’, letterlijk ‘literally’, volstrekt ‘completely’, werkelijk ‘really’, etc. The X maar dan ook X construction can also be used to achieve this semantic effect. When the conjunction involves the negative article geen, as in (174c), there is a strong preference to also include a modifier like werkelijk. In all these examples, the modified noun phrase is assigned contrastive accent.
(174) a. Er was werkelijk NIEMAND/geen MENS aanwezig.
there was literally nobody/no person present
b. Er was NIEMAND maar dan ook (werkelijk) NIEMAND aanwezig.
there was nobody but DAN OOK really nobody present
c. Er was GEEN, maar dan ook ??(werkelijk) geen MENS aanwezig.
there was no, but DAN OOK really no person present

III. Degree quantifiers

Uninflected high/low degree quantifiers veel and weinig can also be modified by means of degree modifiers, and in this respect these quantifiers pattern more or less like gradable adjectives. The inflected forms vele and weinige, on the other hand, defy modification, regardless of whether they are preceded by a determiner or not. This is shown by the examples in (175).

(175) a. erg/heel/te veel/weinig boeken
   very/very/too many/few books
b. *(de) erg/heel/te vele/weinige boeken
   the very/very/too many/few books

This restriction on modification of the inflected forms seems to coincide with the restrictions on comparative formation: whereas meer ‘more’ can be readily used in (176a), it gives rise to an ungrammatical result in (176b); note that de mindere boeken is acceptable under the, here irrelevant, reading “the books of lower quality”.

(176) a. meer/minder boeken
   more/less books
b. *(de) meer/mindere boeken
   the more/less books

Like most gradable adjectives, veel and weinig have an interrogative counterpart, namely hoeveel ‘how many/much’. Although hoeveel is normally written as a single word, the fact that it contains the element veel suggests that veel is the neutral form of the antonym pair veel:weinig. Finally, it can be observed that weinig can be coordinated with the quantified pronoun niets ‘nothing’ or with the negative article geen ‘no’, with the resulting meaning “hardly any(thing)’.

(177) a. Hij heeft weinig of geen boeken gelezen.
   he has few or no books read
   ‘He has read hardly any books.’
b. Hij heeft weinig of niets gelezen.
   he has little or nothing read
   ‘He has read hardly anything.’

The quantifier voldoende ‘enough’ can be modified by ruim ‘amply’, which indicates that the implicit norm is satisfied to more than a sufficient extent. The degree quantifiers genoeg ‘enough’ and zat ‘plenty’ lack this possibility. Both voldoende and genoeg, but not zat, can be modified by net ‘just’, which indicates that lower bound of the implicit norm has just been met.
(178) a. Er zijn hier ruim/net voldoende computers.
there are here amply/just enough computers
b. Er zijn hier net/*ruim genoeg computers.
there are here amply/just enough computers
c. *Er zijn hier ruim/net zat computers.
there are here amply/just plenty computers

Example (179a) contains the sequence meer dan voldoende/genoeg. Given that meer is the comparative form of the degree quantifier veel, this example raises the question whether the quantifier meer modifies voldoende/genoeg or whether it is the other way around. The latter analysis can be supported by claiming that a comparative is normally modified by means of a dan-phrase. However, this particular use of the dan-phrase would be special in that it must precede, and cannot follow, the modified noun, as shown by the (a)-examples in (179); as is illustrated by the (b)-examples, dan-phrases used as modifiers of comparatives normally do not precede the modified noun. This fact may be given in support of the former analysis, according to which it is the comparative meer that modifies the degree quantifier; see Section 6.1.1.4, sub IV, for a similar constructions with cardinal numerals.

(179) a. Zij heeft meer dan voldoende/genoeg boeken.
she has more than enough/enough books
‘She has more than enough books.’
a′. *Zij heeft meer boeken dan voldoende/genoeg.
she has more books than Jan
‘She has more books than Jan.’
b′. *Zij heeft meer dan Jan boeken.

6.2.6. A note on the adverbial use of the degree quantifiers

The previous section has discussed the high/low degree quantifiers veel and weinig, and it was shown that these quantifiers share several properties with gradable adjectives. It therefore does not come as a surprise that the distribution of the forms veel and weinig is not restricted to adnominal positions; they can also be used as adverbial phrases; cf. (180). To conclude this section on quantifiers, we will briefly discuss the properties of such adverbially used quantifiers.

(180) a. Hij reist veel.
he travels a lot
‘He likes traveling a lot.’

In the (a)-examples in (180), veel and weinig are used as adverbial phrases of frequency; they express that the degree of frequency is higher or lower than some contextually determined norm. The same elements seem to function as adverbial phrases of intensity as in the (b)-examples, although some speakers seem to object to the use of weinig, and prefer the use of niet veel ‘not much’ in this function. The
difference between the two adverbial uses can be made clearer by means of the examples in (181), which show that the degree-of-frequency quantifiers are in a paradigmatic relation with frequency adverbs like *vaak* ‘often’, whereas the degree of-intensity quantifiers are not.

(181) a. *Hij reist vaak.*
    he travels often

b. *Hij houdt vaak van reizen.*
    he likes much of travel

Just like the adnominally used forms, the adverbially used forms of *veel* and *weinig* can be modified by degree modifiers like *erg* ‘very’ and *te* ‘too’, and they can also be the input of comparative and superlative formation.

(182) a. *Hij reist erg veel.*
    he travels very much

b. *Hij reist meer.*
    he travels more

c. *Hij reist het meest.*
    he travels the most

(183) a. *Hij houdt erg veel van kaas.*
    ‘He likes cheese quite a lot.’

b. *Hij houdt meer van kaas dan ik.*
    ‘He likes cheese more than I.’

c. *Hij houdt het meest van kaas.*
    ‘He likes cheese the most.’

The interpretation of adverbial *veel* is sensitive to the semantic properties of the verb phrase with which it is construed; cf. Doetjes (1997: 126). When *veel* modifies a *stage-level predicate* like the VP headed by *reizen* ‘to travel’ in (180a), a degree-of-frequency reading results; when an individual-level predicate like the VP headed by *houden van* ‘to like’ in (180b) is modified by *veel*, a degree-of-intensity interpretation ensues. However, not all individual-level VPs are compatible with *veel*; mental state verbs like *vertrouwen* “trust”, which take an NP-complement, do not combine with *veel*, though they are perfectly modifiable by *weinig* as well as by the comparative and superlative forms of both *veel* and *weinig*. *Veel* is therefore unique in this regard.

(184) a. *Hij vertrouwt Marie veel.*
    he trusts Marie much

b. *Hij vertrouwt Marie meer.*
    he trusts Marie more

c. *Hij vertrouwt Marie het meest.*
    he trusts Marie the most

Instead of *veel*, Dutch has to use one of the adverbs *zeer* ‘or erg ‘very’ to express degree quantification for the individual-level verb phrase in (184a), and in the
everyday vernacular niet erg ‘not a lot’ is usually preferred to weinig in the low degree example in (184a’). The corresponding examples are given in (185).

(185) a. Hij vertrouwt Marie erg/zeer.
    he trusts Marie much
b. Hij vertrouwt Marie niet erg.
    he trusts Marie little

In the (a)-examples in (186), which involve individual-level predicates, veel/weinig and erg/niet erg alternate without any significant semantic change. However, for stage-level predicates that are compatible with both veel and erg, like hoesten ‘to cough’ in (186), we find that there is a semantic distinction between these two modifiers: whereas veel and weinig in the (b)-examples express the degree of frequency, (niet) erg in the (c)-examples receives a purely non-quantificational, manner interpretation.

(186) a. Hij houdt veel/erg van reizen.    a’. Hij houdt weinig/niet erg van reizen.
    ‘He likes traveling a lot.’          ‘He doesn’t like traveling a lot.’
b. Hij hoest veel.
    ‘He coughs a lot.’
    b’. Hij hoest weinig.
    ‘He doesn’t cough a lot.’
c. Hij hoest erg.
    ‘He is coughing badly.’
    c’. Hij hoest niet erg.
    ‘He isn’t coughing badly.’

The contrast between (186b&c) can be replicated even more clearly in the case of adjectival predicates, as illustrated in (187); cf. Doetjes (1997: 129). While in (187a) afwezig means “not (physically) present”, the same adjective in (187b) means “absent-minded”. This reflects a difference between the stage-level and the individual-level interpretation of afwezig; veel patterns with the stage-level reading while erg teams up with the individual-level reading. Apart from showing that veel can degree-quantify adjectival predicates as well, the data in (187) once again confirm that veel has difficulty quantifying individual-level predicates.

(187) a. Jan is veel afwezig.
    Jan is much absent
    ‘Jan is often absent.’
   b. Jan is erg afwezig.
    Jan is very absent
    ‘Jan is often absent-minded.’

There are two points that should be stressed in connection with the contrast between stage-level and individual-level predicates. The first concerns transitivity. The examples in (180b) and (184a), repeated below as (188), seem to differ in one syntactically significant respect only: they both involve individual-level predicates, but whereas houden van ‘to like’ selects a PP-complement, vertrouwen ‘to trust’ takes an NP-complement.

(188) a. Hij houdt veel van reizen.
    he likes much of travel
    ‘He likes traveling a lot.’
   b. *Hij vertrouwt Marie veel.
    he trusts Marie much
Apparently, the category of the complement of the individual-level verb matters when it comes to the adverbial use of *veel* as a degree-of-intensity quantifier. Data confirming this conclusion are provided in (189).

   he attaches much to quality he appreciates quality much
   he trusts much on Marie he trusts Marie much

The two primeless examples differ in that *veel* can readily receive the desired degree-of-intensity reading in (189a), whereas it instead receives a degree-of-frequency reading in (189b); in the latter example, the degree-of-intensity is more naturally expressed with the aid of adverbs like *erg/zeer* ‘very’. Be that as it may, the fact that no reading is available for *veel* in the primed examples in (189) shows that the nature of the complement is an important factor when it comes to the distribution of adverbial *veel*: *veel* is impossible when the stage-level predicate takes a nominal complement.

It is, however, not the nature of the complement alone that regulates the adverbial distribution of *veel*; the individual-level/stage-level distinction is a crucial factor as well. This is evident from the fact that the transitive stage-level verbs in (190) are perfectly compatible with adverbial *veel*. These examples show not only that transitivity is not the crucial factor, but also that agentivity is not implicated in the dichotomy: the two examples in (190) differ with respect to agentivity but not in acceptability. That agentivity is not involved is also clear from the fact that the examples in (188b) and (190b) are both non-agentive but do contrast in acceptability.

(190) a. Hij kust Marie veel.
   he kisses Marie much
   b. Dat zie je hier veel.
   that see you here much
   ‘One sees that a lot around here.’

6.3. Quantitative er

We conclude this chapter with a discussion of so-called quantitative *er*, which is exemplified in the examples in (191). These examples show that quantitative *er* is associated with an interpretative gap [*e*] contained within a noun phrase. The reason why we discuss quantitative *er* in this chapter on numerals and quantifiers is that it normally requires that some quantificational element be present: the noun phrase in the second conjunct of example (191a), for example, contains the cardinal numeral *drie* ‘three’ and the noun phrase in the second conjunct of example (191b) contains the quantifier *veel* ‘many’.

(191) a. Jan heeft twee boeken en Piet heeft er [drie [*e*]].
   Jan has two books and Piet has ER three
   b. Jan heeft weinig boeken maar Marie heeft er [veel [*e*]].
   Jan has few books but Marie has ER many
This section will discuss a number of properties of constructions with quantitative *er*. Since some of these properties have been illustrated earlier in this chapter, the discussion will sometimes be relatively brief.

I. The antecedent of the interpretative gap [e]

An important condition on the occurrence of expletive *er* is that the gap in the associate noun phrase can be assigned an interpretation on the basis of information made available by the domain of discourse or the context. This is ensured in the examples in (191) by providing this information in the first conjunct of a coordinate structure, so that the interpretative gap [e] in (191) is construed as *boeken* ‘books’; but in the examples below we will simply tacitly assume that this condition is met.

The examples in (192) show that, when the interpretative gap is interpreted on the basis of a previously mentioned noun phrase, the gap and its antecedent may exhibit a mismatch in number: in (192a) the antecedent is singular whereas the gap is plural, and in (192b) we are dealing with the reverse situation.

(192) a. Jan heeft één boek en Piet heeft er [drie [e]].

Jan has one book and Piet has *er* three

b. Jan heeft twee boeken en Piet heeft er [één [e]].

Jan has two books and Piet has *er* one

The antecedent of the interpretative gap must be a count noun: example (191b) has shown that the quantifiers *veel* and *weinig* are compatible with quantitative *er* and example (193a) shows that these quantifiers can modify non-count nouns like *wijnen* ‘wine’, but nevertheless example (193b) is excluded (although it has been reported that some Flemish varieties do allow examples of this sort).

(193) a. Jan heeft veel/weinig wijn.

Jan has much/little wine

b. *Jan heeft veel wijn maar Piet heeft er [weinig [e]].

Jan has much wine but Piet has *er* little

In the examples discussed so far the antecedent of the gap corresponds to the head of a noun phrase. The antecedent can, however, also be a larger nominal projection; cf. Blom (1977). Example (194a), for instance, shows that complements of nouns must be omitted in the quantitative *er* construction; the example is ungrammatical when the complement clause *dat de maan om de aarde draait* is present. This shows that the antecedent is not just the head noun *bewijs* but the lexical projection *bewijs dat de aarde rond is*. Example (194b) shows that the same thing holds for attributively used adjectives: the example is ungrammatical when the attributive modifier *witte* ‘white’ is present.

(194) a. Jan gaf [een bewijs dat de aarde rond is] en

Jan gave a proof that the earth round is and

Piet gaf er [drie [e] (*dat de maan om de aarde draait)].

Piet gave *er* three that the moon around the earth circles

b. Jan heeft [twee zwarte katten] en Marie heeft er [drie (*witte) [e]].

Jan has two black cats and Marie has *er* three white
Although attributive modifiers may not occur when quantitative \textit{er} is present, the examples in (195) show that it is possible to have prepositional modifiers or relative clauses in such contexts.

(195) a. Ik heb [twee poppen met blond haar] en
    I have two dolls with fair hair and
Jan heeft er [drie [e] met donker haar].
    Jan has \textit{ER} three with dark hair

b. Marie had [veel studenten die wilden meedoen], maar
    Marie had many students who wanted to join in but
Els had er [veel [e] die weigerden].
    Els had \textit{ER} many who refused

We may therefore conclude from the examples in (194) and (195) that the interpretative gap \([e]\) is a nominal constituent larger than a head but smaller than a full noun phrase.

II. The quantification element

The examples above have already shown that the quantificational element is normally a cardinal number or a quantifier like \textit{veel/weinig}, but other quantificational elements may also occur with quantitative \textit{er}: example (196a), for instance, provides a binominal construction with the quantificational nouns \textit{een paar} ‘a couple’ and \textit{een boel} ‘a lot’, and (196a) provides an example with the quantificational element \textit{genoeg} ‘enough’; see Section 4.1.1.3.4, sub I, and Section 6.2.4.2 for more examples of this sort.

(196) a. Ik heb nog een paar/boel boeken. a’. Ik heb er nog een paar/boel.
    I still have a couple/lot of books. I still have \textit{ER} a couple/lot
    ‘I still have a couple of them.’

b. Ik heb nog genoeg boeken. b’. Ik heb er nog genoeg.
    I have still enough books. I have \textit{ER} still enough
    ‘I still have enough books.’ ‘I still have enough of them.’

Although a quantificational element is present in the prototypical case, many (but not all) speakers also accept examples like (197b). Observe that the gap \([e]\) in (197b) must be interpreted as plural; a singular interpretation requires that it be preceded by the numeral \textit{één} ‘one’, as in (197b’).

(197) a. Ik heb nog een stoel/stoelen in de schuur staan.
    I have still a chair/ chairs in the barn stand
    ‘I still have a chair/chairs in the barn.’

b. %Ik heb \textit{ER} nog [\textit{e}] in de schuur staan. [plural only]
   b’. Ik heb \textit{ER} nog [\textit{één \textit{[e]}}] in de schuur staan. [singular]

The presence of a numeral or quantifier is not sufficient to license the occurrence of quantitative \textit{er}; there are several additional conditions that must be met. First, the associate noun phrase must be indefinite; (198a) shows that the definite counterpart of (191a) is unacceptable. Second, (198b) shows that strong quantifiers like \textit{alle} are not compatible with quantitative \textit{er}; see Section 6.2, sub II,
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for more examples. Weak quantifiers, on the other hand, normally give rise to a fully acceptable result; see Sections 6.2.3.2 and 6.2.4.2 for ample illustration.

(198) a. *Jan heeft de twee boeken en Piet heeft er [de drie [e]].
   Jan has two books and Piet has ER the three
   b. *Jan heeft twee boeken van Gerard Reve en Piet heeft er [alle [e]].
   Jan has two books by Gerard Reve and Piet has ER all

The examples in (199) suggest that quantitative er may also occur in tandem with the so-called wat voor construction. This is somewhat surprising, given that this construction is not a quantificational, but a type-denoting expression. The construction is somewhat special, however, in that it requires that the spurious article een be stressed, which is normally not possible in the wat voor construction.

(199) a. Wat heeft Peter voor een/*één auto?
   what has Peter for a car
   ‘What kind of car does Peter have?’
   b.  Wat heeft Peter er voor één/*een [e]?
   what has Peter ER for a
   ‘What kind does Peter have?’

Furthermore, the primed examples in (200) show that the nominal gap in the wat voor construction must be singular, whereas it can readily be plural in the other examples discussed above. Note that (200a’) is fully acceptable with er interpreted as quantitative er, but only when the interpretive gap is construed as singular; cf. (199b). The string Wat koopt Els er voor? is acceptable when er is construed as part of a discontinuous pronominal PP er ...voor ‘for it’, but this is irrelevant for our present discussion.

(200) a. Wat koopt Els voor een boeken a’. #Wat koopt Els er voor één [e]?
   what buys Els for a books what buys Els ER for a
   ‘What kind of books does Els buy?’
   b. Wat koopt Els voor boeken b’. *Wat koopt Els er voor [e]
   what buys Els for books what buys Els ER for
   ‘What kind of books does Els buy?’

III. The syntactic nature of the interpretative gap

This section will discuss the nature of the interpretative gap within the noun phrase that is associated with quantitative er. The three analyses in (201) come to mind and will be discussed in the next subsections.

(201) a. The interpretative gap is the result of deletion: er ... [Num/Q [e]]
   b. The interpretative gap is base-generated as a pronominal element, which
      must be licensed/bound by quantitative er: eri ... [Num/Q [proi]]
   c. The interpretative gap is the result of movement: eri ... [Num/Q [ti]]

A. The interpretative gap is the result of deletion

A problem for a deletion analysis is that it does not explain why quantitative er must be present, given that example (153) in Section 6.2.4.1 has already shown that
N-ellipsis is possible without quantitative er; see also Section A5.4. In fact, the contrast between the two examples in (202) shows that quantitative er is blocked in N-ellipsis contexts; (202b) is only acceptable when er is assigned a locative interpretation. For this reason, we can immediately dismiss this analysis.

    ‘He has bought a blue one(s).’
    he  has  a  blue  car  bought

  b.  #Hij  heeft er [DP  een blauwe [auto]] gekocht.

Barbiers (2009) has put forth a second argument against the deletion analysis. First observe that the examples in (203) show that elided nouns in N-ellipsis constructions maintain their gender and number features: the article het and the relative pronoun dat in (203a) show that the elided noun is neuter and singular; (203b) shows that changing the number of the elided noun (which is of course determined by the context) triggers changes in both the article and the relative pronoun.

    Jan has  the  blue  book  which  Peter wants have
    Jan has  the  blue  book  which  Peter wants have

  b.  Jan heeft [de,pl blauwe boeken,neuter,pl.dat,neuter,pl] Peter wil hebben.
    Jan has  the  blue  books  which  Peter wants have

Barbiers claims that speakers of the northern varieties of Dutch fail to make a similar distinction in constructions with quantitative er: the (a)-examples in (204) show that such speakers can use the relative pronoun die both when the interpretive gap is interpreted as huis ‘house’, which is neuter in Dutch, and when it is interpreted as auto ‘car’, which is non-neuter. Note that we have placed Northern between quotation marks to indicate that some of our northern informants have the southern judgments, which suggests that the stratification of the distinction is in need of further research.

(204)  a.  Jan heeft er [één huis] die je gezien moet hebben. [“Northern” speakers]
    Jan has  ER  one house  which  you  seen  must  have

    a’. Jan heeft er [één auto] die je gezien moet hebben.

    b.  Jan heeft er [één huis] dat je gezien moet hebben. [Southern speakers]
    Jan has  ER  one house  which  you  seen  must  have

    b’. Jan heeft er [één auto] die je gezien moet hebben.

B. The interpretative gap is base-generated as a pronominal element

According to this analysis, proposed in Kester (1996), the presence of quantitative er is required to license some phonetically empty, base-generated pronominal-like element pro: eri ... [Num/Q [ proi ]]. When we assume that the licensing relation involves o-binding, the analysis can be used to account for at least some of the basic properties of the relation between quantitative er and its nominal associate. For example, given that binding requires that the binder c-command the pronominal element, we correctly predict that er must precede its associate noun phrase (when they are situated in the middle field of the clause).
(205) a. Jan heeft er, [één [ pro, ]] meegenomen.
Jan has ER one with-taken
‘Jan has taken one of them with him.’

b. *Jan heeft [één [ pro, ]] er, meegenomen.

Example (206a) further shows that the noun phrase can be placed in clause-initial position, and this also follows under the present analysis, given that the same thing is possible in the case of reflexive pronouns; the topicalized phrase is “reconstructed” into its original position (indicated by the trace $t_j$) as far as its binding properties are concerned.

(206) a. [Eén [ pro, ]] $t_j$ heeft Jan er $t_j$ meegenomen.
one has Jan ER with-taken

b. [Voor zichzelf $i$] $t_j$ heeft Jan een boek $t_j$ gekocht.
for himself has Jan a book bought

‘John bought a book for himself.’

Finally, when we assume that the binding relation between quantitative $er$ and its nominal associate is local in the same sense as the binding relation between a reflexive pronoun and its antecedent, we also correctly predict that $er$ and its nominal associate must be part of the same clause: example (207) shows that placing $er$ in some higher clause leads to ungrammaticality.

(207) Jan vertelde <*er*> mij dat hij <er*> [één [ pro, ]] meegenomen had
Jan told ER me that he one with-taken had
‘Jan told me that he had taken one of them with him.’

Despite this descriptive success, the suggested analysis has at least two flaws. First, it is not clear why the antecedent of pro must be $er$ and cannot be some more meaningful element that could also indentify the semantic content of pro. Second, it is not clear how quantitative $er$ itself is licensed; normally all elements in the clause are licensed by being in a selection or modification relation with some other elements in the clause, but this does not seem to hold for $er$, as it neither seems to be assigned a thematic role nor to have an obvious modification function.

C. The interpretative gap is the result of movement

The two problems mentioned for the previous analysis are immediately solved in the movement analysis, as proposed by Coppen (1991) and Barbiers (2009), where quantitative $er$ is claimed to pronominalize a certa in part of the nominal structure. This means that $er$ is base-generated as part of the noun phrase and subsequently moved into some NP-external position: $er, ... [Num/Q [ t_i ]]$. That the movement is obligatory can be attributed to the more general properties of discourse linked pronouns: the examples in (208), for example, show that definite pronouns like ’m are obligatorily scrambled to the left of °clause adverbs like waarschijnlijk ‘probably’. See Section 8.1.3 for more discussion.

(208) a. Jan heeft waarschijnlijk die blauwe auto/*’m gekocht.
Jan has probably that blue car/him bought
‘Jan has probably bought the blue car/it.’

b. Jan heeft die blauwe auto/*’m waarschijnlijk gekocht.
The movement analysis also accounts for the fact that quantitative er normally precedes the noun phrase it is associated with: given that er is extracted from the noun phrase, the unacceptability of example (209b) is simply the result of "freezing, the fact that a phrase from which some element is extracted is frozen in place.

(209) a.  Jan heeft er [één [ti]] meegenomen.
    Jan has ER one with-taken
    ‘Jan has taken one of them with him.’

b. *Jan heeft [één [ti]], er, ti meegenomen.

Of course, some proviso must be made for the observation that in (206) topicalization of the remnant of the noun phrase is possible, by taking recourse to some notion of reconstruction. The clause-boundness of the relation between quantitative er and its nominal associate, illustrated in (207), follows from the fact that scrambling is likewise clause-bound.

The claim that quantitative er is pronominal and thus has referential properties is supported by the examples in (210). Example (210a) simply shows that quantitative er associated with a direct object can readily precede an indefinite indirect object. Example (210b) shows that this is not possible when the indirect object contains a noun phrase that denotes the same entities as the quantified noun phrase; cf. Coppen (1991). This would immediately follow from "binding condition C if er is co-referential with (that is, binds) the referential noun phrase embedded in the indirect object. The ungrammaticality of (210b) thus supports the claim that quantitative er is referential.

(210) a.  Hij vertelde er, iemand [drie [ti]].
    he told ER someone three
    ‘He told three [= jokes] to someone.’

b. *Hij vertelde er, iemand die geen grap, kan waarderen [drie [ti]].
    he told ER someone who no joke can appreciate three
    Intended reading: ‘He told three jokes to someone who cannot appreciate a joke.’

A powerful argument in favor of the movement analysis is that the restrictions on the relation between quantitative er and its nominal associate resemble those between a moved element and its trace. First, the examples in (211b&c) show that quantitative er cannot be associated with a single noun phrase in a coordinate structure, whereas (211d) shows that it can occur when it is associated with both noun phrases. Similar facts have been described for movement; cf. Coordinate Structure Constraint and "Across-the-Board movement.

(211) a.  Jan heeft [[twee postzegels uit Thailand] en [drie postzegels uit China]].
    Jan has two stamps from Thailand and three stamps from China

b. *Jan heeft er, [[twee postzegels uit Thailand] en [drie [ti] uit China]].
    Jan has ER two stamps from Thailand and three from China

c. *Jan heeft er, [[twee [ti] uit Thailand] en [drie postzegels uit China]].
    Jan has ER two from Thailand and three stamps from China

    Jan has ER two from Thailand and three from China
Second, the relation between quantitative *er* and its nominal associate seems to be sensitive to the same “islands for extraction. Consider the examples in (212) and assume that “R-extraction involves movement of an R-word from the complement position of the PP. These examples show that R-extraction is possible from complement-PPs but not from time adverbials.

(212) a. Ik heb lang over mijn ontslag ge piekerd.
    I have long about my dismissal worried
    ‘I have worried long about my dismissal.’

a’. Ik heb er lang [over [ti]] ge piekerd.
    I have there long about worried
    ‘I have worried long about it.’

b. Ik heb dat boek tijdens mijn vakantie gelezen.
    I have that book during my vacation read
    ‘I have read that book during my vacation.’

b’. *Ik heb dat boek er lang [tijdens [ti]] gelezen.
    I have that book there during read
    Intended reading: ‘I have read that book during it.’

The examples in (213) show that we find the same with quantitative *er; er* can be associated with a noun phrase in a complement-PP but not in a time adverbial.

(213) a. Ik heb lang over twee problemen ge piekerd.
    I have long about two problems worried
    ‘I have worried long about two problems.’

a’. Ik heb er lang [over [twee [ti]]] ge piekerd.
    I have ER long about two worried

b. Ik heb dat boek tijdens twee vergaderingen gelezen.
    I have that book during two meetings read
    ‘I have read that book during two meetings.’

b’. *Ik heb dat boek er lang [tijdens [twee [ti]]] gelezen.
    I have that book ER during two read

The examples in (214) further show that both R-extraction and the association of quantitative *er* require that the complement-PP precede the verb in clause-final position. Note that *Ik heb er lang ge piekerd over twee* is perhaps marginally acceptable with a locational reading of *er*, but this is of course irrelevant for our present discussion.

(214) a. *Ik heb er lang ge piekerd [over [ti]].
    I have there long worried about

b. *Ik heb er lang ge piekerd [over [twee [ti]]].
    I have ER long worried about two

The discussion above has shown that the movement analysis has much to commend itself, but it must be noted that there are also problems. The most important one is related to example (213a’), which presupposes that quantitative *er* can be extracted from the complement of a PP. There are reasons to assume,
however, that this is normally not possible. First, consider the examples in (215), which just intend to show that R-extraction is possible from the *voor*-PP.

(215) a.  Dat brood is toch *voor de lunch* bedoeld.
     that bread is PRT for lunch intended
     ‘That bread is intended for lunch, isn’t it?’

   b.  Dat brood is er toch *[voor [t]]) bedoeld.
     that bread is there PRT for intended
     ‘That bread is intended for it, isn’t it?’

Now consider example (216a), which differs from (215a) in that the preposition *voor* takes the PP-complement *bij the koffie* instead of the nominal phrase *de lunch.* Example (216b) shows that R-extraction from the *voor*-PP is not possible.

(216) a.  Die koekjes zijn toch *voor bij de koffie* bedoeld.
     those cookies are PRT for with the coffee intended
     ‘Those cookies are intended to be eaten with the coffee, aren’t they?’

   b.  *Die koekjes zijn er toch *[bij [t]]) bedoeld.
     those cookies are there PRT for with intended

Note that R-extraction from the *voor*-PP gives rise to a configuration similar to the one proposed for the quantitative *er* construction in (214b) in the sense that a moved element is related to a trace within a complement of a preposition. The difference in acceptability of (216b) and (213a′) therefore raises some doubt on the movement analysis of quantitative *er*, unless it can be reduced to some independent reason. One solution that comes immediately to mind is that the ungrammaticality of (216b) is due to the fact that the embedded *bij*-phrase is an island for extraction, but this is clearly not the case given that example (217) shows that R-extraction from the *bij*-phrase is possible as long as the R-word remains within the *voor*-PP. Since we have no further insights to offer here, we will leave this problem for future research.

(217)    Die koekjes zijn *voor er, [bij [t]]) bedoeld.
     those cookies are there PRT for with intended

6.4. Bibliographical notes

Most of the work on quantification has been carried out in formal semantics. Bach et al. (1995), for instance, presents a large number of studies on quantification in various languages, including Dutch. Other discussions of Dutch quantifiers include Doetjes (1997) on the distribution of quantifying expressions in French, Dutch and English; Zwarts (1992; chapter 7) on quantified determiners in Dutch; De Jong (1991) on the distribution of Dutch determiners (articles, numerals and quantifiers); and De Jong (1983) on the distribution of Dutch numerals.

The distinction between weak and strong determiners was first made by Milsark (1974, 1977) in a number of studies on the English existential construction and the definiteness effect. For more extensive discussions of the expletive construction and the definiteness effect in English and Dutch see Reuland (1983), Bennis (1986) and the papers collected in Reuland & Ter Meulen (1989). Other relevant discussions can be found in Diesing (1992); De Hoop (1995), who deals with the weak-strong
distinction in Dutch; and De Swart (2001), who discusses the weak readings of indefinites. A recent, comprehensive review of the literature on the English expletive construction and the definiteness effect can be found in Hartmann (2008).

Since the 1980s much of the research on quantification has been carried out within the theory of generalized quantifiers, as developed by Barwise and Cooper (1981). For a general introduction, see, e.g., Partee et al. (1990; ch.14). For more detailed discussions, see such collections as Van Benthem & Ter Meulen (1985), Groenendijk et al. (1987) and Gärdenfors (1987).

Some important studies on quantitative *er* are Bech (1952), Blom (1977), Bennis (1986), Coppen (1991) and Barbiers (1990/2009). The arguments in favor of the movement analysis of quantitative *er* are taken from the last two references; Barbiers (2009) further provides an explicit comparison of quantitative *er* with the referential personal pronoun *ze* ‘they’, and shows that, although the former pronominalizes a smaller portion of the noun phrase than the latter, there are several similarities between the two.